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# Contents

Forword vi
Acknowledgement vii
Preface viii
Overview ix

## Chapter 1 Introduction
1.1 Background 1
1.2 Services provided from MCWCs 2

## Chapter 2 Maternal and Child Health (MCH) Services
2.1 National policies 7
2.2 Standards and guidelines 7
2.3 Maternal health care 7
2.4 Essential newborn care 68

## Chapter 3 Family Planning Services
3.1 National policies 105
3.2 Standards and guidelines 106
3.3 Temporary contraceptive methods 108
3.4 Permanent methods 122

## Chapter 4 RTI/STI and HIV/AIDS Services
4.1 National policies 127
4.2 Standards and guidelines 127
4.3 STD infecting the reproductive organ 128
4.4 STD not infecting the reproductive organs 128
4.5 Non-sexually transmitted RTI 128
4.6 Syndromic management 128

## Chapter 5 Infertility
5.1 National policies 163
5.2 Types of infertility 163
5.3 Causes of infertility 163
5.4 Management of infertility 165

## Chapter 6 Male, Youth and adolescent services
6.1 Introduction 168
6.2 Male involvement 168
6.3 Involvement of youths and adolescents 170

## Chapter 7 Behavioral Change Communication, Gender Issues and Violence against Women Services
7.1 Introduction 176
7.2 Behavioral Change Communication 176
7.3 Gender issues 177
7.4 Violence Against Women Services 180

## Chapter 8 Quality of care
8.1 Introduction 188
8.2 Components of quality of care 189
8.3 Monitoring quality of care 190
<table>
<thead>
<tr>
<th>Chapter 9</th>
<th>Infection prevention</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.1 Introduction</td>
<td>194</td>
</tr>
<tr>
<td>9.2 Standards and guidelines</td>
<td>196</td>
</tr>
<tr>
<td>9.3 Infection prevention procedure</td>
<td>196</td>
</tr>
<tr>
<td>9.4 House keeping and waste disposal</td>
<td>205</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chapter 10</th>
<th>Referral system</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.1 Introduction</td>
<td>211</td>
</tr>
<tr>
<td>10.2 Strategies</td>
<td>211</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chapter 11</th>
<th>Different training activities conducted</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.1 Introduction</td>
<td>213</td>
</tr>
<tr>
<td>11.2 In-service/refresher training of FWV's in practical skill development</td>
<td>213</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chapter 12</th>
<th>Infrastructure</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.1 Introduction</td>
<td>215</td>
</tr>
<tr>
<td>12.2 Facilities</td>
<td>215</td>
</tr>
<tr>
<td>12.3 Equipment and supplies</td>
<td>217</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chapter 13</th>
<th>Recording and reporting system</th>
</tr>
</thead>
<tbody>
<tr>
<td>13.1 Introduction</td>
<td>219</td>
</tr>
<tr>
<td>13.2 Record keeping system</td>
<td>219</td>
</tr>
<tr>
<td>13.3 Reporting system</td>
<td>219</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chapter 14</th>
<th>Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.1 Introduction</td>
<td>221</td>
</tr>
<tr>
<td>14.2 Manpower</td>
<td>221</td>
</tr>
<tr>
<td>14.3 Logistics</td>
<td>221</td>
</tr>
<tr>
<td>14.4 Financial</td>
<td>222</td>
</tr>
<tr>
<td>14.5 Supervision and monitoring</td>
<td>222</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Annexures</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
</tr>
<tr>
<td>B</td>
</tr>
<tr>
<td>C</td>
</tr>
<tr>
<td>D</td>
</tr>
<tr>
<td>E</td>
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<tr>
<td>F</td>
</tr>
<tr>
<td>G</td>
</tr>
<tr>
<td>H</td>
</tr>
<tr>
<td>I</td>
</tr>
<tr>
<td>J</td>
</tr>
</tbody>
</table>
FOREWORD

Maternal, Child Health and Family Planning (MCH-FP) program in Bangladesh has achieved commendable success in the last two and a half decades. This has been possible due to continuous support and commitment of the Government of Bangladesh. The support of the development partners and NGOs has also been commendable. A very good service delivery system started functioning since early 1976. MCWCs at that time were only meant for outdoor MCH & Family Planning services. There are 90 Maternal and Child Welfare Centers (MCWCs) in the country providing reproductive health care services including Family Planning, antenatal care, normal delivery, post natal care, EPI, childcare, management of RTI/STI case management and Family Planning services. Out of 90, 64 MCWCs are now providing comprehensive essential obstetric care services. The volume of activities of MCWCs has increased over time since these were transferred in 1975 from Health Directorate to the Family Planning Directorate.

The Operation Manual was prepared, compiled and adopted for efficient management of the MCWC activities in 1997 with financial and technical support from UNFPA. However, it was felt necessary to modify and update the Manual to make it more operational, especially to include new developments in modified partograph, skilled birth attendants training and services, emergency contraception, post-abortion care, management of violence against women, adolescent reproductive health, male involvement and participation, RTI/STI and HIV/AIDS management.

The process of revision and updating of the MCWC operation manual has been made possible with the financial assistance from UNFPA and technical guidance provided by Technical Committee headed by the Director (MCH-Services). JSI Bangladesh has successfully completed the revision and updating of the Manual with inputs from the service providers and eminent professionals in the field of RH, MCH, FP and other agencies.

I am happy to note that the revised MCWC Operation Manual has kept provision for increased access to and use of quality reproductive health services. Gender equity and equality through participation of males and adolescents have give additional dimensions to the updated Manual.

I acknowledge with gratitude the technical and financial support received from UNFPA for the revision and updating of the manual. I appreciate the commendable job performed by the members of the Technical Committee, headed by Dr. Jafar Ahmad Hakim, Director (MCH-Services) for updating the manual. The contribution of the service providers given in the six divisional workshops and professionals are gratefully acknowledged. I sincerely thank Dr. Ahmed Al-Kabir, Country Director of JSI Bangladesh for successfully completing the task of the revision.

I hope the MCWC Operation in its present form will be very useful for the service providers working at different capacities in the MCWCs and other facilities. I also expect that this manual will be translated into Bangla for FWVs and other paramedics working in the MCWCs. It gives me great pleasure to forward the revised and updated 'MCWC Operation Manual' as service delivery guidelines for the MCWCs and UH&FWCs in Bangladesh.

Md. Fazlur Rahman
Director General
Directorate of Family Planning
Ministry of Health and Family Welfare
ACKNOWLEDGEMENT

‘MCWC Operation Manual’ was prepared and adopted for the first time in 1997. Since then a number of services were introduced in the Maternal and Child Welfare Centers (MCWCs). Among many services, modified partograph, skilled birth attendants, emergency contraception, post abortion care, management of violence against women, adolescent reproductive health, male clinic, HIV/AIDS etc are some of the important topics. Introduction of these topics called for revision and updating of the MCWC Operation Manual for the second-time.

The technical and financial assistance of UNFPA in the process of revision and updating of the Manual is timely and gratefully acknowledged.

I am thankful to JSI Bangladesh for providing technical and secretarial assistance in developing the revised Manual. In this regard, I would like to acknowledge the contribution of Dr. Ahmed Al-Kabir, Country Director, JSI Bangladesh.

I am very grateful to the members of the Technical Committee and eminent professionals who have contributed, commented and assisted in updating various sections of the manual. I am particularly indebted to Prof. A. B. Bhuiyan, Prof. Khalilur Rahman, Dr. Mirza A. H. M. Bareque, Dr. Sohail Ally, Dr. Sushil Chandra Sutradhar, Dr. Md. Serajul Islam, Dr. Md. Ashraf Ali, Dr. AKM Mahbubur Rahman, Dr. A. J. Faisal, Dr. Jebunnessa Rahman, Dr. Farhana Dewan, Dr. Salma Rouf and Dr. Setara Rahman for giving their precious time to review the manual for accuracy and completeness.

Opinions of the different stakeholders were of great importance which were collected through organizing 6 divisional workshops. Divisional Directors and District level GOB officials and professional bodies played a vital role in the Divisional workshops giving their valuable opinion in the revision of the manual. I thankfully acknowledge their contribution as well. I thankfully acknowledge the advice given by Dr. Jahir Uddin Ahmed, Director (Planning), Directorate of Family Planning.

I extend my whole-hearted thanks to Ms. Suneeta Mukherjee and Ms. Tahera Ahmed of UNFPA for their unstinted support in completing the task.

I owe my gratitude to Mr. Md. Fazlur Rahman, Director General, Directorate of Family Planning, for his continuous support, guidance and inspiration.

We shall consider our efforts worthwhile once this revised manual is read and followed carefully by the service providers of the MCWCs and other stakeholders.

Dr. Jafar Ahmad Hakim
Director (MCH-Services) and
Line Director (MC & RH Service Delivery) In-charge
Directorate of Family Planning
PREFACE

The goal of the 6\textsuperscript{th} Country Program of UNFPA in Bangladesh is to contribute to the improvement of the status of the reproductive health of the people of Bangladesh leading to sustainable social development and reduction of poverty. As such, UNFPA’s Reproductive Health subprogram aims, among others, at contributing to the increased access and use of quality RH services.

The Maternal and Child Welfare Centers (MCWCs) in Bangladesh are rendering much-needed MCH-FP services to the people. UNFPA was associated with upgradation of all MCWC’s with equipment and training of doctors and paramedics in 1993 and in 1997 in the development and printing of the MCWC Operations Manual which proved to be extremely useful to the service providers in ensuring acceptable standards on each aspect of service delivery provided at the MCWCs. The recent expansion of the range of service provision in the MCWCs has necessitated the revision and updating of the operation manual to include new services.

I am pleased that UNFPA has been able to provide technical and financial assistance in the revising, updating and printing of the manual. We gratefully acknowledge the efforts made by the Technical Committee in providing assistance to JSI Bangladesh in the preparation of the revised manual. We are also thankful to Dr. Ahmed Al-Kabir, Country Director, JSI Bangladesh for preparation of the draft and undertaking other supportive services.

Thanks are also given to the Government ESP Officials and the various Technical Committee members for their efforts. I am also proud that Dr. Jebunnessa Rahman has given the contribution to the updating of the Manual.

I hope that this revised and updated ‘MCWC Operation Manual’ will help the service providers at the MCWCs to deliver improved services to the people.

Suneeta Mukherjee
UNFPA Representative
Bangladesh
The state of maternal health in Bangladesh is dismal. Bangladesh has one of the highest maternal mortality rates in the world – at 3.2 per 1000 live births. While most pregnancies and births are uneventful, all pregnancies are at risk. Around 15% of all pregnant women develop a potentially life-threatening complication that calls for skilled care and some will require a major obstetrical intervention to survive. This manual is written for doctors and FWVs at the MCWC who are responsible for the care of women with delivery, complications of pregnancy, childbirth, and immediate post partum period including immediate problems of the newborn and other ESP services provided from MCWC.

Both doctors and FWVs reproductive health services at MCWC, strive for efficient and reliable referral systems, monitor the quality of health care services and advocate community participation in health related matters. Though some of the services in this manual require specialized equipment and skill but it should be noted that many of the life saving procedures described can also be performed at MCWC if they will be properly trained and develop skill.

Safe motherhood and neonatal care have been accepted as sub-areas under reproductive health care element of essential services package under HPSP. The government Maternal Health Strategy include reductions in maternal mortality and morbidity, social mobilization, caring practices, decision making at home level and service delivery through provision of emergency obstetric care services, promotion of women’s access to resources and ensuring quality of services. Maternal health services are provided at community and facility levels through a network of domiciliary field workers, satellite clinics, UF&FWC and hospitals.

The Government of Bangladesh (GOB) seeks to create conditions where by the people of Bangladesh have the opportunity to reach and maintain the highest attainable level of health.

Reproductive Health is a state of complete physical, mental and social well-being and not merely the absence of disease of infirmity in all matters relating to the reproductive system and to its functions and process.

Reproductive health care is understood as “the constellation of methods, technique and services that contribute to reproductive health and well being by preventing and solving reproductive health problems.”1 The reproductive health problems in Bangladesh are manifold. In order to mitigate the problems, both government and non-government efforts at individual and institutional levels are crucial.

Reproductive Health care is one of the component of ESP. The ESP will provide increasingly sophisticated services at each level of the system, with a capacity to perform Caesarean sections at all levels of facilities at the district and Upazila level. Eight sub-areas have been identified under reproductive health care of which the first four have particular relevance to maternal health.2

I **Safe Motherhood** will focus on creating the conditions necessary for preventing maternal death and disability with emphasis on provision and utilization of quality ANC, safe birth practices, PNC and EOC services together with provision of unsafe abortion and services for cases of violence against women. We further have added the dimension of referral.

---

1 Inventory of National EXPERTS on RH
II Family planning services will focus on provision of services and provisions to increase CPR of modern methods, reduce discontinuation of contraceptive use and to encourage gradual transition to long term and permanent methods. Emphasis will also be on improved management of side effects and complications.

III Preventing Unsafe Abortion will be addressed through improved MR services and family planning services

IV Maternal Nutrition improvement will focus on counseling and supplementation of iron-folic acid and vitamin A

V Prevention and control of RTI/STD/AIDS will focus on treatment of RTI/STD cases through syndromic approach and prevention of HIV/AIDS through education and counseling.

VI Adolescent care will focus on addressing unwanted pregnancies, malnutrition, family conflict, sexual exploitation of adolescent girls, violence against adolescents etc.

VII Infertility will focus on provision of preliminary investigations and referral of infertile couple to higher center.

VIII Neonatal care will focus on promotion of newborn health and reduction of neonatal mortality and morbidity.
Location of MCWCs in Bangladesh
Chapter 1
Introduction

1.1 Background

Maternal mortality is a global problem. According to the Tenth Revision of the International Classification of Diseases (ICD-10) maternal death is defined as “the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes.”¹ It is thus related to multifarious problems during pregnancy, childbirth and postpartum. Important contributing factors to unsafe motherhood are inadequate availability of preventive and promotive health care services for antenatal care (ANC); inadequate obstetric technique during childbirth; and more significantly, the lack of access to lifesaving procedures in emergency and obstructed labor, and sepsis. The three delays associated with maternal mortality are: i) delay in decision making, ii) delay in reaching medical centers, and iii) delay in services at medical centers.

Bangladesh is one of the world’s most densely populated countries, where the population is growing at a rate of 1.48% per annum. The maternal mortality rate is 3.2 to 4.0 per thousand live births where 90% of women still deliver at home with untrained birth attendants using traditional harmful practices.

In Bangladesh, three fourths of births are assisted by traditional birth attendants (TBA)².
• 12% assisted by trained and 76% by untrained birth attendants,
• 12% of births are assisted by medically trained persons,
  - 7 % by doctors/nurses,
  - 5 % by midwives, family welfare visitors, sub-assistant community medical officers and medical assistants.

There are about 9 million women who have survived the rigors of pregnancy and childbirth but suffer from lasting complications such as fistulae, uterine prolapses, inability to control urination and painful intercourse. These complications arise during: Antepartum (37%), Intrapartum (12%), Postpartum (51%) period.

These reproductive morbidities diminish women’s fertility, productivity and quality of life; along with the health and survival of the next generation.

Many of the above complications can be prevented by early detection with proper care during pregnancy in the Maternal and Child Welfare Centers (MCWCs). The MCWC is equipped with emergency medicine, instruments and supported by trained skilled manpower.

MCWC is an institution where comprehensive and continuous MCH-FP services are provided. Historically, Maternal and Child Health (MCH) program existed in isolation from the National Family Planning Program. Prior to 1975, its activities were limited to 90 MCWCs at district, upazila and union levels, and its services did not receive much recognition in other government hospitals and clinics. On the other hand the FP Program with its limited clinical facilities and

¹ WHO. 1999.
² MOHFW. October 2001.
medical manpower was not making much headway. Therefore in 1975, in order to make the Family Planning (FP) Program meaningful, it was converted into MCH based FP Program. The MCH service in MCWCs was transferred from Health Division to Population Control Division and integrated with the Family Planning Program. The main idea behind this integration was to encourage eligible couples to have wider acceptance of family planning methods whereby reducing the high rate of child mortality and improving maternal health. The MCH services did not get much priority in comparison with child health, evidenced by high maternal mortality and morbidity. It was a matter of concern as the sufferers were neglected people of the community. Many steps had to be taken to lower maternal and child mortality rates. It was expected that the number of deaths can be reduced when women have access to MCWC in addition to comprehensive reproductive health, family planning and Essential Obstetric Care (EOC) with well-trained staff.

The MCWCs are situated at district, upazilla and union levels. The staff strength is not equal at all levels. MCWCs at district level have more manpower facilities, equipment, necessary/essential and emergency drugs for rendering comprehensive services to mothers and children.

The plan of action of the International Conference on Population and Development (ICPD) held in Cairo, 1994, emphasized the incorporation of broader reproductive health concerns in traditional MCH-FP program. Strengthening of Reproductive Health - Essential Obstetric Care (RH-EOC) services at the MCWCs is the major effort of the Bangladesh Government to provide comprehensive reproductive health care, family planning and EOC services to vulnerable groups especially the un-served, and under served women and children of the country. It is one of the unique achievements of the government to ensure universal access for women to EOC services of acceptable quality.

Upgradation and functioning of RH-EOC in MCWCs drew attention both locally and worldwide. It has been seen that administrative and management style of RH-EOC program at MCWCs is one of the unique examples, which can be replicated. Many people want to share these experiences and provide all services in one place. Many circulars, instructions were (and still are being) issued, but as there is no comprehensive manual, the activities could not be consolidated. With a view to manage all these activities smoothly, the need arose for a manual to be prepared to guide the personnel working at MCWCs. It may be mentioned here that the new activities of MCWCs needed to be incorporated in detail in the manual after due consultation and consideration. The first Operation Manual was brought out in October 1997.

1.2 Services provided from MCWC’s
The services available or activities performed in MCWCs at different levels are not the same due to dissimilarities in the existing available resources like trained manpower, physical facilities, logistics support etc. But there are some common services available at all level of MCWCs. At present 64 MCWCs are functioning and providing RH-EOC services throughout the country with the financial and technical support of UNFPA. The GOB has embarked on a program with the principal objective of improving the services in the MCWCs. Government of Bangladesh (GOB) and United Nations Population Fund (UNFPA) set up mutual goals to strengthen the maternal care services by providing technical assistance in training, equipment, resources of facilities and supervision to these MCWCs.
I. Services provided from District/ Upazila level MCWCs

(Comprehensive Reproductive Health/Family Planning services including EOC program are available):

A. Outpatient/Outdoor services:
   1. Maternal care:
      a. Antenatal care (normal and complicated)
      b. Postnatal care (normal and complicated)
      c. General treatment for females
      d. Follow up services.
   2. Reproductive Tract Infection (RTIs) including STDs and prevention of HIV/AIDS
   3. Child care:
      a. Treatment of common diseases:
         i. Under one year child (Infant)
         ii. 1-5 years child (Under-5)
      b. Growth monitoring
      c. Immunization against severe infectious diseases, such as:
         i. DPT
         ii. Polio
         iii. Measles
         iv. BCG
         v. TT (for ante-natal mothers as well as women of age 15-45 years).
   4. Family Planning (FP):
      a. FP Counseling.
      b. Methods provided:
         i. Tubectomy
         ii. Vasectomy
         iii. Norplant
         iv. IUD
         v. Injectable
         vi. Oral pill
         vii. Condom.
      c. Management of complications and side effects of FP methods
      d. Follow-up services
   5. Infertility.

B. Indoor services rendered at MCWC:
   1. Deliveries (Normal)
   2. Deliveries (twin, with episiotomy)
   3. Deliveries with the help of vacuum extractor and forceps
   4. Caesarean section

C. Other services available at MCWCs:
   1. Medical treatment of complicated cases
      a. Medical treatment of complicated ante-natal, natal & post natal
         i. Pregnancy Induced Hypertension (PIH)
         ii. Eclampsia
         iii. Antepartum Haemorrhage (APH).
      b. Postpartum haemorrhage
      c. Puerperal sepsis
      d. Severe anemia
      e. Septic abortion
2. Surgical obstetrical care
   a. Caesarean section
   b. Repair of cervical tear and perineal tear
   c. Dilatation & Curettage (D&C) for incomplete abortion
   d. Manual removal of retained placenta
   e. Induction of labor

II Services provided from District level MCWCs
(Comprehensive Reproductive Health services are not available)
A. Outpatient/Outdoor services:
   1. Maternal care
      a. Antenatal care
      b. Postnatal care
      c. General treatment for females
      d. Follow up services
   2. Child care
      a. Treatment of common diseases
         i. Under one year child (Infant)
         ii. 1-5 years child (Under - 5)
      b. Growth monitoring
      c. Immunization against common infectious diseases, such as
         i. DPT
         ii. Polio
         iii. Measles
         iv. BCG
         v. TT (for ante-natal mothers as well as women of age 15-45 years)
   3. Family Planning (FP)
      a. FP Counseling
      b. Methods provided
         i. Tubectomy
         ii. Vasectomy
         iii. Norplant
         iv. IUD
         v. Injectable
         vi. Oral pill
         vii. Condom.
      c. Referral center for management of complications & side effects of FP methods.
      d. Follow-up services

B. Indoor services:
   1. Normal Deliveries
III. Services available at Upazila level MCWCs

(Comprehensive Reproductive Health Services not provided)

A. Outpatient/Outdoor services:

1. Maternal Care
   a. Ante-natal care (Normal)
   b. Referral of high risk ante-natal cases to district level MCWC/District hospital/Medical College Hospital
   c. Postnatal care (Normal)
   d. Referral of complicated postnatal cases to district level MCWC/District hospital/Medical College Hospital
   e. General treatment for females
   f. Follow-up services

2. Child care
   a. Treatment of common diseases
      i. Under one year child (Infant)
      ii. 1-5 years child (Under - 5)
   b. Growth monitoring
   c. Immunization against common infectious diseases, such as
      i. DPT
      ii. Polio
      iii. Measles
      iv. BCG
      v. TT (for ante-natal mothers as well as women of age 15-45 years)

3. Family Planning
   a. FP counseling
   b. Methods provided:
      i. IUD
      ii. Injectable
      iii. Oral pill
      iv. Condom
      v. Tubectomy
      vi. Vasectomy
      vii. Norplant (in selected centers)
   c. Follow-up services
   d. Management of complications and side-effects of FP methods
   e. Referral for management of complications to District level MCWCs/District hospital/Medical College Hospital.

B. Indoor services:
   1. Deliveries (normal)

IV. Services available at Union level MCWCs

A. Maternal Care:
   1. Ante-natal care (Normal)
   2. Referral of high risk ante-natal cases to district level MCWCs/District hospital/Medical College Hospital
   3. Postnatal care (Normal)
4. Referral of complicated postnatal cases to district level MCWCs/District hospital/Medical College Hospital.

5. General treatment for female

6. Follow-up services

B. Child care:
   1. Treatment of common diseases
      a. Under one year child (Infant)
      b. 1-5 years child (Under - 5)

2. Growth monitoring

3. Immunization against common infectious diseases, such as
   a. DPT
   b. Polio
   c. Measles
   d. BCG
   e. TT (for ante-natal mothers as well as women of age 15-45 years)

C. Family Planning:
   1. FP counseling

   2. Methods provided
      a. IUD
      b. Oral pill
      c. Condom
      d. Injectable
      e. Provision for VSC (if possible)
      f. Follow-up services
      g. Management of side-effects and minor complications
      h. Referral of complicated cases to UHC/District level MCWCs/District Sadar hospital/Medical College Hospital.
Chapter 2
Maternal and Child Health (MCH) Services

2.1 National Policies

One of the main aims of the National Health Policy is to improve the health of mothers and children and ensure the provisions of facilities for the safe and clean delivery at the community level. The Government envisages ensuring safe birth and survival to all children through provision of appropriate and adequate family planning services, prenatal/postnatal health care; as well as essential obstetric services; and also by encouraging all mothers to breastfeed their children. One of the objectives enumerated in the Fifth Five Year Plan (FFYP) is ensuring universal access for the people of Bangladesh to essential health care services of acceptable quality, reduction of maternal mortality and morbidity; improving nutritional status and finally, reduction of fertility so as to reach the replacement level of fertility by the year 2010.

The GOB’s maternal health strategy in its principles/priorities emphasizes strategies for reduction of maternal mortality and morbidity, social mobilization, caring practices, decision making at home level and service delivery through:

- Focus on Essential Obstetric Care (EOC) in order to reduce maternal mortality by designing implementing and monitoring strategic activities to offset the “three delays”
- Provisions of EOC/Basic maternity care services for the promotion of “good practices” early detection and appropriate referral of complications
- Promoting women’s access to resources by behavior change, development and focusing on the role of men
- Ensuring Skilled Birth Attendant (SBA) at community
- Ensuring quality of services by involving professional bodies

2.2 Standards and Guidelines

1. Technical Standard and Service Delivery Protocol for Maternal Health Care
2. Managing Complications in Pregnancy and Childbirths (IMPAC)
3. MCWC Operation Manual

2.3 Maternal Health care

MCH care and family planning services are rendered as a common set of activities at the MCWCs for all levels. It is hard for the community to get uniform and adequate service from these centers. The goals of maternal and child health (MCH) care include:

- Reduction of maternal and infant mortality
- Reduction of maternal and infant morbidity
- Increase of maternal and child survival rate
- Improvement of reproductive health and overall health status of a family

Maternal mortality in Bangladesh has not changed much in the past years. Poor nutrition, illiteracy, poverty, poor environmental conditions, and inadequate health and family planning services have exposed women to increased health risk during pregnancy and childbirth. Maternal and child mortality and morbidity can be prevented through regular care of pregnant

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1 MOHFW. October 2001.
women by antenatal, natal, postnatal check-ups, treatment of complications during pregnancy, growth monitoring, and immunization, and under-5 care.

Currently MCH care includes the following:

1. Maternal Health Care which includes:
   • Ante-natal care (normal and high-risk)
   • Intra-natal care (safe delivery including SBA at community and EOC at facility)
   • Post-natal care (normal and complicated)
   • Family planning (FP)

2. Essential Newborn Care.

**Guideline for setting standards for high quality minimum services to antenatal, intranatal and postnatal mothers.**

A Service to antenatal mothers:
Due to socio-cultural ignorance of food habit a large number of rural mothers of the country become victims of many diseases during pregnancy. As a result, many of them die during delivery, or deliver stillborn baby, or low birth weight baby, with less probability of survival. Regular antenatal check-up/advice, and follow-up may lead to build healthy mother/child.

B Steps for quality antenatal care:
Whenever pregnant mothers come to the MCWCs, either being self motivated or referred by basic health and F.P. workers, they should be cordially received and information about their personal, familial and socio-economic condition should be gathered through friendly behavior. This will create in her the level of confidence on the services provided and get her inclined/interested to visit the center again. For conducting antenatal check-up complete physical examination and laboratory tests with the recording of the findings in the antenatal card should be ensured. Besides this, the following advice should be given:

1. Food and nutrition for pregnant mothers:
   A pregnant mother needs more food and calories than she normally takes during her pre-pregnancy condition, i.e. at least 300 calories more than the normal amount of daily caloric intake. This extra amount of calorie is needed for the nutrition of the growing foetus in her womb as well as for the nutrition of the mother herself. She should be advised to take a balanced diet containing fish, meat, egg, milk, fruits and green vegetables. In addition, she should be advised to take iron containing food like green banana, liver, and arum (kachu/kachu shak) as much as possible. The Medical Officers/FWV’s should prescribe/supply iron with folic acid, calcium, and vitamins tablets if required.

2 Personal hygiene:
Every pregnant mother should be advised to maintain personal hygiene through regular bathing, cleaning of teeth and mouth, cutting of nails and wearing of clean clothes. This routine personal hygiene work will protect her from various diseases. She should be given a clear understanding about the importance of personal hygiene so that she practises this routinely.
3 Daily work and rest:
Every pregnant mother should be advised to do light household work. She needs 6-8 hours’ sleep at night and at least 2 hours’ sleep or rest during daytime especially after lunch.

4. Dress:
During the latter part of pregnancy she should be advised to wear loose dresses and flat soled shoes for comfort, easy movement and thereby avoid accidental falling.

5. Vaccination:
A pregnant mother should be advised to take 2 TT injections at an interval of 4 weeks from 5th month onwards. If she had taken two doses of TT before pregnancy in that case she should be advised to take only one dose of TT at 7th or 8th month. Recently EPI program has introduced the new 5-dose TT schedule for life long immunity which is as follows:

Vaccination schedule for any woman of Reproductive age (15 – 45 years)

<table>
<thead>
<tr>
<th>Dose</th>
<th>Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>at any time after 15 years of age</td>
</tr>
<tr>
<td>2nd</td>
<td>after one month of 1st dose</td>
</tr>
<tr>
<td>3rd</td>
<td>after six month of 2nd dose</td>
</tr>
<tr>
<td>4th</td>
<td>after one year of 3rd dose</td>
</tr>
<tr>
<td>5th</td>
<td>after one year of 4th dose</td>
</tr>
</tbody>
</table>

ANTE-NATAL CARE
It is the systematic supervision (examination and advice) of a woman during pregnancy. Ante-natal care begins when the mother becomes pregnant and continues till the onset of labor. The entire pregnancy period is divided into three stages:

<table>
<thead>
<tr>
<th>Trimester</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>upto first 12 weeks</td>
</tr>
<tr>
<td>2nd</td>
<td>13-28 weeks</td>
</tr>
<tr>
<td>3rd</td>
<td>29-40 weeks</td>
</tr>
</tbody>
</table>

It comprises medical check-up, advice, and treatment for any complaint and vaccination (TT).

Medical Check-up
Before starting of medical check-up, all pregnant mothers need to be registered by filling up all the columns of the antenatal card. This includes detailed history of previous pregnancy/pregnancies so that any potential risk factors are identified. After completion of antenatal card during the first visit, the following check-ups have to be done:

First Trimester
i Physical examinations:
   • Height
   • Weight
   • Blood pressure
   • Condition of the chest including heart and lungs
ii. Laboratory tests:
   • Hemoglobin (Hb) estimation for anemia (9.6gm% minimum standard)
   • Urine examination for albumin and sugar
   • Blood grouping, Rh factor
   • VDRL
   • HBsAg
   • Blood sugar
   • Ultrasonography of the uterus to see the pregnancy profile

iii. Advice for personal hygiene, food and nutrition education and place of delivery.

Second Trimester
i. Physical examination:
   • Weight
   • Blood pressure
   • Oedema
   • Height of uterus
   • Quickening
   • Foetal heart rate
   • Abdominal girth

ii. Laboratory test:
   • Hb estimation
   • Urine examination for albumin and sugar

iii. Advice for personal hygiene, food and nutrition

Third Trimester
i. Physical examinations:
   • Weight
   • Blood pressure
   • Oedema
   • Height of uterus
   • Abdominal girth
   • Presentation & lie
   • Foetal heart rate

ii. Laboratory test:
   • Hb estimation for anemia,
   • Urine examination for Albumin and sugar.

iii. Advice for personal hygiene, food and nutrition.

iv. Vaccination:
   • Two doses of TT from 5th month at an interval of 4 weeks.
Frequency of visit to the center for ante-natal care:
At least 4 antenatal visits are required

<table>
<thead>
<tr>
<th>Schedule of 4 Antenatal visits</th>
</tr>
</thead>
<tbody>
<tr>
<td>First visit within 12 weeks</td>
</tr>
<tr>
<td>Second visit within 16 – 20 weeks</td>
</tr>
<tr>
<td>Third visit within 28 – 32 weeks</td>
</tr>
<tr>
<td>Fourth visit after 36 weeks</td>
</tr>
</tbody>
</table>

Each pregnant mother and relatives should be taught/informed about the significance of danger signs and complications of pregnancy, along with when she should be taken to the hospital to get EOC.

<table>
<thead>
<tr>
<th>Danger signs during pregnancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any vaginal bleeding during pregnancy</td>
</tr>
<tr>
<td>Fits and convulsion</td>
</tr>
<tr>
<td>Swollen hands, feet or face</td>
</tr>
<tr>
<td>Persistent fever more than 100°F</td>
</tr>
<tr>
<td>Malpresentation.</td>
</tr>
</tbody>
</table>

After physical examinations and laboratory test if any unmanageable risk factor is detected the case should be referred to higher centers such as District Hospital with established Reproductive Health-Essential Obstetric Care (RH-EOC) facilities.

INTRANATAL CARE (Delivery Care)
When a pregnant woman comes to MCWC with labor pain, she should be immediately admitted and the following examinations should be done:

• Blood pressure
• Oedema
• Height of uterus
• Presentation of foetus
• Engagement of head
• Foetal heart sound
• Vaginal examination to check cervical dilatation, effacement, station of head of the foetus
• Urine for albumin and sugar
• Hb estimation if not done before

After rupture of the membrane FWVs usually conduct normal deliveries. But Medical Officer (MO) does forceps/ventose delivery in some MCWCs. Complicated cases have to be referred to district hospital. At the Upazila level and Union level MCWCs intranatal care (conduction of delivery) may not be possible due to lack of adequate facilities and trained manpower. In that case FWV may attend delivery case at home and complicated cases may be referred to District Hospital/MCWC.

During the last trimester a pregnant woman should be advised to come to the center (MCWC) if she has regular pain in the lower abdomen or if there is any P/V bleeding or blood stained mucous discharge or leakage of water. She should be advised for admission when labor is diagnosed or membrane is ruptured.
Diagnosis of Onset of Labor

Diagnosis of onset of true labor becomes at times difficult. Following are a few agreed criteria:

- rhythmical abdominal and back pains increasing in duration, intensity and frequency;
- show;
- hardening of uterus during pain;
- progressive dilatation of cervical Os from 4 cm;
- progressive effacement of the cervix;
- bulging of bag of water during pain.

How to differentiate between onset of true and false labor:

False labor means onset of painful contractions during later weeks of pregnancy without cervical dilatation. Following are the differentiating features between true and false labor:

<table>
<thead>
<tr>
<th>Features</th>
<th>True labor</th>
<th>False labor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Painful contractions</td>
<td>Regular</td>
<td>Irregular</td>
</tr>
<tr>
<td>Interval between pains</td>
<td>Gradually shortens</td>
<td>Remains same</td>
</tr>
<tr>
<td>Intensity</td>
<td>Increases</td>
<td>Same</td>
</tr>
<tr>
<td>Site of pain</td>
<td>Back and abdomen</td>
<td>Generally lower abdomen</td>
</tr>
<tr>
<td>Cervical dilatation and effacement</td>
<td>Present</td>
<td>Absent</td>
</tr>
<tr>
<td>Bulging of fore-water</td>
<td>Present</td>
<td>Absent</td>
</tr>
<tr>
<td>Analgesics</td>
<td>Pain not relieved</td>
<td>Usually pain relieved</td>
</tr>
</tbody>
</table>

Refer cases to referral centers if following danger signs appear:

- any vaginal bleeding during labor;
- diastolic blood pressure more than 90 mm Hg.;
- continuous or persistent headache;
- labor pain more than 12 hours;
- presentation other than head.

Management of Normal Labor

First Stage of labor

- Admit the woman when she is in true labor;
- Conduct thorough general and obstetric examination including P/V exam to determine:
  - maternal vital signs;
  - onset of labor;
  - foetal presentation and position;
  - foetal heart rate;
  - exclude Cephalo-Pelvic Disproportion (CPD).
- Wash the woman’s perineum and vulva with soap and water. Nowadays most authors do not advise shaving of pubic region because of risk of infection;
- During early labor if bowel is loaded give glycerin suppository and encourage woman to go to the toilet;
- The patient is encouraged to pass urine herself in the toilet. In few cases if she cannot pass urine for 6 hours and the bladder is found full as supra-pubic bulging, sterile disposable catheter is passed into the bladder;
• Posture: Encourage any non-supine position. Encourage her to walk in between contraction in active phase and even in early non-expulsive phase of second stage. If she prefers to lie down adopt lateral position to prevent venacaval compression. Try to deliver in propped up or squatting position. Walking and squatting help descend of foetal head;

• Women in labor must not be left alone. Relative or attendant should stay with her and the person should be supportive;

• Food in labor: Light solid food could be given. In early labor plenty of energy containing fluid (horlicks, soup, fruit drinks) by mouth should be permitted as soon as the labor is started. No intravenous fluid is necessary in normal labor;

• Pain relief in labor: Most women are not much troubled in labor pain, and thus relief of pain is not necessary. Almost all of them forget all about labor pain following delivery. Relief of pain during first and second stage becomes necessary when it becomes distressing in some primigravid women. Multigravidas usually do not need any analgesia. Support from service provider, attendant and encouraging walking and non-supine position will increase pain threshold.

Monitoring Progress of First Stage of Labor:
Monitoring the progress of first stage of labor should be done using partograph.

PARTOGRAPH

A partograph is used to record all observations made on a woman in labor. Its central feature is a graph where dilation of cervix is assessed by plotting the findings of vaginal examinations. By noting the rate at which the cervix dilates, it is possible to identify women whose labors are abnormally slow and who require special attention. These women are at risk of developing prolonged and obstructed labor due to cephalo-pelvic disproportion that may lead to serious problems, such as ruptured uterus and death of foetus. Other problems that may result from slow progress of labor include post-partum haemorrhage and infection.

By helping to identify at an early stage those women whose labor is slow, the partograph should prevent some of these problems. It is also a very clear way of recording all labor.

Before describing how to use partograph, it is important to realize that it is a tool for managing labor only. It does not help to identify other risk factors, which may have been present, before labor is started. Start partograph only when you have checked that there are no other complications of pregnancy that may require immediate action.

Objectives:

• Explain the principles of the partograph as a tool for prevention of prolonged and obstructed labor;
• Record clinical observations accurately on the partograph;
• Explain the difference between the latent and active phases of labor;
• Interpret a recorded partograph and recognize any deviation from normal;
• Monitor the progress of labor, recognize the need for action at the appropriate time and decide on timely referral.

---

2 Integrated Management of Pregnancy and Childbirth: (IMPAC)
Using the Partograph

The WHO partograph has been modified to make it simpler and easier to use as shown in Figure 2.2. The latent phase has been removed and plotting on the partograph begins in the active phase when the cervix is 4 cm dilated. A sample partograph is included Figure 2.3. Record the following on the partograph:

**Patient Information:** Information including name, gravida, para, registration/hospital number, date of admission, time of admission, ruptured membranes is written at the top of the graph.

**Foetal Heart Rate:** Record every half hour.

**Amniotic Fluid:** Record the color of amniotic fluid at every vaginal examination:
- I: membranes intact;
- C: membranes ruptured, clear fluid;
- M: meconium-stained fluid;
- B: blood-stained fluid.

**Moulding:**
- 1: sutures apposed;
- 2: sutures overlapped but reducible;
- 3: sutures overlapped and not reducible.

**Cervical dilatation:** Assess at every vaginal examination and mark with a cross (X). Begin plotting on the partograph at 4 cm.

**Alert line:** A line starts at 4 cm of cervical dilatation to the point of expected full dilatation at the rate of 1 cm per hour.

**Action line:** Parallel and 4 hours to the right of the alert line.

**Descent of the Head assessed by abdominal palpation:** Refers to the part of the head (divided into 5 parts) palpable above the symphysis pubis; recorded as a circle (O) at every vaginal examination. At 0/5, the sinciput (S) is at the level of the symphysis pubis.

![Descent assessed by abdominal palpation](image)
**Hours:** Refers to the time elapsed since onset of active phase of labor (observed or extrapolated).

**Time:** Record actual time.

**Contraction:** Chart every half hour; palpate the number of contractions in 10 minutes and their duration in seconds.

- Less than 20 seconds:
- Between 20 and 40 seconds:
- More than 40 seconds:

**Oxytocin:** Record the amount of Oxytocin per volume IV fluids in drops per minute every 30 minutes when used.

**Drugs given:** Record any additional drugs given.

**Pulse:** Record every 30 minutes and mark with a dot (●)

**Blood pressure:** Record every 4 hours and mark with arrows.

**Temperature:** Record every 2 hours.

**Protein, acetone and volume:** Record every time urine is passed.

**Use of partograph**
- Provides clear picture of normality and abnormality in labor
- Identifies earlier the cases of Cephalo-Pelvic Disproportion (CPD)
- Transfer of information becomes simple when labor ward staff is changing
- Saves working time of labor ward staff against writing labor notes in long hand
- Educational value for all staffs

**Assessment of progress of labor**
Once diagnosed, progress of labor is assessed by:
- measuring changes in cervical effacement and dilatation;
- measuring the rate of cervical dilatation and foetal descent during the active phase;
- assessing further foetal descent during the second stage.

Progress of the first stage of labor should be plotted on a partograph once the woman enters the active phase of labor. A sample partograph is shown in Figure 2.3. Alternatively, plot a sample graph of cervical dilatation (centimeters) on the vertical axis against line (hours) on the horizontal axis.

**Vaginal Examinations**
Vaginal examinations should be carried out at least once every 4 hours during the first stage of labor and after rupture of the membrane. Plot the findings on a partograph.

- At each vaginal examination, record the following:
  - color of amniotic fluid;
  - cervical dilatation;
  - descent (can also be assessed abdominally).
• If the cervix is not dilated on first examination it may not be possible to diagnose labor.
  - If contraction persists, re-examine the woman after 4 hours for cervical changes.
  - At this stage, if there is effacement and dilatation, the woman is in labor.
  - If there is no change the diagnosis is false labor.
• In the second stage of labor, perform vaginal examination once every hour.

Records of the findings of successive vaginal examinations are plotted on a graph, along with the dilatation of the cervix in cm, against the time in hours. The obtained curve is compared with average normal curve for primi or multi-gravida. If patient's progress is normal her curve will correspond with the normal curve or 'Lie to the left of it.'
### Figure 2.2 The Modified WHO Partograph

<table>
<thead>
<tr>
<th>Name</th>
<th>Gravida</th>
<th>Para</th>
<th>Hospital number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of admission</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Table:

<table>
<thead>
<tr>
<th>Date of admission</th>
<th>Time of admission</th>
<th>Ruptured membranes</th>
<th>hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>190</td>
<td></td>
<td></td>
<td></td>
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<td>180</td>
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<td>170</td>
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<tr>
<td>80</td>
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</tr>
</tbody>
</table>

#### Diagram:

- **Cervix (cm)**
  - [Plot X]
- **Descent of head**
  - [Plot C]
- **Time**
  - Hours: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
- **Alert**
- **Action**

#### Additional Metrics:

- **Contractions per 10 min**
  - 5
  - 4
  - 3
  - 2
  - 1
- **Oxytocin U/L, drops/min**
  - [Blank]
- **Drugs given and IV fluids**
  - [Blank]
- **Pulse**
  - 180
  - 170
  - 160
  - 150
  - 140
  - 130
- **BP**
  - 120
  - 110
  - 100
  - 90
  - 80
  - 70
  - 60
- **Temp °C**
- **Urine**
  - protein
  - acetone
  - volume

---

Chapter-2 MCH Services
MCWC Manual
Figure 2.3 is a sample partograph of normal labor.

- A primigravida was admitted in the latent phase of labor at 5 AM:
  - foetal head 4/5 palpable;
  - cervix dilated 2 cm;
  - 3 contractions in 10 minutes, each lasting 20 seconds;
  - normal maternal and foetal condition.

**Note:** This information is not plotted on the partograph.

- At 9 AM:
  - Foetal head is 3/5 palpable;
  - Cervix dilated 5 cm;

**Note:** The woman was in the active phase of labor and this information is plotted on the partograph. Cervical dilatation is plotted on the alert line.

  - 4 contractions in 10 minutes, each lasting 40 seconds;
  - cervical dilatation progressed at the rate of 1 cm per hour.

- At 2 PM:
  - foetal head is 0/5 palpable;
  - cervix is fully dilated;
  - 5 contractions in 10 minutes each lasting 40 seconds;
  - spontaneous vaginal delivery occurred at 2:20 PM.
Figure 2.3    Sample Partograph for Normal Labor

Name: Mrs. S
Gravida: 3
Para: 2+0
Hospital number: 7886

Date of admission: 12.5.2000
Time of admission: 5:00 A.M.
Ruptured membranes: 1 hours

Fetal heart rate:

Amniotic fluid Moulding: C C C C C C C C C

Cervix (cm) [Plot X]

Descent of head [Plot O]

Time: 9 10 11 12 13

Contractions per 10 mins: 3

Oxytocin U/L, drops/min:

Drugs given and IV fluids:

Pulse: 180 170 160 150 140 130 120 110 100 90 80 70 60

BP:

Temp °C: 36.8 37 37

Urine:

protein: —
aceton: —
volume: 200 150

SVD. at 14:20
Live female infant
Wt. 2,850 g
Second Stage of Labor

- Once the cervix is fully dilated and the woman is in the expulsive phase of the second stage, encourage the woman to assume the position she prefers and encourage her to push.
- Ask the woman to pant or give only small pushes with contractions as the baby’s head delivers.

**Episiotomy should be considered only in the case of:**
- complicated vaginal delivery (breech, shoulder dystocia, forceps, vacuum);
- foetal distress.

- To control birth of the head, place the fingers of one hand against the baby’s head to keep it flexed (bent).
- Continue to gently support the perineum as the baby’s head delivers.
- Once the baby’s head delivers, ask the woman not to push.
- Suction the baby’s mouth and nose.
- Feel around the baby’s neck for the umbilical cord:
  - If the cord is around the neck but is loose, slip it over the baby’s head;
  - If the cord is tight around the neck, doubly clamp and cut it before unwinding it from around the neck.
- Allow the baby’s head to turn spontaneously.
- After the head turns, place a hand on each side of the baby’s head. Tell the woman to push gently with the next contraction.
- Reduce tears by delivering one shoulder at a time. Move the baby’s head posteriorly to deliver the shoulder that is anterior.
- Lift the baby’s head anteriorly to deliver the shoulder that is posterior.
- Support the rest of the baby’s body with one hand as it slides out.
- Place the baby on the mother’s abdomen. Thoroughly dry the baby, wipe the eyes and assess the baby’s breathing:
  - If the baby is crying or breathing (chest rising at least 30 times per minute) leave the baby with the mother;
  - If baby does not start breathing within 30 seconds. **Shout for help** and take steps to resuscitate the baby.
- Clamp and cut the umbilical cord.
- Ensure that the baby is kept warm and in skin-to-skin contact on the mother’s chest. Wrap the baby in a soft, dry cloth, cover with a blanket and ensure the head is covered to prevent heat loss.
- If the mother is not well, ask an assistant to care for the baby.
- Palpate the abdomen to rule out the presence of an additional baby(s) and proceed with active management of the third stage.
Active Management of the Third Stage of Labor

Active management of the third stage (active delivery of the placenta) helps prevent postpartum haemorrhage. Active management of the third stage of labor includes:

- Immediate oxytocin
- Controlled cord traction and
- Uterine massage

Oxytocin:

- Within one minute of delivery of the baby, palpate the abdomen to rule out the presence of an additional baby(s) and give oxytocin 10 units IM.
- Oxytocin is preferred because it is effective 2 to 3 minutes after injection, has minimal side effects and can be used in all women. If oxytocin is not available, give ergometrine 0.2 mg IM or prostaglandines. Make sure there is no additional baby(s) before giving the medication.

Do not give ergometrine to women with pre-eclampsia, eclampsia or high blood pressure because it increases the risk of convulsions and cerebrovascular accidents.

Controlled cord traction

- Clamp the cord close to the perineum using artery forceps. Hold the clamped cord and the end of forceps with one hand.
- Place the other hand just above the woman’s pubic bone and stabilize the uterus by applying counter traction during controlled cord traction. This helps prevent inversion of the uterus.
- Keep slight tension on the cord and await a strong uterine contraction (2-3 minutes).
- When the uterus becomes rounded or the cord lengthens, very gently pull downward on the cord to deliver the placenta. Do not wait for a gush of blood before applying traction on the cord. Continue to apply counter traction to the uterus with the other hand.
- If the placenta does not descend during 30-40 seconds of controlled cord traction (i.e. there are no signs of placental separation), do not continue to pull on the cord:
  - Gently hold the cord and wait until the uterus is well contracted again. If necessary, use a sponge forceps to clamp the cord closer to the perineum as it lengthens;
  - With the next contraction, repeat controlled cord traction with counter traction.

Never apply cord traction (pull) without applying counter traction (push) above the pubic bone with the other hand.

- As the placenta delivers, the thin membranes can tear off. Hold the placenta in two hands and gently turn it until the membranes are twisted.
- Slowly pull to complete the delivery.
• If the membranes tear, gently examine the upper vagina and cervix wearing high-level disinfected gloves and use a sponge forceps to remove any pieces of membrane that are present.
• Look carefully at the placenta to be sure none of its is missing. If a portion of the maternal surface is missing or there are torn membranes with vessels, suspect retained placental fragments.
• If uterine inversion occurs, reposition the uterus.
• If the cord is pulled off, manual removal of the placenta may be necessary.

**Uterine massage**
• Immediately massage the fundus of the uterus through the woman’s abdomen until the uterus is contracted.
• Repeat uterine massage every 15 minutes for the last 2 hours.
• Ensure that the uterus does not become relaxed (soft) after you stop uterine massage.

**Examination for tears**
• Examine the woman carefully and repair any tears to the cervix or vagina or repair episiotomy.

**Initial care of the Newborn**
• Check the baby’s breathing and color every 5 minutes
• If the baby becomes cyanotic (bluish) or is having difficulty breathing (less than 30 or more than 60 breaths per minute), give oxygen by nasal catheter or prongs.
• Check warmth by feeling the baby’s feet every 15 minutes
  - If the baby’s feet feel cold, check auxiliary temperature
  - If the baby’s temperature is below 36.5°C, re-warm the baby
• Check the cord for bleeding every 15 minutes. If the cord is bleeding, retie cord more tightly.
• Wipe off any meconium or blood from skin.
• Encourage breast-feeding when the baby appears (begins “rooting”). Do not force the baby to the breast.

**POST NATAL CARE**
Postnatal care is very important for the mother's health as well as for the health of the child. During this period due to weakness and exhaustion, the mother may be diseased which may affect the health of her child. So, post-natal care has to be given to all women who come to MCWC with complications.

Normal puerperium is a period upto 6 weeks following delivery when maternal system returns to pre-gravid state. Care of the mother during this period is called postnatal care. Postnatal care is very important because there may arise some complications during this
period such as: postpartum haemorrhage, puerperal sepsis, which needs attention to save the mother's life.

**Immediate Postnatal Care**

Immediately after delivery the mother should be kept under observation for 6 hours.

- Record pulse, BP, temperature, uterine hardness and P/V bleeding of the mother:
  - Every 15 minutes for 2 hours;
  - Every 30 minutes for 1 hour;
  - Every hour for 3 hours.
- Neonatal examinations

During postnatal period, full normal diet is allowed for mother from the day of delivery. Mother is encouraged to go to toilet 6 hours after delivery to pass urine. Recording pulse, BP, temperature, daily care of perineum are important. Mother should also be advised for regular bath. The healthcare provider should ensure that all women should have at least one postnatal visit within 2 weeks of delivery. The postnatal visit should also be used to check the baby, paying particular attention to cord care, signs of hypothermia or infection and feeding problems.

Mothers with serious postnatal problems have to be referred to district hospital. During antenatal and postnatal care, the mother should also be counseled for postpartum family planning methods.

**Postnatal advice**

The information, education and advice to be given to the mother are as follows:

- **Food and supplementary food:**
  - Water in large quantities, green vegetables containing large quantities of water, fresh fruit, eggs, fish, meat and milk or milk products should be taken. Sour fruits also will have to be taken;
  - An additional fistful of rice, one spoonful of oil and any seasonal fruit should be taken;
  - Iron, folic acid and calcium should be taken as per the prescription;
  - A vitamin A capsule (200,000 IU) should be taken within two weeks of the postnatal period;
  - Iodized salt should be used while cooking. Intake of excessive salt should be avoided.
- **Any kind of medicines (except with the doctor's advice), smoking, zarda, tobacco leaves and liquor should be avoided**
- **Rest, exercise and other activities**
  - Adequate rest should be taken;
  - During the two-month period following the delivery heavy physical work and lifting of heavy things should be avoided (tubewell, heavy earthenware, husking of rice with dheki;
  - Physical exercise of perineum and abdomen muscles should be done.

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3 MOHFW. October 1999.
• General cleanliness
  - Bathing should be done regularly
  - Breasts and the genital organs should particularly be kept clean.
  - Sanitary pad/clean cloth should be used.
• The child should be breastfed as per its needs. This will also help prevent swelling of breasts.
• The neonate should be immunized as per the schedule of immunization.
• The postnatal danger should be explained.

Danger signs in Postnatal period (within 42 days after delivery)
• Heavy vaginal bleeding during or after delivery
• Severe headache/fits
• Foul smelling vaginal discharge/fever
• Persistent painful, heavily engorged breast/abscess
• Patient not passing urine for more than 24 hours after delivery
• High blood pressure
• Severe anemia
• Abdominal pain and tenderness
• Psychological upset

If the above signs appear the mother should be taken to referral hospital (MCWC/District Hospital/Medical College Hospital).

Guidelines for Taking Steps of EOC and Child Health Service

Emergency situations during pregnancy

I. Emergency situations during 1st trimester

The patient may present herself with bleeding due to retention of whole or part of product of conception. There may be fever and lower abdominal pain if it is associated with sepsis. In these conditions the following steps of emergency measures have to be taken:

A. ABORTION

1. Incomplete abortion

• If bleeding is light to moderate and pregnancy is less than 12 weeks, use fingers or ring (or sponge) forceps to remove products of conception protruding through the cervix.
• If bleeding is heavy and pregnancy is less than 12 weeks, evacuate the uterus:
  - Manual vacuum aspiration is the preferred method of evacuation. Evacuation by sharp curettage should only be done if manual vacuum aspiration is not available;
  - If evacuation is not immediately possible, give ergometrine 0.2mg IM (repeated after 15 minutes if necessary) or misoprostol 400 mcg orally (repeated once after 4 hours if necessary).
• If pregnancy is greater than 12 weeks:
  - Infuse oxytocin 40 units in 1 Liter IV fluids (normal saline or Ringer’s lactate) at 40 drops per minute until expulsion of products of conception occurs;
  - If necessary, give misoprostol 200 mcg vaginally every 4 hours until expulsion, but do not administer more than 800 mcg;
  - Evacuate any remaining products of conception from the uterus
• Ensure follow-up of the woman after treatment.
2. Threatened abortion

- Medical treatment is usually not necessary.
- Advise the woman to avoid strenuous activity and sexual intercourse but bed rest is not necessary.
- If bleeding stops, follow up in antenatal clinic. Reassess if bleeding recurs.
- If bleeding persists, assess for fetal viability (pregnancy test/ultrasound) or ectopic pregnancy (ultrasound). Persistent bleeding, particularly in the presence of a uterus larger than expected, may indicate twins or molar pregnancy.

Do not give medications such as hormones (e.g. oestrogens or progestins) or tocolytic agents (e.g. salbutamol or indomethacin) as they will not prevent miscarriage.

3. Septic abortion

- Start triple antibiotic (injection ampicillin 500 mg., injection gentamycin 80 mg. and injection metro IV 500 mg.).
- Give tablet paracetamol 500 mg..
- Refer the patient to the higher center.

B. Ectopic Pregnancy

Patient may come with acute abdominal pain and severe intraperitoneal haemorrhage, a history of short period leading to great prostration, fainting, vomiting and even collapse. This is a surgical emergency and following measures have to be taken:

- immediate admission;
- thorough physical check-up including recording of pulse, temperature, BP and level of anemia;
- P/V examination;
- immediate IV infusion including blood transfusion (if available);
- if facility is available in the center laparotomy will be needed to be performed immediately (do not wait for blood before performing surgery);
- if there is no facility in the center, the patient should be referred to District Hospital/Medical College Hospital immediately.

C. Hyperemesis Gravidarum

Patient usually comes with early pregnancy with intense vomiting which is severe in nature. Patient can not take any food by mouth and becomes dehydrated.

Management:

- Assurance to the patient that she will be all right after treatment;
- Nothing should be fed by mouth till vomiting is controlled;
- IV Crystalloid solution with glucose, Vitamin B complex & Vitamin-C;
- Anti-emetic drug should be used either orally or parentally;
- Gradual introduction of solid food.

II. Emergency situation during second trimester

During mid pregnancy or 2nd trimester usually less emergency situation occurs except bleeding due to threatened or inevitable abortion.
Management:
• Advice bed rest;
• Tranquillizer to be given to allay anxiety;
• If there is pain and severe bleeding (inevitable abortion) with dilatation of the internal os;
• After expulsion of product D&C could be done if it is incomplete.

III. Emergency situation during third trimester:
This is the period when several emergency situations may occur. Following are the conditions when emergency measures have to be taken.

A. Ante-partum Haemorrhage (APH)
Any vaginal bleeding after 22 weeks of gestation should be assumed to be due to either placenta praevia or abruptio placenta unless proved otherwise.

1. Placenta Praevia
Bleeding occurs from an abnormally situated placenta, situated in the lower segment of the uterus. A posteriorly situated placenta praevia is more dangerous than an anterior one. In placenta praevia bleeding is always revealed, with bright red blood, though it may cease spontaneously. Following are few signs and symptoms of placenta praevia.
- scanty or heavy bright red painless recurrent bleeding;
- pale look;
- no tenderness in the abdomen;
- soft and relaxed uterus;
- the presenting part may be high or there may be abnormal lie;
- foetal heart sounds are usually present.

2. Abruptio Placenta or Accidental Haemorrhage
Premature separation of the normally situated placenta with the resultant retroplacental bleeding can be of revealed, concealed or mixed type. The cause is unknown. Predisposing factors include toxaemia, trauma, sudden uterine decompression, or a short umbilical cord.

Difference between Placenta Praevia and Accidental Haemorrhage

<table>
<thead>
<tr>
<th>Placenta / Praevia</th>
<th>Accidental / Haemorrhage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Painless and recurrent bleeding.</td>
<td>May be slight pain but in concealed type there will be severe pain.</td>
</tr>
<tr>
<td>Danger to fetus is comparatively less.</td>
<td>Danger to fetus is always more.</td>
</tr>
<tr>
<td>Preceding symptoms of toxemia eg. Headaches, vomiting, oedema rarely present.</td>
<td>Toxemia usually present.</td>
</tr>
<tr>
<td>Uterus soft and mobile.</td>
<td>Uterus hard and tender.</td>
</tr>
</tbody>
</table>

Management of Placenta Praevia:
A careful speculum examination may be performed to rule out other causes of bleeding such as cervicitis, trauma, cervical polyps or cervical malignancy. The presence of these, however, does not rule out placenta praevia.
• Restore blood volume by infusing IV fluids (normal saline or Ringer’s lactate).
• Assess the amount of bleeding:
  - If bleeding is heavy and continuous, arrange for caesarean delivery irrespective of fetal maturity;
- If bleeding is light or if it has stopped and the fetus is alive but premature, consider expectant management until delivery or heavy bleeding occurs:
  → Keep the woman in the hospital until delivery;
  → Correct anaemia with ferrous sulfate or ferrous fumarate 60 mg by mouth daily for 6 months;
  → Ensure that blood is available for transfusion, if required;
  → If bleeding recurs, decide management after weighing benefits and risks for the woman and fetus of further expectant management versus delivery.
• If a reliable ultrasound examination can be performed, localize the placenta. If placenta praevia is confirmed and the fetus is mature, plan delivery.
• If there is low placental implantation and bleeding is light, vaginal delivery may be possible. Otherwise, deliver by caesarean section.

  **Women with placenta praevia are at high risk for postpartum haemorrhage and placenta accreta/increata, a common finding at the site of a previous caesarean scar.**

• If delivered by caesarean section and there is bleeding from the placental site:
  - Under-run the bleeding sites with sutures;
  - Infuse oxytocin 20 units in 1 L IV fluids (normal saline or Ringer’s lactate) at 60 drops per minute.
• If bleeding occurs during the postpartum period, initiate appropriate management. This may include artery ligation or hysterectomy.
• If ultrasound is not available or the report is unreliable and the pregnancy is less than 37 weeks, manage as placenta praevia until 37 weeks.
• If ultrasound is not available the pregnancy is 37 weeks or more, prepare for either vaginal or caesarean delivery as follows: or the report is unreliable and
  - IV lines are running and cross-matched blood is available;
  - The woman is in the operating theatre with the surgical team present;
  - A high-level disinfected vaginal speculum is used to see the cervix.
• If the cervix is partly dilated and placental tissue is visible, confirm placenta praevia and plan delivery.
• If the cervix is not dilated, cautiously palpate the vaginal fornices :
  - If spongy tissue is felt, confirm placenta praevia and plan delivery;
  - If a firm fetal head is felt, rule out major placenta praevia and proceed to deliver by induction.
• If a diagnosis of placenta praevia is still in doubt, perform a cautious digital examination:
  - If soft tissue is felt within the cervix, confirm placenta praevia and plan delivery;
  - If membranes and fetal parts are felt both centrally and marginally, rule out placenta praevia and proceed to deliver by induction.
Management of Accidental Haemorrhage (Abruptio Placentae) of revealed type

Abruptio placentae is the detachment of a normally located placenta from the uterus before the fetus is delivered.

- Assess clotting status using a bedside clotting test. Failure of a clot to form after 7 minutes or a soft clot that breaks down easily suggests coagulopathy.
- Transfuse as necessary, preferably with fresh blood.
- If bleeding is heavy (evident or hidden), deliver as soon as possible:
  - If the cervix is fully dilated, deliver by vacuum extraction;
  - If vaginal delivery is not imminent, deliver by caesarean section.

In every case of abruptio placentae, be prepared for postpartum haemorrhage.

- If bleeding is light to moderate (the mother is not in immediate danger), the course of action depends on the fetal heart sounds:
  - If fetal heart rate is normal or absent, rupture the membranes with an amniotic hook or a Kocher clamp:
    → If contractions are poor, augment labour with oxytocin;
    → If the cervix is unfavourable (firm, thick, closed), perform caesarean section.
  - If fetal heart rate is abnormal (less than 100 or more than 180 beats per minute):
    → Perform rapid vaginal delivery;
    → If vaginal delivery is not possible, deliver by immediate caesarean section.

Management of Accidental Haemorrhage (Abruptio Placenta) of concealed Type:

Hypovolemic shock is usually evident in case of accidental haemorrhage of the concealed type:

- Start blood transfusion if patient is in hypovolemic shock. The volume of blood required will be approximately four times the estimated increase in the volume of the uterus. This amount may be lifesaving and is unlikely to lead to overloading, but keep a careful watch on such signs.
- If clot-retraction test indicates coagulation failure, give fresh blood or, if available, fresh frozen plasma.
- If the clot formed in the test dissolves after 30 minutes at body temperature, suspect fibrinolytic activity.
- General management consists of
  - administration of oxygen;
  - recording of pulse, BP and hourly urine output;
  - measurement of height of the uterine fundus;
  - catheterize the patient
  - give analgesia
  - C/S is indicated if delivery is not completed within 4-6 hours
- Referral process
  - explain everything to the family;
  - refer the patient to the comprehensive EOC facility with a referral note;
  - place the woman in the left lateral position;
  - begin I/V solutions (Saline, Hartman's) - continue IV fluids during transportation;
  - ask the family to bring people (close relatives) to the hospital to donate blood.
Ante Partum Haemorrhage

<table>
<thead>
<tr>
<th>Signs and Symptoms</th>
<th>Vaginal Bleeding after 22 weeks of pregnancy</th>
</tr>
</thead>
</table>

**Anticipate PPH**
- Pre-eclamptic toxemia, hypertension/renal disease in pregnancy, previous episode of bleeding in this pregnancy, previous caesarean, scar, post past history of APH

**General Management**
- History, Gestational age; I/E; Trauma; Amount of blood loss
- Exam: G/E: Palor, Pulse, BP, P/A, feeling & contour of uterus, FHR, P/V blood loss
- IV access, Blood for Hb Br, & Rh and cross match. Start Hartman solution or normal saline, replace blood.
- Shock; Resuscitate as necessary – IV fluids, oxygen
- USG of uterus for pregnancy profile and localization of placenta
- Reassurance & Counseling
- Plan delivery

**Specific Management**

<table>
<thead>
<tr>
<th>Based on cause of haemorrhage</th>
</tr>
</thead>
</table>

### Bleeding from Placental Site

- **Placenta Praevia**
  - Painless, causeless, recurrent bleeding
  - High presenting part
  - Soft nontender relaxed uterus
  - FHS usually present
  - Shock
  - USG – placenta praevia

- **Abruptio Placenta**
  - Shock, intermetent/constant abdominal pain
  - Tense/tender uterus; normal/high/low BP
  - FHS usually absent
  - USG placenta in upper segment

- Catheterization; ARM
- Analgesic (Pethedine/Morphine)
- Bed side clotting test to rule out DIC

### Active bleeding
- Continue

- **Bleeding light/stopped**
  - Premature
  - Term or dead/severely malformed fetus

- Confirm diagnosis *
- Plan delivery

- **Type-I & Type-II anterior**
- & bleeding is light-vaginal
- delivery may be possible by induction
- * Otherwise C/S

### Bleeding from site

- Other than Placental site

- Gentle speculum examination
- Heavy show
- Vaginal trauma
- Cervix: polyp / cancer

- **Treatment according to the causes**

### Confirmation of the diagnosis:

- If ultrasonogram can be performed: Confirm palate praevia and plan delivery.
- If ultrasonogram cannot be performed: Perform vaginal examination under double setup: 1) IV lines are running & blood is ready, 2) The women is in OT with surgical team present. Cervix not dilated: Palpate vaginal fornix: if spongy tissue felt – plaevia praevia – C/S; if firm foetal head is felt – rule out major plaevia praevia – proceed to deliver by induction. If plaevia praevia is doubt perform cautious digital exam: if soft tissue is felt in cervix: plaevia praevia – C/S. If membrane/foetal part is felt both centrally and marginally, rule out plaevia praevia – delivery by induction.

- *IV Fluids: Best replacement for blood loss is freshly cross-matched blood. Immediate fluid replacement should be with Normal Saline or Hartman’s solution. Give at least 2 liters in the first hour. Aim to replace 2-3 times the estimated blood loss.*

- **Ref:** IMPAC

---

1 IV Fluids: Best replacement for blood loss is freshly cross-matched blood. Immediate fluid replacement should be with Normal Saline or Hartman’s solution. Give at least 2 liters in the first hour. Aim to replace 2-3 times the estimated blood loss.
B. Pregnancy Induced Hypertension:

It is a syndrome peculiar to pregnancy occurring after 20th week of pregnancy, usually in the third trimester, in which at least two of the three signs (hypertension in the extent of 140/90 mm Hg, proteinuria and oedema) are present. Women with pregnancy induced hypertension disorders may progress from mild diseases to a more serious condition. The classes of pregnancy induced hypertension are:

i. Hypertension without proteinuria or oedema
ii. Mild pre-eclampsia
iii. Severe pre-eclampsia
iv. Eclampsia

Clinical Presentation:

A pregnant woman may present with headache, blurred vision, convulsion or loss of consciousness, elevated blood pressure in which the underlying sign and symptoms are usually found in table 2.4 below:

Table 2.4: Diagnosis of headaches, blurred vision, convulsions or loss of consciousness, elevated blood pressure

<table>
<thead>
<tr>
<th>Presenting symptom and other symptoms and signs typically present</th>
<th>Symptoms and signs sometimes present</th>
<th>Probable diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Diastolic blood pressure (BP) 90 mm Hg or more before first 20 weeks of gestation</td>
<td></td>
<td>Chronic hypertension</td>
</tr>
<tr>
<td>• Diastolic BP 90-110 Hg before 20 weeks of gestation</td>
<td>• Proteinuria upto 2+</td>
<td>Chronic hypertension with superimposed mild pre-eclampsia</td>
</tr>
<tr>
<td>• Two readings of diastolic blood pressure 90-110 mm Hg 4 hours apart after 20 weeks gestation.</td>
<td>• No preteinuria</td>
<td>Pregnancy induced hypertension.</td>
</tr>
<tr>
<td>• Two readings of diastolic BP 90-110 mm Hg 4 hours apart after 20 weeks gestation.</td>
<td>• Preteinuria upto 2+</td>
<td>Mild pre-eclampsia</td>
</tr>
<tr>
<td>• Diastolic BP 110 or more after 20 weeks of gestation.</td>
<td>• Preteinuria upto 2+</td>
<td>• Hyperreflexia</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Headache (increasing, unrelied by regular analgesics)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Clouding of vision</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Oliguria (passing less than 400 ml in 24 hours)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Upper abdominal pain (epigastric pain or pain in right upper quadrant).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Pulmonary oedema</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Frequency</td>
</tr>
</tbody>
</table>
Management by Doctor

Mild cases and Gestation less than 37 weeks

If signs remain unchanged or normal, follow up twice a week as an outpatient:

- Monitor blood pressure, urine (for proteinuria), reflexes and fetal condition.
- Counsel the woman and her family about danger signs of severe pre-eclampsia or eclampsia.
- Encourage additional periods of rest.
- Do not give anticonvulsants, antihypertensives, sedatives or tranquillizers.
- If follow-up as an outpatient is not possible, admit the woman to the hospital:
  - Provide a normal diet (salt restriction should be discouraged);
  - Monitor blood pressure (twice daily) and urine for proteinuria (daily);
  - Do not give anticonvulsants, antihypertensives, sedatives or tranquillizers unless blood pressure or urinary protein level increases;
  - Do not give diuretics. Diuretics are harmful and only indicated for use in pre-eclampsia with pulmonary oedema or congestive heart failure;
  - If the diastolic pressure decreases to normal levels or her condition remains stable, send the woman home:
    → Advise her to rest and to watch out for significant swelling or symptoms of severe pre-eclampsia;
    → See her twice weekly to monitor blood pressure, urine (for proteinuria) and fetal condition and to assess for symptoms and signs of severe pre-eclampsia;
    → If diastolic pressure rises again, readmit her.
- If the signs remain unchanged, keep the woman in the hospital. Continue the same management and monitor fetal growth by symphysis-fundal height;
  → If there are signs of growth restriction, consider early delivery. If not, continue hospitalization until term.
- If urinary protein level increases, manage as severe pre-eclampsia.

Mild cases and Gestation more than 37 complete weeks

If there are signs of fetal compromise, assess the cervix and expedite delivery:

- If the cervix is favourable (soft, thin, partly dilated), rupture the membranes with an amniotic hook or a Kocher clamp and induce labour using oxytocin or prostaglandins.
- If the cervix is unfavourable (firm, thick, closed), ripen the cervix using prostaglandins or a Foley catheter or deliver by caesarean section.
Eclampsia

Eclampsia is a convulsive state that usually develops from severe pre-eclampsia, although it can appear without the preceding pre-eclampsia. About half of all cases of eclampsia are present before parturition, but the disease can develop at any time during pregnancy and during, or after labor.

**Symptoms:**
- Generalized or localized headache
- Nausea, vomiting and epigastric pain
- Restlessness, dizziness, blurred vision
- Swelling of feet, hands and/or face
- History of convulsion

**Signs:**
- Oedema of feet, hands and or face
- High blood pressure
- Eclamptic fits
- Hypertensive retinal changes

**Assessment of patient’s conditions:**
Inquire the patient's relatives about the onset, duration, and number of fits and duration of pregnancy. Carry out a quick but thorough clinical examination to assess the patient:
- Pulse, BP, temperature, respiratory rate
- Degree of Oedema
- Lung base auscultation
- Height of uterine fundus
- Foetal heart rate, movement to exclude foetal distress
- Hemoglobin (Hb%)
- Albumin and sugar in urine.

**General Management**
The aim is to prevent asphyxia, control of fits, prevent and treat complications. Severe pre-eclampsia and eclampsia are managed similarly with the exception that delivery must occur within 12 hours of onset of convulsions in eclampsia. All cases of severe pre-eclampsia should be managed actively. Symptoms and signs of ‘impending eclampsia’ (blurred vision, hyper reflexia) are unreliable and expectant management is not recommended.
- Immediately admit the patient and keep her in a well ventilated room without any pillow on her left side to reduce risk of aspiration of secretions, vomit and blood.
- Give anticonvulsive drugs : Magnesium sulfate is the drug of choice for preventing and treating convulsions in severe pre-eclampsia and eclampsia. If magnesium sulfate is not available, Diazepam may be used although there is a greater risk for neonatal respiratory depression because Diazepam passes the placenta freely.
- Gather and use equipments (airway tube, suction, mask and bag, oxygen) and give oxygen at 4-6 L/minute.
- Protect the woman from injury during a convulsion but do not actively restrain her.
- After the convulsion, aspirate the mouth and throat as necessary.
• If diastolic BP remains above 110 mm Hg, give antihypertensive drugs (Hydralazine is the drug of choice). Reduce the diastolic BP to less than 100 mm Hg, but not below 90 mm Hg.
• Start an IV infusion and infuse IV fluids (e.g., Ringer’s lactate)
• Maintain a strict fluid balance chart and monitor the amount of fluids administered and urine output to ensure that there is no fluid overload.
• If urine output is less than 30 ml per hour:
  - Withhold Magnesium Sulphate and infuse IV fluids (normal saline or Ringer’s lactate) at 1 liter in 8 hours.
  - Monitor for the development of pulmonary oedema.
• Never leave the woman alone. A convulsion followed by aspiration of vomit may cause death of the woman and foetus.
• Observe vital signs, reflexes and foetal heart rate hourly.
• Auscultate the lung bases hourly for rales indicating pulmonary oedema. If rales are heard, withhold fluids and give Frusemide 40 mg IV once.
• Assess clotting status with a bedside clotting test. Failure of a clot to form after 7 minutes or a soft clot that breaks down easily suggests coagulopathy.

<table>
<thead>
<tr>
<th>Magnesium Sulfate schedules for severe pre-eclampsia and eclampsia</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Loading dose</strong></td>
</tr>
<tr>
<td>• Magnesium Sulfate 4 gm = 8 ml dissolved in 12 ml of distilled water slow IV over 10-15 minutes.</td>
</tr>
<tr>
<td>or,</td>
</tr>
<tr>
<td>Inj. Nalepsin (MgSO₄ 4 gm = 100 ml) IV @ 60 - 75 drops/minute over a period of 20 minutes.</td>
</tr>
<tr>
<td>• Follow promptly with 6 gm = 12 ml Magnesium sulfate, 3 gm in each buttock as deep IM injection. Maintain aseptic technique and warn the woman that a feeling of warmth will be felt when Magnesium Sulfate is given.</td>
</tr>
<tr>
<td><strong>Maintenance dose (If necessary)</strong></td>
</tr>
<tr>
<td>• 2.5 gm = 5 ml Magnesium Sulfate deep IM injection 2.5 gm every 4 hourly using alternate buttocks.</td>
</tr>
<tr>
<td>• Continue treatment with Magnesium Sulfate for 24 hours after delivery or the last convulsion, whichever occurs last.</td>
</tr>
<tr>
<td><strong>Before repeat administration, ensure that:</strong></td>
</tr>
<tr>
<td>• Respiratory rate is at least 16 per minute</td>
</tr>
<tr>
<td>• Patellar reflexes are present.</td>
</tr>
<tr>
<td>• Urinary output is at least 30 ml per hour over 4 hours.</td>
</tr>
<tr>
<td><strong>Withhold or delay drug if (Mg SO₄ toxicity):</strong></td>
</tr>
<tr>
<td>• Respiratory rate: falls below 16 per minute.</td>
</tr>
<tr>
<td>• Patellar reflexes are absent.</td>
</tr>
<tr>
<td>• Urinary output falls below 30 ml per hour over preceding 4 hours</td>
</tr>
<tr>
<td><strong>Keep antidote ready</strong></td>
</tr>
<tr>
<td>• In case of respiratory arrest:</td>
</tr>
<tr>
<td>Assist ventilation (mask and bag, anesthesia apparatus, intubations), give calcium gluconate/chloride 1 gm (10 ml of 10% solution) IV slowly until respiration begins to antagonize the effects of Magnesium Sulfate.</td>
</tr>
</tbody>
</table>
Obstetric Management

Once the patient is fully sedated, verify foetal heart sounds and carry out abdominal and vaginal examination.

- If spontaneous labor has started: rupture the membranes artificially
  - During second stage of labor, perform low forceps delivery or ventose with episiotomy to reduce the maternal efforts
  - If the foetus is dead perform craniotomy in vertex presentation
- If labor has not started or prolong labor anticipated: C/S is indicated.

| In severe pre-eclampsia, delivery should occur within 24 hours of the onset of symptoms. In eclampsia, delivery should occur within 12 hours of the onset of convulsions |

Postpartum care in case of eclampsia

- Anticonvulsive therapy should be maintained for 24 hours after delivery or the last convolution, whichever occurs last
- Continue antihypertensive therapy as long as the diastolic pressure is 110 mm Hg or more
- Continue to monitor urine output

Referral

Consider referral of women who have:

- Oliguria that persists for 48 hours after delivery;
- Coagulation failure [eg. coagulopathy or haemolysis, elevated liver enzymes and low platelets syndrome];
- Persistent coma lasting more than 24 hours after convulsions.
Eclampsia, Severe Pre-Eclampsia
Severe Headache, Blurred Vision, Convulsions, Elevated Blood Pressure in Pregnancy

<table>
<thead>
<tr>
<th>Signs and Symptoms</th>
<th>Convulsion, diastolic BP 90 mmHg or more after 20 weeks of pregnancy / puerperium</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>General Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintain Airway, O₂ inhalation, Lateral (eclamptic) position, change posture hourly</td>
</tr>
<tr>
<td>Continuous catheterization, strict fluid balance; maintain intake output chart</td>
</tr>
<tr>
<td>IV Access, IV fluid, Normal Saline/Hartman’s solution</td>
</tr>
<tr>
<td>Maintenance of nutrition: IV fluid, if patient unconscious: 24 hours after delivery – Ryle’s tube feeding – 250 ml fluid 2 hourly</td>
</tr>
<tr>
<td>If patient conscious – oral feeding</td>
</tr>
<tr>
<td>Antibiotics: Inj Ampicillin 500 mg IM/IV 6 hourly</td>
</tr>
<tr>
<td>Monitor pulse, BP, respiration (&gt;16/min) reflexes every ½ hours. Monitor FHR, urine output, auscultate lung bases</td>
</tr>
<tr>
<td>Care of the eye, skin and maintain oral hygiene</td>
</tr>
<tr>
<td>Investigation: Bl gr &amp; Rh; urea, S creatinin, S electrolyte, proteinuria, bedside clotting test</td>
</tr>
</tbody>
</table>

### Specific Management

#### Control of Convulsion

<table>
<thead>
<tr>
<th>Magnesium Sulphate Therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dose</strong></td>
</tr>
<tr>
<td>IV/IM protocol Mg. Sulphate (4g=8ml) I.V. in 12ml dist. Water or Inj. Nalepsin MgSo₄ 4g=100ml Loading Dose Mg. Sulphate (6g=12ml) I.M If necessary Therapy Mg. Sulphate (2.5g=5ml) I.M</td>
</tr>
<tr>
<td>Methods</td>
</tr>
<tr>
<td>Slow IV injection over a period of 10-15 min Rapid IV Inj. @60-75 drops/min Over a period of 20min Deep IM injection 3g in each buttock Deep IM injection 2.5g every 4 hourly using alternate buttock. Continue for 24 hrs after last convulsion or delivery</td>
</tr>
</tbody>
</table>

#### Control of BP

| Diastolic pressure more than 110 mmHg |
| Systolic pressure less than 80 mmHg or BP is not recordable |

| Methods |
| Inj. Hydralazine, 1amp (20mg) interval & stop drip when DBP is 90 mmHg No fall of BP within 30 min Nifedipine 3-4 drops sublingually |

| Obstetric Management |
| Conduction of delivery within 6-8 hrs |
| Vaginal delivery |
| Cervix favourable ARM & oxytocin drip 5 units in 500ml NS starting @15-20 drops/min & titrate against uterine contraction. Avoid prolonged 2nd stage may use forceps/VE |

#### IV protocol

| Loading dose Inj. Nalepsin MgSo₄ 4g=100ml |
| Maintenance Within 1 hr 2g (50ml) Therapy Within next 4hrs 4g (100ml) |
| Methods Rapid IV Inj. @60-75 drops/min Over a period of 20min Slow IV inj. @12 min 25ml/hr @6 drops/min |

Mg. Sulphate potentiates the action of depolarising & non-depolarising muscle relaxants the dosage of the later used during anaesthesia is to be curtailed.

Mg. Toxicity: Resp <16/min, urine output<30ml/hr, absent patellar reflex. Antidote: If there is a sign of toxicity give injection calcium gluconate/chloride 1g (10ml) IV slowly. Conc. of MgSO₄ is different in different available preparations. Please check the concentration before administration.

If MgSO₄ unavailable: Diazepam schedule: Loading dose: Inj. Diazepam 10 mg IV slowly over 2 min. If convulsion recur, repeat loading dose. Maintenance dose: Diazepam 40mg in 500ml

Ref: National protocol for eclampsia, BJOC Sp.IMPAC/WHO supported community protocol for eclampsia

### Postpartum Haemorrhage (PPH):

Generally the term denotes excessive haemorrhage from the genital tract at any time after the birth of the baby up to the end of puerperium amounting to a degree affecting the general condition of the patient. For statistical purpose, haemorrhage of more than 500 ml is defined as postpartum haemorrhage. PPH is one of the commonest causes of maternal mortality and this can be reduced by improved EOC and more frequent use of blood transfusion.
Causes of PPH:

- Uterine inertia following delivery of the baby and mismanagement of 3rd stage of labor. It may or may not be associated with retained placenta.
- Traumatic: Haemorrhage may occur from injury to the maternal tissues like cervical, vaginal and vestibular tears.
- Very rarely rupture of the uterus maybe the cause.

Management:

- **Shout for help.**
- If the placenta is retained, empty the bladder by sterile plastic catheter if it is found distended and take the following steps:

  Step one:
  - Immediately start intravenous drip of normal saline 500 ml with 10 units Oxytocin;
  - If uterus is felt soft without signs of placental separation and descent;
  - If uterus is felt hard with signs of placental separation (suprapubic pressure test shows no indrawing of cord) - controlled cord traction is done and placenta is delivered;
  - Give injection Ergometrine 0.5 mg IM after placental delivery;
  - Arrange adequate blood transfusion in the hospital.

  Step two:
  - Manual removal of the placenta is next performed where the above procedure becomes unsuccessful or not tried at all, especially in hospital. Give injection Ergometrine 0.5 mg. IV on placental delivery.

**Management of primary PPH after placental delivery:**

- Rub/massage the uterus and give injection Ergometrine 0.5 mg. IV following the evacuation of the bladder, if it is not empty. Arrange Oxytocin Infusion in Normal Saline and blood transfusion.
- If bleeding is persistent, retention of placental bits, blood clots, are likely. The uterus is to be explored under anesthesia to remove the retained materials.
- If there is any trauma in the perineum, vagina and cervix detected on speculum examination, it should be repaired under general anesthesia. Vestibular haemorrhage should be controlled by deep catgut stitch.

**Management of secondary PPH:**

The important causes of secondary PPH are retention of placental tissue, blood clots, subinvolution, caesarean section wound infection, deep lacerations of the cervix, vagina or vulva, uterine fibroid, and very rarely chorio-carcinoma.

- **Mild haemorrhage:** Bed rest, ergot preparation (viz. tablet Methergin t.d.s. for 4 days) and antibiotic are useful.
- **Severe haemorrhage:** Uterus is explored under general anesthesia with two fingers if possible and curette; any retained product including blood clot inside the uterine cavity is removed followed by administration of injection Ergometrine. Oxytocin drip and blood transfusion need to be given. The placental bit, if removed, must be sent for histological examination to exclude chorio-carcinoma.
Management of PPH by condom catheter ballooning\textsuperscript{4}

Explain to the woman that this ballooning is going to be done to stop excessive bleeding. Ask the woman to lie on her back:

1. Wash hands with soap and wear gloves.
2. Check whether the urinal bladder is full. If full, apply catheter.
3. Insert a rubber catheter in a condom placed in a sterilized container and keep it ready by tying with a string.
4. Make the patient lie in a lithotomy position. Catch the lip of the uterus with two sponge holding forceps.
5. Insert the condom with the catheter tied up with the help of artery forceps in adequate light. Attach a saline set with the other end of the catheter and connect it from above with 500 ml normal saline. Administer 250-300 ml of saline.
6. Open the saline set when the saline will finish.
7. Insert two pads into the vagina and apply a pad outside.
8. Check the condition of the patient every half an hour for 2 hours (pulse rate, blood pressure, bleeding from the uterus).
9. When bleeding stops disconnect the catheter after 24 hours. At first extract water from the balloon and pull out the balloon.

\textsuperscript{4} MOHFW, August 2003.
# Primary Post Partum Haemorrhage

## Signs and Symptoms
Excessive vaginal bleeding (>500 ml) or prolonged moderate bleeding after childbirth, rapid pulse, low BP, shock.

## Anticipate PPH
Past H/O of PPH, present pregnancy: hypertension, APH, prolonged labor, multiple pregnancy, instrumental/operative delivery

## Injudicious intervention, chorioamnionitis

## General Management
**SHOUT FOR HELP:** massage fundus to expel blood clot, 10 units oxytocin IM/IV ergometrin 0.2 mg IM, tab misoprostrol 600 mg per rectal.

- IV access with wide bore canula, rapidly infuse NS/Hartman’s solution; catheterization; initiate/encourage breastfeeding
- **Assessment:** Record: pulse, BP every 5 minutes until stable, monitor blood loss/hourly urinary output
- **Resuscitate:** Transfuse blood; investigation: HB%, Gr & Rh cross match, bedside clotting test
- Reassure and keep patient and family informed.

## Specific Management
**Determine the cause of PPH and manage accordingly (Palpate uterus, examine placenta, examine birth canal with good light and adequate exposure)**

### Placenta Retained: Placenta not delivered within 30 min after delivery

#### Placenta Retained:
- Portion of placenta/membrane missing
- Placenta not delivered within 30 min after delivery
- **Determine the cause of PPH and manage accordingly (Palpate uterus, examine placenta, examine birth canal with good light and adequate exposure)**

<table>
<thead>
<tr>
<th>CT</th>
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<th>Inj. Oxytocin 10 IU IM/IV; Inj. Ergometrine 0.2 mg IM if not already given</th>
<th>Controlled cord traction: If controlled cord traction fails</th>
<th>Manual removal of placenta under GA/deep sedation</th>
<th>Start 20 Units oxytocin in 1 liter NS drip at 60 drops/minute Remove placental fragment/membrane by exploration of uterus using hand, sponge holding forceps, large curette</th>
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**Inj. Oxytocin 10 IU IM/IV; Inj. Ergometrine 0.2 mg IM if not already given**

**Controlled cord traction:**

- If controlled cord traction fails
- Manual removal of placenta under GA/deep sedation
- Start 20 Units oxytocin in 1 liter NS drip at 60 drops/minute Remove placental fragment/membrane by exploration of uterus using hand, sponge holding forceps, large curette

**Ergometrin 0.2 mg IV**

**Blood Transfusion**

**EUA:** trauma: Cx vagina uterus

**Exclude DIC**

**Antibiotic if sign of infection**

**Note:** Very adherent tissue may be placenta accreta. Effort to extract tissue (Placenta/fragments) may result in heavy bleeding or uterine perforation which usually requires hysterectomy.

**All the time monitor vital signs, stabilize the patient, consider blood transfusion, rule out DIC. Prevent DIC by restoring blood volume by IV fluids. If DIC give fresh blood to replace clotting factors and treat possible cause.**

### Retained Product of Conception: Portion of placenta/membrane missing

- **Determine the cause of PPH and manage accordingly (Palpate uterus, examine placenta, examine birth canal with good light and adequate exposure)**

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**DIC**

- Bed side clotting test
- No clot after 7 min or clot breaks easily

**Give fresh whole blood Treat the cause**

**Bleeding Persists**

<table>
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### PLACENTA DELIVERED

**Uterus Contracted**

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**DIC**

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**Controlled IV oxytocin for 4-6 hours**

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**Transfuse blood if necessary**

**Antibiotics if sign of infection**

**Iron (Fe sulphate/fumerate 150 mg OD for 3 month**

**Folic acid 400mcg) OD for 3 month**

**Albendazole 400 mg once**

**If expertise/facility unavailable:**

- Provide first aid
- Counsel patient & family
- Refer

### Uterus Atonic

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**Inj. Pethidine IM 1mg/kg for pain Reposition uterus immediately Under GA**

**Antibiotics**

**If reposition not possible Refer**

**If life threatening bleeding**

- Rule out DIC/retained placental fragments, external bimanual compression for 5-10min.: evaluate
- Internal bimanual compression/Aortic Compression
- Intrauterine ballooning by condom/Foley’s catheter
- EUA: trauma: Cx vagina uterus
- urlpatterns products: Remove
- ?Uterine rupture: Laparotomy
- Uterine & utero-ovarian artery ligation B Lynch sutures
- If life threatening bleeding continuous Perform subtotal Hysterectomy

### Note:

- Very adherent tissue may be placenta accreta. Effort to extract tissue (Placenta/fragments) may result in heavy bleeding or uterine perforation which usually requires hysterectomy.
- All the time monitor vital signs, stabilize the patient, consider blood transfusion, rule out DIC. Prevent DIC by restoring blood volume by IV fluids. If DIC give fresh blood to replace clotting factors and treat possible cause.

1. **IV Fluids:** To restore circulating blood volume, infuse Normal Saline rapidly in a volume of at least 3 times estimated blood loss.

2. **Antibiotics:** Ampicilling 2 gm IV + Metronidazole 500 mg IV.

3. **IV Pethidine:** 6-10 mg/kg IM Ketamine may be given instead of Pethidine. If Ketamine used, 10 mg IV Diazepam should be given slowly to prevent hallucinations.

4. **Ruptured uterus:** Suspect if prolonged obstructed labour or previous Caesarean Section or use of Syntocinon or Prostaglandin.

5. **Bedside clotting test:** Intake 10 ml venous blood in small, dry, clean, plain glass test tube. Hold the tube in closed first to keep it warm. After 4 minute, tip the tube slowly to see if a clot is forming. Then tip it again every mean until the blood clots & the tube can be turned upside down.
Obstetric Shock

Signs and Symptoms

Consciousness  > Confused, no response to verbal stimulation or to pain
Skin  > Cold, clammy, pallor
Pulse  > Rapid, thready, BP low (systolic blood pressure > 90 mmHg
Respiration  > Rapid, gasping
Hydration  > Dehydrated, urine output scanty (less than 30 ml/hr)
P/V examination – according to the cause of shock

Anticipate Shock

Bleeding/Infection/trauma in pregnancy, labour, after childbirth

General Management

Shout for help; Left lateral position
Airway clear and give oxygen by mask (5-6 L/min), raise footend of bed (at least 12 inch); keep warm
IV/access: Use 16G canula; if a peripheral vein cannot be cannulated, perform various cutdown
Blood for hemoglobin Gr & Rh and cross match, start NS/Hartman solution
Urinary catheter: intake output chart,
Monitor vital signs: BP & pulse every 5 mins until stable; temperature; intake output
Inj. Dopamine 200 mg in 500 ml NS @ 8-10 drops/min
Reassure and keep patient and family informed
Inj: Haemotocrete, electrolyte, blood glucose, bedside clotting test, pus for c/s

Specific Management

Determine & manage cause of shock

- Hemorrhage
  - Replace Blood
  - Stop Bleeding
- Primary
  - APH/bleeding after 22 wks of pregnancy
  - Placenta Praevia
  - Abruptia placenta
  - Ruptured uterus
  - Treat accordingly
  - See protocol
- Secondary
  - PPH
  - >22 week gestation
  - Foul smelling discharge
  - Tender uterus
  - Rapid FHR
  - IV Fluid
  - Inj Oxytocin 10 IU/IV
  - Ergometrin IV antibiotic
  - Transfusion EUA
  - Remove products of conception at OT
  - See Protocol
- Pregnancy Related
  - IV Fluid Antibiotics
  - Secondary Causes
  - Ref. to physician as needed
- Infection
  - Septic abortion
  - Metritis
  - Peritonitis
  - Intraabdominal Injury
  - See protocol
  - Severe periperal sepsis
  - Post operative infections
  - Manage accordingly
- Trauma
  - RTA
  - Assault
  - Others
  - ? Eclampsia
- See protocol
- Haemorrhage
  - Inj Oxytocin
  - ? PG induction
  - ? C/S / Hysterotomy
- Others
  - ? Cardiac
  - ? Pulmonary emb
  - ? Drug reaction
  - ? Hypoglycaemia
  - ? Hepatic shock
- Molar Pregnancy
  - ? Amniotic fluid embolism
- Post operative infections
  - Abortion
  - Placenta Praevia
  - Abruptia placenta
  - Ruptured uterus
  - Treat accordingly
  - See protocol
- Complications of pregnancy
  - >22 week gestation
  - Metritis
  - Pneumonia
  - 3rd trimester
  - ? Cardiac
  - ? Pulmonary emb
  - ? Drug reaction
  - ? Hypoglycaemia
  - ? Hepatic shock
- Primary
  - Secondary
  - Tender uterus
  - Intraabdominal Injury
  - ? Drug reaction
- Rapid FHR
  - See protocol
- Abortion
  - Malaria: give antimalarials
  - Dengue fever
  - ? Hepatic shock
- Ectopic Pregnancy
  - Placenta Praevia
  - Post operative infections
  - Hepatitis
  - ? Amniotic fluid embolism
- Placenta Praevia
  - Intraabdominal Injury
  - ? Drug reaction
- Placenta Praevia
  - Pneumonia
  - ? Hepatic shock
- Placenta Praevia
  - Malaria: give antimalarials
  - Dengue fever
  - ? Hepatic shock

Maintenance of fluid:

1 IV Fluids: To restore circulating blood volume, infuse normal saline/ringer’s lactate rapidly in a vol. of at least 3 times estimated blood loss: at least 2 L of fluid in 1st hr.
2 Antibiotics: Ampicillin 2 gm IV every 6 hours + Metronidazole 500 mg IV every 8 hours + Gentamycin 5 mg/Kg IV every 24 hours.
3 Give: Ampicillin 2 gm IV every 6 hours + paracetamol 500 mg every 6 hours + General nursing care. Review antibiotics to conform to local protocol.
4 Give: Paracetamol 500 mg every 6 hours + hydration (tablet or suppositories)
Reassess: If condition improves (pulse > 90/min, Sys BP ≥ 100 mmHg, improve mental status, urine output ≥30 ml/hr) : Adjust rate of infusion 1 L/6hrs.; Continue management of underlying cause of shock.

Ref.: IMPAC / textbooks, Emergency Obstetrics by JHPIEGO / US AIDS
Essential Obstetric Care component

Maternal mortality accounts for large proportion of deaths among women of childbearing age in most of the developing countries. Almost all maternal death due to pregnancy related causes can be avoided if women have access to EOC. It comprises all life saving interventions for obstetric complication like haemorrhage, eclampsia, labor, sepsis and abortion.

EOC intervention involves the following activities:

• First aid EOC at union level MCWCs: This includes facilities for:
  - injectable antibiotics for control of infections;
  - injectable oxytocic for control of haemorrhage;
  - injectable sedatives/anticonvulsants for control of eclamptic fits;

• Basic EOC intervention at Upazila level MCWC: This includes facilities for:
  - injectable antibiotics for control of infections;
  - injectable oxytocic for control of haemorrhage;
  - injectable sedatives/anticonvulsants for control of eclamptic fits;
  - performed assisted vaginal delivery by vacuum extractor or forceps.
  - performed manual removal of placenta;

• Comprehensive EOC intervention at MCWCs, UHC (selected) and District Hospitals: This includes facilities for:
  - All of those included in basic EOC
  - Surgery (e.g. Caesarean section, curettage).
  - Blood transfusion;

Caesarean Section (C/S)

The term Caesarean Section (C/S) denotes the delivery of foetus, placenta and membranes through an incision in the abdominal and uterine walls.

Indications of C/S:

A Absolute Indications:
  i  Gross cephalopelvic disproportion;
  ii  History of (H/O) previous c/s done for recurrent indications;
  iii  Type II posterior, III & IV placenta praevia;
  iv  Vaginal and cervical stenosis;
  v  Successful repair of Vesico-Verginal Festula (VVF);
  vi  Carcinoma Cervix & pelvic tumor impaction;
  vii  Failed trial forceps;
  viii  Large myoma of cervix or lower uterine segment.

B Relative Indication:
  i  Foetal condition
    • Foetal malpresentation
    • Brow presentation
    • Mento-posterior face presentation
    • Shoulder presentation
    • Primi-gravida with breech presentation,

---

5 EOC, OGSB, UNICEF.
• Foetal distress due to postmaturity, hypertension, prolonged labor or abnormal uterine action
• Cord prolapse in first stage of labor when baby is alive

ii Maternal conditions:
• Fulminating pre-eclampsia, eclampsia with failed Induction or prolonged labor
• Elderly primi with minor CPD, breech, hypertension or postmaturity
• Bad obstetrical history
• Maternal disease - diabetes mellitus, hypertension, chronic nephritis
• Uterine inertia
• Failed induction
• Previous C/S with non-recurrent indications

Assessment:
Examine the patient for pallor, oedema, abnormal blood pressure, and heart and lung disease and take appropriate action. Determine the foetal lie and presentation, and check for the presence of foetal heart sounds.

Investigations:
• Hb%
• Urine for sugar and protein
• Blood for grouping (including Rh factor) and cross matching

Preoperative management:
Patients in labor should be given an antacid to neutralize gastric acid and minimize the effects of any accidental aspiration of gastric fluid. An IV drip should be set up with infusion Lactoride 1000 ml.

Equipment for C/S:
• Instruments
  - Towel clips-5
  - Sponge holding forceps – 5
  - BP handle with blade – 1
  - Scissors - 1 big (curved), 1 medium (straight)
  - Artery forceps (big and curved) – 4
  - Artery forceps (big and straight) – 2
  - Mosquito forceps curved – 6
  - Tissue forceps (medium size) – 6
  - Needle holder-2
  - Doyen's retractor – 1
  - Tooth dissecting forceps – 1
  - Plain dissecting forceps – 1
  - Kidney tray – 1
  - Gally pot – 1
  - Sterile gauze and cotton balls – sufficient
  - Dressing pad/micropore - 3 inches – 1
  - Sterile gloves - 4 packets
  - Foley’s catheter - 1 (No. 14)
  - Urine bag -1
• Suturing Materials:
  - Round body needle (medium) – 2
  - Curved cutting (medium) – 1
  - Straight cutting (medium) – 1
  - Chromic Catgut 1 – 1, Atraumatic 1/0 – 2
  - Vicryl -1/0 or 1 -1
  - Silk1 -1

• Linen for C/S:
  - Rubber sheet – 1
  - Draw sheet – 4
  - Double sheet (for Trolley and baby) – 2
  - Abdominal sheet -1
  - Suction tube – 1

• Accessories:
  - Betadine solution
  - Hibitane Cream

**Prophylactic Antibiotic**

Single dose of Inj. Ampicillin 2 gm IV or Cefazolin 1 gm after the cord is clamped and cut.

**Surgical Technique**

• Make a midline vertical incision below the umbilicus to the public hair, through the skin and to the level of the fascia.
• Make a 2-3 cm vertical incision in the fascia.
• Hold the fascial edge with forceps and lengthen the incision up and down using scissors.
• Use fingers or scissors to separate the rectus muscles (abdominal wall muscles).
• Use fingers to make an opening in the peritoneum near the umbilicus. Use scissors to lengthen the incision up and down in order to see the entire uterus. Carefully, to prevent bladder injury, use scissors to separate layers and open the lower part of the peritoneum.
• Place a bladder retractor over the pubic bone.
• Use forceps to pick up the loose peritoneum covering the anterior surface of the lower uterine segment and incise with scissors.
• Extend the incision by placing the scissors between the uterus and the loose serosa and cutting about 3 cm on each side in a transverse fashion.
• Use two fingers to push the bladder downwards off the lower uterine segment. Replace the bladder retractor over the pubic bone and bladder.
• Use a scalpel to make a 3 cm transverse incision in the lower segment of the uterus. It should be about 1 cm below the level where the vesico-uterine serosa was incised to bring the bladder down.
• Widen the incision by placing a finger at each edge and gently pulling upwards and laterally at the same time.
• If the lower uterine segment is thick and narrow, extend the incision in a crescent shape, using scissors instead of fingers to avoid extension of the uterine vessels.
• To deliver the baby, place one hand inside the uterine cavity between the uterus and the baby’s head.
• With the fingers, grasp and flex the head.
• Gently lift the baby’s head through the incision, taking care not to extend the incision down towards the cervix.
• With the other hand, gently press on the abdomen over the top of the uterus to help deliver the head.
• If the baby’s head is deep down in the pelvis or vagina, ask an assistant (wearing high-level disinfected gloves) to reach into the vagina and push the baby’s head up through the vagina. Then lift and deliver the head.
• Section the baby’s mouth and nose when delivered.
• Deliver the shoulders and body.
• Give oxytocin 20 units in 1 L IV fluids (normal saline or Ringer’s lactate) at 60 drops per minute for 2 hours.
• Clamp and cut the umbilical cord.
• Hand the baby to the assistant for initial care.
• Give a single dose of prophylactic antibiotics after the cord is clamped and cut:
  - Ampicillin 2 g IV;
  - or Cefazolin 1 g IV.
• Keep gentle traction on the cord and massage (rub) the uterus through the abdomen.
• Deliver the placenta and membranes.
• Grasp the corners of the uterine incision with clamps.
• Grasp the bottom edge of the incision with clamps. Make sure it is separate from the bladder.
• Look carefully for any extensions of the uterine incision.
• Repair the incision and any extensions with a continuous locking stitch of 0 chromic catgut (or polyglycolic) suture.
• If there is any further bleeding from the incision site, close with figure-of-eight sutures. There is no need for a routine second layer of sutures in the uterine incision.
• Look carefully at the uterine incision before closing the abdomen. Make sure there is no bleeding and the uterus is firm. Use a sponge to remove any clots inside the abdomen.
• Examine carefully for injuries to the bladder and repair any found.
• Close the fascia with continuous 0 chromic catgut (or polyglycolic) suture.
• If there are signs of infection, pack the subcutaneous tissue with gauze and place loose 0 catgut (or polyglycolic) sutures. Close the skin with a delayed closure after the infection has cleared.
• If there are no signs of infection, close the skin with vertical mattress sutures of 3-0 nylon (or silk) and apply a sterile dressing.
• Gently push on the abdomen over the uterus to remove clots from the uterus and vagina.

After Care/Post Caesarean Care
• The patient is to be observed meticulously for at least 6-8 hours Periodic check-up of pulse, blood pressure, amount of vaginal bleeding and behavior of the uterus (in low transverse abdominal incision) is mandatory.
• 5% dextrose or Ringer's lactate drip is continued until at least 2 - 2.5 liters of the solution are infused.
• Injection Oxytocin 10 units in drip if needed.
• Prophylactic antibiotic single dose of Injection Ampicillin 1 gm I.V. stat is given per operatively, and then switched over to oral form.
• Analgesic in the form of Pethidine Hydrochloride 100 mg/Inj. Diclofenac Sodium 75 mg is to be administered and may have to be repeated.
• The patient can sit on the bed or even go to toilet to evacuate the bladder, provided the general condition permits.
• The patient is encouraged to move her legs and ankles and to breathe deeply to minimize leg vein thrombosis and pulmonary embolism.

• Oral feeding:
  - In LUCS after Sub Arachnoid Block
    a) Clear fluid after 2 hours
    b) Liquid diet after 6 hours
    c) Normal diet after 12 hours
  - In LUCS after General Anaesthesia
    a) Clear fluid after 4 hours
    b) Liquid diet after 6 hours
    c) Normal diet after 12 hours

• Bowel is kept emptied and if not spontaneously moved, 4-6 teaspoons of milk of magnesia is given at bed time.

• The abdominal skin stitches are to be removed on the 6th (in transverse) or 7th day (in Longitudinal).

Discharge
The patient is discharged on the day following removal of the stitches or even before removal of stitch, if otherwise fit. Usual advice like those following vaginal delivery is given.

Complications of C/S
• Maternal
  - During operation
    → anesthetic hazards cardiac arrest, air-way obstruction, fall back of tongue
    → haemorrhage with shock
    → injury to bladder, bowel and adjacent organs and tissue.
  - Immediate post operative
    → postpartum haemorrhage
    → shock
    → anesthetic hazards
    → Thrombosis
  - Remote
    → Gynecological: complications include chronic pelvic pain or backache.
    → General surgical complications include incision hernia and intestinal obstruction due to adhesions and bands.
    → Future Pregnancy: risk of scar rupture.

• Foetal Complication
  - Hypoxia due to general anesthesia (GA)
  - Intracranial haemorrhage
Delivery Options after Caesarean Section

Previous Caesarean Section

- Two or more C/S
- Previous classical C/S
- Previous C/S done for recurrent indication
- Successful repair of VVF
- One previous C/S with any obstetric indication

Elective caesarean section

- One previous C/S for non-recurring indication
- Cephalic presentation
- Normal Size baby < 3.5 kg
- Wait for spontaneous labor up to 7 days after EDD

Trial of vaginal delivery

Special care in labor and delivery

IV Access
- Hemoglobin, cross match
- Close monitoring of FHR, uterine contraction & maternal pulse
- Strict partograph record and management

Normal Progress
- Aim for vaginal delivery
- May consider forceps/vacuum extraction in second stage

Abnormal progress
- Signs of abnormal progress
- Cervical dilation right of alert line
- Incoordinate uterine contractions
- Sign of foetal distress
- Heavy show
- Suprapubic tenderness
- Arrest of descent of foetal head
- Persistent maternal pulse 110/min

Do not induce labor

Emergency Caesarean Section
**Anesthesia**

**Introduction**

Most patients who will be undergoing surgery in Maternal and Child Welfare Center (MCWC) are in the younger age group. As such in most cases it is expected that these patients will be free from many coexisting medical diseases. Moreover, as these patients will be presenting to MCWC it is expected that they will be suffering from gynecological and/or obstetric surgical problems only. Fortunately most of these, if not all, will be well managed under regional block. But situation may arise which may make General Anesthesia (GA) necessary.

GA, as a rule, is more hazardous as it rakes off all the protective reflexes. On the other hand Regional Anesthesia (RA) has the advantages of having an awake patient with less effect on the vital systems with the protective reflexes remaining intact.

**Pre-anesthetic Assessment**

Whatever may be the form of anesthesia, patient has to be assessed first. This includes becoming acquainted with the patient and knowing, about their coexisting medical problems. Once the problems are known necessary precautions and measures can be taken to avoid any hazard.

Pre-anesthetic assessment should include:
- **History taking**
- **Clinical examination**
- **Investigations**

If the patient has no history of any major system inadequacy and has no clinical anomaly she needs very little investigations. This reduces unnecessary cost as well as valuable time. Younger patient needs hemoglobin and simple urine routine examination. Other investigations like, total blood count, x-ray, random blood sugar, creatinine, etc. are only indicated for patients below 40 years when clinical examination points to some underlying medical disease.

**Pre-anesthetic Preparation**

- **Reassurance:** Patient must be reassured again and again regarding safety of the procedure, both anesthetic and surgical.
- **Explanation:** Explaining procedure to the patient like she will be given a prick to start I/V fluid, prick in back to perform Spinal Anesthesia (SA), a mask from which O₂ will be given etc.
- **Pre-operative fasting:** Patients should have nothing by mouth 4 hours prior to surgery. Clear liquid (like water, juice, soft drinks, etc.) should be allowed to be taken between 4 and 6 hours. A glass of water may be allowed to drink prior to surgery. This fasting for 2 hours should be routine for GA and RA as well.

**Pre-medication**

Oral Diazepam 1 hour prior to anesthesia makes patient calm. Dose should not exceed 5mg in case of Lower Uterine Caesarean Section (LUCS).
Equipment Check

The anesthetic machine and all accessories should be thoroughly checked before undertaking any form of anesthesia. For a GA it is a must while for a RA it is also the same. This is because of the fact that the regional anesthesia may fail or because of any untoward occurrence patient might need resuscitation requiring an anesthetic machine. A sequential check like, systemic examination of the patient will help one not to miss anything. A functioning anesthetic machine is very useful for moral support. But this is not a must. As resuscitation may be carried out otherwise and GA if needed may be continued using alternate technique [AMBU (self inflating bag) with I/V drugs].

A. Anesthetic Machine

Check Source: Cylinder or pipeline whatever the source, it has to be checked whether there is sufficient oxygen reserve. Spare of full cylinders has to be ensured. Likewise oxygen, nitrous oxide also needs to be checked. Cylinder opener (called wrench or spanner) should be readily available.

Flow of gases: Opening the flow-meter knobs (separately) will initiate flow gases down the breathing circuit. Check individually both oxygen and nitrous oxide flow.

Leak test: Obstructing the flow at the machine outlet by the thumb while keeping the gas flow at the flow meter will produce a hissing sound at the point of leak. To identify fine leaks that make very faint hissing, one might need to place his/her ears at various points of the machine.

Breathing circuit: Like the machine the breathing circuit needs to be checked. First check with all the components of the circuit. Then check for any leakage, especially for the reservoir bag and the expiratory valve (at closed position).

Antihypoxic device: N₂O will not flow unless 25% O₂ is accompanied with it. Present day anesthetic machines are fitted with it.

B. Accessories

Keep the working laryngoscope, endotracheal tubes of different sizes, oropharyngeal airways of different sizes and stylet and a Magill forceps ready at hand. Check with the performance of the laryngoscope and the tube cuffs.

C. AMBU

AMBU or self-inflating resuscitation bag with mask should be kept ready at all times.

D. Oxygen Cylinder with Flow-meter

Oxygen cylinder with flow-meter (as used in ward to supply oxygen) fitted with a Bain circuit is a valuable tool in emergency situation.

E. Drugs

Check all the drugs that might be needed for the procedure (both GA and RA). Also check with the medicines which might need at the time emergency for resuscitation.
Drug preparation
Prepare (dissolve and dilute) all the required drugs for the ensuing procedure. Load the syringes with necessary drugs in their proper dose (for the patient) and on proper concentration. Make it a habit to label all syringes, with name, amount and concentration of the drug.

Common medicines that you may need

**Induction Agent**
- Thiopentone Sodium (2.5% solution) 4-5 mg kg⁻¹
- Ketamine Hydrochloride (Calypsol) 2-3 mg kg⁻¹
- Midazolam Hydrochloride (Dormicum) 0.15-0.2 mg kg⁻¹

**Maintenance Agent**
- Halothane 0.25-0.2 vol%

**Narcotic Analgesic**
- Pethidine Hydrochloride 0.5 mg kg⁻¹ intravenously or 1-1.5 mg kg⁻¹ intramuscularly.
- Morphine Sulphate 0.2 mg kg⁻¹ intramuscularly.
- Tramal 0.5 mg kg⁻¹ intravenously or 1-1.5 mg kg⁻¹ intramuscularly.
- Pentazocine 0.25 mg kg⁻¹ intravenously or 0.5 mg kg⁻¹ intramuscularly.

**Muscle Relaxent**
- Suxamethonium Hydrochloride 1-1.5 mg kg⁻¹ intravenously.
- Pancuronium Bromide (Pavulon) 0.1-0.15 mg kg⁻¹ intravenously.
- Vecuronium Bromide (Nor-curon) 0.4-0.5 mg kg⁻¹ intravenously.
- Atracurium (Tracrium) 0.3-0.5 mg kg⁻¹ intravenously.

**Reversal of Neuromuscular Block**
- Neostigmin (Prostigmin) + Atropine 2.5 mg + 1.2 mg

**Resuscitation kit**
This should contain the following item in it:

1. AMBU bag with different sized face masks.
2. Endotracheal tubes (all sizes, cuffed & small non-cuffed)
3. ETT connectors
4. Laryngoscope with all size blades
5. IV cannulae (different sizes)
6. Airways in different sizes
7. Drugs:
   - Adrenaline (1 ml ampoules of 1:1000 concentration i.e. 1mg/ml)
   - Atropine
   - Sodi-bi-carb
   - Aminophilline
   - Lignocaine 2% (20 ml vial)
   - Calcium Gluconate (5 ml and 10 ml ampoules)
**General Anesthesia (GA)**

**Pre-oxygenation:**
It is standard to pre-oxygenate the patient for 3-5 minutes with an anesthetic breathing circuit. Some patients however, might not like it. This procedure not only provides safety to the patient but also prevents untoward cardiovascular depression caused by induction agents. Use 100% oxygen @ 4-5 L/min-1.

**Induction**
In general it is common to induce sleep with Thiopentone in usual dose. It must be remembered however, that it may cause cardiac and respiratory depression (even in usual dose). It is better to be avoided in case of shocked patient, the dose should be lowered by 25-50%.

For shocked patients Ketamine may be the drug of choice (dose given above). In normal individual Ketamine causes tachycardia, hypertension, raised intra-cranial and intra-ocular pressure. It also causes delirium and hallucination. If this is used at all, Midazolam should be used concomitantly (half of the normal dose given above).

In some cases, in patient with history of allergy to Thiopentone or shocked patients and in those cases where Ketamine cannot be used, Midazolam can be used safely. However, major disadvantages are that it is slow acting and expensive as well.

**Airway Management**
Immediately following the injection of Thiopentone the patient goes into apnoea. In this situation as well as after injecting the muscle relaxant, you are to provide artificial ventilatory support with bag and mask. Place the tight seal anaesthetic facemask and ventilate the patient. For intubation it is preferable to relax the patient with Suxamethonium. Once the patient is sufficiently relaxed, intubate the trachea with the right sized cuffed endotracheal tube. Attach the breathing circuit. It is a good habit of fixing the tube with adhesive tape. Auscultate both lungs and epigastric region to be sure about E.T. position.

**Maintenance**
Once intubation has been done, use a non-depolarizing muscle relaxant. Continue artificial ventilation with oxygen and nitrous oxide (in a ratio of 1:2). **Never use oxygen less than 30%**. Depending on requirement add Halothane (in the range of 0.5-1.0 vol.%). Put off Halothane approximately 3-5 minutes before giving reversal.

**Reversal of neuromuscular block**
It is better to reverse all neuromuscular block induced by non-depolarizing muscle relaxants. Make sure not to use supplemental dose of non-depolarizing muscle relaxants within 15-20 minutes of anticipated time of reversal. In patients with shock, it is usually difficult to reverse the blocking effects induced by Pancuronium. Try to prefer Atracurium in these cases. If Pavulon has to be used, use in very low dose and try to avoid supplementation unless it is badly needed. Allow sufficient time to elapse before reversal. Patient must be adequately breathing and responsive before transferring to post-operative area.
Post Anesthetic Management

- Nursing: It is standard to nurse all patients on his or her lateral side if he/she has received a general anesthesia. If the patient is conscious and prefers to stay supine, however, may be allowed to remain so.

- Oxygen: If situation permits and after prolong anesthesia try to provide oxygen supplementation for at least one hour. Most patient in the immediate post anaesthetic period breath through their mouth. In these cases avoid nasal cannula/prong. Use mask for O₂ @ 2-4 L/min.

- Analgesic:
  - Pethidine should be the drug of choice. 1.5mg/kg body wt. should be given I.M 6 hourly for 1st 24 hours.
  - After the 1st dose of Pethidine, analgesia may be achieved with Inj. Pentazocin 30 mg I.M 6 hourly.
  - NSAID- i.e. Diclofenac Sodium 75mg or Ketoprofen 50mg etc. may be added with Pethidine for 1st 24 hours (12 hourly I.M or suppository).
  - 2nd post operative day- Pain is less. Only NSAID may be adequate. This may be supplemented with Inj. Tramadol 100mg I.M 6-8 hourly.
  - 3rd post operative day- Any form of oral analgesic may be adequate.

- Fluid: If extra intra-operative loss is not to be replaced in the post operative period, then 2 ml/kg/hour will be sufficient. Fluid should stop when the patient starts oral intake.

Protocol for General Anesthesia in LUCS

Specific Indications
1. Patient refusal to sub-arachnoid block (SAB)
2. Hypovolaemia
3. Hypotension
4. Cardiac valvular diseases

Preparation

Check
- Machine: Particularly O₂ supply + stock, machine leak
- Laryngoscope
- E.T tube (cuffed): 7.0 I.D
- 7.5 I.D
- 8.0 I.D
- Circuit (Bain Preferably)
- Keep functioning suction machine at the head end of table

Check
- Patient
  - General condition
  - Blood pressure
  - Pulse
  - Heart
  - Lungs
  - Mallampati grade
• Preoperative fasting
  - Solid food: 6 hours
  - Liquid food: 4 hours
  - Water: 2 hours

• Reassure patient and explain procedure

• Prepare drugs and label syringes
  - Thiopentone (10 ml syringe): 5 mg/kg (roughly 250 mg)
  - Suxamethonium (5 ml syringe): 1.5 mg/kg (roughly 75-100 mg)
  - Pethidine (3 ml syringe): 50 mg/ml (1ml)
  - Pancuronium or Vecuronium or Atracurium (5 ml syringe)
  - Oxytocin (3 ml syringe): 5 IU/ml (1ml)
  - Prostigmine (10 ml syringe) 2.5mg + Atropine 1.2mg in same syringe

Patient in Operation Theater (OT)

• Put the patient in supine position with a wedge (sand bag, one liter saline bag) under right hip.

• I.V line establish by 18-20 G cannula

• Start I.V fluid with
  - Hartmann’s Solution / 5% DNS / 5% Distilled Water etc
  - Rate: 20-30 drops/minute (no preloading is needed)

• Pre-oxygenation: for 3-5 minutes with 100% O₂

• Induction with Inj. Thiopentone 250mg I.V (5mg/kg body weight) over 10-15 seconds.

• Keep 100% O₂ inhalation continued

• When eyelash reflex is gone – give Suxamethonium 75-100mg I.V in 3-5 second.

• Ask helper to apply cricoid pressure

• Keep suction machine on

• Do not ventilate between Thiopentone injection and intubation.

• Do laryngoscopy with proper sized blade.

• Introduce proper size E.T tube (7.0, 7.5, 8.0). Inflate cuff. Release cricoid pressure. Attach circuit, ventilate and auscultate chest to establish tube position.

• Patient may be catheterized now (Urethral catheterization is to be avoided in awake patients)

• Maintain Anaesthesia with O₂ 50% + N₂O 50% and Halothane 0.25-0.50%

• When the baby is delivered
  - Give Oxytocin 5 IU I.V (may be repeated if surgeon decide)
  - Inj. Pethidine 50mg I.V
  - Change O₂: N₂O (ratio) from 50%: 50% to 30%: 70%.
    i.e. O₂ 2L and N₂O 4L

• Reduce Halothane 0.125% to 0.25%.

• Long acting muscle relaxants may be given now.
  - Atracurium - 25mg
  - Vecuronium - 4mg
  - Pancuronium - 4mg
• Reduce long acting muscle relaxant dose by 30% for patients on MgSO4 therapy.
• Continue control ventilation and maintain anaesthesia as such till skin stitch.
• Stop Halothane at the start of skin stitch.
• Stop N2O after vaginal cleaning.
• Continue O2
• Give reversal (Neostigmine 2.0mg + Atropine 1mg)
• Suck pharynx and air way.
• Roll the patient to lateral position
• Watch for adequate respiration
• Look for patient getting awake
• Deflate cuff
• Extubate
• Transfer to post operative ward on satisfactory recovery and maintain lateral position.

Monitoring
• Watch pulse, BP every 2-3 minutes till delivery, then at 5 minutes interval.
• O2 saturation- if Pulse Oximeter is available. It is an invaluable monitor.

Routine Post Operative Management
• I.V fluid: Should not continue after 12 hours in normal circumstances
• Antibiotic: Usually I.V antibiotic 8 hourly for first 24 hours is adequate or single dose on table. I.e. Inj. Gentamycin 80mg + Inj. Amoxycillin 250mg, or on choice of obstetrician. This may be followed with oral Amoxycillin for another 4 days, if obstetrician desires.
• Analgesics:
  - Pethidine should be the drug of choice. 1.5mg/kg body wt. should be given I.M 6 hourly for 1st 24 hours.
  - After the 1st dose of Pethidine, analgesia may be achieved with Inj. Pentazocin 30 mg I.M 6 hourly.
  - NSAID- i.e. Diclofenac Sodium 75mg or Ketoprofen 50mg etc. may be added with Pethidine for 1st 24 hours (12 hourly I.M or suppository).
  - 2nd post operative day- Pain is less. Only NSAID may be adequate. This may be supplemented with Inj. Tramadol 100mg I.M 6-8 hourly.
  - 3rd post operative day- Any form of oral analgesic may be adequate.

Oral Feeding
In LUCS after SAB
  a) Clear fluid after 2 hours
  b) Liquid diet after 6 hours
  c) Normal diet after 12 hours

In LUCS after GA
  a) Clear fluid after 4 hours
  b) Liquid diet after 6 hours
  c) Normal diet after 12 hours
Sub Arachnoid Block (SAB)

Indications
Any lower abdominal/pelvic operation and lower limb surgery can be performed under spinal anesthesia. In terms of sites almost all surgeries performed in MCWCs can be performed under spinal anesthesia. However, depending on patient’s clinical condition some of the operations may not be performed under spinal block. These include, patient bleeding from any cause, hypovolaemia or frank shock.

Advantages
Since this technique does not suppress vital protective reflexes, in general it is safer than general anesthesia. It has one more advantage that the patient may remain awake during the procedure if she desires so. Moreover, the technique involves very little number and amount of drugs. Last but not the least the technique is simple and cheap.

Disadvantages
The only disadvantage of the technique is that unless done under proper supervision and monitoring high spinal block may lead to severe hypotension and bradycardia, which if not properly managed in time may eventually lead to cardiac arrest. The other limiting factor of the technique is that since the drugs are placed in the sub-arachnoid space once, the duration of analgesia depends on the drugs used and it cannot be prolonged according to the need. In other words, time of block is fixed. Apart from these, patient’s discomfort like, retrosternal pain, nausea, vomiting are common sequelae of spinal anesthesia. Some patients if not properly informed may feel very much discomfort in her lower part of the body as she cannot move her legs.

To overcome these, several techniques/medications may be used. Fluid preloading and intra-operative use of ephedrine (or other vasoconstrictor) intravenously may help. Simple bradycardia may be treated by using Atropine intravenously.

* Properly labeled syringes containing vasoconstrictors should always be ready by the hand.
  a) Inj. Ephidrine: 5mg/ml
  b) Inj. Adrenaline: 20μg/ml
  c) Inj. Atropine: 0.6mg/ml

(Drugs kept in syringes in room temperature remain potent for at least 6 weeks.)

Protocol for Sub-Arachnoid Block in LUCS

Steps for SAB
- Do pre-anesthetic assessment
- Explain procedure to the patient
- Re-assure the patient
- Record pulse and blood pressure
- Start I.V infusion with Hartmann’s Solution / 5% DNS / 5% DW through a 18-20 G cannula (500-750 ml fluid should be infused before operation starts)
- Put patient on lateral side or sitting position. Put ‘X’ marks in L₃-L₄, L₂-L₃ space by scratch.
- Scrub and put on sterile gloves
• Check spinal set
• Scrub patients back with Iodine / Providine Iodine / Chlorhexidine followed by spirit.
• Infiltrate the space with 1-2% (1.5-2ml) Lignocaine plain
• Check patency of spinal needle by air
• Take 1.5 ml of Heavy Lignocaine 5% or 0.5% Heavy Bupivacaine : 2.0 - 2.25ml in a 3ml syringe.
• With the level facing laterally, puncture desired space with 25 G spinal needle.
  - When CSF comes out freely push the selected local anesthetics slowly over at least 15 seconds.
  - Seal the puncture site with sterile gauge.
  - Place patient supine quickly.
  - Use left uterine displacement by 1000ml saline bag or sand bag on right hip.
  - Start O₂ administration by mask (or cannula) 3-4 L/min
  - Record pulse and BP every minute till delivery of the baby
  - Surgeon may start operation after 3 minutes of spinal injection
  - When baby is out and cord clamped, give Inj. Oxytocin 5 IU + Inj. Prochlorperazine (Stemretil or Vergon) 6.5mg I.V through the same syringe.
  - Stop O₂ after baby delivery or when systolic BP > 90 mm Hg.
  - Record pulse and BP every 5 minutes till the end of operation
  - For apprehensive and un-cooperative patients any of the following may be used after baby delivered.
    a) Ketamine HCL: 25-50mg I.V
    b) Midazolam: 3-5mg I.V
    c) Diazepam: 5-7.5mg I.V
    d) Pethidine: 25mg I.V
    e) Pethidine: 50mg I.M

Immaculate monitoring is the key to safe spinal anesthesia in LUCS.

For hypotension i.e. Systolic BP < 80 mm Hg

Use: 1. Rapid fluid infusion
  2. O₂ administration
  3. I.V Ephedrine 5mg increment every 5 minutes.
  4. Atropine 0.3-0.6mg I.V if hypotension is accompanied with bradycardia.
  5. Inj. Adrenaline 25-50 µg increment every 3-5 minutes as needed.

Protocol for Anesthesia for D&C due to Incomplete Abortion

A. GA Protocol

Special consideration

Uterus containing product of conception is vulnerable to relaxation resulting in increased bleeding. Halothane is particularly notorious for this effect.

• Patient check-up and preparation
• Butterfly needle insertion
• Inj. Ketamine 25-50mg I.V bolus.
• Followed by Inj. Thiopentone 100-150mg.
• If extension is needed-
  - $O_2 : N_2O - 0.3 : 0.7$ from machine
  - $2 : 4$ L in Magills circuit
  - Additional 10-15mg Ketamine if patient reacts.
• Diazepam 2.5-5mg I.V to stop Ketamine hallucination.

**B. Spinal Protocol**

**General consideration**
- If the uterus size is 10 wks+
- If the patient has history of LUCS

Spinal anesthesia is a safer technique.

**Protocol**
- Patient check-up
- I.V Butterfly
- **No preloading needed.**
- Aseptic spinal puncture.
- 1-1.5ml 0.5% Bupivacaine Heavy.
- I.V fluid may be infused if bleeding is more than average.
- Whole blood may be transfused if needed.

**Protocol for Anesthesia for Retained Placenta**

**General Consideration**
These patients are always hypovolaemic. Spinal anesthesia should be avoided unless blood volume is corrected.

**A. GA Protocol**
- Pre-operative check-up of the patient.
- I.V Butterfly or cannula, I.V fluid may be given as per condition.
- Thiopentone 150-200mg.
- Suxamethonium 50mg.
- Intubation
- Maintenance: $O_2 : N_2O – 0.3 : 0.7$, controlled ventilation
- Ketamine 25-50mg I.V
- Intermittent Suxamethonium 10-20mg as needed.
  or,
  Vecuronium 1-2mg intermittent
- On completion: 100 $O_2$, Extubation.
- Reversal if non-depolarizing, muscle relaxant is used.
- Inhalational agents better avoided as they cause uterine atony.

If predicted easy evacuation

**B. I.V Ketamine**
- Inj. Ketamine: 2mg kg-l
- $O_2 : N_2O – 0.3 : 0.7$
- Spontaneous Ventilation
Special Problems with Anesthesia

Patients with shock

• Resuscitate the patients with blood and fluid preoperatively. But do not waste time in resuscitating the patient. Open 2-3 wide bore channels for rapid infusion/transfusion of fluids and blood. Those who are bleeding, resuscitation may be carried out intraoperatively. Decide which you would prefer. Once the bleeding can be stopped surgically (as in ruptured ectopic) patient’s condition improves dramatically.

• Ketamine is a better drug for induction in these patients than Thiopentone.

• It is better to give oxygen in at least 50% concentration in severe shock. Try to avoid Halothane, if possible (alternately, small doses of Dormicum may be used).

Patients with hypertension

Control blood pressure before administering anesthesia in routine/elective cases. Try to reduce diastolic pressure below 100 mm Hg.

• Induction: Thiopentone

• Relaxation: Vecuronium

• Ventilation: Controlled with 33% O₂ in N₂O with Halothane

• Reversal: As usual

• Emergency cases: Try to lower BP. In these situation if time permits, use beta-blocker (Atenalol) or calcium channel blocker (Nifidipine). In case of emergency 2-3 drops of Nifidipine may be given sublingually. Wait for 10-15 minutes. Inj. Hydrallazine 10-15 mg I.V may also be useful. If the patient is already catheterized Inj. Lasix (40-80 mg) I.V may be useful.

* SAB may also be used safely in Pregnancy Induced Hypertension (PIH).

Patients with Eclampsia

In case of emergency, like eclampsia, assess the patient in terms of pulmonary oedema, renal failure, convulsion etc. It is useful to give large doses of Frusemide (Lasix) I.V, which helps in clearing pulmonary oedema, reduce BP and increase urine output. Sublingual Nifidipine (2-3 drops) may be useful. Keep in mind that BP may fall quite rapidly in some cases. Anesthetic induction may cause drastic fall in BP. Inject Thiopentone slowly in those cases when GA is given. However, recent experience suggests that Spinal Anesthesia may also be useful in these cases if carefully administered.

* MgSO₄ may cause enhanced neuromuscular block by muscle relaxant.

Guidelines for anesthesia management in case of anesthetic machines dysfunction

If any disturbance in O₂ flow

• Discard the machine and use alternate technique.

If N₂O flow is disturbed or N₂O is not available

A. Minor Cases: (D&C etc.)

• Use Pethidine 0.5mg kg-1 I.V bolus

or,

Ketamine 0.5mg kg-1 I.V

• Use increased concentration of Halothane (1.5-2%) for maintenance (in non pregnant patient)
B. Major Cases: (LUCS etc.)

- **Anesthetic technique:**
  - Controlled ventilation with muscle relaxants.
  - Induction and Intubation: Use usual standard method.
  - Maintenance of anesthesia:
    - Before delivery of the baby: Use Halothane 0.5% with O₂. May be supplemented with Diazepam 5mg I.V bolus.
    - After delivery of the baby: Use I.V Pethidine 1mg kg⁻¹ bolus. Halothane concentration may be increased 0.5-1.0% watching pulse and BP carefully.
  - Or, non depolarizing muscle relaxants.
  - Ketamine 1mg kg⁻¹ I.V.

If Vaporizer does not work

A. Minor Cases: (D&C etc.)

Maintain anesthesia with spontaneous ventilation with facemask.

Use:
- Diazepam: 0.1-1.5 mg kg⁻¹ (7.5-10 mg)
- Pethidine: 0.5 mg kg⁻¹ I.V bolus (25-30 mg)
- Ketamine: 0.5-0.75 mg kg⁻¹ I.V
- Intermittent Thiopentone I.V small doses (50-75 mg)

B. Major Cases: (LUCS, Hysterectomy, etc.)

- **Anesthetic technique:**
  - Controlled ventilation with muscle relaxants.
  - Induction and Intubation: use standard method
  - Maintenance of anesthesia:
    - Before delivery of the baby: maintain with 50% O₂ in N₂O.
    - After delivery of the baby: Supplement with
      - a) Diazepam: 0.1-0.15 mg kg⁻¹ I.V bolus single dose (i.e. 7.5-10mg)
      - Pethidine 25-30 mg I.V intermittent at 30 minutes interval
      - or,
      - Ketamine: 1mg kg⁻¹ I.V
    - Or, intermittent small dose of Thiopentone (25-30mg) may be added to any of the previous regimens.

Alternate Techniques

Regional Anesthesia (RA)
Spinal anesthesia is usually suitable for almost all gynecological and obstetric operations.

Total Intravenous Anesthesia with Spontaneous Ventilation without Intubation
(Minor cases not requiring muscle relaxation)
- Induction: Ketamine 1.5-2.0 mg kg⁻¹ + Diazepam 0.1-5 mg kg⁻¹
- Maintenance: Ketamine 0.5 mg kg⁻¹ intermittently at 15-20 minutes intervals.
Total Intravenous Anesthesia with Controlled Ventilation by AMBU
(For those patients requiring muscle relaxation)

- Induction: Thiopentone 5 mg kg-1.
- Intubation: Using muscle relaxants short or long acting.
- Maintenance: Controlled ventilation with AMBU, paralyzing the patient by long acting muscle relaxants and supplemented with
  a) Pethidine, Diazepam and intermittent Thiopentone
  or,
  b) Ketamine 2mg kg-1 & Diazepam (7.5-10 mg bolus)

Management of Cardiac Arrest

First Available Person
- Place the patient supine on a hard surface.
- Give a sharp blow on the pericardium.
- Start external cardiac message.

Procedure
- Kneel bedside the chest of the patient
- Place lower part of your palm of one of your hands on the lower half of the sternum and the other hand on the first.
- Compress firmly and rhythmically at the rate of about 80 compressions per minute. Force on compression must be such that the sternum is depressed 1-1.5 inch from its original position.

Second Available Person
- Extend the neck of the patient, clear out the oral cavity and oropharynx and insert an oropharyngeal airway.
- Start mouth-to-mouth respiration.

Procedure
- Kneel bedside the head of the patient opposite to the messaging person.
- Pinch the nostril of the patient with one hand and keep his head in extended position with the other.
- Inhale as deeply as you can. Put your mouth around that of the patient. Blow hard, so that the patient’s chest visibly expands.
- Remove your mouth and allow the patient to expire passively.
- Repeat this procedure about 20 times per minute. Synchronize with cardiac message. Blow once for every five compressions.
- If AMBU resuscitator set (AMBU bag and mask) is available, use it instead of your mouth. Place the mask over the mouth and nose of the patient tightly, while maintaining the chin traction with the left hand. Press hard on the bag and watch for chest expansion of the patient. Then release the pressure on the bag to allow expiration.

Third Person Available
- Establish a venous line and start intravenous drip.
- Connect the patient to ECG monitor to obtain ECG strip if possible. Or else, feel for the carotid pulse. If there is still no pulse after precordial blow, or if asystole can be confirmed by ECG, give 1-2 mg of Inj. Adrenaline I.V. Repeat, if there is no effect.
Watch for the following parameter

- Color of the skin: Improving
- Cyanosis: Disappearing
- Pulse: Carotid and Femoral present
- Periphery: Warming up
- Pupils: Contracting and reacting to light

Make the Resuscitation Kit Available

In Ventricular Fibrillation
- Precordial blow & continue message
- Saline drip
- Sodi-bi-carb
- DC shock
- Lignocaine

In Asystole
- Saline drip
- Adrenaline
- Atropine
- Sodi-bi-carb
- Calcium Chloride
- Isoprenaline

Conclusion

Young fit patients should never have bad outcome if proper anesthesia, surgery and postoperative management are carried out. Patients with systemic diseases or predicted difficulty should always be referred to specialists.
POST ABORTION CARE (PAC)

Introduction
A large proportion of maternal deaths are attributable to complications of abortion. Unsafe abortion, i.e., the termination of pregnancy performed or treated either by untrained or unskilled persons, and its complications are a major direct cause of death among women of reproductive age. This high level of mortality worldwide results from unsafe abortion could be prevented by providing emergency management of abortion complications and contraceptive services.6

Women, who seek emergency treatment for abortion complications, such as bleeding, infection, and injuries to the reproductive tract, should receive priority attention in reproductive health care programs. They are usually discharged without counseling on postoperative family planning or other reproductive health issues.

Women, who have had an induced abortion due to an unwanted pregnancy, are likely to have repeated abortion unless they receive appropriate family planning counseling and services. Preventing repeated unsafe abortions is important for reproductive health programs because it saves women's lives, protects women's health and reduces the cost of emergency services needed for abortion complications.

Abortion situation in Bangladesh

In Bangladesh, complications from unsafe abortion are one of the leading causes of maternal mortality. It is a serious health problem. About 25 percent of the pregnancies are reported to be unwanted. The World Health Organization estimates that the thousands of maternal deaths, which occur every year in the countries of South Asia including Bangladesh, 14% of them are due to abortion.7

In Bangladesh, Menstrual Regulation (MR) has been legal since 1975. However, many women do not know the places where MR services are available and are ignorant about the time limit. As a result, a substantial number of women obtain abortion services from Traditional Birth Attendant (TBA) / unskilled provider or attempt self-abortion.

According to a survey, the estimated number of women hospitalized for abortion complications in 1996 was over 90 thousand. Of these 58% suffered from complications of induced abortion. According to this survey, the total estimated number of induced abortions is over 52 thousand. This highlights the unnecessary and miserable sufferings of women in Bangladesh.

It is anticipated that PAC services, if can be started in a systematic manner at all levels of the health care system, would result in a significant reduction in maternal morbidity and mortality.

Key Elements of PAC

Comprehensive PAC, which includes both curative and preventive care, has three key elements and they are:

• emergency management for complications of spontaneous or induced abortion
• post abortion family planning counseling and services
• coordination between emergency post abortion treatment and comprehensive reproductive health care services

Post Abortion Care (PAC) is important because it

• protects women's health
• reduces women's suffering
• can prevent repeated abortions
• offers opportunities to meet the multiple health needs of women
• reduces health care costs

Overview of Abortion

Abortion is the termination of pregnancy before the period of viability, which is considered to occur at 22\textsuperscript{nd} week.

Types of Abortion:

1 **Spontaneous Abortion**: Spontaneous Abortion is presumed when expulsion of the product of conception occurs without medical or mechanical intervention. This is most commonly known as "miscarriage". Clinically, spontaneous abortion may present as one of the following categories:

   • **Threatened Abortion**: Threatened Abortion is presumed when any bloody vaginal discharge or vaginal bleeding appears during the first half of pregnancy. This may or may not be accompanied by mild cramping pain resembling that of a menstrual period or by low backache. The bleeding of threatened abortion is frequently slight, but it may persist for days or weeks.

   • **Inevitable Abortion**: Inevitable Abortion is presumed when the product of conception is in the process of expulsion. It is the state from where continuation of pregnancy is impossible.

   • **Incomplete Abortion**: Incomplete Abortion occurs when products of conception are incompletely expelled through a dilated cervix. Effective contraction of the uterus is prevented with subsequent bleeding. Tissue, usually chorionic or placental, remaining in the uterus can cause profuse bleeding and profound hypovolemia.

   • **Complete Abortion**: Complete Abortion occurs when all the uterine contents have been expelled spontaneously and completely. There is cessation of pain, scanty blood loss and a firmly contracted uterus.

   • **Missed Abortion**: Missed Abortion occurs when the embryo dies or fails to develop and the gestation sac is retained in the uterus for weeks or months. Mild symptoms like those of threatened abortion are followed-by absence of the usual signs of progress of the pregnancy. Immediate evacuation of the products of conception is mandatory once the diagnosis has been established.

   • **Recurrent or Habitual Abortion**: Recurrent or Habitual Abortion refers to any woman who has had three or more consecutive spontaneous abortions.
2 Induced Abortion:

Induced Abortion is the termination of pregnancy before the time of foetal viability with the use of medical or mechanical interventions. Abortions may be self-induced, or utilize illegal services available either from untrained or unskilled providers in the community. Abortion may be induced in a variety of ways: insertion of a solid object into the uterus or dilatation and curettage or placement of harmful substances or drugs into the vagina. These are unsafe procedures when performed improperly and under unhygienic conditions, causing life-threatening complications, including tetanus, haemorrhage, gangrene and sepsis.

Management of abortion:

- counseling - pre, during and post procedure counseling on abortion and abortion related complications should be provided;
- immediate management of emergency situation like stabilization of the patient’s general condition;
- perform Manual Vacuum Aspiration (MVA);
- management of pain by verbacaine/Tab. Ibuprofen;
- strictly follow the infection prevention procedure;
- referral and linkages with other reproductive health services;
- BCC activities, which include awareness raising on abortion complications, information about the availability of service, referral to Comprehensive EOC facility from MCWC and increase referral from the community to MCWC etc;
- referral to the relevant agencies for legal aid;
- maintain proper record keeping system for reporting.

For further details, please see Technical Standard and Service Delivery Guideline on Post Abortion Care Ministry of Health and Family Welfare (MOHFW) and EngenderHealth, Bangladesh. 2002.
Post Abortion Care

### Signs and Symptoms

<table>
<thead>
<tr>
<th>Sign/Symptom</th>
<th>Description</th>
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<tbody>
<tr>
<td>Amenorrhoea</td>
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<tr>
<td>Vaginal bleeding or foul smelling discharge</td>
<td></td>
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<tr>
<td>Abdominal pain</td>
<td></td>
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<tr>
<td>Temp. high or sub normal</td>
<td></td>
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<tr>
<td>Any possible interference with pregnancy (include abortion)</td>
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<tr>
<td>Pulse rapid</td>
<td>Rigid abdomen</td>
</tr>
<tr>
<td>B.P. normal or low</td>
<td>Absent bowel sound</td>
</tr>
<tr>
<td>Rebound tenderness</td>
<td>Abdominal distension</td>
</tr>
<tr>
<td>Abdominal motion tenderness</td>
<td>Enlarge uterus</td>
</tr>
<tr>
<td>Absent bowel sound</td>
<td>Pelvic mass</td>
</tr>
</tbody>
</table>

### General Management

- **Reassurance/confidentiality**
- **Pain relief**
- **IV access: IV fluids, maintenance of nutrition**
  - Inv: Hb%, TC, DC, SR Gr & Rh cross matching, urea, electrolytes, pus for c/s,
  - X-ray abdomen erect posture, USG abdomen
- **Antibiotics**
  - Inj. Tetanus toxide 0.5 ml IM/Tetanus Immunogibulin IM
  - Urinary catheter, strict fluid balance, maintain intake output chart,
  - Monitor temperature, pulse BP, respiration, intake output.

### Specific Management

- **Screen for life threatening complication**

  - **Vaginal bleeding**
  - **Infection**
  - **Perforation of uterus**
  - **Cervical/vaginal tear**
  - **Septic abortion**
  - **Peritonitis**
  - **Metritis**
  - **Intra abdominal injury**
  - **Septic abortion**
  - **Pelvic abscess**
  - **Pelvic pain/distension**
  - **Persistent spiking fever/chills**
  - **Tender uterus**
  - **Poor response to antibiotics**
  - **Swelling in adnexae & POD**

- **Fluctuant abscess in POD**
- **Spiking fever continues (rule out other cause)**
- **Tense & hard abdomen**
- **Rebound tenderness**
- **Anorexia/nausea/vomiting**
- **Fever/chills**
- **Lower abdominal pain/distension**
- **Absent bowel sound**
- **Rebound tenderness**
- **Anorexia/nausea/vomiting**
- **Tender uterus, shock**
- **Infuse/transfuse as necessary**
- **Give combination of antibiotics**
- **If fever after 72 hrs reevaluate/revisit diagnosis**
- **If not improved within 72 hrs perform peritoneal lavage Rule out bowel injury & ectopic pregnancy**

- **Prepare/Refer for laparotomy**

- **All patients should be counselled properly while providing Post Abortion Care**

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IV Fluids: Normal Saline 1 liter every 6 hours.
Antibiotics: Ampicillin IV 2 gm every 6 hours + Gentamycin 5 mg /kg IV every 24 hours + Metronidazole 500 mg IV every 8 hours
POD: Pouch of Douglas
Ref: Technical standard & service delivery guideline: Post Abortion Care.
Skilled Birth Attendant

In Bangladesh 90% of all deliveries occur at home and 80% of the maternal deaths also occur in the same situation during pregnancy or immediately after childbirth. Untrained/unskilled traditional birth attendant (TBA) and relatives conduct these deliveries. They can neither recognize the risk factor during pregnancy and delivery, nor are able to deal with the situation because they are not skillfully trained. WHO recognizes Skilled Birth Attendant (SBA) as delivery service providers who are trained with skill to deal with normal deliveries along with complications. These days, the number of deliveries conducted by Skilled Birth Attendant is taken as Maternal Health indicator. Bangladesh has only 13% deliveries conducted by SBA, which includes delivery by specialist, doctors, nurses and midwives, whereas is many of the developing countries the figure is around 60 – 80 percent.

Bangladesh Government had in the past made strategies to reduce maternal mortality except addressing adequately the home delivery situation. Presently, the government has taken the strategy of creating SBA for home delivery and accordingly a pilot project was undertaken in 6 districts. The Family Welfare Assistant (FWA) and Female Health Assistant (FeHA) working in the community have been trained for 6 months in district level hospitals and MCWCs to make them SBA. FWA and FeHA are the grass root level service providers within the Government’s Health and Family Planning infrastructure, available round the clock for delivery services.

The pilot project for training of SBA (FWA and FeHA) was started from 1st March 2003 and completed by 31st August 2003. Fifteen SBAs were trained from each upazila (sub district) belonging to each of the district and a total of 90 SBAs have been trained, and certified to practice in the field.

Both WHO and UNFPA are committed to assist the government to expand the program in more districts once the piloting is over. Accordingly, UNFPA has already started providing assistance in the expansion of the program in 20 additional districts, along with the 3 pilot districts. Ten more districts will be taken in near future. The piloting of SBA program was implemented by the technical support of Obstetrical and Gynecological Society of Bangladesh (OGSB). The GOB has decided to train all the FWA and FeHA to make them SBA in phases and thereby covering the whole country. The NGOs and private sector have the opportunity to train their paramedics as SBA in the line of the pilot project, keeping the standard set by the government program.

An accreditation process has been developed on SBA training program. All the norms, standards and practices are set within the accreditation process to keep the quality of training high.

The SBAs of the pilot project are now engaged in delivery care in their respective areas. Their performance in terms of delivery care is being monitored. It is found that the trained SBAS are conducting 50% of deliveries in their catchment area. Many complicated cases are also being referred to Comprehensive EOC centers at Upazilas and Districts.

Arrangement has been made to evaluate the training performance of SBA pilot training program by competent firm/agency.
Components of SBA Program

The five components of the SBA training program to be accredited are:

- Training centers and their physical facilities from GOB, private sector and NGOs
- District Trainers and facility based/field instructors
- National SBA curriculum and methodology
- SBA trainees
- Performance assessment of trainees.

Criteria are specified for each component and need to be further developed into standards. The standards need to be specified for two levels of attainment.

Basic standard: It means that the standard must be met by every training unit and fulfillment demonstrated during inspection/evaluation.

Standard for quality development: This means that the standards are in accordance with the consensus about best practices for essential competency based training for pregnancy, childbirth and neonatal care, GOB, private sector and NGO training institute should be able to demonstrate fulfillment of some or all of these standards or that initiatives to do so have or will be taken. Fulfillment of these will vary with the stage of development of the training institutes, their resources and the training policy.

Trainers for SBA training

Trainers for SBA are of three types:

1. **The clinical trainers** are responsible for conduction of clinical part of the classroom sessions, demonstrations, skill practice, clinical practice in district hospital and MCWC. Clinical trainers must be the staff of the organization.

2. **The non-clinical trainers** must be responsible for rest of the topics like community awareness, maternal health situation, counseling, record keeping etc. Additional responsibility for the non-clinical group will be to coordinate and manage the SBA training program.

3. **Field Instructor** is senior nurse midwife having experiences in home deliveries. They are recruited for supportive supervision of the SBA trainees and will stay with the trainees during the community practice (8 weeks). At least three field instructors are needed for each district. After recruitment, they must be oriented on the SBA training modules.

Selection criteria of SBA

The minimum selection criteria of SBA trainees were prepared on the recommendation from need assessment study and need improvement. The selection criteria of trainees are:

- A maximum age of 45 years
- Maturity in approach/attitude and comfortable in addressing and working in Reproductive Health
- Education – minimum standard 10
- Service experience more that 5 years
- Must be residing at the place of posting
- Willingness to stay for 6 months at district for training
- Willingness to work as community midwife/SBA for at least 5 years after the training
- Willingness to provide service at any time whenever she is called for emergency
- Acceptable to the community
- Ability to work in an integrated referral system
Fistula and cervical cancer

Each and every pregnancy is a risk threatening the life of a woman. Maternal mortality is a serious concern in Bangladesh. With the current maternal mortality rate of 3.2 per thousand live births, the estimated life-time risk of dying from pregnancy and child-birth related causes in Bangladesh is about 100 times higher than developed countries. Like maternal mortality, the situation of maternal morbidity in Bangladesh is extremely distressing. In Bangladesh, there are 9 million women who have survived the rigors of pregnancy and child birth to suffer from lasting complications such as, fistulae, uterine prolapse, inability to control urination, painful intercourse. These reproductive morbidities diminish women’s fertility, productivity and quality of life, as well as the health and survival of the next generation. These also make them social outcasts in some cases, some are turned out of their homes and rejected by their husbands/ families.

Although it is known that the obstetric fistula (both vasicovaginal and rectovaginal) occurs among women in Bangladesh, not much is known about the incidence and prevalence of the same in this country. The report on “Situation Analysis of Obstetric Fistula in Bangladesh” finds that the number of women living with fistula is estimated to be 1.69 per 1000 ever married women. This number is not a meager figure. Fistula occurs when a woman is in obstructed labor for days on end without medical help and cannot get caesarean section. The blood supply to the soft tissues surrounding mother’s bladder, rectum and vagina are cut off due to the prolonged pressure of the baby’s head against the mothers’ pelvis. The injured tissue soon rots away, leaving a hole or fistula. If the hole is in between the women’s vagina and bladder, she loses control over her urination; if it is between her rectum and vagina, she loses her bowel control. A study conducted by UNFPA and EngenderHealth also shows that many fistula sufferers are abandoned by their husbands, forced out of their homes, ostracized by family and friends and even disdained by health workers, who consider them ‘unclean’. Without skills to earn a living, some have no choice but to beg to survive. They are so ashamed that they even do not like to share their experiences with others. Women living with fistula in Bangladesh are usually in the age group of 15-30 years, illiterate, poor and unaware that treatment is available, or cannot access or afford it, according to the findings of the report.

In Bangladesh, the practice of allowing village attendants to assist with the delivery is widely accepted in the community. Almost all births in Bangladesh (more than 90%) occur at home. There are many causes under which women receive unassisted delivery which sets the stage for the onset of obstetric fistula and rules out the possibilities of enabling early diagnosis of prolonged labor, or referral to health centers with trained delivery personnel. In this context it is likely that the number of women living with obstetric fistula will be high in Bangladesh. Reconstructive surgery can cure this injury.

With the support of UNFPA, Dhaka Medical College Hospital has established a National Referral Center for the repair of fistulae in Bangladesh. International trainers have trained the local team of this hospital for the treatment of fistulae. The Obs/Gyne department of this Medical College Hospital is supported by modern equipment and other logistics for Vesico Vaginal Fistula management. Orientation of service providers from the MCWCs, District and upazilla level were done on the establishment of Fistula center in Dhaka Medical College with good referral system and reduction of morbidity.
Fistula is a preventable and treatable condition. Awareness raising program through media and other means would much help in prevention. Moreover treated fistula cases need to be rehabilitated. Rehabilitation could be done through psychological counseling to repair emotional damage, vocational training to develop skills to maintain living wage and social support. Through a concerned effort which includes prevention and treatment the issue obstetric fistula in Bangladesh can easily be addressed.

Cervical cancer is the second most prevalent cancer among women worldwide. An estimated 468,000 new cases of cervical cancer and 233,000 deaths occurred in the year 2000 with almost 80% of the cases of cervical cancer happening in developing countries\(^9\). In Bangladesh different hospital based data mention that 20-30% of female cancer is cervical cancer. The risk factors for high prevalence of cervical cancer in Bangladesh is related to early -marriage, early - starting of sexual activity; multiparity, STDs, low socio-economic condition etc. One of the most important reasons for prevalence of higher cervical cancer in Bangladesh is lack of effective screening programs. In Bangladesh, so far no effective cancer-screening program has been initiated at the national level by the government. The Government takes some steps for early detection, prevention of new cancer cases, identification and effective treatment for existing cancer cases with the support of UNFPA. In the 6\(^{th}\) country program of UNFPA, cervical cancer screening using VIA (Visual Inspection by Acetic Acid) is piloted in the selected UH&FWCs. FWVs, Paramedics from the UH&FWCs will be trained on cervical screening by VIA method and patients found to have the abnormalities will be referred for treatment to the concerned MCWCs/District hospitals/Medical College Hospitals. In Cervical screening program based on VIA method in Bangladesh, paramedics need to be trained on counseling, motivation, referral and follow up of women regarding VIA and performing VIA at the union/upazila/district level. In this program women should be advised to attend UH&FWCs for counseling and education on cervical cancer screening. After inspection and VIA assessment, VIA findings will be recorded in a separate register. The women will be informed about the results. Those with abnormal results will be referred for further evaluation to the MCWCs/ Medical College Hospitals/Bangabandhu Sheikh Mujib Medical University (BSMMU).

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2.4 : Essential Newborn Care

Introduction
At birth the newborn must adapt quickly to life outside the womb. The newborn’s body must make many changes. These changes begin at birth and continue for the newborn period. The changes the newborn makes are: start breathing, regulating his/her temperature, feeding, and developing the ability to fight infections.

Newborn/Baby Care Overview
Newborn/Baby Care includes all the care given to a baby after birth up to 28 days. This care includes:

- Immediate care at birth
- Baby care during the first 6 hours
- Baby care 6 hours to 28 days

Preparing for a baby’s birth
Prepare the environment, equipment, and supplies that are needed for the care of the newborn at birth. Preparation includes the following:

Infection Prevention
Infection Prevention (IP) practices help to prevent transmission of infection to the mother or baby. They reduce the risk of passing diseases such as hepatitis B and HIV/AIDS among the woman, her newborn, health workers and staff, including cleaning and housekeeping staff in health care facilities. Recommended IP practices are based on the following principles:

- Wash hands often. Hand washing is the easiest and most effective way to prevent passing germs.
- Consider every person as possible infectious.
- Use the infection prevention steps (decontamination, cleaning, high level disinfection) to prepare equipment, supplies, linens and surfaces before the baby is born.
- Wear gloves before touching anything wet – broken skin, mucous membranes, blood or other body fluids.
- Use barriers (protective gloves, face masks, aprons) if splashes or spills of any body fluids are possible.
- Throw away wastes safely (placenta, blood, needles).

Environment
Make sure the room is:

- Clean.
- Warm. The temperature of the room should be warm (at least 25°C). A heat source can give added heat when necessary. Close a door or window to prevent drafts. Even in hot climates the temperature drops at night.
- Lighted. Care givers must see the newborn to assess color and breathing. If natural light is not enough, have candles, lamps or other kinds of lights.
- Private. In a health facility have a curtain or screen to give the privacy. In the home, ask the mother who she wants to be present.

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10 Save the Children: SNL Project, June 2003.
Records
• Newborn record card
• Immunization card

Equipment and Supplies
IP equipment and supplies
• Chlorine solution 0.5% for decontamination and cleaning.
• Cleaning cloths
• Clean water. If no clean, running water in room, a portable container of water must be available.
• Clean soap, nail brush, and personal hand towels.
• Separate containers for used linen, dressings/swabs, and medical instruments (at home can use buckets and/or plastic bags)
• Puncture-resistant container to throw away needles
• Buckets and brushes for decontamination and cleaning

Linens for Mother
• Bed linen and warm blankets
• Macintosh to put on bed or mat
• Extra cloths to collect body fluids
• Clean, warm towels

Linens for Baby
• Cloths or towels for drying and cleaning skin of the newborn
• Warm cloths for covering newborn
• Hat and clothing for the baby (diapers, socks)

Birthing Equipment and Supplies
• Protective clothing: gloves (can be clean or sterile), apron
• Delivery kit, including cord ties and clean razor blade or scissors for cutting the cord
• Container for placenta
• Clean, warm surface for the newborn, if skin-to-skin with the mother is not possible
• Scales to weigh newborn
• Thermometer
• Syringes and needles
• Wipes and clean water for cleaning injection sites
• Swabs/gauze
• Cord ties or clamps
• Equipment and supplies to do newborn resuscitation.

☐ Immediate Newborn Care
Most babies breathe and cry at birth with no help. It should be remembered that the baby was warm in the mother’s womb (at least 98°F), quiet, and the amniotic fluid and the walls of the womb gently touched the baby. We too should care for the baby gently and keep the baby warm. Following steps need to be followed for the baby who is breathing well.
Steps for Immediate Newborn Care

<table>
<thead>
<tr>
<th>Step 1</th>
<th>Dry and stimulate</th>
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</thead>
<tbody>
<tr>
<td>Step 2</td>
<td>Assess breathing and color</td>
</tr>
<tr>
<td>Step 3</td>
<td>Decide if resuscitation is needed</td>
</tr>
</tbody>
</table>

Steps 1-3 happen almost at the same time

<table>
<thead>
<tr>
<th>Step 4</th>
<th>Give baby to mother to keep warm</th>
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<tbody>
<tr>
<td>Step 5</td>
<td>Tie and cut the cord</td>
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<tr>
<td>Step 6</td>
<td>Start breastfeeding</td>
</tr>
</tbody>
</table>

**Step 1: Dry and stimulate**
Dry the baby immediately, including the head. Rub the baby’s body, using a clean, warm towel.

**Step 2: Assess breathing and color**
As you dry the baby, check if the baby is breathing, having trouble breathing or is not breathing. Look at the baby’s color the face, chest and gums should be pink.

**Step 3: Decide if the baby needs resuscitation**
If the baby is not breathing or is gasping, it needs resuscitation. Tie and cut the cord quickly. Leave the cord long. Put the baby on a flat, warm surface, and start resuscitation immediately. Call for help because a second person is needed to care for the mother.

**Step 4: Give baby to mother to keep warm**
**Skin-to-skin Contact**
At birth, remove the wet cloth used to dry the baby. Put the baby directly on the mother’s abdomen for skin-to-skin warmth. Cover both with a warm cloth or blanket and cover the baby’s head. All babies lose heat quickly after birth, especially if a baby is low birth weight.

The advantages of skin-to-skin contact are:
- Mother’s warmth keeps baby warm.
- Helps close contact between mother and baby, supporting mother/infant bonding.
- Helps with early breastfeeding.

If skin-to-skin contact with the mother is culturally not acceptable to her, dry and wrap the baby. Make sure the head is covered. Place the baby next to the mother.

**How do baby lose heat?**
When you know how a baby loses heat, you then know how to prevent the heat lose. There are four ways a newborn loses body heat. Below is a chart that explains these four ways heat is lost and actions to stop the heat loss.
Ways a baby loses heat | Actions to stop the heat loss
---|---
1. When amniotic fluid or water on the baby’s skin dries | • Dry the baby as soon as it is born
• Remove the wet cloth used for drying
2. When the baby is naked and put on a cool surface (such as a table, weighing scales, or cold bed) | • Make sure a warm blanket covers a scale, table or bed
• Put baby skin-to-skin with the mother
3. When the baby is in cool air or there is a wind from open doors, windows or a fan. | • Keep the baby covered
• Put hat or cloth on baby’s head so the head will not be in the cool air
• Prevent drafts
4. When the baby is near, but not in contact with cool objects (walls, tables, or cabinets) | • Keep baby in contact with the mother or another person
• Make sure the room is warm

Notes: 1) Most cooling of the newborn happens during the first minutes after birth. In the first 10-20 minutes, the newborn may lose enough heat for the body temperature to fall 2-4°C. The baby can lose even more heat as time passes if proper care is not given.
2) About 25% of the heat loss may be from an uncovered head. Dress the newborn in warm clothing, including a hat.
3) Warm bedding and bed sharing with the mother helps to keep the baby warm (the body needs one or two more layers of clothing and bedding than adults).
4) Research shows that bed sharing promotes breastfeeding by encouraging the baby to feed more often and for longer times.

Step 5: Tie and Cut the cord
If the baby is skin-to-skin with the mother, ask her to lift one side of the baby so you can easily see and cut the cord. Then do the following:
1. Tie three cord ties tightly around the cord:
   • **First cord tie:** 2 fingers from the base of the cord
   • **Second cord tie:** 1 finger away from the first tie.
   • **Third cord tie:** Milk the cord and put a 3rd tie 4 fingers away from the 2nd tie.
2. Cut the tie between the 2nd and 3rd ties with a new razor blade or sterile scissors. Cover the part of the cord you are cutting so no blood splashes on you.
3. Do not put anything on the cord stump.

Step 6: Start Breastfeeding
If everything is normal, do not separate the mother and baby for weighing or measuring until the baby has breastfeed. Encourage breastfeeding within the first hour of birth. Help the mother at the first feed. Make sure the baby is correctly positioned and attached to the breast. Do not restrict the time the feed lasts. Early and unrestricted feeding gives the newborn energy for heat and nutrition to grow.
Baby Care During the First 6 Hours

The first 6 hours of life is a time of many changes inside the baby. It is also a time the baby is adjusting to living outside the womb. For those reasons careful monitoring and care are important.

Assess the following every ½ to 1 hour during the first 6 hours of life:

<table>
<thead>
<tr>
<th>Breathing</th>
<th>The normal baby will breath 30-59 times a minute with no gasping, grunting, or indrawing of the chest.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warmth</td>
<td>Check if baby is warm: 1) feel baby’s abdomen or back with your hand (also feel someone else who you know has no fever to compare) or, 2) use thermometer, if available.</td>
</tr>
<tr>
<td>Color</td>
<td>Check that the face, chest and gums are pink.</td>
</tr>
<tr>
<td>Bleeding</td>
<td>Check the cord for bleeding. As it dries out it may become loose from the cord tie. If the cord tie is loose, tie it again tightly with another cord tie.</td>
</tr>
</tbody>
</table>

Give normal newborn care

- Keep the baby warm:
  - Skin-to-skin contact with the mother
  - Cover both mother and baby with a blanket
  - Cover the baby’s head with a cloth or hat
- Continue to support the mother to breastfeed
- Teach the mother and family how to:
  - Check the baby’s breathing, warmth and color
  - How to look for any bleeding from the cord
  - How to keep the baby warm

Give other care based on problems or needs identified.

Keep records.
### Newborn Physical Examination: Normal Findings

<table>
<thead>
<tr>
<th>What to change</th>
<th>Normal findings</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Look for colors</strong></td>
<td>• Face, chest, and gums pink</td>
</tr>
<tr>
<td></td>
<td>• Hands and feet may be blue for 48 hours.</td>
</tr>
<tr>
<td><strong>Look at breathing</strong></td>
<td>• Quite, shallow breathing</td>
</tr>
<tr>
<td><strong>Count the breathing</strong></td>
<td>• 30-59 breaths in 1 minute</td>
</tr>
<tr>
<td><em>(count 1 full minute)</em></td>
<td>• May be irregular, hard breathing followed by up to 20 seconds without a breath.</td>
</tr>
<tr>
<td><strong>Look at posture and tone</strong></td>
<td>• Arms and legs flexed</td>
</tr>
<tr>
<td><strong>Count the heart rate</strong></td>
<td>• 100-160 beats in 1 minute</td>
</tr>
<tr>
<td><em>(Count 1 full minute)</em></td>
<td>• Short periods of change in heart rate are normal (such as with sleeping, crying or breastfeeding).</td>
</tr>
<tr>
<td><strong>Feel for warmth</strong></td>
<td>• Baby’s abdomen or back (best to delay examination if baby’s temperature is low)</td>
</tr>
<tr>
<td><strong>Look at activity and movement</strong></td>
<td>• Moves both legs and arms equally</td>
</tr>
<tr>
<td></td>
<td>• Sucks when nipple is rubbed on cheek</td>
</tr>
<tr>
<td><strong>Look at skin</strong></td>
<td>• Tiny white bumps on he face, milia.</td>
</tr>
<tr>
<td><strong>Look at and feel the head</strong></td>
<td>• Uneven (asymmetrical) shape due to molding from pressure of the birth canal. Goes away by 48 hours.</td>
</tr>
<tr>
<td><strong>Look at the eyes</strong></td>
<td>• No discharge</td>
</tr>
<tr>
<td><strong>Look into the mouth</strong></td>
<td>• Lips, gums and palate are whole and the same on both sides.</td>
</tr>
<tr>
<td><em>(When baby cries look into mouth or put one gloved finger into the mouth and feel the palate for any opening)</em></td>
<td></td>
</tr>
<tr>
<td><strong>Feel the neck</strong></td>
<td>• No lumps or swelling</td>
</tr>
<tr>
<td><strong>Look at the chest</strong></td>
<td>• Chest moves equally with breathing</td>
</tr>
<tr>
<td></td>
<td>• Abdomen pushes out with each breath</td>
</tr>
<tr>
<td><strong>Look at the abdomen and Feel gently</strong></td>
<td>• Rounded, soft</td>
</tr>
<tr>
<td></td>
<td>• Umbilical cord is tied, not bleeding , dry</td>
</tr>
<tr>
<td><strong>Look at legs</strong></td>
<td>• Both legs are the same length</td>
</tr>
<tr>
<td><em>(Extended both legs by holding ankles. Compare length of legs and skin folds of thigh and buttocks)</em></td>
<td>• Skin folds are symmetrical (same on both sides)</td>
</tr>
<tr>
<td><strong>Look at feet and ankles</strong></td>
<td>• Both feet move easily up (toward the knee) and down</td>
</tr>
<tr>
<td><em>(Move ankle joints in all positions)</em></td>
<td>• The front of the foot moves easily into a walking position</td>
</tr>
<tr>
<td></td>
<td>• At rest the feet may appear badly formed due to baby’s position in the uterus</td>
</tr>
<tr>
<td><strong>Look at the back and feel the spine</strong></td>
<td>• The skin of the back has no dents or openings</td>
</tr>
<tr>
<td></td>
<td>• The spine has no defects</td>
</tr>
<tr>
<td><strong>Look at the anus</strong></td>
<td>• Baby passes meconium by 24 hours</td>
</tr>
<tr>
<td><strong>Ask if meconium has been passed</strong></td>
<td></td>
</tr>
<tr>
<td><em>(Do not insert instruments or finger to test anus)</em></td>
<td></td>
</tr>
<tr>
<td><strong>Look at the girl’s external genital organs</strong></td>
<td>• White vaginal discharge</td>
</tr>
<tr>
<td><em>(Gently spread the legs)</em></td>
<td>• Bloody vaginal discharge that starts on day 2-3 and continues like a normal menses up to day 7</td>
</tr>
<tr>
<td><strong>Look at the boy’s external genital organs</strong></td>
<td>• Urethral opening is at the end of the penis.</td>
</tr>
<tr>
<td><strong>Feel the scrotum</strong></td>
<td>• Two testes are felt in the scrotum. The testes are not down and cannot be felt in many preterm and some term newborns.</td>
</tr>
<tr>
<td><strong>Check temperature</strong></td>
<td>• 97.5 – 99°F (36.5 – 37.5°C) or,</td>
</tr>
<tr>
<td></td>
<td>• The temperature of the chest or back feels the same as the temperature of a healthy person (feeling with back of hand)</td>
</tr>
<tr>
<td><strong>Weigh the baby</strong></td>
<td>• 2.5 up to 3.999 kg</td>
</tr>
</tbody>
</table>
Identify Needs or Problems

1. Think about your findings from the examination of the baby and ask yourself: Are all the findings normal?
   - If yes, tell the mother her baby is healthy and normal.
   - The baby needs normal care.

2. Are any of the findings not listed under ‘Normal Findings’?
   - If yes, look at the table below: Baby Physical Exam: Abnormal Findings and Action
   - Look at the ‘Abnormal Findings and Possible Cause’ column and find what may be the baby’s problem.
   - Look at the ‘Action’ column to find the action for the problem.
   - Explain to mother what abnormal findings may mean and what action is needed.
   - Also, see the section ‘Newborn Problems’.

<table>
<thead>
<tr>
<th>What</th>
<th>Normal Findings And Possible Causes</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Color</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yellow or jaundiced</td>
<td>Caused: May be infection or mother may be Rh- and Baby Rh+</td>
<td>See the section: Newborn Problems</td>
</tr>
<tr>
<td>Pale, white</td>
<td>Causes: May be blood loss, poor circulation of blood, or baby may not be getting enough oxygen.</td>
<td>• Make sure cord tie is tight. • Give oxygen (if available)</td>
</tr>
<tr>
<td>Blue color including lips, tongue, and gums (cyanosis)</td>
<td>Causes: May not be getting enough oxygen.</td>
<td></td>
</tr>
<tr>
<td><strong>Breathing</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grunting (sound made with expiration)</td>
<td>• Gasing (sound made with inspiration) • Flaring nostril • In drawing of chest between ribs</td>
<td>REFER</td>
</tr>
<tr>
<td>Blue color including lips, tongue, and gums (cyanosis)</td>
<td>Causes: May not be getting enough oxygen.</td>
<td></td>
</tr>
<tr>
<td><strong>Count the breathing</strong></td>
<td>60 Breaths or more in 1 minute.</td>
<td>REFER</td>
</tr>
<tr>
<td>(Count 1 full minute)</td>
<td>Causes: Lung infection, fluid in the lungs, or premature baby.</td>
<td></td>
</tr>
<tr>
<td><strong>Posture and tone</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of flexion, limp, flaccid</td>
<td>Cause: Prematurity, birth injury, asphyxia</td>
<td>• Keep baby warm • Assure baby is breathing well • REFER if continues</td>
</tr>
<tr>
<td>Rapid, stiff or arching of back</td>
<td>Cause: Tetanus, birth injury</td>
<td></td>
</tr>
<tr>
<td><strong>Count the heart rate</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Count 1 full minute)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heart rate below 100</td>
<td>Cause: May not be getting enough oxygen, heart problems</td>
<td>REFER</td>
</tr>
<tr>
<td>Heart rate above 160</td>
<td>Cause: Infection, baby may be too hot or crying</td>
<td>Check if baby has on too many clothes or other reason for being hot</td>
</tr>
<tr>
<td><strong>Activity and movement</strong></td>
<td></td>
<td>REFER if continues</td>
</tr>
<tr>
<td>Moves only one arm or leg or unequal movement of one arm or leg</td>
<td>Cause: May be due to nerve injury during shoulder arrests or fits.</td>
<td></td>
</tr>
<tr>
<td>Excessive and high pitch cry</td>
<td>• Not sucking • Periods of not breathing (apnea) more than 20 seconds • Vomiting</td>
<td></td>
</tr>
<tr>
<td>Pustules, blisters, red or purple spots</td>
<td>Cause: Possible infection while the womb</td>
<td>See the section: Newborn Problems</td>
</tr>
</tbody>
</table>

Newborn Physical Examination : Abnormal Findings And Action

Count the heart rate

Heart rate above 160
Cause: Infection, baby may be too hot or crying

Check if baby has on too many clothes or other reason for being hot

Activity and movement

Moves only one arm or leg or unequal movement of one arm or leg

Cause: May be due to nerve injury during shoulder arrests or fits.

Refer if continues

Excessive and high pitch cry

Not sucking

Periods of not breathing (apnea) more than 20 seconds

Vomiting

Cause: May be bleeding or swelling in the brain

Refer
<table>
<thead>
<tr>
<th>What</th>
<th>Normal Findings And Possible Causes</th>
<th>Actions</th>
</tr>
</thead>
</table>
| **Head**     | • Firm swelling only on one side of skill suture (cephalhmatoma)  
Cause: Blood between the skull bone and skin due to a blood vessel breaking during birth. It starts a few hours after birth and increases in size.  
• Anterior frontanelle pushes outward  
Cause: Shows increased pressure in the head  
• Anterior frontanelle goes inward  
Cause: Shows possible dehydration | No action needed. The blood slowly absorbs and the swelling disappears after 1-3 months.  
REFER |
| **Eyes**     | • Discharging pus  
• Sticky eyes  
Cause: Eye infection, especially from gonorrhoea | See the section: Newborn Problems |
| **Mouth**    | • Cleft or opening in the lip  
• Cleft or hole in soft or hard palate  
Cause: Congenital or genetic abnormality | • REFER  
• Surgery will prevent serious feeding and speech problems |
| **Neck**     | • Swelling in front and middle of the neck  
Cause: May be a large thyroid (goiter)  
• No lumps or swelling  
Cause: May be from broken clavicle during birth | REFER |
| **Chest**    | • Pulling in of the chest at the bottom of the ribs or between the ribs  
• Quick breathing  
• Grunting  
• Color pale or blue  
Cause: Possible lung infection or asphyxia | • REFER  
• See the section: Newborn Problems |
| **Abdomen**  | • Greatly distended abdomen  
Cause: Possible obstruction  
• Sunken-in-abdomen with rapid breathing  
Cause: Possible hernia of diaphragm and abdominal contents go into chest and crowd lungs  
• Bleeding from umbilical cord stump  
Cause: As the cord dries the tie may loosen | REFER immediately  
REFER immediately  
Re-tie the cord tightly |
| **Legs**     | • One leg is shorter than the other  
• Skin folds are uneven  
Cause: May be due to hip joint congenital dislocation. | REFER |
| **Feet and ankles** | • One foot or both fixed in a position that would prevent normal walking  
• Club foot (cannot flex ankle joint upward) | REFER |
| **Back and spine** | • Defects of the spine include small holes in the skin up to large holes with a bubble of tissue on the outside (open neural tube defect) | REFER immediately |
| **Anus**     | • No passage of mucionium by 24 hours with distended abdomen  
Cause: May be blockage in baby’s intestines or anus | REFER immediately |
| **Girl’s external genital organ** | • Female organ are not clear | REFER |
| **Boy’s external genital organ** | • Urethra opens some other place, such as under the penis  
• Scrotum is empty (no testes) | • REFER  
• Do not do circumcision early as skin is needed for repair.  
• Examine the baby at 6 months.  
• REFER if the testes have not come down. |
What Normal Findings And Possible Causes Actions

| Temperature | • Temperature below 97.5 or above 99°F (below 36.5 or above 37.5°C) or  
|             | Baby’s chest or back feels cooler or hotter than the skin of a healthy person (when feeling with the hand) | See the section: Newborn Problems |

| Weight      | • Weight less than 2.5 kg  
|             | Cause: Low birth weight can be due to preterm birth, before 37th weeks, or poor growth in the womb. | • All low birth weight babies need special care. See the section: Low birth weight |

|             | • Weight 4 or more kg  
|             | Cause: Mother may be diabetic | • If large baby, feed baby as soon as possible after birth |

Baby Care: Six hours to 28 Days

The newborn and mother need constant attention after birth. The first 6 hours after birth is the time of greatest change. The changes being made put the baby at greater risk for problems. The first week and month of the newborn’s life is still a time of risk. Over half of the newborn deaths happen in the first 7 days. Although the risk of death decreases as times passes, careful attention is still needed during the first month of life.

Care of the Baby

An important part of the care you give to the baby, mother and family is teaching and counseling about baby care.

Warmth

The baby needs to be warm. The newborn’s body is small and not able to stay warm alone.

Ways To Keep The Baby Warm

<table>
<thead>
<tr>
<th>Ways To Keep The Baby Warm</th>
</tr>
</thead>
</table>
| ▪ Keep the room where the baby stays free from drafts and warm day and night (at least 25°C)  
| ▪ Dress baby in warm clothing, including covering for the head.  
| ▪ Dress or cover baby with one or two more layers of clothing than an adult.  
| ▪ Avoid tight clothing and coverings that do not let the baby move. These do not keep the baby as warm.  
| ▪ Place the baby in bed with the mother for warmth and breastfeeding.  
| ▪ Keep baby skin-to-skin with a warm blanket covering baby and mother:  
| - For all newborns for the first few hours of life  
| - If baby’s skin is cold. |

Sleep

• Babies need sleep.  
• Healthy babies sleep most of the time between feedings (up to 18 hours out of 24).  
• Healthy babies wake every 2-3 hours to feed. Sometimes at night the baby may sleep up to 4 hours between feeds.
Newborns do not distinguish day from night. They wake for night feeds. Because of this a mother needs to rest or sleep during the day when the baby sleeps. Over the first months of life the baby starts sleeping for longer times at night and staying awake more hours during the day. A baby cannot be easily awakened or who sleeps too much may be sick.

Love
- Babies need love.
- Babies learn they are loved when they feel comforted and secure.
- Babies signal their need for attention by crying. The baby who is crying may be hungry, uncomfortable, in pain or sick.
- When the mother talks to and makes eye-to-eye contact with the baby, it responds by looking at the mother. This communication promotes love between mother and baby.

Protection from Infection
The immune system (system to fight against infection) is not mature in a newborn. This means that a baby can get infections more easily than an older child or adult.

<table>
<thead>
<tr>
<th>Ways To Protect The Baby From Infection</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Wash hands with soap and water before and after handling the baby and keep fingernails short.</td>
</tr>
<tr>
<td>• Wash anything in the home that will touch the baby: clothing, bedding, covers.</td>
</tr>
<tr>
<td>• Keep sick children and adults away from the baby because of the risk of passing infection.</td>
</tr>
<tr>
<td>• Protect the baby from smoke in the air (from cigarettes or cooking fire) because this can cause breathing problems.</td>
</tr>
<tr>
<td>• Sleep under an insecticide treated bed net (if available) to protect from malaria.</td>
</tr>
<tr>
<td>• Try not to share baby equipment and supplies. Disinfect shared equipment after use if sharing is needed.</td>
</tr>
<tr>
<td>• Breastfeed exclusively. A mother’s milk contains infection fighting antibodies or substances that protect a baby.</td>
</tr>
<tr>
<td>• Make sure the baby gets all immunizations.</td>
</tr>
</tbody>
</table>

Bathing the baby
Babies do not need a bath every day. It is best to wait until the 3rd day to give the first bath. Do a sponge bath until the cord falls off and the umbilicus is healed, then give a full bath every 2-3 days. The baby’s buttock can be washed each time the diaper or cloth is soiled. Below is information on: • Keeping a baby warm during a bath, • Tips to prevent infection while bathing, • Giving a sponge bath, and • Giving a full bath.

Keep Baby Warm During a Bath
Remember that bathing exposes the baby to the risk of losing heat. Many of the steps of bathing a baby focus on keeping the baby warm.
- Delay the newborn’s first bath for 3 days. At three days of age babies’ temperatures are usually more stable.
- Bathe baby in a warm room with no wind.
• Make sure the bath water is warm. Test bathwater by touching the water.
• Wash the face first and the hair last. Much body heat is lost through the head so this area should be saved for last.
• Bathe baby quickly.
• Dry baby quickly warmly and place in contact with the mother after the bath.

Tips To Prevent Infection While Bathing
• Clean eyes by wiping with a clean cloth. Start near the nose and wipe outward.
• Look for signs of infection while you wash your baby (skin pustules or rashes, redness around and/or discharge from the umbilicus, or a pus-like discharge from the eyes).
• Wash baby’s bottom from front to back.
• Do not use lotion, oils or baby powders. Powders, in particular, can be dangerous to a baby.

Note: Powders are made up of very small particles that are easily carried in the air like dust and can get into a baby’s lungs. Babies that have breathed in too much powder have gotten pneumonia, inflammation (swelling) of the baby’s airways and have even died.

Sponge Bath
A sponge bath is given to a baby before the umbilical cord comes off.

This helps the cord stay dry and come off more quickly.
• The baby is sponged off with a warm, wet washcloth instead of sitting in a tub of water.
• Wash baby’s upper body first, while lower body is clothed. Then dress baby’s upper body before taking clothes off body and washing.

Full Bath
Have everything ready before starting the bath so the baby is not left alone and the bath can go faster
• Put a towel in the bottom of the tub or sink so baby does not slip.
• Put a wet, warm cloth over baby’s stomach to keep baby warm while washing other body parts.
• Never use soap on a baby’s face, only clean water.
• Do not clean insides of baby’s ears (canals) or nose, only the outside.

Cord Care
Cord care is an important way to prevent a baby from developing tetanus and septicaemia (general body infection). Teach and show the mother and family how to do the care noted below.
## Cord Care

- Do not put anything on the cord.
- Keep the cord clean and dry.
- It is best if urine or stool do not touch the cord.
- The cord normally falls off around 5-10 days after birth. This leaves the umbilicus to heal.
- Give baby a sponge bathe until cord falls off and the umbilicus is healed.
- Look at the cord for signs of infection every day until it is dry and healed. Signs of infection are: delay in separation, pus discharge, foul smell, and redness of the skin around the umbilicus.

### Notes:

a) Putting anything on the cord and covering with dressing can lead to serious infection of the cord, such as tetanus and septicemia. These infections are a major cause of neonatal death but are entirely preventable. To prevent these infections give the mother tetanus toxoid in pregnancy, do clean cord care at birth and in the postnatal period, and do not put anything on the cord.

b) In a study that reviewed cord care from 10 countries, it was found that keeping the cord clean was as effective and safe as using antibiotics or antiseptics.

## Immunizations: Vaccination Schedule

<table>
<thead>
<tr>
<th>Age</th>
<th>Vaccines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Just after birth</td>
<td>BCG + OPV-0** +</td>
</tr>
<tr>
<td>6 weeks</td>
<td>DPT-1 + OPV-1 + HB-1*</td>
</tr>
<tr>
<td>10 weeks</td>
<td>DPT-2 + OPV-2 + HB-2*</td>
</tr>
<tr>
<td>14 weeks</td>
<td>DPT-3 + OPV-3 + HB-3*</td>
</tr>
<tr>
<td>9 months</td>
<td>Measles + OPV-4</td>
</tr>
</tbody>
</table>

**Key**
- BCG: Bacillus Calmette-Guerin (for TB)
- OPV: Oral Polio Vaccine
- HB: Hepatitis B
- DPT: Diphtheria – Pertussis - Tetanus

* = Give Hepatitis B vaccinations as per local recommendations
** = Can be given up to day 14
Vitamin A

- Babies need Vitamin A to grow and develop well. Vitamin A also helps the mother and baby resist infections and fight infection when they get one.
- Breast milk is rich in Vitamin A. Exclusive breastfeeding supplies the baby with Vitamin A.
- To make sure the mother has lots of Vitamin A to pass to the baby through her breast milk, give Vitamin A to every postpartum mother. Give a single high-dose (200,000 IU) Vitamin A capsule as soon as possible but not after 6 weeks of postpartum. High-doses of Vitamin A can be harmful to a developing fetus if the mother is pregnant.

Note: Vitamin A supplements for the infants are started at 9 months of age.

<table>
<thead>
<tr>
<th>Age</th>
<th>Vitamin a capsule 200,000 IU</th>
</tr>
</thead>
<tbody>
<tr>
<td>9-12 months</td>
<td>½ capsule</td>
</tr>
<tr>
<td>12 months – 5 years</td>
<td>1 capsule every 4-6 months</td>
</tr>
</tbody>
</table>

Safety and Security

Babies cannot tell us what they feel or need. The baby’s caregivers must know how to recognize signs of illness or danger, and what to do to protect the baby.

- Never leave a baby alone on a bed or table.
- Do not throw a baby into the air and then catch the baby.
- Do not hold a baby by its feet with the head down.

Note: Throwing a baby into the air and holding a baby upside down causes a lot of pressure in the baby’s brain. This pressure can break a blood vessel and cause bleeding into the brain.

Danger Signs

Danger signs are the signs of a serious health problem. Many babies die from serious health problems or illnesses. To prevent death from illnesses everyone should need to recognize the danger signs. Baby often dies because caregivers:

- Delay in recognizing danger signs.
- Delay in deciding to seek medical care.
- Delay in reaching a health worker or facility

<table>
<thead>
<tr>
<th>Baby Danger Signs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Feeding difficulties or not sucking</td>
</tr>
<tr>
<td>2. Lethargy or difficult to wake up</td>
</tr>
<tr>
<td>3. Breathing problems (less than 30 or 60 or more breaths in 1 minute)</td>
</tr>
<tr>
<td>4. Convulsions/fits</td>
</tr>
<tr>
<td>5. Fever or baby feels cold</td>
</tr>
<tr>
<td>6. Red swollen eyes with pus discharge</td>
</tr>
<tr>
<td>7. Redness or discharge around the cord</td>
</tr>
<tr>
<td>8. Jaundice before 24 hours, after 2 weeks, or anytime on the palms of the hand and soles of the feet</td>
</tr>
</tbody>
</table>
Plan for Follow-up

Make a plan with the mother for follow-up visits for the baby. For the healthy baby without problems plan a minimum of four follow-up visits:

<table>
<thead>
<tr>
<th>Healthy Baby Visits</th>
</tr>
</thead>
<tbody>
<tr>
<td>VISIT 1: 6-24 Hours</td>
</tr>
<tr>
<td>VISIT 2: 3 Days</td>
</tr>
<tr>
<td>VISIT 3: 7 Days</td>
</tr>
<tr>
<td>VISIT 4: 28 Days</td>
</tr>
</tbody>
</table>

- Remember to make a plan for the 6-week immunization visit.
- Refer or advise mother for family planning by 3-4 weeks.

Why is follow-up Baby Care so important?

In the world over 4 million babies die every year before they reach the age of one month. The World Health Organization estimated in 2001 that 32 percent of newborn deaths (1,280,000 newborns) was caused by infection (tetanus, sepsis, pneumonia and diarrhoea). Many of these deaths should and can be prevented. As a health worker you can do much to save babies up to 28 days of age and beyond in your area. You do not need very technical training or equipment to save most of these baby’s lives.  

What you can do is:

- Keep mothers healthy before, during and after pregnancy (nutrition, Vitamin A, rest, birth spacing)
- Keep babies warm
- Keep the umbilical cord clean
- Help mothers to exclusively breastfeed for 6 months and then to continue to breastfeed while giving other foods
- Help mothers to use clean water and good hygiene
- Teach mothers and families baby danger signs and what to do if they see a sign
- Make sure babies receive their immunizations
- Screen babies for health problems

☐ Care of a Baby 6 Hours to 28 Days After Birth

The World Health Organization (WHO) estimates in 2001 that 32 percent of newborn deaths (1,280,000 newborns) was caused by infection (tetanus, sepsis, pneumonia and diarrhoea). Many of these deaths should and could have been prevented. However, babies are at higher risk for certain problems at certain ages. These are noted on the following:

---

## Special focus of each follow-up visit

<table>
<thead>
<tr>
<th>Visit</th>
<th>Explanation</th>
<th>Ask And Look</th>
</tr>
</thead>
</table>
| **6-24 Hours** | During this time the baby is still adjusting to life outside the womb.      | • Breastfeeding  
• Breathing, skin color  
• Urination  
• Stools  
• Temperature |
| **3 Days**   | The mother and baby are still adjusting to breastfeeding. Engorged breasts can make breastfeeding difficult. | Signs of infection (redness, pustules, discharge of the umbilicus, eyes or skin, baby too hot or too cold, feeding problems, breathing problems, fits) |
| **Babies who get infected from their mothers during labor may have signs of infection at birth or start on days 3-4.** | Skin color (significant jaundice before 24 hours, after 2 weeks, or anytime on the palms of the hand and soles of the feet). |
| **A baby may have jaundice (yellow skin, eyes)** |                                                                                     |
| **7-10 Days** | A mother and baby may still be adjusting to breastfeeding.                    | • Breastfeeding  
• Weight |
| **Babies who get infections after birth may have signs of infection at this visit.** | Signs of infection (redness, pustules, discharge of the umbilicus, eyes or skin, baby too hot or too cold, feeding problems, breathing problems, fits) |
| **A baby may have (yellow skin, eyes)** |                                                                                     |
| **If baby has not received the first immunizations, remind the mother to take the baby to the clinic.** | Immunizations                                                                 |
| **28 Days**  | At 28 days a baby should be fully adjusted to life outside the womb. The continuing concerns are infection and good growth. Remind the mother that immunizations are needed at 6 weeks. | • Breastfeeding  
• Signs of infection (redness, pustules, discharge of the umbilicus, eyes or skin, baby too hot or too cold, feeding problems, breathing problems, fits)  
• Weight  
• Immunizations |
Preparing for Follow-up Care

Make sure the room is:

- **Clean.** Use the three infection prevention steps to prepare equipment, supplies and environment.
- **Warm.** The room should be warm (at least $25^\circ$ C). Close a door or window to prevent wind.
- **Lighted.** Caregivers must clearly see the newborn to assess color and breathing.

Drugs:

For Baby

Immunizations are given in the first few days after birth and again at 6 weeks of age. If you give three immunizations you will need:

- BCG Vaccine
- OPV Vaccine
- Hepatitis B Vaccine
- DPT

For Mother

- Vitamin A 200,000 IU

Keep Records

- Newborn record card
- Immunization card

Doing Follow-up Baby Care

Below is the general information to help you with the visits.

As you start the history

- Use good communication skills
- Show respect to the mother and family.
- Explain to the mother and family what you are going to do.
- If the mother or family is worried about anything, listen to their concerns.

Before you begin the physical examination

- Wash your hands thoroughly with soap and water. Dry with a clean dry cloth or air-dry (if cloth is not clean it is better to air-dry hands).
- Put on gloves (if available).
- Review in your mind the parts of the physical examination. Remember you did a complete physical examination for the first examination. This examination will be brief, focusing on the needs of a normal newborn and finding any problems.

As You Do the Physical Examination

- Explain what you are doing and answer any questions the mother and family have.
- Ask the mother to uncover the baby.
- LOOK carefully at the color, breathing and posture before you touch the baby.
• Teach the mother and family:
  - Show the mother and family how to look at the baby’s breathing, color, cord, and feel the baby for warmth.
  - Ask the mother to do this and to tell you what she sees and feels.
  - Give her feedback and praise for learning to do this.
• LOOK at how the mother is interacting with her baby. Signs that the mother feels close to her baby include:
  - She has eye contact with her mother
    → She uses her full hand (not just finger tips) when touching her baby.
    → When feeling the baby, she and her baby are turned to each other.
• Be sure to praise the baby as you do the exam. A mother wants to be proud of her baby. This will also make her feel good about herself.
• Handle the baby gently during the exam.
• Follow steps for Care of the Baby: Six hours up to 28 days.
  - Look at the Newborn Physical Examination for details of normal findings.
  - As you examine the baby, see if there are any findings that are not normal. See the section Newborn Problems, for the action needed for a problem.

After the Physical Examination
• Wash your hands with soap and water. Dry with a clean dry cloth or air-dry.
• Decide what are the baby’s needs and problems.
• Do a plan of care for each problem or need you find.
• Discuss the plan of care with the mother and family, if they can do the plan in their setting, or if any changes in the plan are needed.
• Counsel the mother on baby care, danger signs and what to do if any danger signs happen.

Newborn Resuscitation
During pregnancy a baby receives oxygen from its mother through the placenta. After the baby is born, it can begin to use its own lungs to get the oxygen it needs by breathing. But some babies need help to start or keep breathing. About 5-10% of newborn need infant resuscitation.

Asphyxia
Asphyxia can start before and after the baby is born. If the baby has asphyxia:

i) the baby has trouble breathing and may be gasping (sound made on inspiration) or breathing very irregularly or not breathing,

ii) the baby’s color is pale or blue.

This is when the skill of infant resuscitation can save the life of the baby.
**Preparation for Newborn Resuscitation**

You must be prepared to do newborn resuscitation at all births. Preparation should include having: warmth, place to do the resuscitation, and equipment and supplies.

**Warmth**

Keeping a newborn warm saves the baby’s energy for breathing. There are many ways to keep a baby warm. If possible use all these methods:

- **Room.** Keep the room warm (at least 25°C) and keep it free from wind.
- **Heat.** Use a heater or light bulb above where the baby will be. Turn on before the delivery and keep on during the resuscitation.
- **Dry the Baby.** Do immediately after birth and then remove the wet cloth.
- **Warm cloth.** Use to wrap baby keeping face and upper chest open.
- **Cloth or hat on head.** Keep baby’s head covered.

**Resuscitation Place**

A flat place is needed to do the resuscitation. A table in the room or next to the mother can be used. It needs to be clean and warm.

**Equipment and Supplies:** All should be clean and decontaminated.

- **Equipment to help the baby breath**
  - If Doing Mouth-to-Mouth Resuscitation
    
    - **4 Small bowels**
      - 1 with clean dry gauge
      - 1 with soapy water
      - 1 with rinse water
      - 1 to dispose to gauge
    
    - **5 Pieces of gauge**
      - 1 to wipe baby’s mouth and nose area with soapy water
      - 1 to wipe baby’s mouth and nose area with clear water
      - 1 to dry baby’s mouth and nose area
      - 1 to place over baby’s mouth and nose during resuscitation
      - 1 to wipe out baby’s mouth (if needed)

  - If Doing Bag and Mask Resuscitation
    
    - AMBU Bag
    - Face mask
      - Size 1 for normal weight newborn
      - Size 0 for a small newborn

- **Cloths**
  
  - 1 to roll and put under the baby’s shoulders so the head is slightly extended
  - 1 to dry baby
  - 1 to cover baby and mother after drying baby

- **Clock, timer or watch:** To tell time of birth and how long the resuscitation took.

- **Gloves:** If available (do not need to be sterile)
Doing Newborn Resuscitation

It is important to explain to the mother and family that the baby needs some help with breathing and you will give that help. As soon as the baby is fine, put the baby skin-to-skin with the mother for warmth and breastfeeding.

Newborn Resuscitation Steps

Resuscitation must be started as soon as you see the baby is having trouble breathing and is pale or blue (asphyxia).

• **First step: Do the three actions for immediate resuscitation care:**
  - Dry and stimulate
  - Warm and
  - Position
  Often this step alone will help a baby to start breathing.

• **Second step: Evaluate the baby’s breathing and color:**
  This will help you to decide if you will do Action I or Action II.

• **Third step: Do Action I or Action II:**
  - **Action I**: If the baby is blue or pale, but breathing is normal, do Action I (keep the baby warm and dry and do more stimulation).
  - **Action II**: If the baby is blue or pale and not breathing or not breathing normally, do Action II. With Action II you will breathe for the baby. Do either mouth-to-mouth or bag and mask resuscitation.

There are two charts on the next pages, **Newborn Resuscitation Steps** and **Explanation of Newborn Resuscitation Steps**. Read both charts carefully to understand how to do newborn resuscitation.

### Newborn resuscitation steps

<table>
<thead>
<tr>
<th>Step 1: Do Immediate Resuscitation Care</th>
<th>1) Dry and Stimulate</th>
<th>2) Warm</th>
<th>3) Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>COLOR</td>
<td>BLUE OR PALE</td>
<td>BLUE OR PALE</td>
<td>No breathing or having trouble breathing (less than 30 breaths in 1 minute)</td>
</tr>
<tr>
<td>Breathing</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Step 2: Evaluate</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTION I</td>
</tr>
<tr>
<td>1. Continue to stimulate as needed and keep baby warm and dry.</td>
</tr>
<tr>
<td>2. LOOK for breathing and color</td>
</tr>
<tr>
<td>3. If color and breathing good, give baby to mother, skin-to-skin, for continued warmth, stimulation, love and energy (breastfeeding)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ACTION II</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Breath 1 time. Does chest rise? If NO, reposition and wipe out baby’s mouth.</td>
</tr>
<tr>
<td>2. Breathe about 40 times in 1 minute.</td>
</tr>
<tr>
<td>3. LOOK for breathing and color</td>
</tr>
<tr>
<td>4. Repeat steps 2 and 3 until baby’s breathing is normal.</td>
</tr>
<tr>
<td>5. When baby’s breathing is normal, go Action I (keep warm and stimulate)</td>
</tr>
</tbody>
</table>
### Explanation of Newborn Resuscitation Steps

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
<th>How to do the action</th>
</tr>
</thead>
</table>
| **Dry and Stimulate** | | ➢ **Dry** the baby with the cloth, from head to toe, until dry.  
 ➢ While drying the baby, also **stimulate** the baby. This can be done two ways: 1) massage the baby’s skin and muscles as you dry, and 2) rub your hand up and down the baby’s spine firmly and quickly.  
 ➢ **Remove** the wet cloth after drying. |
| **Step 1** | **Warm** | ➢ **Cover head and body**: Wrap the baby quickly in a dry, warm cloth. Use 2 steps only when wrapping baby: 1) fold cloth above baby’s head down over head and arms, 2) fold cloth below baby’s feet over legs, up to waist. This keeps the baby’s face and chest open so you can work and observe.  
 ➢ **Heat**: Use a heater or light bulb above the resuscitation next to a fire. |
| | **Position** | ➢ **Put a small folded cloth under baby’s shoulders** so the head is slightly extended in the “sniffing” position. This position is best to keep the airway open. |
| **Step 2** | **Evaluate** | ➢ **Observe the baby’s breathing.** Check if the baby is breathing, having trouble breathing or is not breathing. Remember signs the baby is having trouble breathing include indrawing of the chest (when baby breathes in, areas between ribs are pulled in), grunting (a sound the baby makes when breathing out) or gasping (a sound the baby makes when breathing in).  
 ➢ **Look at the baby’s color.** It is normal for the baby to have a pink face and chest. It is **not abnormal** for the baby’s hands and feet to be blue. |

**Note:** The above actions, Step 1 and Step 2, should not take longer than 30 seconds.

**Note on Suctioning and Meconium:**
If meconium is present:
- Suction baby with head on the premium before delivery of the body.
- After delivery:
  - If baby is vigorous: NO SPECIAL suctioning of baby is needed.
  - If baby **NOT** vigorous: Do not stimulate until baby is suctioned again.
<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
<th>How to do the action</th>
</tr>
</thead>
</table>
| 3    | Action 1 | - Continue to stimulate as needed and keep baby warm and dry  
|      |         | - LOOK for breathing and color  
|      |         | - If color and breathing good, give baby to mother, skin-to-skin, for continued warmth, stimulation, love and energy (breastfeeding)  
|      | Action 2 | If doing AMBU bag resuscitation:  
|      |         | Place mask over baby’s mouth and nose and ventilate 1 time to see if the baby’s chest rises (test breath)  
|      |         | REMEMBER: More inflation pressure may be needed for first several breaths.  
|      |         | If doing mouth-to-mouth resuscitation:  
|      |         | Clean baby’s mouth and nose area: using gauge wipe with soap water, then with clear water. Dry with dry gauge.  
|      |         | Place dry gauge over mouth and nose with your mouth.  
|      |         | Breath 1 time into the baby’s chest rises (test breath)  
|      |         | REMEMBER: The baby’s lungs are small. Use only air from your mouth and not your lungs.  
|      |         | - If the chest does not rise: reposition the baby and wipe out the mouth with gauge on your small finger. If using an AMBU bag, also try to reposition the mask on the baby’s face to improve the seal between the mask and face.  
|      |         | - If the chest rises: breathe about 40 times in 1 minute for the baby.  
|      |         | - Evaluate quickly: Observe breathing and color.  
|      |         | - Repeat the above 2 steps (breathe/evaluate) until baby’s breathing is normal.  
|      |         | - If the baby’s breathing is normal: Go to Action 1 (support the baby with warmth and stimulation.  
|      |         | - When the baby is pink and active: Give baby to mother, skin-to-skin, for continued warmth, stimulation, love and energy (breastfeeding).  
|      |         |  

**Stop Resuscitation after 20 Minutes If Baby is Not Breathing**

**Care After Resuscitation**

The resuscitation is successful if the baby is breathing 30-59 breaths in 1 minute, there is no indrawing of the chest, grunting or gasping, and the baby’s skin color is pink. There are some added steps that you can do now to help the baby, mother and her family.

**Counsel/Advice**

- Talk with the mother and the family about the resuscitation. Answer any questions they may have.
- Encourage the mother to breastfeed as soon as possible. Babies that have trouble breathing use a lot of energy. Some even get low blood sugar (hypoglycemia). The breastfeeding will help give the baby more energy.
- Encourage mother to keep baby skin-to-skin to help baby stay warm.
- Explain there is a small risk of problems such as lung infection, feeding problems or convulsions. Encourage the mother and family to get care immediately if any problems happen.
Give care

- Watch the baby for at least 6 hours for:
  - Breathing problems (breathing 60 or more times in 1 minute, indrawing of the chest, grunting or gasping)
  - Temperature that is too high (above 37.5° C, 99° F) or too low (below 36.5° C, 97.5° F)
- Give normal care for a newborn.

Record

- Condition at birth
- What did you during the resuscitation
- How long the resuscitation took
- Results of the resuscitation
- After care

Follow-up

Ask the mother to bring her baby in for a follow-up visit on day 2 or 3. Remember baby with breathing problems at birth have a small risk of problems such as lung infection, feeding problems or convulsions.

If Baby is Breathing, but has following signs - Referral is needed

After the resuscitation, the baby will need special help if you see:

<table>
<thead>
<tr>
<th>Signs A Baby Needs Referral After Resuscitation</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Breathing less than 30 or 60 or more breaths in 1 minute</td>
</tr>
<tr>
<td>• Indrawing of the chest</td>
</tr>
<tr>
<td>• Grunting (sound made with expiration) or gasping (sound made with inspiration)</td>
</tr>
<tr>
<td>• Whole baby is pale or blue</td>
</tr>
</tbody>
</table>

For this baby you will need to:

Counsel/Advice

- Talk with the mother and family about the resuscitation and how the baby is doing now. Answer any questions they may have.
- Explain that the baby needs special care by a doctor who knows about that care.
- If the baby needs to be referred to another facility explain:
  - The mother and the family should go with the baby, if possible
  - Breastfeed as soon as possible and during the referral (or express breast milk and give it by cup)
  - Keep baby warm:
    → Keep head covered
    → Put baby skin-to-skin with the mother and cover both with warm blankets. If mother is not able to go someone else should do this.
**Give Care**
- Continue to stimulate
- Arrange for referral

**Record**
- Prepare records for referral
- Prepare records to be kept

**Follow-up**
See Care of the Baby Six Hours to 28 Days, to do a follow-up visit.

**Care If Resuscitation is Not Successful**
If the baby is not breathing after 20 minutes, stop resuscitation. The mother and family will need much support. Be caring and gentle in your communication.

**Counsel/Advice**
- Talk with the mother and family about the resuscitation and situation. Answer any questions they may have. Give them time to talk about the baby.
- Give the mother and family time with the baby.
- Explain to the mother and family that the mother:
  - Will need rest, support and a good diet at home
  - Should not return to full workload too early
  - Should do breast care:
    - Breasts will become full around day 2-3.
    - Bind breasts with a tight bra or cloth until there is no milk in the breasts.
    - Do not express milk or stimulate breasts.
- May feel very emotional. The normal changes in the hormones after pregnancy can make a woman feel depressed (very sad, worried or irritable). Because of the loss of the baby, the depressed feelings may be worse. Encourage the mother and/or family to speak with a health worker if they wish to talk more about the loss.

**Follow-up**
- Ask the mother to return for a postnatal and family planning visit early as ovulation will happen earlier (not breastfeeding).
  
  **Note:** Many women who do not breastfeed will ovulate by 3 weeks postpartum.
- If possible, postnatal care should be done at the mother’s home.

**Record**
- The government has a system for recording and notifying the authorities about a baby’s death. Do the required recording and notification.
- Complete the regular baby records.

**Emergency Referral**
As a health worker you will refer babies to a higher-level health facility when needed. Remember the mother and the family will be worried and upset by the baby’s illness and need for referral. **Treat the mother and family with gentleness and give repeated explanations.**
Referral Guidelines

- **Explain the reason for referral** to the mother and the family.
- **Arrange transport** without delay.
- **Notify the referral center** (if possible) about the baby’s condition and the estimated time of arrival.
- **Give any emergency treatments** before leaving the health facility. See the following problem-solving charts for emergency treatments.
- **Keep the baby warm during transport.** Keep the baby in skin-to-skin contact with the mother and cover both with cloths. The infant may be partially dressed with a hat, socks, and diaper and covered with warm blankets. If the climate is very hot, fewer coverings are needed. Protect the baby from direct sun.
- **Encourage the mother to breastfeed** during the journey.
- **Take records of labor and delivery and baby records** to the referral center. Complete a referral slip and include findings of examinations, reason for referral, and all treatments, as well as medicines given.
- **Ensure a family member or friend accompanies the mother.** If the newborn is seriously ill, the health worker should also accompany them.
- **Monitor baby’s condition during the journey** (breathing, color, temperature) and record findings in the records.

Cleaning Equipment and Supplies

Equipment and supplies used for infant resuscitation can have body fluids from both the mother and the baby. They need to be cleaned correctly to protect health workers and other babies from infection. Use the three infection prevention steps, when needed, as explained below:

<table>
<thead>
<tr>
<th>Infection Prevention Steps</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Decontamination</strong></td>
</tr>
<tr>
<td>• Make 0.5% solution by mixing 20 grams of powder bleach with 1 liter of water (or 1 ice cream cup of powder bleach, 100 grams, with 5 liters of water).</td>
</tr>
<tr>
<td>• Soak item in solution for 10 minutes.</td>
</tr>
<tr>
<td><strong>2. Cleaning</strong></td>
</tr>
<tr>
<td>• Wash with soap water</td>
</tr>
<tr>
<td>• Rinse in clean water</td>
</tr>
<tr>
<td><strong>3. High Level Disinfection (By boiling)</strong></td>
</tr>
<tr>
<td>• Put items in pot</td>
</tr>
<tr>
<td>• Fill pot with water until items are completely covered</td>
</tr>
<tr>
<td>• Bring to a boil</td>
</tr>
<tr>
<td>• Boil for 30 minutes</td>
</tr>
<tr>
<td>• Drain water, dry and store</td>
</tr>
</tbody>
</table>
Infection prevention procedure for equipment and supplies

- **Disposable Items**: Anything that will be thrown away should be decontaminated first for 10 minutes (gauge, gloves, catheter, etc).

- **Reusable suction catheter or gloves**: Do the three infection prevention steps (decontaminate, clean and disinfect).

- **Cloths and linen**: Decontaminate, clean, air or sun dry, then store in clean, dry place.

- **Table used for resuscitation**: Wipe with decontamination solution, then with soap and water. Air dry.

- **Mask and patient valve**: Take apart before doing the three infection prevention steps. This should be done after every resuscitation.

- **Bag and inlet valve**: Do the three infection prevention steps regularly (every week, every 2 weeks, or every month, depending on the number of resuscitations). Always do the three infection prevention steps if used for a baby with an infection.

**Note**: When you put the bag and valves together again, always make sure they work.

**Low Birth Weight Babies**

A low birth weight (LBW) baby is a baby who weighs less than 2500 grams at birth. Birth weight is a good indicator of the development of the newborn and the maturity of its different organs and systems. Low birth weight babies die more frequently than babies who weigh over 2500 grams at birth. They are more likely to develop hypothermia, infection, low blood glucose, and feeding problems due to poor sucking and swallowing ability. Due to the immaturity of their lungs, these babies may also have birth asphyxia and other breathing difficulties.

**Types of LBW**

1. **Preterm or premature baby**: The average gestational age is 40 weeks with a range between 37 to 42 weeks. Babies born within this range are called term infants. A preterm or premature baby is a baby born before 37 completed weeks of pregnancy. It will be smaller because it did not stay in the womb the full time.

2. **Intrauterine Growth Retardation (IUGR)**: This newborn may be a term baby, but it is small for its gestational age (SGA) or small for dates. The baby may not have had enough food in the mother’s womb because the mother was malnourished during pregnancy or because of pregnancy complications.
<table>
<thead>
<tr>
<th>Low birth weight</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Causes</strong></td>
</tr>
</tbody>
</table>
| Women who:       | • Advise women and men to have children between 20-35 years of age.  
| • Are less than 20 or older than 35  | • Counsel men and women to space children at least 3-5 years apart  
| • Have pregnancies that are closely spaced (less than 3 years between pregnancies)  | • Encourage using contraceptive methods to delay and space pregnancies.  |
| Women who:       | • Make the community aware of women’s need to make childbearing safer:  
| • Had a LBW baby before  | - Eat enough and the right kind of foods.  
| • Do physical work for many hours with no rest.  | - Enough rest from hard work  
| • Are very poor  | - Antenatal Care  
| • Are less than normal weight and have poor nutrition.  | - Primary health care services to detect and treat common problems before pregnancy  
| Women who have problems of pregnancy and labor such as:  | • Help women to meet their health needs during pregnancy.  
| • Severe anemia  | Teach women and families:  
| • Pre-eclampsia  | • To recognize the signs of problems during pregnancy  
| • Infections during pregnancy (bladder and kidney infection, hepatitis, STI, HIV/AIDS)  | • To get treatment for problems during pregnancy.  
| • Malaria  |  
| • Multiple pregnancy  |  
| Babies who:     | During pregnancy teach women and families:  
| • Have congenital or genetic abnormalities  | • To not take any medicine or treatment unless approved by a health worker  
| • Develop infection while in the womb.  | • To recognize the signs of problems  
|  |

**Once the baby is determined as LBW:**

1. Explain the condition to the mother/family. They need to understand the potential problems and the special needs of the LBW newborn.
2. Take the babies temperature; if the baby is hypothermic, treat as indicated and record its temperature every fours.
3. Count the babies respirations; if there are many breathing difficulties, treat as indicated.
4. Give 1 mg vitamin K, IM.
5. Check blood glucose and treat or refer if it is low. Advise mother to keep baby warm.
6. If the baby has difficulty in sucking, show the mother how to express breast milk as explained below.
7. Explain infant danger signs and appropriate actions to the mother/family.
8. If the baby is less than 1500 grams, has breathing difficulties, or any severe problem, do not feed this baby, but refer urgently for IV therapy and specialized care.

**Problems of LBW babies**

Low birth weight babies are at great risk of dying or developing serious health problems. The baby’s size predicts the risk, so the smaller the baby the bigger the risk.

- **Breathing Problems** (asphyxia) at birth and later
  See section: Newborn Resuscitation.
- **Low Body Temperature** because there is little fat on the body.
  Kangaroo Mother Care with the baby skin-to-skin contact helps keep the baby warm.
- **Low Blood Sugar** because there is very little stored energy in the baby’s body.
  These babies need to be given breastmilk as soon as possible after birth.
- **Feeding Problems** because of small size, lack of energy, and small stomach.
  The moderately premature babies can usually breastfeed well with help. The baby needs frequent small feeds.
- **Infections** because of the infection fighting system are not mature.
  Caregivers must have infection prevention practices and wash hands carefully before caring for small babies.
- **Jaundice (high bilirubin)** because the liver is not mature.
  Preterm babies become yellow earlier and it lasts longer than in term babies. If any jaundice before 24 hours, after 2 weeks, if hands and feet are yellow, or if yellow with other danger signs, refer to a higher referral facilities.

  The mother and family can do two things to help the baby get rid of the yellow bilirubin: 1) put the baby in the sun (be careful the baby does not get sun burn), and 2) breastfeed the baby more (at least every two hours) to help the baby get rid of the bilirubin through the urine by urinating more.

- **Bleeding Problems** due to poor clotting at birth.

**Kangaroo Mother Care (KMC)**

The LBW baby needs more help and time than a larger baby to adjust to life outside the womb. They also need help to stay warm and get enough nourishment to grow and mature. One way to help a baby meet all these needs is to do Kangaroo Mother Care.

KMC has 3 parts:

1. **Skin-to-skin contact between the baby’s front and the mother’s chest**
   Skin-to-skin contact starts at birth and continues **day and night**. The baby wears a hat or cloth to cover the head to prevent cooling of the head, and many wear cloths to soak up stool and urine.

2. **Exclusive Breastfeeding**
   The baby breastfeeds right after birth and frequently. The cloth that wraps around the mother and baby is loosened for the breastfeeding. Information about how to help a mother breastfeed her preterm baby follows.
3. **Support to the mother and baby**

This means whatever the mother or baby needs is supplied **without separating them**. In a health facility the stuff will provide support. At home the family will support the mother and baby.

<table>
<thead>
<tr>
<th>How does KMC help the baby and mother?</th>
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</thead>
<tbody>
<tr>
<td><strong>Baby</strong></td>
</tr>
<tr>
<td>- Breathing becomes regular and stable</td>
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<tr>
<td>- Temperature rises</td>
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<tr>
<td>- Immunity is improved</td>
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<tr>
<td>- Infections are reduced</td>
</tr>
<tr>
<td>- Better breastfeeding and weight gain</td>
</tr>
<tr>
<td><strong>Mother</strong></td>
</tr>
<tr>
<td>- Encourages mother – baby bonding.</td>
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<tr>
<td>- Gives the mother a feeling of competence.</td>
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</table>

**How to help the mother to do Kangaroo Mother Care**

Start KMC as soon after birth as possible. If the baby breath well, does not need resuscitation or medical treatment, begin KMC immediately.

**Tips to help the mother and family to practise KMC**

- Place the baby between the mother’s breast, with the baby’s feet below the mother’s breasts and the baby’s hands above the mother’s breasts.
- Mother and baby should be chest-to-chest and baby’s head turned to the side.
- Use a long cloth to snugly wrap the mother and baby together:
  - Place the center of a long cloth over the baby on the mother’s chest.
  - Wrap both ends of the cloth around the mother, under the arms, to her back.
  - Cross the cloth ends behind the mother and bring both ends again to the front.
  - Tie the ends of the cloth in a knot under the baby.
- Support the baby’s head by pulling the wrap up to just under the baby’s ear.

When mother is temporarily unable to provide Kangaroo care, relatives or health workers can do it for her, feeding the baby using expressed milk.

**Breastfeeding and KMC**

Breastfeeding is an important part of KMC. All LBW babies need to breastfeed often. With the baby so close to the mother, the baby can smell the milk and can begin to suckle when hungry.

Breast milk is the perfect food for all babies. But it is especially perfect for preterm low birth weight babies. The breast milk made by the mother of a preterm infant is different from the milk of a mother at term. The ‘preterm’ milk has more protein, which the preterm baby needs for quick growth.

Preterm babies are at risk for not getting enough food. They have very little stored energy (fat) or other nutrition in the body. Preterm babies have small stomachs and cannot take in large feeds. They tire easily. They need enough food to recover from birth, to grow and to mature, but they may not have the energy to get the food.
Exclusive and unlimited breastfeeding is part of KMC. The small baby needs to nurse at least every two hours. Because of the small stomach size the preterm baby needs to take small amounts very frequently. As the baby grows he will be able to take in more and will not nurse as often.

Tips to help a mother breastfeed her preterm baby

- Find a quiet place to breastfeed
- Preterm babies have immature nervous systems and can be overwhelming by noise, lights, and activity.
- Express a few drops of milk onto the nipple to help baby start nursing
- Give the baby short rests during a breastfeed
- Feeding is hard work for the preterm baby.
- If the baby coughs, gags or spits up when starting to breastfeed, the milk may be letting down too fast
  
  Teach the mother to:
  1) Take the baby off the breast,
  2) Hold the baby against her chest while he/she regains her breathing, and
  3) Put the baby back to the breast after the letdown of milk has passed
- If the baby does not have the energy or a strong enough suck reflex:
  - Teach the baby to express breast milk
  - Feed the baby the expressed breast milk by cup

Ideally, kangaroo care can and should be provided continuously until the baby is about 2.5 kg or the time when it would have been 37-40 weeks (term). The baby usually becomes restless by that time and less tolerant of being put in the kangaroo position.

Breastfeeding

Think about this statement ‘the kindness of human milk’. It helps to describe the care and love in the act of giving breast milk. Breastfeeding is a special giving from a mother to her baby.

Benefits of Breastfeeding:

Baby Benefits: Breast milk contains all of the nutrition that the baby needs in the first 6 months.

- Contains Vitamin A. Babies low in Vitamin A have problems with less appetite, eye problems, and more infection, especially diarrhoea and measles. How much Vitamin A is in breastmilk depends on the mother’s. For that reason, mothers are encouraged to take Vitamin A 200,000 IU once during the first 6 weeks postpartum.
- Is a clean source of food. Water to make formula and clean bottles may have germs that can cause a baby to have diarrhoea and vomiting.
- Acts like the first vaccine for the baby (makes the immune system stronger)
- Helps baby’s body and brain growth.
- Protects against allergies in babies.
- Help sick babies. If a baby is sick, breastmilk helps a baby to become better faster.
• Helps premature babies:
  - A premature baby has a premature stomach and intestines. This means digesting and absorbing food does not work as well. Breastmilk is the easiest digested and absorbed food a premature baby can eat.
  - Helps to prevent a serious disease of the intestines that premature babies can get (necrotizing enterocolitis)

Mother Benefits:
• Lowers risk of postpartum haemorrhage
• Helps the womb to return to its normal size
• Reduces anaemia because the return of the mother’s menses is delayed.
• Can delay return of ovulation, so delays mother’s pregnancy. The mother has time between pregnancies to recover and time for the baby and other children. Exclusive breastfeeding helps delayed ovulation even more.
• Supports bonding between the mother and baby
• Saves money. The mother does not need to buy other milk to feed the baby or to pay for health care when her baby gets sick more often.

Exclusive Breastfeeding
Exclusive breastfeeding is to give ONLY breast milk up to 6 months. This means a baby will not get any water, tea, herbal drinks, infant milk formula, other liquids, or food. Exclusive breastfeeding is recommended throughout the world because it increases the chance of baby’s survival. It helps the baby grow and develop.

<table>
<thead>
<tr>
<th>Giving other liquids or foods during the first 6 months</th>
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<tbody>
<tr>
<td>• The baby will not feed as often or as long at the breastfeed.</td>
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<tr>
<td>• The baby becomes used to a bottle nipple and stops breastfeeding.</td>
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<tr>
<td>• Babies who get other foods stop breastfeeding earlier.</td>
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<tr>
<td>• The babies chances are much higher to get an infection, like diarrhoea and pneumonia.</td>
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</table>

Importance of the first milk the mother makes (Colostrum)
Colostrum (the sticky, yellow-white early milk) should be the newborn’s first and only taste. It is so important because it is so high in Vitamin A, antibodies, and other protective factors. Since it gives so much protection to the baby, it is often called the baby’s ‘first immunization’.

Length of Breastfeeding
There is no limit to how long a baby can suck. If the attachment, suck, and position are good, the baby can suck until full. Use both breasts.

Continuing to breastfeed
Exclusive and continued breastfeeding helps mothers and saves baby’s lives. Help a mother start to breastfeed, and also counsel and advice her on how to keep breastfeeding.
How long to breastfeed
A mother should breastfeed exclusively for at least 6 months. After 6 months, breast milk alone cannot give the baby all the energy, vitamins and minerals it needs. The longer a mother breastfeeds, the longer her baby gets protection from the breast milk, may be upto 2 years.

How long should a mother wait to become pregnant after breastfeeding
New research shows time between pregnancies should be at least 3-5 years (the time from one child’s birth date until the next child’s birth date). This is now recommended. It is also recommended that a mother wait at least 6 months between stopping to breastfeed and the next pregnancy. That protects a baby that is still breastfeeding.

Newborn Problems
The baby’s immune system is immature at birth. The ability to fight off infections is not strong. When a baby is sick the signs of illness may be difficult to recognize. Infection, heart/lung diseases, high/low body temperature, or other illness can cause breathing problem.

Breathing problems
The problem of Birth Asphyxia is discussed in section Newborn Resuscitation. Signs of breathing problems include breathing too fast and working hard to breathe.

How do breathing problems affect the baby?
When the baby has a breathing problem, not enough oxygen gets into the body to keep the body working. All the baby’s energy is spent trying to get enough oxygen into the body. This means the baby does not have enough energy to keep warm, to grow or fight off infection. Breathing problems often lead to death.

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<thead>
<tr>
<th>Breathing Problems</th>
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<tbody>
<tr>
<td><strong>History</strong></td>
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<td><strong>Exam</strong></td>
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<tr>
<td><strong>Problems/Needs</strong></td>
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<td><strong>Plan of Care</strong></td>
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<tr>
<td><strong>Follow-up</strong></td>
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</table>

Infections
Infections are one of the major causes of death to newborns. They can be prevented and treated. It is important to remember that small local infections can spread and become serious life-threatening infections.
A  **Newborn Sepsis (General Infection in the Newborn)**

Sepsis is an infection affecting the whole baby. The infection may be in the blood (septicaemia) or in one or more other organs of the body. Germs that cause sepsis may enter the baby during pregnancy, during labor and birth or after birth. They can enter the body from an infection of the skin or cord. Newborn sepsis is a serious illness and can rapidly cause death.

**Prevention of Newborn Sepsis**

- Use infection prevention practices during labor, birth, and postnatal care.
- Teach the mother and family to use infection prevention practices, especially hand washing.
- Treat the mother’s infection during pregnancy.
- Treat the mother during labor with antibiotics if she has signs of infection.
- Treat the baby after birth with antibiotics if the mother had fever during labor.
- Breastfeeding the newborn exclusively.

B  **Local infections**

Local infections are those that can be seen in the baby’s body. They are important because they can enter the baby’s body and cause newborn sepsis. Quick and correct treatment of local infections may prevent sepsis and possible death of the baby.

**Umbilical Cord Infection**

It is an infection around the umbilical cord or the umbilicus.

Infection can easily pass through the cord into the baby’s body. It can lead to sepsis and death if there is delay in treatment or the treatment is not correct. If unclean substances are applied to the cord, there is a danger of tetanus leading to death.

**Prevention of umbilical cord infection**

- Always use infection prevention practices during birth and care of the newborn.
- Cut the cord with a sterilized scissor or new razor blade that has been boiled for 30 minutes.
- Keep the umbilical cord open, clean and dry.
- Do not apply anything to the cord.

*Note:* In some areas traditional practices include applying local substances to the cord. These may cause **tetanus** or **sepsis**.

**Skin Infection**

Infection of the skin causes small pustules (pus filled blisters) on the skin.

A skin infection that is not treated may spread. Skin infections can be serious and develop into a deeper (cellulitis)/blood infection (septicaemia), which is life-threatening.

**Prevention of Skin Infection**

- Always use infection prevention practices for delivery and postnatal care.
- Teach the mother and family to wash hands before caring for the baby.
- Teach mother and family to keep baby’s environment, covers, clothing clean.
- Teach the mother to bathe the baby.
Eye Infection

An eye infection is an infection of the lining of the eyes. The eyelids become swollen/red, and there is a discharge of fluid or pus. The germs that cause the infection may also cause sexually transmitted infections. These germs can live in the mother’s birth canal and infect the baby as it is born. Less serious eye infections may be caused by other germs. Eye infection can cause serious eye damage and blindness if it is not treated or if treatment is delayed.

Notes:
1) Infection of the lining of the eyes (conjunctivitis) causes swollen eyelids and a pus-like discharge. It is known as ophthalmia neonatorum. It usually happens during the first two weeks of life. The germ causing the infection is usually Neisseria gonorrhoea (which can cause blindness) or Chlamydia trachomatis. These germs also cause sexually transmitted infections.
2) Less serious eye infections may be caused by other germs, such as Staphylococci aureus.
3) Gonococcal eye infection may lead to keratitis and blindness.

Thrush

Thrush is an infection of the mouth caused by a fungus or yeast. The most common fungus is called “candida”.

Note: This fungus also causes vaginal candidiasis when it grows in the vagina.

Thrush fungus lives best in wet, warm places. It is normal to have a little of this fungus in our mouths, but at certain times it can grow so much that it causes an infection. A newborn baby’s ability to fight infection is still growing, so babies are likely to get this infection during the first few months of life.

• Thrush in the mouth: Thrush covers the baby’s mucus membranes and tongue with a white coating. It makes the mouth painful so many babies do not want to feed.

• Thrush on the buttocks: The infection can also go through the baby’s stomach and intestines in the stool. This causes the stool to be loose (diarrhea) and smelling bad. When this happens the infection spreads to the baby’s buttocks, causing a painful red rash.

A baby can become very ill quickly because of poor feeding and diarrhea. This then causes weight loss and dehydration. It is important to treat thrush as soon as possible. The fungus infection can pass to the mother’s nipples. The mother will notice that her nipples are sore and red. She will feel breast pain during the time the baby breastfeeds.

Prevention of Thrush
• Breastfeed exclusively from birth. This will transfer infection fighting substances to the baby.
• Teach the mother to:
  - Wash her hands before and after caring for the baby
  - Wash anything that will touch the baby (cup, clothing)
  - Seek medical care for any signs of thrush as soon as possible
Problems with body temperature

The normal newborn temperature ranges between 97.5 – 99 °F (36.5 °C and 37.5 °C). The newborn is not able to regulate body temperature well. At birth and for the first few days of life, the baby’s caregivers must help the baby keep a normal body temperature. The actions of caregivers to keep a baby from being too cold or too hot are called thermal protection.

Low Temperature/Hypothermia

A temperature below 97.5 °F (36.5 °C) is too low or too cold. This is hypothermia. see Newborn Care Birth to Six Hours, for detailed information about the causes of low body temperature and how to prevent hypothermia in the baby. Hypothermia may occur soon after birth unless thermal protection is done.

Causes of Low Temperature / Hypothermia Include:

- The room temperature is too cool
- There is a draft
- The baby is wet
- The baby is exposed or uncovered, even for a short time
- The baby is placed on a cold surface, near a cold wall or window
- Baby has an infection
- The baby has birth asphyxia and does not have enough energy left to keep warm

If the low temperature is not quickly recognized and treated, the baby’s condition gets worse.

- The skin hardens and becomes red, especially on the back and the limbs
- The face becomes bright red
- Note: This serious sign can be mistaken for a sign of health.
- The heart does not work well
- Bleeding occurs, especially in the lungs
- There may be jaundice
- Without treatment, death follows.

Prevention of Low Temperature

To protect the baby from hypothermia the actions are summarized below:
The warm chain

- Keep birth place warm, at least 25\(^0\) C, and without cool winds.
- Immediately dry baby with a warm towel.
- Keep baby lying on the mother’s abdomen or chest for all care. If not possible, put baby on warm surface nearby.
- Place baby in skin-to-skin contact with the mother for at least 2 hours after birth. Cover both with a warm cloth.
- Breastfeed baby as soon as possible, but must be within one hour of birth.
- Wait for at least 6 hours after birth to bathe and weigh the baby. Wait longer if the infant’s feels cold or his body temperature is below 97.5 \(^0\) F (36.5\(^0\) C), the environment is cold, or the newborn is preterm and/or unwell.
- Dress baby in several layers of light, loose clothing. Put a cloth on baby’s head. Cover with light, warm covers (number of layers depends on room warmth).
- Keep mother and baby together in a warm room and encourage breastfeeding on demand.
- Keep baby warm during transportation if referred by placing baby in skin-to-skin contact with the mother or another adult and cover both warmly. The baby’s temperature should be checked during the journey.
- Educate both health workers and families about risks of low temperature/ hypothermia and how to prevent it.

High Temperature/Hyperthermia:

High temperature, fever or hyperthermia, occurs when the body temperature rises above 99 \(^0\) F (37.5\(^0\) C). It is not as common as hypothermia, but it is just as dangerous. The causes of high temperature may be:
- The room is too hot
- The baby has too many covers or clothes
- The baby has an infection

High temperature (hyperthermia) may lead to:
- Dehydration or loss of body water
- Convulsions or fits
- Shock
- Coma and death

Prevention of high temperature
- Keep the baby away from sources of heat, direct sunlight
- If the baby feels hot remove a layer of clothing.

Jaundice

Jaundice is a yellow color of the skin and the eyes that come from a substance called bilirubin. It is often seen in normal full term newborns.
Physiological jaundice:
In normal babies the yellow color appears after the second postnatal day and fades by 2 weeks. This is called normal, or physiological, jaundice. It is caused by a normal body process of breaking down red blood cells. Breaking down the blood cells releases a substance called bilirubin, which causes the yellow color. The baby’s liver usually gets rid of the extra bilirubin and then passes it out of the body through the urine and stool. The newborn baby is not able to get rid of bilirubin fast enough because the liver is immature. Extra bilirubin makes the skin yellow. The yellow color appears first on the head and moves down the body as it increases.

Pathological Jaundice:
If the baby has a problem that causes a very high level of bilirubin in the blood, serious jaundice will occur. A baby that is preterm, not sucking well, or not passing stool is not able to get rid of the bilirubin. A baby with a blood disease or infection may produce too much bilirubin. Serious jaundice means the yellow color appears during the first 24 hours of life, after 2 weeks, or is present anytime on the palms of the hand and soles of the feet.

• Normal Jaundice: The health of the newborn is not affected by this type of jaundice.
• Serious Jaundice: If the baby has serious jaundice the extra bilirubin may affect the baby’s brain and cause brain damage.

Prevention of serious illness from jaundice:
• Teach mothers to seek medical care for any jaundice that appears during the first 24 hours of life, lasts longer than 2 weeks, or is present anytime on the palms of the hand and soles of the feet.
• Remind mothers of the danger signs and to seek medical care if the baby has jaundice/any other signs.
• Follow up babies closely if they are at risk for serious jaundice:
  - Preterm babies
  - Babies with problems at birth, such as those needing resuscitation
  - Babies with any signs of infection.

Bleeding from the umbilical cord
Bleeding from the umbilical cord is a problem on the first day of life. The cord tie or clamp may slip as the cord begins to dry. After the cord dries, it no longer bleeds.

How Does Bleeding Affect the Baby?
The baby’s small body does not have much blood. Loss of a small amount of blood is serious for the baby and can cause shock.

Diarrhoea
Diarrhea is passing watery stools more than 3 times in 24 hours. What the stools are like (loose, like water) is more important than the number of times stools are passed. Vomiting sometimes happens with diarrhea. Most babies spit up a little milk after feeding. Vomiting is more forceful than spitting up. Vomiting means a larger amount of fluid comes out of the stomach.
Causes of Diarrhea

Many types of germs can cause diarrhea. The germs usually get into the baby’s body by something that is not clean touching the baby. Clothing, hands of caregivers, cup or bottle, and flies are some of the unclean things that may touch the baby. Diarrhea may also be a sign of infection in the whole body. Passing loose, water-like stools causes the baby to lose water from the body. Water in our bodies is very important to life and health. Loss of large amounts of body water quickly leads to shock, coma and death. Dehydration means the body has lost much water and is at risk.

The baby with diarrhea also loses vitamins and food from the body. If the diarrhea lasts over two weeks or happens frequently, the result is poor nutrition and failure to grow. If the baby also vomits a large amount of fluid, the loss of body water, dehydration, is more serious. It is important to remember that the problem of dehydration is more serious than the diarrhea or vomiting.

Prevention of Diarrhea

• Teach all health workers and baby’s caregivers to wash their hands before and after touching a baby.
• Teach the mother to:
  - Make sure only clean cloths cover the baby
  - Protect the baby from contact with flies and dirt
  - Breastfeed exclusively and put nothing else in the baby’s mouth.
• If the baby receives replacement feedings, make sure all the equipment used to prepare and give the feeds is washed and boiled after each use.

Baby growing too slowly (failure to thrive)

A baby does not gain enough weight and grows normally. The baby looks thin and stays small. The baby will not grow and develop normally and also will not be able to fight off infections.

Causes Failure to Thrive

• Infection
• Diarrhea that does not stop
• Continuous vomiting
• Lack of milk
• Serious medical problems.

Prevention of failure to thrive

• Teach the mother to recognize danger signs
• Refer babies with problems to a health facility where they can get medical care
• Follow up all babies to make sure they are feeding well and growing normally.
Chapter 3
Family Planning Services

3.1 National Policies

It has been predicted that the population of Bangladesh will double in the next 47 years, reaching 167 million by 2020, under very optimistic assumptions.\(^1\) As the plateauing of TFR is a big concern for Bangladesh, strategies to address this issue will have to be worked out and included in the National Plan of Action of the National Population Policy. The larger proportion of CPR is currently contributed by traditional and temporary methods. The GOB aims to improve this situation and emphasize on appropriate measures coupled with increasing proportion of clinical and terminal methods.

The National Health Policy, currently under review, aims at achieving replacement level of fertility by the year 2010 with increasing emphasis on the FP program to make it more effective. It also aims to introduce innovative ways and means for making the program acceptable, easily available, effective and affordable for the poor and ultra poor. The policies, principles and strategies of the National Health Policy also aim to: \(^2\)

- Assure and make available the methods of contraception by integrating, expanding and strengthening family planning program;
- Improve and ensure overall management system including the supply of different family planning methods;
- Form a council on population related issues at national level under the leadership of the head of the government. The council will also ensure accountability in the ESP health delivery system;
- Local and regional councils will monitor, supervise and analyze the implementation of primary health care services;
- The National Health Policy would be directed towards opting for the “Client-Centered Reproductive Health” approach that has been shown to be a most effective way to reduce unwanted fertility.

In order to address the problems of high fertility, mortality and morbidity, RH-FP services are critical with considerable scope for improvement. It is estimated that substantial natural increase in population comes from an unmet need for family planning, as well as desire for a larger family. Hence, more attention needs to be given to improve quality of care and increased utilization of services for the reduction of:

- Fertility
- Maternal mortality and morbidity
- Infant and child mortality

Contraceptive security is a cornerstone of GOB policy. Some of the services being offered are:

1. Provision of essential RH-FP services through a comprehensive client centered approach. These services should be provided along with health services at the Upazila and Union levels.

\(^1\) MOHFW. 1996.
\(^2\) MOHFW. 2000.
Special attention is given to young, low parity, newly married couples and those with unmet need for RH information/services. Freedom to choose contraceptive methods according to individual needs and preferences will be emphasized.

Establishment of Union Health and Family Welfare Centers wherever needed. Appointment of a doctor in these centers will be pursued in a phased manner to increase availability and access to quality care.

Uninterrupted supply of required medicines and equipment for all the service centers. This can be ensured by strengthening the contraceptive security system so that supplies are available wherever and whenever needed;

Ensuring access to essential information and services especially amongst high-risk population groups to prevent STD, RTI and HIV/AIDS infection.

The sources of family planning methods play an important role in the promotion and maintenance of contraceptive use in the population. The sources are divided into four categories:

1. Government facilities (including government hospitals, Upazila health complexes, Union health and family welfare center, satellite clinics, MCWCs and government field workers);
2. NGO sector sources (including static clinic, satellite clinics, depot holders and field workers);
3. Private medical sources (including private hospitals/clinics, doctors both – qualified/traditional); and
4. Private non-medical sources like shops, friends/relatives.

The government (public) sector is the predominant source of family planning methods. About 64% of current users of modern methods depend on public sector sources (with 36% from a Government facility and 28% from a Government field worker). Twenty two percent of modern method users depend on private medical sources and 7% on non-medical private sources. Only 5% of users rely on NGO sources.

**3.2 Standards and Guidelines:**

For detailed information about different family planning methods please consult the Service Delivery Manuals on seven different methods, developed by the Directorate of Family Planning named Janma Niyantran Manual.

Contraceptive methods are services through which conception is prevented. An eligible couple who is not a contraceptive user today may be a user tomorrow resulting from good counseling and education. A service provider has to exercise the following steps very carefully to make a prospective user to a potential user. The steps are:

- Motivation
- Counseling
- Appropriate selection of client
- Appropriate services
- Follow-up
- Management of complications.

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• **Motivation:**
  Motivation is the willingness to exert high levels of effort toward organizational goals. During this process not only the organizational goal is achieved but some individual needs also being satisfied. There are three key elements in defining motivation: Effort, organizational goals and needs.

• **Counseling:**
  Counseling is a process in which two people meet to explore personal problems and identify solutions. Problems may be life/work-related. Definition of counseling usually involves some or all of the followings:
  - Two people present;
  - The process leads to action on the part of the client;
  - The counselor is a person, who listens;
  - Personal growth i.e. empowerment of the client usually occurs;
  - Resolution of the problems is an expectation;
  - The client can be trusted to find his or her own solution.

**The Process of counseling**

This can be explained by expanding the word “GATHER” which is analyzed below:

\[
\begin{align*}
G &= \text{Greet the client} - (\text{To welcome the client}) \\
A &= \text{Ask/asses about needs} - (\text{Ask the client about herself, assess the knowledge and needs.}) \\
T &= \text{Tell details about methods} - (\text{To tell the client about the different F.P. methods}) \\
H &= \text{Help to choose a method} - (\text{To help the client about choosing one suitable method}) \\
E &= \text{Explain all about the method} - (\text{To explain all about the chosen method with advantage, disadvantage and on explanation on how to use a method}) \\
R &= \text{Return for follow-up/refer} - (\text{To ask the client to visit the centre for follow up service or to attend the centre for desired services where he/she is referred})
\end{align*}
\]

**Appropriate Selection of Client**

After getting good counseling, a client may choose a particular method but before providing the method, the client should be selected by taking related history and physical check-up to exclude possibility of any contra indication.

**Follow up**

Follow up is necessary for effective contraceptive use. This can be done either by visiting the clients’ home or when the client visits the centre as per previous schedule. During follow up the following things shall have to be done:

1. Ask about regular use.
2. Know about any side effect/complications.
3. Manage the side effect/complication.

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\(^4\) DFP, MCH-Services unit. 1997.
The need for Family Planning is to:
• limit family size with 2 children through desired birth spacing;
• reduce risk of maternal and infant mortality rate;
• Reduce complication due to repeated pregnancy;
• Help to maintain the health of mother and child;
• Ensure the basic needs of a child (food, clothing, education, shelter and treatment) in order to give a good start in life;
• Lessen mental, physical and financial pressure on the couple from too many children;
• Build a happy family.

Family Planning methods can be divided into two groups: Temporary and Permanent contraceptive methods. Section 3.3 deals with temporary contraceptive methods, while section 3.4 with permanent contraceptive methods.

Name of the methods
Family Planning methods are grouped into the following groups:

Temporary methods:
1. Condom
2. Oral Pill
3. Injection
4. Norplant
5. IUD

Permanent methods:
6. Vasectomy
7. Tubectomy

3.3 Temporary Methods

<table>
<thead>
<tr>
<th>Condom (Male Method):</th>
<th>It is a temporary method of contraception used by male partners. Is used correctly it is a very effective method of contraception by preventing the spermatozoa from entering into the vagina/uterus.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effectiveness</td>
<td>Condom is 97% effective if used properly. Care should be taken during use so that it does not burst due to improper wearing, friction, storage, etc.</td>
</tr>
</tbody>
</table>
Oral Pill: Oral contraceptive pill is an effective and safe oestrogen progesterone combined pill being used in this country as a popular fertility control method. The low dose oral pill which is being used in Bangladesh family planning national program is named ‘Sukhi’. It is a combination pill containing two synthetic hormones - levonorgestrel (Progestin) - 150 Microgram + Ethinyl Estradiol (oestrogen) 30 microgram. The other low dose pills available in market are Nordett, Femicon (SMC), Mini con etc.

<table>
<thead>
<tr>
<th>Mode of action</th>
<th>Oral pill acts as a contraceptive method by the following way:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Inhibits ovulation by blocking the production and release of FSH and LH.</td>
</tr>
<tr>
<td></td>
<td>• The cervical mucosa becomes thick with light cellular alignment causing physical barrier to the passage of spermatozoa.</td>
</tr>
<tr>
<td></td>
<td>• Prevents implantation of ovum in the endometrium.</td>
</tr>
</tbody>
</table>

| Effectiveness | If used correctly it is almost 97-99.9% effective. |

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Temporary method.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>If used correctly, it is 97-99.9% effective.</td>
</tr>
<tr>
<td></td>
<td>Decreases the dysmenorrheic pain.</td>
</tr>
<tr>
<td></td>
<td>Decreases the chance of fibrocystic diseases of the breast</td>
</tr>
<tr>
<td></td>
<td>Decreases the risk of ovarian cancer and ovarian cyst.</td>
</tr>
<tr>
<td></td>
<td>Decreases the risk of ectopic pregnancy.</td>
</tr>
<tr>
<td></td>
<td>Decreases the risk of endometrial cancer</td>
</tr>
<tr>
<td></td>
<td>Decreases the risk of PID.</td>
</tr>
<tr>
<td></td>
<td>Easily available and also easy to use.</td>
</tr>
<tr>
<td></td>
<td>Decreases the amount of blood loss during menstruation and helps to prevent anaemia.</td>
</tr>
<tr>
<td></td>
<td>Can be used till menopause if there is no contraindication.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Disadvantages</th>
<th>Has to be taken daily and regularly at the same time.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>May decrease the slipperiness of the vagina.</td>
</tr>
<tr>
<td></td>
<td>May cause amenorrhea.</td>
</tr>
<tr>
<td></td>
<td>May reduce the amount of breast milk secretion.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Who can use?</th>
<th>Those who want to use an effective temporary method.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Those who suffer from anemia due to excessive menstrual bleeding.</td>
</tr>
<tr>
<td></td>
<td>Those who have dysmenorrhea.</td>
</tr>
<tr>
<td></td>
<td>Those who have irregular cycle.</td>
</tr>
<tr>
<td></td>
<td>Those who have history of ectopic pregnancy.</td>
</tr>
<tr>
<td></td>
<td>Those who have non-carcinogenic ovarian cyst.</td>
</tr>
<tr>
<td></td>
<td>Those who have strong familial tendency of ovarian cancer.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Who cannot use?</th>
<th>Pregnancy or suspected pregnancy.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>If there is possibility of thrombo-embolic disorder like, thrombophlebitis, history of stroke, pulmonary embolism, or heart diseases.</td>
</tr>
<tr>
<td></td>
<td>Smoker and age above 40 years.</td>
</tr>
<tr>
<td></td>
<td>Breast cancer.</td>
</tr>
<tr>
<td></td>
<td>History of jaundice or liver diseases within the last 1-year.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Contraindications</th>
<th>All women are not eligible for using oral pill. There are certain conditions in which oral pill is contraindicated and can not be advised. Contraindications can be grouped into:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. Absolute Contraindication</td>
</tr>
<tr>
<td></td>
<td>2. Relative Contraindication.</td>
</tr>
<tr>
<td>Absolute Contraindication</td>
<td>Pregnancy</td>
</tr>
<tr>
<td></td>
<td>Previous history of Cerebrovascular Accident (stroke)</td>
</tr>
<tr>
<td></td>
<td>Thrombophlebitis</td>
</tr>
<tr>
<td></td>
<td>Heart disease</td>
</tr>
<tr>
<td></td>
<td>Serious liver disease or Jaundice during last one year.</td>
</tr>
<tr>
<td></td>
<td>Breast Cancer or Cancer of genital organs.</td>
</tr>
<tr>
<td>Relative Contraindication</td>
<td>Significant hypertension</td>
</tr>
<tr>
<td></td>
<td>Severe migraine</td>
</tr>
<tr>
<td></td>
<td>Diabetes</td>
</tr>
</tbody>
</table>

| How to take pill? | One cycle pack consists of 21 white pills containing hormones and 7 colored pills containing 75mg of Iron each. The pill should be taken from the 1st day of menstruation and should be continued uninterruptedly for 28 days. By this time next menstruation usually starts. |
### Missing pills (i.e. if pill taking is forgotten)

If someone forgets to take pill at the usual time, the woman should take that pill as soon as she remembers and then take the next pill as usual. If the woman forgets to take pills consecutively for two days she should take 2 pills as soon as she remembers and then she will take the third pill at usual time of third day. If 2 pills are missed there is chance of ovulation and condom should be used by her husband but she will continue pill taking every day till the cycle is finished. Start taking new cycle after she start bleeding. If 3 or more pills are missed probably the client will start bleeding.

### Side-effects and their management

Though the woman's body is accustomed to the effect of endogenous oestrogen and progesterone, still some women may have side effects from pill taking with varying degrees of intensity which may be troublesome. This is due to change in the hormonal availability. The side effects are the following:

<table>
<thead>
<tr>
<th>Side-effect</th>
<th>Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nausea/ Vomiting</td>
<td>Find out the cause of nausea. Confirm whether the client is pregnant or not.</td>
</tr>
<tr>
<td></td>
<td>Find out whether the client is taking pills on empty stomach.</td>
</tr>
<tr>
<td>Management</td>
<td>• Assure the client that this will usually subside within 3-4 months.</td>
</tr>
<tr>
<td></td>
<td>• Pill to be taken after food.</td>
</tr>
<tr>
<td></td>
<td>• If the client has already conceived, pill to be stopped.</td>
</tr>
<tr>
<td></td>
<td>• If there are signs of jaundice, pill should be stopped and refer the client to a doctor.</td>
</tr>
<tr>
<td>Headache/ Vertigo</td>
<td>Find out whether the client has sinusitis, high blood pressure, or suffers from excessive anxiety and tension.</td>
</tr>
<tr>
<td>Management</td>
<td>• Assure the client that this will usually subside within 3-4 months</td>
</tr>
<tr>
<td></td>
<td>• If the woman had previous history of migraine, headache or hypertension - she should be referred to the medical officer.</td>
</tr>
<tr>
<td></td>
<td>• If the client is suffering from sinusitis, refer her to a doctor for treatment.</td>
</tr>
<tr>
<td>Spotting or Intermenstrual Bleeding</td>
<td>This is due to relative oestrogen deficiency in the blood causing hormonal imbalance in the body. Ask the client how long she is taking pill and whether she has missed any pill or not. Also ask the client whether she is taking any anti-tuberculosis or anti-epileptic drugs.</td>
</tr>
<tr>
<td>Management</td>
<td>• Assure the client that it is usual and will subside within 3–4 months.</td>
</tr>
<tr>
<td></td>
<td>• To be advised to take 1 tablet of standard dose combined oral pill along with the routine pill for 7-10 days or till the bleeding stop.</td>
</tr>
<tr>
<td>Amenorrhoea:</td>
<td>Find out how the client is taking pills and whether she is pregnant or not. Also note what type of pill the client is using.</td>
</tr>
<tr>
<td>Management</td>
<td>• This may be due to irregular taking of pill leading to conception. If pregnancy is diagnosed, pill should be stopped immediately.</td>
</tr>
<tr>
<td>Hypertension:</td>
<td>• Ask the client whether this is the first time that hypertension is detected.</td>
</tr>
<tr>
<td></td>
<td>• Record client’s blood pressure for three successive time at an interval of one week. Note whether the systolic pressure during the present visit is more than 190 or more than 160 during the previous visits or whether the diastolic pressure is more than 110 during the present visit or more than 90 during the previous visits.</td>
</tr>
<tr>
<td>Management</td>
<td>• Assure the client.</td>
</tr>
<tr>
<td></td>
<td>• Refer the client to a physician/Doctor/MO (MCH-FP/Clinic) for treatment.</td>
</tr>
<tr>
<td></td>
<td>Specific management of the above and other side-effects and complications are available in the Janmo Niyantran Manual.</td>
</tr>
</tbody>
</table>
**Contraceptive Injections:** It is a temporary safe and effective contraceptive method used by women. There are two types of injections viz. Depo-provera (150 mg) and Noristerat or Doryxus (200 mg) of progesterone hormone. As present only Depo Provera (Depo-medroxy progesterone acetate) is available in our program. The effectiveness of injection is 98% - 99.6%. One dose of Depo-Provera is effective for 3 months and that of Noristerat or Doryxus is effective for 2 months. It should preferably be given within the 5th day of menstruation.

| Mode of action | The injection containing progesterone hormone acts in the following way:  
| | • Prevents ovulation.  
| | • The cervical mucosa becomes thick and sticky causing physical barrier to the passage of spermatozoa.  
| | • Makes the endometrium unsuitable for implantation of fertilised ovum. |

| Effectiveness | If used correctly injectables contraceptives are 98-99.6% effective in preventing contraception. |

| Advantages |  
| | • Almost 100% effective and very safe contraceptive.  
| | • Can be used easily. DMPA has to be taken every 3 months and Noristerat has to be taken every 2 months.  
| | • No relationship with sexual intercourse.  
| | • Can be accepted maintaining confidentiality.  
| | • Can be taken by breastfeeding mothers.  
| | • Other than the doctors, any trained health workers can also give it. |

| Disadvantages |  
| | • Causes menstrual irregularities like, irregular bleeding, spotting, amenorrhoea, and in rare occasion excessive bleeding  
| | • Once given can not be taken out unless its effect is completely finished  
| | • Some clients are afraid of injection  
| | • Some clients may experience weight gain, heaviness and tenderness in the breast  
| | • Some clients may experience other problems like, headache, loss of libido, dizziness, irritability, etc.  
| | • Conception may be delayed even after injection is stopped |

| Clients suitable for injection |  
| | • Woman having at least one living child.  
| | • Young woman who wants long acting birth spacing and before deciding for the permanent contraception  
| | • Woman who cannot take pill due to estrogenic side effects.  
| | • Breast feeding mother  
| | • Clients suffering from endometriosis  
| | • Risk of PID if IUD is used  
| | • If the client is suffering from sickle-cell anaemia |

| Clients not suitable for injection |  
| | • Without any living child  
| | • During pregnancy or suspected pregnancy  
| | • Undiagnosed excessive bleeding  
| | • If there is suspected mass or cancer in the breast  
| | • Thrombo-embolic disorder  
| | • History of jaundice or serious liver diseases over the last I year |

| Contraindications |  
| | • Pregnancy  
| | • Irregular menstruation or polymenorrhoea  
| | • Any tumor of breast  
| | • History of jaundice over the last one 1 year  
| | • Diabetes  
| | • Heart disease |

| Timing for Injection |  
| | • Within the fifth day of menstrual period  
| | • Six weeks after child birth if the baby is not completely breastfed  
| | • Immediately after MR or abortion  
| | • Within the fifth day of menstruation after stopping oral pills  
| | • At any time if one is sure that the client is not pregnant |
Second and subsequent doses of contraceptive injections may be given either 14 days before or 14 days after the schedule date. This is called ‘window period’. Following are the window period for two different brands of injectables:

- For DMPA: 90 ± 14 days.
- For Net-En: 60 ± 14 days.

### Side-effects and their management

#### Amenorrhea

Examine the client to find out the cause of amenorrhea and manage accordingly.
- Assure the client that it will be re-establish after taking 2-3 doses.
- If amenorrhea continues after 2-3 doses and the woman becomes anxious, she may be advised to change the method.

#### Spotting or Intermenstrual Bleeding

Discuss with the client about her problem. Examine the client to find out the cause of the problem and manage accordingly.

#### Excessive Bleeding

Discuss with the client about her problem. Examine the client to find out the cause of the problem and manage accordingly.

Woman having spotting or intermenstrual bleeding may be given standard dose combined oral pill in the dose of 1 tablet per day for 7-10 days.

Woman having spotting or intermenstrual bleeding may be given oral pills. In case of heavy bleeding 1 tablet of standard dose combined oral pill can be given for 21 days. Management of specific complications of injectables should be done as per GOB guidelines, available in Janmo Niyantran Manual.

### Norplant

Norplant: It is a long acting and effective temporary contraceptive method. A Norplant set contains 6 flexible closed capsules (made of polydimethyl siloxane 34 mm x 2.4 mm) which are placed under the skin on the inner side of upper arm a little above the elbow. When it is placed in position its efficacy lasts for 5 years. It contains a synthetic hormone levonorgestrel whose effectiveness is more than 99%.

#### Mode of action

- It inhibits ovulation.
- Thickening of cervical mucosa thus inhibits sperm penetration into the uterus
- Thinning of the endometrium thus makes the endometrium hostile for implantation of fertilized ovum.
- Premature luteolysis.

#### Effectiveness

Effectiveness of Norplant depends upon total surface area and thickness of the wall of the capsule, duration of use and body weight.

<table>
<thead>
<tr>
<th>Year</th>
<th>Effectiveness (%)</th>
<th>Failure Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>99.8%</td>
<td>0.2%</td>
</tr>
<tr>
<td>2nd</td>
<td>99.6%</td>
<td>0.4%</td>
</tr>
<tr>
<td>3rd</td>
<td>99.4%</td>
<td>0.6%</td>
</tr>
<tr>
<td>4th</td>
<td>98.8%</td>
<td>1.2%</td>
</tr>
<tr>
<td>5th</td>
<td>98.4%</td>
<td>1.6%</td>
</tr>
</tbody>
</table>

#### Advantages

- Almost 100% effective and very safe contraceptive
- Once taken remains effective for 5 years
- As it does not contain oestrogen, it does not cause any complications associated with oestrogen. So, Norplant can be used by the women who can not use combined pills due to oestrogen related complications.
- No relationship with sexual intercourse
- As the implants remain under the skin these are not visible
- Fertility returns very quickly after removal of the implants

#### Disadvantages

- Causes menstrual irregularities like, irregular bleeding, spotting, amenorrhoea, and in rare occasion excessive bleeding
- Once accepted can not be taken out by anyone else other than trained doctors.

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1. MOHFW, NIPH. 2000.
Some clients are afraid of surgical procedures
Some clients may experience weight gain, heaviness and tenderness in the breast
Some clients may experience other problems like, headache, loss of libido, dizziness, irritability, etc.

**Clients suitable for Norplant**
- Woman having at least one living child.
- Young woman who wants long term birth spacing before deciding for the permanent contraception
- Woman who cannot take pill due to oestrogenic side effects.
- Breast feeding mother
- Clients suffering from endometriosis
- Are seeking continuous contraception
- If there is risk of PID if IUD is used

**Clients not suitable for Norplant**
- Pregnant or suspected pregnancy
- Unexplained abnormal vaginal bleeding
- Breast cancer
- Liver diseases or history of jaundice within previous one year
- Heart disease or stroke
- Women receiving anti-epileptic or anti-tubercular drugs

**Contra indications**
- Pregnancy or suspected pregnancy
- Liver disease
- Irregular menstruation or polymenorrhoea
- Tumor or cancer of the breast
- History of jaundice within 1 year
- Uncontrolled Diabetes
- Heart disease
- Pregnancy with hepatitis

**Timing of giving Norplant**
- Within the 5-7 days of menstrual period.
- Post partum (after 4 weeks of delivery if not breast feeding)
- Postpartum if breastfeeding
- Immediately after MR or abortion.
- At any time if one is sure that the client is not pregnant.

**Side-effects and their management**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amenorrhea</td>
<td>Find out the cause of amenorrhea and manage accordingly.</td>
</tr>
<tr>
<td></td>
<td><strong>Management</strong></td>
</tr>
<tr>
<td></td>
<td>• Assure the client that it will re-establish after 2-3 months.</td>
</tr>
<tr>
<td></td>
<td>• If amenorrhea continues and the woman becomes anxious, she may be advised to change the method.</td>
</tr>
<tr>
<td>Spotting or Intermenstrual Bleeding</td>
<td>Discuss with the client about her problem. Examine the client to find out the cause of the problem and manage accordingly.</td>
</tr>
<tr>
<td></td>
<td><strong>Management</strong></td>
</tr>
<tr>
<td></td>
<td>Woman having spotting or intermenstrual bleeding may be given standard dose combined oral pill at the rate of 1 tablet per day for 7-10 days.</td>
</tr>
<tr>
<td>Excessive Bleeding</td>
<td>Discuss with the client about her problem. Examine the client to find out the cause of the problem and manage accordingly.</td>
</tr>
<tr>
<td></td>
<td><strong>Management</strong></td>
</tr>
<tr>
<td></td>
<td>In case of heavy bleeding - standard dose combined oral pill can be given in the dose of 1 tablet twice daily for 3 days followed by i tab daily for 1 to 3 cycles.</td>
</tr>
<tr>
<td></td>
<td>• Follow up of the client</td>
</tr>
<tr>
<td></td>
<td>• Tab. Ibuprofen 400 mg to 800 mg 2-3 days a day according to severity</td>
</tr>
<tr>
<td></td>
<td>• Iron tablet</td>
</tr>
<tr>
<td></td>
<td>• Tab. Folic acid</td>
</tr>
</tbody>
</table>
| Other side-effects | • Endocrinological: Ovarian cyst, weight gain, tenderness in the breast  
• Related to nervous system: Headache, nausea, vertigo, psychological changes  
• Related to skin condition: Dermatitis, acne, hirsutism  
• Infection, itching  
• Anemia, etc  
* Management of specific complications of Norplant should be done as per GOB guidelines, available in Janmo Nyantran Manual. |

| Intra Uterine Device: | IUD is a long term effective (97% - 99.2%) method used by women. Presently the largely used IUD in Bangladesh is Copper-T 380-A. Its effectiveness lasts for 10 years. There is another type of IUD which is TCu-200 effective for 5 years. |

| Mode of action | IUD acts as a contraceptive in the following way:  
• **Sperm:** Prevents movements of sperm especially from the vagina to the fallopian tubes.  
• **Ovum:** Speeds the movement of the ovum in the fallopian tube.  
• **Fertilization:** Prevents fertilization of sperm and ovum.  
• **Implantation:** Either by causing lyses of the blastocyst and or working as a foreign body creates a hostile environment inside the uterus and thereby prevents implantation. |

| Advantages | • Temporary contraceptive, but effective for long duration, 5-10 years depending on the type of IUD.  
• Can conceive at any time if it is removed  
• Does not interfere with sex  
• Can easily be inserted at all stairs of service centers by a trained FWV/doctor  
• Services are available UH&FWC, UHC, MCWC, District Sadar Hospital, Model FP clinic, NGO FP-MCH clinics. |

| Disadvantages | • The client may have pelvic pain during the first few months  
• The client may have excessive bleeding during the first few months  
• White discharge |

| Contraindications | There are certain contraindications where IUD can not be inserted. The contraindications can be grouped into:  
• Absolute contraindications, and  
• Relative contraindications  

| Absolute contraindications | • Pregnancy  
• Cervical or uterine cancer  
• Acute or chronic pelvic infection |

| Relative contraindications | • Dysmenorrhoea  
• Menorrhagia  
• Severe anemia  
• PID  
• HIV/AIDS  
• History of ectopic pregnancy |

| Timing of giving IUD | • Within 6 weeks after delivery  
• Immediately after complete MR  
• Anytime, if it is confirmed that the client is not pregnant  
• Within 5 days of menstruation |

| Side-effects | Following IUD insertion there may be immediate side effects like bleeding in the form of spotting and abdominal pain. During menstruation IUD can cause prolonged bleeding.  
• Assurance that spotting will subside after 3-4 months.  
• For prolonged bleeding during menstruation Ibuprofen tablet may be given.  
• Iron should be given to correct anemia.  
• Analgesics should be given to alleviate pain.  
• In spite of above measure if IUD remains as a threat to the woman’s health, it should be removed without delay. |

| Management | • Assurance that spotting will subside after 3-4 months.  
• For prolonged bleeding during menstruation Ibuprofen tablet may be given.  
• Iron should be given to correct anemia.  
• Analgesics should be given to alleviate pain.  
• In spite of above measure if IUD remains as a threat to the woman’s health, it should be removed without delay. |
Complications of IUD use include:
- Expulsion
- Missing IUD string
- Uterine perforation
- Ectopic pregnancy, and
- Pelvic infection.
But these complications rarely occur. Management of specific complications of IUD should be done as per GOB guidelines, available in Janmo Niyantran Manual.

Management of Missing IUD String should be done as following:

<table>
<thead>
<tr>
<th>If the string is missing</th>
<th>Consider the possibility of:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Uterine perforation</td>
</tr>
<tr>
<td></td>
<td>Expulsion of the IUD</td>
</tr>
<tr>
<td></td>
<td>Coiled up of the thread (string) inside the uterus</td>
</tr>
<tr>
<td></td>
<td>Falling off of the IUD string (detachment of the string)</td>
</tr>
</tbody>
</table>

**Management**
FWVs will examine the client using speculum. Reassure the client if the thread is visible. If not visible, they will refer the case to the doctor [MO (MCH-FP), MO (Clinic)] for further management.

If missing string is not associated with missed period and abdominal pain

- Advice ultrasonogram / X-Ray to detect the actual status of the IUD.
- Rule out pregnancy by bi-manual examination and ultrasonogram/pregnancy test.
  - If both are negative, advice another form of contraception and wait till next period and examine the client during next menses.
If missing string is associated with missed period

- Advice for ultrasonogram/X-Ray to detect the actual status of the IUD.
- Rule out pregnancy by bi-manual examination and ultrasonogram/pregnancy test.
  - If both are negative, advice to another form of contraception and wait till next period and examine the client during next menses.
  - If found pregnant, and the client wishes to continue pregnancy:
    * Look for signs of intra-uterine infection.
    * If, signs of intrauterine infection do not exist:
      ♣ inform the client to watch for signs of infection and ectopic pregnancy
      ♣ refer for prenatal care
      ♣ warn for possible perforation
      ♣ recover IUD at the time of delivery
    * If, signs of intrauterine infection exist:
      ♣ perform ultrasonogram to detect the status of IUD
      ♣ evacuate the uterus, and treat with proper antibiotics
      ♣ evacuate the tissue to rule out ectopic pregnancy
      ♣ remove the IUD, if it is inside the uterus.
  - If found pregnant, and the client does not wish to continue pregnancy:
    * determine the age of pregnancy
    * if it is within 10 weeks
      ♣ Perform ultrasonogram to detect the status of IUD
      ♣ Evacuate the uterus, and treat with proper antibiotics
      ♣ Evacuate the tissue to rule out ectopic pregnancy
      ♣ Remove the IUD, if it is inside the uterus.
    * If the age of pregnancy is over 10 weeks:
      ♣ Advice her to continue the pregnancy
      ♣ Inform the client to watch for signs of infection and ectopic pregnancy
      ♣ Refer for prenatal care
      ♣ Warn for possible perforation
      ♣ Find out IUD at the time of delivery
### Emergency Contraception (EC): (A Backup Method)

Emergency Contraception (EC) refers to contraception methods that can be used by women in the first few days following unprotected intercourse or if she had a contraceptive accident such as leakage/slippage of condom to prevent an unwanted pregnancy. Emergency contraception should not be used as a regular family planning method, but should be used only in an emergency as a back up support. Emergency contraception can be provided by emergency contraceptive pills or an intra-uterine device (IUD).  

#### Emergency Contraception Pills (ECP)

Emergency contraceptive pills are hormonal methods of contraception. Emergency contraceptive pills are of two types:

- Increased dose of combined oral contraceptives containing ethinyl estradiol and levonorgestrel (the Yuzpe regimen)
- High dose of progestin-only pills containing levonorgestrel.

#### How does ECP work?

The precise mechanism of action of emergency contraceptive pills has not been clearly established. However, a number of studies recommended the following mechanisms of action. It possibly:

- Inhibit or delay ovulation
- Prevent implantation
- Prevent fertilization
- Prevent transport of the sperm or ovum

Which mechanism is active in a particular case depends on the time of the menstrual cycle when emergency contraceptive pills are used. Emergency contraceptive pills do not interrupt or abort an established pregnancy.

#### When ECP can be used?

Emergency contraceptive pills can be used after an unprotected intercourse if a woman does not want to become pregnant from that sexual encounter. Unprotected intercourse includes the following:

- Where a contraceptive method has not been used in voluntary sex
- When the method has failed or the method has been used incorrectly, for instance:
  - Condom burst, slippage or leakage
  - Failure to take oral contraceptive pills on three consecutive days
  - Delaying a contraceptive injection (DMPA) by more than 14 days
  - Miscalculating the infertile period or failure to abstain from sexual intercourse during the fertile period
  - Failed coitus interrupts, for instance when ejaculation has occurred inside the vagina or on the external genitalia
- In case of involuntary or sexual assault, such as rape

#### Indication for use of ECP

The absolute indication of ECP is after unprotected intercourse if the woman does not want to become pregnant.

#### Contraindication for use of ECP

The only contraindication for the use of ECP is pregnancy or suspected pregnancy. Those women who can not use oral contraceptive pills (OCP) as a regular method for longer time even they can also use ECP.

#### Suggested regimen for ECP

Several types of oral contraceptive pills available in Bangladesh can be used as emergency contraceptive pills. Moreover, several dedicated brands of ECP is also available in Bangladesh such as Postinor-2 and available from the government family planning service delivery system and private sector. However, irrespective of which pill is taken, the first dose must be taken within 72 hours of unprotected intercourse (more effective when taken early) and the second dose 12 hours after the first dose.

The number of pill has to be taken in each dose depends on the formulation of the contraceptive pills. Two formulations are available in Bangladesh. Combined oral contraceptive pills and progestin only pills. The use of combined oral contraceptive pills as a ECP is not recommended by the government system as progestin-only ECP has less side effect, more effective and available from the government system.

---

**Combined oral pill**

There are two types of combined oral pills available in Bangladesh:

- Standard dose pills containing 50 micrograms of ethinyl estradiol and 250 micrograms of levonorgestrel, or 500 micrograms of dl-norgestrel.
- Low dose pills containing 30-35 micrograms of ethinyl estradiol and 150 micrograms of levonorgestrel or 300 micrograms of dl-norgestrel.

Irrespective of whether standard dose pills or low dose pills are taken, each dose should contain at least 100 micrograms of ethinyl estradiol and 500 micrograms of levonorgestrel to be effective as an emergency contraceptive.

**Progestin-only pill**

Progestin-only ECPs are more effective and are associated with fewer side effects than combined emergency contraceptive pills. Each dose of progestin-only ECP should contain at least 750 micrograms of levonorgestrel. In Bangladesh, only Postinor-2 pills or Norlevo contain the prescribed amount of hormone for emergency contraception. These pills are especially packaged as emergency contraceptive pills. Progestin-only ECP should be taken in two doses, first dose should be taken within 72 hours of unprotected intercourse and the second dose is to be taken 12 hours after the first dose.

Bangladesh government has approved the introduction of only dedicated brand of progestin-only emergency contraceptive pills such as Postinor-2 for the use in the National Family Planning Program. Ministry of Health and Family Welfare has approved its (Postinor-2) use as an emergency contraceptive pill initially in Dhaka division. Depending on success, the program will be expanded in all other divisions in the country.

**How ECP (Postinor-2) should be taken?**

Like other tablets, Postinor-2 should be swallowed with water. They should be taken preferably after a meal as they sometimes cause irritation in the stomach. The first dose should be timed so that the woman does not have to wake up in the mid or late night for the next dose. It must also be remembered that any delay in starting treatment could decrease the efficacy of emergency contraception pills.

**Effectiveness of ECP**

It is important to recognize that not every woman will become pregnant after unprotected intercourse even if she does not take any emergency contraceptive pills. Indeed, every woman has equal chance of becoming pregnant after an unprotected intercourse. It is estimated that if 100 women have unprotected sexual intercourse during second and third week of their menstrual cycle, 8 would become pregnant.

- If the same 100 women use combined oral pills as ECP, instead 8 women only 2 would become pregnant
- If the same 100 women use progestin-only ECP, instead of 8 women 1 would become pregnant.

These estimates suggested that the use of ECPs could reduce the probability of becoming pregnant from unprotected sexual intercourse by roughly 75 percent in the case of combined oral contraceptive pills, and 85 percent in the case of progestin only pills.

**Side-effects of ECP**

ECPs have some side-effects, many of which are similar to what women experience in the first few weeks of starting oral contraceptive pills. However, these side effects do not last more than one to two days after the second dose. Some side effects that women experience are:

- Nausea
- Vomiting
- Headache
- Dizziness
- Fatigue
- Breast tenderness
- Menstrual problems

**Management of Side-effects of ECP**

- Taking ECPs with food or bedtime may help reduce nausea and vomiting. Women may take an anti-emetic an hour before taking ECPs to prevent nausea or vomiting. If vomiting occurs with two hours of taking the first dose of ECP, the dose should be repeated.
For menstrual problems such as irregular bleeding, spotting, women should be assured that this is normal and is nothing to worry about. However, if menstruation is delayed by more than one week a pregnancy test should be conducted to exclude the possibility of pregnancy.

- Side effects such as breast tenderness, headache, dizziness and fatigue are not common and do not generally last more than 24 hours. Paracetamol or aspirin or ibuprofen can be safely recommended for breast tenderness and headache.

### Service Delivery Guidelines for ECP

#### To whom should services for emergency contraceptive pills be provided?

Three types of clients need to be informed and educate on emergency contraceptive pills:

- Potential contraception users (those who are not yet using any method of contraception)
- Regular family planning clients particularly those who are using barrier methods (condoms), oral contraceptive pills, DMPA injections or traditional methods such as withdrawal and safe period
- Clients who have requested for emergency contraceptive pills

#### What services providers should offer?

Service providers should:

- Inform women as well as their husbands routinely about the availability of emergency contraceptive pills during regular family planning consultations
- Distribute BCC materials on emergency contraceptive pills to create awareness among potential clients
- Try and provide women with a supply of emergency contraceptive pills in advance

Whenever possible, clients requesting for short-term contraceptive methods (such as barrier methods, oral contraceptive pills, DMPA injections or traditional methods) should be given information and services for emergency contraceptive pills. Clients requesting for long-term and permanent method should not provide such information and services. Clients who are interested in learning about other methods of contraception when they visit for emergency contraceptive pills should also be provided information and supplies.

#### How services should be provided to clients who have requested for emergency contraceptive pills?

Service providers must follow the following guidelines when dealing with clients who have requested for emergency contraceptive pills.

<table>
<thead>
<tr>
<th>Date of last menstrual period (LMP),</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Length of women's normal menstrual cycle to know whether is it normal,</td>
</tr>
<tr>
<td>- Timing of all unprotected or inadequately protected episodes of sexual intercourse in the current menstrual period,</td>
</tr>
<tr>
<td>- The number of hours since the first episode of unprotected intercourse in that cycle.</td>
</tr>
</tbody>
</table>

When a client asks for emergency contraceptive services, the first step is to assess whether emergency contraceptive pills are appropriate for her. In some cases, the client may be seeking treatment too late or may already be pregnant.

- If intercourse has occurred within the previous 72 hours (3 days) and the client is not breastfeeding, then either combined emergency contraceptive pills or progestin-only ECP (Postinor 2) can be prescribed and provided.
- If the client is breast-feeding, then progestin-only ECPs are more appropriate as they do not affect the quantity and quality of breast milk. However, there is no evidence that combined emergency contraceptive pills decrease the quantity and quality of breast milk, as the length of exposure of hormone is very short.
- If the recommended time limit of 72 hours for using emergency contraceptive pills has been crossed but the
If a client misses an oral contraceptive pill for three consecutive days

The National Family Planning Program has set guideline on what should be done if 1, 2, or 3 oral contraceptive pills are missed (MOHFW and NIPHP, 2000). Only law-dose pills are available in the country through the National Family Planning Program except 5 percent cases were high-dose/standard- dose pills are also available for side effects management. The social marketing company is also marketing low-dosed pills by the private sectors. There are some standard-dose pills that are marketing by the private sectors. The current national guidelines should be followed for missing 1 and 2 pills. However, the national guidelines should also be follow for those women who have missed 3 consecutive pills and experienced withdrawed bleeding. The national guidelines have recommended that in case three consecutive pills are not taken:

* The pills should be discontinued and discarded as the contraceptive effect of the pills would be lost. Moreover, many women may lead to withdrawal bleeding and
* The client should use condom during her rest of the period, if needed and
* The client should start a new pill packet from the first day of the beginning of the next cycle.

**Sample screening questions**

1. Have you had unprotected intercourse during the last three days?
   - Yes □ No □

   Date (s): ____________________

   Time (s): ________ a.m., _________ p.m.

2. What was the first day of your last menstrual period?
   - Date: _________________________

   Is this less than 4 weeks ago? Yes □ No □

3. Was this period normal in both its length and duration?
   - Yes □ No □

If the response to all three questions is YES, emergency contraceptive pills can be prescribed. If the response to any of these questions is NO, or the provider feels that the client's sexual history is inaccurate, the client should have a pregnancy test. If the pregnancy test is negative, emergency contraceptive pills may be prescribed. However, the client should be informed that it may be too early to detect pregnancy and, if the woman is already pregnant, emergency contraceptive pills will neither prevent the pregnancy nor harm the fetus.

**What should be done in case of method failure?**

If the woman is still within the 120-hour period, then she should be asked to use an IUD and referred to an appropriate health centre.

- If the woman has crossed the 120-hour time limit or if there is a possibility that she may be pregnant, she should be asked to wait until the next menses starts. A pregnancy test can be conducted to confirm her pregnancy status. Other health assessments such as a pelvic exam are not recommended. Sample screening questions are presented below.

<table>
<thead>
<tr>
<th>Sample screening questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Have you had unprotected intercourse during the last three days?</td>
</tr>
<tr>
<td>- Yes □ No □</td>
</tr>
<tr>
<td>Date (s): ____________________</td>
</tr>
<tr>
<td>Time (s): ________ a.m., _________ p.m.</td>
</tr>
<tr>
<td>2. What was the first day of your last menstrual period?</td>
</tr>
<tr>
<td>- Date: _________________________</td>
</tr>
<tr>
<td>Is this less than 4 weeks ago? Yes □ No □</td>
</tr>
<tr>
<td>3. Was this period normal in both its length and duration?</td>
</tr>
<tr>
<td>- Yes □ No □</td>
</tr>
</tbody>
</table>

If the response to all three questions is YES, emergency contraceptive pills can be prescribed. If the response to any of these questions is NO, or the provider feels that the client's sexual history is inaccurate, the client should have a pregnancy test. If the pregnancy test is negative, emergency contraceptive pills may be prescribed. However, the client should be informed that it may be too early to detect pregnancy and, if the woman is already pregnant, emergency contraceptive pills will neither prevent the pregnancy nor harm the fetus.
### The revised guidelines are:

Some women who have missed three consecutive pills may start withdrawal bleeding. These women should follow the earlier guidelines. Women who have not started withdrawal bleeding are potential clients for emergency contraceptive pills. They have several options:

Those who have had intercourse should:
- Take two doses of emergency contraceptive pills and
- After taking both doses, they should continue to take the rest of the oral pills, one tablet daily till the next menstrual cycle starts (this will help the woman to maintain the length of her menstrual cycle) and
- Use a condom for any further intercourse as the contraceptive effects of the pills is lost once two or more pills have been missed consecutively and
- Start a new packet of oral contraceptive pills on the first day of the next cycle.

Those who have not had intercourse should:
- Stop using oral contraceptive pills and
- Use condoms (if any intercourse happens) till the next menstrual period begins and
- Start a new packet of oral contraceptive pills on the first day of the next cycle.

If the condom burst or leaked during intercourse:
- Take two doses of emergency contraceptive pills and
- After taking two doses, use condom consistently and correctly till beginning of the next menstrual period and
- Start using a condom again from the beginning of the next menstrual cycle (if the client wants to rely on condoms) or
- Start a new packet of oral contraceptive pills after the second dose of emergency contraceptive pills (if the client wants to shift).

If the client misses the due date of a contraceptive injection:
A contraceptive injection can be taken 14 days prior to or after the recommended date. If a woman crosses this 14-day period and seeks treatment within 72 hours of intercourse, she should be treated with emergency contraceptive pills. If she has not had intercourse she can be given a contraceptive injection. Women who have missed the recommended date for the injection and seek treatment after having intercourse should:
- Take two doses of emergency contraceptive pills and
- After taking both doses, use condoms till the next menstrual cycle begins and
- Take an injection on the first day of the next menstrual cycle.

Some women who are taking contraceptive injections do not experience menstrual bleeding for many months. Service providers are often unsure about what should be done in case of a woman who has missed the due date for an injection and seeks treatment after intercourse. In such situations, it is advisable that after treatment with emergency contraceptive pills and before a subsequent injection is administered; the service provider should confirm that the client is not pregnant. A simple urine test can be performed to test for pregnancy.

What should be done if emergency contraceptive pills fail and the client becomes pregnant?
It is estimated that about 15-25 percent of the women who use emergency contraceptive pills may become pregnant even though they use the pills correctly. The possibility of "failure" must be mentioned when emergency contraceptive pills are dispensed otherwise the service provider may be blamed if the pills are ineffective. This may have an adverse impact on the ongoing national family planning program.

If the client has used emergency contraceptive pills and not menstruated for a week or more after the expected date, she may be pregnant. A pregnancy test should be conducted to confirm the pregnancy. If the client is pregnant, she should be told about the available options, and asked to choose the most appropriate option for her situation. If the client would like to continue with the pregnancy, she should be reassured that emergency contraceptive pills do not harm the fetus. If the client would like to seek menstrual regulation services, she should be referred to an appropriate centre.
### 3.3 Permanent Methods

**Vasectomy:** It is a permanent sterilization method for male. The testis produces spermatozoa from its seminiferous tubules (sperm-mother cells). The mature spermatozoa pass through the Vas Deferens of spermatic cord, to the seminal vesicles from where they come out during ejaculation.

During vasectomy operation the two vasa-deferentia are tied and dissected so that spermatozoa can not pass and meet the ovum and thereby fertilization and conception is prevented.

At present vasectomy operation is also being done by non-scalpel method. This method does not require skin incision in the scrotum but with simple puncture of the skin of the scrotum in the mid line with a sharp and pointed dissecting forceps the cord is brought outside, dissected and tied and then released into the scrotum.

After vasectomy operation, the client may not be completely sterile as the distal part of the cord and seminal vesicles still contain spermatozoa and it requires to be completely flushed out with at least 20 ejaculations. That is why, at least 20 condoms shall have to be supplied to the client after operation.

<table>
<thead>
<tr>
<th>How it works</th>
<th>Vasectomy prevents passage of spermatozoa from the vas testes to the vagina</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effectiveness</td>
<td>If vasectomy is done correctly and successfully, it is 99.6-99.85% effective</td>
</tr>
</tbody>
</table>

**Advantages:**
- Permanent method of contraception, so, once done there is no need of contraception throughout life
- Best method for the clients who have completed their desired family size
- Male participation is ensured.

**Disadvantages:**
- Reversal is possible but needs another surgeon and failure rate is high
- Requires surgery, and trained and skilled providers
- Requires specialized facilities

**Who are suitable?**
- Currently married clients, having at least 2 living children. If the numbers of living child are only 2, age of the last living child must be above 2 years.
- Clients who have completed their desired family size
- If wife cannot use hormonal methods and IUDs
- Voluntarily agreed to accept sterilization

**Who are not suitable:**

<table>
<thead>
<tr>
<th>Social cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unmarried</td>
</tr>
<tr>
<td>If wife not within child bearing age (menopause)</td>
</tr>
<tr>
<td>Less than 2 living children</td>
</tr>
<tr>
<td>Widower, divorcee</td>
</tr>
<tr>
<td>If wife has undergone minilap</td>
</tr>
<tr>
<td>If wife has not conceived during the last 5 years without any contraception</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Medical cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mental disorder</td>
</tr>
</tbody>
</table>

**Temporarily rejected, if there is**
- Fever
- Jaundice
- Hemoglobin less than 45% or 7 gm
- Untreated chronic diseases like, Tuberculosis, Hypertension, Diabetes, Heart diseases, Asthma, Thrombosis, etc.
- Skin disease at the site of operation
- Hydrocele
- Hernia

**Timing of Operation**
- Anytime if there is no contraindications.

**Side-effect or complications**
- Temporary pain, swelling, bruising, etc
- Infection
- Haematoma
- Injury to scrotal structures during operation
- Injury to the vas or slipping of the vas
- Anti-sperm Antibody
- Failure of procedure
Management

According to the cause, and as per guidelines mentioned in the Janma Niyanantran Manual:

- For mild infection or stitch infection: Cleaning with antiseptic, sterile dressing, and antibiotic
- For severe infection: Drainage of pus and broad-spectrum antibiotic.
- For pain: Analgesic tab for 2-3 days or as required
- For haematoma: If small, conservative treatment and for large haematoma, surgical evacuation blood clot and ligation of bleeding point.

Tubectomy:

It is a permanent sterilization method for female. During this operation the two fallopian tubes are ligated and dissected. Normally each month one ovary releases one mature ovum which passes through the fallopian tube to enter the uterus. Ovum can not pass through the ligated tube to meet the sperm and as a result fertilization and conception can not occur.

How it works

Minilap tubectomy prevents union of spermatozoa and ovum in the fallopian tube

Effectiveness:

It is 99.6% effective if the operation is done correctly and successfully.

Advantages:

- Permanent method of contraception, so, once done there is no need of contraception throughout the life
- Best method for the client who has completed her desired family size
- Women, who has more than 2 living children and can not use hormonal method or IUD, can use this method

Disadvantages:

- Reversal is possible with another surgery where the failure rate is high
- Requires trained and skilled providers
- Requires specialized facilities for this type of surgery

Who are suitable?

- Currently married clients, having at least 2 living children. If the number of living children is only 2, age of the last living child must be above 2 years.
- Clients who have completed their desired family size
- Cannot use hormonal methods and IUDs
- Voluntarily agreed to accept sterilization

Who are not suitable:

Social cause

- Unmarried
- If women is not within child bearing age (menopause)
- Less than 2 living children
- Widow, divorcee
- If husband has undergone vasectomy
- If not conceived during the last 5 years without any contraception
- Mental disorder

Temporarily contra indications

- Pregnancy
- PID
- Fever
- Jaundice
- Hemoglobin less than 45% or 7 gm
- Chronic diseases like, Tuberculosis, Hypertension, Diabetes, Heart diseases, Asthma, Thrombosis, etc.
- Skin disease at the site of operation

Contra indication

Absolute contraindication

- Pregnancy
- Untreated case of high blood pressure, Uncontrolled Diabetes, Heart disease, Asthma etc.
- Jaundice
- Mental disorder

Relative contraindication

- Hypertension
- Skin disease in the operation site
- Obesity

Side-effect or complications

- Temporary pain, swelling, bruising, etc
- Infection
- Haematoma
- Injury to structures inside the abdomen
- Anesthetic complications, like, convulsion, respiratory depression, shock, respiratory and or heart failure
- Failure of procedure (operation).

**Management:** According to the cause, and as per guidelines mentioned in the Janma Niyantar NMaclual:

- For mild infection or stitch infection: Cleaning with antiseptic, sterile dressing, and antibiotic
- For severe infection: Drainage of pus and administration of broad-spectrum antibiotic.
- For pain: Analgesic tab for 2-3 days or as required
- For haematoma: If small, conservative treatment and for large haematoma, surgical drainage under strict aseptic condition. Blood clot to be removed and bleeding point is to be caught and ligated.
- For specific injuries: management of bladder and bowel (intestine) injuries should be managed as below:

<table>
<thead>
<tr>
<th>Management Protocol for Bladder Injury during Minilap</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Contributing factors of bladder injury</strong></td>
</tr>
<tr>
<td>- Failure to ensure that the bladder was empty before the minilap procedure.</td>
</tr>
<tr>
<td>- Inappropriate location of the incision (too low).</td>
</tr>
<tr>
<td>- Failure to look for the translucency of the fold of the peritoneum while opening the peritoneum.</td>
</tr>
<tr>
<td><strong>Prevention of bladder injury</strong></td>
</tr>
<tr>
<td>- Ask the client to void and ensure mandatory voiding before starting the operation.</td>
</tr>
<tr>
<td>- Feel the suprapubic region for any fullness at the time of local infiltration. If suspected, catheterize.</td>
</tr>
<tr>
<td>- Give the incision 1 inch above the symphysis pubis. If there is bleeding or oozing or feel difficulty in getting the peritoneal cavity, be careful, as you might be close to the bladder.</td>
</tr>
<tr>
<td>- After opening the peritoneal cavity, feel for the bladder again. If found distended, catheterize.</td>
</tr>
<tr>
<td><strong>Signs of Bladder Injury:</strong></td>
</tr>
<tr>
<td><strong>Intra-operative signs</strong></td>
</tr>
<tr>
<td>- It is usually the roof of the bladder that is injured during minilap, while trying to open the peritoneal cavity.</td>
</tr>
<tr>
<td>- Clear fluid (urine) will start leaking into the wound.</td>
</tr>
<tr>
<td>- Rugal fold of the bladder interior may also be sighted.</td>
</tr>
<tr>
<td><strong>Post-operative signs</strong></td>
</tr>
<tr>
<td>- Haematuria</td>
</tr>
<tr>
<td>- Suprapubic pain</td>
</tr>
<tr>
<td>- Fever or signs of infection.</td>
</tr>
</tbody>
</table>

| **Steps of Repair**                                    |
| 1. Pass a foley’s catheter and attach to a drainage bag. |
| 2. Put the patient in slight trendelenberg position.    |
| 3. Provide good lummination.                           |
| 4. Catch hold of the bladder with tissue forceps beyond the two cut ends. |
| 5. Suture the bladder in two layers using atraumatic chromic ‘0’ or ‘00’ catgut. |
| 6. Use fine round-body curved needle.                  |
| 7. First suture the bladder mucosa (urethelium).       |
| 8. Then suture the bladder muscle (detrusor) layer.    |
| 9. Make sure that the bladder wound is water (urine) tight. |
| 10. Keep the foley’s catheter for seven days (indwelling), and make sure that it drains continuously for a week. |
| 11. Complete the tubectomy operation at the same sitting. |

| **Post operative care**                                |
| 1. Hospitalize the client and assure her.              |
| 2. Retain the catheter for at least seven days and remove thereafter. |
| 3. Encourage the client to drink plenty of water (2-3 litters/day) |
| 4. Give appropriate antibiotic, preferably, ciprofloxacin or norfloxacin. If not available administer amoxicillin. |
| 5. Remove the catheter after seven days and monitor the ability to void. |

**Management Protocol for Bowel Injury during Minilap**

| **Contributing factors of Bowel injury during**         |
| - Failure to feel the fold of the peritoneum to ensure that the bowel is not adherent before opening. |
### Minilap
- Failure to look for the translucency before opening the peritoneum.
- Quick and deep entry through the thin abdominal wall at the umbilicus during postpartum procedures.
- Use of toothed instruments within the abdominal cavity.

### Prevention
- Avoid quick and deep entry through the abdominal wall, especially if it is thin.
- Feel the fold of the peritoneum and ensure that bowel/omentum and other structures are not adherent.
- Look for the translucency before opening the peritoneum.
- Do not use toothed instruments within the abdominal cavity.

### Signs of bowel injury

<table>
<thead>
<tr>
<th>Intra-operative signs</th>
<th>Post-operative signs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visualization of the bowel serosa or muscularis.</td>
<td>Abdominal pain</td>
</tr>
<tr>
<td>Visualization of bowel contents/lumen.</td>
<td>Vomiting</td>
</tr>
</tbody>
</table>

### Management of Bowel Injury

1. If the injury is superficial (serosal layer only):
   - Complete the tubal occlusion.
   - During discharge provide instructions to return immediately if pain or fever begins.
   - Make arrangement for follow-up of the patient in order to monitor any changes in condition over the next 48 hours.
2. If the injury is through the bowel lumen:
   - Initiate Intravenous fluid and antibiotics.
   - Promptly repair the injury using fine chromic catgut suture in multiple layers using an atraumatic needle.
   - Introduce a Foley’s catheter and retain it as needed.
3. If the faecal matter is expelled into the abdomen:
   - Initiate Intravenous fluid and antibiotics.
   - Introduce Ryle’s tube for giving suction.
   - Promptly repair the injury using fine chromic catgut suture in multiple layers using an atraumatic needle.
   - Do lavage of the peritoneal cavity with a sterile solution. Leave a drain or two.
     - Discontinue tubal occlusion if it has not already been started.
   - Introduce a Foley’s catheter and retain it as needed.

### Steps of repair of bowel injury

1. Give extra dose of injection Pethidine and local anesthesia and enlarge the incision.
2. If required transfer the patient that has facilities for giving GA.
3. Make good illumination.
4. Repair the injury in two or three layers.
5. Make the injury transverse in direction by holding with two tissue forceps.
6. Use fine (00) atraumatic chromic catgut with fine round-body curved needle.
7. Suture the deeper layer (first layer) through and through transfixing all the layers except penetrating the mucosa.
8. Continuous/interlocked or interrupted stitches may be given.
9. Suture the second layer to invaginate the first suture line:
   - Take-up the serous and muscular coats on each side of the deep suture line.
   - Keep 5 mm distance from the deep suture line.
   - Do not penetrate the mucous layer.
Post-operative Care in case of bowel injury

<table>
<thead>
<tr>
<th>Condition</th>
<th>Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Convulsion</td>
<td>Inj. Diazepam 5 mg IV</td>
</tr>
<tr>
<td></td>
<td>If needed oxygen shall have to be given.</td>
</tr>
<tr>
<td>Respiratory depression</td>
<td>If respiration has stopped for any length of time, there will be respiratory acidosis. Give injection Sodi-Bi-carb 7.5% 40-50 ml IV. If respiratory arrest is supposed to be due to high dose of Pethidine, give Naloxone injection. Also institute artificial respiration with Ambu bag connected with O₂ cylinder.</td>
</tr>
<tr>
<td>Shock</td>
<td>If there are signs of shock (hypotension feeble pulse, cold sweat on the forehead - Immediately start I.V infusion of 5% Dextrose saline with 100 - 200 mg injection hydrocortisone. Also give injection Adrenaline (1 in 1000) 1 ml IV. Also foot end of the bed to be raised.</td>
</tr>
<tr>
<td>Cardiac Arrest</td>
<td>If there is cardiac arrest showing absence of carotid pulse and heart beat, then start CPR (Cardio-Pulmonary Resuscitation) immediately. Also give injection Adrenaline (1 in 1000) to stimulus cardiac muscle. If still the same condition continues then give injection calcium gluconate 10% 10 ml. and injection 7.5% Sodi-Bi-carb 50 ml IV slowly.</td>
</tr>
<tr>
<td>Bronchospasm</td>
<td>If there is evidence of bronchial spasm, give IV injection of Aminophylline (250 mg) slowly along with 5% Dextrose 50 ml. Also if required injection hydrocortisone 100 mg - 200 mg IV may be given.</td>
</tr>
</tbody>
</table>
Chapter 4
RTI/STI and HIV/AIDS Services

4.1 National Policies
Realizing the gravity of the HIV/AIDS situation in Bangladesh, the GoB undertook a project on ‘Prevention and Control of Sexually Transmitted Diseases’ in 1996. Later, in 1997, the National Policy on HIV/AIDS and STD-related issues was approved. The National AIDS Policy is a landmark document, which outlines the various aspects of HIV/AIDS prevention/care. It covers public health aspects such as surveillance; HIV/AIDS counseling and testing; and management of sexually transmitted diseases. The GoB also developed, in May 1997, a strategic plan for the National AIDS Programs of Bangladesh (1997-2002) for HIV/AIDS prevention and care. A National AIDS Committee was also formed in 1995 to suggest ways and means for preventing HIV/AIDS.¹

In order to address all social, ethical and personal issues related to HIV/AIDS infection, the GoB has adopted policy guidelines for the National AIDS Program (NAP). These technical policy guidelines refer in particular to the following areas:

- Surveillance and reporting of AIDS cases,
- Testing guidelines,
- Management of AIDS and HIV infection to include special groups, e.g., TB,
- Behavior change communication,
- Counseling of HIV/AIDS patients and confidentiality,
- National blood transfusion services,
- HIV/AIDS and women, men, children, adolescents, sex workers, IDUs, people staying away from their partners, prisoners, minority populations, etc.,
- Human rights issues,
- HIV/AIDS education in and out of school,
- Maternal and child health,
- HIV/AIDS and the work place,
- Relationship of the NAP with other program areas,
- Legal/ethical aspects,
- Social/behavioral/clinical research.

As the program should continue to develop, the National STD/AIDS Policy needs to be reviewed (and possibly amended) on a regular basis to ensure consistency.

4.2 Standards and guidelines
Technical Standard and Service Delivery Protocol for Management of RTI/STD.
Capacity Development through Training for the Reproductive Health Program Clinical Contraception, HIV/AIDS and RTI/STI Case Management.

¹ WHO 2003
4.3 STI infecting the reproductive organs:

- Trichomoniasis
- Gonorrhea
- Chlamydia
- Herpes Genitalia
- Syphilis
- Chancroid
- Granuloma Inguinale
- Lymphogranuloma Venereum
- Pelvic Inflammatory Diseases (PID) (some of the causes)
- Other possible diseases like
  - Scabies (of genital area)
  - Genital warts
  - Pediculosis pubis
  - Molluscum Contagiosum (not always sexually transmitted)

4.4 STI not infecting the reproductive organs

Some STI might not cause infections of the reproductive tract.

- Hepatitis –B, C and D,
- HIV/AIDS.

4.5 Other than STI infecting the reproductive organs

These are RTI that are not usually sexually transmitted. Examples of non-sexually transmitted RTI are:

- Candidiasis/Moniliasis or yeast,
- Bacterial Vaginosis,
- Some cases of PID.

4.6 Syndromic Management

STI associated syndromes are easily identifiable groups of symptoms and clinical signs on which the health care provider can base their diagnosis. Syndromic diagnosis requires the appropriate algorithm and the overall approach allows time for simple education messages, condom promotion and the discussion of partner notification. Usually no laboratory tests are done (or only basic tests) and so the specific cause of the syndrome is unknown. As many RTIs/STIs can cause the same syndrome, it is usually necessary to treat for several infections. Antimicrobial treatment is provided at once and should be appropriate to cover the majority of the pathogens responsible for the syndrome in the locality. Ideally treatment should be oral and single dose.

I Advantages of the Syndromic Approach:

A Reduces probability of incorrect clinical diagnosis by dealing with most likely causative agents,
B Presents an alternative when laboratory support is not available,
C Ensures effective and standardised treatment at all levels of the health system.

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2 DGHS, MOHFW, 2003
D  Facilitates training and supervision,
E  Allows patients to be treated effectively at their first visit,
F  Uniformity in collecting data,
G  Easy availability of drugs (stock),
H  Educative messages are addressed,
I  Can be used by any level of health care providers.
J  Condoms are promoted
K  Partner notification is discussed

II  Disadvantages of the Syndromic Approach:

• In the general population over diagnosis and overtreatment: leading to increased drug costs, possible side effects from drugs, changes in vaginal flora, potential for increased drug resistance and domestic violence
• In high risk women, the vaginal discharge syndrome may under treat cervicitis due to high rates of asymptomatic infections
• Requires re training of staff
• Requires monitoring and updating (as e.g. antibiotic sensitivity of gonococcus changes)
• Resistance from medical establishment as health care providers feel uncomfortable to use his/her clinical experience.
• Still requires referral system

NB: Problems with asymptomatic infection: the syndromic flow chart is de facto not useful for asymptomatic patients since it relies on the presence of a combination of signs and/or symptoms. Since STDs are commonly asymptomatic in women (and in men), this shortcoming applies particularly to women. Thus the concept of risk assessment is introduced.
Table 1: Explains the signs and symptoms for the main RTI/STI syndromes and their most common etiologies:

<table>
<thead>
<tr>
<th>Syndromes</th>
<th>Symptoms</th>
<th>Signs</th>
<th>Most Common Etiologies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urethral discharge (UD)</td>
<td>Urethral discharge</td>
<td>Urethral discharge (milk the urethra)</td>
<td>Gonorrhea, Chlamydia</td>
</tr>
<tr>
<td></td>
<td>Dysuria</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Frequent micturation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vaginal discharge (VD)</td>
<td>Vaginal discharge</td>
<td>Vaginal discharge (nature of discharge, if</td>
<td>Vaginitis: Trichomoniasis,</td>
</tr>
<tr>
<td></td>
<td>Profuse foul smelling discharge</td>
<td>speculum examination is possible)</td>
<td>Candidiasis, Bacterial</td>
</tr>
<tr>
<td></td>
<td>Vaginal itching</td>
<td>Endocervical discharge</td>
<td>vaginosis, Cervicitis:</td>
</tr>
<tr>
<td></td>
<td>Dysuria</td>
<td>Friability of cervix</td>
<td>Gonorrhea, Chlamydia</td>
</tr>
<tr>
<td></td>
<td>Painful intercourse</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Genital Ulcer (GU)</td>
<td>Genital Ulcer</td>
<td>Genital Ulcer</td>
<td>Syphilis, Genital Herpes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Enlarged inguinal lymph nodes</td>
<td></td>
</tr>
<tr>
<td>Lower abdominal pain</td>
<td>Lower abdominal pain and</td>
<td>Vaginal discharge</td>
<td>Gonorrhea, Chlamydia</td>
</tr>
<tr>
<td>(PID)</td>
<td>Painful intercourse</td>
<td>Lower abdominal tenderness on palpation/</td>
<td>Mixed anaerobes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>cervical motion tenderness.</td>
<td></td>
</tr>
<tr>
<td>Scrotal swelling (SS)</td>
<td>Scrotal pain and or swelling</td>
<td>Scrotal tenderness and swelling</td>
<td>Gonorrhea, Chlamydia</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inguinal bubo (IB)</td>
<td>Painful enlarged inguinal lymph</td>
<td>Swollen tender lymph nodes</td>
<td>Lymphogranuloma venereum,</td>
</tr>
<tr>
<td></td>
<td>nodes</td>
<td></td>
<td>Chancroid</td>
</tr>
<tr>
<td></td>
<td>Fluctuation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Abscess or fistulae</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neonatal conjunctivitis (NC)</td>
<td>Swollen eyelids</td>
<td>Edema of the eyelids</td>
<td>Gonorrhea, Chlamydia</td>
</tr>
<tr>
<td></td>
<td>Discharge</td>
<td>Purulent discharge</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Baby cannot open eyes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

III Steps in RTI/STI Case Management:

The aims of RTI/STI case management are to:

1. Provide effective antibiotic treatment to cure and reduce infectivity
2. Prevent complications and sequelae of RTI/STI
3. Reduce HIV transmission

RTI/STI case management should therefore be comprehensive and go beyond reaching a correct diagnosis and providing therapy. It should reduce and prevent future risk-taking behavior and ensure that sexual partners are appropriately managed and treated.

The 5 Steps of Comprehensive RTI/STI Case Management:

- Step 1: History taking
- Step 2: Physical examination
- Step 3: Curative or palliative therapy
- Step 4: Health education messages (the 4 Cs)
- Step 5: Schedule a clinical follow-up

All STI patients should have a full sexual history and genital examination (including speculum and bimannual examination when possible). To the extent possible, consultation should take place in privacy. If necessary the physician can
sit close to the client so that they can speak without being overheard. Remember to maintain a respectful and non-judgmental attitude toward your client. It is very important to only ask for information that will help you better manage the patient.

**Step 1 : History Taking:**
Taking a history from RTI/STI clients is very important and requires special skills. The following points should be remembered:

i. Reassure the patient that absolute confidentiality will be maintained,
ii. Obtain the reason for consultation (infection, fear of infection),
iii. Find out what symptoms and signs, if any, prompted the visit and their duration
iv. Take a sexual history – when did the patient last have sex, with whom and in what manner. Were condoms used the last time and in general
v. Conduct a behavioral risk assessment on female patients,
vii. Obtain information on drug allergies and current medications.
viii. For women, obtain information on obstetric, gynaecological and contraceptive history

**Risk Assessment for Female Patients:**
The probability that a woman has acquired a sexually transmitted infection is greater if she has a positive risk assessment. The risk assessment questions are based on the recommendations of an expert panel. Although they have yet to be validated, they are considered the most appropriate for the context.

A risk assessment is considered positive if at least one of the statements in Part I is true or if two or more of the statements in Part II are true.

**Part - I:**

i. Her partner has symptoms or was recently treated for an STI,
ii. She is a sex worker,
iii. She has had more than one sexual partner or a new sexual partner in the past three months.

Some individuals are at risk because of their own behavior. Others are at risk because of their partner's behavior. In most societies, without exception, women are at risk mostly because of their husband's behavior. This is why the risk assessment includes questions about the patient's partner.

**Step 2 : Physical Examination (including genital examination):**

**Male Patients:**
The male patient should be asked to undress so that the genitals are fully exposed. Sterile gloves should be used to conduct the examination, otherwise the patient himself should be asked to retract his foreskin (if present) and milk his penis to show any discharge. Proceed as follows:

1. **Pubic area** – inspect for e.g. pubic lice, molluscum contagiosum
2. **External genitalia** - inspect for e.g. warts, ulcer, herpes, scabies
3. **Inguinal and femoral lymph nodes** - palpate for swelling and tenderness
4. **Prepuce** - retract and inspect
5. **Scrotum and its contents** (testes, epididymies, spermatic cords) – palpate
6. **Urethral meatus** – look for discharge and warts. Milk the urethra for discharge
7. **Perineum, perianal region and anus** – inspect for e.g. warts or fissures. This is particularly important for men who have sex with men.

8. **Oropharynx** – examine for pharyngitis if there is a history of oral sex and possible gonococcal pharyngitis in men who have sex with men.

9. **Proctoscopic examination** – if required.

**Female Patients:**

The female patient should be asked to remove her underwear and lie on her back, on the examination table with her knees flexed and legs apart. Speculum examination should be performed using sterile instruments. Bi-manual examination or external palpation of the pelvis and lower abdomen should be performed for evidence of tenderness and swelling. Following things should be looked for while examining a female patient:

1. **Abdomen** – inspect and palpate the abdomen for tenderness, guarding and masses

2. **Pubic area** – inspect for pubic lice, warts, molluscum contagiosum and ulcers

3. **Inguinal and femoral lymph nodes** – palpate and note enlargement or tenderness

4. **Labia and introitus** – separate and inspect the labia majora, the inner labia and introitus for e.g. warts, herpes lesions, discharge, inflammation of Bartholin’s Gland

5. **Urethra and paraurethral glands** – insert a finger into the vaginal orifice and milk for discharge

6. **Speculum examination** – carefully pass a bivalve speculum, open and locate the cervix. **Note:** the character of any vaginal fluid; the appearance of the vaginal walls; the appearance of the ecto-cervix; the character of any cervical discharge

7. **Bimanual examination** – the lubricated index and second finger of the right hand are used to gently separate the labia and are then passed into the vagina. The anteverted uterus can be palpated by passing the fingers to the anterior fornix with the fingers of the left hand placed well above the symphysis pubis. The retroverted uterus is palpated from the posterior fornix. The uterine appendages are examined from the lateral fornices where any swelling may be palpated between the fingers of the two hands. Swellings may also be felt in the rectovaginal pouch (pouch of Douglas).

8. **The perineum, perianal region and anus** – inspect for lesions such as warts, anal fissures etc.

9. **Oropharynx** – examine for pharyngitis if there is a history suggestive of oral sex and possible gonococcal pharyngitis

**Step 3 : Curative or palliative therapy:**

For RTI/STI case management do not prescribe drugs and doses that are not recommended. Ineffective or sub-therapeutic treatment is a sure way of losing the confidence of your patient and contributing to spread of the infection and the emergence of drug resistance. Follow the drug regimes recommended in these guidelines.
Step 4 : Basic Health Education Messages (the 4 C's):

The 4cs are an essential part of syndromic management. People who seek treatment for a suspected STI constitute a very important target group for STI/HIV prevention education. Those who are actually diagnosed to have an STI may be more receptive to preventive advice. They now have proof that ‘it can happen to me’, not only to others. So, this is a valuable opportunity to communicate with them about the risks of HIV infection and how to avoid future STI infections.

<table>
<thead>
<tr>
<th>The four basic Health Education Messages (4C’s) are:</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
</tr>
<tr>
<td>C</td>
</tr>
<tr>
<td>C</td>
</tr>
<tr>
<td>C</td>
</tr>
</tbody>
</table>

There is no standard order in which these messages should be delivered. However, patients tend to be most responsive to messages related to their own cure, followed by the treatment of those close to them, for instance a spouse.

Compliance with Treatment:

- Give all necessary instructions for the patient to complete the full course of treatment. Disappearance of symptoms at the middle of the treatment does not mean that the patient is cured.
- To avoid re-infection from a partner or transmitting the infection to a partner the patient should avoid sexual contact during the treatment and until the partner is treated.
- Ensure a follow up visit if the patient is not cured after taking the full course. After completion of the treatment, if the patient feels that he/she is cured, then the patient need not attend for a follow up visit.
- Give instructions in a manner that the patient can understand and remember.
- Ask the patient to repeat the instructions.
- When appropriate, write down details and give them to the patient.
- Use symbols for the patient who cannot read.

Counseling/Education for prevention:

- Educate the patient about his/her disease:
  - How it was contracted through sex with an infected partner,
  - About its potential complications if not treated early and effectively, e.g. infertility, ectopic pregnancy
  - About other serious consequences such as acquiring HIV/AIDS,
  - To come back for follow-up if symptoms do not resolve or recur Because he/she may need more medicines or a different kind of medicines to cure the infections.
• Every patient suffering from STD must receive and understand the following messages:
  - Without treatment STI may cause severe complications,
  - The mode of transmission of STI including HIV,
  - STI augments the risk of HIV transmission,
  - Information about safer sex practices and use of condom.

**Steps of counseling:**

b. Help your patient trace his/her sexual partners.
c. Assess your patient’s risk level.
d. Identify any barriers to changing risky behavior.
e. Inform your patient about his/her risk level.
f. Help your patient plan changes in his/her behavior.

a. **Inform your patient about his/her RTI/STI, its implications and treatment**

   Through informing, the patients need to understand how to get over their current RTI/STI and prevent getting another one in the future.

   The following six information should be provided to a RTI/STI patient:
   - Complete the full treatment
   - Take care not to spread RTI/STI and HIV:
     - Avoid sex during treatment
     - If not, partner may be infected
     - If unavoidable, use condom
   - Help your husband/partner to get treatment
   - Follow up visit – Assessment of the condition
   - Safer sex:
     - Sex with mutually faithful partner who is not infected
     - Correct and consistent condom use
     - Non-penetrative sex and abstinence
     - Early and effective treatment seeking behavior
   - Protect your baby:
     - Look for RTI/STI in the first trimester of pregnancy.

b. **Help your patient trace sexual partners**

   Always tell the patients how important it is to treat the partner(s). Ask them how you can help them bring their partners in for treatment. Patient may be the index case: the only one who can tell you where the infection came from.

c. **Assess your patient’s risk level**

   For assessing your patient’s risk level, ask about five different areas:
   - Personal sexual behavior
     - Sexual partners in the past year
     - Past history of any other STI
   - Other personal risk factors
     - Blood transfusion
     - Sharing needles

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3 NIPHP, 1999
- Partner(s) sexual behavior
  - Have an STI
  - Inject drug
  - Sex with other partner
- Personal drug use
  - Alcohol or drugs
- Patient’s protective behaviour
  - Safer sex

Common myths about RTI/STI and AIDS include:
- Married women, young girls or boys, or clean, healthy or big partners are usually free from infection.
- Taking antibiotics and anti-malarial drugs before or after sex is protective.
- Urinating, washing or douching after sex provides sufficient protection.
- I don’t belong to a high-risk group (sex workers, truck drivers, homosexual) so I’m safe.

d. Identify any barriers to changing risky behavior

Changing risky sexual behavior is difficult because it is extremely personal, private and satisfying. It is formed by a combination of different factors like, physical structure, gender, culture, religion, economic background, character, principles, personal factor and environment. Most sexual activities are habitual; they are automatic and take place without the person having to think a great deal.

It is necessary to understand the patient’s sexual behavior if we want to bring a change in risky behavior. Therefore counselling should be tuned to suit the patient’s nature and behavior.

e. Inform your patient about his/her risk level

Counsellor’s job is not to change patient’s behavior directly but to give information about his/her risk level, identify any barriers that might interfere with his/her attempts to change and to help deal with those barriers. It is critical to find a balance between fear arousing and fear reducing messages.

f. Help your patient to plan changes in his/her behavior

There are a number of techniques to help the patient change his/her behavior. Focus on
- The immediate benefits to the patient
- Replacing a risky practice
  - Safer sex
  - Knowing the signs and symptoms of RTI/STI and treating them promptly
  - Seeking treatment for drug addictions
  - Avoiding any body piercing, (involving the use of shared instruments)
  - Seeking health care at a facility where needles and skin piercing instruments are properly sterilized.
- Helping your patient to deal with any barriers
**Condom use: Demonstration of correct use:**

- How to prevent further spread of STIs including HIV infections,
- Demonstrate correct use of male and or female condoms,
- Dispense male and or female condoms.

**Condom demonstration:**

- Carefully open the package so that the condom does not tear. DO NOT use your teeth or other sharp object to open the package. DO NOT unroll the condom before putting it on
- If not circumcised, pull the foreskin back. Squeeze the air out at the tip of the condom and leave space for the semen to collect and thus prevent from bursting. Unroll the condom directly onto the hard penis.
- Continue to squeeze the tip while unrolling the condom until it covers the penis.
- Always put on condoms before entering a partner. DO NOT use grease, oils, lotions or Vaseline to make the condoms slippery because oil weakens the condom and may break it. If desired, use glycerine or other water based lubricants.
- After ejaculation, hold the rim of the condom and pull the penis out before it gets soft.
- Slide the condom off without spilling the semen.
- Tie and wrap the condom (in paper, if available) and dispose properly. Throwing it in a bin or sanitary latrine may cause public nuisance or sewerage problem.

**Contact tracing and treatment**

Partner notification and treatment is especially important for female partners since women are frequently asymptomatic and unaware of their infection.(there is increasing evidence that men can also be frequently asymptomatic) If you think it is unlikely that the partner will seek treatment, consider providing the patient with additional treatment for the partner.

Educate the patient about:

- Importance of notifying recent sexual contacts and encouraging them to get treatment,
- You must help your patient understand the importance of partner management even if he/she is asymptomatic:
  - Risk of re-infection from asymptomatic partner.
  - Risk of complications for his/her partner.
- Possible ways of partner management:
  - Taking the drug for the partner.
  - Bring the partner to the clinic.
  - Use referral card for the partner. In the referral card mention the serial number of the patient and code of the syndrome.
The following chart confirms the treatment of the partner respective to that of the index patient:

<table>
<thead>
<tr>
<th>Code</th>
<th>Syndrome of Index Patient</th>
<th>Treatment of Partner</th>
</tr>
</thead>
<tbody>
<tr>
<td>UD</td>
<td>Urethral discharge</td>
<td>Treat partner for Cervicitis</td>
</tr>
<tr>
<td>GU</td>
<td>Genital ulcer</td>
<td>Treat partner for Genital ulcer</td>
</tr>
<tr>
<td>VD</td>
<td>Vaginal discharge: (i) Patient treated for Vaginitis &amp; Cervicitis (ii) Patient treated for Vaginitis only</td>
<td>(i) Treat partner for Urethritis (ii) Not necessary for the partner to be treated</td>
</tr>
<tr>
<td>PID</td>
<td>Pelvic Inflammatory Disease</td>
<td>Treat partner for Urethritis</td>
</tr>
<tr>
<td>SS</td>
<td>Scrotal Swelling</td>
<td>Treat partner for Cervicitis</td>
</tr>
<tr>
<td>IB</td>
<td>Inguinal Bubo</td>
<td>Treat partner for Lymphogranuloma Venereum</td>
</tr>
<tr>
<td>NC</td>
<td>Neonatal Conjunctivitis</td>
<td>Treat mother for Cervicitis and her partner(s) for Urethritis</td>
</tr>
</tbody>
</table>

Note: The partner should receive treatment even if he/she is asymptomatic

Step 5: Schedule clinical follow-up

Follow-up is a most important for patients with genital ulcer disease, pelvic inflammatory disease and scrotal swelling and pain; otherwise the patient can be advised to return only if symptoms persist or recur.

IV Flow Charts for Syndromic Management of RTI/STI

The World Health Organization/Global Prevention of AIDS (WHO/GPA) has developed a set of standard syndromic flowcharts that take into account the most common etiologies for each syndrome. As the seven RTI/STI syndromes are easy to identify, it has been possible to devise a flowchart for each one. These flowcharts have been adapted to local Bangladesh circumstance and needs.

Each flowchart is broadly made up of a series of three steps, these are:

A  The clinical problems (the patient’s presenting symptom),
B  The decision that needs to be taken,
C  The action that needs to be carried out.

The flowcharts called ‘Algorithms’ are in fact a decision and action tree. Each flowchart begins with a patient complaint and guides the user through a series of decisions and actions ending with an instruction on how to manage the patient (or, in a few cases, an instruction to refer the patient). Each decision or action is enclosed in a box with one or two routes leading out of it to another box, with another decision or action. A box with thin margins indicates complaints and a box with ash color shaded thick margins indicates treatment or management. Algorithms and treatment recommendations are available for each of the syndromes. Combined treatment is to be provided if more than one syndrome is present.
**Benefits of the flowcharts are:**

A. Promptness of treatment, because RTI/STI services can be made available at any first-line health facility. Patients are thus treated at their first visit;

B. Widespread access, since treatment is available at more health centres, so a wider population can be covered;

C. Opportunities for introducing preventive and promotive measure such as through education and condom distribution.

**VI Referral of RTI/STI Cases**

The syndromic approach to RTI/STI case management must always be very well supported by a well-organized referral network to specialised service providers and a reference laboratory.

Laboratory tests improve the diagnostic specificity of symptomatic RTIs/STIs, as well as the diagnostic sensitivity of asymptomatic RTIs/STIs. However, they are not always available and the delay in receiving results can lead to lost treatment opportunities. The laboratory is useful for asymptomatic infections, to monitor resistance to antibiotics and to validate treatment Algorithms.

RTI/STI cases may need to be referred in the following situations:

A. Patient does not respond to the treatment
B. Patient needs confirmation of the diagnosis by laboratory tests,
C. Patient has a confusing or complex syndrome.

The clinical infrastructure in Bangladesh is organized at three successive levels. Patients are first seen in primary health care or first-encounter level health units of the GOB (H&FWC) and NGO clinics. Most of the primary level health care centres usually do not have any facility to perform laboratory procedures to support the syndromic management of RTI/STI. If possible primary level health care facilities should be equipped for performing microscopic examination of Gram’s stained specimens, and RPR.

RTI/STI referral centres should be specialized facilities equipped with trained doctors and/or laboratory equipment for dealing with the referred/complicated as well as simple cases.

Intermediate level referral centres (THC, District Hospital, MCWC, Private Clinics, Diagnostic laboratories, etc.) should be located in the Thana or District levels. These facilities should have better infrastructure, specialized/skilled manpower and better diagnostic capabilities. Laboratory tests in these facilities might include microscopic examination of fresh/stained specimens, RPR, culture of *Neisseria gonorrhoea*, identification of penicillinase-producing strains, antigen detection of *Chlamydia trachomatis*. Serology might include HIV testing (ELISA) or particle agglutination as well as confirmatory tests for Syphilis.

Already mentioned above the central/national level facilities (Medical College Hospitals, other GOB facilities, specialized hospitals/clinics/laboratories, etc.) are usually located in the divisional/capital cities or university hospital. The range of diagnostic tests performed varies according to the available human, material, financial resources, and the workload.
VII Urethral Discharge Syndrome

A Causes of Urethral Discharge:
1 Neisseria gonorrhoea
2 Chlamydia trachomatis
3 Ureaplasma ureolyticum
4 Trichomonas vaginalis

B Signs and Symptoms of Urethral Discharge Syndrome:
1 Urethral discharge
2 Dysuria
3 Frequent micturation
4 Urethral itching
5 Urethral discharge can be associated with scrotal pain and swelling.

C Complications:
1 The most common complication in men is epididymitis, which can lead to decreased fertility or sterility.
2 Urethral stricture and peri-urethral abscess.
3 The most serious complications of gonococcal and chlamydial infections if untreated, falls upon female partners who, often unaware of their infection, develop cervical infection which can lead to pelvic inflammatory disease, infertility or ectopic pregnancy. Their infant may develop complications such as ophthalmia neonatorum or pneumonitis.
4 Untreated urethritis in men (and the resulting cervicitis in women) facilitates the acquisition and transmission of HIV infection.
**Urethral Discharge**

**Patient Complains of Urethral Discharge/dysuria**

- Take History
- Examine: milk urethra, if necessary

**Discharge present?**

**Yes**

- Treat for Urethral Discharge Syndrome
- 4 C’s

Follow-up after 1 week

**Discharge persists?**

**Yes**

- Non-compliance of treatment?
- Possible re-infection?

**Yes**

- Repeat treatment

**No**

- Refer

---

**E  Treatment of Urethral Discharge Syndrome:**

1. Injectable Ceftriaxone: 250mg by intramuscular injection, as a single dose; or
   Capsule Cefixime: 400mg orally, as a single dose; or
   Injectable Spectinomycin: 2gm by intramuscular injection, as a single dose
   Plus
2. Capsule Doxycycline: 100mg orally 12 hourly for 7 days; or*
   Capsule Tetracycline: 500mg orally 6 hourly for 7 days; or*
   Tablet Erythromycin: 500mg orally 6 hourly for 7 days
   Table Azithromycin 1g single dose orally;

**Should not be prescribed for partner if she is pregnant or lactating.**

- a If possible, single dose treatment should be taken/given at the clinic.
- b Persistence of Urethral discharge may be due to resistance to antibiotics, possible re-infection, non-compliance of treatment.
- c Partner notification card: Give card for partner(s) management with diagnostic code ‘UD’ to be treated for Cervicitis.
F Referral
If urethral discharge persists even after treatment with appropriate antibiotic for 1 week and adherence to 4Cs, refer to the client for laboratory test if needed then treat appropriately.

VIII Vaginal Discharge Syndrome:
Vaginal discharge is the most common gynecological complaint of women in Bangladesh. A healthy normal woman may have a variable amount of clear and white discharge from her vagina. The discharge usually increases and becomes more watery when a woman is in the middle of her menstrual cycle. It also increases when she is taking oral contraceptive pills (OCP) or has an IUD in place.

A Causes of Vaginal Discharge:
1. Infections of the vagina (vaginitis) e.g. candidiasis, trichomoniasis and bacterial vaginosis,
2. Infections of the Cervix (cervicitis) e.g. mucopurulent cervicitis caused by gonococcus and/or chlamydia,
3. Simultaneous vaginal and cervical infections.

The most probable cause of a woman complaining of vaginal discharge is vaginitis. Cervicitis is a less frequent cause of vaginal discharge but the complications of untreated cervicitis are much more serious.

B Signs and Symptoms of Vaginal Discharge Syndrome (VDS):
1. Vaginal discharge:
2. Can be associated with vaginal/vulval irritation, itching and soreness.
3. If speculum examination is possible, the origin and nature of the discharge should be detected:
   a Cervicitis - endocervical discharge or friability of cervix (bleeds easily on gentle touch or swab) or behavioral and clinical assessment positive.
   b Trichomoniasis and bacterial vaginosis - a profuse, watery, foul-smelling and frothy vaginal discharge is seen.
   c Candidiasis - a curd like vaginal discharge is found.
4. When associated with lower abdominal pain VDS is suggestive of pelvic inflammatory disease (PID) and the relevant flow chart is to be followed.
5. In the absence of advanced laboratory tests, it is not possible to make a reliable distinction between gonococcal and chlamydial cervicitis because:
   a Coexistence of gonococcal and chlamydial infections are common and signs / symptoms overlap.
   b Cervical infections are frequently asymptomatic.

C Complications:
1. Pelvic inflammatory disease in 10-20% of untreated cases
2. Infertility
3. Ectopic pregnancy
Vaginal Discharge
(Speculum Examination Possible)

Patient complains of vaginal discharge (Without lower abdominal pain)

Risk assessment positive

Treat Cervicitis (If drugs available) 4Cs

Profuse/watery/greyish white/foul smelling/frothy vaginal discharge

- Treat Trichomoniasis
- Bacterial Vaginosis and 3Cs

Curd-like vaginal discharge

- Treat Candidiasis 3Cs*

Mucopurulent cervical discharge or friable cervix

- Treat cervicitis 4Cs

Follow up after 1 week

Sign / Symptoms Persist
- Non-compliance Of treatment
- Possible reinfection

Yes
Repeat Treatment 4Cs

No
Refer*

* 3Cs will include Counseling, Compliance of treatment and condom demonstration (No partner notification).

If mixed infection is detected provide combined treatment.

* 1) Higher Centre
   2) Lab. Investigation:
      → Specific STI,
      → Voluntary HIV Counseling and Testing (if facility available),
      → Pap Smear (if available)
**Vaginal Discharge**
*(Speculum Examination not possible)*

Patient Complains of Vaginal Discharge
(Without lower abdominal pain)

Risk Assessment positive

Yes
- Treat Vaginitis and Cervicitis (if drugs available)
- 4Cs

After 1 week

Symptoms Persist:
- Non-Compliance of treatment?
- Possible re-infection?

No
- Refer

Yes
- Repeat Treatment
- 4Cs

Follow-up after 1 week

Symptoms Persist:
- Repeat Treatment
- 4Cs

Yes
- Repeat Treatment
- 4Cs

No
- Treat cervicitis and refer if persists

*Partner notification not required*
**Treatment of Vaginal Discharge Syndrome:**

<table>
<thead>
<tr>
<th>Cervicitis</th>
<th>Trichomoniasis &amp; Bacterial Vaginosis</th>
<th>Candidiasis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Injectable Ceftriaxone: 250mg by intramuscular injection, as a single dose; or Capsule Cefixime: 400mg orally, as a single dose; or Injectable Spectinomycin: 2gm by intramuscular injection, as a single dose</td>
<td>Tablet Metronidazole: 2gm orally as a single dose or Tablet Secnidazole: 2gm orally as a single dose (not to be given in 1st trimester of pregnancy)</td>
<td>Tablet Cotrimazole or Miconazole: 150mg intravaginally for 3 days or Capsule Fluconazole: 150mg orally as a single dose.</td>
</tr>
</tbody>
</table>

**Plus**

2. Capsule Doxycycline: 100mg orally 12 hourly for 7 days; or* Capsule Tetracycline: 500mg orally 6 hourly for 7 days; or* Tablet Erythromycin: 500mg orally 6 hourly for 7 days Tablet Azithromycin 1g orally as a single dose

If mixed infection is detected provide combined treatment

- Should not be prescribed during pregnancy and lactation.
- If possible, single dose treatment should be given / taken from the clinic.
- Persistence of Vaginal Discharge may be due to resistance to drugs, non-compliance of treatment or possible re-infection.
- Partner notification card: Give card for partner(s) management with diagnostic code ‘VD’, only in case of Cervicitis for treating partner for Urethritis.

**IX Genital Ulcer Syndrome (GU):**

A Main causes of Genital Ulcer:

1. Primary or recurrent genital herpes,
2. Chlamydia
3. Syphilis.

B Other causes include:

1. Lymphogranuloma Venereum (LGV)
2. Donovonosis (Granuloma Inguinale).

C Signs and Symptoms of Genital Ulcer Syndrome:

1. Ulcer, sores or vesicles in the genital area,
2. The ulcer could be painful or painless, single or multiple,
3. Frequently associated with unilateral or bilateral inguinal lymphadenopathy (also known as bubo),
4. Patients with inguinal swelling (bubo) in the absence of genital ulcer disease are managed according to the bubo flow chart.
5 It is not possible to make a conclusive distinction between the different etiologies of genital ulcer on clinical grounds, because:

a Mixed infections are common.
b The appearance of the lesions could be altered by associated HIV infection, other secondary infections, use of systemic and topical antibiotics, corticosteroids and other local remedies (eg. Treatment of Chancroid may mask the course of incubating Syphilis).

D Complications:
1 All ulcers increase the risk of acquiring and transmitting HIV infection,
2 Left untreated, Syphilis has serious consequences,
   (a) Late / tertiary Syphilis: Neuro-syphilis and cardiovascular Syphilis,
   (b) Transmission to the fetus: stillbirth, premature delivery and congenital syphilis.

**Genital Ulcer**

- Patient Complains of Genital Ulcer
  - Take history
  - Physical examination
  - Ulcer present?
    - Yes
      - Ulcer with vesicles or recurrences?
        - Yes
          - Manage Herpes
          - 4 C’s
        - No
          -  
            - Treat Genital Ulcer Syndrome
            - 4Cs
  - No
    - Follow-up after 2 weeks
      - Genital Ulcer persists
        - Non-compliance of treatment?
          - Yes
            - Repeat treatment
          - No
            - Refer
F  Treatment of Genital Ulcer Syndrome:
   1. Benzathine Penicillin G: 24 lakh, (2.4 million units) deep intramuscular as a single dose (after skin test); or
      Capsule Tetracycline: 500mg orally 6 hourly for 14 days; * or
      Capsule Doxycycline: 100mg orally 12 hourly for 14 days; * or
      Tablet Erythromycine: 500mg orally 6 hourly for 14 days
      Plus
      Tablet Ciprofloxacin 500mg 12 hourly for 3 days, or
      Tablet Azithromycin 1g orally single dose.
      Tablet Erythromycine: 500mg orally 6 hourly for 10-14 days; or
      Injectable Ceftriaxone: 250mg by intramuscular injection, as a single dose.

   * Should not be prescribed during pregnancy or lactation.

G  Management of Associated Lymphadenopathy (bubo)
   1. If bubo becomes fluctuant, it may burst and create more complications.
   2. A fluctuant bubo should always be managed by a trained practitioner. It should be aspirated under aseptic conditions using a large bore needle. A bubo should never be excised by drained using a large bore sterile needle.

H  Management of Genital Herpes
   1. Treatment of Herpes is palliative - herpes cannot be cured and Patients should be reassured, but warned that a recurrence of ulceration is possible.
   2. The patient should be advised to avoid unprotected sexual intercourse while lesions are present, although it should also be explained that herpes infection can be passed on whether ulceration is present or not.
   3. Tell the patient to clean the lesions with soap and water and keep them dry.
   4. Tab. Acyclovir (200 mg): 2 tabs 5 times daily after meal for 7 days
   5. Acyclovir may be used locally every 4 hours for 5-10 days.

X  Lower Abdominal Pain: (In Female)
   A  Causes of Lower Abdominal Pain (LAP)
      1. N. gonorrhoea
      2. C. trachomatis
      3. Anaerobic organisms
      4. Other causes includes:
         i. Gram negative rods,
         ii. Streptococci,
         iii. Postpartum and postabortion ascending infection,
         iv. The presence of intra-uterine devices favor the development of PID.

   B  Signs & Symptoms of Lower Abdominal Pain (LAP):
      1. Abnormal vaginal discharge.
      2. Cervical motion tenderness/pelvic tenderness (tenderness on examination).
      3. Painful intercourse.
      4. Presence of an IUD.
C Complications of LAP:
1. Chronic pain
2. Infertility
3. Ectopic pregnancy
4. Tubo-ovarian abscess

Lower Abdominal Pain in Female

Patient Complains of Abdominal Pain

Missed/over due period or recent delivery-abortion or abnormal vaginal bleeding

Rebound tenderness or abdominal guarding?

Yes

Gynecological Referral

No

Surgical Referral

- Vaginal/Cervical discharge and
- Cervical motion tenderness or
- Pelvic tenderness

Follow up after 3 days

Signs/Symptoms Persist:
Non-compliance of treatment?

Yes

- Complete treatment
- 4Cs

No

* Refer

* Immediate referral to higher facility

Remember 4 C’s

D Treatment of Lower Abdominal Pain:

i. Injectable Ceftriaxone: 250mg by intramuscular injection, as a single dose; or
Capsule Cefixime: 400mg orally, as a single dose; or
Injectable Spectinomycin: 2gm by intramuscular injection, as a single dose.

Plus

ii. Capsule Doxycycline: 100mg orally 12 hourly for 14 days; or*
Capsule Tetracycline: 500mg orally 6 hourly for 14 days; or*
Tablet Erythromycin: 500mg orally 6 hourly for 14 days

* Should not be prescribed during pregnancy and lactation

Plus

iii Tablet Metronidazole: 400mg orally 12 hourly for 14 days

E Referral:
If lower abdominal pain in female worsens after the 3 days of follow up, using appropriate antibiotic and adherence to 4Cs, refer the patient to appropriate/facility/individual/established next level referral centre.

XI Scrotal Swelling:

A Causes of Scrotal Swelling:

1 Epididymitis is caused by infections such as:
   a Neisseria Gonorrhoea (NG) and Chlamydia Trachomatis (CT) Complication of Gonococcal urethritis and Chlamydial urethritis,
   b Enteric Bacteria i.e. Salmonella Infection,
   c Chronic Infections such as Tuberculosis and Filariasis

2 Non infectious causes like:
   a Testicular torsion,
   b Trauma to scrotum
   c Tumour

B Signs and Symptoms of Scrotal Swelling

1 Swollen, hot and painful testis
2 Usually unilateral,
3 May be associated or preceded by urethral discharge or dysuria,
4 High fever and hydrocele in patient with Filarial epididymitis (often bilateral involvement),
5 May be associated with mild constitutional symptoms such as fever, myalgia and malaise.

C Complication:
When not effectively treated, RTI/STI related epididymitis may lead to infertility.

D Management of Scrotal Swelling Syndrome

1 History Taking:
   i History and nature of scrotal swelling,
   ii History of injury,
   iii History of STD in last 6 weeks,
   iv Any urethral discharge.

2 Physical Examination:
   i Inspect the scrotal skin for bruises,
   ii Compare two sides of the scrotum and scrotal sacs,
   iii Look for swelling and tenderness of testes,
   iv Look for position of testes in scrotum (elevation, rotation, torsion),
   v Check for Inguinal hernia, hydrocoel and any tumour,
   vi Check for other RTIs/STDs.
3 Treatment of Scrotal Swelling Syndrome
i Injectable Ceftriaxone: 250mg by intramuscular injection, as a single dose; or
ii Capsule Cefixime: 400mg orally, as a single dose; or
iii Injectable Spectinomycin: 2gm by intramuscular injection, as a single dose

Plus
Capsule Doxycycline: 100mg orally 12 hourly for 10 days*; or
Capsule Tetracycline: 500mg orally 6 hourly for 10 days*; or
Tablet Erythromycin: 500mg orally 6 hourly for 10 days

* Should not be prescribed for partner if she is pregnant or lactating

i If possible, single dose treatment should be taken / given at the clinic.
ii Persistence of Scrotal Swelling may be due to resistance to antibiotics, possible re-infection, non-compliance of treatment.
iii Partner notification card: Give card for partner(s) management with diagnostic code ‘SS’ to be treated for ‘Cervicitis’.
iv. bed rest and give advice for scrotal support
Chapter 4 RTI/STI and HIV/AIDS Services
MCWC Manual

4 Referral

If Scrotal Swelling worsens or is not improved, even after treatment for 1 week, using appropriate antibiotic with adherence to 4Cs, refer the patient to appropriate facility / individual / established next level referral centre.

XII Inguinal Bubo

Inguinal bubo is an abscess of an inguinal lymph node.

A Causes of Inguinal Bubo:
1 Chancroid is suggested- when bubo and ulcer coexists,
2 Lymphogranuloma Venereum (LGV), is suggested when there is no ulcer present.
3 Syphilis, genital herpes and tuberculosis: cause non-tender, non-fluctuant and firm bubo.

B Signs and Symptoms Lymphogranuloma Venereum (LGV):
1 Unilateral or bilateral enlargement of inguinal lymph nodes.
2 Can be associated with genital ulcer disease.
3 The swollen lymph nodes are tender, fluctuant and may rupture.

C Difference between the Bubo of Chancroid and LGV:
1 The primary genital lesion (ulcer) is usually absent or inconspicuous in LGV.
2 The characteristic groove sign (cleavage of swollen inguinal and femoral lymph nodes by inguinal ligament) is rare for Chancroid but pathognomonic for LGV.
3 The first stage of LGV consists of a genital ulcer. But the ulcer produced by LGV is so inconspicuous and short-lived that it usually goes undiscovered. Most often, the patient seeks care in the second stage of the disease when tender inguinal lymphadenopathy (bubo) has developed. At that stage, there is no longer evidence of an ulcer.

D Complications:
1 Genital elephantiasis,
2 Fistula.

E Recommendation:
Inguinal bubo without Genital Ulcer should be treated for LGV infection.

F Referral
If Inguinal Bubo worsens, or does not improve even after 1 week’s treatment, with the appropriate antibiotic and adherence to 4Cs, refer the patient to appropriate facility / individual / established next level referral centre.

G Management of Inguinal Bubo Syndrome
To confirm the Inguinal Bubo syndrome the following has to be done:

1 History taking:
   i History of groin pain,
   ii History of exposure or contact,
   iii Recent or past genital ulcer,
   iv Recent or past swelling anywhere in the body.

2 Physical examination:
   i Inspect and palpate the lymph nodes for:
      a Tenderness, warmth, fluctuation, draining area.
      b Inspect genital organ for ulcers, skin rashes or sores.
If a bubo is present don’t forget to inspect the interior part of the prepuce and covered part of the glans penis in men; and external genitalia and mucous surface of the labia in women to exclude the presence of genital ulcers.

Check for other RTI / STD

Inguinal Bubo

**Patient Complains of Enlarged and/or Painful Inguinal Lymph Nodes**
- Take history
- Examine lymph nodes and draining area
  
  **Ulcer Present?**
  - Yes
    - Use Genital Ulcer Flow-chart
  - No
    - Treat Inguinal Bubo Syndrome
    - 4 C’s

**Follow-up after 1 week**

- Inguinal swelling persists?
  - Yes
    - Non compliance of treatment
    - Repeat treatment
  - No
    - Refer

Follow up should be until the bubo completely resolves

**H Treatment of Inguinal Bubo Syndrome:**
1. Capsule Doxycycline: 100mg orally 12 hourly for 14 days*; or
2. Capsule Tetracycline: 500mg orally 6 hourly for 14 days*; or
3. Tablet Erythromycin: 500mg orally 6 hourly for 14 days.

**I Management of Fluctuant Bubo:**
1. If a bubo becomes fluctuant, if may burst and create more complications,
2. Management of a Fluctuant Bubo should include:
   i. Hot fomentation,
   ii. Buboes should not be incised, but aspirated with a wide bore needle under aseptic conditions. Surgical aspiration of a fluctuant bubo should be done through the adjacent healthy skin,
If necessary, aspiration could be repeated after 2-3 days
iv Refer, to a specialist for aspiration.

XIII Neonatal Conjunctivitis:

Neonatal conjunctivitis or Ophthalmia Neonatorum is defined as any conjunctivitis with discharge occurring in neonates during the first 28 days of life. The infection is usually acquired during pregnancy or at birth, during delivery through an infected birth canal.

A Causes of Neonatal Conjunctivitis:
1 The most serious causes of Neonatal Conjunctivitis are:
   i. STI causing organisms like Neisseria Gonorrhoea, Chlamydia Trachomatis.
   ii. Pyogenic bacteria: Staphylococcus aureus, Streptococcus pneumonia, and
   iii. Occasionally other Gram-negative bacteria (often hospital acquired, usually do not endanger sight).

B Signs and Symptoms of Neonatal Conjunctivitis:
The signs and symptoms depend on whether it is caused by Neisseria Gonorrhoea, Chlamydia Trachomatis or other bacterial infections, acquired at or after birth. Although each etiological agent produces a slightly different pattern of disease, the signs / symptoms considerably overlap.
1 Purulent conjunctival discharge,
2 Swollen eyelids / closed eyes,
3 May be unilateral or bilateral.

C Complications:
1 Ulceration of the cornea often progressing to perforation of the eyeball with loss of vision.
2 In Gonococcal infection extraocular manifestation such as arthritis / septicaemia may develop.
3 In Chlamydial infection complications such as pneumonia and otitis media may develop.

D Prevention of Neonatal Conjunctivitis:
1 All women attending antenatal clinics should be assessed for Cervicitis and if positive, should be treated promptly along with partner(s).
2 Immediately after delivery, wipe the baby’s face & eyes with sterile dry cotton (hydrophilic cotton) before the eyes are opened.
3 Open the baby’s eye by gently parting the upper and lower eyelid.
4 Apply 1% Tetracycline eye ointment into each inferior conjunctival sac.

E Recommendations:
During the first visit, the neonate should be treated for Gonorrhoea and the parents for Gonorrhoea and Chlamydia. If signs persist, the neonate is to be treated for Chlamydia during follow-up visit.

F Referral:
If the condition worsens or is not improved even after the treatment, at the follow-up visit using appropriate antibiotic, refer the neonate to appropriate facility / individual / established next referral centre.
G Medical Strategies to Confirm the Diagnosis:
To confirm the diagnosis, the following needs to be done:
1 History taking
   a Take the history from the mother.
   b Ask mother if she or her partner has any RTI / STD symptoms.
2 Physical examination
   a Inspect neonate’s eyes for purulent discharge (Separate or press the eyelids, to look for pus pouring out beneath them).

**Neonatal Conjunctivitis**

- Neonate with eye discharge
  - Take history
  - Examine Neonate

- Purulent Conjunctival Discharge present?
  - Yes
  - Treat Baby for Gonorrhoea and Chlamydia
  - Treat Parents for Gonorrhoea and Chlamydia
  - 4 C’s

- Follow-up after 3 days
  - Discharge persists?
    - Yes
    - Treatment neonate for Chlamydia
    - 4 C’s for the parents

- Follow-up after 1 week
  - Improved?
    - Yes
    - Complete treatment 4 C’s for the parents
    - No
    - Refer
### Treatment of Neonatal Conjunctivitis

#### Treatment of Neonate

<table>
<thead>
<tr>
<th>Treatment of Gonococcal Ophthalmia</th>
<th>Treatment of Parents (for Urethritis and Cervicitis)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Injectable Ceftriaxone 50 mg/kg (maximum 125mg), intramuscular as a single dose; or, Injectable Kanamycin 25mg/kg (maximum 75mg), intramuscular as a single dose.</td>
<td>1. Capsule Cefixime: 400 mg orally as a single dose; or Injectable Ceftriazone 250 mg, intramuscular as a single dose; Plus 2. Capsule Doxycycline 100 mg orally 6 hourly for 7 days *; or Capsule Trtracycline 500 mg orally 6 hourly for 7 days *; or Tablet Erythromycin 500 mg orally 6 hourly for 7 days, or Tab Azithromycin 1gm orally single dose.</td>
</tr>
<tr>
<td>Treatment of Chlamydia</td>
<td></td>
</tr>
<tr>
<td>Syrup Erythromycin 50 mg/kg/day, orally 6 hourly for 14 days; or Syrup Cotrimoxazole 1 tsf orally 12 hourly for 14 days.</td>
<td></td>
</tr>
</tbody>
</table>

b If possible, single dose treatment should be taken/given at the clinic.  
c Persistence of Neonatal Conjunctivitis and parent’s Gonorrhoea / Chlamydia may be due to resistance to antibiotics, non-compliance of treatment.  
d Partner notification card: Give card for the mother’s partner coded ‘NC’ for partner management. Partner to be treated for Urethritis.  

**Neonate’s eyes are swollen immediately after delivery and are difficult to open.**
HIV and AIDS:

HIV is Human Immunodeficiency Virus, the pathogenic organism that causes AIDS. HIV is found in the body fluids (particularly blood, semen, and vaginal secretion) of infected persons. It is believed that on average, people infected with HIV will develop AIDS between 5-10 years after infection. HIV can be transmitted whether symptoms of AIDS are present or not.

AIDS is Acquired Immune Deficiency Syndrome, a fatal disease caused by HIV, which attacks the body’s immune system and makes it unable to fight other diseases and infection. AIDS is manifested by a number of symptoms, of which many, but not all, are visible. Even if the symptoms of AIDS subside for a while, the virus that causes them still remains present and the infected person can still transmit the disease. At present there is no cure for AIDS, and until there is a cure, doctors expect that all people with AIDS will die from the disease. AIDS has become a worldwide epidemic or pandemic.

HIV/AIDS in Bangladesh

In the context of a conservative society such as Bangladesh, the issues surrounding sexuality and STIs are stifled, stigmatised and hidden. Economic inequality, inequity and endemic poverty in Bangladeshi society facilitates the transmission of viruses like HIV and makes people vulnerable to infection. The first HIV positive case in Bangladesh was detected in 1998. According to Government sources, a total of 248 HIV positive cases have been reported mostly among males. So far 26 of these HIV infected patients have developed AIDS, among whom 20 have died. In 2002, a total of 60 new cases HIV/AIDS cases were detected: 37 (29 males and 8 females) at the Department of Virology, BSMMU; 7 (6 males and 1 females) at BIRDEM; 6 (5 males and 1 females) at Armed Forces Institute of pathology (AFIP) and 10 ( 7 males and 3 females) at ICDDR,B. As of December 2002, the Department of Virology, BSMMU, reported the detection of 219 HIV-positive cases. The exact number of people currently living with HIV/AIDS in Bangladesh is not known but is estimated to be approximately 30,000.

HIV situation in Neighbouring Countries

Bangladesh is surrounded by countries with high prevalence of HIV with highly permeable international borders. The progression of HIV infection in the region has been rapid. Most experts agree that the Asian epidemic will surpass the African epidemic, in terms of number of infections, in just a few years. UNAIDS estimated that by the end of 1997, South and South East Asia accounted for approximately 6 million or one fifth of the people living with HIV worldwide. Approximately one quarter of the adults infected with the virus are women. WHO estimates that by the year 2000 there will be as many as 10 million people infected with HIV in South East Asia.

Reasons for the spread of HIV in South Asia:

The prevalence of HIV infection is highest among intravenous drug users (4.0 percent) followed by Hijra (0.8%), commercial sex workers (0.7%) and among STD patients (0.4%). Latest data from 4th round of national serosurveillance MOHFW. All the known risk factors for HIV transmission—CSWs, men who have sex with men (MSM), intravenous drug users (IDUs) and high rates of STI in core groups (e.g. sex workers)– are acknowledged to be

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4 MOHFW 2002
5 UNAIDS, 2002.
6 NIPHP, 2001
7 UNAIDS 1997
present in Bangladesh. As a result there is an increasing concern that a marked epidemic of HIV might occur in a manner similar to that documented in the neighboring countries. At an average of 18.8 clients a week, sex workers in Bangladesh brothels report among the highest turnover of partners anywhere in Asia. Among the hotel-based sex workers it is still higher, averaging 44 clients a week. It means that once a woman does contract HIV from a client, she can pass it on to large number of people very quickly especially when the rate of condom use is low. Men rarely use condoms and virtually all sex workers report some sex without condoms.

Sharing of needles and syringes with an infected person is one of the surest ways of spreading HIV. In Bangladesh, needle sharing is common. A study found that 93.4 percent of the drug injectors had shared needles with others.

Deep-rooted social and economic problems such as poverty, illiteracy, and gender inequity increase individual, community, and social vulnerability. Pre- and extra-marital sexual behavior in which safe sex practices are not followed, is common. Internal and external migration of labor as well as rapid and significant changes in the economy of Asian countries, also make the region vulnerable. In addition, displacement of populations due to natural disasters and civil unrest generate situations where HIV can spread more rapidly.

**Types of HIV Viruses:**

The two main strains of HIV viruses are: HIV1 and HIV2,

The main difference between HIV viruses are:
1. The time between infection and the onset of AIDS, and
2. The AIDS related illness.

**How HIV is Contracted:**

HIV can be contracted by any one of the following ways:

1. Through sexual contact (vaginal, anal, or oral intercourse) with an infected person.
2. Through blood transfusions or treatments using infected blood or blood products.
3. Through the use of skin-piercing instruments or sharing needles, syringes, razor blades, etc., that have been infected by blood or body fluids and have not been properly processed (decontamination and sterilisation/HLD).
4. Infants from the infected mothers during pregnancy and childbirth, and more rarely from the milk.

**HIV is not contracted through the following:**

1. Ordinary social contact,
2. Sharing clothes,
3. Sharing dishes/food,
4. Simple kissing and hugging,
5. Shaking hands,
6. Sharing toilets,
7. Insect bites (mosquitoes cannot transmit the HIV the same way they transmit malaria),
   touching, or living with an infected person.

**Can HIV be transmitted through kissing:**

There is no risk of HIV transmission if it is on the cheek. If saliva is exchanged during kissing, it is unlikely that HIV will be transmitted. Saliva contains very little of the Virus and it is believed that as much as three quarts of saliva would be needed to infect someone.
Symptoms of HIV and AIDS:
1. Persons infected with HIV are often asymptomatic. It can take an average of 5-10 years between infection and the onset of AIDS. Once AIDS begins to develop, the symptoms may include the following:
   a. An unexplained loss of weight lasting at least one month or at least 10% unexplained loss of body weight.
   b. Persistent fever for more than one month.
   c. Persistent diarrhoea for several weeks.
   d. Persistent cough for more than a month.
   e. White coating on the tongue.
   f. Enlarged or sore glands in the neck and/or armpits.
   g. Discoloured areas on the skin or bluish rash on the skin that does not disappear on pressure.

The symptoms also characterise other diseases (a persistent cough may indicate tuberculosis, diarrhoea may mean an intestinal illness). Tests for the presence of HIV and/or a test for the confirmation of AIDS are the surest ways to determine the presence of AIDS.

Who are at risk:
1. Given the modes of transmission of AIDS, everyone is at risk.
2. However, there are behaviors and practices that increase the risks of HIV transmission/infection, e.g. including having multiple sexual partners anal intercourse, etc
3. Safer sex (like using condoms) is strongly advocated not only with those who have multiple partners, but with all sexual partners, because one cannot tell if someone is infected with HIV just by looking at the person.
4. Transmission of virus through breast-feeding by an HIV-positive mother:
   The breast-milk of HIV-positive mothers sometimes contains small amounts of HIV. Although there have been some documented cases of HIV transmission through breast-milk, though the exact risk is still not known. WHO now advocates that HIV-positive mothers should bottle feed their babies, when feasible.
5. Does the virus die after leaving the body:
   The overwhelming majority of the virus present in the blood or secretion dies within half an hour after leaving the body. The amount of time the virus lives outside the body depending upon the environment in which it is found. In humid and cold environment the virus can live longer.

How to diagnose HIV infection:
One cannot tell if someone is infected with HIV by simply looking at the person. This is because those infected with HIV may be asymptomatic until they develop AIDS. There are some blood tests that can tell if someone has the HIV virus. The tests do not detect the virus itself, but detects the antibodies that are produced by the body in response to the virus. The main two tests are:
   i. The Enzyme-Linked Immuno-Sorbent Assay (ELISA): It takes 4-6 hours and also costly.
   ii. The Western Blot test: It confirms a positive ELISA test.

If the tests are done correctly, then they are accurate in detecting the HIV antibodies. However in some instances there can be false-positives: (i.e., even though a person is HIV antibody-negative, the test gives a positive reading; and false-negative (i.e., even though a person is infected with HIV, the test does not detect the antibodies).
Time needed to develop antibodies:
a The time period between the initial HIV infection and the development of antibodies can vary from six weeks to six months.
b On average, 95% of those infected with HIV develop the antibodies within three months, and 98% within six months.

Treatment and Cure:
a Currently there is no cure for AIDS. Treatment methods being used today aim to delay the onset of symptoms, and thereby lessen the health problems associated with AIDS. The treatment includes: Azidothymidine (AZT) and Dideoxyinosine (DDI), nucleoside analog that suppress replication of HIV. The best solution for AIDS is through its prevention.
   i Vaccine against AIDS:
       Currently there is no vaccine to prevent HIV infection, although several are being tested.
   ii Prevention of HIV and AIDS:
       The best way to prevent HIV infection and AIDS is to avoid high risk behavior of the adults
       Following are some of the means for the prevention of HIV infection/AIDS:
       • Sexual abstinence,
       • Have sex with only one, faithful sexual partner and to remain faithful. If there is a chance that one or both of the partners has been exposed to the virus already, condoms have to be used during sexual intercourse.
       • Use of latex Condom: Because condoms are the most effective in preventing transmission during sex.
       • Avoid sharing needles and instrument for invasive procedures that have not been properly processed (decontaminated and sterilised/HLD).
       • Avoid blood transfusion or if needed, certify that the blood you will receive is free of HIV.
       • Avoid having baby as there are possibilities of mother to baby transmission, during pregnancy and delivery
       • Requirement of Condom use if both partners are infected with HIV:
           Even if both the partners are infected with HIV, they should use condoms every time they have sex, because:
           - they may be infected with different strains of the viruses and may infect the other with the other strains of the virus,
           - more of the virus can be transmitted which may cause an earlier onset of AIDS.

STD and HIV infection:
The persons having STDs, such as herpes, chancroid, syphilis, are at much greater risk of transmitting or contracting HIV. This is because the same risk factors associated with the transmission of STDs are present in the sexual transmission of HIV (i.e., unprotected sexual intercourse). Also there is increased shedding of HIV virus when STIs are present (so STI patients are more likely to transmit HIV), and patients with STI are more receptive to the HIV virus (so STI patients are more likely to acquire HIV infection). HIV infection can also change the clinic course and presentation of STIs (e.g. HSV) and can affect treatment of STIs. Also the epidemiology of STIs changes with development of an HIC/AIDS epidemic e.g. HSV becomes more common. Adequate STI control is an essential part of preventing an HIV epidemic. Particularly at an early stage of an epidemic such as in Bangladesh.
Health Education Messages for AIDS:

a. AIDS is an incurable disease. It is caused by a virus which can be passed on by sexual intercourse, infected blood and by mothers to their unborn children.

b. People who are sure that both they and their partners are uninfected and have no other sexual partners are not at risk from AIDS. People who know or suspect that this might not be the case should practice safer sex. This means, either sex without intercourse (penetration), or intercourse when protected by a condom.

c. Any injection with an unsterilized needle or syringe is dangerous.

d. Women infected with HIV should think carefully about having a baby and seek advice. There is a one-in-three chance that their babies will also be born infected with HIV.

e. All parents should tell their children how HIV spreads.

Advice to people infected with HIV:

a. Patients who are infected with HIV or are ill with AIDS require special care, information, and counseling. In general they should be advised to:

i. Protect themselves against further infection from STDs including AIDS and other illnesses and stresses to the immune system.

ii. Avoid passing the infection to other through unprotected sexual intercourse, sharing needles (or razors), etc.

iii. Inform partner(s) about his/her own condition before initiating intercourse. Use latex condoms and spermicide.

iv. Continue to enjoy loving and affectionate contact with partners, family members, and friends.

v. Eat nourishing food.

vi. Get plenty of rest.

vii. Seek psychological and/or spiritual comfort through support group, or additional counseling.

Antenatal care for HIV-infected women:

Many HIV infected women will be diagnosed as such for the first time during pregnancy. They will need emotional support and medical care at this difficult time. Although much of the focus of the antenatal care provided to these women will be to reduce the risk of mother-to-child transmission (MTCT) of HIV, the ongoing care and support of mother and child is very important. Appropriate medical care for the mother is essential at all stages of pregnancy.⁸

1. Mother-to-child transmission of HIV (MTCT):

a. MTCT of HIV is the major cause of HIV infection in children. An estimated 700,000 children are infected in this way each year. Some 15-20% is infected during pregnancy, 50% during delivery and 33% through breastfeeding. If an HIV positive woman becomes pregnant, there is a 35% chance that she will transmit the virus to her child if no preventive action is taken.⁹

b. Without any intervention, up to 40% of children born to HIV-infected women will be infected.

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⁹WHO, 2001
c Infection can take place in utero, during labor and delivery, postpartum through breast milk.

d Where women do not breastfeed, most of the transmissions occurs at the time of labor and delivery. Transmission in early pregnancy is less common. In developing countries, where most women breastfeed, there is an additional risk of HIV transmission through breastfeeding. In population where breastfeeding is the norm, it accounts for more than one-third of all transmission.

2. Voluntary Counselling and Testing (VCT):

HIV testing in pregnancy has advantages and may have disadvantages.

The benefits of HIV testing in antenatal clinics are:

- Knowledge of a negative result in pregnancy can reinforce safer sex practices and may help the pregnant woman to remain negative.
- Identifying HIV infection in pregnancy may enable women to access antiretroviral prophylaxis to reduce MTCT of HIV.
- Knowing a woman’s HIV status would allow counseling about infant feeding options. Women not infected with HIV would be encouraged to breastfeed exclusively, and HIV-infected women would have the option of minimizing the risk of HIV transmission by avoiding breastfeeding.
- Knowledge of her HIV status may enable a woman to make informed choices about future pregnancies and future fertility.
- A woman who knows she is HIV-infected may seek early appropriate medical care for HIV-related conditions such as tuberculosis (TB), if she becomes ill.
- If a woman and her health carers are aware that she has HIV she can referred for specialist medical help, or to NGOs for ongoing HIV care and emotional and social support.
- A diagnosis of HIV in the mother allows for the appropriate diagnosis, treatment and follow-up care of her baby.
- Woman who have had an HIV test may be able to share their test result with their sexual partner/s. This can be important in encouraging partners to be counseled and tested.
- Widespread access to testing can help to ‘normalize’ HIV in the community, as increasing numbers of people become aware of their status.
- Knowledge of their HIV infection status might enable women to take part in peer support groups.
- Newly identified HIV-infected women can be helped to adopt a positive lifestyle.

The possible disadvantages of HIV testing in the maternity setting are:

- HIV testing may create disharmony in the family.
- There may be an increase in the risk of violence against and abandonment of women who test HIV positive.
- It may cause blaming and the stigmatization of HIV-infected women by both the community and health workers.
- If there are no resources to provide interventions to reduce transmission to the infant, mothers and health workers may feel angry and frustrated.
- There may be an additional workload for maternity
3. Termination of pregnancy:
Termination of pregnancy should be offered if the HIV infection is diagnosed in early pregnancy and in circumstances where abortion is not against the law. Counselling must provide all the information about transmission risks and the prognosis of the mother, in a non-judgmental manner. The woman or the couple should make the decision about termination according to their wishes, without undue influence from the health worker.

4. How can routine antenatal care practices help?
There are a number of routine practices that could be reinforced to help reduce the risk of HIV infections in all mothers and children.

   a. Antenatal care allows interaction between health services and women who are usually allows interaction between health services and women who are sexually active (therefore at risk of HIV). This opportunity should be used as much as possible to promote safer sex practices, encourage testing of HIV for women and men, provide information on HIV prevention and help reduce social stigmatization of HIV infected people.

   b. Diagnosis and treatment of curable sexually transmitted infections (STIs) in pregnancy is an important way of reducing new HIV infections in adults and children.

   c. Malaria prophylaxis is an important consideration for pregnant women in endemic areas regardless of their HIV infection status.

5. Routine antenatal care:
The antenatal care given to HIV infected women is essentially the same as that given to uninfected patients.

   • HIV infected women will not need additional visits for obstetric reasons, although they may need to come for further counseling sessions.

6. Nutritional support:
HIV infected women will need advice on a healthy diet and may need nutritional support during pregnancy. Weight loss (or not weight gain) is a proper prognostic sign. Monitor weight at antenatal visits and consider substitutes if required.

   Low vitamin A levels have been associated with higher rates of MTCT and with higher levels of virus in breast milk. There is no evidence that vitamin A supplementation can reduce the risk of transmission, but supplementation may provide other health benefits to the mother and baby. Multivitamin supplementation (one multivitamin tablet a day) during pregnancy has been shown in Tanzania to be associated with a reduction of around 40% in stillbirth rate, preterm delivery, small-for-gestational-age infants and with an increase in maternal CD4 level, but has been shown to have no effect on MTCT.

7. Lifestyle and behavior change:
HIV-infected women should be counseled about behaviors which could damage their health or immune system, or which could be associated with an increased risk of transmission to the child.

   a. Unprotected sex during pregnancy and breastfeeding may be associated with an increased risk of HIV transmission to the child. Women should be counseled about this and advised to use condoms.
b Women should be counseled on how to deal with stress and on maintaining a healthy lifestyle.

c Smoking, alcohol and drug use should be discouraged.

8. **Prevention of mother-to-child transmission of HIV:**

The rate of mother-to-child transmission of HIV is affected by many factors (see box below). High viral load is one of the most important determinants, although transmission has been reported even with low viral loads. Much of the transmission takes place during late pregnancy, labor and delivery, and so many of the intervention strategies are aimed at this time.

**Factors Associated with increased risk of MTCT of HIV:**

<table>
<thead>
<tr>
<th>Factors</th>
<th>Strong evidence</th>
<th>Intermediate evidence</th>
<th>Limited evidence</th>
</tr>
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<tbody>
<tr>
<td>Maternal</td>
<td>• High viral load</td>
<td>• Chorioamnionitis</td>
<td>• Frequent unprotected sexual intercourse</td>
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<td></td>
<td>• Immune deficiency</td>
<td>• Anemia</td>
<td>• Multiple sexual partners</td>
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<td></td>
<td>• Viral characteristics</td>
<td>• Vitamin A deficiency</td>
<td>• Drug use involving injection</td>
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<td></td>
<td>• Advanced disease</td>
<td>• Sexually transmitted infections</td>
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<td></td>
<td>• HIV infection acquired during pregnancy or breastfeeding period</td>
<td>• Smoking</td>
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<tr>
<td>Obstetric</td>
<td>• Vaginal delivery (compared to elective caesarean section)</td>
<td>• Invasive procedures</td>
<td>• Episiotomy</td>
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a. Proven strategies to reduce or prevent MTCT when a woman is known to be infected with HIV include:

i prophylaxis: long-course zidovudine or combination, short-course zidovudine or combination, nevirapine;

ii elective caesarian section;

iii replacement feeding for the infant;

iv elective termination of pregnancy (where safe and legal services exist);

v restricted use of invasive obstetric procedures such as artificial rupture of membranes and episiotomy to reduce the exposure of the infant of the blood of an infected mother.

b. Specific measures to prevent new HIV infection in women and their partners include:

i providing information about transmission of HIV and STIs;

ii promoting safer sex and making condoms widely available;

iii providing early detection and appropriate treatment of STIs;

c. Infant feeding:

HIV infected women should be counseled about risks of transmission through breastfeeding and about the potential risks and benefits of breastfeeding and replacement feeding in the context of their circumstances. It is important to give women the necessary information to help them to make an informed choice on the method of infant feeding. This should happen during the antenatal period and not be a rushed decision in the postpartum period.
Chapter 5
Infertility

5.1 National Policies
Globally, Infertility affects about 50 to 80 million couples at some point of their reproductive lives with a variety of biological and behavioral determinants. In developing countries where the incidence of RTI is high, infertility rates are much higher, which in many instances are preventable. The overall primary infertility rate in developing countries is between 2 and 5%. Studies conducted by WHO have shown that the secondary infertility rate is even higher, between 10% and 33%.

Though infertility is one of the components of ESP, very little facilities are available at the lower level of service delivery. Some investigation facilities are present at the tertiary level, which are very costly and out of reach of the poor couples. A few interventions have been undertaken such as education of both husbands and wives about factors contributing to infertility; orientation of field workers/service providers, about the causes of infertility and the prevention of secondary infertility by treating STDs/ RTI cases.

Despite the cost, work continues in the field of infertility in the private sector of Bangladesh. More than seven centers exist in Dhaka city for treatment of infertile couples. Their work is with ovulation induction drugs, antibiotics for STD-related cases, Intrauterine Insemination (IUI) and microsurgery. One of these centers also works with In-Vitro Fertilization (IVF). IVF’s success rate is very limited, in addition to its high cost.

5.2 Types of Infertility:
Infertility is defined as the inability of a couple to conceive within 1 year of unprotected coitus. Approximately 90% of couples with unprotected intercourse will conceive within 1 year.

I Primary Infertility:
The woman has not conceived despite cohabitation and exposure to pregnancy for a period of two years.

II Secondary Infertility:
The woman has previously conceived but is subsequently unable to conceive despite cohabitation and exposure to pregnancy for a period of two years. If the woman has previously breast-fed an infant, exposure to pregnancy is calculated from end of the period of lactational amenorrhea.

5.3 Causes of Infertility:
The causes can be divided into 2 groups:

I Causes of male infertility:
A Failure to produce spermatozoa in sufficient number and with the capacity to fertilize
   1 Congenital absence of testis,
   2 Hypoplastic and undescended testis,
   3 Diseases like orchitis, seminoma, tuberculosis,
   4 Syphilis,
   5 Occupation like x-ray worker, long travel lorry driver, working in furnace,
   6 Extreme age.

2 IPPF. 2000.
B Failure to transport of sperm because of bilateral obstruction of epididymis, vas, ejaculatory ducts as a result of infection or accident.

C Failure to deposit sperm in the vagina:
   1) Impotency,
   2) Premature ejaculation,
   3) Retrograde ejaculation into bladder,
   4) Hypospadiasis, stricture urethra.

D Errors in seminal fluid:
   1) Too small or large volume,
   2) Physico-chemical abnormality of semen.

E Surgical cause
   1) History of Vasectomy

II Causes of female infertility:
A Failure to ovulate frequently:
   1) Sex chromosomal abnormality,
   2) Sub-clinical adrenal failure, hypothyroidism.

B Failure in transportation of ovum:
   1) Pelvic adhesion caused by pelvic peritonitis,
   2) Partial or complete tubal obstruction due to congenital hyperplasia and infection.

C Uterine factors:
   1) Congenital absence or hyperplasia,
   2) Fibroid uterus,
   3) TB endometritis.

D Cervical factors:
   1) Retroversion of uterus,
   2) Cervical mucous plug,
   3) Cervical polyp, fibrosis

E Vaginal factors:
   1) Sperm agglutination,
   2) Transverse septum,
   3) Vaginal tumor,
   4) Imperforated hymen.

F Coital errors:
   1. Apareunia, Dyspareunia,
   2. Frequency and timing of coitus,
   3. Lubricants.

G Surgical cause
   1) History of Tubal Ligation
III Psychological aspects of Infertility for both partners:
When an anticipated conception fails to occur in a timely fashion, a couple begins to consider infertility as a diagnosis pertaining to them. Their reaction may be intense and overwhelming. As an individual or couple actually confronts infertility, they may progress through stages, including denial, anger, grief and resolution. Recognition of these stages may assist the practitioner in providing appropriate support and counseling. Infertility, even when secondary, remains a chronic reality. Honest advice about probabilities for success should be offered at frequent intervals to assist couples in maintaining proper perspective.

5.4 Management of Infertility

I  Diagnosis of infertility:
The goals of infertility evaluated are to determine its probable cause, provide accurate information regarding prognosis, counseling, support, education throughout the process and subsequently, to give guidance regarding options for treatment. To investigate a case of infertility, both husband and wife should be asked questions together, and separately, about their age, occupation, previous marriage, duration of marriage, and time(s) during which contraception has been practiced.

II  When should infertility be investigated?
Highly fertile couples practicing coitus regularly take an average of 6-7 months to achieve pregnancy. Statistically, four out of five women conceive within one year of commencing regular coitus without contraception. Failure to conceive during 12-18 months despite adequate opportunity is therefore always acceptable as justifying full investigation. A strong case can be made for investigating infertility with only one year’s duration – especially if the woman is aged over 30 years or the man is aged over 40 years.

III Clinical assessment of both partners;

A. The special points on which information is required are as follows:
   1 Age, occupation, previous marriages,
   2 Duration of marriage and the period of time during which contraception has been practiced,
   3 Are the partners separated for significant periods of time?
   4 Previous illnesses and operations,
   5 The family’s medical history of each, looking especially for tuberculosis on the woman’s side,
   6 Is coitus normal and painless, how frequently is it practiced and at what time in the cycle,
   7 Details of menstrual function including factors which favor an ovulatory cycle.

B. Examination:
This examination should be comprehensive and cover all areas.
   1 For males: particular attention to the reproductive systems where size and consistency of testis/epididymis, abnormalities of the penis; cryptorchidism;
      a The presence of the vas,
      b A varicocele,
      c Any prostatic abnormality in the man.
For female:
   a. Assessment of the vagina; the size, position and mobility of the uterus,
   b. Any enlargement or fixation of the adnexa in the woman should be looked into.

C. Assessment of male fertility:
   a. Clinical:
      Paternity is probably the best proof of male fertility, yet it can be misleading. The wide variation in results of semen analysis in fertile and infertile men at different times makes reassessment essential, if a couple requests advice regarding their ability to conceive.
   
   b. Semen analysis:
      Full semen analysis is essential. The specimen is best collected after 3 days of abstinence, masturbated directly into a dry and clean wide-mouthed glass container. It is kept as close as possible to body temperature (by carrying it in a hip pocket) and its examination carried out as soon as possible after it is liquefied (this takes half an hour), preferably within 1 hour, as motility declines progressively with time.
      The presence of pus cells indicates an inflammatory lesion, usually in the prostate, but is not necessarily significant so far as fertility is concerned. Semen culture should be done. Urethral swabs are required for chlamydial culture. Most men with pyospermia prove fertile without treatment; nevertheless pyospermia in an infertile man is best treated.
      Other investigations like Sperm Antibody Test, Hormonal Assessment and Testicular Biopsy can also be done if possible.

D. Assessment of Female Infertility:
   a. Estimation of the time and frequency of ovulation:
      After the basic work-up has been done, it may be wise, even in regularly menstruating women, to look for presumptive evidence of ovulation or luteinization. The one which has been overemphasized in recent years is the daily temperature record. This method has the advantage of indicating the approximate time of ovulation, and therefore the time when coitus is most likely to be fruitful.
      Its disadvantages are that it is a daily reminder of childlessness; it tends to make couple time their acts of intercourse with a mathematical precision and changes it into a coldly calculated duty. Though temperature recording is considered necessary, it should never be continued for longer than 3-4 months, by which time it should be possible to assess the ovulation habit. Ovulation pain (Mittelschmerz) is also an indication of ovulation.
   
   b. Ultrasonography:
      Ultrasound is commonly used to tract follicle development and better observed with transvaginal with abdominal ultrasound. Other investigations like endometrial biopsy, tubal potency tests, hysterosalphingography, hysteroscopy and laparoscopy and the postcoital test also can be done to diagnose Infertility.
IV Both partners:

A Reassurance:
Reassurance may be all that is necessary when couples complain of infertility too soon. They appreciate a simple account of the physiology of conception with an explanation that the mathematical changes of conception are not as high as they imagined.

B Correction of coital difficulties:
Some couples require instruction as to the difficulties of coitus, its timing and spacing. They should follow their natural inclinations but keep in mind that conception is most likely to happen between the tenth and eighteenth days of a 28-day cycle, at which time coitus should be practiced at 48-hour intervals.

C Correction of general ill health:
Under this heading are attention to matters such as overwork, anxiety, obesity and intemperance to smoking and drinking. A long carefree holiday may sometimes be the answer.

V. For the treatment of infertility, the patients should be referred from the MCWC to an Obstetrician and Gynaecologist from all MCWCs. Currently Tubal anastomosis and vasal anastomosis are being carried out in some selected centres like Bangabandhu Sheikh Mujib Medical University (BSMMU), Mohammadpur Fertility Services and Training Centres (MFSTC), BIRDEM Hospital, Institute of Maternal and Child Health (ICMH), Barisal Medical College Hospital, Combined Military Hospital (CMH) and Rajshahi Medical College Hospital.
Chapter 6
Male, Youth and adolescent services in MCWC

6.1 Introduction
Adolescents in Bangladesh are exposed to the same reproductive health risks as their counterparts in other developing countries. Adolescent pregnancy and its impact on maternal/infant mortality rates, sexually transmitted infections in adolescents and initiation to tobacco/substance abuse/violence have serious public health implications. The Program of Action of the ICPD identified adolescents as a vulnerable group, and suggested that governments, in collaboration with non-government organizations, should meet their special needs.

Adults visualize adolescents as a problematic section of the population. Adolescents are the parents, workers, and leaders of tomorrow. Family pressure and lack of knowledge and access to contraceptives put adolescents in a high-risk situation. Social and religious restrictions may limit adolescents' access to sexual and reproductive health information/services. Negative attitudes of service providers, non-confidentiality, unfriendly services and inappropriate opening hours/locations are often reasons why adolescents do not seek sexual and reproductive health services in places where such services are available. Meeting the reproductive health needs of today’s adolescents requires more than solving their problems.

6.2 Male Involvement¹

“Male involvement is broadly used to encompass the various ways in which men relate to reproductive health problems and programs, and reproductive behavior”

Lack of Progress:
A During the first 10 years of Safe motherhood initiative, no reduction in annual number of maternal deaths related to pregnancy,
B Interventions rarely tried to counsel male partners of pregnant women,
C A few studies have shown promise, but more research is needed.

Male involvement has following major aspects:
A The way men accept and support their partners’ needs, choices and rights in reproductive health,
B Men’s responsibility and participation,
C Men’s own reproductive and sexual behavior.

Reason of male involvement:
i) Men are the key decision-makers regarding pregnancy and child birth;
ii) Men have generally not been involved in trying to make pregnancy and childbirth safer.

Few attempts have been made to involve male in reducing maternal mortality. If males better understand that pregnancy is not merely a natural event, but one that carries potential health risks for women, they would be in a better position to help ensure that their partners receive pre natal care, adequate rest and good nutrition.

¹ NIPHP, 2003.
Barriers to male participation in safe delivery:
   i) Social, cultural, religious norms (e.g. stigma/prejudice related to pregnancy, non-discussion of RH matters),
   ii) Familial (influence of in-laws to decide on safe delivery matters),
   iii) Programmatic (e.g. lack of male friendly clinics and health services),
   iv) Spousal communication is very rare in respect to safe delivery.

Participating in Birthing Process
Helping after baby is born e.g. fathering process.

Possible areas for enhancing male involvement:

A. Participating in Birthing Process:
   1. Masculinity is sometimes judged negatively, which can be viewed as powerful force for change. Therefore, involvement of men in all areas of RH is important.
   2. Man can seek RH for himself and use information for his wife. He can also disseminate information to others
   3. Man can assist and support his wife to seek RH care
   4. Man can play a role in decision-making and act a force for change in RH matters
   5. Men have a role to play to ensure safe outcome of pregnancy by assisting women in the following ways;

   a  Safeguarding women’s health during pregnancy:
      i  Reducing delay in getting treatment by being trained to recognize and respond to complications of pregnancy and delivery,
      ii  Planning for antenatal care,
      iii  Ensure regular antenatal care,
      iv  Accompanying wife during antenatal care,
      v  Attending health education classes,
      vi  Maintaining nutrition,
      vii  Vaccination,
      viii  Ensuring adequate rest,
      ix  Cleanliness,
      x  Exercise,
      xi  Caring about taking medicines/ diet/ rest/ hygiene/ work,
      xii  Psychological support,
      xiii  Ensuring careful sexual activity,
      xiii  Knowing about the danger signs of pregnancy,
      xiv  Ensuring Intra-natal and post-natal care,
      xv  Planning for delivery and arrangement of money.

   b  Arranging for skilled care during delivery:
      i  Planning as to where and by whom delivery will be done,
      ii  Taking decision about institutional delivery,
      iii  Arranging for skilled birth attendant,
      iv  Arranging money and vehicle at proper time,
      v  Arranging relative,
      vi  Taking quick decision during proper time
      vii  Using masculine force to break harmful cultural barriers,
      viii  Allocating family and community resources,
      ix  Knowing about delivery process/ complication,
x Remaining present during the time of delivery for psychological support,
xi Arranging with ventilated room to ensure privacy,
{xii Maintaining C’s,
xiii Having capability of taking decision without the help of relatives
xiv Keeping good communication with health care provider.

B. Fathering Process:
1 How Traditional masculinity limits the role of fathers
   a Mostly, fathers are considered as provider and authoritative figure,
   b Lack of alternative models: “that is what my father taught me”.
   c Limited cultural acceptability for men’s emotional expression and
      involvement,
   d Little opportunity to learn to care for others.

C Involving male in fathering may lead to:
1 Better communication and stronger bondage among couples/family,
2 Better role model for children,
3 Increased commitment to contraceptive usage,
4 Increased support during pregnancy,
5 Reduced violence in the home,
6 Increased promotion of exclusive breast-feeding,
7 Reduced blaming for infertility of women, while men may have many causes to be
   infertile. Men can a play role to change this social belief.

ICPD 1994 declaration:
“The ICPD 1994 proposed equal participation of men and women
in all areas of family and household responsibilities including FP,
child rearing. The conference recommended that special efforts
should be made to emphasis men’s shared responsibilities and
promote their active involvement in responsible parenthood,
sexual and reproductive behavior including family planning,
maternal and child health, prevention of STDs, prevention of
unwanted and high-risk pregnancies, shared contribution to
family income, children’s education and health, nutrition and
recognition and promotion of equal value of children of both
sexes”. 2

6.3 Involvement of youths and adolescents

Youth services:
The World Health Organization defines youth as the period of life spanning the ages between
15 and 24 years. Adolescence constitutes a major part of youth. The GOB has initiated
different policies and activities for this youth group, which also covers adolescents.

1 MOHFW. 1997.
National Youth Policy:
To combat the challenges of the 21st century the government has taken steps to update the existing National Youth Policy (addressing individuals 10-24 years of age). In this respect, a national level Youth Policy Formulation committee has been formed.

National Youth Day:
A decision has been taken to celebrate National Youth Day on 1st December. Successfully trained male and female youths who can show exemplary contribution on self-employment projects are awarded the National Youth Awards. So far 123 successful male and female youths have received such awards.

Areas for Action

One big challenge is to introduce appropriate services for married adolescents that address difficult subjects, such as sexuality. Both men and women need to be prepared for a healthy reproductive life through education about premarital sex and the risks associated with unsafe practices. Community leaders, including religious leaders, need to learn about the risks of early marriage and consequences of early childbirth.

The immediate actions need to be taken are:

Bangladesh has a marriage law that sets the age of marriage at 18 though with parental consent it can be 16 years. This law needs to be enforced and strengthened to protect the reproductive health of female adolescents. Policy makers should take necessary steps to publicize the law and enforce it;

There is an emerging trend of contraceptive use prior to the first birth. The national programs through information and services specifically designed for newly married couples or those about to be married should encourage this. Field workers should give special emphasis on reaching these couples. Special events, such as village fairs and street dramas for newlyweds, with health education as theme, should be organized at clinic and community levels;

The national program should encourage the use of media to disseminate messages about safe sex before and after marriage. The radio seems to be particularly effective at reaching young people;

Data on the reproductive health knowledge and behavior of unmarried adolescents should be enriched to develop appropriate information and service programs. Adolescent programs should include social messages about gender equity in relationships, delaying sexual initiation as well as marriage, and other essential reproductive health messages;

In-depth information on reproductive health-related knowledge, attitude and practices among unmarried adolescents needs to be collected;

More programs should be designed to target adolescent boys; Efforts to improve services for adolescents should be complemented with campaigns targeting elders in the community (e.g., parents, guardians, teachers);

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Mothers and female guardians/ and other family members need to be informed about the consequences of malnutrition and early marriage of adolescent girl;  
Appropriate policy and programmatic measures should be undertaken immediately to reduce the incidence of early childbearing;  

More concerted family planning programs focused specifically on newly married adolescent couples are needed;  
Pre-marital contraception counseling for adolescents should be reinforced;  

Community leaders need to be more involved in providing information to adolescents about the bad outcomes of late marriage, drug abuse, pre-marital sex as well as information on the prevention of STD/HIV/AIDS, etc., to ensure a healthy future.

**Adolescent Health**

Adolescents in Bangladesh are exposed to the same reproductive health risks as adolescents in other developing countries. Adolescent pregnancy and its impact on maternal and infant mortality rates, sexually transmitted infections in adolescents, initiation to tobacco and substance abuse and violence have serious public health implications. The Program of Action of the ICPD identified adolescents particularly as a vulnerable group, and suggested that governments, in collaboration with non-government organizations, should meet their special needs.

Adolescence has been defined by WHO as the period of life spanning the ages between 10 and 19 years. According to The National Census of 2001, as many as 36.3 million Bangladeshis are adolescents (10-19 years of age) constituting 23% of the population. Among them 8.8 million girls and 9.3 million boys fall in the age group of 10-14 years while 8.7 million girls and 9.5 million boys belong to the 15-19 years age group.

There are several factors, all inter-related, that affect the normal development of adolescent girls. These include poverty, violence against adolescents, sexual exploitation, family conflict, unwanted pregnancies, gender bias, malnutrition and forced prostitutions, etc. Nutrition is also an important issue to be considered in the development of the adolescent.

In general, knowledge of reproductive health among adolescents is low. The majority has no idea about the changes associated with puberty (e.g., menstruation or wet dreams) until they experience them. In Bangladesh, the strong family structure plays a major role in the lives of adolescents but fails to respond to their needs for reproductive health information. Their information sources regarding sex and sexuality are usually grandmothers, peer groups, and canvassers, but the scope for acquiring academic or institutional knowledge is very limited.

**National Policies and Objectives**

Focusing the programs of reproductive health and family planning on married as well as unmarried adolescent is imperative for internalizing the behavior that supports the use of modern health care services to improve the quality of life. Besides, the sooner the adolescents pick up FP practices as a routine behavior, the greater are the prospects of slowing down the

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5 MOHFW. 2000.  
7 Hossain, S M I et al., 1998.
momentum of population growth after reaching replacement fertility. Intersectoral approaches and focused sectoral approaches have to be devised to cater to the needs of the in-school and out-of-school adolescents.

**National policy on adolescents:** Adolescents have been identified as an underserved priority target group under the HPSP, and subsequently in the revised 3-year Health and Nutrition Program (HNP). Although numerous programs have been undertaken through relevant ministries and agencies, there is no comprehensive national policy addressing the multidimensional needs of adolescents. There are overlaps in terms of age groups of the adolescents, for example, most of the adolescents are covered under the National Children Policy (a child is defined by the United Nations agencies to be a person below 18 years of age); while the rest are covered under the National Youth Policy. However, policies and programs for adolescents cannot exist in isolation, and their success will depend on the extent to which they are embedded in the social and family interventions.

The Adolescent Health Care program undertaken by HPSP is one of the pivotal subcomponents of ESP. The program includes the development and wide circulation of Behavioral Change Communication (BCC) message to create awareness about:

- The reproductive process
- Safe sex
- STD/HIV/AIDS
- Proper nutrition and hygiene
- Proper sibling care
- Adolescent contraception
- Demerits of early marriage and early childbearing
- Treatment of iron-deficiency anemia
- Treatments of gynecological problem, such as analgesic for dysmenorrhoea.

**Adolescent health services**

Adolescents are the parents, workers, and leaders of tomorrow. Family pressure, lack of knowledge and access to contraceptives put adolescents in this kind of high-risk situation. Social and religious restrictions may limit adolescents' access to sexual and reproductive health information and services. Negative attitudes of service providers, non-confidentiality, unfriendly services and inappropriate opening hours or locations are often reasons why adolescents do not seek sexual and reproductive health services in places where such services are available. Meeting the reproductive health needs of today’s adolescents requires more than solving their problems.

**Sex education:**

Reproductive and sexual health education is aimed at developing the capacity of adolescents to understand their sexuality in the context of biological, psychological, socio cultural and reproductive dimensions and to acquire skills to take responsible decisions and actions with regard to sexual and reproductive health behavior. Several social barriers work against the introduction of sex education in school curricula. Many believe that this may increase promiscuity in the country while others believe that it already exists in the society. However, it has been suggested that receiving correct knowledge on reproductive health matters will reduce the irresponsible sexual behavior of adolescents.
Media and other sources of information:
Public electronic media, which include radio and television, are vital sources of information for adolescents. Other sources of information are the print media, i.e., books, leaflets, posters, etc. The Government and different NGOs have developed various print materials, short dramas, TV and radio spots, etc., to encourage adolescents to go to school.

Peer education:
Peer education can play a vital role for adolescents. The peers in their sexual and other behaviors like smoking, taking drugs, etc, can easily influence young people. There are organizations working to motive adolescents through peer groups. They develop peer groups in the community that provide guidance and information to adolescents.

Family planning services:
Knowledge of contraceptive methods is universal among married female adolescent and younger men of the ages 10-19 use condom more than the national average\(^8\). Although a large number of married female adolescents take the oral pill, condom use by the youth indicates a positive turn to male involvement\(^9\). According to an NIPHP\(^{10}\) evaluation survey, the overall CPR among currently married adolescents was about 46% and for modern methods 41%. The oral pill was the most widely used contraceptive method among this group (27%) followed by the condom (6%).

In Bangladesh, the adolescents are unlikely to use contraceptives at first intercourse before marriage as they are ashamed and scared of being found out. This particular behavior increases the chances of unwanted pregnancy.

Services on pregnancy and unsafe abortion:
The high risks associated with teenage pregnancy are pronounced in Bangladesh. A good number of adolescent women below 20 years undergo unsafe abortion each year with a third of all women seeking hospital/clinics care for abortion complications. The Government provides special antenatal support to adolescent mothers through the ESP. Government health facilities like community clinics and district hospitals undertake regular checkup of the pregnant mothers.

Treatment of RTI/STIs and prevention of HIV / AIDS Programs:
Only 17% adolescent married girls have heard about AIDS, and if they need treatment for the disease, they visit quacks, pharmacists (‘compounders’), Kabiraj, Hekim and other homeopath doctors. The GOB undertook a project in 1996 on the "Prevention and Control of Sexually Transmitted Diseases", and the year later approved the National Policy on AIDS. A strategy plan of action for the National AIDS Program of Bangladesh (1997-2002) for HIV/AIDS prevention and care has been also developed. There is a HIV/AIDS Committee at the district level which is headed by senior government officials and which develops local plans of actions. NGOs have also taken up special initiatives to resist HIV/AIDS in Bangladesh.

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\(^8\) Mitra et al., 1997.
\(^{10}\) NIPHP. 2002.
Nutrition:
Issues like economy, knowledge, food habit, cultural norms etc., and influence the nutrition status of adolescents. The GOB has undertaken several initiatives in this regard, e.g., the Bangladesh Integrated Nutrition Project (BINP), Control of Iodine Deficiency Disorder (IDD), Vitamin-A capsule (VAC) for lactating mothers, etc. The Bangladesh National Nutrition Council also plays a significant role in these issues. NGOs are also working on the issue of adolescent nutrition, e.g., Concern has developed the "Urban Nutrition and Food Security Program" for poor adolescents living in slums.

Protection against violence:
Violence can be committed against adolescents by the family or at the workplace. From January to December 2002, the total number of acid attack victims was about 450 and rape cases about 1200. Of this adolescent rape and acid attack cases were around 643 and 114, respectively. Battery and verbal abuse cases are the most frequently reported. Most parents and community leaders suggest stepping up social awareness building activities to prevent such violence.


TT programs:
Tetanus Toxoid (TT) injections are given during pregnancy for the prevention of tetanus among the newborn. Around 13.7% of pregnant mothers below 20 years receive at least one dose and 71.8% receive two or more doses of the injection. The GOB undertakes and promotes initiatives such as TT school programs, TT camps and TT services provided at clinics.
Chapter 7

Behavioral Change Communication,
Gender Issues and Violence Against Women Services

7.1 Introduction
The health status of poor women and girls is a cause for international as well as national concern and action. Poor people suffer generally from worse health than the well off, as they have less access to affordable, competent health care. Poor women’s and girls low health status is compounded by high rates of maternal mortality, morbidity and neglect of their health needs stemming from societal discrimination.

7.2 Behavioral Change Communication (BCC)
The Project Implementation Plan (PIP) of HNPSP have laid great emphasis on BCC as a cross cutting intervention investment, which will match the immense financial losses created by the continuing gaps in public perceptions and behaviors, particularly those related to pregnancy and childbirth. The HNPSP envisages that various BCC interventions will allow target clients, specially the poor, to understand their need, and entitlement to the ESP, subsequently demanding it. Specifically, the aims of the BCC component have been stated to be:

• Changing attitude and behavior of people to improve their health status,
• Building effective community support for health seeking behavior,
• Changing attitude and behavior of service providers to provide client centered services;

Promoting men’s respect for the special situation of women and girl children in the society. Both men and women have been socialized with these attitudes. They pass them on to the next generation. Women are the ones who distribute the food within the family according to the established practice. Interestingly, research has shown that in households where women make decisions, women spend more money on medical care, food and make better food choices. In these households, both women and children fare better nutritionally. Efforts have been made in the past to educate the women on the need for family planning, good nutrition and antenatal care. However, women often do not have the power to decide on these matters.

Power is the issue behind violence against women within the family and in the community. As many as 13.8 % maternal deaths are due to injury and violence. Violence is also a factor in other issues that impact on maternal health. Social insecurity and social pressure lead to early marriage. As pregnant women are unable to carry out their usual heavy domestic load fully, they are more often subjected to physical assault. The mental distress of abused women affects their appetite, therefore further weakening them. Many women have no control over their fertility and are forced to keep unwanted pregnancies or have repeated Menstruation Regulation (MRs).

Poverty is a major factor in the entire family’s health. It influences nutrition and care seeking practices. It also increases the stress and tension within the family so that violence also increases. Efforts at poverty alleviation are important to improve maternal health. The facilities also have a role in ensuring that unnecessary burden is not put on the poor to their accessibility to health care. Even for solvent families, there are factors, which inhibit access
to health care. These include attitudes of male doctors, lack of privacy and respect shown to women, the ignorance of the risks and danger sign in pregnancy.

BCC should be addressed on:
1. The role/value of women in society, and the discrimination she faces throughout her life cycle
2. Reproductive rights
3. Dignity and self-esteem of women
4. Early marriage and registration
5. Use of EOC services with emphasis on 5 danger signs and 3 delays
6. Promoting birth planning
7. Skilled birth practices and use of PNC
8. Essential newborn care
9. Participation of husbands, mothers, mothers in law, and the community in general in pregnancy related matters
10. Changing attitudes and practices of the service providers
11. Breaking the silence surrounding violence against women
12. Filling in the gaps left out in other BCC initiatives in the area of safe motherhood
13. Preventing unsafe abortion
14. Promoting small family norm and addressing preference for son

Rights Based Approach
Health service delivery particularly for the reduction of maternal mortality can be pursued using rights-based approach. The rights-based approach can be structured on a conceptual framework of three elements, Quality Technology, Management Excellence and Respect for Human/Client Rights.

Persistently high maternal mortality is being recognized as a violation of women’s right to life and health. Using human rights to underline the gravity and unfairness of maternal death has been the major use of human rights in safe motherhood initiative. Human rights principles such as non-discrimination, community participation, accountability and dignity.

The overall strategy of the rights-based approach is for the providers to adhere to the quality technology component of the conceptual framework. Appropriate infection prevention and other medical practices at service sites and regular supervision of staff by trained clinical personnel shall have to be ensured. This as such not only ensures quality of services but also fulfills the rights of the women. This means that if the providers do not perform the infection prevention steps we deprive the women of their right to avail/receive good quality services.

7.3 Gender Issues
Introduction
Gender differentials in health remain a major challenge. Bangladesh is one of the few countries in the world where life expectancy at birth is lower for females than males. In Bangladesh, social inequalities and discrimination against women are so intense that they have reversed women’s biological advantage. Severe malnutrition amongst girls is 25% higher than amongst boys, and mortality rates for girls (aged 1-4) are higher than those for
boys. The Gender Equity Strategy (GES) is a major step towards addressing these pressing issues in the health sector of Bangladesh.

**Gender:**
The social definition of what it means to be male or female, the economic, social and cultural attributes and opportunities associated with being male or female. Definitions of gender have varied among cultures over period of time.

**Sex:**
The physiological attributes that identify a person as male or female:

- Type of genital organs,
- Type of predominant hormones circulating in the body,
- Ability to produce sperm or ova,
- Ability to give birth and breastfeed children.

**Gender issues:**
Gender issues exist when a person’s access to societal goods, services or benefits are denied on the basis of gender (status, roles or stereotypes).

Examples:

- if RH services are not made available to a man because a female service provider feels uncomfortable counseling him; or
- if a woman is told by a service provider that she must have her husband’s consent to use an FP method

**Gender Sensitivity:**
It is the ability to perceive existing gender differences, issues, inequalities and incorporate these into strategies and actions.

**Gender Equity:**
It is the process of being fair to women and men. In the context of reproductive health, gender equity refers to equitable or fair access by women and men to RH services and to reproductive health.

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<th>Comparison and Contrast</th>
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**Gender-sensitive providers:**
The gender-sensitive providers are aware of inequalities in reproductive health and health care access, with usage based on gender. They strive to reduce barriers to RH/FP service acceptance, access and use based on gender differences which result in more gender-equitable services.

**Examples in which gender influences provider performance:**

- Expectations about desirable female (or male) behavior in public,
ii Gender role in division of labor which makes women’s participation in continuing education difficult or requires time off from work (double burden),

iii Demotivating lack of equal pay for equal work,

iv Cultural inhibitions about what men or women may say in mixed company,

v Gender-sensitive services,

vi Gender-sensitive services respond to clients’ specific needs and social circumstances.

Examples in which gender influences use of services:

i Lack of money or credit to pay for services,

ii Lack of information about existing services ie. purdah or education,

iii Lack of decision-making or bargaining power in household to use services,

iv Lack of same-sex service providers.

Strategies where gender sensitive services needs improvement are evident in:

i The involvement of women/men groups in the definition of with/how services are offered,

ii The involvement of women/men groups in the evaluation of services,

iii The existence and use of a mechanism to obtain client feedback,

iv Efforts to involve men as partners in safe motherhood and other reproductive health services,

v Services whose costs are affordable and offered at times convenient to male clients,

vi Services whose costs are affordable and offered at times convenient to female clients,

vii Services offered in places that are convenient to men,

vii Outreach provided to those with limited access; to vulnerable groups (e.g., for adolescent, sex worker, HIV + persons) through mobile clinics or other approach,

vii Integration of RH/FP, maternal/child health (MCH) services (or creating links with other services.

Multiple gender perspectives and priorities:

a Taking into consideration differences in power between women and men,

b Changing power dynamics between women and men,

c Involving men in RH issues and programs,

d Giving women a voice in designing or using RH services,

e Understanding the cultural influences at work in sexual and RH behavior,

International and national consensus documents addressing gender equality:

a Convention on the elimination of all forms of discrimination against women (1980),

b Nairobi forward-looking strategies for the advancement of women (1985)

c Agreements reached at the 1994 Cairo International Conference on Population and Development (ICPD),

d World Summit for social development emphasizing links between empowerment of women and sustainable development,

e Beijing declaration and platform for action (1995) on gender equality and health,

f GOB/MOHFW 2001 gender equity strategy addresses the neglect of the health needs of poor women and girls stemming from social discrimination.

Gender Equity Strategy (GES)
The Ministry of Health and Family Welfare aims to improve the health of the people of Bangladesh—particularly women, children and the poor. The Gender Equity Strategy (GES) provides the MoHFW with strategic guidance to support that aim. The following strategic objectives are from the GES, approved in 2001. The Strategy was developed under the Gender Issues Office through a series of discussions and workshops involving the MOHFW, NGOs and development partners.

7.4 Violence against Women:

Introduction

Millions of women suffer from violence and its consequences, because of their gender and their unequal status in society. Violence against women (often called gender-based violence) is a serious violation of women’s human rights. Yet little attention has been paid to the serious health consequences of abuse and the health needs of abused women. Women who have experienced physical, sexual, or psychological violence suffer from a range of health problems, often in silence. They have poorer physical and mental health, suffer more injuries, and use more medical resources than non-abused women.

Females of all ages are victims of violence, in part because of their limited social and economic power compared with men. While men also are victims of violence, violence against women is characterized by its high prevalence within the family; its acceptance by society; and its serious long-term impact on women’s health and well-being.

Health care workers have the opportunity and the obligation to identify, treat, and educate women who are being abused. Health care institutions can make significant contributions to addressing violence against women by supporting clinicians and clients. Developing and institutionalizing national health-sector policies, protocols, norms about violence, draw attention to the problem of gender-based violence, thereby ensuring quality care to survivors of abuse.

Violence against women is defined as—“Any act of gender based violence that results in or is likely to result in physical, sexual, or psychological harm or suffering to women, including threats of such acts, coercion or arbitrary deprivations of liberty whether occurring in public or in private life.”

Bangladesh Situation

In Bangladesh, violence against women is common, particularly by husbands. The nature of violence ranges from scolding to severe beating, forced sex and in extreme cases, murder. A U.S. study found that women who experienced intimate partner abuse were three times more likely to have a gynaecological problem than were non-abused women. In Bangladesh, a half of all murders are of wives by husbands. Bangladeshi women are the most battered in the world. Surveys indicate that 47% of adult women have been physically assaulted by an intimate partner in Bangladesh. Many in our communities believe it is acceptable to hit women. Cultural norms strengthen this belief and may lead women into believing that violence is deserved.

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1 NIPHP, 2003.
2 Campbell, J. et al., 2002
3 (Barbara Shane and Marry Ellsberg, 2002)
Acid attacks remain one of the most barbaric acts against girls and women in Bangladesh. Hundreds of young women are attacked with sulphuric acid simply because they dared to say no to men. Experts say three to five young women a week are being burned with acid in Bangladesh, and the numbers are increasing at an alarming rate. By throwing acid, men not only destroy a women’s face but also her future, the chances of her getting married and enjoying a normal life. Rape is now probably one of the most common forms of violence against girls. Unfortunately, despite the fact that in most cases the violator is known to the victim, nothing is done to bring the former to justice\(^4\). In Bangladesh, where both the prime minister and opposition leader are women, nearly 50 percent of murder cases against women are linked to marital violence, and by an inability to meet dowry demands and to handle polygamous men\(^5\). Despite the fact that demanding, giving and accepting a dowry is an offence under the laws of Bangladesh, the practice, however, still prevails in many sections of society.

By 1990’s all gender-based violence was recognized as an abuse of human rights.

Type of Violence/Abuse

Domestic violence is an ongoing, debilitating experience of physical, psychological and/or sexual abuse in the home, associated with increased isolation from the outside world, limited personal freedom and accessibility of resources.

**Physical abuse** is usually recurrent and escalates in both frequency and severity. It may include the following:

1. Pushing, showing, slapping, punching, biting, kicking, choking,
2. Assault with a weapon,
3. Holding, tying down, or restraining her,
4. Leaving her in a dangerous place,
5. Refusing to help when she is sick or injured.

**Emotional or psychological abuse** may precede or accompany physical violence as a means of controlling through fear and degradation. It may include the following:

1. Threats of harm,
2. Physical and social isolation,
3. Extreme jealousy and possessiveness,
4. Deprivation,
5. Intimidation,
6. Degradation and humiliation,
7. Calling her names and constantly criticizing, insulting and belittling her,
8. False accusations, and blaming her for everything,
9. Ignoring, dismissing, or ridiculing her needs,
10. Lying, breaking, promises, and destroying trust,
11. Driving fast and recklessly to frighten and intimidate her.

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\(^4\) (Prof. B A Majumdar, 2002)  
\(^5\) (Dawn, September 2000)
Sexual abuse in violent relationships is often the most difficult aspect of an abuse for women to discuss, which may include any form of forced sex or sexual degradation such as:

1. Trying to make her perform sexual acts against her will,
2. Pursuing sexual activity when she is not fully conscious or is not asked or afraid to say no,
3. Hurting her physically during sex or assaulting her genitals including use of objects or weapons intravaginally, orally, anally,
4. Coercing her to have sex without protection against pregnancy or STDs,
5. Criticizing her and calling her sexually degrading names.

Practice of violence during delivery

1. Use of dark, ill ventilated room and place,
2. Typing the abdomen tightly and pushing the abdomen vigorously during delivery,
3. Introduction of hand frequently inside the vagina,
4. Use of oil and herbal juice inside the vagina as lubricants,
5. Introduction of hair and ragged clothes inside the mouth to initiate vomiting thinking that it will help in expulsion of placenta.

Effects on health and society

Violence against women has important effects on health and development.

Effect on Socio-economic development:

• Socio-economic development is slowed because gender violence reduces women’s ability to contribute fully,
• Violence against women reduces women’s participation in development projects,
• Fear of stranger-perpetrated violence similarly limits women’s participation in public life by restricting themselves, as they are not going out, to in certain places, or during certain times in certain dress.
• As a result of abuse, women and girls do not attain the educational and income level for which they have ability. They see the outside world as dangerous and limit themselves in what they do. This attitude continues and affects their children as well.
• To avoid violence, women learn to restrict their behavior to what they think will be acceptable to their husbands and partners. Threats or fear of violence control women’s mind as much as do act of violence, making women of their own jailers.
• The restriction and underlying fear may even exacerbate under nutrition. Distrust and hatred of men affects the normal working relationship with male colleagues.

Effect on Maternal Health:

• Surveys show that pregnant women are prime targets of abuse,
• Violence is also responsible for a sizable but often unrecognized share of maternal mortality.

Effect on Family Planning:

Many women limit their use of contraception out of fear of abuse. Sexual victimization may be directly and indirectly related to unwanted pregnancy.
Effects on STD and HIV/AIDS prevention:
Violence can increase a woman’s risk of STD and HIV/AIDS through non-consensual sex, by limiting her willingness or her ability to get her partner to use a barrier contraceptive

Effects on pregnancy and delivery:
- IUGR,
- Abruptio placenta,
- Spontaneous abortion,
- Vaginal bleeding due to trauma,
- Pre-term labor.

Effects on the fetus:
- Low birth weight,
- Prematurity,
- Fractures,
- Cranial bleeds

Management of Violence Against Women

A Reception:
- i. Create a supportive, non-judgmental environment at reception,
- ii. Display posters that decry violence against women and advice that care is available at this facility,
- iii. Maintain privacy and confidentiality,
- iv. Ensure a chaperone is present during examinations, but not within hearing distance during taking history.

B Attitude:
- i. First, “do no harm”. Unsympathetic or victim blaming attitudes can reinforce isolation and self blame, undermine women’s self-confidence, and make it less likely that women will reach out for help.
- ii. Let her tell her story. State clearly that no one deserves to be beaten or raped under any circumstances.

Process of Management of Violence Against Women:

A History:
Domestic violence often increases during pregnancy. Battered women who come to the service provider for services are more likely to present with vague medical complaints than acute trauma. A service provider may believe that talking about abuse will offend clients. A client will usually respond positively to being asked if she knows the provider cares. The following signs that may signal that a woman is being abused.
- Chronic, vague complaints that have no obvious physical cause (sleep disturbances, depression),
- Injuries that do no match the explanation of how they occurred,
- A husband who is overly attentive, controlling, or unwilling to leave the women’s side,
- Physical injury, especially during pregnancy,
- A history of attempted suicide or suicidal thoughts,
• Delays between injuries and seeking treatment,
• Urinary tract infection,
• Chronic irritable bowel syndrome.

Remember the shock and the shame of abuse often make it difficult for women to respond quickly to questions.
• Give her time to speak,
• Approach the woman with a caring, sympathetic attitude,
• Maintain privacy and confidentiality because her abuser may be with her,
• Let her tell the story,
• Respect the woman’s right to decide for herself.

State clearly that no one deserves to be beaten or raped under any circumstances.

B Examination of pregnant women or women in labor

On physical examination:
- Any injury of the body,
- Genital trauma,
- Abdominal trauma,
- Trauma in groin and upper inner thigh,
- Trauma on the buttock and back of the upper pelvis,
- Poor weight gain in pregnancy,
- Foetal heart sound
- Any vaginal bleeding due to trauma,
- Pre-term labor/labor pain.

C Clinical Management

The treatment will be directed at the relief of the pain and repair of tissue damage. In the case of a pregnant woman, special attention must be paid to the foetal as well as maternal welfare. For foetal and maternal welfare, the service provider must counsel the members of the in-laws household and her own household.

Pregnant women who are in labor will have to be treated and managed as per protocol:
- Referral to relevant consultants,
- Service provider need to be aware of state law and of the services available in their community for abuse victims,
- According to clinical findings, the patient should be referred to the appropriate consultants with findings and the primary treatment given,
- Record date and time of the receipt of the case by and referral for the relevant department,
- Proforma for referral (with carbon copy/counter sleep) is to be developed and used.
D Referral to the relevant agencies:

An intervention at first presentation may prevent further injury. For this to occur, the women need referral to the relevant agencies such as:

i Legal aid/human rights organizations,
ii Social welfare,
iii Police/law enforcing agencies
iv NGOs providing shelter, micro-credit etc.
v Psychotherapist

Timely informing of community agencies:

Each clinic must establish a register of the various NGOs and other facilities available in the area. The register should also indicate the way in which the woman may make contact and the services are available.

E Role of service provider for prevention of VAW

In the past, violence against women has not been viewed as a public health issue. However, the health system is the public system most likely to be in contact with women affected by gender violence. The serious health consequence of violence against women means that prevention of violence against women is a priority health issue.

The role of the service provider in the prevention of violence against women includes:

- Health education and counseling,
- Being alert to the possibility of violence as a possible causes of illness,
- Treatment,
- Safety planning,
- Referral to the relevant agencies,
- Psychological support,
- Advocacy,
- Empowerment of women.

Every service provider can do something to help promote non-violent relationships. If she suspects her client is being abused or if she discloses that she lives with violence, here are some things she can do:

i Respect confidentiality:
All discussion must occur in private, without other family members present. This is essential to building trust and ensuring the clients safety. Do not discuss her specific situation with friends, colleagues, or other members of the community.

ii Believe and validate her experiences:
Listen and believe her. Acknowledge her feelings and let her know she is not alone: Many women have similar experiences.

iii Acknowledge the injustice in a friendly, gently, and non-judgmental way:
Violence perpetrated against her is not her fault. No one deserves to be abused.

iv Respect her autonomy:
Respect her right to make decisions in her own life, when she is ready. She is the expert on her own life.

v Health education and counseling:
14% maternal deaths are related to violence so antenatal visits are important opportunities to give education on many important issues such as; nutrition, immunization and the danger signs in pregnancy including violence.

vi Mother knows:
- What must be done so that the girl child is safe,
- How health can respond to violence against women,
- Caring practices that will prevent the creation of perpetrators of violence.

vii Inter-personal communications e.g. focus group discussion will help options for treatment and make the appropriate choice.

To minimize the effects of violence, there needs to be dissemination of information that care is available:

i Letting people know that treatment for violence against women is available,
ii Inform stakeholders that they may refer affected women for care,
iii Teaching first aid measures especially for burns and bleeding

F Help her plan for future safety
- What has she tried in the past to keep herself? Is it working?
- Establish whether the woman feels that either she or her children are in immediate danger.
- Asks “It is safe to go home?”
  Does she have a place to go if she needs to escape? Does she have telephone numbers of friends, relatives, and police? Does she have copies of important documents available (birth certificates, children’s medical records)? Does she have small savings she can access in an emergency? Can she arrange to have an extra set of clothes packed for herself and for her children?

The family is the safety net in Bangladesh. So any planning for her safety must involve in the family.

1 Key issues that needed to be addressed in planning safety are:-
   a Acknowledging the violence,
   b Identifying the allies,
   c Learning danger signals,
   d Considering options for the children and developing a strategy for escape

2 Referral to the relevant agencies
   a An intervention at first presentation may prevent further injury. For this to occur, the women need referral to the relevant agencies.
   b Find out what resources exist in your community. Are they legal, social services or a shelter for battered women? The agency may be:
     • Legal aid/human rights organizations,
     • Social welfare,
     • Police/law enforcing agencies,
     • NGOs providing shelter, micro-credit etc.
     • Psychotherapist

G Counseling and Psychological Support:
Remember that this woman has been injured in more than her body. She needs to have her feelings acknowledged and respected. Encourage the woman to realize that in admitting the abuse and seeking help, she has already taken control of her situation and can find the best solution of her situation. Women in abusive situation feels very isolated. They often can see no other possibility than continuing in the same way. To make a change in their lives, they need to feel that they are not alone, they have options and they have the power to choose.

The service provider can provide psychological support and empower the women to:

i. Make the necessary decisions for her safety
   ii. The key response is to ask the woman with she wants to do and to offer her options.

• Advocacy:
   Since the health care system is often the only public system that is approached by women affected by violence, health care workers are at the forefront of bringing this issue to the notice of the public. A society, which condones violence against women, needs to be challenged with the evidence of the huge cost that accrues to the society. Our public health efforts must be directed to preventing this epidemic of violence by striking at its roots. By providing the statistics and the details necessary to support the contentions of activist groups. “Might is right” is becoming the overwhelming rule of the society and it need to challenge this statement. The opportunities to advocacy being in the hospital are increased by joining an activist group.

• Empowerment of women:
   VAW underlines the powerlessness of many women. For full social and physical rehabilitation, the women must learn to overcome the barriers to make fully informed choices about all levels of their lives, especially in their most intimate relationships. In the pursuit of life and livelihood, households utilize three kinds of power: social, political and psychological.

• Social power is access to certain bases of household production such as information, knowledge and skills, participation in social organizations and financial resources. Political lives are made. Psychological power is the individual empowerment through a process by which decisions, which affect their lives, are made. Psychological power is the individual’s sense of personal power.

• Women suffering from abuse have little sense of personal power. The health provider can increase this by telling them in seeking care; they have taken control, by giving information and providing the necessary services. The health providers contribute to their social power, by allowing the woman to make their own decisions about their future without forcing a particular option on them. The health worker acknowledges and enhances their political power.
Chapter 8  
Quality of Care

8.1 Introduction

Quality of care, a client centered approach to providing high quality health care as a basic human right, has emerged as a critical element of family planning and reproductive health programs. It was affirmed at international conferences, such as the 1994 International Conference on Population and Development. High-quality services ensure that clients receive the care that they deserve. Furthermore, providing better services at reasonable prices attracts more clients.¹

Providing high-quality care is important for service providers, since improving basic standards of care attracts more clients, reduces per capita costs of services and ensuring sustainability. Improving the quality of reproductive health care programs benefits other health services as well. This in part is done by encouraging users to seek higher-quality services for all of their health care needs. In addition, improvements to health care facilities enhance the quality of care for a wide range of adult and child health care needs.

While most people feel that improving quality of services is important, health specialists do not always agree on which components should be included in the definition of quality. Historically, quality has been defined at a clinical level, and involves offering technically competent, effective, and safe care that contributes to the client’s well-being. But quality of care is a multidimensional issue that may be defined and measured differently according to stakeholders’ priorities.

I Clients, whose perception of quality may be influenced by social and cultural concerns, place significant emphasis on the human aspects of care;

II Providers usually stress on the need for technical competency, as well as infrastructure and logistical support from their institution;

III Program managers may focus on support systems, such as logistics and recordkeeping;

IV Policymakers and donors are concerned with cost, efficiency, and outcomes for health investment as a whole.

The complexity of defining quality of care makes it difficult to identify and measure improvements in service delivery.

Good quality means providing patients with appropriate services in a technically competent manner, with good communication, shared decision making and cultural sensitivity. (IOM, Crossing The Quality Chasm)

The definition is further expressed as six aims – safe, effective, patient-centered, timely, efficient, and equitable healthcare.

In summary, quality medical care may be defined as that care which may be reasonably expected to lead to an optimal outcome. It must include care which educates patients about their personal responsibility for their health, prevents illnesses when possible, and utilizes appropriate modalities to diagnose and treat diseases. Quality medical care is dependent on the interaction between those who provide and receive care. It should produce optimal health outcomes in the most cost effective manner and result in high patient satisfaction.

I Quality of care:
A Produces optimal improvement in the patient's physiological status, physical function, emotional and intellectual performance, and comfort at the earliest possible time consistent with the patient's best interests,
B Emphasizes health promotion, disease/disability prevention, early detection and treatment of such conditions,
C Is provided in a timely manner without undue delay in initiation of care, inappropriate curtailment, discontinuity, or unnecessary prolongation of such care,
D Seeks to achieve the patient's informed cooperation and participation in decisions about care with respect for the cultural and ethnical diversity of the population served,
E Is based on accepted principles of medical science and proficient use of appropriate technological and professional resources,
F Is provided with sensitivity to the stress and anxiety that illness can generate concern for the patient's overall welfare,
G Uses technology and other resources efficiently to achieve desired treatment goal,
H Is sufficiently documented in the patient's medical record to enable continuity of care and peer evaluation,
I Recognizes that in every patient's life there comes a time when the best care is no longer an attempt to prolong life, but instead, efforts must be directed toward maintenance of dignity, allowing comfort, preparation of the patient and family for impending death. (1987) (1998).

8.2 Components of Quality of Care:

Quality Improvement:
Quality improvement (QI) identifies gaps existing between services actually provided and expectations for services. It then lessens these gaps not only to meet customer needs and expectations, but to exceed them and attain unprecedented levels of performance. QI is based on principles of quality management that focus on the client, systems, processes, teamwork, and the use of data.

QI has evolved over the years to arrive at the ideas presented in this document. Originally improvements were thought to depend on adding new or more things, such as new machinery, procedure, training or supplies. It was believed that more of these resources or inputs would improve quality. People working to improve quality learned that increasing resources did not always ensure their efficient use and consequently might not lead to improvements in quality. For example, the purchase of a new machine in a hospital does not alone improve the quality of care. In order to benefit from the machine’s advancement in technology, employees need training to learn to use the machine, patients need access to the
services that the machine provides, and the system of healthcare delivery must be changed in ways that permit the use of this new technology. In other words, improvement involves not only adding new resources to a system, but also making changes to an organization in order to make the best use of resources.

In fact, a key lesson is that in many cases quality can be improved by making changes to healthcare systems without necessarily increasing resources. Interestingly, improving the processes of healthcare not only creates better outcomes, but also reduces the cost of delivering healthcare: it eliminates waste, unnecessary work, and rework.

Inspecting main activities or processes is another way that management has attempted to identify and solve problems. This method tried to increase control over staff and often blamed people for mistakes. The philosophy of improving quality showed limited success because it did not necessarily identify barriers to improvement or generate the support of workers who felt resistant to being evaluated. Current QI approaches examine how activities can be changed so employee performance may stem from a lack of supplies, inefficient processes, lack of training or coaching rather than worker performance.

The philosophy behind the QI approaches presented in this document recognizes that both the resources (inputs) and activities carried out (process) must be addressed together to ensure or improve the quality of care (output/outcome).

This figure demonstrates how both inputs and processes are linked to the desired output and outcome of quality care. For example, it is evident that improvements result from advances in technology, such as new pharmaceuticals or diagnostic techniques. Improvements also result, however, from an organizations’ ability to incorporate inputs, such as technology, effectively and efficiently into the delivery of care.

**Measuring quality of care:**

Several approaches have been used to measure quality of care in family planning and reproductive health care programs. Measuring quality is important for several reasons: it signals what is important, monitor what is happening, and allows the appropriate parties to address what is happening. Signaling what matters by measuring quality, observers can determine an intervention’s effectiveness, and provide information for future program strategies. Furthermore, measuring quality demonstrates to providers that quality is a critical component of their work, and sets a standard for providers’ performance.

**8.3 Monitoring the Situation**

Tools for monitoring quality of care can be either quantitative or qualitative. Quantitative studies may have greater scientific rigor, but they may seem too remote to affect providers directly; qualitative studies help engage staff in improving programs, but may not be considered scientific enough to be creditable. Both types of evaluations have their place. Several quantitative approaches and tools have been used to monitor the effectiveness of reproductive and child health services.

A The Service Availability Module (SAM), an optional addition to the Demographic and Health Surveys (DHS), was the first quantitative tool used to measure population’s access to reproductive and child health services. The SAM collects information from community members about barriers to seeking care at clinics, then verifies whether the facilities offer certain basic services such as immunizations and family planning services.
B Situation Analysis (SA), developed by the Population Council in 1989, created widespread awareness about the importance of facility-based surveys in evaluating the availability, functioning, and quality of family planning and reproductive health programs. SA studies conducted in nearly 40 countries have shown that services often fail to meet minimal standards of care.

C The Service Provision Assessment (SPA), a combination of the SAM and SA, covers family planning, safe motherhood, newborn care, child survival, and HIV/AIDS. The SPA survey is designed to be used by a local agency under the direction of a country’s health ministry; technical assistance is provided by ORC Macro International. The Quick Investigation of Quality (QIQ), a subset of the SPA, was developed in 1999.

Recommended List of Quality of Care Indicators:

**Provider**
* Demonstrates good counseling skills,
* Assures client of confidentiality,
* Asks client about reproductive intentions (asking whether the client wants more children, and when),
* Discusses with client which method he or she would prefer,
* Mentions HIV/AIDS (initiates or responds),
* Discusses methods for preventing pregnancy and sexually transmitted infections,
* Treats clients with respect/courtesy,
* Tailors key information to the client’s needs,
* Gives accurate information on the methods accepted (explaining its use, side effects, and possible complications),
* Gives instructions on when to return,
* Follows infection control procedures outlined in guidelines,
* Recognizes/identifies contraindications, consistent with guidelines,
* Performs clinical procedures according to guidelines.

**Staff (Other Than Provider)**
* Treats clients with dignity and respect.

**Client**
* Participates actively in discussion and selection of method,
* Receives his or her method of choice,
* Believes the provider will keep his or her information confidential.

**Facility**
* Has all (approved) contraceptive methods available; no stock-outs,
* Has basic items needed for delivery of methods offered by the facility (including sterilizing equipment, gloves, blood pressure cuffs, specula, adequate lighting, water),
* Offers privacy for pelvic exams/IUD insertions,
* Has mechanisms to make programmatic changes based on client feedback,
* Has received a supervisory visit within a certain predetermined period,
* Has adequate storage of contraceptives and medicines (away from water, heat, direct sunlight) in the premises,
* Follows state-of-the-art clinical guidelines,
* Has acceptable waiting time.
Qualitative approaches and tools, such as Appreciative Inquiry (AI), Continuous Quality Improvement (CQI), Client-Oriented Provider-Efficient services (COPE), and Performance Improvement (PI), include data collection as well as quality improvement components.2

1 Appreciative Inquiry is an approach to organizational analysis and learning that is uniquely intended for discovering, understanding, and fostering innovations in social organizational arrangements and processes. Appreciative Inquiry refers to both a search for knowledge and a theory of intentional collective action which are designed to evolve the vision and will of a group, organization or society as a whole. It is an inquiry process that affirms our symbolic capacities of imagination and mind as our social capacity for conscious choice and cultural evolution. The art of appreciative inquiry is the art of discovering and valuing those factors that give life to an organization or group. The process involves interviewing and storytelling to draw the best of the past to set the stage of effective visualization of what might be.3

2 CQI is a management technique that encourages staff members from all levels to collaborate on analysis to continuously improve services. It helps institutionalize customer service practices. The Family Planning Service Expansion and Technical Support Project (SEATS II) and the American College of Nurse-Midwives relied on CQI to help the Zimbabwe Nurses Association, a group of private midwives, tackle barriers to providing reproductive health services on a fee-for-service basis, retain clients in the face of price increases, reduce waiting times, and develop referral guidelines.4

3 The COPE approach, designed by Engender Health (formerly AVSC International) enables a facility’s providers, supervisors, and other staff to jointly assess services. COPE uses various tools (including self-assessment guides, client-interview protocols, client-flow analyzes, and action plans) to help participants identify problems and develop effective solutions. Studies have shown increased quality of care resulting from the use of COPE techniques. Training modules have also been adapted to cover other reproductive health topics, such as maternal care, infection prevention, post abortion care, and sterilization services.

4 Performance Improvement (PI), a process used in industry since the 1960s, has been used more recently by program staff, clients, and other stakeholders to identify and correct shortcomings in service delivery. Programs in over a dozen countries have used PI to respond to clients’ requests, strengthen supervision, develop a community-based distribution program, and improve private-sector client counseling.

The use of these and other approaches is still in the preliminary phase, and under review. Future documentation of results will be useful for family planning and reproductive health services providers who are committed to quality improvements.

5 Quality improvement components:

**Next Steps**

Improving quality of care for clients means understanding their cultural values, previous experiences, and perceptions of the role of the health system, and then bringing reproductive health service providers and the community together to map out a shared vision of quality. Similarly, enhancing quality of care for providers requires identifying their motivations, addressing their needs (including general administrative and logistical

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2 EngenderHealth 1995; Management Sciences for Health 1993
support from the health care system), and helping them to better understand and address clients’ concepts of quality. Ethnographic studies, situation analyzes, and other research initiatives are being used to help identify and establish ways to measure quality from both clients’ and providers’ perspectives. More research is needed to identify and address the needs of clients who may need family planning and reproductive health services but who are not receiving care due to a variety of barriers. Similarly, additional research must be undertaken to determine whether initiatives to improve providers’ performance, such as training, the provision of job aids, self-assessment tools, enhanced supervision and ongoing evaluation, and improved infrastructure and facilities, actually affect client outcomes:

<table>
<thead>
<tr>
<th>Tools to Measure Improvements in Quality Improving Provider Knowledge and Skills.</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Pre- and post-tests; follow-up “post-post-tests”</td>
</tr>
<tr>
<td>* Provider observations</td>
</tr>
<tr>
<td>* Provider surveys</td>
</tr>
<tr>
<td>* “Mystery clients”</td>
</tr>
<tr>
<td>* Reviews of records</td>
</tr>
</tbody>
</table>

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<tr>
<th>Increasing Client Satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Client exit interviews</td>
</tr>
<tr>
<td>* Household interviews</td>
</tr>
<tr>
<td>* Focus group discussions</td>
</tr>
<tr>
<td>* Service statistics</td>
</tr>
</tbody>
</table>

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<tr>
<th>Improving Facilities’ Capability or Readiness to Provide Quality Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Facility audits or assessments</td>
</tr>
<tr>
<td>* Provider surveys/focus group discussions</td>
</tr>
<tr>
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</tr>
<tr>
<td>* Reviews of records</td>
</tr>
<tr>
<td>* Client flow analyzes</td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>Understanding Why Clients Do Not Use Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Focus group discussions with potential users or dropouts</td>
</tr>
<tr>
<td>* Household interviews with potential users or dropouts</td>
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**Conclusion**

Creating a shared vision for improved quality of care requires that program managers, service providers, researchers, and consumer advocates commit to the idea that quality matters. Increased efforts must be made to understand and motivate providers, improve their performance and help make them partners in improving access to quality family planning and reproductive health care services. Given time and effort, the ongoing attempt to improve the quality of care will translate into services that both meet high quality standards and satisfy the needs of clients and providers.
Chapter 9
Infection Prevention

9.1 Introduction
Infection prevention is the process through which diseases capable of spreading organisms in the health care facility are prevented.

Hospital acquired infections are continuous problems. Over the past few decades previously unidentified infectious agents, which can cause incurable diseases such as AIDS and hepatitis, have become significant contributors to illness and death in many parts of the world.

How infections are transmitted:
Infection caused by micro-organisms, can only be seen under a microscope. Some micro-organisms are normally present on the skin, and respiratory, intestinal, and genital tracts. These are called normal flora. Other micro-organisms are normally not found on or in the human body as they are usually associated with disease pathogens.

All micro-organisms, including normal flora, can cause infection or disease. Infections are transmitted when normal flora are introduced into an area of the body where they are not normally found or when pathogens are introduced into the body.

The Disease Transmission Cycle

1 Tietjen L et. Al. 1992..
**Modes of transmission:**

There are four ways through which infections are transmitted:

**Contact**  
Direct transfer of micro-organisms through touch (staphylococcus), sexual intercourse (gonorrhea, HIV), fecal/oral transmission (hepatitis A, shigella), or droplets (influenza, TB)

**Vehicle**  
Material that serves as a means of transfer of the micro-organisms. These can be found (salmonella) in blood (HIV, Hepatitis), water (cholera, shigella), or instruments/other items used during clinical procedures (Hepatitis, HIV, pseudomonas)

**Airborne**  
Some micro-organisms can be carried by air currents (Measles, TB)

**Vector**  
Invertebrate animals can transmit the micro-organisms (mosquito: malaria/ yellow fever; flea: plague)

**Who is at risk of infection?**

Everybody working at a health care facility is at risk of infection. Every health care worker has a role to play in practicing appropriate infection prevention procedure. In order for this to be effective, the staff member should individually and collective play their role.

**Risks to staff:**

Service providers are at significant risk of infection because they are exposed to potentially infectious blood and other body fluids on a daily basis. Those staff member/s who processes instruments and other items, cleans up after procedures, cleans the operating theaters/ procedure rooms, and undertake disposal of waste are particularly at risk. Client-to-health care worker transmission can occur through exposure to infectious blood and other body fluids:

- A health care worker’s skin is pierced or cut by contaminated needles or sharp instruments;
- Fluids are splashed on the mucous membranes of the health care worker (e.g eyes, nose, or mouth);
- Broken skin due to cuts, scratches, rashes, acne, chapped skin, or fungal infections.

Almost all cases of hepatitis B and HIV transmission to health care workers have occurred through preventable accidents, such as puncture wounds.

**Risk to clients:**

Clients are at risk of post procedure infection when, for example, service providers do not wash their hands between clients and procedures, when they do not adequately prepare clients before a clinical procedure, and when used instruments and other items are not cleaned and processed correctly.

**Risk to the community:**

The community is also at risk of infection, particularly from inappropriate disposal of medical waste, such as contaminated sharps. Improperly disposed of medical wastes including contaminated dressings, tissue, needles, syringes and scalpel blades can be found
by children or others scavenging in open dumps, or can scatter on the ground where adults and children travel, putting them at risk of injury and infection.

9.2 Standard and guidelines

9.3 Infection Prevention Procedure
Steps of Infection Prevention

1. Handwashing
2. Gloves wearing
3. Decontamination
4. Cleaning
5. Sterilization
6. High level disinfection
7. Waste disposal

Principles of Infection Prevention:
• Consider every person (client or staff) infectious;
• Washes hands – mostly practical procedures for preventing cross-contamination (person to person);
• Wear of gloves before touching anything wet, broken skin, mucous membranes, blood or other body fluids (secretions or excretions)/ soiled instruments and other items;
• Use physical barriers (protective goggles, face masks and aprons) if splashes and spills of any body fluids (secretions or excretions) are anticipated;
• Use safe work practices;
• Do not recap or bend needles;
• Safely pass sharp instruments;
• Properly dispose of medical waste;
• Isolate patients only if secretions (airborne) or excretions (urine or faeces) cannot be contained;
• Process instruments and other items (decontaminate, clean, high level disinfect or sterilize) using recommended infection prevention (IP) practices.
A. Protective Barriers (Hand washing, Surgical Handscrub and Gloving):
Placing physical, mechanical or chemical “barrier” between microorganisms and an individual - whether clients, patient, or health worker. This is an effective means of preventing the spread of disease. The barrier serves to break the disease transmission cycle.

1. **Handwashing**
It is the simplest and most important infection prevention procedure in any clinic, removes many micro-organisms from the skin, which helps to prevent transmission of infections from person to person.

Three kinds of handwashing:

i. **Handwashing with plain soap and running water**
   Removes transient microorganisms and soil (such as dirt, blood, feces, and crumbs from food). After most activities (for example, contact with a client, handling specimens or potentially contaminated items, using the toilet or latrine), handwashing with plain soap and water for 10-15 seconds and rinsing in running water is sufficient. If hands are heavily soiled with dirt, blood, or other organic material (such as when gloves have been torn), handwashing for several minutes may be necessary.

ii. **Handwashing with antiseptic and running water**
   Removes transient organisms and soil, and kills or inhibits the growth of resident microorganisms. Some antiseptics continue to perform these actions for several hours after hands are washed. This type of handwashing is appropriate in high-risk situations (such as before invasive procedures or contact with immunocompromised clients at high risk of infection).

iii. **Alcohol handrub**
   Kills or inhibits the growth of transient and resident microorganisms but does not remove microorganisms or soil. This method can be used when handwashing is not possible or practical (such as between surgical cases in high-volume settings), but only if hands are not visibly soiled with dirt, blood, or other matter.

   **Hand washing Tips:**
   - Keep bar soap on a rack to allow drainage;
   - Always use running water – avoid dipping or washing hands in a basin of standing water;
   - Use small bars of soap, or cut large ones into small pieces;
   - Always use a clean towel or air dry the hands.

2. **Surgical Handscrub**
   - Scrubbing with antiseptics before beginning surgical procedures will help prevent this rapid growth of microorganisms for a period of time and will reduce the risk of infections to the client if the gloves develop holes, tears, or nicks during the procedure. Antiseptic agents are used in surgical scrub because they inhibit the growth and development of microorganisms and are safe for use on the skin. A 3-5 minute surgical scrub with an antiseptic (such as chlorhexidine or an iodophor) and running water is recommended before a surgical procedure;
• Performing surgical scrub with soap and water, followed by an alcohol handrub, can be used in place of surgical handscrub.

**Alcohol handrub solution:** made up of 2 ml glycerine, propylene glycol, or sorbital mixed with 100 ml of 60-90% alcohol.

**High-volume settings**
- Ideally, surgical handscrub should be performed before every procedure. However, to prevent skin irritation from too frequent scrubbing in high-volume setting, use 3-5 ml of an alcohol handrub solution between clients, rubbing hands together until the alcohol dries. Then scrub every hour or after every four clients, whichever comes first.

**Surgical Scrub Tips:**
- Warm water makes antiseptics work more effectively, while very hot water removes more of the protective oils from the skin. Therefore, washing with very hot water should be avoided.
- Hands – more than any other part of the arms must be as clean as possible. Therefore, it is important to hold hands above the level of elbow to allow the water to flow from the hands (the area of least contamination) to the forearms (the area of most contamination). Otherwise, water may splash onto the unscrubbed portions of the arms and run down over the scrubbed portions, which would contaminate them.
- Scrubbing for at least 3-5 minutes allows adequate time to remove, inhibit, or kill as many microorganisms as possible.

3. **Gloves for protection from infection**
Gloves act as a barrier that protects health care workers and clients. Gloves protect service providers from coming into contact with the potentially infectious microorganisms that can be found in blood, other body fluids, and waste. During examinations and clinical procedures, gloves also protect clients from infections that can be caused by the microorganisms normally found on the skin of service providers. Health care workers should wear the proper type of gloves whenever they might come into contact with blood and other body fluids (for example, during service provision, handling or cleaning used instruments and other items, housekeeping activities, etc.) and whenever they perform a clinical procedure or an examination that might put the client at risk of infection.

**Three kinds of gloves:**
i. Surgical gloves;
ii. Single-use examination gloves;
iii. Utility or heavy-duty household gloves.

i. **Surgical gloves**
These should be worn for all clinical procedures where provides will be in contact with the tissues under the skin or with the bloodstream (for example, surgical procedures, cesarean section, manual removal of placenta, repair of perineal tear, Norplant implant etc.). Disposable surgical gloves are recommended for use whenever possible. Sterile surgical gloves are preferable for these procedures; however, high-level disinfected (HLD) surgical gloves can be used when sterilized gloves are not available.
ii. Single-use examination gloves

These should be worn for procedures where there will be contact with intact mucous membranes (for example, IUD insertion or pelvic exam) or where the primary purpose of wearing gloves is to reduce the risk of exposure to blood or other body fluids (for example, during manual vacuum aspiration). Examination gloves are usually made of latex or vinyl and may be either supplied in bulk in a box or individually packaged. These gloves are clean, but not sterile or HLD. As the name “single-use” implies, these gloves should always be discarded after one use. They should not be processed and reused.

iii. Utility or heavy-duty household gloves

These thick rubber gloves should be worn for handling contaminated instruments and other items, for handling waste and lines, for performing housekeeping activities, and for cleaning contaminated surfaces. These gloves can be reused after cleaning. To protect from contamination on the outside of the glove, always wash your hands while still wearing the gloves following the routine procedure described in the hand washing section of this guideline before removal.

Sterile glove tips:
- Use a separate pair of gloves for each client to avoid cross contamination;
- Do not use gloves from a package that is broken or expired;
- Do not use gloves which, are cracked, peeling, have holes or tears;
- Never touch the outside of the gloves while putting them on: handle them only by the out turned inner cuff;
- If gloves accidentally become contaminated, change them immediately;
- Wash hands after gloves are removed at the end of client contact.

Surgical glove tips:
- The outside of the glove package is not sterile. Either open the outer package before surgical scrub, or have another person open it for you.
- If the gloves become contaminated during a procedure, stop what you are doing, step away from the sterile field, remove the contaminated gloves, and put on new gloves.
- Do not let gloves snap while you are removing them or blood and other matter may splash on you or on those around you.
- During removal, do not allow the outside surface to contact your skin.
- Remove your used gloves before touching anything – including countertops, faucets, pens, and pencils.

If possible, use disposable surgical gloves, since it is difficult to properly process reusable gloves.

B. Client preparation for clinical procedures:

Proper client preparation (“client prep”) using antiseptics is critical before a procedure. Client prep helps keep bacteria on the client’s skin from causing infections in the surgical/procedure site.

Shaving the surgical/procedure site is no longer recommended because it causes small nicks and breaks in the skin where bacteria can grow and multiply, and it can lead to increased risk of post procedure infections. Hair around the surgical/procedure site may be clipped very short if it interferes with the procedure. If the site must be shaved: 1) use
antimicrobial soap and water or shave dry; and 2) shave immediately before the procedure, in the operating theater or procedure room.

**Skin preparation for surgical/clinical procedures**

- First, make sure the surgical/procedure site has been cleaned with soap and water. (The client can do this either at home or at the clinic or by clinic staff.)
- Apply antiseptic and gently scrub the skin in a circular motion, beginning in the centre of the site and moving out, using sterile cotton balls, cotton wool, or gauze sponges held by sponge holding forceps. Soak them in antiseptic just prior to use.

**Preparation for the vagina, cervix and other mucous membranes**

Using sterile cotton balls, cotton wool, or gauze sponges held by a sponge forceps, apply an antiseptic liberally to the vagina and cervix before instrumentation of the uterus. Alcohol and alcohol-based antiseptics should not be used on the vagina, cervix, or other mucous membranes because they easily irritate these tissues.

**C. Antiseptics and Disinfectants**

**Antiseptics:**

An antiseptic is a chemical agent used to reduce the number of microorganisms on skin and mucous membranes without causing damage or irritation. In addition to removing or killing microorganisms, antiseptics may also prevent the growth and development of some types of microorganisms.

Antiseptics are used for:
- Skin, cervical, or vaginal preparation before a clinical procedure
- Surgical scrub
- Handwashing in high-risk situations, such as before an invasive procedure or contact with a client at high risk of infection (e.g., a newborn or an immunosuppressed client).

**Antiseptics are not meant to be sued on inanimate objects, such as instruments and surfaces**

Antiseptics and designed to be used for reducing or destroying microorganisms on the skin or mucous membranes without damaging these tissues. They usually do not have the same killing power as chemicals used for disinfection of inanimate objects. Therefore, antiseptic solutions should never be sued to disinfect inanimate objects, such as instruments and reusable gloves. In addition, items such as pickup forceps, scissors, scalpel blades, and suture needles should never be left soaking in an antiseptic solution.

- **Common antiseptics usage for client preparation**
  - Iodophors (e.g. Betadine). Apply, wait 2 minutes, then wipe off the excess with sterile cotton or gauze.
  - 4% Chlorhexidine (e.g. Hibiten). Apply, wipe off the excess with sterile cotton or gauze.
  - 1%-3% Iodine, followed by 60%-90% alcohol (ethyl or isopropyl). Apply, allow to air-dry.
  - Chlorhexidine gluconate with cetrimide (e.g. savlon). Apply, wipe off the excess with sterile cotton or gauze.
• **To avoid contaminating solutions**

  - Never leave cotton balls, cotton wool, or gauze sponges soaking in antiseptic solutions. Repeated dipping of forceps or fingers into the container to pick up the items will contaminate the solution and the items.
  - Never dip cotton or gauze into the main antiseptic container. Instead either:
    - Pour the amount of antiseptic needed into a small container and dip the cotton or gauze into it. Discard any antiseptic remaining in the container after client prep.
    - Or
      - Pour the antiseptic from the container directly on to the cotton or gauze, making sure not to touch the lip of the container with the cotton or gauze. Antiseptics are designed to be used for reducing or destroying microorganisms on the skin or mucous membranes. Never use antiseptics to disinfect objects or instruments, and never leave instruments soaking in an antiseptic solution.

**Disinfectants:**

A disinfectant is a chemical agent used to kill microorganisms on inanimate objects, such as instruments and surfaces. Disinfectants are not meant to be used on the skin or mucous membranes. Disinfectants rapidly kill or inactivate infectious microorganisms. In health care facilities, disinfectants are used in three different ways:

- **During decontamination**: A disinfectant is used as the solution for decontamination.
- **During chemical High Level Disinfection and sterilization**: Certain disinfectants can be used to sterilize or high-level disinfect instruments and other items.
- **During housekeeping**: Disinfectants are used to make disinfectant cleaning solution to clean high-risk areas.

**D. The steps of processing instrument**

For proper processing, it is essential to perform the steps in the correct order. Proper processing involves several steps that reduce the risk of transmitting infections from used instruments and other items to health care workers and clients:

1. Decontamination
2. Cleaning
3. Either sterilization or high-level disinfection
4. Storage
1. **Decontamination:**

The first step in processing instruments and other items for reuse, decontamination kills viruses (such as hepatitis B, other hepatitis viruses, and HIV) and many other microorganisms, making these items safer to handle by the staff that perform cleaning and further processing.

Immediately after use, items should be placed in 0.5% chlorine solution for 10 minutes which rapidly inactivates hepatitis B and AIDS viruses.

To decontaminate items, use a 0.5% chlorine solution or a solution made from another acceptable disinfectant.

**How to make a 0.5% chlorine disinfection solution**

Chlorine solution can be made from:

1. **Liquid household bleach.** (Sodium hypochlorite)
2. **Bleaching powder.** Chlorine compounds available in powder form (calcium hypochlorite or chlorinated lime)
3. **Chlorine releasing tablets.** (Sodium dichloroisocyanurate)

To make a 0.5% chlorine solution - dissolve 20 grams of calcium hypochlorite powder in 1 liter of water in order to get a 0.5% chlorine solution.

2. **Cleaning:**

Cleaning refers to scrubbing with a brush, detergent and water to remove blood, other body fluids, organic material, tissue and dirt. In addition, cleaning greatly reduces the number of microorganisms (including bacterial endospores) on items and is a crucial step...
in processing. If items have not first been cleaned, further processing might not be effective because:
- Microorganisms trapped in organic material may be protected and survive further processing.
- Organic material and dirt can make the chemicals used in some processing techniques less effective.

3. Sterilization or High Level Disinfection (HLD)

**Sterilization:**
Sterilization, the third step in instrument processing, ensures that instruments and other items are free of all microorganisms (bacteria, viruses, fungi, and parasites), including bacterial endospores, that can cause infections in clients during procedures in which the items will come in contact with the bloodstream or tissues under the skin. Because sterilization is the only procedure that kills all microorganisms, including bacterial endospores, it is preferred over HLD for any items that will come in contact with the bloodstream or tissues under the skin. If sterilization is not possible or feasible, HLD is the only acceptable alternative for these items.

**Method of sterilization**

i. **Steam sterilization (autoclaving):**
   In general, sterilize wrapped items for 30 minutes and unwrapped items for 20 minutes at 121°C (250°F) and 106 kPa (15 lb/in²) pressure.

ii. **Dry-heat sterilization (electric oven):**
   Dry-heat sterilization requires high heat for a specific period of time. For sterilization to be achieved, a constant supply of electricity is necessary. Because of the high temperatures, only glass or metal objects can be sterilized by dry heat. Do not use this method for other items, such as surgical gloves, which may melt or burn. Use only for items that can withstand a temperature of 170°C (340°F).

iii. **Chemical (cold) sterilization:**
   Chemical sterilization is used for instruments and other items that are heat-sensitive or when methods that require heat are unavailable. Cidex, which contains glutaraldehyde, is a commonly available solution used for sterilization. Soak items in glutaraldehyde for 10 hours for chemical sterilization. Rinse with sterile water.

**High Level Disinfection (HLD):**
When sterilization is not available or feasible, high-level disinfection (HLD) is the third step in instrument processing. HLD eliminates bacteria, viruses, fungi, and parasites but does not reliably kill all bacterial endospores, which cause diseases such as tetanus and gas gangrene. HLD is suitable for items that will come in contact with broken skin or intact mucous membranes.
Method of HLD

i. Boiling
   It kills most or many diseases producing micro-organisms, including viruses which may cause hepatitis B or AIDS except for endospores. Instruments and other items are placed in a pot or boiler and the water is heated to boiling for 30 minutes.

ii. Steaming
   For this method, items are steamed in a steamer containing one to three tiers. Steaming is the best method of HLD for gloves, and is a useful methods of HLD for the cannulae used during manual vacuum aspiration (MVA).

iii. Chemical High-Level Disinfection
   Chemical HLD is used for heat-sensitive items, like laparoscopes, when a heat source is not available. The only chemicals appropriate for HLD are chlorine and glutaraldehyde.
   - By soaking instruments in glutaraldehyde for 20 minutes used for HLD;
   - By soaking instruments in 0.5% chlorine solution for 20 minutes used for HLD.

4. Use or storage
   After processing, items should be used immediately or stored in such a way so that they do not become contaminated. Proper storage is as important as proper processing.
The following table shows the schedule of IP activities for Infection Prevention:

<table>
<thead>
<tr>
<th>IP Steps</th>
<th>Activities</th>
<th>Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Handwashing</td>
<td>Handwashing with plain soap and running water</td>
<td>‣ Immediately after arrival at work</td>
</tr>
<tr>
<td></td>
<td></td>
<td>‣ Before and after examining each client</td>
</tr>
<tr>
<td></td>
<td></td>
<td>‣ Before putting on gloves after removal of gloves</td>
</tr>
<tr>
<td></td>
<td></td>
<td>‣ After touching contaminated or instruments objects</td>
</tr>
<tr>
<td></td>
<td></td>
<td>‣ Before leaving work</td>
</tr>
<tr>
<td></td>
<td>Hand washing with antiseptic and running water</td>
<td>Before invasive procedure or contact with immunocompromised patients</td>
</tr>
<tr>
<td></td>
<td>Alcohol handrub</td>
<td>When frequent handwashing is not possible or practical, such as between surgical cases in high volume settings.</td>
</tr>
<tr>
<td>Gloving</td>
<td>Surgical gloves</td>
<td>All clinical procedures where providers will be in contact with the tissues under the skin or with the blood stream</td>
</tr>
<tr>
<td></td>
<td>Single use examination gloves</td>
<td>Where there will be contact with intact mucous membranes</td>
</tr>
<tr>
<td></td>
<td>Utility gloves</td>
<td>During handling contaminated instruments and others items, handling waste and linens, performing housekeeping activities and cleaning contaminated surfaces.</td>
</tr>
<tr>
<td>Gowning</td>
<td>Putting on sterile gowns</td>
<td>Before all invasive clinical procedures where providers will be in contact with the tissues and or with the blood stream</td>
</tr>
<tr>
<td>Decontamination</td>
<td>Preparation of 0.5% chlorine solution</td>
<td>Every morning; when and where necessary</td>
</tr>
<tr>
<td></td>
<td>All contaminated Instruments should be decontaminated immediately after use, before removing of gloves, waste containing container after disposal of waste</td>
<td>When necessary</td>
</tr>
<tr>
<td>Cleaning</td>
<td>After decontamination all instruments should be cleaned with detergent and water</td>
<td>When necessary</td>
</tr>
<tr>
<td>Sterilization</td>
<td>After cleaning all instruments should be autoclaved</td>
<td>When necessary</td>
</tr>
<tr>
<td>High level disinfection (HLD)</td>
<td>If autoclaved is not available HLD should be done</td>
<td>When necessary</td>
</tr>
</tbody>
</table>

9.4 Housekeeping and waste disposal

Housekeeping:

Housekeeping refers to general cleaning and maintenance in a clinical environment. The purpose of housekeeping is to reduce the number of micrograms at the site (thus reducing the risk of infection and accidents to both clients and staff), and to provide an appealing work and service-delivery space. Good housekeeping is the foundation of good infection prevention.
practice. The general cleanliness and hygiene of a facility are vital to the health and safety of clients, staff, visitors and the community at large.

**Facility Preparation for Surgery/Clinical Methods:**

Tasks to be performed to prepare the theatre/outdoor clinic for the surgery/clinical methods should include:

- Ensure that the facility is clean and neat before starting daily work;
- Check supplies and drugs in the store;
- Ensure that emergency drugs are clearly marked and easy to locate if required;
- Review the expiry date of drugs and replace them as needed;
- Ensure that all electrical and mechanical appliances in the theatre are functioning;
- Be sure that the operation theatre floor is clean and dry.

Between cases, the following tasks should be performed:

- Remove cloth materials and place them in the proper container for washing;
- Wearing utility gloves, decontaminate the table, the floor and other tables the client was lying on. Use 0.5% chlorine solution for this task;
- Remove containers of decontamination solution containing instruments used during surgery,
- Resupply into the operation theatre as needed;
- Supply a fresh container of decontamination solution in the theatre for the next procedure instruments.

**Cleaning procedures for different clinic areas:**

- **Low-risk areas** (waiting rooms, administrative areas)

  These are the areas that are usually not contaminated with dirt or infectious microorganisms, Routine cleaning – the kind of cleaning done at home – is usually good enough for these areas. In general, clean these areas once a week (or whenever they appear to be dirty) with a cloth or mop dampened with detergent and water.

- **Toilets, latrines, and sluice rooms:**

  These areas are usually heavily contaminated and should be cleaned daily or more frequently, if traffic in the facility is high. Use different supplies to clean these areas than the supplies that use for cleaning client-care areas.

  - **Client-care areas** (operating theatres, procedure rooms, laboratories, areas where instruments are cleaned and processed).

    These areas must be cleaned with special care using a disinfectant cleaning solution. In these areas, there is a greater potential for contamination with infectious materials for both clients and clinic staff. These areas should be cleaned as follows:

    1. **Each morning:**
       
       At the beginning of each day, damp-wipe or mop countertops, tables, trolleys, and floors with water to remove dust and lint accumulated overnight.

    2. **Between clients:**
       
       - Clean operating and procedure rooms, examination tables, trolleys or mayo stands, countertops, lamp handles, and any other potentially contaminated surfaces with a cloth dampened with a disinfectant cleaning solution;
       - Clean spills of blood or other body fluids immediately with a 0.5% chlorine solution;
• Put waste in a leak-proof container. Remove the container from the operating theatre or procedure room whenever it is three-quarters full;
• Clean visibly soiled areas of the floor with a mop soaked in a disinfectant cleaning solution.

3. **At the end of the clinic session or day:**
• Remove contaminated waste and dispose of it as soon as possible to limit exposure;
• Wipe down all surfaces-including counters, tabletops, sinks, lights, and door handles and plates, with a cloth saturated with a disinfectant cleaning solution,
• Pay particular attention to procedure/operating tables, making sure to thoroughly clean the sides, base, and legs with a disinfectant cleaning solution.
• Clean the floors with a mop dampened with a disinfectant cleaning solution.

**Cleaning Schedule:**

**Daily cleaning:**
• Discard all disposable materials according to instructions;
• Launder all reusable materials;
• Wash instruments in preparation for reusing;
• Clean the theatre/equipment with detergent and water;
• Reposition the equipment and tables for the next theatre session;
• Resupply sterile wrapped materials and instruments in cabinets;
• Close the theatre door until the next session.

**Weekly cleaning:**
Thoroughly scrub the operation theatre, including walls, floors, and equipment, with a recommended disinfecting solution.

**After infected cases:**
• Inform personnel outside the theatre that an infected case is underway or has been completed, so that entry can be limited only to those essential to the procedure.
• All personnel involved in the case should leave their infected clothes in the operating room.
• Follow standard procedure for removal/decontamination of materials and equipment.

**Note that minilaparotomy is contraindicated in clients with infections, so this circumstance will occur only if the bowel has been opened during surgery.**

**Cleaning solutions:**
Three types of cleaning solutions are used during housekeeping at a health facility. It is essential that housekeeping staff understand the different type of cleaning agents and how each should be used:

1. **Plain detergent and water**
   This is used for low-risk areas and general cleaning tasks. Detergents remove dirt and organic material and dissolve or suspend grease, oil, and other matters, so it can easily be removed by scrubbing.
2. **Disinfectant solution (0.5% chlorine solution)**

Disinfectants rapidly kill or inactivate infectious microorganisms during the cleaning process. Disinfectants are also used to decontaminate an area so that it is safer for staff to clean with a disinfectant cleaning solution. In most setting, a 0.5% chlorine solution made from locally available bleach is the cheapest disinfectant, but alternatives include commercial disinfectants that contain 5% carbolic acid (such as Phenol or Lysol) or quaternary ammonium compounds.

3. **Disinfectant cleaning solution**

This solution contains a disinfectant, a detergent and water. This solution is used for cleaning areas that may be contaminated with infectious materials (such as operating theaters, procedure rooms, latrines, and sluice rooms). The solution must contain both a disinfectant and a detergent. Disinfectants rapidly kill or inactivate microorganisms during the cleaning process, while detergents remove dirt and organic material, which cannot be done by water or disinfectants alone.

**When and how to conduct routine cleaning in low-risk areas:**

The following guidelines are effective for cleaning the environmental surfaces:

- **Walls and Ceiling:** Wipe when visibly dirty with a damp cloth, detergent and water.
- **Chairs, Lamps, Tabletop and Counters:** Wipe daily whenever visibly soiled with a damp cloth, detergent and water. A disinfectant should be used when contamination is expected, such as blood spills.
- **Floor:** Clean floors frequently (twice each day, and as needed) with a damp mop, detergent and water.
- **Sinks:** Use disinfectant cleaning solution; scrub frequently (daily or more often as needed) with separate cloth or brush. Rinse with water.
- **Toilets and Latrines:** Wear utility gloves. Use disinfectant cleaning solution; scrub frequently (daily or more often as needed) with separate cloth or brush.
- **Waste Containers:** Wear utility gloves. Use disinfectant cleaning solution; scrub to remove soil and organic materials. Clean contaminated waste containers after emptying each time. Clean non-contaminated waste containers when visibly soiled and at least once a week.

**When and How to Clean the Operating Rooms:**

The following guidelines are effective for cleaning the Operating Rooms:

- **At the End of the Day:** Total cleaning of the operating room (scrubbing all surfaces top to bottom) should be done at the end of each day.
- **Between Each Procedure:** Total cleaning is not necessary between each case for clean surgical procedures.
- **At the Beginning of each day:** Wipe all surfaces (tables, lights, etc.) with damp cloth or mop to remove dust and lint which may have been collected overnight.
- **Between Each Client:** Do the following
  - **Step 1:** Operating and Instrument Tables (Trolley or Mayo stand): Decontaminate with a cloth soaked in 0.5% chlorine solution and rinse with clean water.
  - **Step 2:** Spills: Clean spills with 0.5% chlorine solution.
• After clients with infection, do total cleaning. But remember to remove covered contaminated waste containers when 3/4 full and transport to be incinerated or buried. Replace with clean container.

Procedure of Total Cleaning:

**Step 1:** Remove covered decontamination bucket. A fresh bucket containing 0.5% of chlorine (decontamination solution) should be provided at the beginning of each day and as necessary.

**Step 2:** Remove covered contaminated waste containers and replace with clean containers. Transport for incineration or burial as soon as possible.

**Step 3:** With a cloth soaked in disinfectant cleaning solution, wipe all surfaces, including counters, table tops, sinks, lights, etc. Wash from top to bottom, so that all debris which falls on the floor is cleaned-up last.

• **Walls and Ceilings:** Wipe with a damp cloth, detergent and water as needed of visible soil.

• **Chairs, Lamps, Tabletop and Counters:** Wipe daily whenever visibly soiled with a damp cloth, disinfectant cleaning solution.

• **Floor:** Clean with a damp mop, detergent and water.

• **Operating Room Lamp:** Wipe with a damp cloth, disinfectant cleaning solution.

• **Operating Table:** Decontaminate top with 0.5% chlorine solution, clean sides, base and legs with damp cloth using disinfectant cleaning solution.

**Don’t dry-sweep or dry-mop the operating theater and procedure rooms that may stir up dust and contaminates the already cleaned surfaces.**

How to Clean Spills of Blood and Other Organic Materials:

The following guidelines should be maintained for cleaning the spills of blood and other organic materials:

• Clean spills of blood, body fluids and other potentially infectious fluids, immediately.

• For Small Spills: Wear utility gloves. Remove visible materials using a cloth soaked in 0.5% chlorine solution.

• For Large Spills: Wear utility gloves. Flood the area with 0.5% chlorine solution, mop up solution, then clean as usual with detergent and water.

**Ineffective Practices:**

Two housekeeping practices, fumigation and the use of UV light, are common in many health facilities, particularly in some parts of the developing world. But these practices will not reduce contamination in the facility and should not be used. These practices are time-consuming, waste valuable resources, and do not decrease the risk of infection in the facility.

**Waste disposal:**

Waste disposal is a crucial aspect of infection prevention in health care facilities. Although disposal of waste from health facilities poses problems worldwide, it is often the most neglected area of infection prevention.
There are three kinds of waste generally found in health facilities: general waste, medical waste and hazardous chemical waste. It is important to dispose of all kinds of waste properly, but improper disposal of medical and hazardous chemical waste poses the most immediate health risk to the community.

- **General waste**
  Non-hazardous waste that poses no risk of injury or infections. This is similar in nature to household trans. Examples include paper, boxes, packaging materials, bottles, plastic containers, and food-related trash.

- **Medical waste**
  Material generated in the diagnosis, treatment, or immunization of clients, including:
  - **Blood, blood products, and other body fluids**, as well as materials containing fresh or dried blood or body fluids, such as bandages and surgical sponges.
  - **Organic waste** such as human tissue, body parts, the placenta, and the products of conception.
  - **Sharps** (used or unused), including hypodermic and suture needles, scalpel blades, blood tubes, pipettes, and other glass items that have been in contact with potentially infectious materials (such as glass slides and coverslips)

- **Hazardous chemical waste**
  Chemical waste that is potentially toxic or poisonous, including cleaning products, disinfectants, cytotoxic drugs, and radioactive compounds.

**Safe disposal of sharps**
Improper disposal of contaminated sharp objects can cause infections in your health care facility and community. Any delay in the disposal of sharps will increase the occurrence of accidents.

**To dispose of sharps correctly:**
- Do not recap, bend, or break needles before disposal, and do not remove the needle from the syringe by hand.
- Dispose of needles and syringes immediately after use in a puncture-resistant sharps-disposal container.
- Incinerate sharps-disposal containers in an industrial incinerator whenever the containers become three-quarters full.
- To discourage scavenging of discarded sharps, decontaminate needles and syringes that cannot be incinerated and render them harmless before burying them.

**Care of Equipment and Instruments:**
All the equipment and instruments are very costly and unfortunately almost all of them are imported or donated from abroad. Unless good care is taken, equipment will be out of order and the program will suffer. Repairing facilities are available in a few big centers, like in Dhaka, Chittagong and probably in one or two places. Currently, replacement is still difficult. If the surgeon, surgical assistant and the person processing the instruments take a bit more interest and care, the problems will be minimized. Therefore the life of the valuable instruments will be lengthened.
Chapter 10

Referral System

10.1 Introduction:
Referral system is an essential component of health care system for rendering improved services to at risk mothers with obstetric complications and for newborns that are at risk, as well as complicated. When high risk factors are identified or danger signs appear-and the situation is beyond the competency of the medical officer, the woman with the baby should to be sent to higher level, which can manage and save the life of the woman as well as that of the baby. Health care facilities and referral centers must have adequate supplies, equipment, drugs and trained skilled personnel to provide high quality obstetric care. Proper referring system can play a vital role in reducing MMR, IMR and morbidities.

10.2 Strategies:
In order to develop good referral system the following strategies have to be taken:

Information to communities through Behaviour Change Communication (BCC) activities:
• Explaining to the relatives of pregnant mothers when and where to take the mother during emergencies. This information should be provided during antenatal visit or through general IEC messages;
• Mass education and communication to sensitize society that maternal/neonatal deaths are unacceptable;
• Social mobilization through women’s organizations and village leaders, general public and Health and Family Planning workers at the grass root levels.

Making pregnant mothers and their families concerned about availing of the facility at the referral centre/hospital in time:
The pregnant mothers and their families should be made aware of the danger signs during pregnancy and importance of reaching the referral centre/hospital in time. Stress should be given to make them understand that “time is crucial” to the survival of mothers with complications, and all pregnancy is at risk at any time.

Development of transport plan for the movement of high-risk mother and baby to the referral centre along with arranging volunteers for blood donation if needed:
Transportation is of vital importance. Pre-arrangement of transport through discussion with family members along with cost involvement should be settled well ahead of time. Government transport, where available, should always be kept ready round the clock. Relatives and field workers should accompany the patient to referral hospital/centre.

In case of emergency, blood transfusion volunteers must be lined up and kept ready for blood donation.

Special emphasis is to be given, so that relatives of pregnant mother can give blood: the blood of relatives is better than that of professional donors.
Providing referral slip with detailed case history:
A referral slip indicating the name of the patient, age, address, present condition (pulse, temperature, respiration, BP and others), physical examination finding, treatment given, causes for referral should be mentioned for ready reference. The person who is the referral should sign the slip with the designation. A copy should be kept at the original centre for record as well as for follow-up.

Following is the flow chart of 3 delays

<table>
<thead>
<tr>
<th>Factors Affecting Utilization and Outcome</th>
<th>Phases of Delay</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic Status</td>
<td>Phase 1</td>
</tr>
<tr>
<td>Educational Status</td>
<td>Decide to Seek Care</td>
</tr>
<tr>
<td>Women’s Status</td>
<td>Phase 2</td>
</tr>
<tr>
<td>Illness Characteristics</td>
<td>Reach Medical Facility</td>
</tr>
<tr>
<td>Distance</td>
<td>Phase 3</td>
</tr>
<tr>
<td>Transport</td>
<td>Receive Adequate Treatment</td>
</tr>
<tr>
<td>Roads</td>
<td></td>
</tr>
<tr>
<td>Cost</td>
<td></td>
</tr>
<tr>
<td>Quality of Care</td>
<td></td>
</tr>
</tbody>
</table>

Sample Referral Slip
To
Name ........................................
Designation ................................
........................................MCWC

From: Miss/Mrs/Mr..........................
........................................UHC/UH & FWC
........................................Union/Upazila

Janab/Janaba,
The undermentioned patient is being sent herewith for admission and arrangement of proper treatment.
1. Patient’s Name.........................................................Age..............................
2. Address..............................
3. Diagnosis (Provisional) ..............................................................
4. Present condition of the patient: ........................................
   Pulse........../min Temp................................ Resp................/min
   BP...........mm of Hg
5. Findings of physical examination..
   ..........................................................................................
6. Treatment given..............................................................
   ..........................................................................................
7. Cause of referral..............................................................
   ..........................................................................................

Date.......................... Signature
Name:.............................
Designation:....................
Chapter 11

Different Training Activities Conducted

11.1 Introduction:
MCWC conducts different training activities especially at the district level, besides providing ante-natal, natal and postnatal services. It acts as an institution for training of maternal and child health care personnel, for example, FWV’s, FWAs & FeHA in preventive/promotive maternal and neonatal health care/safe delivery services, including clinical contraception (e.g., VSC, Norplant, IUD, and Injectables) and management of complications.

The following In-service/Refresher training of Medical personnel are given for skill development.

11.2 In-service/refresher training of FWV’s in practical skill development:

**Basic training of FWV's in practical skill development:**

- Skilled Birth Attendant (SBA) training of FWAs and FeHAs;
- Midwifery training for FWVs;
- GOB doctors training in clinical contraception in some selected MCWCs;
- Post Abortion Care training in MCWCs;
- Training on Syndromic approach of RTI/STI and prevention of HIV/AIDS;
- Training on male, Youth and Adolescents services;
- Training on Infection Prevention;
- Training on Breast Feeding;
- Training on Family Planning.

**Training is conducted through:**

- Lecture session;
- Discussion;
- Demonstration;
- Practical skills.

For imparting better and effective training, MCWCs, have to be well equipped with necessary teaching materials - instruments, booklets, blackboard/chalk/duster/easel board/ marker pen, dummies, overhead projectors, slide projector; accommodation for 5-6 trainees and 1 trainer.

**Training facilities to be provided:**

- Labor room should be arranged in such a way that trainees can see and learn by practicing in small groups;
- Operating room should be separate and arranged in such a way that trainees can see and learn by practicing in small groups;
- District and Upazilla level program managers should ensure continuous flow of client/patients/labor cases for facilitating adequate learning by practicing individually;
- Check up room for ante-natal cases should be organized with necessary equipment and materials for urine examination so that each trainee can have the chance to perform physical examination and other tests independently;
• Practical experiences in both institutional and domiciliary settings should be enhanced;
• Transports must be provided for field practice.

Training should also focus on recording and maintenance of service records, infection prevention, operating theatre management, family planning counseling, and others. A focal point for monitoring, evaluation and co-ordination of different training program should be identified, and linked with MCH co-ordination committee.
Chapter 12
Infrastructure

12.1 Introduction
The infrastructure of MCWCs at district level does not follow uniform pattern or design. In some districts it is a one storied building having sufficient rooms with attached MO's quarter, while in some districts it is a two storied building having 8 rooms [1 for MO (Clinic) – 1 for (MCH-FP), 1 for FWV, 1 for labor-cum-examination room, 1 for ward, 1 for O.T., 1 for autoclaving, 1 for IUD insertion room and 1 for store room]. In addition, there is attached quarter for MO (Clinic) within the compound so that s/he remains available during emergency. But with the new concept of starting EOC program in some district MCWCs (presently at 54 district level MCWCs) the pattern and design of MCWCs have been changed with increased number of rooms, furniture and equipment for providing better and standard MCH-FP care. Presently MCWCs having EOC programs have been repaired and renovated with the financial support of donor agencies. In HNPSP program, all MCWC will be constructed upto 20 beds with adequate manpower and other facilities. Now district level MCWCs has 10 beds, and Upazila as well as the union level MCWCs have 6 beds. The present and future proposed manpower strength of level-wise MCWCs are shown as Appendix –G.

12.2 Facilities:
Rooms of MCWCs under RH/FP including EOC Program:

<table>
<thead>
<tr>
<th>Ground Floor:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>For MO (Clinic)</td>
<td>1 room</td>
</tr>
<tr>
<td>&quot; MO (MCH-FP)</td>
<td></td>
</tr>
<tr>
<td>&quot; FWVs</td>
<td></td>
</tr>
<tr>
<td>&quot; IUD insertion</td>
<td></td>
</tr>
<tr>
<td>&quot; EPI (multi purpose room for health education and EPI)</td>
<td></td>
</tr>
<tr>
<td>&quot; Female Medical Attendant</td>
<td></td>
</tr>
<tr>
<td>&quot; Store room cum dispensing</td>
<td></td>
</tr>
<tr>
<td>&quot; Kitchen</td>
<td></td>
</tr>
<tr>
<td>&quot; Preoperative</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10 rooms</td>
</tr>
<tr>
<td>There are 4 latrines also</td>
<td></td>
</tr>
</tbody>
</table>

(There should be separate male unit in the MCWCs to provide vasectomy and other services to the males).

<table>
<thead>
<tr>
<th>First floor:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>For Delivery (attached toilet)</td>
<td>1 room</td>
</tr>
<tr>
<td>&quot; Ward</td>
<td></td>
</tr>
<tr>
<td>&quot; O.T.</td>
<td></td>
</tr>
<tr>
<td>&quot; Resting/duty room</td>
<td></td>
</tr>
<tr>
<td>&quot; Autoclaving</td>
<td></td>
</tr>
<tr>
<td>&quot; Scrub &amp; change room</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 &quot;</td>
</tr>
</tbody>
</table>

(There should be separate male unit in the MCWCs to provide vasectomy and other services to the males).
Furniture:
At the time when the MCWCs started functioning at different levels under the Health Division, the staff strength was small and accordingly limited number of furniture was supplied. But with the passage of time and transfer of MCWC activities to Family Planning Division, the scope of MCH activities has increased making a meaningful MCH-FP program. As a result there has been need of increased staff strength, which has necessitated more furniture for smooth functioning of the centers. However, in the MCWC, necessary furniture has been supplied for RH/FP services including EOC program.

The following is the list of furniture supplied/to be supplied at MCWCs with EOC program:

<table>
<thead>
<tr>
<th>For Medical Officer (Clinic/MCH-FP) each:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full secretariat table - 1</td>
</tr>
<tr>
<td>Armed cushioned chair - 1</td>
</tr>
<tr>
<td>Armed chair - 6</td>
</tr>
<tr>
<td>Steel almirah - 1</td>
</tr>
<tr>
<td>File rack - 1</td>
</tr>
<tr>
<td>Examination table - 1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>For Family Welfare Visitors:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Half secretariat table - 2</td>
</tr>
<tr>
<td>Armed char - 5</td>
</tr>
<tr>
<td>Armless chair - 8</td>
</tr>
<tr>
<td>Rack - 1</td>
</tr>
<tr>
<td>Almirah - 1</td>
</tr>
<tr>
<td>Examination table - 1</td>
</tr>
<tr>
<td>IUD insertion table - 1</td>
</tr>
<tr>
<td>Long bench - 10</td>
</tr>
<tr>
<td>Wall clock - 1</td>
</tr>
<tr>
<td>Arm board - 6</td>
</tr>
<tr>
<td>IV drip stand - 6</td>
</tr>
<tr>
<td>Mobile screen - 3</td>
</tr>
<tr>
<td>Wooden stool (for P/Vexam room) - 1</td>
</tr>
<tr>
<td>Notice board - 1</td>
</tr>
<tr>
<td>Cup board (for medicine) - 1</td>
</tr>
</tbody>
</table>

Maintenance of Furniture:
For maintenance of furniture the following steps have to be taken:
- Maintaining register listing furniture with date of receipt and number of each item. The furniture meant for individual officers/FWV shall have to be recorded in separate section with page number;
- Everyday the usable furniture should be cleaned;
- Timely repair of broken furniture should be undertaken.
12.3 Equipment and Supplies

In the national MCH-FP program several types of kits containing various types of instruments are used. In the MCWC especially, MCH kit is used by the Medical Officer and FWV for the purpose of diagnosis, safe delivery and improved quality service. Additionally several other instruments which are not available in those kits are also supplied to the MCWCs for EOC program. For family planning services, vasectomy/tubeectomy/IUD kit, and Norplant set are also used by Medical Officers and FWV for male and female sterilization, Norplant implantation and IUD insertion.

### Instruments Required for No-Scalpel Vasectomy Operation:

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vas fixing clamp</td>
<td>1</td>
</tr>
<tr>
<td>Vas dissecting clamp</td>
<td>1</td>
</tr>
<tr>
<td>Small scissors</td>
<td>1</td>
</tr>
</tbody>
</table>

### Instruments Required for Norplant Service:

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trocar with Plunger (No. 10)</td>
<td>1</td>
</tr>
<tr>
<td>BP handle and blade</td>
<td>1</td>
</tr>
<tr>
<td>Mosquito forceps</td>
<td>1</td>
</tr>
<tr>
<td>Cryle forceps</td>
<td>1</td>
</tr>
<tr>
<td>Templat</td>
<td>1</td>
</tr>
</tbody>
</table>

**Maintenance:**

Separate Inventory Control Registers should be maintained listing all items of instruments indicating date of receipt with quantity as well as physical condition of them. Instruments are to be kept in glass fitted almirah in a systematic manner. The instruments after use are to be decontaminated by soaking in 0.5% chlorine solution for 10 minutes. These are cleaned and then dried before keeping in the almirah. Procedures of decontamination and cleaning should also be carried out before sterilization (autoclaving) or boiling. Instruments which are not used frequently should be checked for their effectiveness and cleaned and kept as before.

**Drugs/Supplies:**

Drugs/supplies or logistics support are very important as a driving force for smooth running of any program. Generally in MCWCs 24 (twenty four) Drug and Diet Supplementary kits (DDS) are supplied per year along with some items of loose medicines for general patient treatment. In some high performing MCWC 3x12 = 36 DDS kits are being supplied per year.

**Procurement of Drugs/Supplies:**

Drugs/supplies have to be procured from the upazilla store through indent by MCWCs. The indents should be sent well ahead of time so that new supply of drugs comes before exhaustion of old stock.

**Procurement of Family Planning Materials:**

Besides MCH services all the MCWCs should have facilities to perform VSC procedures (at district and Upazila level MCWCs), IUD, Injectables, Oral Pill, Condom (for all MCWCs) and Norplant (in some MCWCs where available). Necessary MSR required for this purpose should be available at the MCWCs. Continuity of regular and timely procurement of contraceptives, should be maintained and their supply to the acceptors should be ensured. Procurement plan
has to be made on the basis of quantity used in a month with 10% expected increase of the quantity minus the present stock. This can be shown as under:

<table>
<thead>
<tr>
<th>Financial year</th>
<th>Quantity used in a month</th>
<th>Quantity Requested (2x3)</th>
<th>Expected 0% increase</th>
<th>Total Requested (3+4)</th>
<th>Present stock</th>
<th>Net quantity requested (5-6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>100 cycles</td>
<td>300 cycles</td>
<td>30 cycles</td>
<td>330 cycles</td>
<td>70 cycles</td>
<td>230 cycles</td>
</tr>
<tr>
<td>2004</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Storing System of Drugs and Supplies:**

The drugs, either in the form of DDS kits or loose medicines, should be kept in dry/cool place preferably on wooden dunnage, so that air can freely pass through. For accounting purposes all items of medicines (DDS kits or loose medicines) should be posted in the stock register using separate page for each item. The medicines should be arranged in such a way that those with short expiry date can be used before expiration as per "FIFO" (First In First Out) method. The container should always be tightly capped so that no air can enter and damage the medicines.

If the medicines are kept in the almirah then it should be kept in the upper and lower shelves. The medicines from the upper shelf should be utilized first as they have short expiry date. Once these are exhausted the medicines from the lower shelf should be taken to the upper shelf. Indents for new procurement should be made ready for transmission to the supply centre.

Similarly in the case of storage of contraceptive materials, all FP methods which are made available at MCWC should be recorded in ICR (inventory control register) for proper accounting.

**Four principles for the management of storing materials:**
1. Proper storage of commodities;
2. Daily stock taking and updating;
3. Monthly verification;
4. Timely reporting and indenting.

For further details/information, please see the latest edition of the supply manual published by the Directorate of Family Planning.

**Financial Management**

MO (Clinic) is the drawing and disbursing officer (DDO) for MCWCs. MO (Clinics) shall exercise financial powers given by the Director General vide memo No. Po Po/Sha-1 (Ba: O Hi: 38)/94-95/Khomota Orpon/2/1859 Dated: 02/02/1402 (BS)/16/05/1995 (Engineering).
Chapter 13
Recording and Reporting System

13.1 Introduction
Recording and reporting system gives a clear picture of the performance of the set organizational activities and indicates the success or failure in delivering quality services. Starting from the reception of the patient through outdoor/indoor service all records shall have to be maintained in the relevant registers daily. If the registers are not maintained daily then the monthly reporting of the program activities will not be accurate. As a result there will be under reporting or over reporting.

13.2 Record keeping system:
Record keeping system includes the information on the number of patients/clients, present problems, management given, result of management (e.g. birth, death, alive, morbidity etc.) and maintenance of all information including referral.

Better record keeping is done through computer. We can say in a word that record keeping is the source of information for either clinical or administrative purposes. Recording of all activities done in the centre is the prime function of the concerned personnel. For every outdoor patient the prescribed OPD slip should be properly filled up. The patients’ complaints, examination findings and diagnosis with treatment given, should be recorded date wise; OPD slips should be kept with the patient and every time he/she visit MCWC/hospital/doctor it should be brought along. Similarly for every indoor patient full history in the prescribed history and examination sheets should be recorded. This history sheet along with vital signs observation sheet should be kept with the patient’s bed cot for daily recording of the patient’s condition. This will definitely improve the standard and quality of service. Supervisors should make routine work to check different forms and registers and asses its quality of maintenance. They should provide on the job training on correct filling of forms and registers.

13.3 Reporting systems:
Reporting system means communication with others with different relevant information. It may be sent monthly, bi-annually and yearly to the proper authority after preparing in prescribe format. It may be sent to other service centres, every worker, and different information media and at national level. Reports are utilized for the improvement of activities and to identify the advantages and disadvantages of activities. It also plays a positive role for achievement against the target of certain activities. It will help in future action plan for specific activities in service centre and comparison can be made with other service centres.

The information which are used in preparing must be correct and sent on time. Records are kept in different registers and in patient file. Those are written in specific report format. MCWCs are situated at Union, Upazilla and District level. The MCH-FP activity reports of all levels of MCWCs are sent to Upazilla Family Planning Office. Those reports are compiled with other reports received from other service centres. The compiled reports from Upazilla are sent to: District Family Planning Office and again compiled there with one copy sent to the MIS unit, one copy to DFP at national level and one copy to Divisional director, Family Planning at divisional level. MIS unit then compiles all those, which are received from the district and are published for sending to MOH & FW, and others.
Reporting System at a glance

<table>
<thead>
<tr>
<th>Union level MCWC</th>
<th>Upazilla Family Planning Office</th>
<th>District Family Planning Office</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upazilla level MCWC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>District level MCWC</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- MIS unit of DFP
- Divisional Director

Since upgradation of 64 MCWCs, RH-EOC monthly activities of 64 MCWCs are directly sent to Director MCH-S, DFP with a copy to

A NPPP, UNFPA, Dhaka,
B DD (FP)
B Regional Supervisor FPCST/EOC-QAT.

After receiving the performance reports from MCWC, these are compiled at the Office of the Director (MCH-S), DFP and sent back to all MCWCs, MOH&FW, UNFPA and other agencies as feedback. In every MCWC one computer has been supplied. MO (clinic), MO (MCH-FP), one FWV and one FM have been trained on computer operation. So computer is being used for record keeping and reporting. Also client data recording is being done and sent to the national level. Within a short time, all the MCWCs will have Internet / e-mail connection.

Some rules for record keeping and reporting to be followed:

A All the activities of MCWCs should be correctly reflected in the records,
B Every worker should maintain the record of his/her activities properly,
C The records should be easily available as per need,
D The record should contain such information which will be used by the management authority,
E Record should be kept in such place where it is available,
F Record will be in easy format so that it can be easily analyzed,
G Record will be such in nature so that after analysis, continuation or improvement/failure of activities can be found out and measurement can be taken accordingly.
Chapter 14
Management

14.1 Introduction
While human resource development is key to ensuring the availability of services, management issues will also be addressed adequately for optimal utilization of the human resources.

The following types of support services are needed for managing the services of MCWC:

I Manpower support,
II Logistics support,
III Financial support.

14.2 Manpower
At present a total of 12-15 personnel of different categories are working at District level MCWC's. They are MO (Clinic) -1, MO (MCH-FP) -1, FWV- 4, Pharmacist -1, Driver -1, Peon-1 and Cleaner-1. MO (Clinic) with one year training in EOC, MO(MCH-FP) with one year training in anesthesia, and four FWVs in each centre with 6 months training in nursing and OT management. The present and future proposed manpower strength of level-wise MCWCs are shown in Appendix.

14.3 Logistics
I Procurement:
Logistics support is mainly meant for procurement of different kits (DDS kit, tubectomy Kits, vasectomy kits, IUD kits, etc.), vehicles (Ambulance), computer, maintenance of building and furniture. UNFPA is the main development partners providing logistics support.

In the MCWCs, there is one pharmacist on deputation working as a store keeper and distributor for medicine/some contraceptives for the patient / client. The dispensing is done as per slip issued by medical officers and FWVs. Pharmacist received medicines and other items from upazila store. The pharmacist is responsible for record keeping and storing of all items.

MO(Clinic)/MO(MCH-FP) will verify every week the stock position of medicines and other contraceptives so that timely procurement of logistics can be made before exhaustion.

II Storage:
This is very important for maintaining stock balance of any item of medicine, or material, after daily usage of any items of medicine or material distribution. If it is not done on time there may be disparity between stock balance and actual stock, which may lead to confusion and delay in the next procurement.

III Distribution

IV Disposal of unusable items.
14.4 Financial Support:
Financial support in the form of salary of the staff is met from GOB contribution.

14.5 Supervision and Monitoring:
Supervision is an important tool for effective implementation of program activities. It plays an important role in keeping both program and the program in motion. Through supervision the supervisor can see whether the program personnel are doing their work as per desired level or not. It helps to increase the effectiveness and skill of the program personnel. There are two types of supervision (1) administrative supervision and (2) technical supervision.

I Administrative Supervision:-
By this type of supervision, the supervisor can see whether all the administrative procedures are being implemented properly or not. The supervisor should see that the circulars, instruction or supervision notes given in the inspection book are being followed. Due to lack of regular supervision the program activities may suffer. Supervision should be carried out by "one step down" process, i.e. supervisor from national/divisional, district level senior officials (DD-FP, AD-CC, AD-FP) should supervise district level, upazila and union level MCWC; and supervisor from upazila level (MO, MCH-FP, UFPO) should supervise union level MCWC. In addition supervisor from national and divisional level can supervise any MCWC. In this way a supervision chain should be developed in creating uniformity amongst the common activities.

II Technical Supervision:
By giving on the spot training through technical supervision, the skill, performance efficiency and quality of work of personnel can be improved. For this purpose the technical personnel from the senior levels should do the supervision downwards, so that at each level the working personnel can benefit through knowledge enrichment.

Therefore Regional Supervisor FPCST/QAT, AD (CC), MO (CC) should supervise the activities of technical personnel like MO (Clinic)/MO(MCH-FP)/FWVs/Pharmacists working at lower levels by using the supervision check list. If any worker is found to have performance deficiency resulting in knowledge deficiency, he/she should be given on the spot training on technical matters. This will help to improve the skill of the personnel in service delivery related to RH-EOC

A Monitoring:
It is a process by means of which one looks at the work plan, outputs and watches a program whether it is going in the right track or not. It is an important component in the management of the program. Where there is no regular monitoring, there will be no improvement of program activities. It can be done by personal presence, by giving instructions over telephone or through sending letters. But the best way is the personal presence.

1 During supervision the following should be looked into:
   a Cleanliness of the centre is being maintained as per guidelines,
   b Ante-natal, natal and post natal care of the mothers is being carried out properly,
   c Cases referred by FWV or any service providers or lower facility are being taken due care by the MO(Clinic)/MO(MCH-FP),
   d Availability of required medicines(DDS Kit, loose medicines) and other registers are being ensured by MO(Clinic) /MO(MCH-FP) regularly,
e Weekly clinical meetings on the fixed day about complication of VSC, side effects of FP methods and RH-FP activities being held regularly,

f Fortnightly staff meetings regarding solving the problems are being held regularly.

g Supervision and monitoring checklist based information written in the register is being followed or not.

h Sending of performance report on time to the proper authority.

2 Implementation of day to day activities at MCWC:

The following are the routine day to day activities performed at MCWC:

a Administrative,

b Technical.

a Administrative:

i Maintenance and Cleanliness of MCWC Building:

Before starting the days work MO(Clinic) and MO(MCH-FP) will have a look on the surroundings to ensure cleanliness of the floors, walls, table/chair etc. to reduce micro-organisms for prevention of infection. Similarly latrines, O.T and pre-operative room should be cleaned with soap water adding disinfectant (2% phenol) or 0.5% chlorine solution. A check list has been developed for maintaining daily activities in all the MCWCs before starting the activities of the day.

ii Availability of Medicines and Equipment:

iii Indoor Management:

MO(Clinic)/MO (MCH-FP) will also see whether indoor patients are receiving proper care or not. She/he will make a round in the morning and in the evening.

iv Timely Supply of Logistics:

v Running Water Supply:

MO(Clinic)/ MO(MCH-FP) will also ensure 24 hours running water supply in the centre. Any problems in this regard should be brought to the notice of DD(FP)/higher authority for taking immediate effective measure.

vi Attendance of Officers and Staff:

MO(Clinic)/MO(MCH-FP) will check attendance register daily to ensure regular and timely attendance of officers and staff of the centre.

vii Staff Meeting :

MO(Clinic) /MO (MCH-FP) will hold clinical meeting with all the staff on a fixed day (Thursday) every week. Similarly management meeting will be held fortnightly to solve the problems through discussion with the staff and minutes should be written for future reference.

b Technical :

i Ante-natal check up of pregnant mothers,

ii Natal services,

iii Postnatal services,
iv Under 5 children,
v Immunization of children, pregnant mothers, and women of Reproductive age (5 doses schedule),
vi Infertility,
vii General patient treatment service,
viii Male, Youth and Adolescent health service
ix Family planning services,
x Post abortion care services,
xii Referral of complicated cases to higher center/hospital,
xii Maintenance of relevant registers,
xiii Daily stock taking and updating.

i Ante-natal check-up of pregnant mothers:
All pregnant mothers are considered to be potentially at risk, until and unless any danger signs/risk factor is identified during ante-natal check-up. Ante-natal check-up should be done very carefully taking past history, physical examination and laboratory test for sugar and Albumin in urine of the pregnant women. She should be encouraged to visit the centre regularly for check up and progress of foetal development. Past history should be on number of children, any abortion/still birth, obstructed labor, surgical intervention etc.

Physical examination for oedema, BP, anemia, jaundice, weight/height, height of uterus, foetal heart sound, presentation etc are to be done.

Laboratory test should be conducted for sugar and albumin in urine. For this purpose Uristix or Benedict solution (if supplied) should be used properly. It is mandatory for FWV to test urine of each and every pregnant woman for sugar and albumin as a determinant factor coexisting diabetes or toxaemia of pregnancy.

ii Natal service:
All pregnant mothers during ante-natal check-up should be advised to come to MCWC at least one week before the expected date of delivery (EDD) for final check up and advancement of pregnancy. The mothers who come with labor pain should immediately be admitted. All necessary examination like BP, foetal position foetal heart sound, any show, or rupture membrane, cervical dilatation etc. should be done quickly. When the patients will be found in true labor pain with full cervical dilatation she should be taken to labor table and conducted delivery if it is normal. In prolonged obstructed labor caesarean section is to be done where CEOC facilities are available. Patient should be referred to district hospital/Medical College Hospital, or any other service center where CEOC service is being provided.

iii Postnatal service:
The service is directed to postnatal mother. During puerperium she should be examined for any abnormality or sub-involution of uterus, breast engorgement and puerperal sepsis. Treatment should be given accordingly.
iv Under 5 Children:
Clinics should be held every day to see under 5 children. Growth chart should be maintained, Vaccination against 6 diseases, treatment of helminthiasis, Gastrointestinal tract and respiratory tract infection or any other diseases should be provided as and when required.

v. Administration of T.T (tetanus toxoid)
Every pregnant woman during ante-natal care must be given two doses of TT (one in each month) at 5th and 6th or 6th and 7th or 7th and 8th month of gestation. This will develop immunity of mother and her baby against tetanus a major killer of neonates. Recently 5 dose TT schedule for the mothers has been introduced, and this will provide life long immunity. Every pregnant mothers should be registered and all the relevant information should be noted in Ante Natal Card which must be provided in 1st visit.

vi. Infertility
Infertility services are recently being provided by MCWC.

vii General patient treatment :
Along with the treatment of mother and children during ante-natal check up and under 5 clinic there may be some general patient who will come to the centre with general and minor ailments. They should be given treatment and complicated cases may be referred to district hospital/MCH for further investigation and treatment.

viii Male, Youth and Adolescent health services
Male, Youth and Adolescent health services are recently being provided by MCWC.

ix Family Planning services :
Besides maternal and child health service, Family Planning service like: VSC procedures, IUD insertion, Norplant services Injectables are also provided as well as Oral Pill and Condom are distributed, FWVs help MO (Clinic)/MCH-FP in sterilization service and Norplant implantation. Separate registers should be maintained for each method and the cases followed very rigidly.

Adoption of Family Planning method by an eligible couple is a precondition of the maintenance of mother and child health. This will enable the mothers to have spacing between two births and as such she will get time for health recovery. For the recruitment of family planning acceptors, following steps are to be taken.

Motivation / Counseling:
• Selection of the case
• Method distribution.
• Follow up.
Motivation:
Motivation is a slow and painful process by means of which a client is influenced to take a favorable decision for acceptance of Family Planning method. When the couple is motivated to be an acceptor he/ she should be counseled by informing about all methods with their merits and demerits so that he/ she can choose one method for adoption.

• Selection of case:
The motivated clients should be examined properly for selecting a particular method through exclusion of contraindication.

• Method distribution:
When a motivated client is finally selected he/she should be supplied with the method immediately. Otherwise for delayed supply she/ he may be demotivated.

• Follow up:
It is a vital step for continuation of method use. During follow -up if the acceptors are found to suffer from any side effect or complication he/ she should be immediately taken care of so that the client may have confidence and satisfaction towards the program.

x Post abortion care services are being provided by MCWCs.

xi Referral of complicated cases to higher centre/hospital:
During day to day activities there may be some complicated cases either with obstetric complication or complicated general patients whom can not be managed or treated locally and need be referred to higher centre/ hospital for investigation and treatment. Every case when referred should be accompanied by a "referral letter" giving history of treatment and present status of the cases as ready reference.

xii Maintenance of relevant register:
All kinds of registers that are used in day to day activities should be maintained daily without keeping them pending for the next day. All registers will have page number from first to last having certificate inscribed on the cover page. There should be index of different items showing page number especially in case of medicine stock and distribution register. Besides this, the MR registers, Birth register, Ante-natal and postnatal registers, General patient register and child patient register should be maintained properly and timely.

In case of patients admitted into MCWC, the Indoor form shall have progress note daily with given treatment and to be hung by the side of the patient’s table. When the patient is cured and discharged, a discharge certificate giving diagnosis, treatment chart and follow-up advice should be given for case reference. Similarly in case of new born baby a birth certificate form should be filled up and handed over to the mother at the time of leaving the centre. Proper personnel of MCWC must sign it.
Daily stock taking and updating:

The pharmacist who remains in charge of store should do stock taking and updating regularly. Expiry date medicine and other items should be checked up regularly; and short dated items are to be used before the long dated items.
ANNEXURES : A – J

A. Acronyms
B. Components of ESP
C. List of MCWC (Level-wise)
D. Samples of Forms & Registers used in MCWC
E. Performance of 64 MCWCs
F. Proposed Man Power Strength of MCWC
G. TOR – Regional Supervisor of FPCST & EOC-QAT
H. Selected Important Circulars
I. List of Contributors
J. References
### ACRONYMS

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFLE</td>
<td>Adolescent Family Life Education</td>
</tr>
<tr>
<td>AIDS</td>
<td>Acquired Immune Deficiency Syndrome</td>
</tr>
<tr>
<td>ANC</td>
<td>Antenatal Care</td>
</tr>
<tr>
<td>APH</td>
<td>Antepartum Hemorrhage</td>
</tr>
<tr>
<td>ARI</td>
<td>Acute Respiratory Infection</td>
</tr>
<tr>
<td>ARM</td>
<td>Artificial Rupture of Membrane</td>
</tr>
<tr>
<td>BAPSA</td>
<td>Bangladesh Association for Prevention of Septic Abortion</td>
</tr>
<tr>
<td>BBS</td>
<td>Bangladesh Bureau of Statistics</td>
</tr>
<tr>
<td>BCC</td>
<td>Behavioral Change Communication</td>
</tr>
<tr>
<td>BDHIS</td>
<td>Bangladesh Demographic and Health Survey</td>
</tr>
<tr>
<td>BINP</td>
<td>Bangladesh Integrated Nutrition Project</td>
</tr>
<tr>
<td>BIRPERHT</td>
<td>Bangladesh Institute of Research for Promotion of Essential &amp; Reproductive Health and Technologies</td>
</tr>
<tr>
<td>BMI</td>
<td>Body Mass Index</td>
</tr>
<tr>
<td>BPHC</td>
<td>Bangladesh Population and Health Consortium</td>
</tr>
<tr>
<td>BRAC</td>
<td>Bangladesh Rural Advancement Committee</td>
</tr>
<tr>
<td>BSMMU</td>
<td>Bangabandhu Sheikh Mujib Medical University</td>
</tr>
<tr>
<td>BWHC</td>
<td>Bangladesh Women’s Health Coalition</td>
</tr>
<tr>
<td>CCs</td>
<td>Community Clinics</td>
</tr>
<tr>
<td>CEDAW</td>
<td>Convention on the Elimination of all Forms of Discrimination Against Women</td>
</tr>
<tr>
<td>CPD</td>
<td>Cephalo – Pelvic Disproportion</td>
</tr>
<tr>
<td>CRC</td>
<td>Convention on the Rights of the Children</td>
</tr>
<tr>
<td>CSWs</td>
<td>Commercial Sex Workers</td>
</tr>
<tr>
<td>C/S</td>
<td>Caesarean section</td>
</tr>
<tr>
<td>CWFD</td>
<td>Concerned Women for Family Development</td>
</tr>
<tr>
<td>CYP</td>
<td>Couple Years of Protection</td>
</tr>
<tr>
<td>D&amp;C</td>
<td>Dilatation and Curettage</td>
</tr>
<tr>
<td>DFID</td>
<td>Department for International Development</td>
</tr>
<tr>
<td>DHS</td>
<td>Directorate of Health Services</td>
</tr>
<tr>
<td>Acronym</td>
<td>Description</td>
</tr>
<tr>
<td>-----------</td>
<td>--------------------------------------------------</td>
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<tr>
<td>D,E&amp;C</td>
<td>Dilatation, Evacuation and Curettege</td>
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<tr>
<td>EC</td>
<td>Emergency Contraception</td>
</tr>
<tr>
<td>EFA</td>
<td>Education for All</td>
</tr>
<tr>
<td>ELISA</td>
<td>Enzyme-Linked Immuno-Sorbent Assay</td>
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<tr>
<td>EOC</td>
<td>Essential Obstetric Care</td>
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<td>EPI</td>
<td>Expanded Program of Immunization</td>
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<td>ESP</td>
<td>Essential Services Package</td>
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<tr>
<td>FFYP</td>
<td>Fifth Five Year Plan</td>
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<td>FeHA</td>
<td>Female Health Assistant</td>
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<td>FHS</td>
<td>Foetal Heart Sound</td>
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<td>FPAB</td>
<td>Family Planning Association of Bangladesh</td>
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<tr>
<td>SEATS II</td>
<td>Service Expansion &amp; Technical Support Project II</td>
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<td>Family Welfare Assistants</td>
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<td>GA</td>
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<td>Ganoshastha Kendra</td>
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<td>GOB</td>
<td>Government of Bangladesh</td>
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<td>HA</td>
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<td>Hb</td>
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<tr>
<td>HBV</td>
<td>Hepatitis B Virus</td>
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<tr>
<td>HCV</td>
<td>Hepatitis C Virus</td>
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<tr>
<td>HIV</td>
<td>Human Immuno-deficiency Virus</td>
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<td>HNP</td>
<td>Health and Nutrition Program</td>
</tr>
<tr>
<td>HNPSP</td>
<td>Health, Nutrition and Population Sector Program</td>
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<tr>
<td>HPSP</td>
<td>Health and Population Sector Program</td>
</tr>
<tr>
<td>HPSS</td>
<td>Health and Population Sector Strategy</td>
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<td>ICDDR’B</td>
<td>International Center for Diarrheal Disease Research, Bangladesh.</td>
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<tr>
<td>ICD-10</td>
<td>International Classification of Diseases 10</td>
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</table>
ICPD  International Conference on Population and Development
IDA  International Development Association
IDD  Iodine Deficiency Disorder
IDU  Intravenous Drug Users
IEC  Information Education and Communication
IEDCR  The Institute of Epidemiology, Disease Control and Research
ILO  International Labor Organization
IMCI  Integrated Management of Childhood Illness
IMR  Infant Mortality Rate
IPGMR  Institute of Post-Graduate Medicine and Research
I-PRSP  Interim Poverty Reduction Strategy Paper
IUGR  Intrauterine Growth Retardation
IUI  Intrauterine Insemination
IVF  In-Vitro Fertilization
KMC  Kangaroo Mother Care
KAP  Knowledge, Attitude and Practice
LBW  Low birth weight
LUCS  Lower Uterine segment Caesarian Section
MAP  Managing the AIDS Pandemic
MCH  Maternal and Child Health
MCH-FP  Maternal Child Health & Family Planning
MCWC  Maternal and Child Welfare Centers
MDG  Millennium Development Goals
MIS  Management Information System
MMR  Maternal Mortality Rate
MOH&FW  Ministry of Health and Family Welfare
MR  Menstrual Regulation
MSCS  Marie Stopes Clinic Society
MSM  Men having sex with men
MTCT  Mother to Child Transmission
MVA  Manual Vacuum Aspiration
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tr>
<td>NAP</td>
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<td>NGOs</td>
<td>Non-Government Organizations</td>
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<td>NIPHP</td>
<td>National Integrated Population and Health Program</td>
</tr>
<tr>
<td>NIPORT</td>
<td>National Institute of Population Research and Training</td>
</tr>
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<td>NRR</td>
<td>Net Reproductive Rate</td>
</tr>
<tr>
<td>NSDP</td>
<td>NGO Service Delivery Program</td>
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<td>OGSB</td>
<td>Obstetrical &amp; Gynecological Society of Bangladesh</td>
</tr>
<tr>
<td>ORT</td>
<td>Oral Rehydration Therapy</td>
</tr>
<tr>
<td>PAC</td>
<td>Post Abortion Care</td>
</tr>
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<td>PDAP</td>
<td>Participatory Development Action Program</td>
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<td>PHC</td>
<td>Primary Health Care</td>
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<td>PI</td>
<td>Performance Improvement</td>
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<td>Pregnancy Induced Hypertension</td>
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<td>PIP</td>
<td>Program Implementation Plan</td>
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<tr>
<td>PLWHA</td>
<td>People living with HIV/AIDS</td>
</tr>
<tr>
<td>PMED</td>
<td>Primary and Mass Education Development</td>
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<tr>
<td>POA</td>
<td>Program of Action</td>
</tr>
<tr>
<td>PRB</td>
<td>Population Reference Bureau</td>
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<tr>
<td>RA</td>
<td>Regional Anesthesia</td>
</tr>
<tr>
<td>RH</td>
<td>Reproductive Health</td>
</tr>
<tr>
<td>RH-EOC</td>
<td>Reproductive Health – Essential Obstetric Care</td>
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<tr>
<td>RPR</td>
<td>Rapid Plasma Reagent</td>
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<td>RTIs</td>
<td>Reproductive Tract Infections</td>
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<td>SAB</td>
<td>Sub Arachnoid Block</td>
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<td>SBA</td>
<td>Skilled Birth Attendants</td>
</tr>
<tr>
<td>SGA</td>
<td>Small for Gestational Age</td>
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<tr>
<td>SMC</td>
<td>Social Marketing Company</td>
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<tr>
<td>SRH</td>
<td>Sexual and Reproductive Health</td>
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<td>STDs</td>
<td>Sexually Transmitted Diseases</td>
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<td>STIs</td>
<td>Sexually Transmitted Infections</td>
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<td>TBAs</td>
<td>Traditional Birth Attendants</td>
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<td>Acronym</td>
<td>Definition</td>
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<td>---------</td>
<td>------------</td>
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<tr>
<td>TFR</td>
<td>Total Fertility Rate</td>
</tr>
<tr>
<td>TOT</td>
<td>Training of the Trainers</td>
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<tr>
<td>TT</td>
<td>Tetanus Toxoid</td>
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<tr>
<td>U5MR</td>
<td>Under 5 Mortality Rate</td>
</tr>
<tr>
<td>UFHP</td>
<td>Urban Family Health Partnership</td>
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<tr>
<td>UH&amp;FWC</td>
<td>Union Health and Family Welfare Centre</td>
</tr>
<tr>
<td>UHC</td>
<td>Upazilla Health Complexes</td>
</tr>
<tr>
<td>UMIS</td>
<td>Unified Management Information System</td>
</tr>
<tr>
<td>UNDP</td>
<td>United Nations Development Program</td>
</tr>
<tr>
<td>UNFPA</td>
<td>United Nations Population Fund</td>
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<tr>
<td>UNICEF</td>
<td>United Nations Children’s Fund</td>
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<tr>
<td>USAID</td>
<td>United States Agency for International Development</td>
</tr>
<tr>
<td>UTPS</td>
<td>Unity through Population Service</td>
</tr>
<tr>
<td>VAC</td>
<td>Vitamin-A capsule</td>
</tr>
<tr>
<td>VAW</td>
<td>Violence against Women</td>
</tr>
<tr>
<td>VCT</td>
<td>Voluntary Counseling and Testing</td>
</tr>
<tr>
<td>VIA</td>
<td>Visual Inspection by Acetic Acid</td>
</tr>
<tr>
<td>VIDA</td>
<td>Village Integrated Development Association</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organization</td>
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<tr>
<td>WRA</td>
<td>Women of Reproductive Age</td>
</tr>
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</table>
### ESSENTIAL SERVICES PACKAGE

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Clients</th>
<th>Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immunization</td>
<td>Infants and mothers</td>
<td>Immunization against diphtheria, pertussis, tetanus, measles, polio, and tuberculosis (Hepatitis B will be added), and immunization of mothers/Women of Reproductive Age (15-49) with tetanus toxoid</td>
</tr>
<tr>
<td>Control of Diarrheal Disease</td>
<td>Children</td>
<td>Case management using the Integrated Management of the Sick Child approach, which includes oral rehydration taught to mothers or other caretakers, antibiotics or antiamoebics when appropriate for dysentery, breast feeding promotion, continued feeding during episodes of diarrhea, and hand washing after defecation and before touching food.</td>
</tr>
<tr>
<td>Control of Micronutrient Deficiency</td>
<td>Children</td>
<td>High-dose Vitamin A capsules for children every six months, iron for young children suffering from iron deficiency anemia, and promotion of the use of iodized salt.</td>
</tr>
<tr>
<td>Maternal care</td>
<td>Mothers</td>
<td>Prenatal care, assistance with labor and delivery, post-partum care, referral for obstetric emergencies, health education during pregnancy including information on nutrition and family planning.</td>
</tr>
<tr>
<td>Family Planning</td>
<td>All men and women</td>
<td>Provision of contraceptive commodities (oral contraceptives, condoms, Injectable, IUDs and Norplant) Information and referral for other options such as vasectomy, Tubectomy, and information on side effects how to deal with them.</td>
</tr>
<tr>
<td>Control of Reproductive Tract Infections</td>
<td>All men and women</td>
<td>Information on preventing HIV/AIDS and other STDs, and treatment using the syndromic approach</td>
</tr>
<tr>
<td>Management of Common Diseases</td>
<td>Children and adults</td>
<td>Treatment for tuberculosis and other diseases common among children and adults, including emerging infections such as dengue fever.</td>
</tr>
<tr>
<td>Assistance for women who are victims of violence</td>
<td>Women</td>
<td>Health workers will be able to properly refer victims of violence to the appropriate legal assistance, counseling, and crisis management services and provide immediate psychological support, Health workers will also detect cases of assault and increase community awareness of the issue. At each health center there will be at least one staff member capable of using the “rape investigation kits”</td>
</tr>
</tbody>
</table>
# List of 90 Maternal and Child Welfare Center in Bangladesh (MCWCs)

## District Level MCWCs

<table>
<thead>
<tr>
<th>SL #</th>
<th>Name of MCWC</th>
<th>Level</th>
<th>Division</th>
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<tbody>
<tr>
<td>1.</td>
<td>Narshingdi *</td>
<td>District</td>
<td>Dhaka</td>
</tr>
<tr>
<td>2.</td>
<td>Narayangonj *</td>
<td>District</td>
<td>Dhaka</td>
</tr>
<tr>
<td>3.</td>
<td>Munshigonj *</td>
<td>District</td>
<td>Dhaka</td>
</tr>
<tr>
<td>4.</td>
<td>Manikgonj *</td>
<td>District</td>
<td>Dhaka</td>
</tr>
<tr>
<td>5.</td>
<td>Tangail *</td>
<td>District</td>
<td>Dhaka</td>
</tr>
<tr>
<td>6.</td>
<td>Kishorgonj *</td>
<td>District</td>
<td>Dhaka</td>
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<td>Netrokona *</td>
<td>District</td>
<td>Dhaka</td>
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<tr>
<td>8.</td>
<td>Jamalpur *</td>
<td>District</td>
<td>Dhaka</td>
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<tr>
<td>9.</td>
<td>Gopalgonj *</td>
<td>District</td>
<td>Dhaka</td>
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<tr>
<td>10.</td>
<td>Faridpur *</td>
<td>District</td>
<td>Dhaka</td>
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<tr>
<td>11.</td>
<td>Madaripur *</td>
<td>District</td>
<td>Dhaka</td>
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<tr>
<td>12.</td>
<td>Rajbari *</td>
<td>District</td>
<td>Dhaka</td>
</tr>
<tr>
<td>13.</td>
<td>Rajshahi *</td>
<td>District</td>
<td>Rajshahi</td>
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<td>15.</td>
<td>Naogaon *</td>
<td>District</td>
<td>Rajshahi</td>
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<tr>
<td>16.</td>
<td>Chapai Nawabgonj *</td>
<td>District</td>
<td>Rajshahi</td>
</tr>
<tr>
<td>17.</td>
<td>Nilphamari *</td>
<td>District</td>
<td>Rajshahi</td>
</tr>
<tr>
<td>18.</td>
<td>Kurigram *</td>
<td>District</td>
<td>Rajshahi</td>
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<td>19.</td>
<td>Gaibandha *</td>
<td>District</td>
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<tr>
<td>20.</td>
<td>Rangpur *</td>
<td>District</td>
<td>Rajshahi</td>
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<td>21.</td>
<td>Thakurgaon *</td>
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<td>23.</td>
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<td>Lalmonirhat *</td>
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<td>Rajdebi (Comilla Sadar) *</td>
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<td>33.</td>
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<td>36.</td>
<td>Bramhan Baria *</td>
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<td>37.</td>
<td>Cox’s Bazar *</td>
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<td>Bandarban *</td>
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<td>Rangamati *</td>
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<td>Narail *</td>
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<td>42.</td>
<td>Jhenaidhah *</td>
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<td>47.</td>
<td>Khulna *</td>
<td>District</td>
<td>Khulna</td>
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<td>48.</td>
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<td>49.</td>
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<td>50.</td>
<td>Kushthia *</td>
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### List of 90 MCWCs

<table>
<thead>
<tr>
<th>Number</th>
<th>Location</th>
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<td>51.</td>
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<td>Pirojpur *</td>
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<td>54.</td>
<td>Patuakhali *</td>
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#### Upazilla Level MCWCs

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<th>Number</th>
<th>Name</th>
<th>Location</th>
<th>District</th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>Bukshiranj (Jamalpur)</td>
<td>Upazilla</td>
<td>Dhaka</td>
</tr>
<tr>
<td>2.</td>
<td>D. N. D (Narayanganj)</td>
<td>Upazilla</td>
<td>Dhaka</td>
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<tr>
<td>3.</td>
<td>Nangalkot (Comilla)</td>
<td>Upazilla</td>
<td>Chittagong</td>
</tr>
<tr>
<td>4.</td>
<td>Begumganj (Noakhali)</td>
<td>Upazilla</td>
<td>Chittagong</td>
</tr>
<tr>
<td>5.</td>
<td>Shahrasti (Chandpur)</td>
<td>Upazilla</td>
<td>Chittagong</td>
</tr>
<tr>
<td>6.</td>
<td>Rupkara (Chittagong Hill)</td>
<td>Upazilla</td>
<td>Chittagong</td>
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<tr>
<td>7.</td>
<td>Boda (Panchagar)</td>
<td>Upazilla</td>
<td>Rajshahi</td>
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<tr>
<td>8.</td>
<td>Dhupchanchia (Bogra)</td>
<td>Upazilla</td>
<td>Rajshahi</td>
</tr>
<tr>
<td>9.</td>
<td>Syedpur (Nilphamari)</td>
<td>Upazilla</td>
<td>Rajshahi</td>
</tr>
<tr>
<td>10.</td>
<td>Kumarkhali (Kustia)</td>
<td>Upazilla</td>
<td>Rajshahi</td>
</tr>
<tr>
<td>11.</td>
<td>Lalmohon (Bhola)</td>
<td>Upazilla</td>
<td>Barisal</td>
</tr>
<tr>
<td>12.</td>
<td>Gouranadi (Barisal)</td>
<td>Upazilla</td>
<td>Barisal</td>
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</tbody>
</table>

#### Union Level MCWCs

<table>
<thead>
<tr>
<th>Number</th>
<th>Name</th>
<th>Location</th>
<th>District</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Tikikata Baroani (Mathbaria, Pirojpur)</td>
<td>Union</td>
<td>Barisal</td>
</tr>
<tr>
<td>2.</td>
<td>Koraaltali (Faridganj, Chandpur)</td>
<td>Union</td>
<td>Chittagong</td>
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<tr>
<td>3.</td>
<td>Shaicha (Laxmipur Sadar)</td>
<td>Union</td>
<td>Chittagong</td>
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<tr>
<td>4.</td>
<td>Kankirhat (Senbag, Noakhali)</td>
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<td>Chittagong</td>
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<tr>
<td>5.</td>
<td>Kumarilhat (Mirersharai, Chittagong)</td>
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<td>Chittagong</td>
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<tr>
<td>6.</td>
<td>Panchuriadighi (Patya, Chittagong)</td>
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<tr>
<td>7.</td>
<td>Malachi (Shibaloy, Manikganj)</td>
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<td>Dhaka</td>
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<td>8.</td>
<td>Belswar (Dhammral, Dhaka)</td>
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<td>Dhaka</td>
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<tr>
<td>9.</td>
<td>Humaunpur (Bajitpur, Kishorganj)</td>
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<td>Dhaka</td>
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<td>10.</td>
<td>Adampur (Autragram, Kishorganj)</td>
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<td>11.</td>
<td>Kaderdi (Boalia, Faridpur)</td>
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<td>12.</td>
<td>Nandina (Kasinit, Gopalganj)</td>
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<td>13.</td>
<td>Abdulpur (Lalpur, Natore)</td>
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<td>14.</td>
<td>Matajalut (Mohaidebpur, Naogaon)</td>
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<td>15.</td>
<td>Haragacha (Kaunia, Rangpur)</td>
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<td>16.</td>
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<td>18.</td>
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<td>Debadowar (Paikgacha, Khulna)</td>
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<td>Lauta (Bianibazzar, Sylhet)</td>
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<td>Durgapasa (Sunamganj, Sadar)</td>
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### MCWCs to be upgraded to provide RH-EOC services under HNPSP

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<th>Name</th>
<th>Location</th>
<th>District</th>
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<td>Rawjan</td>
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</table>
List of 90 MCWCs
MCWC Manual
Government of the People’s Republic of Bangladesh  
Directorate of Family Planning  
Mother and Child Welfare Centre (MCWC)

Name of MCWC: ____________________  District: ____________

Out Patient Department (OPD) Slip

Name: ______________________________ Age: __________ Sex: ________

Father’s/Husband’s name: ______________ Registration No. ___ Date: ________

Address: House No. ______ Road No. ______ Village/Mohallah: ________________

Union: ______________ Upazilla: _______ District: _______________________

<table>
<thead>
<tr>
<th>Date</th>
<th>Complaints, Examination and Diagnosis</th>
<th>Treatment</th>
<th>Signature</th>
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</table>
Government of the People’s Republic of Bangladesh
Directorate of Family Planning
Mother and Child Welfare Centre (MCWC)

History and Examination Sheet

Name of MCWC : _______________________________ District : ________________
Name: ________________________________ Occupation : ________________
Age: ____________ Sex: _________________________ Registration No. _____________
Father’s/Husband’s Name : _________________________ Occupation : ________________
Address : House No. _____________ Road No. _________ Village/Mohalla: _____________
Union : _______________________ Upazilla: __________ District: ________________
Date and Time of Admission : _______________________ Date/Time of Discharge: ______
Chief Complaints (CC):

History of present illness:

Past Medical/Surgical History:

**Family History** (Tick the appropriate): Hypertension/Diabetes/Multiple Pregnancy/
Congenital Abnormality/ Others (Specify) :

**Obstetric History:** Married for ____________ years
Gravida: ________________ No. of abortion : ________________
Para : ________________ No. of MR: ________________
LMP: ________________ Date of last delivery ________________
EDD: ________________ Age of last child: ________________

History and Examination Sheet
MCWC Manual
Past Obstetric History:

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Year of Delivery</th>
<th>Mode of Delivery</th>
<th>Place of Delivery</th>
<th>Complication (if any)</th>
<th>Live Birth/Still Birth</th>
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Physical Examination:

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<tr>
<th>General Examination</th>
<th>Per Abdominal Examination</th>
<th>Per Vaginal Examination</th>
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<tbody>
<tr>
<td>Pulse</td>
<td>Anaemia</td>
<td>Height of Uterus</td>
</tr>
<tr>
<td>BP</td>
<td>Oedema</td>
<td>Presentation</td>
</tr>
<tr>
<td>Temp</td>
<td>Jaundice</td>
<td>Foetal Heart Rate</td>
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<tr>
<td>Respiration</td>
<td>Others</td>
<td>Uterine Contraction</td>
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</tbody>
</table>

Investigation:

Hb% _____________ Blood grouping and Rh factor : _____________ VDRL _____________
Urinary: Albumin: _______ Sugar: _______ RBS/FBS _______ Ultrasonogram: _______
Diagnosis: __________________________________________________________________

Confinement Note:

Date and Time of Delivery: _____________ Mode of Delivery: SVD/NVD with episiotomies/forcep/ventose/LUCS

Outcome: Healthy baby/asphyxiated baby/ Term baby/ Pre-term baby/ Still birth / IUD

Weight: 
Sex:

Delivery of Placenta and Membrane:

Bleeding : Mild/Moderate/Severe

Operation Note (other than delivery): 

Signature : __________________

Designation : __________________

Date : ______________________
Government of the People’s Republic of Bangladesh
Directorate of Family Planning
Mother and Child Welfare Centre (MCWC)

Name of MCWC : _______________________________ District : __________________

Indoor Form

Name: _________________________________________ Age : ______________________

Bed No. ________________________________________ Registration No. _____________

<table>
<thead>
<tr>
<th>Date and Time</th>
<th>Progress Notes</th>
<th>Treatment</th>
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<tbody>
<tr>
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</table>
# Intake and Output Chart

**Name of MCWC:** _____________________  **Registration No. _____**  
**Name of Patient:** _____________________  **Age:** ________  **Bed No. _____________**

<table>
<thead>
<tr>
<th>Day</th>
<th>Date &amp; Time</th>
<th>Intake</th>
<th>Output</th>
<th>Name/Signature</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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</tbody>
</table>

**1st**

**2nd**
Name of MCWC : _____________________   Registration No. ______
Name of Patient : _____________________   Bed No. _____________

Vital Signs Observation Sheet

<table>
<thead>
<tr>
<th>Date &amp; Time</th>
<th>Pulse</th>
<th>BP</th>
<th>Temp.</th>
<th>Resp.</th>
<th>Heart</th>
<th>Lungs</th>
<th>PV bleeding</th>
<th>Urine output</th>
<th>Others</th>
<th>Signature</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
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<td>11</td>
</tr>
</tbody>
</table>
ANNAESTHETIC RECORD

Name of Pt. ____________________________ Age : ________ Sex : M/F

Bed : ____________ Weight: ________ Kg.

Preop. Diagn. : ____________________________ Proposed Opn. _______________________

Co-Existing disease: ___________________________________________________________________

Date of Opn: ___________________ Surgeon: ___________________ Opn. : ______________________

Accepted for : GA/SA

PREOPERATIVE CONDITION OF PATIENT:
Preop. Advice: Pulse: ___________ /Min.   ASA Class : 1,2,3,4,5,E
1. _________________ BP: _____________ mm. Hg.
2. _________________ Heart: ________________ CXR
3. _________________ Lungs: ________________
4. _________________ Asthma : + -
Allergy : + -
Chest Pain: + -
Teeth: ________________

Maintenance drugs:
Hb: ________________ 1. ________________
FBS/RBS: ________________ 2. ________________
B. Urea: ________________ 3. ________________
S. Creatining: ________________
S. Electrolytes: Na+ _______ K+ _______ Cl _______

Anaesthetic Technique:

<table>
<thead>
<tr>
<th>Anaesthetic Technique:</th>
<th>Type of Anaesth: GA/Spinal</th>
</tr>
</thead>
<tbody>
<tr>
<td>O2 ____ L min-1</td>
<td>Type &amp; Needle Size</td>
</tr>
<tr>
<td>N2O ____ L min-1</td>
<td>Space:</td>
</tr>
<tr>
<td>Air Halo</td>
<td>Drug:</td>
</tr>
<tr>
<td>Circuit Used: Circle/Bain/T-Piece/Magill’s/MAP.D/Sodalime.</td>
<td>Dose:</td>
</tr>
<tr>
<td>Respiration: Spontaneous/Controlled:</td>
<td>Adjuvant:</td>
</tr>
<tr>
<td>Vt. _____ Manual/ Ventilator.</td>
<td>1. Peth/Fenta/</td>
</tr>
<tr>
<td>Resp. Rate: _</td>
<td>2. Diaz./Mida</td>
</tr>
<tr>
<td>Air way: Face mask/ETT: Oral/Nasal</td>
<td>3. TPS/</td>
</tr>
<tr>
<td>Size: mm Cuff/Non-Cuff</td>
<td>4. Ketamine</td>
</tr>
</tbody>
</table>

Monitoring: Pulse, BP, ECG.  O₂ Saturation  O₂ Saturation  O₂ Saturation

POST-OPERATIVE ADVISE

Name of Pt. ____________________________ Age ________ Ward : ________ Bed: ________

O₂ ________ Lmin-1 Via cannula/Facemask for ________ hours

Pethidine _____ mg I/M ________ hourly for ________ hours
Pentazocine _____ mg I/M ________ hourly for ________ hours
Tramal ________ mg I/M ________ hourly for ________ hours
Diclofenac ________ mg I/M ________ hourly for ________ hours
Ketoprofen ________ mg I/M ________ hourly for ________ hours

I/V fluids _____ L/24 hours for ________ days
Blood ________ units.

Sign. of Anaesthetist :
Name :
## OPERATIVE PERIOD

<table>
<thead>
<tr>
<th>Time: (min)</th>
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<tr>
<td>DA/DNS</td>
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<tr>
<td>NS/CS/HS</td>
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<tr>
<td>BLOOD</td>
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<tr>
<td>URINE OUTPUT</td>
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<tr>
<td>O₂ Sat%</td>
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</table>

### SIGNS TO BE USED

- Anaesthesia-X: 200
- Operation- ⊗: 180
- Syst. B.P. ⊳: 160
- Diast. B.P. △: 140
- Pulse ⋈: 120
- 100
- 80
- 60
- 40
- 20
- 0

Duration of Anaesth: ______ hr. ______ mins
Duration of Surgery: ________ hr. ________ mins

Events:

**Baby Note:**

Baby delivered at: _________ wt. _________ Sex _________

APGR __________ I mins
_____________ V mins

Signature of Anaesthetist
Name: ____________________
Government of the People’s Republic of Bangladesh  
Directorate of Family Planning  
Mother and Child Welfare Centre (MCWC)  

Birth Certificate  

This is to certify that Mrs. _____________________________ Reg. No. __________
wife of Mr. _________________________ of House No. ______________ Road No. _____
Village/Mohalla ___________________________ Police Station ______________________
Upazila ____________________________ District ________________________________
has given birth to a healthy male/female baby on ________________________________
at ___________________________ in ____________________________________ MCWC.

Signature : ______________________
Name : ______________________
Designation : ______________________
Discharge Certificate

Name of MCWC: _______________________________ District: __________________

Name: ____________________________________ Age: ____________ Sex: __________

Address: ___________________________________________________________________

Date of Admission: ________________________ Date of Discharge: ________________

Diagnosis: _________________________________ Surgical Procedure: ______________

Treatment during stay in MCWC: _______________________________________________

Advice on:

  Breast feeding

  Family planning: Temporary / permanent.

  Diet.

  Hygiene.

Immunization:

Follow up visit (please mention date)

Conditions when to report immediately to MCWC:
<table>
<thead>
<tr>
<th>ZWL</th>
<th>KZ</th>
<th>cte</th>
<th>cte alb</th>
<th>qv</th>
<th>kw, wqv</th>
<th>dmc</th>
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</table>

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
Consent Form for Operation

A ewmZKi Y mα§wZc İ

Dc‡Rjv t .................................................   †Rjv t .................................................

ti wR: bs-t .............................................   eqmt .............................................

bvg t ..............................................................................................................................

wKvbvt ............................................................................................................................

......................................................................................................................................

†ivM wbY©qt     A‡¯¿vcPv‡ii aiYt ............................................

Aewv/Aewv ti wM‡K mα§ÚY©AÄv Kibq Acv‡ikb Ki Ø‡Z i wR AewQ| Bnv‡Z tKvb A myyav nB‡j

nvmc wZv‡ji KZ ‡! `vqx wK‡e bv|**

1| ..............................................................................................................................

2| ..............................................................................................................................

Consent Form for Operation
MCWC Manual


<table>
<thead>
<tr>
<th>Annexure-D</th>
</tr>
</thead>
</table>

"ti dvi cî"
Government of the People's Republic of Bangladesh  
Directorate of Family Planning  
Mother and Child Welfare Centre (MCWC)

Monthly Reporting Format

Name of MCWC: ___________________________ Month: ___________________ Year: ____________

### OUTPATIENT

#### Name of Activity

<table>
<thead>
<tr>
<th>A. Mothers</th>
<th>1st visit</th>
<th>Re-visit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antenatal Normal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Antenatal High-risk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Postnatal Normal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Postnatal Complications</td>
<td>1st visit</td>
<td>Re-visit</td>
</tr>
</tbody>
</table>

#### B. Infertility

#### C. General Patients

- Treatment of adolescent
- Treatment of male patient
- Treatment of victims of violence

#### D. Reproductive Tract Infections: (Including Indoor)

- PID
- UTI
- STD's/RTIs
- Others

#### E. Child Care:

- Infant (under 1 year)
- 1-5 years

#### F. Immunisation:

- DPT
- Polio
- Measles
- BCG
- TT
- Others

#### G. Family Planning

- Tubectomy
- Vasectomy
- Norplant
- IUD
- Injectables
- Oral Pills (Person)
- Condom (Person)
- Complications of FP methods
- Motivation
- Counseling

#### H. Total Outpatients

---

### INDOOR (ADMISSION)

Name of Activity
<table>
<thead>
<tr>
<th>Category</th>
<th>Subcategories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Admission</td>
<td></td>
</tr>
<tr>
<td>I. Deliveries</td>
<td>Normal (SVD)</td>
</tr>
<tr>
<td></td>
<td>Twin Delivery</td>
</tr>
<tr>
<td></td>
<td>Breech</td>
</tr>
<tr>
<td></td>
<td>Delivery with episiotomy</td>
</tr>
<tr>
<td></td>
<td>Forceps</td>
</tr>
<tr>
<td></td>
<td>Vacuum extraction</td>
</tr>
<tr>
<td></td>
<td>C-section</td>
</tr>
<tr>
<td></td>
<td>Others</td>
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<tr>
<td></td>
<td>Total Deliveries</td>
</tr>
<tr>
<td>J. New-born</td>
<td>Live birth</td>
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<tr>
<td></td>
<td>Still birth</td>
</tr>
<tr>
<td></td>
<td>IUFD</td>
</tr>
<tr>
<td></td>
<td>Neonatal death during hospital stay</td>
</tr>
<tr>
<td>K. Medical Treatment</td>
<td>Pre-eclampsia</td>
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<td></td>
<td>Eclampsia</td>
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<tr>
<td></td>
<td>Antepartum hemorrhage</td>
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<tr>
<td></td>
<td>Postpartum hemorrhage</td>
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<tr>
<td></td>
<td>Puerperal sepsis</td>
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<td></td>
<td>Severe Anaemia</td>
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<td></td>
<td>Ectopic pregnancy</td>
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<td>Ruptured uterus</td>
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<td>Jaundice</td>
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<td></td>
<td>Tetanus</td>
</tr>
<tr>
<td></td>
<td>Others</td>
</tr>
<tr>
<td>L. Surgical Obstetrics</td>
<td>Caesarean section</td>
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<tr>
<td></td>
<td>Surgical treatment of sepsis</td>
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<td></td>
<td>Repair of vaginal/ cervical tears</td>
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<td>Evacuation for incomplete abortion/ D&amp;C</td>
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<tr>
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<td>Retained placenta</td>
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<td>Intravenous oxytocin infusion (to augment labour)</td>
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<td></td>
<td>Amniotomy with / without oxytocin</td>
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<td></td>
<td>Blood Transfusion</td>
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<tr>
<td></td>
<td>Others</td>
</tr>
<tr>
<td>M. Management of complications of Abortion</td>
<td>Post-abortion sepsis</td>
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<tr>
<td></td>
<td>Haemorrhage</td>
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<td>Haemorrhage and Sepsis</td>
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<tr>
<td></td>
<td>Others</td>
</tr>
<tr>
<td>N. Deaths</td>
<td>No. of maternal Deaths (with causes)</td>
</tr>
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<td>APH</td>
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<td>PPH</td>
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<td></td>
<td>Eclampsia</td>
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<td>Obstructed labour</td>
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<tr>
<td></td>
<td>Other causes</td>
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<td></td>
<td>Total deaths</td>
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</table>
### O. Referral

<table>
<thead>
<tr>
<th>Referrals from other centers (St.Clinic/UH&amp;FWC/UHC/NGO/Self)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Referred to other centres (DH/MCH/Clinic)</td>
</tr>
</tbody>
</table>

### P. No. of low income group patients attended in MCWC

Prepared by: __________________________
Name: __________________________
Designation: __________________________
Date: __________________________

Signature of MO: __________________________
Name: __________________________
Date: __________________________
Supervision and Monitoring
Check List

Date of Visit:
Name of the MCWC:
Name of the Supervisor:
Date of previous visit:

Manpower: Sanctioned post:
   In position:
   Vacant:

Facilities: Cleanliness
   Labour Room
   OT
   Bathroom
   Insertion room
   Ward
   Multipurpose room

Infrastructure:
   Hospital
   Quarter
   Others

Use of Multipurpose room:
   Condition TV, VCP
   Health education facilities
   Nutrition Tray

Activities:
   Trends of performance
   Constrains:
   ANC & PNC Record:
   Indoor record
   Clinical activities
   I P practice : record

   Child Care:
   FP activities:
   STD & RTI activities
   Infertility:
   Violence against women:
   Male Clinic
   Youth Friendly clinic:
   PAC
All manuals are available or not and whether are using – Clinical meeting:

Logistics:

- Presence of required MSR.
- Equipment’s:
  a) OT light
  b) AC
  c) Anesthesia machine
  d) OT & Labour table
  e) Emergency Instrument
  f) Sucker:
  g) Autoclave
  h) Ventose:-
  i) Labour kit/Delivery kit:

Medicine:

- a)
- b)
- c)

Report & Record keeping:

- Computer installed or not:
- Functioning or non-functioning:
- Trained person available or not:

Data software using or not.

Display

Reporting Format:

Records: All activities

1.
2.
3.
4.


Ambulance funds:

Follow up of previous visit:

Others:

Name of the Supervisors

............................. Region.
## Delivery Register

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Date &amp; Time</th>
<th>Name and Address</th>
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<td>Sex</td>
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<th>Time</th>
<th>Sl. #</th>
<th>Regis No</th>
<th>Name</th>
<th>Husband's Name</th>
<th>Address</th>
<th>Age</th>
<th>Para/Gravida</th>
<th>Diagnosis</th>
<th>Operation</th>
<th>Surgeon/Assistant</th>
<th>Type of Anaesthesia</th>
<th>Anaesthesiologist</th>
<th>Baby</th>
<th>SB</th>
<th>Alive/</th>
<th>Sex</th>
<th>Wt</th>
<th>Apgar Score</th>
<th>Remarks</th>
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</table>
## Admission and Discharge Register

<table>
<thead>
<tr>
<th>Reg. #</th>
<th>Date of Admission</th>
<th>Name and Address</th>
<th>Diagnosis/ Referred from</th>
<th>Date of Discharge</th>
<th>Health Status Mother</th>
<th>Health Status Baby</th>
<th>Remarks Referred/ Expired</th>
</tr>
</thead>
<tbody>
<tr>
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Annexure-E

Performance of 64 MCWCs from January 1998 to December 2002

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<tr>
<th>Activities</th>
<th>1998</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
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<td>Ante-natal care</td>
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<td>125630</td>
<td>177958</td>
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</tr>
<tr>
<td>Delivery</td>
<td>10575</td>
<td>17698</td>
<td>20183</td>
<td>27612</td>
<td>33528</td>
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<tr>
<td>Post-natal care</td>
<td>17523</td>
<td>33323</td>
<td>36924</td>
<td>46267</td>
<td>52002</td>
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<td>C-section</td>
<td>1082</td>
<td>1985</td>
<td>1700</td>
<td>3058</td>
<td>4437</td>
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<tr>
<td>Medical Treatment</td>
<td>1339</td>
<td>3386</td>
<td>2946</td>
<td>4683</td>
<td>5160</td>
</tr>
<tr>
<td>RTIs/STDs</td>
<td>10327</td>
<td>20608</td>
<td>33778</td>
<td>36830</td>
<td>25456</td>
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<td>Tubectomy</td>
<td>2626</td>
<td>3375</td>
<td>2798</td>
<td>3871</td>
<td>5020</td>
</tr>
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<td>Vasectomy</td>
<td>246</td>
<td>212</td>
<td>248</td>
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<td>Norplant</td>
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<td>Oral Pill (in cycle)</td>
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<tr>
<td>Sl. No.</td>
<td>Particulars</td>
<td>Existing Manpower</td>
<td>Proposed Manpower Strength of District level MCWCs (Total # %%)</td>
<td>Extra Manpower for District Level MCWCs</td>
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<td>--------</td>
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<tr>
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<td></td>
<td>District Level MCWCs (Existing # 55)</td>
<td>Upazilla Level MCWCs (Total # 11)</td>
<td>Union Level MCWCs (Total # 23)</td>
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<tr>
<td>1</td>
<td>Medical Officer (Clinic)</td>
<td>1 (Rev) 0 0</td>
<td>2</td>
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<tr>
<td>2</td>
<td>Medical Officer (Anaesthetist)</td>
<td>0 (Rev) 0 0</td>
<td>1</td>
<td>1</td>
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<td>FWV</td>
<td>3 (Total) 2 (Rev) 1 (Dev)</td>
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<tr>
<td>4</td>
<td>Dai-Nurse/Asstt. Nursing Attendant/ Nurse Midwives</td>
<td>2 (Dev) 2 (Rev) 2 (Rev)</td>
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<tr>
<td>5</td>
<td>Female Medical Attendant</td>
<td>1 (Rev) 0 0</td>
<td>1</td>
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<tr>
<td>6</td>
<td>LDA cum Typist</td>
<td>0 0 0</td>
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<td>7</td>
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<td>0</td>
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<td>8</td>
<td>Peon cum Chowkider</td>
<td>1 (Dev) 1 (Rev)</td>
<td>2</td>
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<td>9</td>
<td>Sweeper</td>
<td>1 (Dev) 1 (Rev)</td>
<td>2</td>
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<td>TOTAL</td>
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**Annexure-F**

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Terms of Reference (TOR) for Regional Supervisors of Family Planning Clinical Supervision Team (FPCST) & EOC-QAT (Quality Assurance Team).

1. To work under the guidance of Director (MCH-Services) & line Director (ESP), DFP and to report to him on administrative and technical matters relating to that region.

2. Each Regional Supervisors will be placed in the existing FPCST regional office. They will be responsible to organize and supervise the work of administrative staff in the regional office. They will maintain office discipline according to Govt. rules.

3. To be responsible for financial management and general maintenance of the regional office (Salaries of staffs, Telephone, Stationery, Electricity bill, Water bill, Fuel, Maintenance of the car etc.)

4. To report to the Line Director (ESP-RH) in matters of leave and to be responsible for the leave of administrative staff in his office.

5. To plan and execute visits in GOB and NGO outlets providing clinical contraception (VSC, IUD, Injectable, Norplant etc.) and MCH services in the region being under the care of particular regional team of FPCST; to monitor the quality and the maintenance of the standard of these services. They will prepare advance tour Program for every month which will be duly approved by Director (MCH) & Line Director (ESP-RH) with a copy to Program manager (Clinical Services), Program Manager (MHS) & NPPP. At least 10 (ten) days in the month should be spent in field visits with maximum 5 (five) night halts. They will get DSA at the rate of Tk. 1200/- per night halts & for more than 10 (ten) hours stay outside Headquarters will get 40% of Tk.1200/- (DSA). If the Government vehicle is out of order and the officers travel on public transport, they will get actual travel cost from UNFPA for those specified days. Other than that if there is any claim, it will be met from Government fund.

6. To take active part in planned VSC operations (tubectomies and vasectomies) during the field visits and to teach and guide the Medical Officers to perform such operations accordingly and thereby enhance their surgical skill.

7. To train and teach service providers in aseptic techniques (operations of sterile materials, autoclaving, high level disinfection techniques, chemical sterilization, decontamination etc.)

8. To prepare adequate reports on the standard and quality of clinical services in visited outlets and to provide these reports to concerned officials e.g. Head of the local offices and Director (MCH-Services) & line Director (ESP), DFP and also to follow-up with them in the implementation of recommendations given in the reports.

9. To try to solve as much as possible on the spot problems identified during site visits by showing the possible mechanisms of improving the clinical activity.
10. To perform the investigation of mortality related to clinical contraception & Maternal Mortality to identify the causes and chain of events in case of mortality and to submit report to the Director (MCH-Services) & line Director (ESP), DFP.

11. To perform training on-the-spot and conduct planned training sessions for service providers at regional level on topics such as advances and changes in the clinical contraception programme, contraceptive practices (IUD, Injectable, Norplant, etc.) of management, sterilization of equipment, techniques of tubectomy and vasectomy.

12. To close the outlets providing clinical contraception with concurrence of the Director (MCH-Services) & Line Director (ESP) of DFP when minimal criteria for clinical standard are not observed and also to monitor activity of such centers after their reopening.

13. To prepare reports for bi-monthly meetings and to attend such meetings held at Dhaka.

14. Regional Supervisor will visit MCWCs under renovation and construction and look at the progress and if it is slow, will discuss with the site engineer of CMMU and contractor to accelerate the progress.

15. Regional supervisors will ensure the following tasks during their visits to MCWC:
   a) The readiness of the facilities to provide RH/FP&EOC services.
   b) The equipment is functional and drugs and supplies are available in sufficient quantities.
   c) Staff is available in MCWC and 24 hours services are provided
   d) Each room in MCWC is equipped according to its functions. Operation Theatre (OT) has two sterile C-section instruments and linen is sterile and ready for use.
   e) Delivery room has two sterile delivery sets and is ready for use.
   f) Contraceptives are available in Family Planning room.
   g) If there is any deficit in supply, supervisors will look in to the Thana, District and Regional Reserve Store and make ensure of supply of desired equipment/drugs.
   h) Water supply is available, sanitation system is working and the electric generator and spare parts for replacement are available locally.
   i) Aseptic principles and techniques are followed according to the standard set in MCWC Operation Manual.

16. Regional supervisor will use checklist (attached) on each visit to MCWCs and submit report to Director (MCH-Services) & line Director (ESP) and UNFPA every month.

17. Problems identified and expected solutions should be noted in the visit book and jointly signed by MO (CL), MO (MCH-FP) and visiting officers.

18. Problems identified during visit should be solved locally with the Co-ordination of UH&FPO, Medical Officer (MCH-FP), UFPO, Deputy Director (FP) and others.

19. Regional Supervisors will ensure use of monthly self assessment and quality improvement checklist by MCWC team for regular monthly discussion on identified problems and finding the solution.
20. Strengthening links with District Hospital, UHCs, NGOs and UN sister agencies such as, UNICEF, WHO etc.

21. Make sure that NPPPs and counterparts from the Directorate of Family Planning provide technical backstopping, where it is needed.

22. IFC activities (disinfecting, nutrition, hygiene, danger signal etc.) to be ensured by the supervisors in the service centers.

23. Regional Supervisor will strictly observe the field visit schedule and prior permission will be required for any change which will be desired for the financial control.

24. To take part in any other monitoring and educational activity when requested by Director (MCH-Services) and Line Director (ESP) of DFP.

25. Any other relevant jobs given by the higher authorities.
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A wi R gcý, X K ý

ZwLt 18/11/2003 Bs

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- CPR
- Modern Contraceptive Methods
- Method-Mix
- Abortion

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Continuation rate

Discontinuation rate

Unmet need

Strengthening Permanent & other Clinical Family Planning Services

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1. Safe Motherhood (Maternal Health services including EOC at MCWCs).
2. Family Planning Services.
3. Adolescent Health.
5. Management of complication related to Abortion & Safe MR services.
6. Infertility control.

**G eQ‡ii Rg wm BDHS (1999-2000) Gi Key Findings mg cÖk Kiv n‡q‡Q hv wb‡gœ †`qv njt**

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e֫vKiY, AવB BDwayne bíc wU Gĩ A MѐnZ tgwUB Avk we ÀK bq| l i w w j, KÚg, BbIR Kgb l A вBDwayne c × z MѐnZ wv Gk eQ{i i gta`h _w t 46.7%, 66.7%, 50%, 34.2%, nwí tQho t` q| c × z wï̀ Y K wmv A v wbzgbi Q+K c ÔE nj t

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3. bíc wU - 2.5 eQi
4. 4 тWkR BbIR Kkb - 01 eQi
5. 150 вr мKÚg - 01 eQi
6. 13-15 мB#K j wj - 01 eQi

cÔbb wG K x wK ma wni eW G Gĩ Ab`b` c × z Wĩ We AvDU l WmK wUbdDk `ob тU Kvg tq K wUbdDk `ob тU eп wZ c wj j B тg U cÔbb nw Kgt| mWk f t cÔDwW y`s G s Gd `j вwbbc Z Kívтмj G Gĩ mWk f t BйwZ w eقB K t c × z t` j We AvDU/WMK wUbdDk `ob Kgt| вBтqæc c×z mgwK
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0 2005 мjg i gta` в wNRR-1 (Replacement Level of Fertility) A R bd| 0 2005 мjg i gta` в wмwrr A w (c wew c wKl bvc × z MѐnZ w nw) 72% G DbaE Kіv| 0 2005 мjg i gta` в WГдвA w (tgU cÔbb nwW) 2.2 G bwgg tq A вb| 0 2005 мjg i gta` в Kи gZ 25/1000 R xeZ R bYAR bd| 0 2005 мjg i gta` в gZ gZ gZ 2.2/1000 R xeZ R bYAR bd|

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c w c i

velqt c w e w i c w K i b v w K ù K ý K u h g e v Z v f w K c w k v a t h M " (Spot Payment) A _ © c Ö b l A v b ý w K L i P v a e vel q K b w Z g y v

G ¶ t Y " 9 " l c w e w i K j \ W g s Y \ nu q i l \ ë K b s m c K g / c K D -1 / m v 5 / B g t c Œ d Œ l / 2 0 0 1 / 1 8 Z v s 1 2 / 2 / 2 0 0 2 B s t g v Z t e K 2 9 / 1 / 0 2 B s Z w w l " 3 " l c w e w i K j \ W g s y \ q i m f k f l m n E g t n V q i m f c v i Z T A b y B Z m f ë K h ù e Y x A b y n w t Y A l A w a 8 b i i 0 9 / 1 2 / 9 5 B s Z w w l c c A / c c K m c O m m e / ù - 6 6 / 9 4 - 9 5 / 1 6 9 0 m s L K \ s h K w l 2 1 / 1 2 / 9 7 B s Z w w l c c A / w m m e / ù - 4 1 / 9 6 - 9 7 / 2 8 9 3 m c s L K \ s h K w l G e s 1 7 / 9 / 0 1 B s Z w w l c c A / B G m w / w K e c t m / w m m e / ù - 1 9 0 / 9 9 - 2 0 0 0 / 1 4 9 6 m s L K \ c w c i t g v Z v e K m i K u x i t e m K w i x m s v q B g t c Œ d Œ l t _ K m i K v x A _ 8 l P i K i w v e a u b i t q t Q |
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velqt gZgsMj i wî """" KgmPx w k v kj i Y cÖtî i A W Zq msMpx Z G¬mî Y Gi e"envî l i l bweî tbi bxZ gîv cÖtîtî

Ava"vîi 12-12-94 ZwiLt cc A/GgwmGBP-33/94/1459 bs-"""" K evZj ccK eZ @eb gZgsMj l wî """" KgmPx w k v kj i Y cÖtî i A W Zq msMpx Z 46wî l cÖeÖc msMpx Z 6Hmnm tgu 52wî G¬mî Y e"envî l i l bweî tYi Rb"""" tbgæw Z bxZ gîv Rvîx Kivnj|

1] mswkô 1Rjv tguW|Kj A Av mu (W K), tRjv cÖvãq gv l wî Kj `W tKb `P Rb "eîî KZ. G¬mî Y, wî mweK i Y evaK Y/A Aeb mgu s"""" -veZq K vRi ZÉevaeb _K teb|

2] G¬mî Y, wî tKej gu gZgsMj l wî """" Ges cÖeÖc cÖKíbv KgmPx cv mgu s emulate, i Zi A âmî tî Wx cÖwî mgu s uëZ ntej W Kâv K vYÎgu cÖPÝy bu Rb " RÎ"x hšg wZ l Rxeb i l Kûxî l cÖcÖwî mgu s e"envî Kivhâe|}

3] mK úxA _ evew Y Kâv G¬mî Y e"envî Kivhâe bŷ|

4] gZî n evmsu Wg K tî WmA A v s -KvÎ tî WmX A "wî Y ô""""v evmeb Kivhâe bŷ|

5] gv, wî """" l cÖeÖc cÖKíbv tmev MÔY Kívâs W Rxeb i l Kûxî x W KêWÎmî Rb " RÎ"x wî xÇZ G¬mî Y tRjv cÖwî tî MÔY Kívâs W Rxeb i l Kûxî l cÖwî mgu s e"envî Kivhâe|

6] Dc tî 2 Avvô KZ A _ cÖmsorkô tguW|Kj A Av mu (W K) tUrÎv x Pjvî qîi gua "tY 03ø """" l cÖeÖc Kj `WÔLùW cÖWÎxî Kâvi wî x W meavâ 1PvÎ ub msi Y Kîteb|

7] MôxPj K, G¬mî Yî tî `üqî cÖWÎ, P|Kvî, wîq îqîi, l 1qîcî wÎtë cÖÔZ Zú ZÉevaeb i Wôeb Môx A bîb" RvÎ mcî tYÎ tguvÎ guvÎ xì vÎlÎ, Ggweq vÎqî, wîsîÎUkb tgpÎ b cÖÔZ ÔK tî WÔvî mgu s Wx KÎ tî tguWÎ Y Kûv mu (W K) Bmëf_ ÙDÔuii gua "tY MôxPj tKi 1bKU i`i ÚvÎ Kivhâe|

8] MôxPj K cÖwî wÎmK tî Yî cÖÔZ KÎteb Ges MôxPj yKîwî cÖeÖeK, j ÎBU, Uqvîiî Aëîë RjvÎ êcî cÖÔZ cÖÔZ cÖvÎ KÎtebl cÖPj K (GgwmGBP- mWÎm Î) Gîwebv A bÎëWÎ tKvÎ ÙdëvÎ guvÎ xì cÖÔZ ÔSÎ Hšgsk ev A bÎ œqv cÖÔZ Kivhâe bŷl KûY ÙdëvÎ guvÎ xì cÖÔZ ÔSÎ Uqvîi G¬mî Y Gi mëî B tqvA vÔQ|

9] tKvÎ `WÔbÎv NÔuiZ ZviÎb tbr tguW|Kj A Av mu (W K) mswkô Dc-cÖPj yKîwî cÖeÖeK (GgwmGBP- mWÎm Î) tK AêmZ KÎtebl tKvÎ eo aîYî tgiYî Zî cÖdÎ RvÎ bntî tguW|Kj A Av mu (W K), cÇPj K (GgwmGBP- mWÎm Î) Gi A bÎgÎvÎ mvcî sîl mi KûxÎ bxZ gîv xvA bÎvÎqîx tgiYî Zî cÖdÎ RvÎ bqt é"e`V MÔY KÎteb|
G"vµy‡jÝ e"env‡ii ci G"vµy‡jÝ wU M"v‡i R e v XvK v R wMv i wL Z n‡e |
G"vµy‡j‡Ýi Rb¨ wc I Gj I A b¨b¨ e"q t gU‡bwi e i w g sMj I w k i F K g m P x k w k v y x K i Y c Øi , c vie w c w Ki b v A va F i , A wR g c y , XvK v n‡Z t g W‡Kj A wL m i ( wK v K ) G i e i vei tc ÕY K i v n‡e |
gv‡i wgUvi, dz‡qj wgUvi Pvj ~ ti‡L Mv x Pvj v‡Z n‡e | tkvb Kvi‡Y wgUvi bó n‡j m‡½ m‡½ Mv x Pvj K wL q‡U t g W‡Kj A wL m i ( wK v K ) tk R vb‡eb | tg W‡Kj A wL m i ( wK v K ) wgUvi "‡U t g i v Z c e K c y i v qx Mv x Pvj v‡bvi A b¨gª b t ‚‡eb | Pvj ~ wgUvi Qx o v Mv x Pvj v‡b v c w n‡i Ki‡Z n‡e | wgUvi bó n‡j Z v mg g Z A evn Z K i v b v n‡j Mv x Pvj K Gi Rb¨ "‡x n‡e G e s w L q U A evn Z nevi m‡½ m‡½ t g W‡Kj A wL m i ( wK v K ) Mv x Pvj ‚‡i vi ‚‡x c ØvmvbK e¨e "Ý ‚‡eb |

(t g u t w m i wR ji Bmj w)
gv v c w Pvj K
c vie w c w Ki b v A va F i
esij w`' ti mi Kvi x Ges temi Kvi x chêqi mkj `f ´ lc bâK bvi xeÜe Kiv Ges bvi x c Ôek vaKvi
Aeva Kivi j‡¶¨ mi Kvi vb‡æv vbt `Kbcv Òü Kivi Qtv

1) th ³Kvb `f ´ lc bvi `lc Z` bK &v`Zixl vbg v' ci Kibvi mg q`; lc bvi KjÎZ bvi x KjÎZ bvi x KjÎZ KjÎZ bvi x KjÎZ x`i
e`envi Rb` `lc bvi mgav RbK `t bvb chêb msLk` f`k `Kivi Uqtvj U mgav (Avtj `e` e`e` vchêb; nwl qv
Pj wPj chêb; Uqtvj Ui tgitS muiZ muiZ bq I cvb R`g _vK bvi Ges veAv/Av bgv vRi `tvb `e`e` viw`Z
nte;

2) bvi xiwx/ tmev MëîZ u`i K_ w`e`ePbx Ktv Zvi`i Rb` Aby`e`e Uqtvj U mgav Avcj `i `ub, wûKU Ges
Jla MëîYi Rb` `c`K KjÎU`i e`e` viw`Z nte;

3) bvi xiwx`i ciK xKivi `tb e`i MZ `tMuc bgxZvi `i`i c ÔqR bgx e`e` v`v KjÎZ

4) w`i l q w`Ges c ÔyZ I `gi Wl l q w`Z j bggy K tkek xeR &AveR bvb mvq nj e`j Dij y Z l q w`Ki
j vKvb bg` Gbev vte KjÎZ nte thb tmlvb chêb c ÔkîZ Kvi vtj ve`Jv nm c Yl qvhqv Ges c vb
me i wn mn eR `wb` tkbtb mgq `e`e` v`v K;

5) c`y`bv `f ´ lc bvi tj vZ`c ÔqÎR bxms` u Kvi Kvi mgq Dch`y vbt` Kôvije A Mêa Kvi `tvq c Ôc c`y` b
vb`v Z KjÎZ nte;

6) w`v Z/.
(gyt d Rj î l ng`b)
mPe
Mbc Ńş ş gvqej v'k mi Kú
ck će'w c wKí vAwa'bi
A Z'vk Kq tmév c"âK R (c Bb "φ")
3/2 e-G, Aumv' Gw vB D
tg unq Y'c y, X\k v1207

"§i K bs- c cA/BG mw/4048 ZwLt 27.04.03 B|
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<td>A. K. M. Shahajahan</td>
<td>Deputy Director, Family Planning, Moulvibazar</td>
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<td>Abdur Razzaque</td>
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<td>Dr A. I. M. Mozammel Hoq</td>
<td>Deputy Director, Family Planning, Rajshahi</td>
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<td>Dr A.K.M. Mahabubur Rahman</td>
<td>Regional Supervisor FPCST/QAT, Dhaka Region, DFP</td>
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<td>Dr A.K.M. Siddiquur Rahman</td>
<td>Assistant Director, Clinical Contraceptive, Mymensing</td>
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<td>Dr Afroza Begum</td>
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<tr>
<td>Dr Fauzea Begam</td>
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