LECTURE NOTES

Health Science Students

Maternal and Child

Health Care

EPHTI

Ethiopia Public Health  
Training Initiative

Mesfin Addisse, M.D., M.P.H.

University of Gondar

In collaboration with the Ethiopia Public Health Training Initiative, The Carter Center,  
the Ethiopia Ministry of Health, and the Ethiopia Ministry of Education

January 2003

STATESA   
SAGENS   
USAID   
USAID

VTERNTIONAL DEVELO FROM THE AMERICAN PEOPLE

Funded under USAID Cooperative Agreement No. 663-A-00-00-0358-00.

Produced in collaboration with the Ethiopia Public Health Training Initiative, The Carter  
Center, the Ethiopia Ministry of Health, and the Ethiopia Ministry of Education.

Important Guidelines for Printing and Photocopying

Limited permission is granted free of charge to print or photocopy all pages of this  
publication for educational, not-for-profit use by health care workers, students or  
faculty. All copies must retain all author credits and copyright notices included in the  
original document. Under no circumstances is it permissible to sell or distribute on a  
commercial basis, or to claim authorship of, copies of material reproduced from this  
publication.

@2003 by Mesfin Addisse

All rights reserved. Except as expressly provided above, no part of this publication may  
be reproduced or transmitted in any form or by any means, electronic or mechanical,  
including photocopying, recording, or by any information storage and retrieval system,  
without written permission of the author or authors.

This material is intended for educational use only by practicing health care workers or  
students and faculty in a health care field.

i

Preface

I have been teaching Maternal and Child Health course, for Health  
Officer,  
Public Health Nursing, Clinical Nursing, and Midwifery students for the  
last five years. To prepare this lecture note, specially for degree  
students, I have tried to compile and emphasis on issues that the  
students, specially health Officers, recommended as a) very relevant for  
their future practice b) areas which are not given much emphasis in Gyn-  
Obs and paediatric attachments in relation to MCH Care c) to give less  
emphasis on topics focused on diploma programmes d) to give priority  
for selected issues as the time allocated for this course is only 2 credit  
hours and the preparation of the lecture note has to be governed by the  
time allocated.

In preparing this lecture note, I have given serious concern for the time  
allocated. As a result, emphasis is given on selected topics as MMR,  
PNM, abortion, family planning, ANC, anaemia. Due to this reason very  
important topics such as ARI in children, child abuse, sexual violence  
etc. cannot be included in the lecture. But they are supposed to be  
covered by assignments and group discussion.

The contents of the lecture note are gathered and compiled from a  
variety of sources including notes from my student days, books,  
journals. from WHO manuals , bulletins over the years. And I also took  
some issues, which I thought are very descriptive, from my previous  
colleagues in the Department of Community Health In GCMS.

Assignments and topics for group discussions are given after the major  
topics and students have to discuss it in class after submitting their  
assignment paper. Other relevant and important topics will be raised in-  
group discussion. I have initially prepared this lecture note to be use  
mainly by health Office students. But Medical students can  
use it, even though they do not have aseparate MCH class.

ii

If the curriculum improves in terms of credit hour it is possible to improve  
the content of this lecture note by addressing questions like abuse,  
violence, disability etc.

Ethiopia Pu

EPHTI

iii

Acknowledgments

I want to thank the Carter Centre for helping me, through the Ethiopian  
Public Health Imitative, in preparing this lecture note. I want also to thank  
members of the Department of Community Health whom I took parts of  
Maternal and Child health notes such as School health services, which I  
find it to be very important. My thanks again go to members of the  
Department of Community Health, GCMS, for reviewing the note and gave  
me very valuable and constructive comments. I want also to thank Ms.  
Carla Gale , the resident Technical adviser for the Carter Center and Ato

Aklilu Mulugeta for facilitating the helping am

EPHTI

iv

Contents

|  |  |
| --- | --- |
| TOPIC | PAGE |
| Preface | i |
| Acknowledgment | iii |
| Table of Contents | iV |
| Abbreviations | iii |
| CHAPTER ONE INTRODUCTION |  |

1.1. Justifications for the provision of MCH Care 1

1.2. Objectives of the MCH program in Ethiopia 5

1.3. Strategies of MCH programme in Ethiopia a 5

1.4. Learning objectives 6

CHAPTER TWO MATERNAL HEALTH PROBLEMS

2.1 Learning objectives 7

2.2. Maternal mortality 10

2.3. Factors Affecting Health Status of mothers 31

CHAPTER THREE MATERNAL HEALTH SERVICES

3.1. Learning objectives 32

3.3. Family planning services 33

3.4. Antenatal care service 38

3.5. Delivery care service

3.6. Postnatal care service 50

3.7. Summary on major causes of maternal

mortality and services to be delivered 51

v

**CHAPTER FOUR** **CHILDREN'S HEALTH PROBLEMS**

|  |  |  |
| --- | --- | --- |
| 4.1. | Learning objectives | 54 |
| 4.2. | General consideration | 54 |
| 4.3. | Perinatal mortality | 57 |
| 4.4. | Childhood problems (selected) | 60 |

CHAPTER FIVE HEALTH SERVICES FOR CHILD CARE

5.1. Learning objectives 66

5.2. General consideration 66

5.4.

5.5.

Growth monitoring

School health services Ethiopia 72

79

5.3 Screening itomtive 67

5.6.

**CHAPTER SIX BREASTFEEDING AND WEANINING FOOD**

Adolescent health care Publi

**85**

83

**REFERANCE**

EPHTI

vi

Tables and Figures

Table1. Selected measures of maternal, total fertility rate, and life  
time risk of maternal death by region and sub region  
Table 2. MOH recommended immunization schedule  
Figure one: Common causes of maternal mortality

Ethiopia Pu

EPHTI

vii

**Abbrevations**

ANC - Ante Natal Care

APH - Ante Partum Haemorrhage

ARI - Acute respiratory Infection

CBD - Community Based Distribution

CMR - Child Mortality Rate

CPR - Contraceptive Prevalence Rate

EPI - Expanded Programme On Immunisation

FGM

FP mitidfemale Genital Mutilationpi

IMR Infant Mortality Rate

LBW - Low Birth Weight

MCH Maternal and Child Health Care

MMR Maternal Mortality Rate

MOH Ministry Of Health

PHC

PNC   
 E  
 Post Natal Care  
 Primary Health Care  
ORT Oral Rehydration Therapy

PNM Peri Natal Mortality

PPH - Post Partum Haemorrhage

RSS Risk Scoring System

SES - Socio Economic Status

TTBA - Trained Traditional Birth Attendant

VAD - Vitamin A Deficiency

VVF - Vesico Vaginal Fistula

WHO - World Health Organization

Maternal and Child Health Care 1

CHAPTER ONE

Introduction  
Maternal and child health (MCH) care is the health service provided to  
mothers (women in their child bearing age) and children. The targets for  
MCH are all women in their reproductive age groups, i.e., 15 - 49 years of  
age, children, school age population and adolescents.

Throughout the world, especially in the developing countries, there is an  
increasing concern and interest in maternal and child health care. This  
commitment towards MCH care gains further strength after the World  
Summit for Children, 1991, which gave serious consideration and outlined  
major areas to be addressed in the provision of Maternal and Child Health  
Care services.

1.1 Justifications for the provision of MCH Care

Why should the care of mothers and children needs major consideration and  
be part of every programme that is taking care of people's health?

The important considerations and justifications include:  
Mothers and children make up over 2/3 of the whole population.

Women in reproductive age (15 - 49) constitute 21%, pregnant women,  
4.5%, children under1 5, 47%, children under 5, 18%, under 3: 12%  
and infants: 4%.

(This working estimate is very important in developing countries for  
 project planning and implementation)  
. Maternal mortality is an adverse outcome of many pregnancies.

Miscarriage, induced abortion, and other factors, are causes for over  
40 percent of the pregnancies in developing countries to result in  
complications, illnesses, or permanent disability for the mother or  
child. About 80 percent of maternal deaths in are directed obstetric

Maternal and Child Health Care 2

deaths. They result "from obstetric complications of the pregnant state  
(pregnancy, labour, and puerperium), from intervention, omissions,  
incorrect treatment, or from a chain of events resulting from any of the  
above.

•  
 Most pregnant women in the developing world receive insufficient or  
 no prenatal care and deliver without help from appropriately trained  
 health care providers. More than 7 million newborn deaths are  
 believed to result from maternal health problems and their  
 mismanagement.

· Poorly timed unwanted pregnancies carry high risks of morbidity and  
mortality, as well as social and economic costs, particularly to the  
adolescent and many unwanted pregnancies end in unsafe abortion.  
. Poor maternal health hurts women's productivity, their families'  
welfare, and socio-economic development.

•  
Large number of women suffers severe chronic illnesses that can be  
exacerbated by pregnancy and the mother's weakened immune  
system and levels of these illnesses are extremely high.

•  
 Infectious diseases like malaria are more prevalent in pregnant  
 women than in non-pregnant women (most common in the first  
 pregnancy). In addition, an increasing number of pregnant women  
 are testing positive for the human immunodeficiency virus. In Sub-  
 Saharan Africa, 3 million women are estimated to be infected with  
 the AIDS virus and a woman with HIV has a 25 to 40 percent chance  
 of passing the infection on to her fetus in the womb or at birth.  
. Many women suffer pregnancy-related disabilities like uterine  
 prolapse long after delivery due to early marriage and childbearing  
 and high fertility.

· Nutritional problems are severe among pregnant mothers and 60 to  
70 percent of pregnant women in developing countries are estimated  
to be anaemic. Women with poor nutritional status are more likely to  
deliver a low-birth -weight infant.

. Majority of perinatal deaths are associated with maternal

complications, poor management techniques during labour and

Maternal and Child Health Care 3

delivery, and maternal health and nutritional status before and

during pregnancy.

. The large majority of pregnancies that end in a maternal death also  
result in fetal or perinatal death. Among infants who survive the  
death of the mother, fewer than 10 percent live beyond their first  
birthday.

•  
Ante partum haemorrhage, eclampsia, and other complications are  
associated with large number of perinatal deaths each year in  
developing countries plus considerable suffering and poor growth  
and development for those infants who survive.  
· Development impairments among children due to poor management  
during labour and delivery.

· Low birth weight babies. Because many women are fed less, marry  
early, carry a heavy workload, and spend a considerable portion of  
their lifespan in pregnancy and lactation, they are exposed to  
persistent low nutritional status and high-energy expenditure. This  
predisposes mothers to bear low-birth-weight infants.

· Women often lack access to relevant information, trained providers  
and supplies, emergency transport, and other essential services.  
· Cultural attitudes and practices impede women's use of services that  
are available.

•  
 Children whose earliest years are faced by hunger or disease or  
 whose minds are not stimulated by appropriate interaction with  
 adults and their environment will experience grave and negative  
 consequence throughout their lives-and so does society as they  
 would be less contributory member.

Given the magnitude of these problems and the interventions available,  
much has not been done.Most of these problems are silent. They remain,  
to a large extent, uncounted and unreported. Maternal and child health  
programmes should focus on addressing these problems, clarifying policy  
and program alternatives and identifying cost-effective health-related

Maternal and Child Health Care 4

program interventions that are likely to reduce maternal and child

morbidity and mortality.

These outlined issues do not only show the importance of MCH care to the  
health of mothers and children or their immediate problems. Rather, they  
show the role and necessity of MCH care in the welfare of the family, the  
community and the country as a whole. Thus, MCH care an issue that has to

**be addressed in terms of national productivity and futurity of a country.**

The specific objectives of MCH Care focuses on the reduction of maternal,  
perinatal, infant and childhood mortality and morbidity and the promotion of  
reproductive health and the physical and psychosocial development of the  
child and adolescent within the family.

**1.2 Objectives and Targets of WHO**

1. To reduce maternal morbidity and mortality due to pregnancy and child

2. To reduce morbidity and mortality due to unsafe abortionHogyde

birth

3. To reduce perinatal and neonatal morbidity and mortality  
4. To promote reproductive health awareness for young children  
5. To increase knowledge of reproductive biology and promote responsible  
behaviour of adolescents regarding contraception, safe sex and  
prevention of sexually transmitted infections.  
6. To reduce the levels of unwanted pregnancies in all women of

reproductive age.

7. To reduce the incidence and prevalence of sexually transmitted  
infections, in order to reduce the transmission of HIV infection.

8. To reduce the incidence and prevalence of cervical cancer  
9. To reduce female genital mutilation and provide approparaite care for  
females who have already undergone genital mutilation  
10. To reduce domestic and sexual violence and ensure proper  
mananagment of the victims.

Maternal and Child Health Care 5

**1.3 Objectives of the MCH program in Ethiopia**

General Objective: To improve maternal and child health services in

order to decrease maternal and childhood morbidity and mortality

**Specific Objectives**

· To provide primary health care services  
· To extend integrated MCH services into the rural areas.  
· To prevent malnutrition and infection among mothers and children  
through education in health and nutrition  
· To promote the use of safe water, sanitation and immunisation  
· To promote supply and promote effective FP programmes.  
· To provide services at a cost commensurate with the financial, material  
and manpower resources of the country.  
· To initiate, develop and co-ordinate operational and other relevant

1.4Strategies of the MCH Programme

•  
 The health services at all levels, including the CHS shall carry out  
 integrated services. Health education programmes are to be included.

· The health services shall be continually expanded  
. The skills and knowledge of the health personnel shall be constantly  
improved.

a. Adequate emphasis on MCH shall be ensured in the curricula of  
health workers.

b. An adequate number of health workers for the various levels shall  
be trained.

c. Textbooks, manuals and other reference materials will be  
distributed to all health institutions.

d. Knowledge shall be continuously upheld through appropriate  
training and supervisory activities.

Maternal and Child Health Care 6

· Revision and improvement of the referral system  
. Co-ordinate with other organisations and institutions involved in  
activities related to MCH.

•  
To engage the participation of the agricultural extension workers and  
the Ethiopian Nutrition Institute in the promotion of the production and  
utilisation of supplementary feeding mixes.  
· Promote community participation and involvement as an essential  
component of the MCH Programme.

•  
Seek resources for the expansion of services from the government and  
Non-Governmental Organisations.

•  
Manpower training and research should be carried out whenever  
necessary and feasible. Regions should develop their respective in  
service training capability and implement a training programme to  
develop and upgrade the skill and knowledge of the health workers.

1.5 Learning Objectives

· Understand the importance and role of MCH care

**· Outline the objectives of the MCH programs**

· Describe major health problems of mothers and children  
. Identify the factors that affect the health of mothers and children  
· Major causes of maternal mortality and prevention

· Recognize the available maternal and child heath services  
. Describe the role of these services in preventing maternal and child  
morbidity and mortality  
· To be able to participate, organize, and manage MCH activities

Maternal and Child Health Care 7

CHAPTER TWO

**Maternal Health Problems**  
**2.1 Learning Objectives**

· Understand the magnitude of maternal health problems  
. Describe the factors that affect the health of mothers  
· Describe maternal mortality  
· Outline the major causes of maternal mortality  
. Understand effects of maternal health on children, family and

2.2 General Consideration Public

community

More than 150 million women become pregnant in developing countries  
each year and an estimated 500,000 of them die from pregnancy-related  
causes. Maternal health problems are also the causes for more than

seven million pregnancies to result in stillbirths or infant deaths within the  
first week of life. Maternal death, of a woman in reproductive age, has a  
further impact by causing grave economic and social hardship for her  
family and community. Other than their health problems most women in  
the developing countries lack access to modern health care services and  
increases the magnitude of death from preventable problems.

**2.3** **Factors Affecting Health Status of Mothers**

The major determinants of maternal morbidity and mortality include  
pregnancy, the development of pregnancy-related complications,  
including complications from abortion and, the management of  
pregnancy, delivery, and the postpartum period. However, a lot of factors  
contribute to the low health status of women in the developing countries  
including Ethiopia. These factors include:

Maternal and Child Health Care 8

· Socio economic development of the country has serious Impact on  
morbidity and mortality.

· Poor agricultural development results in inadequate household food  
and has direct influence on nutritional status of mothers.

Maternal death often has a number of interlined causes, which may start  
as early as birth or in early childhood. For example, a girl who is not fed  
properly during her early years will be stunted and therefore more likely  
to have obstructed labour. Also, a woman's risk of dying from infection  
and haemorrhage is increased considerably when being malnourished.

**· Poor sanitary environment, poor housing, unsafe and inadequate**  
**water, adverse social and physical environment.**

**· Access to health services.**

Lack of access to modern health care services has great impact on  
increasing maternal death. Most pregnant women do not receive  
antenatal care; deliver without the assistance of trained health  
workers etc. Less than 10% of women in Ethiopia and many  
countries of Africa & Asia get Family planning services.

**•** **Access to education**

In many countries women have poor education and 2/3 of illiterate  
adults are women. Poor education of women has to be given serious  
consideration. Because denial of education indicates that women are  
denied the role they can play in decision-making and decreases the  
extent of contribution to their lives, family and community. Education  
is proved to have significant effect on women's health and  
reproductive behaviour through its influence on age at marriage,  
contraception and health care use, and awareness of risks and  
danger signs.

•**Women's reproductive and health behaviour.**

Maternal and Child Health Care 9

Reproductive and health behaviour involves, for example, the age at  
which a woman becomes pregnant, whether the pregnancy is  
wanted, and what kind of health care the woman seeks.

•**Access to and control of income and resources**

Women's income, access to household resources, and power to  
make decisions influence their ability to seek and utilize health  
services.

• **Political commitment**

Political commitment is crucial to allocate the available resources  
and to provide services which are accessible to those most in need.

• **Low social status of women**

The health and well being of women is related and highly influenced

**with their social status.**

"Poor, Powerless, Pregnant" This is the status of women as labelled  
by a global survey in 1988.

Large number of women (about 50%) and girls in the world live  
under conditions that threaten their health, deny them a choice  
about child bearing, limit their educational attainment, restrict their  
economic participation and fail to guarantee them equal rights as  
compared to men.

Low social status leads to sever burden & over work (Conjugal,  
maternal, domestic, and professional) exposing to physically  
demanding activities.

Although all factors in the framework are likely to influence maternal  
morbidity and mortality as well as the health all women (and  
newborns), some have greater impact in the short term, particularly  
on the incidence of maternal death.

It is always important to address the above-mentioned factors, as  
women need to be physically, mentally & socially healthy to fulfil

Maternal and Child Health Care 10

their reproductive duty safely and efficiently and to be a contributing  
member of their community.

**Some indicators of health status of women in Ethiopia**

•  
 Maternal mortality rate: 500 - 700 per 100,000  
· Malnutrition among women in reproductive age group: 17%

· Total fertility rate: 6.2

· Teen-age pregnancy: 20%  
· Low birth weight deliveries: 17%· Weight gains during pregnancy: 5-6 KGsEthio

**2.2**

2.2.1

Maternal mortality is defined as the death of a woman while pregnant or

General Consideration

**Maternal Mortality** Public Health

· Ante natal care utilization: 20%

· Deliveries assisted by trained health worker: 14%

• Family planning coverage less than 10%

within 42 days of termination of pregnancy irrespective of the site and  
duration of pregnancy from any acutely related to or aggravated by the  
pregnancy or its management but not from accidental or incidental

causes.

Maternal mortality is the leading cause of death among women of  
reproductive age in most of the developing world. Globally, an estimated  
500,000 women die as a result of pregnancy each year. It is the statistical  
indicator, which shows the greatest disparity between developed, and  
developing countries.

Maternal mortality in developing countries is given least attention, despite  
the, fact that almost all of the suffering and death is preventable with  
proper management.

Maternal and Child Health Care 11

Maternal mortality constitutes a small part of the larger maternal  
morbidity and suffering, because for every maternal death there are a lot  
of women suffering from acute and chronic illnesses during pregnancy,  
delivery and 6 weeks after.

Most of the deaths, 99%, are in developing countries the magnitude of  
maternal death is very high in Sub-Saharan Africa and South Asia, where  
material mortality ratios (material deaths per 100,000 live births) may be

**as much as 200 times higher than those in industrial countries. This is**

widest disparity in human development indicators yet reported.

This difference is further expressed when comparing lifetime risk of  
women: one in every 21 women in Africa dies of complications of  
pregnancy, delivery, or abortion, while with only one in every 10,000 in  
Northern Europe. The maternal mortality rate in Western Europe, a  
century ago, was less than most developing countries including Ethiopia.

Poverty, though not a disease in biological sense, it affects maternal  
health adversely and is reflected by maternal death. The difference in  
maternal mortality between developed and developing countries

**strengthen the above fact.**

The risk of maternal mortality is also related to the mother's previous  
health and nutritional status, issues of gender discrimination, and access  
to health services. Adolescent pregnancy carries a higher risk due to the  
danger of incomplete development of the pelvis, and there is a higher  
prevalence of hypertensive disorders among young mothers. Frequent  
pregnancies also carry a higher risk of maternal and infant death.  
Concern for maternal mortality is not only for the mother's life. It is related  
to:  
. The health and deaths of the seven million newborns who die  
annually as a result of material health problems and  
The health and socio-economic impact on children, families, and  
communities.

Maternal and Child Health Care 12

Table1 Selected Measures of Material mortality, Total fertility rate and life time

**risk of maternal death by Region and Subregion**

|  |  |  |  |
| --- | --- | --- | --- |
| Region/ subregion | Maternal Mortality ratio, (per100,000 live births) | Total  fertility rate, 1991 | Lifetime risk of  maternal  death |
| World | 370 | 3.4 | 1 in 67 |
| Industrial countries | tive26 ELLIO | 1.9 | 1 in 1,687 |
| Developing countries | 420 | 3.9 | 1 in 51 |
| Africa | 630 | 6.1 | 1 in 22 |
| North | 360 | 5.0 | 1 in 47 |
| East | 680 | 6.8 | 1 in 18 |
| Middle | 710 | 6.0 | 1 in 20 |
| West | 760 | 6.4 | 1 in 18 |
| South |  | 4.6 | 1 in 68 |
| Asia |  | 3.9 | 1 in 57 |
| East |  | 2.2 | 1 in 316 |
| Southeast | 340 | 3.4 | 1 in 72 |
| South | 570 | 4.4 | 1 in 34 |
| West | 280 | 4.9 | 1 in 61 |
| South America | 220 | 3.3 | 1 in 115 |
| North America | 12 |  | 1 in 2671 |
| Europe | 23 | 1.7 | 1 in 2,132 |
| Oceania | 600 | 2.6 | 1 in 54 |
| Commonwealth of Independent States | 45 | 2.3 | 1 in 805 |

**2.2.2 Major Causes of Maternal Mortality**

There are five major causes of maternal mortality, especially in the  
developing countries. These are

· Haemorrhage

Maternal and Child Health Care 13

· Infection

· Hypertensive disorders of pregnancy

· Obstructed labour

• Abortion

**Hemorrhage (25%)**

**Sepsis**

(19%)  
 nia Publi  
Indirect

causes

**Unsafe**

abortion 13%

**Other**

(8%)  
 Obstructed **Hypertensive**

labor (8%) **disorders (12%)**

**2.2.2.1** **Haemorrhage**

It can occur during pregnancy, delivery and post partum period.

**During pregnancy it can occur at the**  
**· 1st trimester due to abortion**

· 2nd trimester due to placental location and pre term labour  
· 3rd trimester due to abnormal placental location, premature  
separation of placenta, and premature labour

**During delivery due to**

· Uterine or placental bleeding  
· Traumatic damage to Vagina or cervix

**During post partum period due to**

Maternal and Child Health Care 14

•  
 Non-involution of the uterus  
Haemorrhage is more common among multiparous women, following

· Unsafe abortion

· In cases of antepartum haemorrhage

· Prolonged labour

· Retained placenta and it is also common among women with a  
history of problems in delivering the placenta.

**As stated before largely most problems are preventable. This point**  
**is very Convincing when one sees the major predisposing factors**  
**for both ante partum and post partum haemorrhage**

**Predisposing cause for Ante partum haemorrhage**

· Placenta praevia  
· Common in multiparity  
· Increases with age

Predisposing cause for abruptio placenta  
•  
 Multiple pregnancy  
EPHTI  
· Scarred uterus

· Common in patients with hypertension

· Trauma  
· Injuries to abdomen  
· Excessively hard work  
· Emotional trauma

**Predisposing cause for Post partum haemorrhage**

· Atonic uterus

. History of post prtum haemorrhage, increased chance for recurrence

· High parity  
· Multiple pregnancy

· Anaemia - causing poor contraction

· Prolonged labour

. Trauma - this can show quality of care

Maternal and Child Health Care 15

Most primary postpartum haemorrhage results either from failure of the  
uterus to contract and remain contracted or from retained placenta  
(partial or complete). WHO has recommended that midwives be trained  
to perform manual removal of the placenta, because the results in terms  
of blood loss, infection and mortality are best when this is done within an  
hour of delivery.

**As the predisposing cause show virtually all are preventable with**  
**proper and regular antenatal care followed by proper management**

**2.2.2.2Infection** ia Pub

**during delivery and soon after.**

Infection is prevalent among the disadvantaged and risk increases by  
factors like anaemia, malaria, goitre, and malnutrition. Maternal infection  
is a serious problem as a result of the vicious cycle caused by low caloric  
intake, heavy workload and infection.  
It is also compounded by pregnancies at young age and too many  
pregnancies too close together.

Poverty also perpetuates the problem through illiteracy, poor sanitation,  
inadequate housing (crowding), and Inadequate and unsafe water.

**a. Puerperal Sepsis**

Puerperal sepsis occurs following long and complicated deliveries and it  
is rare in uncomplicated spontaneous delivery. Sepsis is also very  
common after unsafe abortion. Usually sepsis is fatal when the mother's  
condition is compromised due to difficult labour and severe bleeding.

Important factors that are related with and increase the risk are:

**· Majority deliver at home and expose to poor sterile procedure**

· Assistance by Untrained person during delivery  
· Vaginal examination with unclean hands during delivery and  
number of vaginal examination

Maternal and Child Health Care 16

· Prolonged labour (the larger it lasts the greater the risk)  
. Duration of ruptured membrane before delivery (increase chance of  
 the liquor to become infected)  
· Use of Instruments to assist delivery  
· Trauma  
· Caesarean section specially in ruptured uterus  
· Pre-existing genital and reproductive tract infections  
. Those who survive infection face increased risk of  
· Pelvic inflammatory disease· Infertility, and Ethiop

**Effective strategies to prevent sepsis include:**

· Improvement in standards of hygiene in routine care.. Keeping interventions and vaginal examinations to a minimumPublic H

· Ectopic pregnancy

· Provision of "clean delivery" for all women. Basic aseptic technique is  
simple in facilities with adequate supplies of water, soap and  
disinfectant.

One of the primary aims of trained birth attendant training programs  
throughout the developing world is to promote clean delivery in the home  
through deduction and provision of basic supplies such as:  
sterile razor blades and washable plastic sheets.  
It is, however, difficult to ensure cleanliness in all deliveries, particularly  
where access to clean water is limited.  
· Referring women with pre-term prolonged rupture of membranes  
(longer than 12 hours) to a referral-level facility for assessment.  
· Use of prophylactic antibiotics following pre-labour rupture of  
membranes (longer than 12 hours).

· Transferring women with prolonged labour (longer than 12 hours) to  
a referral- level facility.

· Evacuating retained placental fragments promptly.

Maternal and Child Health Care 17

· Early detection and timely use of antibiotics for postpartum sepsis  
reduces the risk of mortality or long-term sequelae.

Therefore, educating trained birth attendants, women, their families, and  
community health workers to recognize the early signs of sepsis and  
seek medical care may be lifesaving. Scheduling timely postpartum  
visits may also be useful. Postpartum care to detect infection is as  
important for those who deliver in institutions as it for those who deliver  
at home. Women in hospitals are often discharged within less than two  
days, so that the first signs of infection may only appear after they have

**b. Malaria**

Malaria is cause of severe under weight during birth and 3 million infantsa Publi

left.

are affected in Africa. It is common at first pregnancy.  
During pregnancy the risk of getting malaria increases two times and the  
risk for cerebral malaria is high. During pregnancy malaria is also thecause of galhun

• Severe anaemia

· Spontaneous abortion  
· Pre mature labour  
· Still birth, and  
· Low birth weight

Wherever malaria is common pregnant women should take anti malarial  
tablets throughout pregnancy.

**Anaemic women due to malaria face**

· Risk during child bearing

· Less tolerance to blood loss (bleeding)  
· Risk for anaesthesia and operative delivery  
· Poor pregnancy outcome  
· Bleeding, illness, and death during delivery

Maternal and Child Health Care 18

• Still birth

· Poor foetal growth  
· Pre term labour

· Low birth weight (serious effect on infancy)

When anaemia is severe pregnant mothers face (directly) congestive  
heart failure and haemorrhage (indirectly). This can happen in 3-9% of  
pregnant mothers. In moderate cases of anaemia there will be poor  
ability to recover form haemorrhage and infection

**c. Hepatitis** miopia

Hepatitis A is related with socio economic status and usually women of  
low socio economic status (SES) are susceptible as a result of poor  
hygienic conditions. Faecal contamination of food & water are

responsible as the mode of transmission.  
Incidence during pregnancy increases two times and pregnant are more  
seriously ill and likely to die than non-pregnant women. In Ethiopia it is  
reported as one of the major causes of maternal death due to infectious  
diseases. Premature labour, liver failure, and sever haemorrhage are  
common complications of severe hepatitis.

**d. Sexually Transsimited Diseases and Pelvic Infections**

Sexually transsimited diseases and pelvic infections have grave  
consequence on mother and child. They can result from

· Sexual activity

· Poor obstetric and gynaecological practices specially associated  
with Induced abortion, spontaneous abortion and childbirth

Fatality depends on the type of organism and the organs affected.  
Its effects and complications include:  
· Tubal scarring leading to infertility

· Ectopic pregnancy

Maternal and Child Health Care 19

· Spontaneous abortion

· Pre mature rupture of membrane  
· Congenital anomalies such as blindness, and mental retardation

etc.

**e. Acquired Immuno Deficiency Syndrome (AIDS)**

The spread of AIDS is increasing and rapid specially in sub-Saharan  
Africa and other developing countries putting stress on the already

Magnitude Ethiopia

strained health care system.

According to the WHO estimate16,000 people are infected every day and  
there are 3 million infected women and it is becoming a serious threat  
and alarmingly increasing in pregnancy. In countries like Rwanda  
18.30% of women who came for Ante Natal Care were found to be HIV  
positive in a routine screening. This condition is further aggravated as a  
woman with AIDS has a 25-40% chance of passing on HIV in the womb  
or at birth (the number of children born with HIV is reported to be 3.8  
million).

The Ministry of Health reported that chance, of transmitting in the uterus,  
for an Ethiopian woman is 35%.

With the current state of spread and infection rate, in few years time,  
AIDS is expected to be the major cause of maternal mortality.

**Poverty is also related with AIDS and as a cause of death. Some of the**

**reasons are:**

. Poor health care

· Poor availability of drugs for protection of immunity and increasing  
survival Immunity  
· Crowding (increases transmission)  
· Malnutrition further lowers immunity for common diseases like water  
borne infections etc.

Maternal and Child Health Care 20

The following statement clearly reflects the current state of poverty in the

**developing countries and their inability to combat AIDS.**

**If the cure for AIDS were a single glass of clean water most of the**  
**HIV positive people in Africa would still be dead.**

Prevention

· There is an urgent need for increased understanding of magnitude  
of the epidemic and its local and global dimension.  
· Promotion of action & sound policy at a national level is mandatory  
to prevent transmission and to focus on children, family, and

· Intervention must give emphasis on Health Education importance is well proved in countries like Thailand and Uganda Purelic

community

· Health education at all levels and due attention to address specific  
problems such as religious and cultural issues (e.g. where people  
can't speak of condom, and sexuality).  
· Promote abstinence before marriage or faithfulness to one partner

• Screen blood

• Reduce mother to child transmission

**2.2.2.3** **Obstructed Labour**

**1. General Consideration**

Obstructed labour occurs when there is no advance of the presenting  
part despite good uterine contraction. Teenage pregnancy is a serious  
risk factor and mostly occurs in first delivery. Thus it is mainly the  
problem of early adolescent pregnancy.  
Between 1 and 13 percent of pregnant women suffer prolonged or  
obstructed labour, though the level of obstructed labour varies by

country. Obstructed labour can result not only in maternal death, but

also in fetal death due to infection, birth injury, or asphyxia.

Maternal and Child Health Care 21

Operative delivery to relieve obstructed labour is one of the recognized  
essential obstetric functions, which should be available at the first-  
referral level hospital to which women are referred in emergencies. Lack  
of access to timely operative delivery for women in developing countries,  
most of who deliver in homes, which may be far from any health facility,  
leads to any preventable deaths.

Strategies to overcome these problems include:

· Prenatal risk screening and Ethin

. Early detection and referral of women for whom labour is not

Prevention of obstructed labour due to abnormal lie might be possible progressing at a normal rate. a Pu

through detection of transverse or oblique lie and external cephalic  
version at term.

Prolonged labour is not always due to cephalo-pelvic disproportion and  
does not inevitably end in obstructed labour. However, whatever its

cause, prolonged labour is also associated with increased risk of

postpartum haemorrhage and infection and long-term sequelae such as  
vesico-vaginal fistula, indicating a need for referral for higher-level care.

Use of the partograph to monitor the progress of labour has been shown  
to be effective in detecting prolonged labour and improving decision-  
making. The partograph enables health staff to assess the progress of  
labour by tracking cervical dilation against the passage of time. Cervical  
assessment is recommended on a four hourly basis. Use of the  
partograph by midwives in peripheral unit's facilities early transfer. In  
referral hospitals, it assists decision making for operative delivery or  
other interventions, and improves communication.  
The causes can be related to problems due to the mother (such as  
malnourished girls who grew up stunted may have small pelvis), the  
presentating part or the foetus. Health workers in Antenal clinics has to

Maternal and Child Health Care 22

be alert as most of the patients are very young, short-statured. primipara  
coming from rural areas where health services are scarce.

**2. Problems of Fistula**

One of the worst consequences of childbirth vesico-vaginal fistula (VVF)  
or holes that develop between the vagina and urinary tract and/or  
rectum. VVF is commonly due to obstructed labour, which is most  
common among women

. Who are stunted due to chronic malnutrition or untreated infections

in childhood and adolescence, or  
· Among women experiencing their first pregnancy at a young age,  
prior to complete pelvic growth.

Women who suffer VVF continuously leak urine, and sometimes  
feces. They typically become social outcasts; divorced and rejected,

they often travel long distances in search of treatment. The

prevalence is particularly high in sub-Saharan Africa.

In Ethiopia, the Fistula hospital has done 15,000 repairs in about 25

years.

In India, the numbers are decreasing with the development of peripheral

maternity  
 services and improved communications.  
 Community  
awareness and support for transfer of women in prolonged labour is  
crucial in decreasing the prevalence of obstructed labour.

Serious problems are encountered by most women after developing  
fistula. The problems range from rejection by husbands, and ostracised

by their community for life if untreated to self-loathing

**2.2.2.4. Hypertensive Disorders of Pregnancy (Toxaemia of**  
**Pregnancy)**

These include eclampsia and pre-eclampsia, which are occurring only  
during pregnancy (after 20 weeks gestation) as a result of pregnancy-

Maternal and Child Health Care 23

induced hypertension.

Early stage pre-eclampsia, characterized by high blood pressure,  
generalized edema (swelling), and excess protein in the urine, may arise  
in the second or third trimester and is most common among primiparas.  
Eclampsia is characterized by very high blood pressure, convulsions,  
and possible cerebral haemorrhage. Untreated pre-eclampsia leads to  
eclampsia in less than 1 percent of pregnant women, but the condition is  
serious and the outcome poor. Immediate transfer and treatment,  
including expedited delivery, are required.opia

Between 5 and 17 percent of eclampsia victims die, and those who

kidney damage. Derelic

survive may suffer paralysis, blindness, or chronic hypertension and

Eclampsia can happen at any time during the latter part of pregnancy, it  
can and often does result in fetal death or the birth of a premature infant  
at high risk of death. Hypertension and pre-eclampsia can also result in  
low-birth-weight infants or fetal death.

The detection and management of hypertensive disorders of pregnancy  
depend on a continuum of services from prenatal care through routine  
and emergency care around the time delivery.  
Much of the reduction in fatalities in industrialized countries may be  
attributed to improved medical support for the critically ill patient and the  
increased use, effectiveness and safety of methods of expediting  
delivery, including induction of labour and operative delivery.

The most basic requirement for adequate attention to hypertension in  
pregnancy is blood pressure monitoring by trained personnel during  
prenatal care. The serial measurement of blood pressure is not always  
simple, but it is an important measurement. Training of health care  
providers to take blood pressure measurements in a reliable, unbiased  
fashion can be difficult. In-service training to maintain accuracy in

Maternal and Child Health Care 24

recording measurements and intelligent interpretation of results and  
subsequent diagnosis are important factors in the prevention of  
eclampsia.

In addition, community education should be conducted to improve  
knowledge of the danger signs of severe pre-eclampsia and the  
importance of seeking care immediately in the case of convulsions.  
Where blood pressure screening is not possible, use of other indicators  
for referral should be explored. For example, urine dipsticks can be used  
to screen for protein urea, and indicator of pre-eclampsia. Pre-  
eclampsia, if it is not treated and recognised early it can prognoses to  
eclampsia, the severe form.

Hypertensive disorders of pregnancy can be superimposed on essential  
hypertension and are common  
· In primigravida - specially teenage mothers and in women over 35

years

•

· When there is a new partner

Conditions that increases the rate of maternal death due to unrecognised  
toxaemia include:  
· Low socio economic status

· Lack of public health care  
· Lack of prenatal care etc.

2.2.2.5.Abortion

**A. General Consederation**

Abortion Is termination of pregnancy before the foetus is capable of extra  
uterine life.

Depending on the cause abortion is classified

1. Spontaneous abortion (commonly known as miscarriage) which is  
unprovoked termination of pregnancy

Maternal and Child Health Care 25

2. Induced abortion due to deliberate interference. It can be performed  
either  
a) In accordance with legal sanctions  
b) Out side of the law  
3. Therapeutic abortion, which is performed exclusively for medical  
reasons specially when  
a) Danger to mother's health is high if pregnancy continues  
b) If foetus is threatened with congenital and genetic abnormalities  
Induced abortion is one of the leading public health problems in all  
regions. It has adverse clinical, economical, and psychosocial effects  
profoundly in developing countries. It is also the leading cause of  
maternal mortality ranging from 15-50% in different countries

Like all health cares, abortion care is subject to regulations in the health  
code of any country.

a) Emergency abortion care HTI

**B. Categories of abortion care**

**b) Elective abortion care**

**Elective Abortion Care**

The circumstances of performing elective abortion care have significant  
differences among countries.

•  
 40% 0f the world population live in countries ware induced abortion  
 is permitted on request of the woman. Many countries have  
 gestational age limits.

· 23% of the world population live in countries where socio- medical  
factors may be considered as indicators for induced abortion or  
where adverse social conditions alone can justify termination of  
pregnancy

Maternal and Child Health Care 26

•  
 12% of the world population live in countries where broad medical  
 conditions such as a threat to the woman's health or foetal  
 conditions justify termination of Pregnancy.

•  
 25% population live in countries where induced abortion is  
 prohibited except to save the life of the pregnant woman or without  
 explicit exception.

**C. Unsafe Abortion**

A pregnancy terminated by untrained and un skilled persons. It increases  
risk of death 250 times and its complication is a major direct cause of  
death among women in reproductive age group. Whatever the type of  
abortion (spontaneous or induced abortion) the events and the care  
received determine whether the abortion is safe or unsafe.

Even though spontaneous abortion can occur in 10-15% of known or  
suspected pregnancies, it is less fatal than unsafely induced abortion.

**Why?**

Because usually mothers tend to go to a health institution for

**spontaneous abortion.**

**D. Factors Leading to Unsafe Abortion**

**Demographic risk factors**

· Age is an important determinant whether a pregnancy be unwanted  
& therefore aborted, for choice of abortion and extent of the  
resulting clinical manifestations  
In Africa complications are seen among young, unmarried girls, students,  
and dropouts usually as a result of Ignorance, fear, that lead to denying  
pregenancy symptoms until they become unmistakable. As a result  
pregnancy advances and leads to complicated abortion

Maternal and Child Health Care 27

In many developing countries, for young boys and girls there is less  
access to relevant information about reproductive health and less or no  
access to contraception

•High Parity. This can be related to economic problems.

But high parity women have better clinical outcomes Why?  
Because they seek appropriate outlet and go at early gestational age in  
contrast to low parity mothers

**Contraceptive failure / access to FP** thio

Socio-economic & cultural risk factors pia P

Women seek abortion when pregnancy occurs in circumstance such as  
severe hardship, insufficient income or intense socio economic  
deprivation.

**Culture and Religion**

Myths & taboos prevent using contraception or value fertility. Many  
cultures in Africa disapprove contraception for single & unmarred

women.

Lonely women such as widows, separated are expected to remain  
celibate, and pregnancy is regarded as a major violation of traditional

**norms.**

**(But no effective cultural mechanism to disengage from indulging in**  
**pre marital sex)**

**High-risk groups for complicated abortion commonly are adolescents.**  
**This is supported by many studies in different countries. In Kenya 79%**

unmarried women in one study had history of complicated abortion and  
among these 60% were schoolgirls or unemployed and 43% were found  
to be adolescents. Similarly in Nigeria among the 60% single women  
who had history of complicated abortion 50% of them were students.

Maternal and Child Health Care 28

However, many studies also showed women of all ages and walks of life  
use induced abortion.

**F. Strategies to Combat Abortion Related Morbidity & Mortality**

· Improving family planning services bring dramatic change  
By increasing CPR Chile and Mexico decreased abortion related  
mortality to 42 from 118/100,000 and by 50% respectively.  
· Education and counselling helps to decrease unwanted children.

Unwanted pregnancy - causes psychosocial problems even when  
pregnancy is terminated. It can cause rejection of Infant, baby battering,

· Family life Education (even during abortion procedure)a) AdolescentAccess to information is very minimal for adolescents due toPublic Head

baby dumping & infanticide.

**(Un wanted pregnancy could be caused due to failed contraceptive)**

illiteracy and taboos which make it difficult to talk about sex with  
parents (even parents are the least informed in many  
circumstances). Sex education in the carricula and such an  
intervention needs the co-operation of all concerned

b)  
Married women: - to increase control on their reproductive role.  
c) Single mothers :- as this group faces the worst consequence of  
law status of women in addition to having children with no job or  
support

•  
 Counselling regarding termination of pregnancy  
a) With married women about gestational age and  
b) In the case of adolescent pregnancy with parents or relatives  
 · Contraception and follow up after abortion both for induced  
 & spontaneous.

Maternal and Child Health Care 29

•  
 Changes in abortion laws. Developing countries with the  
 exception of China, Cuba, Vietnam, India and Singapore  
 has restrictive laws  
 In Africa 7 countries permit for reasons other than danger to a  
 mother's life.

Zambia, Tunisia, Mozambique permit on socio-economic  
grounds.

**2.2.2.6. Female Genital Mutilation**

**A. General Consideration** Ethiopia Pu

**(Female Circumcision)**

Female circumcision or female genital mutilation (high acceptance for  
this name) is one of the serious causes of maternal morbidity and  
mortality.

Female genital mutilation (FGM) is carried out as cultural and religions  
requirement to ensure chastity until marriage or to initiate a girl in to a  
women's life.

FGM is practiced in 27 countries in Africa .WHO estimated that,  
approximately 85 - 114 million women and girls have been subjected to  
FGM and in Africa alone in the 1990's FGM was conducted on 100  
million women. Reports in the late 90's also showed the number of  
women subjected to FGM is very high. The prevalence varies for  
different countries, such as

· In Somalia 100%,

· In Egypt 94%( reported in 1998)

· In Sudan 80%.

· In Uganda and Congo 5- 10%  
. In Ethiopia - Among both Christians and Moslems and no region is  
spared.

Estimated figure is 80-90%

Maternal and Child Health Care 30

**B. Types of FGM**

1. Sunna is the mildest form of FGM  
Removal of the hood or the fold of the skin over the clitoris or the  
excision of the clitoral prepuce only.

2. Excision (modified circumcision)  
Removing the entire clitoris part of or inner labia minora  
· Scarring breaks during delivery and haemorrhage is severe. It  
is practised in the Christian highlands  
liopi:3. Radical circumcision or Infibulation

Removal of clitoris, labia minora and part of L. Majora.  
Raw sides of the vulva are either stitched or pinned together and the  
thigh and legs are tied together to seal the organ. Only a pea sized hole  
is left for urination and menstrual flow.  
I.e. Closing Labia and result in blocking the birth canal, which causes  
obstructed labour  
It is practised all along the Red sea coast Afar, Somali and, Djibouti

**Reduction of FGM is a top priority of the policy. Because practising**  
**FGM is a gross violation of human rights!**

**C. problems associated with fgm**

**· Pain - during FGM and marriage**

· Emotional scar on her sexuality

· Rejection for marriage

· Infection (Tetanus, HIV/AIDS etc)  
· Haemorrhage, acute anaemia

· Retention of urine

· Injury to urethra, anus, rectum and vaginal wall  
· Chronic pelvic sepsis leading to infertility  
· Mutilation during marriage when failed to penetrate the choice is to  
mutilate to gain access.

Maternal and Child Health Care 31

· During delivery upward episiotomy to divide the labia.  
· Morbidity days of hospitalisation are very high

**2.3 Assaingment and Group Discussion**

1. Past nutritional deficiency is an important factor for obstructed

**labour? Why?**

2. Maternal mortality shows greater disparity between developed and  
 non-developed countries than most other health indicators. What do  
 you think is the cause of such a disparity? Opi

3. Maternal mortality in developing countries shows the extent of equity  
and social justice. It also reflects the ecology of poverty. What does  
these concepts reflect.

4. AIDS affects both rich and poor. But the deprived poor woman has  
less ability to protect herself against HIV Infection. What does this  
mean?

5. In developed countries the rate of trans placental transmission is  
very low and fast decreasing. Why?

6. AIDS also may lead to doubling of maternal mortality. Explain this  
sugesstion.

7. Women are at a disadvantage in situations from childhood through  
adult life and many of which have direct health implications. Why?

Maternal and Child Health Care 32

CHAPTER THREE

**Maternal Health Services**

3.1. Learninning Objectives

. Identify the health services available for mothers  
. Describe the objectives of FP, ANC, Delivery, PNC  
· Understand the role of FP, ANC, Delivery, PNC in preventing MMR,  
IMR, and CMRia

. Understand the role of FP, ANC, Delivery, PNC, on the health of

mothers and children

. Explain the effective methods of delivering maternal health services  
· Identify the problems related to delivery of maternal health service

delivery  
. Identify the problems related to utilization of maternal health service  
delivery  
. Identify the role of TTBA and CHWs in the delivery of maternal  
health services

**3.2** **General Consideration**

For most women in the developing world the luck of regular access to  
modern health services greatly contributes to the increased morbidity  
and mortality. Most mothers receive insufficient family planning advice  
and ante natal care or none at all and deliver without access to skilled  
obstetrical care when complications develop. Even in countries with  
relatively well-developed health systems, preventable maternal illness  
and death persist because of inadequate management of the  
complications of pregnancy.

Based on the above issues the important and major purposes of  
provision of Maternal Health Services are:

Maternal and Child Health Care 33

· Prevention of maternal morbidity and mortality  
· Recognition and treatment of complications as they arise, and  
. The promotion of the health of the mother and the newborn.

3.3. Family Planning Services

**3.3.1. General Consideration**

Family Planning is a means of:

. Promoting the health of women and families and part of a strategy to  
 reduce the high MMR, IMR, and CMR. la

· Preventing maternal mortality by reducing exposure to pregnancy  
and therefore to risks associated with pregnancy and childbirth in  
the event of wanted births  
· Preventing pregnancy and abortion when pregnancy is unwanted.  
Based on the above factors family planning programmes can be  
taken as the means to offer the service, to all who desire it, the

opportunity to determine when to have children, the number of their  
children and spacing of births.

Accordingly Information about FP should be made available in order to  
promote access to FP services to all individuals desiring them. Many  
reports indicate that contraceptive prevalence often rises among older,  
higher parity women, or those at greatest risk of abortion. There is also a  
high prevalence in contraceptive use among more educated, urban  
women with better access to services.

Even though family planning programs have raised awareness and  
contraceptive use throughout the developing world, there is considerable  
unmet need for contraception. In many of developing countries it was  
found that between 10 - 40 percent of married women of reproductive  
age want to avoid a birth but are not using any type of contraceptive  
methods.

Maternal and Child Health Care 34

**3.3.2. Objectives, Strategies and Service Modalities of FP**

**(Ethiopia)**

The objectives are to

· Limit the size of a family  
· Adequately space children

· Decrease maternal and child morbidity and mortality due to  
unwanted pregnancies  
· Help infertile couples to have children  
In Ethiopia, as part of family planning service strategies, all health  
institutions (rural, urban, government and, private) are expected to  
provide family planning services.

The delivery modalities which the Minstry of Health is using are:  
· Community Based Distribution Services (CBD)

· Facility Based  
· Work based services

•

• Outreach Services Social marketingPHTI

3.3.3Eligibility

Family planning services for whom?

Any person male or female who can conceive or cause conception  
regardless of age or marital status is eligible for family planning services  
including family planning counselling and advice.

**3.3.4. Justifications for the Provision of FP Services**

Decrease fertility rate, population growth  
· Reduce maternal deaths by spacing or preventing pregnancy. It is  
reported to bring 20% reduction in maternal deaths  
· Reduce too early, too late, too close too many pregnancies  
· Reducing risk of unwanted pregnancies and illicit abortion

Maternal and Child Health Care 35

•  
Brings Immense benefits to children. It helps to avoid closely  
spaced, frequently ill children, LBW new borns, and, slow growth of  
children

· Improve family welfare

· Increase sustainable growth and decrease dependency ratio

· Help infertile couple

**3.3.5. Types of Family Planning Methods**

· Abstinence

**•**Breast feeding as a contraceptive Ethiopia Pu

**Natural methods**ve

· Withdrawal (Coitus interrupts)

• Periodic abstinence methods or safe days

**Technical methods**

· Hormonal methods

. Mechanical and chemical methods

• Post coital contraception

**Permanent contraception**  
**· Female sterilisation**

•Male sterilisation

Family planning choices are often the first element of primary health care  
that can be made available in a resource poor setting. Provision of basic  
non-clinical contraceptives requires minimal skill and can be handled by  
community-based providers with appropriate training.

The risk/benefit ratio of using methods such as oral contraceptives is in  
favour of nearly all women in such a setting, and a variety of cost-  
effective, distribution systems can be set up, from social marketing to  
community-based distribution programs focused on vulnerable groups.

Maternal and Child Health Care 36

Methods vary in their clinical effectiveness, and couples vary in the  
degree to which they make proper use of them. There has been a  
gradual shift toward more effective and more long-term methods,  
especially sterilization. Worldwide, female sterilization is the leading  
method and now accounts for about half of all contraceptive use, but  
regional comparisons show substantial variations in method acceptance.  
The most popular method in China is the IUD; in Northern Africa, the pill;  
and in Latin America, female sterilization. Traditional methods account

for over 10 percent of users

Although contraceptive methods are not without risk, the risks tend to be

ive   
Ethiopia

small, balanced by some health benefits, considerably outweighed by the  
risks of pregnancy and childbirth, and dwarfed by the risks of unsafe  
abortion. The health benefits and risks of each method vary by the  
individual circumstances and the medical condition of the user; careful

counselling of users by family planning providers can further reduce the  
risks. The IUD, for example, is associated with pelvic inflammatory  
disease, mainly in women who are at risk of developing sexually  
transmitted diseases. Barrier methods are not as effective as some  
other methods in preventing pregnancy, but they have an important non-  
contraceptive benefit by protecting against HIV infection and sexually  
transmitted diseases.

**Factors important when discussing and selecting contraceptive**  
**method include:**

· Effectiveness - success if used regularly

· Acceptability - easy to use

· Interference with sexual activity  
· Availability - easy to get for continual use  
· Side effects- problems and significance  
· Reversibility - How easy to conceive again

Maternal and Child Health Care 37

**Couples have to select the method that is best for them !!**  
**Success depends on all the factors and always, if possible, discuss**  
**with both couples.**

3.3.6. Factors for Effective Family Planning Programs:

· There must be access to services.  
· Services must be provided in both public and private health facilities  
and through community-based distribution networks.

•  
There must be contraceptive diversity to meet varying family  
planning needs throughout the life cycle and for both women and

· Counselling must be offered by health care providers trained to

respect clients concerns and sensibilities. Public

men

•  
 Strategic management must take into account contraceptive  
 demand, public and political support, the service delivery

infrastructure and the logistical supply system.  
· Collaboration with the private sector can be an effective means of  
reaching many more people. And,

•Effective information, education and communication is essential.

**Always rember that**

. Contraceptive use has no direct effect on the risk of death once

pregnant; therefore, if all women were equally likely to adopt  
effective methods of contraception, irrespective of age, parity, and  
other determinants of obstetric risk, increasing contraceptive  
prevalence would not change the risk of death once pregnant.

•  
A decline in fertility also means that first births, which are riskier, will  
increase as a proportion of all births. This means that increasing  
contraceptive prevalence could, in theory, actually lead to an  
increase in the maternal mortality ratio, even though the maternal  
mortality rate and lifetime risk of maternal mortality decline.

Maternal and Child Health Care 38

•  
 Abortion is the major cause of death among reproductive age  
 women in many developing countries. The fact that women do  
 resort to primitive abortion, even knowing it to be unsafe, is  
 evidence of their strong desire to prevent unwanted, unplanned  
 births. Women known to have had abortions are therefore likely to  
 accept contraception, and should be targeted in family planning  
 efforts. On-site delivery of post-abortion family planning, including  
 the provision of initial counselling and contraceptive methods

**In General**

following abortion, is essential. Ethiop ia

Family planning increases the standard of Health and Quality of Life !!!PL

It is cost effective more than many other health and social interventions !!!

**3.3.7. Assignment and Group Discussion**

1. Who is benefiting from the provision of Family Planning Services?  
2. In Ethiopia contraceptive prevalence rate is less than 10%. What do

you think are the reasons for this under utilisation?  
3. What do you suggest to increase the contraceptive prevalence rate In  
Ethiopia?

4, What is the role of councelling in family planning?

**3.4** **Antenatal Care Service**

**3.4.1. General Consideration**

Ante Natal Care (ANC) is the care given to pregnant mothers that they  
have safe pregnancy and healthy baby. It also helps in minimising  
complications of pregnancy, labour the post partum and neonatal  
periods.

Maternal and Child Health Care 39

The purpose of ANC is to care for pregnant mothers and to have all  
births attended by trained health workers, and to identify pregnancies  
where risk is high and provide special care for the mother and the infant.  
There is a large body of evidence from routine statistics and special  
studies to suggest that women who have received prenatal care  
experience lower rates of maternal mortality.

Components of prenatal care should include haemoglobin measurement  
and correction of anaemia, blood pressure measurement (to help detect  
hypertensive disorders of pregnancy), and the diagnosis and treatment  
of reproductive tract infections (especially sexually transmitted diseases)  
and urinary tract infections. Depending on local prevalence levels, it may  
also be necessary to prevent, screen for, and treat malaria and other  
infectious or parasitic diseases. Immunization against tetanus, which has  
benefits for both mother and infant, is an essential component of prenatal  
care throughout the developing world.

Ante natal care can also play a role in identifying danger signs or  
predicting complications around delivery by screening for risk factors and  
arranging for appropriate delivery care when indicated. Risk assessment  
has proven most useful in the prediction of obstructed or prolonged  
labour based on height and previous poor obstetric history (for example,  
caesarean section, still birth). A history of previous postpartum  
haemorrhage or retained placenta may be indicative of a woman at risk  
of postpartum haemorrhage.

Mothers have to be encouraged to register for ANC as soon as they  
know they are pregnant.

**3.4.2. Activities During the First Ante Natal Care Visit**

· Diagnose pregnancy  
· History taking  
· Physical Examination

Maternal and Child Health Care 40

•  
 Laboratory Examination. Haemoglobin measurement. VDRL test for  
 syphilis is one of the important tests to be done irrespective of any  
 condition provided that the facilities are available. Because syphilis  
 has a grave impact on the foetus then on the new born.

•  
Immunisation: give Tetanus Toxoid injection. If first time repeat after  
one month.

Protection: 2 doses of tetanus toxoid protect for 3 years, 3 doses for 5  
years, 4 doses for 10 years and 5 doses for life.

· Treat anaemia Ethio

· Treat syphilis and other problems accordingly

**3.4.3. Second and Following ANC Visits**

· Measure blood pressure

• Measure the symphasis fundal height

• Tetanus Toxoid and other examinations as indicated

**3.4.4. Health and Nutrition Education During ANC**

Health and nutrition education during ANC must focus on:

•  
 Pregnancy: foetal movement (specially for primigravida), labour and  
 common problems  
· Diet and Nutrition: extra food, weight gains, fasting and rest  
· Avoiding alcohol, tobacco, and drugs (specially in the first trimester)

· Personal hygiene  
· Delivery preparation  
· Labour signs  
· Breast-feeding  
. Newborn care  
· Family planning

· Traditional beliefs and practices

3.4.5. Weight Gain During Pregnancy

Maternal and Child Health Care 41

Pre-pregnancy weight and weight gain in pregnancy are both critical and  
additive in their effect on pregnancy outcome. Equal emphasis should be  
given to assuring that both are normal.  
A pregnant mother has to have weight measurement a month apart,  
anytime during the second or third trimester. A gain of less than one kg  
per month is the danger signal, with no weight gain or weight loss being  
even more severe and calling for immediate action, such as food  
supplementation directly for the woman.

this

Mothers should be weighed and counselled at the available opportunity

immunization or growth monitoring,

Arm circumference is the most feasible measurement to implement. TheJubler

present either during prenatal care or when they bring their children for

same cut-off point can be used to identify undernutrition in or out of  
pregnancy and ranges from 21-23.5cm depending on the country or  
region. Because of the simplicity of arm circumference technology.  
Which requires only an inexpensive tape, women can measure each  
other in their own homes.

3.4.6. Risk Approach in Maternal Care

Risk approach is a managerial tool for health services to identify people  
at risk as early as possible and intervene in order to reduce the risk.

•What is the basic concept behind this approach?

All women in reproductive age group are vulnerable to disease, death  
and disability. However, all women are not equally vulnerable and this  
approach helps to identify mothers who are at a higher risk than others  
with a lesser risk.

**Purpose**

The main objective of the at - risk approach is the optimal use of existing  
resources for the benefit of the majority .It attempt to ensure a minimum

Maternal and Child Health Care 42

of care for all while providing guidelines for the diversion of limited  
resources to those who most need them. That means  
· To care for all but to pay special attention to those in greatest need.

. The diversion of limited resources to those who most need them.

· Detection of risk factors requires  
. Knowledge of the characteristics associated with poor outcomes  
and

•The ability to recognise and measure them.

**Criteria to identify high risk women** Ethiopia

Identification of high- risk women can be based on two classifications

1. Relationships between the risk factor and adverse out come  
Causative or triggering - maternal malnutrition, LBW, placenta  
previa, congenital malformation  
Contributory - grand multiparty can lead to transverse lie,  
Prolapse of the cord  
Predictive or associative - previous foetal loss  
2. Biological, medical, social condition

• Biological - Age, birth interval, weight gain

•  
 Medical - diabetes, obstetric complication, pre eclampsia,  
 health care utilisation

• Social - work load, birth attendant, economic status

**Risk scoring system (RSS)**

For detecting risk factors and classifying pregnant women according to  
risk.

**Steps to develop RSS**  
**· Identify risk factors**

. Categorise risk factors

· Scoring marks - to each risk factor according to severity and effect  
on pregnancy, labour and puerperium

Maternal and Child Health Care 43

**RSS has to be done based on the actual risk in the population.**

**Consideration in risk scoring**

· Can be different in different circumstances depending on the types  
of health problems, personnel, facilities, and equipment etc.

**Always screening has to done during**

· Pregnancy  
· Labour

**Choose cut of points to balance**

· Puerperium itiative Ethiop

· Inconvenience and waste of resources- false positive

**3.4.7 Risk Screening and Referral** Public He

· Serious out comes of false negatives and

The aim of prenatal care is to assess the risk of complications in later  
pregnancy, labour or delivery and arrange for a suitable level of care.

Though many systems of risk scoring of varying levels of complexity  
have been devised, most of the major problems which can lead to  
maternal mortality cannot be predicted with sufficient accuracy, except in  
the case of obstructed or prolonged labour.

In addition, risk approach for maternity care can only work if all women  
are screened by adequately trained personnel, and if appropriate referral  
services are acceptable and within their reach geographically, logistically  
and financially.

Even where the risk approach works, however, the need for emergency  
care is not eliminated due to the unpredictability of many complications.A  
history of prolonged labour in a multigravida with or without adverse  
outcomes, and short stature in relation to the local norms, are strong risk  
factors for obstructed labour. Cut off points for height and for number of  
previous births must be selected based on local circumstances to ensure

Maternal and Child Health Care 44

that the maximum proportion of those who may develop problems are  
identified without overwhelming service capacity.  
Some health care systems have established the feasibility of providing  
maternity waiting homes for women with high-risk pregnancies, where they  
can wait for the onset of labour close to a health care facility well prepared  
to handle obstetric problems, without occupying the limited number of  
hospital beds.

**3.4.8. Risk Factors Identifiable In ANC**

**Risk factors identifiable in ANC include:**

· Age under 18 or above 35

· Primigravida

· Previous caesarean section, vacuum, or forceps delivery  
· Previous perinatal death, stillbirth  
· Previous Post partum haemorrhage  
· Previous ante partum haemorrhage  
. More than 6 pregnancies

· Twins

· Hydrominos  
· Pre eclampsia

· Diabetes, cardiac problem, renal disease etc.

**3.4.9 Anaemia /I/o**

Anaemia is very prevalent among women in developing countries, as a  
result of iron and/or folate deficiency and of malaria and other parasitic  
diseases. WHO estimated that around 60 percent of pregnant women in  
developing countries (other than China) had nutritional anaemia despite  
efforts in iron supplementation, fortification and dietary modification?

Anaemia contributes to maternal mortality by making women more  
susceptible to infection and less able to withstand infection or the effects  
of haemorrhage. Anaemia is known to give rise to considerable long-

Maternal and Child Health Care 45

term morbidity in women, and at extreme levels may be associated with  
low birth weight. Anaemia during pregnancy may be aggravated by  
malaria, hookworm infection, and schistosomiasis.

Death from anaemia results from heart failure, shock, and infection due  
to lowered resistance. Effective prevention depends ultimately on  
lifelong nutrition of girls and women, and thus on agricultural and  
economic factors and food distribution patterns within communities and  
families. It can, however, be detected and treated simply and effectively  
during pregnancy. opia

Though the use of routine iron and folate supplementation in pregnancy  
has been abandoned in industrial countries where anaemia and  
subclinical deficiency are rare, this approach almost certainly has a place  
in areas where they are common; acceptable doses of inexpensive oral  
supplements can prevent anaemia from developing or treat mild to  
moderate disease. Supplements may, however, produce unpleasant  
side effects, such as nausea and constipation, and compliance may be  
poor, especially in the absence of symptoms of anaemia, or where  
symptoms are accepted as normal in pregnancy.

Iron can be given intra-muscularly or intravenously to ensure compliance  
and avoid gastro-intestinal side effects, but haemoglobin does not rise  
any more rapidly through this form of administration than through  
adequate oral therapy. Blood transfusion as a treatment for anaemia is  
discouraged because of the serious dangers of blood borne infection of,  
notably, HIV, malaria, syphilis, and hepatitis B.

**3.4.10 Infections During Pregnancy**

Pregnant women are sexually active and at risk of sexually transmitted  
disease, including HIV/AIDS. In prenatal care screening and treatment  
for syphilis is routine and is a cost-effective intervention

Maternal and Child Health Care 46

Many studies in developing countries have demonstrated high  
prevalence levels of both syphilis and gonorrhoea in pregnant women,  
leading to considerable long-term morbidity in women, and to congenital  
disease and prenatal mortality. Researchers estimate that of those  
women, who are currently pregnant, 10 to 15 percent have syphilis and  
two-thirds of all these pregnancies have an adverse outcome.

Reliable screening tests exist for both syphilis and gonorrhoea, as do  
safe, effective treatments. Screening can be conducted in the clinic  
while women are attending and treatment started immediately.  
Unfortunately, screening and treatment of sexually transmitted diseases  
are not often regarded as core components of prenatal care and may  
only be available in special clinics. Despite the serious logistic obstacles,  
effective screening, treatment and contact tracing programs for all  
pregnant women is rewarding.

Women are at higher risk of AIDS because the two predominant modes  
of transmission of HIV infection are sexual and prenatal. A study in  
Uganda has shown the HIV infection rate for women to be approximately  
1.4 times that of men, and the rate of HIV infection is greater at an earlier  
age among women (15-19 years) than among men. The rate of  
transmission from male to female to be 2.5 times higher than from female  
to male.

The risk of transmission of AIDS is particularly high were high rates of  
sexually transmitted diseases, especially those which cause ulcerative  
lesions such as chancroid and syphilis, are found.

In the case of HIV, curative treatment is not available, and even  
treatment to delay the onset of symptomatic disease with antiviral drugs  
is not readily available or affordable in developing countries. However,  
some of the most effective strategies for sexually transmitted diseases

**are equally important for AIDS prevention. These include**

Maternal and Child Health Care 47

. Promoting education strategies that modify or eliminate risk  
 behaviours  
· Providing adequate diagnostic and treatment facilities for patients  
· Limiting complications by early detection and adequate treatment;  
· Reducing the risk of infection during genital tract procedures  
 through safe delivery procedures  
· Reducing exposure to infection by offering health education;  
· Limiting further transmission through counselling and partner  
 referral and jative Ethion

· Promoting condom use and targeting family planning programs

ul

more aggressively toward men.

Treatment of symptomatic urinary tract infections is important, and it has  
been shown that screening for asymptomatic bacteriuria, followed by  
appropriate antibiotic treatment, reduces the incidence of pyelonephritis  
in the mother, as well as the incidence of low weight and premature  
delivery.

Depending on the local prevalence, screening and treatment for other  
important infectious diseases, including malaria and tuberculosis, should  
be included as essential components of prenatal care. Studies have  
shown that malaria is more prevalent in pregnant women than in non-  
pregnant women. Also, anaemia during pregnancy may be aggravated  
by malaria infection. do

The increased risk of low birth weight babies and the risk of neonatal and  
infant mortality associated with low birth weight are of major concern in  
areas of endemic malaria.

Chorio-amnionitis and fetal infection and loss can be prevented through  
prompt referral of women with pre-term or pre-labour rupture of the  
membranes and prophylactic use of antibiotics.

In developed countries where hepatitis B is prevalent, vaccination of the  
infants of hepatitis B carriers is effective in preventing early infection and

Maternal and Child Health Care 48

its long-term sequelae.The incidence of viral hepatitis was twice as high  
for pregnant women than for non-pregnant women, in studies for  
Ethiopia and Iran. It is also more serious, with case fatality rates up to  
three and a half times as high. Malnutrition increases the chances of  
contracting hepatitis, as well as its severity. Premature labour, liver  
failure, and sever haemorrhage are common complications of severe  
hepatitis

**3.4.11 Role of Trained Traditional Birth Attendants**  
 **(TTBA's)** opia

In general Trained traditional birth attendants are important and helpful in  
advising and referring during pregnancy & delivery. Because TTBA's can  
easily identify problems such as

· Young primigravida

· Previous pregnancy problems  
· Short stature (depending on local norms of risk)  
· Bleeding before or during labour

•  
 Pre mature rupture of membrane  
TBAS - assist 60% -80% deliveries throughout the world are called by  
different names such as "comadrone" co mother of clients in Latin

**America. The name explains their importance.**

One of the primary aims of trained birth attendant training programs  
throughout the developing world is to promote clean delivery in the home

through deduction and provision of basic supplies such as:  
sterile razor blades and washable plastic sheets. It is, however, difficult  
to ensure cleanliness in all deliveries, particularly where access to clean  
water is limited.

**3.4.12. Group Assignment and Discussion**

1. Should a pregnant woman fast? Why?

Maternal and Child Health Care 49

2. What do you understand by the word "RISK"? Discuss about cross  
cultural concepts of being " at risk"  
3. What is the role of TTBAs in antenatal care?  
4. What is the Importance of weight measurment during antenatal  
care?

5. What are the effects of anaemia on the health of the mother and the  
fetoes?

6. What are the effects of sexually transmitted diseases on the fetus  
 and the new born?ative Ethion

7. What are the problems identified in treating

pregnancy?

**3.5** **Delivery Care Service**

anaemia during  
Public

The most elementary knowledge in delivery care is the The 3 c's

. Clean hands

. Clean cutting of the cord  
HTI  
. Clean delivery service

Always discuss with TTBAs  
· To prepare in Advance

· To avoid massage

· To avoid vaginal examination  
· About handling of the cord  
. About care for the newborn

· About referral

· About recording. (Recording is a compulsory for TTBAs and all  
health workers at all Levels) and  
· Supervision of TTBA's is important and mandatory.  
Some traditional practices of TBAs are sound and helpful  
· Allowing presence of relatives  
· Encouraging walking around  
· Allowing free position in delivery

Maternal and Child Health Care 50

• Placing the baby at the mother's breast even before umbilical cord

is cut.

One of the primary aims of trained birth attendant training programs  
throughout the developing world is to promote clean delivery in the home  
through deduction and provision of basic supplies such as sterile razor  
blades and washable plastic sheets. It is, however, difficult to ensure  
cleanliness in all deliveries, particularly where access to clean water is  
limited.

ative Ethin

Educating trained birth attendants, women, their families, and community  
health workers to recognize the early signs of delivery problems  
including sepsis is a very important activity to save the life of the mother  
and the new born.

**3.5.2. Group Assignment and Discussion**

1. For promotion of delivery care training of TTBAs is essential. Why?

2. What are the important measures to decrease neonatal tetanus?  
3. What are the common home delivery practices in your birth area in  
relation to management of labour, and perception of duration of  
labour?

4. What are the common practices that contribute to poor delivery  
outcome?

**3.6** **Post Natal Care Service**

Post Natal Care (PNC) a care up to six weeks in the post partum period.

Incorrectly given least attention and usually neglected.

PNC - first day after delivery  
PNC - from first day to 6 weeks  
During postnatal care always give equal attention and care for both the  
mother and the new born

**Objectives of Postnatal Clinic:**

Maternal and Child Health Care 51

· Observe physical status

· Advise, and support on breast-feeding

· Advise on Family Planning

· Provide emotional support  
. Health education on weaning and food preparation.  
· Discuss about menstruation (when it will restart) and when to start  
sexual relation (this point is usually overlooked in post natal clinics)

Different cultures have different postnatal care. For example in Ethiopia  
staying indoor for 40 days. The rationale is justifiable as it gives rest to  
the mother and enough time for breast feeding .The disadvantage is the  
Immobility and depriving the new born from sun light exposure.

N.B. Always rember that early detection of puerperal sepsis depends on  
careful postpartum visit of women at home

**3.7 Summary on Major Causes of Maternal Mortality**

**and Services to be delivered**

An effective program to prevent maternal deaths will include services at  
the community, health centre and referral level, all of which must be  
coordinated to ensure their effective functioning.

Preventing the main causes of maternal death will require a spectrum of  
services including prenatal and delivery care, family planning, and  
treatment for the complications of unsafe abortion (with provision of safe  
abortion depending on the law). Provision of comprehensive and  
integrated care increases the chance of achievement of the objectives of  
maternal health care.

The major types of services and activities to be conducted to prevent and  
decrease maternal mortality from the major causes are listed below.  
· Family planning can reduce maternal deaths from all causes, by  
reducing the fertility rate, and especially, unwanted pregnancies,

Maternal and Child Health Care 52

and thus unsafe abortion. Further reductions in deaths from unsafe  
abortions can be achieved through provision of emergency  
treatment for complications.

•  
 Antenatal care during the prenatal period can improve the health of  
 women and their infants through routine screening and treatment for  
 sexually transmitted diseases, urinary tract infections, and locally  
 prevalent infectious and parasitic diseases. Particularly malaria. It  
 also help to manage hypertensive disorders of pregnancy, and

assessing the risk of complications

obstructed labour),

at delivery (particularly

· Prophylactic iron and folate supplements are recommended where  
anaemia is common and identified, with screening.  
· Tetanus toxoid immunization is highly effective in reducing neonatal  
deaths and the 30,000 estimated maternal tetanus deaths yearly.

•  
 Health education during the ante natal period may increase  
 awareness of danger signs (such as bleeding, pre-labour rupture of

the membranes, and generalized oedema(swelling), offer

information about appropriate treatment, including where, how and  
when to obtain it, and encourage community planning for routine  
and emergency care, including communication and transport. The  
most important component of antenatal care, however, is likely to be  
referral services for women, in case they are needed.  
· A proportion of the cases of obstructed labour can be predicted, well  
before labour, form previous obstetric history and height, so that  
arrangements can be made for adequately supervised labour with  
access to operative delivery if required. The use of the partograph  
in labour leads to earlier diagnosis of prolonged labour and more  
timely intervention or transfer, which can improve the survival  
chances of mother and infant.

•  
Haemorrhage is largely unpredictable, but can be prevented by  
routine active management of the third stage of labour by skilled

Maternal and Child Health Care 53

birth attendants using oxytocic drugs. Effective treatment includes  
rapid manual removal of retained placenta, oxytocic drugs,  
intravenous fluids, blood transfusion, and surgery.  
· Minimizing vaginal examinations and ensuring clean delivery  
practices can prevent sepsis at delivery. The latter can be  
promoted through education of women, training of trained birth  
attendants and other health care staff and provision of adequate

equipment and supplies. Early detection of puerperal sepsis

depends on careful postpartum visit of women at home.  
· Deaths from hypertensive diseases of pregnancy are the most  
difficult to prevent. However, most recommend for prevention of pre-  
eclampsia to give low dose aspirin with calcium supplements. This  
may become the most effective intervention to reduce mortality,  
especially in women at high risk and areas of high prevalence if

women are seen early in pregnancy.Though the choice of

treatment for advanced disease is still under investigation, it is clear  
that care in referral centres reduces mortality. As such, early  
detection, education to promote recognition of danger signs, and  
referral are necessary.

Maternal and Child Health Care 54

CHAPTER FOUR

**Children's Health Problems**

**4.1** **Learning Objectives**

The student will be able

· To define a child

· To identify major problems of children  
· To understand magnitude of children's problem  
· To understand the importance of proper early development  
· To understand causes of PNM, NNM, IMR CHM  
. To define the role and importance of mothers' health on children

**4.2.1. General Consideration**

A child means " .... every human being below the age of eighteen years,  
unless under the law applicable to the child, majority is attained earlier."

Conventions on the right of the child. Part one, article one 1991.  
Every year 13 million children die from preventable diseases. More than  
60% are due to

· Pneumonia: 3.6 million

· Diarrhoea diseases: 3 million  
· Vaccine presentable diseases and combination of the three: 2.1

million

In Ethiopia there are 2.4 million births per year, however the magnitude  
of death is very high; 1500 under five's die /day, 210,000 infants die per  
year, and 350,000 die before they reach their 5th year.

Among these deaths 75% are preventable by immunisation and  
improved management of diarrhoea.

Maternal and Child Health Care 55

**4.2.2.**

**With favourable environment the process of growth and development is a**  
**normal one. Certain stages of growth and development are crucial such**  
**as young age, and reproductive age or special characteristics like**  
**pregnancy, reproduction, and growth and development.**

**These conditions make such groups vulnerable and expose them to**

disease, disability and death (the 3 D's)

**This is a major concept that has to be addressed in both curative**  
**and preventive services.** ía P

Growth is a continuos process and every stage is built on the one before  
it and it affects the next.

So at every stage  
Physiological and psychological requirements has to be fulfilled. If not  
. It is difficult to catch by or repair the damage  
. The body's potential to adapt in a healthy way diminishes  
throughout life

i.e. the health of the child determines the health of the adult as also

**shown in the next paragraph.**

Malnutrition and, disease expose to poor mental & physical growth poor  
mental & physical growth expose to poor performance at school work  
poor performance at school work expose to reduced adult capacity to  
earn an income, initiating change, respond to new opportunities reduced  
adult capacity expose to Poor, large families further exposing to  
disease and malnutrition and the cycle continues with the next

generation.

In summury, children whose earliest years are faced by hunger or  
disease or whose minds are not stimulated by appropriate interaction  
with adults and their environment pay for these early deficits throughout  
their lives and so does society. Such children are far more likely than

Maternal and Child Health Care 56

their more fortunate peers to do poorly in school, to drop out early, to be  
functionally illiterate. Collectively, these children who have been deprived  
in early life therefore affect labor productivity and national economic  
prosperity.

**Where is the best place to break the cycle?**

Before the child is born and during the early years of his/her life. i.e.

· Special protection for mental and physical growth  
· Families, communities and governments must prevent the worst  
aspects of poverty affecting growth and development.  
· Special measures to protect those vulnerable months & years by  
such means as:  
· Breast feeding (nature protects the vulnerable years)

· Immunisation,  
· Growth monitoring,

· Management of diarrhoea disease and ARI,

•Low cost water and sanitation services etc.

**4.2.3. Factors That Affect the Health of Children**

Some of the factors that affect the health of children include:  
· Balanced and adequate diet  
· Poor personal and household hygiene  
· Lack of safe and adequate water supply

. Poor sanitation  
· High fertility rate

· Fast increasing population growth  
· Poor maternal health services

· Maternal education

· Low status of women  
· Poverty etc.

Maternal and Child Health Care 57

**Few indicators for health status of children in Ethiopia**

MCH coverage; 25.5%  
EPI Coverage: 59.7%  
Fully Immunized: 38.41%  
Infant mortality rate: 110/1000  
Under five mortality rate: 161/1000  
ORT use rate 38%

4.3.1

Of the 13 million deaths each year in children under 5 years old in the General Consideration Ethiopia Pu

**4.3 Perinatal Mortality (PM)**

developing world, 3 million occur in the first week after delivery. In  
addition, there are some 4 million stillbirths or late fetal deaths each year.

birthweight of at least 1,000 grams, who die.

Perinatal mortality is the number of late foetal deaths (also called still births)  
and early neonatal deaths (before day 7 (168 hours) per 1000 births.  
Deaths of all foetuses and new-borns with at birth weight of 500 gms  
(gestational age of 22 weeks or crown-heel length of 25 cm, when birth  
weight is not known), whether alive or dead, should be considered as  
perinatal deaths.

Among the estimated 25 million low-birth-weight babies born each year  
worldwide, 24 million are in developing countries where 80% of global  
births occur, The perinantal mortality rate ranges from 40 to 60 per 1,000  
live births in most developing countries, but it is between 6 and 10 in  
industrial countries. There is always problem of knowing the exact  
magnitude of PNM due to poor or lack of recording. The above-  
mentioned figures, in the developing countries, usually come from  
hospital statistics.

Maternal and Child Health Care 58

**4.3.2 Causes of Perinatal Mortality**

**Causes of Perinatal mortality include:**

· Low birth weight  
· Cord prolapse  
· Asphyxia  
· Birth injury  
· Congenital anomalies

· Neonatal tetanus Ethiopia

· Sepsis tiative

· Complicated labours (prolonged, obstructed, breech, transverse)  
· Mismanagement of labour  
· Anoxia due to problems such as antepartum haemorrhage  
· Maternal age

· Maternal anaemia

· Maternal health problems like, renal problem, diabetes, hypertensive  
disorders

· Maternal infections

· Parity  
· Placental insufficiency

· Ruptured uterus  
. Mother's utilization of health services

. Maternal education

**4.3.3 Low Birth Weight**

Low birth weight is an extremely important factor predisposing for PNM.  
Because the perinatal mortality rate for low-birth weight babies is five to  
thirty times higher than for fetuses or infants of normal weight. Low-birth-  
weight infants who survive may have serious neurological problems and  
hearing and visual defects and may be subject to slow development  
throughout life.

Maternal and Child Health Care 59

**Causes of low birth weight include:**

· Short stature  
· Low pre-pregnancy weight  
· Inadequate weight gain during pregnancy  
· Anemia  
· Reproductive tract infections,  
· Other infections during pregnancy. For example, women suffering  
from malaria in sub-Saharan Africa give birth to an estimated 3 million  
severely underweight babies. A woman with HIV has a 25 to 40  
percent chance of passing the infection on to her fetus in the womb or

· Antepartum haemorrhage· Eclampsia, AIDS in the first year and 80 percent by the fourth year. u bocc Heal

at birth. According to  
WHO, 25 percent of the children born with HIV will be diagnosed with

. Poor management during labor and delivery. Associated with  
development impairments among children. Birth asphyxia in the first  
minutes of life kills or causes brain damage (notably cerebral palsy)  
· Maternal death. If a woman dies, the effect on her fetus or newborn is  
devastating. The overwhelming majority of pregnancies that end in  
maternal death also result in fetal or perinatal death. Among infants  
who survive the death of the mother, fewer than 10 percent live  
beyond their first birthday.

When addressing low-birth-weight one has to give emphasis for low-  
birth-weight girls. Because low-birth-weight girls are less likely than  
boys to catch up. Because they are fed less, marry early, carry a  
heavy workload, and spend a considerable portion of their lifespan in  
pregnancy and lactation. Persistent low nutritional status and high-  
energy expenditure predispose such girls to bear low-birth-weight  
babies themselves, passing the problem on to the next generation.

Maternal and Child Health Care 60

**4.4.** **Childhood Problems (Selected)**

Worldwide about 14 million children under the age of 5 will die each year  
and Majority of these deaths occur in developing countries.  
In developed countries, deaths under age the age of five constitute only  
a very small proportion of all deaths, while in many developing countries  
deaths of young children constitute a large share of total deaths. About  
40% of all deaths in developing countries are deaths of children under  
age 5 and nearly 30% of all deaths in the world are deaths of young  
children in developing countries. The diference in deaths of young  
children in developed and developing countries shows that the majority  
of causes of CHM are preventable. Accordingly the major causes of  
death are infectious, parasitic, respiratory and diarrhoeal diseases which  
are easly preventable in the developed world. For example, deaths from  
many of the most common childhood diseases are preventable through  
immunisation. Research in many contrives has consistently indicated a  
strong inverse relationship between female education and child mortality.

4.4.1. Diarrheal Diseases

Diarrheal diseases are serious illnesses, widespread in developing  
countries. In virtually all developing countries diarrhea! diseases are  
among the five leading causes of death in children under five and, in

many countries the leading cause of death in children.

Diarrhoea is defined is the passage of three or more loose or watery stools  
in 24 hours. Diarrhoea which lasts for more than 14 days is called persistent  
diarrhoea.

Diarrhoea is most common in children, especially those between 6  
months and 2 years of age. It is also common in infants under 6 months  
who are drinking cow's milk or infant feeding formulas. In addition to  
bringing death, diarrhea is also a significant contributor to  
malnourishment in those children who survive. Diarrhea acts through

Maternal and Child Health Care 61

increased malabsorption, reduced food intake caused by loss of appetite  
and food withdrawal, and fever to deprive children of needed  
nourishment.

Diarrhoea is worse and more common in children with undernutrition.  
Malnutrition is an important element of diarrhea. Many children in  
developing countries are malnourished. Frequent episodes of diarrhea  
contribute to malnutrition because appetite diminishes, feeding is  
interrupted, and absorption of nutrients is reduced.Malnourished

children then become more vulnerable to infections, creating the  
potential for a vicious cycle of malnutrition and infection. Malnutrition is a  
contributing cause in approximately one-third of all child deaths. In  
developing countries, 12% of children under age 5 suffer from acute  
malnutrition and that almost 40% suffer from chronic malnutrition.

Other factors that contribute to death due to diarrhoea include: short birth  
interval, acute respiratory tract infections (ARI), measles, and malaria etc.

Unsanitary birth procedures and a mother's unclean hands or breasts  
represent potential sources of contamination to the newborn Infant but  
these are slight compared to those encountered as the child grows and  
begins to drink water and eat weaning foods. The primary source of  
bacterial contamination is human feces. The agents may be transmitted  
to the child in a variety of ways including UI

· Direct contact with feces through another person's dirty hands,  
. Direct contact through the child crawling on unclean surfaces,  
. Indirectly through contaminated water which is then transmitted to the  
child through drinking water, bottle formula, or weaning foods, or  
· Indirectly through hand transmission during preparation of weaning  
foods. Perhaps the most prolific source of infection is weaning foods.

If the child does not recover, prolonged or severe diarrhea will usually  
lead to dehydration, which is the main cause of death due to diarrhea.

Maternal and Child Health Care 62

Mortality caused by dehydration from diarrhoea is the largest single  
contributor to the mortality of young children

Oral rehydration therapy (ORT) can treat 85 to 95 percent of cases of  
dehydration from watery diarrhea in all age groups. Oral rehydration  
therapy does not cure diarrhea, but prevents dehydration, which leads to  
death. ORT largely replaces intravenous therapy, which requires trained  
personnel, sterile fluids, and expensive equipment. ORT is simpler to  
administer, and much less expensive. This makes it less dependent  
upon highly trained health workers and fixed facilities, and compensates  
more quickly for nutritional loss due to diarrhea. Disease some of the  
factors that need emphasis in prevention of diarrhea are: Pub

· Adequate feeding during and after diarrhea. Episodes, including  
· Breast milk, diluted formula, and regular foods given to children  
· To demonstrate and encourage parents to prepare and give home

· Support of breastfeeding for its immunological properties andSec .

made fluids.

because it reduces the risk of exposure to contaminated substances.

· Improved weaning practices  
· Clean water (though not completely safe or available)  
· Proper food storage and clean feeding utensils  
. Proper sanitation in and around the house including children's  
crawling and play grounds and proper disposal of the stools of infants  
and young children and use of latrines  
· Personal hygiene including mothers' practice of washing hands  
before breast-feeding after return from toilets.

· Immunization such as against measles  
· Health education programs which build upon an understanding of  
traditional practices and beliefs to promote positive changes with  
mothers, health personnel, and community leaders.

Maternal and Child Health Care 63

· Epidemiological surveillance to determine prevalence and incidence  
of diarrhea in order to select populations at high risk.  
Use of antimicrobial agents is discouraged because mostly they are  
ineffective against the causes of most childhood diarrhea and they are  
sometimes harmful. Prevention of diarrhoea- Diarrhoea can be prevented  
by the following practices

4.4.2 Malaria

Malaria is a major cause of illness and death in Sub-Saharan Africa.

To reduce the effects of malaria on these high-risk groups, certain typeschildren under five years of age and pregnant women. os Pub

Although persons of all ages can get malaria, two groups are at high risk:

of treatment are necessary. For pregnant women it is important to  
provide prophylactic treatment with drugs such as chloroquine in order to  
prevent the risk of abortion of the fetus or low birth weight of the neonate.  
In areas where malaria is endemic, it is recommended that "presuptive"  
treatment be given to young children, that is, to treat all young children  
with drugs when it appears that the fever is due to malaria and that the  
child will respond to treatment with chloroquine (or other appropriate  
medications in the case of chloroquine-resistant areas).

**4.4.3.** **Vitamin a Deficiency**

Vitamin A deficiency (VAD) is a public health problem in more than 75  
countries and affects as many as 228 million children sub clinically at a  
severe or moderate level. Some 3.1 million preschool age children have  
eye damage due to due to vitamin A deficiency and more than 250,000  
preschool children go blind every year.

Vitamin A deficiency is the most preventable cause of blindness  
worldwide. The impact of vitamin A deficiency, however, is more  
extensive than the ocular effects. Xerophthalmia and low vitamin A levels

Maternal and Child Health Care 64

are associated with increased mortality and severity of morbidity from  
respiratory and gastrointestinal disease. Recent findings have indicated  
that vitamin A is a key modulator of the immune system and may play a  
role in preventing the development of cancer. Sufficient vitamin A stores  
could significantly reduce the risk of transmission of HIV from infected  
mothers to their babies.

Xerophthalmia is an eye disease that results from vitamin A deficiency  
(VAD) and is the primary cause of blindness among children in the  
developing world. Inadequate vitamin A status can vary from marginal  
deficiencies without clinical signs, to the presence of early and reversible

· Bitot's spots,  
· Conjunctival xerosis

In cases of severe depletion with advanced and irreversible cornealchanges there is a high probability of blindness. public Health

clinical signs of  
· Night blindness (frequently the earliest symptom)

Children with protein-energy malnutrition, respiratory infections, measles,  
and/or diarrhea are at especially high risk of developing vitamin A

deficiency.Recent research has found that even children with mild

xerophthalmina may have a much higher mortality rate than children  
without apparent deficiency.

Simple techniques for assessing vitamin A status and xerophthalmia  
should be part of primary health care programs, especially in areas  
where vitamin A deficiency is endemic. Because biochemical tests,  
although accurate, are not always practical. Primary health care workers  
need to be trained to recognize the clinical signs of vitamin A deficiency.

Any intervention that proves effective in improving vitamin A status in  
deficient populations will on average reduce mortality by 23% in infants  
and children between the ages of 6 months and 5 years. Global

Maternal and Child Health Care 65

estimates indicate that between 1.3 and 2.5 million deaths could be  
averted each year by improving vitamin A status. Among the deficiencies  
caused by the three micronutrients (iodine, iron, and vitamin A) the  
programme on vitamin A is potentially the most important achievable  
international health goal

Measures to combat vitamin A deficiency are generally grouped into the  
following:  
. Dietary modification by improving food availability through the

Production and preservation of vitamin  
 A-rich foods, and  
 increasing food consumption  
 la  
· Breastfeeding protection and promotion,  
· Food fortification and supplementation  
· Public health measures such as on components of primary health

care

**Role of breast feeding in preventing vitamin A deficiency**

Promotion and protection of breastfeeding is a fundamental aspect of  
preventing vitamin A deficiency.

Breast milk is virtually the only source of vitamin A the first few months  
for many infants and often continues to be one of the most important  
sources through age two. Without breast milk, newborns can maintain  
optimal vitamin A for no more than a few weeks. Although vitamin A  
concentrations in human milk are dependent on the mother s vitamin A  
status, vitamin deficiency is rare among breastfed infants, even in parts  
of the world where vitamin A deficiency is endemic. Promotion of  
exclusive breastfeeding for 4 - 6 months and continued breastfeeding  
with complementary foods thereafter should form part of any dietary  
intervention to improve vitamin A status.

Maternal and Child Health Care 66

CHAPTER FIVE

**Health Services for Child Care**

**5.1 Learning Objectives**

· Understand importance and justification of child care  
· Understand the role of child care in national productivity  
. Describe types of health services and individual contribution to health  
of the child  
. Understand role of screening, EPI, Growth monitoring on the health of

**5.2 General Consedration** ublic Hea

**children**  
**. Understand the importance of school health**

**"Blessed are the young, for they shall inherit the national debt"**  
**H.Hoover (President of United States of America) Health status of**  
**the children of a nation is a highly reliable index of health the**  
**population What we do for our children today, especially at their**  
**younger age will in large part determine the course of the future of**  
**our country and it's future citizens.**

In both developed and developing countries children should be placed at  
the centre stage in all development thinking and implementation.

Because care for children is related with:  
. Future investments as children are the future of the nation.  
. Strong belief as ours and others culture give high value for having  
children  
· Future health because national productivity depends on today's  
children.

Maternal and Child Health Care 67

**5.3.1 Screening**

One of the most neglected services which is often forgotten is screening. It  
is a very important activity which has to be carried out every day in all  
institutions delivering child health services. There is an immense benefit for  
children, as well as to their mothers, by the brief assessment (history and  
physical examination) at every visit to the clinic. Screening is an important  
tool to avoid "missed opportunities. The need for vaccination, growth  
monitoring as well as mothers' need in terms of antenatal care, family  
planning etc. can be easily identified.

5.3.2 Expanded Program On Immunization (EPI)

Immunisation is the process of protecting a person from a specific  
disease.

It is protection of a susceptible host from a specific disease by  
administration of  
· A living modified agent  
· A suspension of killed organism  
· An attenuated toxin.

Immunisation decreases susceptibility by producing antibodies or  
sensitised cells to fight the agent and its product.

**Types of Immunisation**

· Active - Vaccine which acts in place of natural antigen  
· Passive - ready-made antibodies and our body do not take in the

making.

E.g. Foetus, TAT, snake antiserum.

Another classification can be:  
. Natural such as Mother to foetus, infection  
· Artificially induced immunisation such as vaccine (antigen), antibodies

Maternal and Child Health Care 68

**Herd Immunity**

Herd immunity indicate that large proportion of people in a certain  
community are immune. The implication is when there are few  
suscputables the natural infection cannot keep going in the community  
and incidence goes down to a low level.  
Immunisation to be effective in controlling communicable disease 75% of  
the population and 75% of new-borns have to be vaccinated.

Discontinuing vaccination programs have serious risk of causing an  
epidemic. Mopia

1. To reduce morbidity and mortality from six major diseases - deptheria,Pu

pertussis, tetanus, measles, poliomyelitis and tuberculosis by  
immunising all children throughout the world by 1990.  
2. To promote national self-reliance in delivering immunisation services  
within comprehensive health services.

3. To promote regional self-reliance in vaccine production and quality  
control.

The activities outlined were:

•  
 Provide immunisation or information about immunisation at every  
 health contact  
. Reduce dropout rates between the first and last immunisations  
· Increase the priority given to control of measles, polio and  
 neonatal tetanus  
· Improve immunisation services to the poor in urban areas  
· Use special approaches such as national immunisation days,  
 where they strengthen the health infrastructure and contribute to a  
 sustained improvement in coverage.

Maternal and Child Health Care 69

**Strategies to conduct EPI sessions**

1. Fixed (static) facilities offering immunisation every day in all health  
institutions. Advantages  
· No additional costs for transportation  
· Personnel who can give injections and instructing parents are  
already available as is basic medical equipment  
· Easier to keep vaccines at proper temperatures  
· Client records may more easily established and kept up to date

**Disadvantages**  lopia

. Parents must travel long distance to bring children to health  
centres. The further parents travel, the less likely they are to come  
for immunisations.

• Absence of integrated health service

2. Outreach services and mobile teams  
Important, especially for children in remote rural areas and poor urban  
as well as other children whose parents are unable or unwilling to come  
to health institutions

**Disadvantage**

· Scheduling visits and adhering to schedules are difficult because of  
transportation

· Problems or poor weather.

· Outreach services and mobile teams can be expensive.

· Staff need to be paid per diem  
· Vehicles much be bought and maintained.  
. Strict reminding is necessary for parents to be available on the days of

appointment

3. Intensive immunisation campaigns  
This consists of regularly repeated mass campaigns which are mounted  
to stop epidemic by quickly immunising as many susceptible people as

Maternal and Child Health Care 70

possible. These campaigns have sharply increased vaccine coverage,  
especially, those of single dose vaccines. Such campaigns can involve  
non health workers for polio vaccination as it is given orally.

**Antigens**

Antigens given are: Bacterium Culmette Guirrin (BCG, for tuberculosis),  
DPT (depththeria, pertussis, tetanus), OPV (oral polio vaccine), Measles  
vaccine, tetanus toxoid for reproductive age and pregenanant women.

Types of Vaccine for EPI

Vaccines can be killed microorganisms, live but weakened (attenuated) or

tive   
Ethiopia

toxoid, i.e., harmless forms of toxins or poisons that the bacteria produce.  
· Killed vaccines are DPT and TT, which should be kept just above  
freezing point in the refrigerator (0 - 8℃).  
· Live attenuated vaccines are measles, polio and BCG. These should be  
deeply frozen, at around -20℃. Since BCG is sensitive to UV light and  
heat, it is packaged in coloured vials and they should be protected  
against the sunlight.

**Table 2** **MOH recommended immunization schedule**

|  |  |  |  |
| --- | --- | --- | --- |
| Vaccine | Number of Doses | Minimal Age for First Dose | Minimal Interval between Successive Doses |
| BCG | 1 | At birth |  |
| DPT | 3 | 6 weeks of age | 4 weeks apart |
| OPV | 4 | At birth 6 weeks of age | 4 weeks apart |
| Measles | 1 | 9 months of age |  |
| Tetanus  Toxoid | 5\* | For use in prevention of neonatal tetanus | The 2nd 4 weeks after first dose |
|  |  | First dose at first contact with susceptible women. |  |

\* Five doses give protection for life.

Maternal and Child Health Care 71

Routes and dosages

BCG  
 -  
 0.1cc, intradermal, right deltoid  
DPT -  
0.5cc, deep intramuscular, on the thigh  
OPV  
 -  
2 - 3 drops per os  
Measles - 0.5cc, subcutaneous, left upper arm

**Cold Chain**

Maintaining cold chain is one of the very few important activities that should  
be conducted, without any exception, by all concerned in the manufacturing  
of vaccines and delivery of immunization services. pia P

Cold chain is the equipment and people that ensure vaccine potency by  
keeping vaccine cold all the way from the manufacturer to the child/mother  
or the consumer.

**The important and guiding concept behind cold chain is once vaccine**  
**potency is lost it cannot be regained. Using a vaccine that has lost**

potency is considered to cheat the mother and to leave the infant  
unprotected and exposed for diseases and disability and possibly to death.

Levels of cold chain  
1. Central store - usually located in the nations capital  
2. Regional store - located in a major regional town  
3. Zonal store -  
 located in the respective zonal town in the region  
4. District store - located in the respective district health departments  
 (usually a rural town)  
5. Health institution store

6. At consumption site -either in the health institution or at the village level

through outreaches

**Assignment And Group Discussion**

**1. Why BCG At Birth? DPT at 6 weeks?**

2. Why polio 4 doses? BCG & measles one?

Maternal and Child Health Care 72

3. Why DPT 3 doses? BCG & measles one?  
4. Why DPT one month apart?

5. Effects if measles vaccine if given at 3 or 4 months?

6. Is there maximum Interval between doses of DPT, Polio, TT?  
7. Is there minimum Interval?

8. Do you give polio for a child with diarrhoea?  
9. A mother who had DPT as a child, does she need TT when becomes  
an adult and pregnant?

h

10. What the barriers which hinder the successful implementation of EPI in  
Ethiopia?

**5.4.1. General Consideration**

Growth is a continuous process from conception to physical maturity.Public H

**5.4.** **Growth Monitoring**

There is always normal growth whenever nutrition and environment are  
good for Age. When these conditions are satisfied growth rate is the  
same for well nourished & healthy. Always to follow and know that  
growth is satisfactory should be given a priority rather than only try to  
prevent malnutrition  
When children are growing they become  
· Taller, fatter, heavier,  
· "Grow out of their clothes"

Factors influencing growth

· Family genes: childhood growth patterns and Adult heights  
· Adequate nutrition  
· Infections diseases  
· Endocrine: hormones such as growth hormone or disease of pituitary  
· Systemic diseases: diabetes  
· Stress  
· Abuse etc.

Maternal and Child Health Care 73

. Effects of race / ethnicity / geneticsVs nutrition /attitude/

environment  
· International reference populations

· Local Reference

· One time measure Vs dynamic measurements

**Importance of growth monitoring**

Why do we give so much emphasis for growth monitoring? Because  
· Growth is a very sensitive measure of health  
· Weight gain is a very sensitive measure of growth  
· Growth faltering is the best indicator for early detection of health

problems

•  
 Such as nutritional and infectious one can identify steady growth,  
 which is a best indicator of a child's health.

· It is important for follow up of children  
. It tells the nutritional status in a given community.

**. If it is done right malnutrition can be identified before it affects the**

BRAIN.

**When is the best time to start growth monitoring?**

The first 5 years are a crucial period in the development of a child.  
Brain development is almost wholly completed by age 2 and malnutrition peaks  
at around 24 months of age. This implies the need for early interventions\_of  
health, nutrition, cognitive stimulation, and socialization programs etc.

Do children grow at a normal rate?

We have to measure their length to know how tall and thickness to know  
how fat they are. As growth is an increase in size and weight one has to  
measure their weight and to be certain measure has to be taken

**regularly.**

Maternal and Child Health Care 74

To know the steady growth in regular measurement one has to use  
Growth Charts. Growth Charts are extremely important and central in  
growth monitoring.

**Growth chart**

A Growth chart is a very important record which is used as a personal  
growth chart for the child and has record of the child's illnesses and  
progress and has notes about nutrition advice given to mother

jative Ethio

Growth Chart:

. Tells direction of growth

Through regular measurement & recording one can have and plot· Helps in early detection of growth failure. How? Publi

· Reveals significant change in growth pattern.

Growth Curve

Always remember that:

**· Weighting the child is not a problem. But regular & accurate plotting !!!**  
**· Growth chart is essential for every child as ANC card is for every**

pregnant Mother !!!

. An important part of health education is to teach mothers to keep  
growth charts carefully !!!

**5.4.2. Methods of Assessing Nutritional Status**

1. Clinical history and examination  
2. Nutritional Anthropmetery  
3. Biomedical and laboratory tests

Anthropometric Measurements

Anthropometric Measurements are useful for growing children to detect  
growth failure. There are two methods depending on whether the child's  
age is known or not.

· When age is known

Maternal and Child Health Care 75

Weight and height for age  
· When age is unknown  
- Mid arm circumference and  
- Head - chest circumference ratio

- Weight for age  
. Measures Acute and chronic malnutrition.

Weight for height  
· Measures acute malnutrition - wasting  
· Useful for nutrition surveys on older children.  
 Height for age pi

· Simple method· Can be done by all health units, surveys· For children above one year and under 5. Why between 1 and 5? Public Health

· Measures chronic malnutrition (stunting)  
Mid upper arm circumference

There is litter change in arm circumference between 1 and 5 yeas of age.

Growth is in length and the upper arm does not get fatter  
Mid upper arm circumference  
· At birth is 11 cms  
. At the first it becomes 16 cms and  
. By the age of 5years it reaches 17 cms. Accordingly  
· Healthy children above one year have mid- upper arm circumference  
of 16 cms.

· Undernourished children above 1 year have mid- upper arm  
circumference of 13.5 cms  
· Malnourished children have mid- upper arm circumference of <12.5

cms

Head - chest circumference Ratio

Maternal and Child Health Care 76

Over 6 months the chest circumference is larger than the head and If it is

the same or smaller after six months it shows that the child is

undernourished.

Ethiopia Pu

EPHTI

Maternal and Child Health Care 77

**Comparison of Anthropometric Indicators for Growth Monitoring**

1. Weight-For-Age

Advantages  
· Good basic indicator, combining acute and chronic malnutrition, for  
monitoring ongoing programs.

· Sensitive to small changes (although many variables influence small  
fluctuations in weight)  
· Measure is objective and repeatable.Ethio

· Sole tool (scale) is portable and relatively inexpensive.  
· Weighing is relatively easy for inexperienced health workers to

· Measure is not time consuming.

**Disadvantages** blic He

manage, although it does require a literate worker.

· Not sensitive to a stunted child who is growing well (below but parallel  
to a normal growth channel) or to the very tall child who may be  
malnourished.

· Relies on ago data, which arc often subject to error. Age data for  
children below two years old have been found accurate, or, if in error,  
easily corrected, but it is difficult to accurately estimate unknown ages  
for children over two years.

. Mothers in some countries have objected to hanging than children  
from the scale during weighing.

2. Length/Height-for-Age

Advantages

· Good indicator of past nutrition problems.

· Measure is objective, repeatable, and has a low variability.  
· A length and height board can be made locally for a minimum  
investment, and the boards are easily transported.

Maternal and Child Health Care 78

· Rarely are mothers reluctant to have child measured because of

appearance of the board.

**Disadvantage**

· In growth monitoring projects It should be supplemented by another  
indicator like weight-for-age or weight-for-height because changes in  
height occur relatively slowly.

. Requires two different techniques if programs include all

preschoolers: recumbent (lying down) length (children 0-2 years) and  
standing height (children 3-5 years).

4. Weight-for-Length/Height

**Advantage**

· Relies on age data, which are often subject to error.

EPHTI blic Health

. More difficult for unskilled workers to learn to take accurate

length/heights than to weigh a child with a simple scale.  
· Requires two persons to take the measure.

· Good indicator to distinguish those who are well proportioned  
(weight/height) from those who are thin (or heavy) for their height.  
· Indicator does not require age data, which are often inaccurate and  
difficult to obtain.

· Measures are objective and repeatable.

**Disadvantage**

. Depending on the cut-oft points chosen, weight-for-height can  
underestimate malt nutrition by classifying those who are short and  
thin as normal.

· Requires taking two measures; therefore, problems of purchasing or  
making the instruments and transporting them are compounded.

Maternal and Child Health Care 79

· Weighing and measuring height will require more training time and  
may be too complicated and time consuming for the inexperienced  
clinic worker to do with frequency.

. Some mothers may be reluctant to have their children weighed.

· Requires two persons to take length or height measure.

Arm Circumference

**Advantage**

· Indicator of severe current malt nutrition, whether or not stunting is  
present

indicate changes in nutritional status over a short time.Problic

· While it may not detect changes as rapidly as weight monitoring, it will

· Measurement is taken with an inexpensive and portable arm tape,  
which can be made by project per. sonnet.  
· Quick to use.

. Arm tape can be color coded for use by non-literate health workers.  
· Indicator does not require age data, which can be inaccurate and  
difficult to obtain.

· No known objection by community to this measure.

Disadvantage

. Will only identity children with severe malnutrition. It is more difficult to  
determine who is borderline.

· Variability is high on measurement. Field workers need practice  
taking measurement to do it accurately. Finding the mid-upper arm  
and placing the tape around the arm without compressing the tissue

**is difficult.**

Maternal and Child Health Care 80

5.5. School Health Services (SHS)

**5.5.1. Preschool Education Program**

Preschool Education Program's major purpose is to improve young  
children's capacity to develop and learn. The programme can focus on  
· Improving parents' teaching and child care skills  
· Delivering services directly to the children  
· Improving the child care services available in the community

The most effective programs combine basic nutrition and health care  
services with activities designed to stimulate the children's mental,  
language, physical, and psychosocial skills which are mutually  
reinforcing.

Many studies and programmes have shown that enhancing the  
experience of children particularly disadvantaged children from their  
youngest years significantly improves their potential for growth and  
development throughout life.

School children, mostly, in the developing world, are one of the population  
groups who constitute the largest segment in population. By virtue of their  
number, children are entitled to a major share of the community health  
services. During this period, there are rapid physical, mental and emotional  
changes; hence there is a great need for health supervision and guidelines.  
The school going child experiences group living outside the home, learns to  
adjust in the community and is exposed to hazards of infection in a mixed  
community.

5.5.2. Importance of School Health Services

· School children constitute a large segment of population in any country.  
· Well-defined target group at one place, with the help of teachers so that  
their health status, growth and development can be monitored easily.

Maternal and Child Health Care 81

. Children learn healthy habits in school based on the health education  
received at school from teacher and other health professionals and thus  
spread the message of healthy living in the community where they live  
and grow.

. A child who is not well cannot derive the full advantage of the education  
imparted at school.

· Early detection of defects in growth and development, vision, hearing,  
speech, and behavioural problems; correction will help the child to  
overcome the handicap and thus contribute better to the community

· Ensure achievement of children's potential to the fullest possible extentGeneral Objectives of SHS Dia Publ

where he lives.

for effective physical, mental, intellectual, emotional and social living as  
adults.

· Enable children to achieve highest possible performance.  
. Prepare children for smooth transition from childhood to adulthood with  
minimal health risk encountered through adolescence.

· Promote community health through parent-teacher-pupil interaction.

Specific Objectives

. Promotion of positive health by periodic medical inspection of school  
 children. e

. Early diagnosis and treatment of disease, institution of remedial  
measures to correct the defects observed during medical inspection.

· Control of communicable diseases by immunisation.  
· Ensuring proper environment, sanitation in school, including attention to  
housing facilities, protected water supply, drainage, and disposal of  
waste, hygienic environment where mid-day meals are prepared and  
served.

· Health education to impart knowledge and develop health attitude and  
habits to fight superstition, misconceptions, beliefs and facts, which are

Maternal and Child Health Care 82

likely to affect health, and make maximum use of available health

services.

· First aim and emergency care.

· Improvement of nutritional status of school children by way of health  
education, supplementary nutrition, mid-day meals, etc.  
· Promotion of appropriate social and emotional behaviour and correction  
of behavioural problems with the help of child guidance clinics.  
· Detection and proper guidance to physical and mentally handicapped  
ativechildren.

· Awareness of health problems of national importance, ways and means  
 of prevention and population-control education, nutritional,

Components / activities of the SHSProvision of Healthy School Environment blic He

communicable diseases, immunisation, etc.

· Safety and sanitary conditions - includes safety and sanitation of play  
grounds, sewage system, recreation facilities, eating and drinking  
establishments, class room sanitation - lighting, ventilation and  
crowding,  
· Traffic safety, substance abuse, supervision of motor vehicle accident  
preventive modalities by simulation  
· Consideration of safe school day in terms of length, class size,  
classroom procedures (disciplines), etc.

Provision of Health services in the school

· Curative services - first aid care, treatment of minor illnesses such as  
injuries, examination and treatment at the school clinic, follow-up of  
special cases, etc.

· Preventive services - immunisation, growth monitoring, counselling  
services, periodic health check up, health appraisal screening tests for  
hearing, vision, IQ tests, etc.

Maternal and Child Health Care 83

· Promotive services - these can be general or routine, i.e., hygiene,  
physical exercise and balanced diet

Health instruction in the schools

This includes planned and directed health teaching. The program may  
include:  
· Systematic classroom teaching  
. Incidental health education  
· Correlated and co-ordinated health education  
. Preparation of Health education curriculum  
· Community health education

Since the main mission of the school is imparting education, which canPu

used to develop the intellectual capacity to learn various facts and apply  
them to the ideal and real situation, school health instruction can be  
considered as the a core area of SHS.

Role of schoolteachers in SHS  
· Recording height/weight/vision/hearing test at regular intervals.  
· Daily observation of children with a view to spotting any deviations from  
normal health.

· To maintain health record of teachers and other health professionals  
and thus spread the message of healthy living in the community where  
they live and grow.

. A child who is not well cannot derive the full advantage of education  
imparted at school.

· Early detection of defects in growth and development, vision, hearing,  
speech, and behavioural problems; correction will help the child to  
overcome the handicap and thus contribute better to the community  
where he lives.

Maternal and Child Health Care 84

**5.4.** **Adolescent Health Care**

5.6.1. General Consederation

Adolescence is a period of transition between childhood and adulthood in  
which the body develops in size, strength, and reproductive capability. It  
is a period with abstract thinking and social relationships more from  
family base to a wider society. Adolescents  
· Need Psychosocial support and material support  
· Need opportunity and independent experiment and achievement  
But the problem is to balance between support and opportunity  
Adolescent Health care is a paradox. Why?. Because this group is the healthiest group in every society and onPul

the other hand it is highly suffering from problems related to  
behaviour.

**There is an increasing interest in adolescent health care? Why**

. Shift of attention from infectious cause to behavioural cause -  
relevance to adolescents.

· Changes in socio-cultural and demographic characteristics such as  
urbanisation, decreasing influence of extended family resulting in  
decreased traditional support and control system.  
· Ease of social and sexual constraints and exposure to unhealthy  
situations and substances.

· Size of adolescents population  
· Lengthening of adolescent period - wide range between individual's  
age of puberty and marriage.

**Health problems of adolescents are related with problems during**

· Infancy and childhood and  
· Adolescence such as nutritional problems, physical stress, and  
pregnancy. For example nutrition need increases during adolescence  
and adolescent girls need more after they have started to have  
menusration.

Maternal and Child Health Care 85

Health problems of adolescents is highly related with Behaviour which is  
voluntary. The major problems include:  
· Unwanted pregnancy,

. Illicit abortion Adolescent pregnancy is one of the major causes of

maternal mortality.

· Sexually transmitted diseases, and AIDS  
· Drug and alcohol abuse  
. Risk of accidents  
· Risk taking behaviour (adventure) Ethio

These behavioural problems expose adolescents to  
· Illness in later life  
· Poor performance at school  
· Suicide  
· Sexual precocity  
For Adolescent Health care  
· Appropriate interaction needs knowledge of what constitutes healthy  
development  
. They need services which will be sensitive to their needs  
· Health promotive services or prevention and correction of problems  
has to be supported by policies and legislation in sections such as  
health, education, criminal justice youth, sports and culture, religious  
affairs etc.

Maternal and Child Health Care 86

CHAPTER SIX

Breast-feeding and Weanining Food

In prevention of diarrhea, especially among small infants breast-feeding  
plays the major and important role. Breast milk plays an important role in  
both the prevention and treatment of infant diarrhea. From a prevention  
viewpoint, breast milk provides a natural immunity and is generally safe  
from contamination. From a treatment viewpoint, breast milk, when  
given during ORT, helps provide extra water in addition to the salts in  
ORT, and helps restore the nutritional status of the child.

The increasing use of formula feeding by mothers, particularly in urbanPula

and semi urban areas is considered one of the leading causes of

diarrhea, and malnutrition. Many mothers adopt formula feeding

because of its flexibility and ease of use, freeing them to work. Others  
are convinced by the aggressive marketing campaign of commercial  
formula companies and by the appeal or modernity that bottle-feeding  
has come to represent.

Most poor mothers have no safe water to mix with the formula, and have  
problems to properly maintain bottle sterility, and often dilute the formula

to make it last longer. These actions increase the likelihood of bacterial

contamination and reduce the nutritional benefit of the product. As a  
response to this growth in improper bottle-feeding, a campaign has been  
launched worldwide to promote continued breastfeeding and to develop  
appropriate weaning foods for children.

**Breastfeeding and bottle-feeding: advantages & disadvantages**

**Advantages of breast-feeding:**

. Naturally suited to needs and digestion of infants  
· Needs no preparation, less work for mother  
· Ready on demand

Maternal and Child Health Care 87

· Inexpensive  
· Clean  
· Right temperature & concentration  
· Contains protective elements for infant  
· Infant benefits from cuddling and close contact with mother  
· May delay conception, (however is not reliable as a contraceptive)  
· Helps uterus of mother return to normal size

**Disadvantages of breast-feeding:**

Ethio

· Severely malnourished mother who breastfeeds is depriving both  
herself and her child of vital nutrients.

**Advantages of bottle-feeding**

**(These may not be advantages for the baby)**

· Allows mother more independence, ability to work away from home  
· Allows other members of family to feed child

Disadvantages of bottle-feeding:

· Formula is expensive  
· Formula needs to be accurately mixed for adequate nutrition  
· Takes preparation time  
· Formula needs to be prepared using hygiene practices  
· Baby is more susceptible to diseases & infections when bottles are  
contaminated  
. Fuel needed for heating water  
· Need adequate amounts of safe water to prepare formula and clean  
bottle  
. More than one bottle is needed  
· Need cleaning utensils and soap

Maternal and Child Health Care 88

**Weaning Foods**

It is generally held that "breast milk alone, from adequately nourished  
mothers, is sufficient food for infants up to six months of age. After six  
months, breast milk is a valuable supplement to weaning food.

The actual weaning period varies from one culture to another.  
Supplemental feeding can be introduced almost immediately after birth in  
some cultures. It is more common that at three to five months, mothers  
will start introducing weaning foods, yet in some cultures weaning may  
be delayed until the ninth or tenth month. In addition to identifying  
existing weaning schedules it will be necessary to look at the kind of  
weaning foods and the way in which they are prepared.

When discussing with mothers about weaning the following points has to  
be considered  
· Cooking temperature which destroys bacteria  
· Reducing the time between food preparation and child feeding  
· Hand-washing before food preparation which will reduce bacterial  
· Contamination  
· Use of clean or boiled water when possible.  
· Weaning food can be prepared from food items available at home

Maternal and Child Health Care 89

REFERANCE

1. Health and Health Related Indicators, Planning and programming,  
Minstry of Health, 1991 (Eth. Cal)  
2. Tropical Health Conscise Notes, Obsteterics. C.Hoverd and  
R.Brown  
3. Reproductive Health, Strategy for the African region 1998-2007,  
WHO, Regional Office for Africa

**4. Primary Health Care Technologies at the Family and Community**

levels. UNICEF AGA Khan Foundation WHO, 1986  
5. Population Reports, Immunizing the World's Children. 1, 5, April  
1986  
6. Risk Approach for Maternal and Child Health Care, WHO,

7. WHO Technical Report Series # 600,1976. Fifth report WHO TRS.

Geneva, 1986

1969 # 428

**8. Humphrey, J.H., et.al. 1992. Vitamin A deficiency and attributable**  
**mortality among under 5 year olds. Bulletin WHO, 70, 225-232.**  
**9. Sommer, A., et.al. 1983 Increased mortality in children with mild**

vitamin A deficiency. Lancet, 2, 585-588.  
10. Joint Committee on Health policy of the World Health  
Organization (WHO) and UNICEF on vitamin A  
11. Conventions on the right of the child. 1991