# Primary Health Care Programs

## Learner's Guide

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**Foreword**

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**Primary Health Care Programs**

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# Foreword

On fortieth anniversary of ALMATA declaration in (1978) for primary health care concepts, it is mandatory To review the after math of that declaration which had coined the pillars for equity and equality in presentation of health services, paving the way for universal health coverage.

That had been fulfilled by comprehensiveness and integration in presentation of health services within certain demarcated catchment areas, thus focusing on robust integration between preventive and curative services, through tackling target age groups with intersectoral collaboration and community participation.

Accordingly primary health care concepts were translated into action all over the world through presentation of PHC programs which were consistent within epidemiological , demographic and topographic variables thus taking into consideration all circumstances whether they were ordinary once or emergency and crisis circumstances , making use the capabilities of all levels of presentation of health services from community to all levels of health facilities, utilizing all areas of amelioration and development through introducing basic health services package with full integration between public and private health sectors , thus buttressing health system through building up its essential building blocks.

There, preparing and execution of this primary health care pamphlet for students and those health facilities and field workers, making us from that long run expertise's of primary health care will form a great step towards not only bolstering the cornerstone for more upgrading and development of these concepts within the fulfillment of sustainable development goals (SDGS), hoping for these efforts to Make more fruition

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# About the Author

**Riyadh Kareem Abbood** graduated from medical school in 1984 and completed a postgraduate study with a degree in community medicine in 1994. He was in charge with the management of primary healthcare programs for more than 15 years at MOH. Riyadh was a project manager of Marshland Children Initiative for more than five years from 2005-2011, then worked as provincial coordinator of a primary health care project in Iraq (PHCPI/USAID). While at Najaf Health Directorate for almost three years, he had the opportunity to train in all Iraqi National primary health care programs and participated in most of workshops and training courses. He joined UNICEF through third party as senior health care facilitator and held a short-term contract with the WHO office in Iraq as public health officer in Najaf for three months. Riyadh is currently in Iraq working as director of quality assurance and performance division, nursing faculty, university of Kufa.

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# Preface

Primary health care is an essential part of society and should be important to all people. The scope of primary health care services is broad and often complex. There is a need help facilitate training, fill management gaps of the primary health care services and to provision better services to targeted population. Unfortunately, there are no available comprehensive practical guidelines to facilitate students who are training in primary health care.

This guideline in primary health programs is targeted to benefit medical, health and nursing students as well as public health practitioners. The materials included are designed to improve health care services by graduated generations who will be expected to work at a variety of health facilities in Iraq and beyond. It can be used as a tool in practical training during studying years, in addition to be a potential source for training of health professionals, physicians, nurses, midwives and other health care workers.

The guide is organized into eleven sections filled with basic, but essential information on each of the topics associated with primary health care.

**Aims:**

This guideline in primary health care programs aims the students to:

1) Facilitate development of essential basic knowledge and skills for the implementation of primary health care programs in their careers.
2) Orient their knowledge and attitude toward community-based health care services.

**Expected outcomes:**

After using these guidelines, the students are able to:

1) Critically analyze the concepts and programs of Primary Health Care.
2) Take a proactive role in identifying and analyzing health needs at the population and individual levels with reactive responses.
3) Apply concepts of Primary Health Care in programmatic manner in health facilities.

Learner's Guide in Primary Health Care Programs has been prepared with the idea to strengthen education and training of medical, health and nursing students as public health care providers.

# Abbreviations

| | |
|---|---|
| AFP | Acute Flaccid Paralysis |
| BCG | Bacillus Calmette–Guérin (BCG) vaccine |
| BSE | Breast Self-Examination |
| CBE | Clinical Breast Examination |
| ANC | Ante Natal Care |
| BMI | Body Mass Index |
| DM | Diabetes Mellitus |
| DoH | Directorate of Health |
| DOTS | Direct Observed Treatment Strategy |
| EPI | Expanded Program on Immunization |
| EBF | Exclusive breastfeeding |
| IMNCH | Integrated Management of Newborn and Child Health |
| IPV | Inactivated Polio vaccine |
| I.U | International Unit |
| LBW | Low Birth weight |
| mhGAP | Mental Health Global Action Program |
| MMR | Mump Measles Rubella Vaccine |
| MOH | Ministry of Health |
| NIDs | National immunization days |
| OPV | Oral Polio Vaccine |
| PHC | Primary Health Care |
| PHCCs | Primary Health Care Centers |
| PHCT | Primary Health Care Team |
| TB | Tuberculosis |
| TT | Tetanus Toxiod |
| VLBW | Very Low Birth weight |
| VVM | Vaccine Vial Monitor |
| WHO | World Health Organization. |

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Although the reviewers listed above have provided many constructive comments and suggestions, the review of this guide was overseen by **senior** academic staff in the medical school at university of kufa.

# Section 1 – Primary Health Care

## 1.1 Health

WHO 1948; Health was defined as; State of complete physical, mental and social well-being and not merely the absence of disease or infirmity. The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition.

WHO 1953; stressed the need to strengthen the basic health services through the establishment of a network of health centers and sub-centers, as close to the people as possible. The concept of auxiliary health workers, to be trained and deployed particularly in rural areas, to provide basic health care was advocated.

In 1978, WHO adopted the primary health care (PHC) approach as the conceptual basis for effective health care delivery.

## 1.2 Primary Health Care (PHC)

The Alma-Ata Conference defined PHC as: "essential health care, based on practical, scientifically sound and socially acceptable methods and technologies made universally accessible to individuals and families in the community through their full participation and at a cost that the community and the country can afford to maintain at every stage of their development in the spirit of self-reliance and self-determination." (International Conference of Primary Health Care 1978).

PHC is an approach to health beyond the traditional health care system by contributing to reduce the effects of social inequities and inequality on health. PHC is based on standard humanitarian principles and has basic essential elements which aim to attain optimum health services for all, combating social, environmental, educational and economical determinants of health toward sustainable development.

## 1.3 Principles of PHC approach

- **Accessibility** – A continuing, and organized supply of essential health services is available to all people with no unreasonable geographic or financial barriers.
- **Public participation** – Individuals and communities have the right and responsibility to be active partners in making decisions about their health care and the health of their communities.

- **Health promotion** – The process of enabling people to increase control over and to improve their health.
- **Appropriate technology** – This includes methods of care, service delivery, procedures and equipment that are socially acceptable and affordable.
- **Intersectoral cooperation** – Commitment from all sectors (government, community and health) is essential for meaningful action on health determinants. (Canadian Nurses Association, 2003).

## 1.4 Universal health coverage (UHC)

UHC is firmly based on the WHO constitution of 1948 declaring health a fundamental human right and on the Health for All agenda set by the Alma Ata declaration in 1978. UHC cuts across all the health-related Sustainable Development Goals (SDGs) and brings hope of better health and protection for the world's poorest.

UHC means that all people and communities can use the promotive, preventive, curative, rehabilitative and palliative health services they need of enough quality to be effective, while also ensuring that the use of these services does not expose the user to financial hardship. (WHO).

From the PHC perspective, universal access implies the elimination of geographic, financial, sociocultural, organizational, gender and structural barriers that prevent access to the health system and/or use of services according to the health needs of individuals, families, and the community.

Universal coverage requires a significant number of professionals trained in primary care.

1. Human resources planning must be consistent with the population's needs.
2. Human resources training must be sustainable and respond to health needs.
3. Policies on the quality of personnel performance must be implemented.
4. Staff capacities (profiles and competencies) must be outlined and each worker profile tailored to serve a specific task.
5. Mechanisms for continuous evaluation are required to enable health workers to adapt to new scenarios and address the population's changing needs
6. Policies must support a multidisciplinary approach to comprehensive care.

## 1.5 Types of PHC Programs

- Vertical Programs [VP] are initiatives, which focus on a disease or group of diseases.

  Vertical programs are "so called because they are directed, supervised, and executed, either wholly or to a great extent, by a specialized service using dedicated health workers"

  Vertical programs have limited chance of sustainability and have negative spillover effects on health systems and non-targeted populations.

  Smallpox eradication is the most frequently cited example of a successful vertical program that has succeeded without adversely affecting the functioning of the health system.

- Horizontal programs or Integrated programs seek to "tackle the overall health problems on a wide front and on a long-term basis through the creation of a system of permanent institutions commonly known as 'general health services'"

  Integrated program is "the process of bringing together common functions within and between organizations to solve common problems, developing a commitment to shared vision and goals and using common technologies and resources to achieve these goals".

  In practice, most health services combine vertical and integrated elements, with varying degrees of balance between them.

## 1.6 PHC Values

1. Equality and Equity
2. Quality and Distinction
3. Effectiveness and Efficiency
4. Beneficiaries' Rights
5. Teamwork
6. Patient's Safety

## 1.7 Essential Elements of Primary Health Care (PHC)

1. E–Education concerning prevailing health problems and the methods of identifying, preventing and controlling them.
2. L–Locally endemic disease prevention and control.
3. E–Expanded program of immunization against major infectious diseases.
4. M–Maternal and child health care including family planning.
5. E– Essential drugs services.

6. N–Nutritional food supplement, an adequate supply of safe and basic nutrition.
7. T–Treatment of communicable and non-communicable disease and promotion of mental health.
8. S– Safe water and sanitation.

**Extended Elements:**

1. Reproductive health needs.
2. Provision of essential technologies for health.
3. Health promotion.
4. Prevention and control of non-communicable diseases.
5. Food safety and provision of selected food supplements.

## 1.8 Principles of Primary Health Care

1. Universal access: Extension of essential health services with priority given to the undeserved sectors based on need.
2. Equity and social justice: Health care must be provided equally to all individuals irrespective of their gender, age, and urban/rural and social class.
3. Community participation in defining and implementing health agendas.
4. Appropriate use of technology.
5. Multi-sectoral approach: All sectors are equally important in promoting the health and self-reliance of communities (Intersectoral collaboration).

## 1.9 PHC Team

PHC Team refers to the health personnel in the field of health care in different areas of expertise (medical, nursing, health, etc.) who are individually and collectively responsible for providing this care according to their role.


For a group to become a team, the following conditions are important:

- Performance is the main objective. The team is a means and not the end.
- Managers strengthen teamwork through the creation of a team performance ethic.

- The cultural tendency toward individualism should not curb team performance.
- Discipline within the team and organization allow for enhanced team performance.
- Team performance is associated with the quality and comprehensiveness of their work in a changing area such as health.

## Teamwork

Teamwork is a dynamic, open, and participatory process of technical, political, and social development of health work in the context of a new care model.

The characteristics of teamwork include the relative autonomy of each type of professional (ensured by the legitimacy of the set of competencies of each of them); interdependence between the different professionals in the performance of actions; interdisciplinarity; horizontality; flexibility; creativity; and communicative interaction.

## Team Leadership:

An intention to take a role as leader of a team or other group. A desire to lead others.

- Encourages others to work together as a team
- Acts to promote a teamwork climate
- Keeps associates informed about relevant or useful information, lets them know what is happening for benefit of work
- Promotes team morale and productivity: models desired behavior: demonstrates personal commitment to the team

## Health Teams

The creation of a health team is not achieved by the mere physical juxtaposition of its components and activities. Team members must accept common goals and establish functional bonds that facilitate harmonious development.

## The composition of PHC team (PHCT)

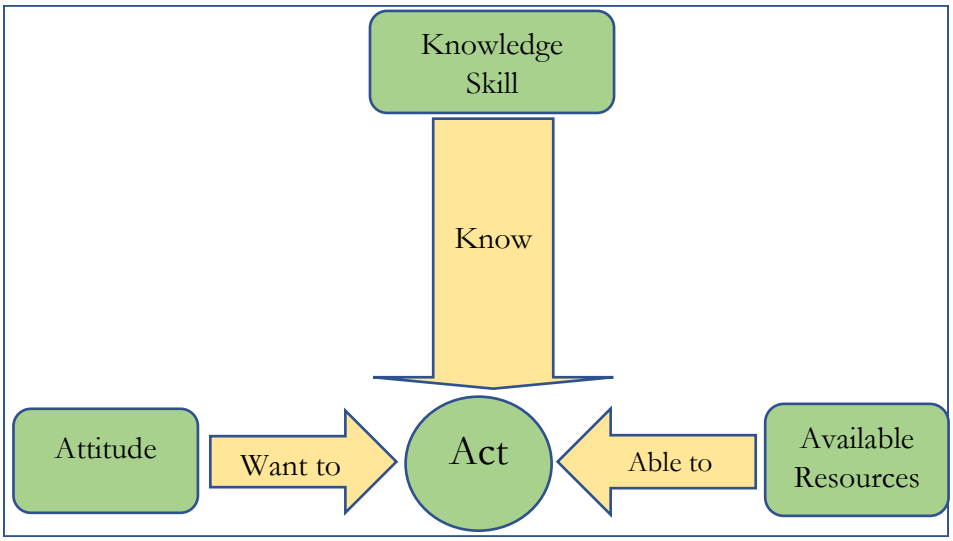
The composition of a primary health care team (PHCT) should adapt to the specific characteristics of the system and the community in which it provides care. There are no universal models for composition of a primary health care team (PHCT) which can be valid for all places and social contexts. A health team is not defined by the type of professionals that form the team

or its qualitative relationship to the population, but rather by the organizational approach to adaptation of its structure and operation to meet the needs of individuals, families, and the community.

## Criteria for recognition of teamwork

1. Intrinsic communication
2. Common project
3. Technical differences between specialized jobs
4. Rationale for inequality of specialized jobs
5. Specific characteristics of specialized jobs
6. Flexibility in division of labor
7. Independent technical autonomy

**Strategies for the Development of Primary Health Care Teams**




## PHC Team Tasks

1. Preparing PHC database.
2. Assessment, classification & diagnosis for presented cases.
3. Providing comprehensive medical and nursing care.
4. Providing the services of medical and nursing consultations.
5. Preventive health services.

## Tasks shifting:

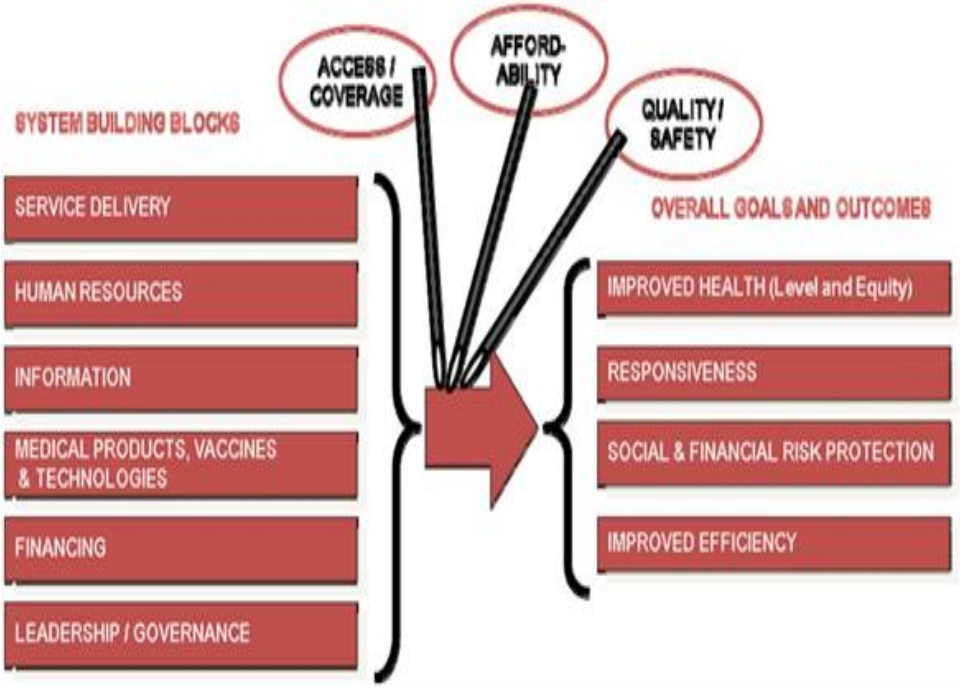
The use of specialist health staff in training and supervisory roles to non-specialist health workers, as a mechanism for more efficient and effective care.

## District Health care System

Primary health care is the gateway to the health system and social services, where health needs are addressed. A PHC-based system strengthens the first level of care, although its structure and operation are more complex.

District health system was adopted by the WHO Global Program Committee in 1986: "A district health system based on Primary Health Care is a self-contained segment of the national health system and close enough to communities for problems and constraints at the community level to be understood. It includes all institutions and individuals providing health care in the district, whether governmental, social security, non-governmental, private, or traditional.

## Six Building Blocks of a Health System According to WHO



## Primary Health Care Center PHC Centers

PHC centers provide preventive, promotive, and basic curative services, along with simple diagnostic investigations.

### 1- PHC main centers:

Main PHC centers are staffed by doctors, nurses, midwives and laboratory and pharmacy technicians. The centers serve a population ranging from 10 000 – 30 000 and up to a maximum of 45 000 in centers with emergency and obstetric care services. PHC main centers provide a wide range of preventive and curative services, including some complications, difficult cases of childhood illness and other curative services. Areas of services include: Maternal & Child health services, Immunization services, Control of communicable diseases, noncommunicable diseases, Mental health, Emergency services, Dental services, Laboratory services and essential medicines.

There are three categories of PHC main centers:

1- Primary health care centers (Category: A): These are the centers that deliver all the primary health care services.
2- Primary health care training center (Category: B): These centers offer the same services as category (A) plus a training hall within the main building to deliver training activities for medical, paramedical staff of health facilities, medical institutions and medical school students.
3- Primary health care centers with delivery room and emergency unit: (Category: C: These centers deliver the same services as category A facilities in addition to emergency care services (for simple medical and surgical cases) and services for normal labor.

### 2- PHC Sub-centers

Primary health care sub-centers: (Category: D): These sub-centers deliver simple maternal and child health services, immunization activities and simple curative service

PHC centers are intended to refer to the second level of care at (district and general hospitals).

**"Primary health care is the single most important basis from which to renew the health care system."**

– Roy Romanow, chair of the Commission on the Future of Health Care in Canada (as cited in Canadian Nurses Association, 2003, p. 2)

## Importance of PHC to nurses

Nurses are addressing the challenge of working more effectively as members of multi-disciplinary primary care teams and integrating a PHC focus more effectively into their practice. PC teams, which include family physicians, nurses, and other health professionals working side-by-side as partners, produce better health outcomes, improved access to services, more efficient use of resources, and greater satisfaction for both patients and providers. Nurse practitioners, for example, who integrate elements into their practices such as health promotion, diagnosing and treating health problems, and prescribing drugs, can be effective providers of primary care for many clients. All health providers, including nurses, need to be educated within a framework that supports interdisciplinary work, and interdisciplinary practice needs to be supported in health care settings, whether in the community or in an institution.

Nurses learn to consider socioeconomic factors and the broad determinants of health in their assessments and interventions. Their work settings, however, often compel them to work within a much narrower clinical and treatment-based focus. Indeed, at the level of the health system, although the rhetoric is about "primary health care reform," the focus of government policy is on expanding access to treatment services.

# Section 2 - Maternal &Neonatal Health care

## 1.1 Continuum of Care Model

The continuum of care can be defined over the dimension of time (throughout the lifecycle), and over the dimension of place or level of care.16 The continuum of care over time includes care before pregnancy (including family planning services, education, and empowerment for adolescent girls) during pregnancy; and through the most vulnerable 5 years of a child's life. The continuum of care for service delivery includes integration of health service delivery, including care provision taught to families, services provided at the community level, outreach services, and services at all facilities from Primary Health Care Sub-Center, Main primary Health Care Center up to referral hospitals.

The "Continuum of Care" for reproductive, maternal, newborn and child health includes integrated service delivery for mothers and children from pre-conception, pregnancy, delivery, the immediate postnatal period and childhood.

The Continuum of Care recognizes that safe childbirth is critical to the health of both the woman and the newborn child—and that a healthy start in life is an essential step towards a sound childhood and a productive life.

### Dimensions and importance of the Continuum of Care.

**The first dimension of the Continuum of Care is time** - from pre-pregnancy, through pregnancy, childbirth, and the early days and years of life


**Figure 1.**

Connecting care giving across the Continuum for maternal, newborn and child health).

The Partnership for Maternal, Newborn & Child Health (PMNCH) adapted from WHO 2005 make every mother and child count

**The second dimension of the Continuum of Care is place** - Linking interventions in this way is important because it can reduce costs by allowing greater efficiency, increase uptake and provide opportunities for promoting related healthcare elements (e.g. postpartum/postnatal and newborn care).


**Figure 2.**

Connecting care giving between households and health facilities to reduce maternal, newborn, and child deaths.

## 2.2 Premarital counseling (PC)

It is the process of advice and guidance for those who are planning to get married to enhance their understanding about healthy marital relationship to improve their quality of life.

**Objectives:**

1. Provision baseline assessment for engaged couples.
2. Raise awareness of the couple about health problems.
3. Identify and reduce the reproductive genetic and other health risks.

**During Visit:**

1. Each partner should sign the premarital counseling consent form. A phone number or any other contact information from the couple should be requested.

1. Basic data and Risk Assessment.
2. Degree of consanguinity between the couple must be identified.

3. Request blood sample from both partners for required lab investigations and record the results when coming back.
4. The female partner should be given a dose of tetanus toxoid, after checking history of tetanus vaccination.
5. Premarital educational booklet will be given to each client. The booklet includes information on the following:
   a) The concept and aim of Premarital Counseling.
   b) Common haemoglobinopathies in Iraq.
   c) Sexually transmitted infections (STIs)
   d) Healthy life-style.
   e) Concept of family planning and methods of contraception.
   f) Breast self-examination, the maneuver and frequency.
6. Perform physical examination.
7. Perform and review lab reports.

## 2.3 Antenatal care (ANC)

Antenatal care are the integrative health care services delivered to mother and fetus during pregnancy. It includes provision of counseling and healthcare, several regular routine visits and assessment of pregnant women throughout pregnancy.

**Goals:**

To lower maternal mortality and morbidity rates according to national levels.

**Objectives:**

1) Screening for risk factors such as anemia, STIs, Diabetes Mellitus, Hypertension, mental health problems, and domestic violence.
2) Early identification and treatment of high risk cases and complications that may affect health of the fetus/newborn and mother.
3) Health education about risk signs, birth plan, breast feeding, postnatal care and immunization.
4) Assessment and monitoring of fetal growth.

### Steps of antenatal care:

1. Assessment
2. Classification
3. Treatment
4. Guidance for counselling
5. Follow up (According to national antenatal care guidelines)
6. Documentation

## Types and Periodicity (Schedule) of Antenatal Care visits:

1- **Routine Visits:** Routine antenatal care within the schedule of regular visits on monthly bases during the first 6th month of pregnancy, twice weekly in the 7th and 8th months of pregnancy and weekly in the 9th month of pregnancy.

2- **Focused ANC or specialized:** Special care based on their specific health conditions or risk factors with minimum of number of antenatal visits **(Eight (up-to-date 2016 WHO)** throughout pregnancy.

## 2.4 Rights of the Pregnant Woman

1- Information about her health.

2- Discuss her concerns, thoughts and worries.

3- Express her views about the services she intends to receive.

## 2.5 Antenatal Health Care Services Versus Time of Care

| # | Time Order of the visit | Tasks |
|---|---|---|
| 1 | 1st visit before 4 months (up to 16 weeks) | Complete medical and obstetric history<br>Complete clinical examination<br>Lab investigations<br>Documentation and scheduling of the next visits during periodic visits |
| 2 | 2nd visit 6 months (24-28 weeks) | Check duration of pregnancy<br>Ask for plan of delivery<br>Any vaginal bleeding since last visit؟<br>Is the baby moving? (after 4 months)<br>Check record for previous complications and treatments received during this pregnancy.<br>Do you have any concerns?<br>Check for the following diseases: Anemia, Hypertensive disorder, Diabetes mellitus, if she had |
| 3 | 3rd visit 8 months (30-32 weeks) | |

| | | |
|---|---|---|
| 4 | 4th visit 9 months (36-38 weeks) | gestational diabetes and Hepatitis B if she is from the risk group<br>Abdominal examination should confirm fetal lie and presentation during the last antenatal visit.<br>Is she taking prophylactic Iron-Folic acid regularly from 4th month onward?<br>What is Tetanus toxoid Immunization status?<br>Preparedness for breast feeding<br>Preparedness for clean and safe delivery |

## 2.6 Risk pregnancies

Every pregnancy faces a risk. So the pregnancy categorized as high risk and low risk pregnancy according to presence of risk factors and weights of these factors within the score system of risk measurement. High risk pregnancies necessitate specialized or focused care and referral of the mother to higher level of specialized care.

### Advice the mother and Clarify:

- Signs of normal labor and pregnancy-related emergencies and how to deal with them. This should include where she should go for assistance.
- Explain why delivery needs to be at referral level.
- Develop the birth and emergency plan.
- Advice about nutrition, soft diet rich in vitamin C, Iron and minerals.

### Documentation:

Risk Assessment Forms will be kept in a Box File and will then be transferred to their Health Center within catchment area and kept in their Family Folder. A personal card or a copy of the Risk Assessment Forum is given to each client with his/her laboratory results and each client should be given an appointment for counseling before they leave.

## 2.7 Types of Risk factors

| A) History of Current Pregnancy and Previous Pregnancies | | B) Current Pregnancy | |
|---|---|---|---|
| **Factor** | **Score** | **Factor** | **Score** |
| Age<16 or >35 | 2 | Hypertension | 1 |
| BMI<18 or 22.5 before pregnancy | 2 | Pre-Rupture membrane | 1 |
| First visit before 20 weeks | 3 | Oligo- or polyhydromnios | 1 |
| Primigravida | 3 | Intrauterine growth retardation | 1 |
| Parity >5 | 3 | Multiple pregnancies | 1 |
| Abortion | 3 | Breach (Breech) presentation after 36 weeks | 1 |
| Ectopic pregnancy | 3 | ABO Rh blood incompatibility | 1 |
| Infertility | 1 | Anemia | 1 |
| Ante partum Hemorrhage | 3 | Hemorrhage before 20 weeks | 1 |
| Still birth | 1 | Hemorrhage after 20 weeks | 1 |
| Hypertension or Convulsion | 1 | Post maturity | 1 |

| C) Medical and Surgery | | D) History of Previous Labors | |
|---|---|---|---|
| **Factor** | **Score** | **Factor** | **Score** |
| Previous genitourinary surgery | 1 | Preterm labor | 1 |
| Chronic renal diseases | 1 | Post-term labor | 1 |
| Diabetes Mellitus | 3 | Birth weight >4 Kg | 1 |
| Chronic hypertension | 3 | Birth weight <2.5 Kg | 1 |
| Cardiac diseases | 3 | Birth of congenital malformed newborn | 1 |
| Gestational diabetes mellitus | 1 | Previous cesarean section | 1 |
| Epilepsy | 1 | Prolonged obstructed labor | 2 |
| Psychological diseases | 1 | | |
| Bleeding disorders | 1 | | |
| Thyroid diseases | 1 | | |

## 2.8 Scoring and Classification of the Risk:

| # | Score | Classification | Intervention |
|---|---|---|---|
| 1 | 0-2 | **Low risk** | Monitoring and follow up |
| 2 | 3-6 | **High risk** | Closed visits and referral according to clinical assessment |
| 3 | 7 and more | **Extremely high** | Urgent referral to hospital |

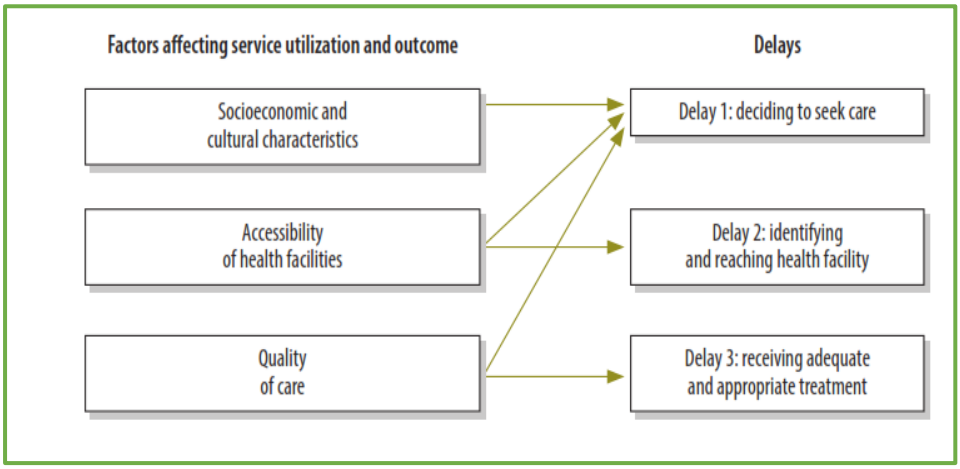
## 2.9 Three delays (3Ds) model causing pregnancy complications and death

### Three Delays Model

1. Delay in recognition of danger signs and decision to seek care
2. Delay in reaching an appropriate source of care
3. Delay in obtaining adequate and appropriate treatment

*Source: Thaddeus S, Maine D (1994) Too far to walk: maternal mortality in context. Social Science and Medicine 38 1091-1110.*

All these factors are related to one or more of the underlying causes such as socioeconomic and cultural characteristics, accessibility of health services and quality of care as illustrated in figure below.



## 2.10 Referral of high risk pregnancies

There is a process of sending a client for additional health services and specialized care at a higher-level health facility.

**Referral notes:**

1. Date of the referral and time.
2. Name of the hospital sending the patient to.
3. Name, Age, ID number (if known) and address of the patient.
4. Relevant medical history of the patient.
5. Findings from physical examinations and tests.
6. Suspected diagnosis.
7. Any treatment you have given to the patient.
8. Reason for referring the patient.
9. Name, date and signature.
10. Your name, date and signature.

## 2.11 Tetanus toxoid for women in child bearing age (14-49)

Each woman in child bearing age (14-49) according to WHO, now the in Iraq tendency to be (12-49) should receive doses of tetanus toxoid (TT) vaccine (Refer to the Iraqi National Immunization Schedule) as clarified in immunization section.

TT vaccine is 0.5 ml TT IM, typically administered in the upper arm. Advise woman about date of next dose and record on the mother's card.

Check tetanus toxoid (TT) immunization status:

1- If mother was given Tetanus Toxoid before follow-up appointment according to the schedule within EPI section.
2- If the mother is in doubt about the number of doses received before, take the lowest number and follow up the schedule.
3- If immunization status unknown, start vaccination according the EPI schedule.

## 2.12 Natal Care

**Key messages:**

1) Motivate the woman and her family to have a clean and safe delivery.
2) Promote and ensure skilled attendance at every birth.
3) Promote institutional delivery.
4) Let the woman choose the position she desires and feels comfortable in during labor and delivery.

5) Maintain a partograph which will help you in recognizing the need for action at the appropriate time and thus ensure timely referral.
6) Ensure active management of the third stage of labor, which will help in the prevention of postpartum hemorrhage.

### Stages of labor:

1-The first stage of labor starts with the onset of labor pains to the full dilatation of the cervix. This stage takes about 12 hours in primigravida's and half that time for subsequent deliveries.

2-The second stage starts from the full dilatation of the cervix to the delivery of the baby. This stage takes about 2 hours for primigravida's and only about half an hour for subsequent deliveries.

3-The third stage starts from after the delivery of the baby and ends with the delivery of the placenta. This stage takes about 15 minutes to half an hour, irrespective of whether it is a primigravida or multigravida.

4-The fourth stage of labor is the first hour after delivery of the placenta. This is a critical period as PPH, which is a fatal complication, can occur during this stage.

### Partograph:

It is a basic tool for management of labor and timely diagnosis of complications of labor. The partograph assesses three main areas: fetal monitoring, progress of labor and decision making.

## 2.13 Postpartum care

The most critical postnatal period for the mother is the first 4 hours, as PPH can occur during this period. Assessment of all mothers and newborns to detect problems or complications is crucial during this time.

### Types of Postpartum care services:

#### 1. Care of the mother:

Use chart for examining the mother after delivery, checked for (Anemia, Hypertensive disorder, D.M., Hepatitis B, Check for thromboembolism in puerperium.

### Preventive measures:

Advice and counsel on:

1. Self-care.
2. Nutrition.

a) Advise the woman to eat a greater amount and variety of healthy foods.
b) Spend more time on nutrition counseling.
c) Encourage family members to help the woman to eat enough and avoids hard physical work.

3. Danger signs during pregnancy labor and puerperium.
4. Importance of exclusive breastfeeding.
5. Family planning.
6. Other relevant topics for advice and counseling.
   a) Drink plenty of clean, safe water.
   b) Rest & sleep.
   c) Avoid smoking (passive and active).
   d) Avoid medication unless prescribed by doctors.
   e) After delivery wash all over daily, particularly the perineum and change pad every 4 to 6 hours. Wash pad or dispose it safely.
   f) Advice and counsel on routine and follow up visits.
   g) Sexual activity.
   h) Psychosocial support with focusing on mental health:

   Psychosocial support is recommended for the prevention of postpartum depression among women at high risk of developing this condition.
7. Prophylactic antibiotics:

   The use of antibiotics among women with a vaginal delivery with a third or fourth degree perineal tear to prevent wound infections.

## Postpartum care visits:

1- First visit during the first 24 hours after birth before being discharged.
   a- Routine visit: First visit should be as early as possible.
   b- Active home visit is recommended for care of the mother and newborn.

2- follow up visits: At last Three additional postnatal contacts are recommended for all mothers and newborns, on day 4 (48-72 hours), then between day 7–14, and 6 weeks after birth.

Support breastfeeding, support for maternal recovery and early access to family planning and early detection and timely referral of complications.

3- Other exceptional visits: if there is problem (Fever 2 days, Lower urinary tract infection, Hemorrhage and psychosocial disturbance).

## Mothers counseling during Postpartum care:

All women should be counseled and given information about the physiological process of recovery after birth, and about the following:

1. Signs and symptoms of Post-Partum Hemorrhage.
2. Signs and symptoms of Pre-Eclampsia/Eclampsia.
3. Signs and symptoms of infection.
4. Signs and symptoms of Thromboembolism.
5. Women should be counseled on nutrition.
6. Women should be counseled on hygiene, especially handwashing.
7. Women should be counseled on birth spacing, family planning and contraceptive methods should be provided if requested.
8. Exercise: All women should be encouraged to mobilize as soon as appropriate following the birth and to take gentle exercise and time to rest during the postnatal period.
9. Mental health and psychosocial support ought to be given great concern.

## Vitamin A supplementation

a) Give 200-000-I.U. vitamin A capsules after delivery or within 6 weeks of delivery.
b) Explain to the woman that the capsule with vitamin A will help her to recover better, and that the baby will receive the vitamin through her breast milk.
c) Ask her to swallow the capsule at the time of the visit.
d) Explain to her that if she feels nauseated or has a headache, it should pass in a couple of days.
e) Vitamin A during pregnancy is contraindicated.

## Iron-Folic Acid (Ferofolic) tablet

Explain to mothers and their families and motivate them to take Ferofolic tablet which is essential for healthy pregnancy and after delivery. Inform them about the danger of anemia and need for supplementation.

- Iron and folate (1 tablet = 60-mg iron, folic acid = 400-µg)
- Give iron and folic acid to all pregnant, postpartum and post-abortion women as follow:
- All women without anemia should take one tablet daily
- Women with anemia should take two tablets daily during pregnancy and three months after delivery and abortion.

## 2. Care of the newborn

Care of Preterm and low-birth-weight babies immediately after birth according to WHO guidelines and at one minute and five minutes Apgar score.

### 1-APGAR scores

The Apgar score is a tool for initial assessment of the new born at the first minute and five minutes, according to five criteria. Each criterion ranges from zero to two with a maximum final total score of Ten.

| # | Condition or criterion | Severity | | |
|---|---|---|---|---|
| | | 2 | 1 | 0 |
| 1 | Heart rate | >100 beat /minute indicates that the baby is vigorous. | <100 beats/minute indicates that the baby is not very responsive | No heart rate |
| 2 | Respiration | Good, strong cry | Weak cry–may sound like whimpering or grunting | Not breathing |
| 3 | Muscle tone | Active motion | Some flexing (bending) of arms and legs | Limp |
| 4 | Reflex response | Grimace and cough or sneeze during stimulation | Grimace during stimulation | No response to airways being stimulated |
| 5 | Color | Completely pink or good color | Good color in body but with blue hands or feet | The baby's entire body is blue or pale |

** Lower than normal scores do not mean that there will be permanent health problems with the child.*

| Time | Score | Action required |
|---|---|---|
| At one minute | 7-10 | Baby will need only routine post-delivery care. |
| | 4-6 | Some assistance for breathing might be required. |
| | <4 | Can call for prompt, lifesaving measures. |
| At five minutes | 7-10 | It is normal. |
| | <7 | The baby will continue to be monitored and retested every five minutes for up to twenty minutes |

## 2. Further Assessment for risk signs

The following signs should be assessed during each postnatal care contact and the newborn should be referred for further evaluation if any signs are present:

a) Not able to feed
b) History of convulsions
c) Breathing rate (60 per minute or more)
d) Severe chest in-drawing
e) Movement only when stimulated or no movement at all
f) Fever (temperature 37.5°C or above)
g) Low body temperature (temperature below 35.5 °C)

## 3. Exclusive breastfeeding (EBF)

All babies should be exclusively breastfed from birth until completed 6 months of age. Mothers should be counseled and provided support for EBF at each postnatal contact. LBW infants, including those with VLBW, should be fed mother's own milk or fed donor human milk.

### 3-Cord care:

Clean, dry cord care is recommended for newborns born in health facilities, and at home in low neonatal mortality settings.

Use of chlorhexidine in these situations may be considered only to replace application of a harmful traditional substance, such as cow dung, to the cord stump.

## 4-Bathing

Bathing should be delayed to after 24 hours of birth. If this is not possible at all due to cultural reasons, bathing should be delayed for at least 6 hours. Appropriate clothing of the baby for ambient temperature is recommended (this should be 1–2 layers more than adults and a hat). The mother and baby should not be separated and should stay in the same room 24 hours a day.

## 5- Immunization

a) All newborn should receive their first dose of hepatitis B vaccine as soon as possible after birth, preferably within 24 hours.
b) Oral polio vaccine (known as zero dose because it does not count towards the primary series), is recommended in all polio-endemic countries and in countries at high risk for importation and subsequent spread.

c) Single dose of BCG vaccine in settings where tuberculosis is highly endemic or in settings where there is high risk of exposure to tuberculosis.

## 6- Eye care:

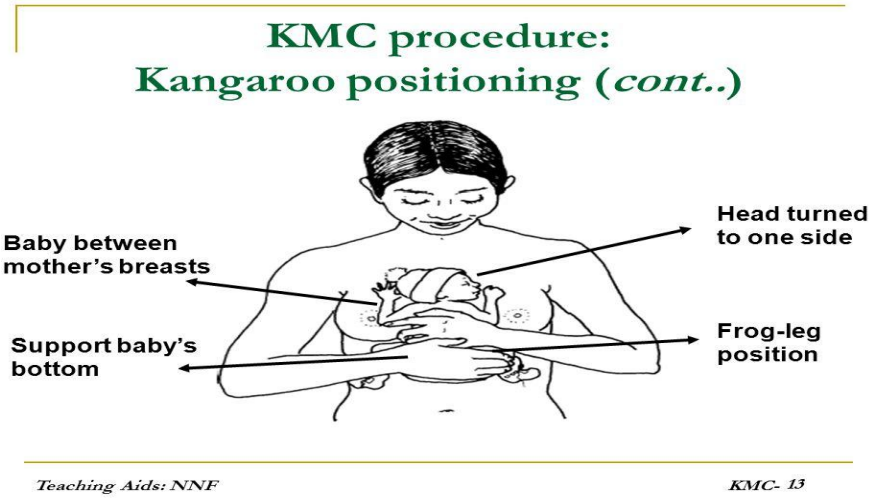
Clean eyes immediately after birth with swabs soaked in warm sterile water using separate swabs for each eye. Clean from medial to lateral side and use a separate swab for each eye.

## 7-Prevention of hypothermia immediately after birth:

LBW neonates should be put in skin-to-skin contact with the mother soon after birth and after drying them thoroughly to prevent hypothermia.

## Kangaroo mother care:

It is recommended for the routine care of newborns weighing 2000 g or less at birth and should be initiated in health-care facilities as soon as the newborns are clinically stable.




## 8- Vit. K supplementation to newborn

Vitamin K should be given to all newborn infants as a single, intramuscular dose of 0.5 to 1 mg. **(American Academy of Pediatrics)**

## 2.14 Indications for Referral to Hospital Level

**1- Management of obstetric emergencies**

Bleeding, infections and severe anemia.

**2- Management of neonatal emergencies**

Infections, complications related to asphyxia, preterm birth or congenital malformations.

## 2.15 Essential routine care of the newborn

1. Assess for danger signs, measure and record weight, and check temperature and feeding.
2. Support feeding practices, particularly exclusive breastfeeding.
3. Promote hygiene and good skin, eye, and cord care.
4. Promote clean, dry cord care.
5. Ensure warmth by delaying the baby's first bath to after the first 24 hours, practicing skin-to-skin care, and putting a hat on the baby.
6. Encourage and facilitate birth registration.
7. Refer for routine immunizations.
8. Counsel on danger signs and home care.

Extra care for low birth weight (LBW) and other vulnerable babies:

1. Identify the small baby.
2. Assess for danger signs and manage or refer as appropriate.
3. Provide extra support for breastfeeding, including expressing milk and cup feeding, if needed.
4. Pay extra attention to warmth promotion, such as skin-to-skin care or Kangaroo Mother Care.
5. Ensure early identification and rapid referral of babies who are unable to breastfeed or accept expressed.

# Section 3 – Child Health

## 3.1 Integrated Management of Newborn and Child Health (IMNCH)

**Definition:** IMNCH is an integrated approach to child health that focuses on the wellbeing of the whole child and newborn, it includes promotive, preventative (monitoring and promoting growth, immunizations, homecare counseling, de-worming and promoting breast feeding), curative (assessing, classifying and treating) and rehabilitative services in accordance with the most recent IMNCH chart booklet at all times that the PHC facility is open.

### Objectives of the IMNCH

1. To reduce mortality and morbidity associated with the major causes of disease in children less than five years of age.
2. To contribute to the healthy growth and development of children.

## 3.2 Routine examinations of Children Under five (U5)

1- During infancy: In the first week of life, then every 2 months.
2- 1-2 years: Every three months.
3- 3-5 years: every six months.

### Child visits to PHC Center:

**Steps:**

1- Identify the Sex.
2- Calculate the age by subtraction the date of birth from the date of visit.
ex: child date of birth 20/12/2007, date of visit 12/7/2009

**Note:**

1- If the age is less than 3 months, record by complete weeks (7 days)
2- If the age is between 3 m. but less than one year, record by complete months (30 days)
3- If the age is equal or more than one year, record by years & complete months.

**Initial visit:** When did the child come for a complaint for the first time to PHC Center.

**Follow-up visit:** When the child visits the PHCC according to advice from the health worker. In both visits, the mother may omit but feel anxious and it is important to assure her. This will help to obtain important information about the concern for her child.

For each visit when you see the mother or the child's caregiver with the sick child:

1. Greet the mother appropriately and ask about the child.
2. Take the child's weight and temperature and record in the recording form.
3. Ask the mother what the child's problems are.
4. Determine if this is an initial or follow-up visit for this problem.

Purposes of periodic examination at routine visit:

1- Immunization.
2- Screening for growth, developmental milestones or physical problems.
3- Screening for child maltreatment.
4- Identify parental concerns.
5- Parental support and education.

## 3.3 Management guidelines of sick children aged under five years

1- Assessing signs of severe disease according to the recording form.
2- Assessing a child's nutrition and feeding (page 27).
3- Assessing immunization status.
4- Health education and counseling parents to solve feeding problems and advising parents about when to return to a health facility.

## IMNCH case management process:

**1- Assessment** Includes checking the child for health problems when mother and child arrive at the health care center.

a) Accurate recognition of clinical signs, choosing appropriate treatments, and provision of counseling and preventive care.
b) Assess a child for general danger signs (or possible serious bacterial infection in a young infant), five main symptoms, malnutrition and anemia, and to look for other problems.
c) Scheduled follow-up visits to check the child's progress.
d) Incorporation of basic preventive activities for illnesses.

**2- Classification** According to national guidelines

**Classify** a child's illnesses in three categories:

a) Very severe diseases which need urgent pre-referral treatment and referral.
b) Diseases which need specific medical treatment and advice.

c) Diseases which need simple advice on home management.

## 3.4 Acute Respiratory Infections (ARI) among children

### Classification:

There are two different guidelines with two sets of charts according to the age of the sick child.

**Firstly:** less than two months of age (young infant)

- Severe pneumonia: characterized clinically by chest indrawing, Stridor in calm child.
- Pneumonia: characterized clinically by rapid breathing.
- No Pneumonia: Cough colds, can be accompanied by fever and there is neither fast breathing nor chest indrawing.

**Secondly:** Two months up to under five years (before fifth birthday)

- **Severe pneumonia:** when accompanied by shortness of breath that is the attraction of lower chest wall into at the time the child took a breath (when the child should be examined in a calm state of no crying or straining).
- **Pneumonia:** when accompanied by rapid breathing, ages 2-12 months was ≥ 50 beats per minute and ages 1-4 years old is ≥ 40 times per minute.
- **No pneumonia:** Cough and Cold, if there is neither fast breathing nor chest indrawing.

### General danger signs in children age groups 2 months-five years

## Danger signs in age groups less than 2 months:

1. Drinking ability decreased less than half the usual volume of drink.
2. Convulsion.
3. Decreased consciousness.
4. Stridor.
5. Wheezing.

Record clinical findings, circle any general danger signs that are found, and check (✓) against the appropriate answer (yes or no) in the classify column

## Assessment, classification, and treatment of sick young infants

<table>
<tr><th colspan="2">Sick children age 2 months up to 5 years who are brought to the PHCC</th></tr>
<tr><td colspan="2">Ask the child's age</td></tr>
<tr><td>Greet the mother appropriately and ask about her child.<br>Look to see if the child's weight and temperature have been recorded</td><td rowspan="2">Use Good Communication Skills:<br>(see also Chapter 25)<br>● Listen carefully to what the mother tells you<br>● Use words the mother understands<br>● Give the mother time to answer the questions<br>● Ask additional questions when the mother is not sure about her answer<br>● Record Important Information</td></tr>
<tr><td>ASK the mother what the child's problems are</td></tr>
<tr><td colspan="2">DETERMINE if this is an initial visit or a follow-up visit for this problem</td></tr>
<tr><td>IF this is an initial visit for the problem</td><td>If this is a follow-up visit for the problem</td></tr>
<tr><td>Assess and classify according to the guidelines</td><td>Give follow-up care according to the guidelines</td></tr>
<tr><td colspan="2">1. Ask: is the child able to drink or breastfeed?<br>2. Ask: does the child vomit everything?<br>3. Ask: has the child had convulsions?<br>4. Look to see if the child is lethargic or unconscious.<br>Note: if the child is sleeping and has cough or difficulty breathing, count the number of breaths<br>cough or difficult breathing: for all sick children ask the mother about the child's problem, check for general danger signs and then</td></tr>
<tr><td colspan="2">Assess and classify the sick child age 2 months up to 5 years<br>Assess, Classify, Identify Treatment<br>Ask the mother what the child's problems are<br>• Determine if this is an initial or follow-up visit for this problem.<br>• If follow-up visit, use the follow-up instructions on treat the child chart.<br>• If initial visit, assess the child as follows:<br>1. Greet the mother appropriately and ask about the child</td></tr>
</table>

2. Look to see if the child's weight and temperature have been recorded

**Ask** the mother what the child's problems are

**Listen** carefully to what the mother tells you.

- Use words the mother understands.
- Give the mother time to answer the questions.
- Ask additional questions when the mother is not sure about her answer.

**Determine** if this is an initial or follow-up visit for this problem

## General danger signs

**Ask/Look:**

- Is the child able to drink or breastfeed?
- See if the child is lethargic or unconscious
- Does the child vomit everything?
- Hs the child had convulsions?

A child with any general danger sign needs **urgent** attention; complete the assessment and any pre-referral treatment immediately so referral is not delayed

Make sure that a child with any danger sign is referred after receiving urgent pre-referral treatment.

Then ask about main symptoms: cough and difficult breathing, diarrhea, fever, ear problems.

Check for malnutrition and anemia, immunization status and for other problems.

## Ask: does the child have cough or difficult breathing?

**If yes, ask:** look, listen, feel: <u>child must be calm</u>

- For how long?
- Count the breaths in one minute.
- Look for chest indrawing
- Look and listen for stridor

Classify cough or difficult breathing

| **If the child is:** | **Breathing fast:** |
|---|---|
| - 2 months up to 12 months | - 50 breaths per minute or more |
| - 12 months up to 5 years | - 40 breaths per minute or more |

Ask about the next main symptoms: diarrhea, fever, ear problems.

Check for malnutrition and anemia, immunization status and for other problems

| Signs | Classify as | Treatment (urgent pre-referral treatments |
|---|---|---|
| Any general danger signs. | Very severe | 1- Treat the convulsion.<br>2- Complete assessment immediately.<br>3- Give first dose of appropriate antibiotics.<br>4- Prevent low blood sugar.<br>5- Refer urgently to hospital |

## Assessment and classification of cough or difficult breathing

A child with cough or difficult breathing is assessed for

*child must be calm

- How long the child has had cough or difficult breathing
- Fast breathing
- Chest indrawing
- Stridor.
- Wheezing.

For **All** sick children, ask about cough or difficult breathing.

**Ask:** For how long?

**Count:** the breaths in one minute.

| If the child is | The child has fast breathing if you count |
|---|---|
| Less than Two months<br>2 months up to 12 months<br>12 months up to 5 years: | 60 breaths per minute or more<br>50 breaths per minute or more<br>40 breaths per minute or more. |

## Look for chest indrawing

Look for chest indrawing when the child breathes **in**. Look at the lower chest wall (lower ribs). The child has chest indrawing if the lower chest wall goes IN when the child breathes in.

## Look and Listen for stridor:

Stridor is a harsh noise made when the child breathes IN.
Stridor happens when there is a swelling of the larynx, trachea or epiglottis

## Look and Listen for Wheeze:

A child with wheezing makes a soft musical noise or shows signs that breathing **out** is difficult. The main causes of wheezing are asthma & respiratory infections including bronchiolitis or epiglottis

## Classifications of a child with cough or difficult breathing

| # | Classify as | Clinical presentation | Management |
|---|---|---|---|
| 1 | Very Severe Disease or | 1-Any general danger sign or<br>2-Stridor in calm child or<br>3-Chest indrawing<br>(If also wheezing go to treat wheeze first then reassess)<br>4-Chest indrawing may be the child's only sign of severe pneumonia.<br>***When the child is tired** | 1-Give first dose of an appropriate antibiotic.<br>2-Treat wheeze if present.<br>3-Prevent low blood sugar.<br>4-Refer URGENTLY to hospital |
| 2 | Severe Pneumonia | Fast breathing.<br>(If also wheezing go to treat wheeze first then reassess). No general danger signs, no chest indrawing and no stridor | 1-Give an appropriate antibiotic for five days.<br>2-Treat wheeze if present.<br>3-Soothe the throat and relieve the cough with a safe remedy.<br>4-Advise mother when to return immediately.<br>5-Follow-up in two days. |
| 3 | No Pneumonia (Cough or Cold) | No signs of pneumonia<br>or sign of very severe disease.<br>(If also wheezing go to<br>treat wheeze first) | 1-Treat wheeze if present.<br>1-If coughing more than 21 days, refer for assessment.<br>2-Soothe the throat and relieve the cough with a safe remedy.<br>3-Advise mother when to return immediately.<br>4-Follow up in two days if wheeze persists.<br>5-Follow-up in five days if not improving. |

### Assessment of Nutritional Status (See Section 4, P. 37)

**Refer to hospital:**

- Marasmus.
- Kwashiorkor
- Marasmic Kwashiorkor
- Oedema of both feet.

4- Measure & record the weight by Uniscale.

5- Measure & record the length or height by the wooden board.

a) Length for less than 2 years

b) Height for 2 years & above

c) Calculate the BMI by using the BMI table

6- Check immunizations of the child.

## 3.5 Ear Problems

## Classification of Ear Problems

| Signs | Classify As | Identify Treatment |
|---|---|---|
| • Tender swelling behind the ear. | **Mastoiditis** | • Give first dose of an appropriate antibiotic.<br>• Give first dose of paracetamol for pain.<br>• Refer URGENTLY to hospital. |
| • Pus or discharge is seen draining from the ear for less than14 days or more.<br>• Ear pain. | **Acute Ear Infection** | • Give an oral antibiotic for 5 days.<br>• Dry the ear by wicking.<br>• Give paracetamol for pain.<br>• Follow-up in 5 days. |
| • Pus or discharge is seen draining from the ear for 14 days or more. | **Chronic Ear Infection** | • Dry the ear by wicking.<br>• Follow-up in 5 days. |
| • No ear pain and no pus seen draining from the ear | **No Ear Infection** | • No additional treatment. |

## Treatment:

1. Children with very severe disease who require urgent referral, give essential treatment before referral.
2. Children with severe disease need treatment at home, with integrated treatment plan and given the first dose of drugs in the health center. Give the child needed immunizations.
3. Children with non-severe disease:

- Provide practical **treatment** instructions, how to give oral drugs, how to feed and give fluids during illness, and how to treat local infections at home.
- Ask the caregiver to return for follow-up on a specific date and teach her how to recognize danger signs, which necessitate immediate return to the health center.
- Assess feeding.
  - Counseling.
  - Follow-up care.
  - Documentation.

## 3.6 Control of Diarrheal Diseases (CDD) among children

### 3.6.1 Types of Diarrhea:

| # | Types of Diarrhea | Signs |
|---|---|---|
| 1 | **Acute** | Duration less than two weeks |
| 2 | **Persistent** | Duration more than two weeks |
| 3 | **Bloody** | Blood with diarrhea |

### Assessment of Diarrhea in children

1. How long the child has had diarrhea
2. Blood in the stool to determine if the child has dysentery
3. Signs of dehydration.

Look at the child's general condition. Is the child lethargic or unconscious? Restless and irritable? Look for sunken eyes.

Offer the child fluid. Is the child not able to drink or drinking poorly? Drinking eagerly, thirsty?

Pinch the skin of the abdomen. Does it go back: When you release the skin, look to see if the skin pinch goes back:

1. Very slowly (longer than 2 seconds)
2. Slowly
3. Immediately

## Classification of Dehydration

There are three possible classifications of dehydration in a child with diarrhea:

1. Severe dehydration (at least two of the following signs):
   a) lethargy/unconsciousness
   b) sunken eyes
   c) unable to drink or drink poorly
   d) skin pinch goes back very slowly (≥ 2 seconds)
2. Some dehydration (two or more of the following signs):
   a) restlessness, irritability
   b) sunken eyes
   c) drinks eagerly, thirsty
3. No dehydration (not enough signs of dehydration)

## Treatment plans

**Plan A:** Diarrhea Treatment at Home for the treatment of children with diarrhea, but no dehydration. Counsel the mother on the Four rules of Home Treatment:

**First:** advise the mother to give the infant the highest accepted amount of fluid through:

- Increasing the breastfeeding at frequent longer intervals each feed
- Infant who are exclusively breast fed only

Breastfeeding + Administering Rehydration Solution

- Infant who are not breastfed give artificial milk only

Milk without dilution + Rehydration Solution + one or more dietary fluids e.g., soup, boiled rice fluid and milk

- The mother should be offered a practical statement about how to prepare ORS solution and then asked for practice under observation, according to the following steps:

1- Preparing a teaspoon and a bowl with a capacity of 1 liter
2- Adding 1 liter of clean water into the bowl
3- Stirring well until the powder is completely dissolved
4- Washing the hands, the cup and the spoon with soap and water
5- Opening the Sachets and discharge all its content in the bowl with water.

**Plan A:**

**First:** Educating the mother how to administer the solution to the infant by age in the following amounts:

1- Infant less than 2 years old: ¼-½ solution cup after each time of diarrhea
2- Infant 2 years old or more: ½-one solution cup after each time of diarrhea

**Second:** Continuation to Feed and Breastfeed the Infant

1. Directing the mother to breastfeed the infant more often and for longer periods
2. Providing frequent meals of soft and various foods, commensurate with the infant's age

**Third:** Mother's Prompt Recognition of Infant's Return Signs

1. Overall signs for the return of any sick infant promptly
2. Blood in feces
3. Impaired capability of drinking or suckling

**Fourth:** Administration of Zinc tablets

1- Infant 2 months to less than 6 months old is administered 10 mg by mouth for 10-14 days
2- Infant aged 6 months up to 5 years old is administered 20 mg by mouth for a period of 10-14 days

**Plan B:** For the treatment of cases of gentle dehydration using Oral Rehydration Solution (Perfusion Solution), first at the Health Care Center and then at home.

**Plan C:** For the treatment of severe dehydrations quickly by intravenous infusion performed by a doctor at the referral level.

| Assessment of Dehydration | | |
|---|---|---|
| **Degree of Dehydration** | **Signs** | **Treatment plan** |
| **Severe Dehydration** | Two of the following signs:<br>• Lethargic or unconscious<br>• Sunken eyes<br>• Not able to drink or drinking poorly<br>• Skin pinch goes back very slowly | **Plan C** |
| **Some dehydration** | Two of the following signs:<br>• Restless, irritable<br>• Sunken eyes<br>• Drinks eagerly, thirsty<br>• Skin pinch goes back slowly | **Plan B** |
| **No Dehydration** | Not enough signs to classify as some or severe dehydration | **Plan A** |

## 3.7 Growth Measurement (Section 4 p. 37)

Measurement of a child's weight, height and head circumference (up to 36 months) is most important in the health assessment process.
Body mass index (BMI) should be routinely calculated for children after 2 years of age
Weight: Weight drops by two or more lines on the growth chart: failure to thrive should be suspected and child is considered at high risk.

## 3.8 Hearing Screening

Hearing impairment is one of the most important causes of speech delay and educational, social-emotional and behavioral difficulties. Hearing Screening Procedures: Gross screening includes questioning the parents or caregiver about the child's hearing ability, observing the response to a sound stimulus (for example, clapping hands) in a younger child.

## 3.9 Vision screening

All well-child visits during the first 2 years of life include an eye examination to check for abnormalities of vision, including cataract.

# Section 4 – Nutrition

## 4.1 Malnutrition

Malnutrition is a broad term commonly used as an alternative to under nutrition but technically it also refers to over nutrition. People are malnourished if their diet doesn't provide adequate calories and protein for growth and maintenance or they are unable to fully utilize the food they eat due to illness (under nutrition). They are also malnourished if they consume too many calories (over nutrition) (UNICEF).

## 4.2 Growth monitoring

The continuous monitoring of growth in children can be performed at the individual level or at a group level. It can also be:

a) Clinic-based growth monitoring (conducted by health professionals at Maternal and Child Health clinics)
b) Community-based growth monitoring (conducted by trained of the community members like teachers or members of NGOs)

## 4.3 Maternal malnutrition

The most common nutritional problem in women, especially the poor, is chronic energy deficiency (CED). CED is measured by height as well as by BMI.

## 4.4 Intra-uterine Undernutrition

Low Birth Weight (LBW) Malnutrition can begin from intra-uterine life, mainly due to maternal malnutrition. Maternal malnutrition during pregnancy retards the growth and development of the fetus. Therefore, it is born with a birth weight lower than normal. When the birth weight of a full-term fetus is below a cut-off level, the newborn is termed as a LBW baby. According to WHO, the cut-off value for birth weight is 2.5 kg. Therefore, babies born with birth weight.

## 4.5 Growth Chart

Growth chart is a basic tool and standardized graph upon which a child's measurements may be plotted. This information allows a visual mechanism to compare the child's rate of growth over time (for example, months and years). This technique allows an assessment of how a child's growth rate and compares to his peer group as well as his own previous rate of growth. Girls

and boys are measured on different growth charts because they grow in different patterns and at different rates.

Growth charts allow health care providers to see the pattern of a child's height and weight gain over time, and whether they're developing proportionately. Growth charts present information to measure and track a child's growth. Abnormal growth on the growth chart is only a sign of a possible problem and needs to be determine whether it is an actual medical problem, or whether the child's growth just needs to be watched carefully. Standard growth charts include following information:

1. **Ages birth to 36 months (3 years):**
   a) Boys' length- and weight-for-age
   b) Girls' length- and weight-for-age
   c) Girls' head circumference-for-age and weight-for-length
   d) Boys' head circumference-for-age and weight-for-length
2. **Ages 2 to 5 years:**
   a) Girls' stature- and weight-for-age
   b) Boys' stature- and weight-for-age
   c) Girls ' weight-for-stature (height)
   d) Boys' weight-for-stature (height)

## 4.6 Head Circumference

Head circumference measurement (the distance around the largest part of the head) can provide clues about brain development. A baby's head that is unusually large may be a sign of hydrocephalus, a buildup of fluid inside the brain A baby's head that's smaller than average may be a sign that the brain is not developing properly or has stopped growing.

**Percentiles:**

Percentiles are measurements that show where a child is compared with others. Higher percentages indicate a larger or taller child and lower percentages indicate a smaller or shorter child. For example, a girl in the 75th percentile for weight would be larger than 75 girls out of 100 and smaller than 25 girls out of 100.

Percentiles are also used to compare height to weight to determine proportionate growth. A child with 90th percentile weight and 25th percentile height is likely carrying too much weight for her height, whereas, a child in the 50th percentiles for both height and weight has an even proportion. The

percentiles are shown as lines drawn in curved patterns on which weight and height are plotted on the chart, to illustrate a percentile line.

### Ideal Percentile:

There is no one ideal number. Healthy children come in all shapes and sizes, and a baby who is in the 5th percentile can be just as healthy as a baby who is in the 95th percentile.

### What is normal growth percentile?

If a child's weight is at the 50th percentile line, that means that out of 100 normal children her age, 50 will be bigger than she is and 50 smaller. Similarly, if she is in the 75th percentile, that means that she is bigger than 75 children and smaller than only 25, compared with 100 children her age.

## Classification of Undernutrition

**1-Gomez Classification:**

One of the earliest systems for classifying protein-energy malnutrition in children, based on percentage of expected weight for age. Provides grading as to prognosis.

| Weight-for-Age % | Status |
|---|---|
| 90-100 | Normal |
| 75-90 | 2nd degree |
| 60-75 | 2nd degree |
| <60 | 2nd degree |

**2-Wellcome Classification:**

Simply based on 2 criteria only - weight loss in terms of weight for age % and presence or absence of edema.

| Weight-for-Age % | Edema | No Edema |
|---|---|---|
| 80-60 | Kwashiorkor | Undernutrition |
| < 60 | Marasmic-kwashiorkor | Marasmus |

**3-Waterlow Classification:**

Adopted by WHO; can distinguish between deficits of weight-for-height % (wasting) and height-for-age (stunting).

| Weight-for-Age % | Normal | Mild | Moderate | Severe |
|---|---|---|---|---|
| Ht-for-Age% | >95 | 90-95 | 80-90 | Undernutrition |
| Wt-for-Ht% | >90 | 80-90 | Marasmic-kwashiorkor | Marasmus |

## 4.7 Anthropometric Measurements (WHO)

1- **Weight:** Scale (hanging vs. standing)
2- **Height:** Board for recumbent for sick or very young (< 2 years) children or upright for others
3- **Middle Upper Arm Circumference (MUAC):** Tape
4- **Head Circumference:** Tape (<3 years)

## Nutritional indicators:

| # | Nutritional index | Use |
|---|---|---|
| 1 | Weight for height or length (WFH) | An index used to measure wasting or acute malnutrition |
| 2 | Height for age (HFA) | An index used to measure stunting or chronic malnutrition |
| 3 | Weight for age (WFA) | An index used to measure underweight |
| 4 | Body Mass Index | An index used to measure body fat |
| 5 | MUAC for age, sex and height | A specific indicator of wasting or acute malnutrition |

### 1. Weight for-height:

a) Low WFH identifies current or acute undernutrition (wasting)
b) Useful when exact age is difficult to determine
c) Weight for-length (< 2 yrs) or weight for-height (in > 2 yrs)
d) Appropriate for examining short-term effects

**Advantages:**

- Age not required
- Useful for larger population surveillance and emergencies

**Disadvantages:**

- Less sensitive for change over time
- Inter-observer variability in height measurements more common

**Wasting (low weight–for-height)**

1) Wasting is a measure of underweight relative to height and indicates a weight deficit associated with acute starvation and/or severe disease.
2) Acute, short-term malnutrition does not affect the height, but it affects the body weight.

3) This is seen as "wasting" of the body, i.e. loss of body mass compared to the body size.
4) Weight-for-height is therefore useful for assessing body wasting.
5) For this, age does not need to be known.

**Degrees of Wasting:**

Weight-for-height up to –2 SD = Normal
Weight-for-height <-2 SD to –3 SD = Moderate
Weight-for-height < -3 SD = Severe

### 2. Height for-age:

a. Low HFA identifies past or chronic undernutrition (stunting).
b. Stunting indicates reduced linear growth.
c. Cannot measure short-term changes in malnutrition.
d. For children < 2 years of age the term is length for age (LA).
e. For children > 2 years age, the index is referred as height-for-age (HA).

**Advantages:**

- Assessment including LBW and genetic differences.
- More genetic differences globally.

**Disadvantages:**

- Variability in height measurement.
- Need to know age (difficult in emergencies; especially if separated from parents).

### 3. Weight for Age (W/A) "growth faltering"

**Advantages:**

- Composite of W/H and H/A
- Good for following individual children's health over time.
- Picks up faltering, due to inadequate weight gain, wasting or concomitant illness
- If slow faltering, directed to get more info - H/A and W/H

**Disadvantages:**

- Does not indicate whether child is short and normal weight or tall and underweight

**Underweight (low weight-for-age)**

This is an indicator of long-term and acute short-term malnutrition. The body weight may be lost from malnutrition for a long time. The child is then low

weight for-age. Weight may also be lost from acute, short-term malnutrition. In this case also, the child is low weight-for-age. For this, both weight and age are to be known.

1) The child is said to be of normal weight, if its weight-for-age is within 2 standard deviations (-2SD) of the median weight for-age of a reference population.
2) If the weight-for-age falls below 2SD (<-2SD) but within 3 SD below the reference median (-3SD), then the child is classified as moderately underweight.
3) If the weight-for-age falls below 3SD of the reference median (<-3SD), then the child is classified as severely underweight.

**The classification can be summarized as follows:**

| | |
|---|---|
| Weight-for-age up to –2SD | = Normal Weight-for-age |
| Weight-for-age <-2SD to –3SD | = Moderate |
| Weight-for-age <-3SD | = Severe |

## 4. Body Mass Index (BMI)

BMI is a useful growth indicator when it is plotted on a graph against a child's age. BMI is calculated as follows:

**Weight in kg ÷ squared length/height in meters**

It is very important to use a length measurement for a child less than 2 years old and a height measurement for a child age 2 y ears or older. If necessary, convert height to length (by adding 0.7 cm) or length to height (by subtracting 0.7 cm) before determining the child's BMI.2

**Note:** If a child has edema of both feet, do not determine the child's BMI, as his or her weight is unrealistically high due to fluid retention. Refer the child with edema of both feet to specialized care.

**5. Mid-upper-arm Circumference (MUAC)**

Between the ages of 1 and 5 years, there is very little change in a normal child's arm circumference. Thus, this measurement gives a simple anthropometric measure of wasting which is almost age-independent. The degree of severity of malnutrition in children based on MUAC is given below:

| | |
|---|---|
| MUAC >14 cm | = Normal |
| MUAC 12.5 – 14.0 cm | = Mild/moderate wasting |
| MUAC <12.5cm | = Severe wasting below |

## Moderate Acute Malnutrition (MAM)

It is defined by WHO/UNICEF as: Weight-for-Height Z-score <-2 but >-3

## Clinical Forms of Acute Malnutrition.

Severe Acute Malnutrition (SAM) defined by WHO/UNICEF as:

- MUAC (mid-upper arm circumference) <11.5cm
- Weight-for-Height Z-score <-3
- Bilateral pitting oedema

WHO recommends that children be kept in the nutrition rehabilitation ward until they reach −1 SD (90%) weight-for-height.
There are three clinical forms of acute malnutrition:

1) Marasmus – severe weight loss or wasting
2) Kwashiorkor – bloated appearance due to water retention (bi-lateral oedema).
3) Marasmic-kwashiorkor – a combination of both wasting and bi-lateral oedema.

## 4.8 Micronutrient malnutrition

The most widely prevalent micronutrient malnutrition problems are:

### 1) Vitamin A deficiency:

a) Chronic dietary vitamin A deficiency first leads to night blindness and then, in untreated cases, to total blindness.
b) Sub-clinical vitamin A deficiency is present in a much larger population than clinical blindness.
c) Serum retinol (vitamin A) level is a dependable indicator for sub-clinical vitamin A deficiency.

### 2) Iodine deficiency:

Chronic dietary iodine deficiency first leads to enlargement of the thyroid gland such that it is not yet visible. This goiter is called Grade 1 goiter. In untreated cases, Grade 1 goiter develops into Grade 2 goiter, which is visible.

### 3) Iron deficiency:

Iron deficiency and iron deficiency anemia is chronic dietary iron deficiency that leads to low Serum ferritin (depletion of iron stores of the body in the form of ferritin in liver).

a) When the iron store falls below such level that it cannot support hemoglobin synthesis, hemoglobin level begins to fall.
b) If hemoglobin falls below a critical level, the person becomes anemic.

The severity of anemia depends on hemoglobin level. This can be measured by determining hemoglobin concentration throughout the whole blood stream.

### 4) Vitamin D deficiency:

Another important area of concern as it has been reflected in the survey that more than 80% of people have had Vitamin D deficiency. A program of supplementing Vitamin D was proposed and generalized to all DOHs all over Iraq

### 5) Zinc supplementation was used for all diarrheal cases.

Zinc supplementation has been found to reduce the duration and severity of diarrheal episodes and likelihood of subsequent infections for 2–3 months.

Routine use of zinc supplementation, at a dosage of 20 milligrams per day for children older than six months or 10 mg per day in those younger than six months, for 10–14 days.

Zinc, it is a vital micronutrient essential for protein synthesis, cell growth and differentiation, immune function, and intestinal transport of water and electrolytes

**Notes:**

There was a specific program for combating obesity among children with promotion of supporting and encouraging breastfeeding and finding breastfeeding alternatives for specific cases that could not breastfeed.

A balanced diet and healthy food were one of the important areas in prevention and control non-communicable diseases since childhood, thus combining that with reproductive health approach.

# Section 5 – Expanded Program on Immunization

Vaccines can protect infants and children from 12 potentially harmful diseases. Vaccine-preventable diseases can be very serious, may require hospitalization, or even be deadly – especially in infants and young children. Vaccinations are very safe and effective.

## 5.1 EPI Targeted diseases

### A) Viral diseases

1. **Poliomyelitis:** Usually asymptomatic but can sometimes cause paralysis or meningitis. Its mode of transmission is through the oral-fecal route.
2. **Hepatitis Type B:** Hepatitis B attacks the liver and can cause both acute and chronic disease. The virus is transmitted through contact with the blood or other bodily fluids of an infected person.
3. **Rotavirus diarrhea:** Rotavirus causes diarrhea, mostly in babies and young children. The diarrhea can be severe and lead to dehydration. Vomiting and fever are also common symptoms in babies with rotavirus.
4. **Measles:** Measles virus causes rash, cough, runny nose, eye irritation, and fever. It can lead to ear infection, pneumonia, seizures, brain damage, and death.
5. **Mumps:** Mumps virus causes fever, headache, muscle pain, loss of appetite, and swollen glands. It can lead to deafness, meningitis, painful swelling of the testicles or ovaries, and sterility in rare cases.
6. **Rubella (German Measles):** Rubella virus causes rash, arthritis (mostly in women), and mild fever. If a woman gets rubella while she is pregnant, she could have a miscarriage or born baby with serious birth defects.
7. **Rota viral Gastroenteritis:** causes upset stomach and diarrhea, especially in children. It is spread through the fecal-oral route.

### B) Bacterial diseases

1- **TB meningitis, or Miliary TB:** the forms of TB developing through hematogenous spread of the bacteria, Mycobacterium tuberculosis.

Can cause fever, chills, nausea, sensitivity to light and severe headaches.

2- **Tetanus (Lock jaw):** It causes painful muscle tightening and stiffness, usually all over the body. It can lead to tightening of muscles in the head and neck so the person is unable to open the mouth, swallow, or sometimes even breathe. It is caused by bacteria found in soil.
3- **Diphtheria:** It can lead to breathing problems, heart failure, paralysis, and death and is spread via direct contact with fluid from coughs or sneezes.
4- **Pertussis (Whooping Cough):** causes severe coughing spells, which can cause difficulty breathing, vomiting, and disturbed sleep. It is spread via direct contact with fluid from coughs or sneezes.
5- **Haemophilus influenzae type b (Hib) disease:** is a serious disease. It usually affects children under 5 years old. It can also affect adults with certain medical conditions.
6- **Pneumococcal disease, or pneumonia:** an infection of the lungs, which is spread via coughing and sneezing.

## 5.2 Types of vaccines

1. **BCG:** It has an efficacy of 60-90%. BCG prevents the forms TB meningitis and Miliary TB.
2. **Rota Virus vaccine:** It protects against rotavirus gastroenteritis.

There are two brands of the rotavirus vaccine, RotaTeq (RV5) and Rotarix (RV1). Both vaccines are given orally, not as a shot. The only difference is the number of doses that need to be given. With RotaTeq, three doses are required. Rotate q is polyvalent 5 serotype while rotarix one serotype.

They should be given at ages 2 months, 4 months, and 6 months. Rotarix only requires two doses -- at 2 months and 4 months.

First dose of rotavirus vaccine before 15 weeks of age, and the last by age 8 months for rotateq and 6 months for rotarix. Rotavirus vaccine may safely be given at the same time as other vaccines.

**3-The inactivated polio vaccine (IPV)** consists of inactivated (killed) poliovirus strains of all three poliovirus types to protect against polio. IPV is given by intramuscular with Hexa, Penta2 AND Tetra 2.

4- **Oral Polio Vaccine (OPV)** consist of attenuated poliovirus strains, it is

given orally, there are two types trivalent (Three strains, P1.P2 and P3) and bivalent ( Tow strains P1 and P2). Switch on from Trivalent to Bivalent was done in Iraq at first of May 2016.Oral Polio Vaccine (OPV) for global eradication of poliomyelitis.

Different characteristics of both types is illustrated in following table

| # | Salk (IPV) | Sabin (OPV) Bivalent (p1, p2) |
|---|---|---|
| 1 | Now on all countries | In developing countries |
| 2 | Inactivated (killed) | Live attenuated |
| 3 | Injectable | Oral |
| 4 | Prevents spread of wild polio virus to the nervous system through blood | Limits multiplication of wild poliovirus in the intestine and therefore reduces fecal transmission |
| 5 | No shedding of vaccine virus in the stool shedding of vaccine | Leading to passive immunity of close contacts |
| 6 | Expensive (needles & syringe) | Cheap & easy |
| 7 | No marked adverse events | Vaccine associated paralysis (1/3,000,000 doses in Trivalent and 1/2,500,000 in Bivalent) |
| 8 | IPV: 0 - 8 oc (18 months), 37 oc (4 weeks). | OPV: -20 oc (up to 2 years), 0 – 8 oc (up to 1 year), 37 oc (1 day). |

5. **Hexa Vaccine:** It is a safe and useful option for providing protection against the common childhood diseases of diphtheria, tetanus, poliomyelitis, pertussis, hepatitis B and invasive Hib disease. It's administered intramuscularly as three-doses at 2, 4 and 6 months, followed by booster vaccination at 18 months of age.

6- **Penta vaccine (Penta 2 vaccine; DTaP+Hib +IPV, Penta 1 vaccine; PTwP + HepB-+Hib):** it is a freeze sensitive vaccine and should be stored and transported at +2 to +8 degrees Celsius in ice lined refrigerators and vaccine carriers with conditioned ice packs. Discard if vaccine is frozen. It is given as first booster dose at 18 months old.

7- **Tetra2 vaccine: (DTaP +IPV) Tetra1 (DTaP + Hib):** It is given to provide protection against Diphtheria, Tetanus, Pertussis, and Haemophilus b (Hib) diseases. In children it is given as a second booster

dose after the Penta vaccine at age 4-5 year. Children should get 5 doses of DTaP vaccine within the Hexa, Penta and Tetra vaccines.

8-. **DT:** vaccine for children under 7 years old (Diphtheria dose 40 I.U).

9- **Td:** protects against Tetanus and Diphtheria, but not Pertussis. It is (5 I.U d) It is recommended every 10 years. Td may safely be given at the same time as other vaccines.

10-.**Hep. B:** Given within Hexa vaccine and protects against Hepatitis B. Hepatitis B vaccine **should not** be given in the buttock or intradermally as these routes are associated with decreased protective antibody levels. This vaccine also **should not** be mixed in the same syringe with other vaccines unless specifically recommended by the manufacturer.

***Hepatitis B Immunoglobulin G (HBIG)** is a medicine to fight the virus for babies of mothers who have Hepatitis B.

11- **Hib:** Protects against *Haemophilus influenza type b*. It is given within the Hexa vaccine at ages 2, 4 and 6 months of age and within the final/booster dose of the Penta vaccine at 18 months of age.

*Children over 5 years old and adults usually do not need Hib vaccine.

12. **PCV (Pneumococcal Conjugate Vaccine; PCV13):** Protects against pneumococcal disease, or pneumonia. Three dose of Pneumococcal Conjugate Vaccine (PCV13) is recommended for infants at 2, 4 and 6 months of age.

13. **Measles:** Two factors are considered when determining the age to give vaccine

1- Age incidence.

2- Maternal antibody interference.

Maternal antibodies disappear around age of 6 months and cases start to appear at the age of one year. The vaccine is 85% effective when given at the age of 9 months & provides a longer lasting immunity. In Iraq, more than 10% of outbreak cases are below 1 year of age. Any measles vaccine dose below one year is not accounted for so we have to vaccinate 2 doses of any MCV after one year with 1-3 months at least between doses.

14. **MMR:** Protects against measles, mumps, and rubella.

Children should get two doses of MMR vaccine at 15 months of age and a second dose between 4–6 years of age (may be given earlier, if at least 28 days after the 1st dose). MMR vaccine may be given at the same time as other vaccines.

15. **Tdap/Td:** Protects against tetanus, or lockjaw, If the child has not received any or all of the DtaP vaccine series or doesn't know if the child has received these shots, the child needs a single dose of Tdap when they are 7-10 years old.

16. **Influenza: Influenza (Flu) Vaccine (Inactivated or Recombinant):**

Flu vaccine can prevent or lower the severity of the influenza and is recommended every flu season. Children 6 months through 3 years of age may need two doses during the same flu season. Everyone else needs only one dose each flu season. It takes about 2 weeks for protection to develop after vaccination, and protection lasts through the flu season.

## 5.3 National Immunization Schedule in Iraq 2017

| Age | Type of Vaccine |
|---|---|
| At birth | OPV Zero dose + Heb B1(first dose) + BCG |
| 2 Months | Hexa1(First dose) + ROTA 1(First dose) +OPV1 First dose + PCV first dose |
| 4 Months | Hexa2 (Second dose) + OPV2 Second dose + ROTA 2 (second dose) + PCV2 second dose |
| 6 Months | Hexa3 (Third dose) + PCV 3 (third dose) +OPV3 Third dose |
| 9 Months | Measles (Single Measles) + Vitamin A 100.000 IU |
| 15 Months | MMR (Measles + Mumps + Rubella) |
| 18 Months | Penta2 vaccine +OPV first booster dose+ Vitamin A 200.000 IU |
| 4-6 Years | Tetra 2 vaccine + second booster dose OPV + MMR |

**Hexa Vaccine** (Tetanus+Deptheria + a Pertusis+Hepititis B+Hemophillus Influanza Type b+ IPV (Inactivated Polio Vaccine) **MMR** (Measles + Mumps + Rubella) **Penta vaccine** (Tetanus+Deptheria +Pertusis+Hemophillus Influanza Type B+IPV, (Inactivated Polio Vaccine) **Tetra Vaccine** + (Tetanus+Deptheria +Pertusis+ **IPV (**Inactivated Polio Vaccine) delete **Hep. B** (Hepatitis Type B Vaccine).

## 5.4 Vaccine administration Routes

| Vaccine | No. of doses | Route |
|---|---|---|
| BCG | Single dose during infancy (below one year) not given after one year of age | Intradermal |
| OPV | Six oral polio vaccine doses | Oral |
| IPV | Five injectable (At least three) intramuscular doses | Intra-Muscular |
| ROTA | 1-Rotarix Brand: Two doses (2+4 months) | Oral |
| Hexa | 2-Rota Teq Brand: Three doses (2+4+6 months) | Intra-Muscular |
| Measles | Three doses during first year age (2+4+6 Months) | Subcutaneous |
| MMR | Single dose + Vitamin A 100.000 IU | Subcutaneous |
| Penta | Two doses (15 months and at school entry) | Intra-Muscular |
| Tetra | Given as first booster dose at age | Intra-Muscular |
| TD | Given as Second booster dose at age | Intra-Muscular |
| Td | For children under 7 years old | Intra-Muscular |

## 5.5 Tetanus Immunization Schedule

| Dose (Time Interval) | Immune response | Note |
|---|---|---|
| At first antenatal care visit, as early as possible. (First contact) | Provides no immunity | • It is give as 0.5 ml TT IM, upper arm.<br>• Advise woman when next dose is due. Record on mother's card.<br>• Explain to the woman that the vaccine is safe to be given in pregnancy; it will not harm the baby.<br>• The injection site may become a little swollen, red and painful, but this will go away in a few days.<br>• If she has heard that the injection has contraceptive effects, assure her that it has no contraceptive effect |
| At least 4 weeks after TT1 (at next antenatal care visit). | Provides immunity for three years | |
| At least 6 months after TT2. | Provides immunity for five years | |
| At least 1 year after TT3. | Provides immunity for ten years | |
| At least 1 year after TT4. | Provides immunity for 15 years | |

**Notes:**

- Tetanus Toxiod (TT) vaccine given to all women in child bearing age (14-49 years). If the mother became pregnant at any time, she must continue the schedule and there is **No Need** to start a new schedule.
- If the mother became pregnant at any time, she must continue the schedule and there is **No Need** to start a new schedule.

## 5.6 Contraindications to Vaccination

**1- General:**

– Immunological dysfunction e.g. hypo-gamma-globulinaemia
– Malignant disease, e.g. leukemia, Hodgkin's disease
– Steroid therapy, immuno-suppressants & radiotherapy

**2-Specific:**

– **Oral poliomyelitis:** Severe diarrhea or vomiting
– **Measles:** Active TB, allergy to Polymyxin & neomycin, history of convulsions (precautionary)
– **BCG:** Local septic condition, premature & low body weight baby, chronic skin disease
– **Rubella:** Pregnancy, allergy to neomycin & polymyxin, thrombocytopenia.

**Precautions to killed vaccines & Toxoids:**

1- Any abnormality of the CNS e.g. Spina bifida (acute febrile illness)
2- Severe local or general reaction to a previous dose (give dt) (Td)
3- History of convulsions in a child
4- Family history of convulsions (controversial)

## 5.6 Cold chain:

Vaccines should always be stored between +2ºC and +8ºC; from the factory where they are manufactured until they are used. Excess heat or cold will reduce the vaccine potency (strength). To keep vaccines cold, we need equipment (freezer, refrigerator, cool boxes, vaccine carriers, thermometers & cold rooms) & trained people about Cold chain vaccines.

**Temperature sensitive vaccines**

1- **Most sensitive vaccines are:** polio vaccine, Measles vaccine, Rota virus, MMR, BCG, Tetra vaccine, Penta vaccine, Tetanus Toxiod vaccine and Hepatitis B vaccine.
2- **Most sensitive vaccines for freezing are:** Hepatitis B vaccine, Penta vaccine, Tetra vaccine and Tetanus Toxiod vaccine.
3- **Light sensitive vaccines:** BCG, Rota virus vaccine, Measles and Rubella

## Methods used to detect heat exposure:

1) **Vaccine Vial Monitor (VVM):** VVM is a WHO prequalified device, it is used only in polio vaccine vials, where each one has a sticker (a square & a circle in it) one is purple & one is white, and when exposed to high temperatures both the circle & the box become purple.
   The VVM is printed on the label or cap, or the neck of ampoules of freeze-dried vaccines. It looks like a square inside a circle. As the vaccine vial is exposed to more heat, the square becomes darker.
2) **Freeze indicator:** is used to warn of freezing and is packed with vaccines that are sensitive to freezing temperatures: DTP, TT, DT, Td (freezing point of -0.5°C), Hepatitis B (-0.5°C), liquid Hib and their combinations (DTP-HepB, and DTP-HepB+Hib vaccines).

a) **The Fridge-tag:** It is primarily designed to help health workers to have full control of temperature monitoring in refrigerators including night, weekends and holidays. It gives necessary information to health workers to take informed decisions to correct the problem. It holds the recorded information for the last 30 days. The best location for Fridge-tag® in the refrigerator is the shelf that you keep your freeze sensitive vaccines on such as HepB or combination vaccines.

b) **The Freeze-tag:** Monitors the temperature of its environment and shows you on the display if there has been an exposure of below 0 °C for over 10 minutes. The Freeze-tag® monitors temperature exposure but not the product quality.

## Instructions for use:

- Enclose the Freeze-tag® with the products that should be monitored.
- Before reading, the Freeze-tag® should be placed in an environment above freezing temperature for at least 2 minutes.
- Observe the Freeze-tag® and note which sign is shown on the display:

  ☑ = OK display: Your product has not been exposed for more than 10 minutes to freezing temperatures.

  ☒ = ALARM display: Your product has been exposed for more than ten minutes to freezing temperatures.

## The ALARM sign is irreversible!

At least one freeze indicator should be placed in each cold box during vaccine transport and distribution.

Check the freeze indicator in the refrigerator. If it warns of freezing or you suspect that a freeze-sensitive vaccine (DTP, DT, TT, Td, HepB, DTP-HepB, liquid Hib and DTP-HepB+Hib vaccines) has been frozen, you should perform the shake test.

### 3) Shake test

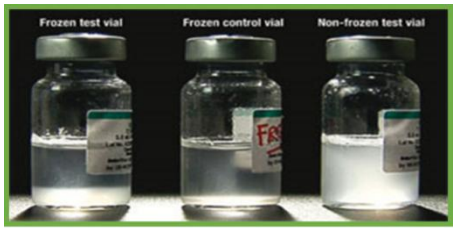


*Photo: WHO*

The shake test to determine whether vaccine has been frozen. DPT, hepatitis B, Penta vaccine and tetanus toxoid vaccines can be damaged by freezing. The shake test should be conducted for all vaccines with the following characteristics:

1) Vaccines packed in boxes that have a freeze indicator (e.g. freeze tag, see Figure 6.9), which is found to be activated.
2) Refrigerator temperature records that show the temperature has fallen below +2ºC.
3) Where you suspect that the vaccines may have been frozen by mistake, for example by placing too close to the freezer plate in the refrigerator or touching frozen ice-packs.

### 4) How to conduct shake test?

a) Take two DPT or TT vaccine vials, one that you think might have been frozen and another from the same manufacturer which you KNOW has never been frozen.
b) Shake both vials.
c) Look at the vaccine inside the two vials:

- In frozen vaccine you can see granular particles and after 15-30 minutes will become almost clear with thick sediment. Do not use this vaccine! The vaccine has been damaged and all affected vaccines should be discarded.
- In case of unfrozen vaccine, the vaccine looks smooth and cloudy and after 15-30 minutes it will become clear without sediment and you can use this vaccine.

The figure of three vials of liquid freeze-sensitive vaccine viewed with the light behind them:

- Left: frozen test vial in which sediment has settled to the bottom of the vial after vigorous shaking.
- Center: frozen control vial in which the sedimentation rate can be compared with the rate in a suspected frozen test vial.
- Right: non-frozen test vial showing the uniformly cloudy appearance of a vaccine that has not been damaged by freezing.

**There is no need to conduct a shake test if:**

- A liquid vaccine vial is already frozen solid — simply discard it.
- Any vials that develop white lumps of sediment attached to the glass, which cannot be dispersed despite vigorous shaking. This can happen if pentavalent vaccine is exposed to freezing below 0ºC.

**Destruction of unused vaccines:**

All vaccines which are not used, because they were kept at room temperature during a vaccination session, and cannot be re-refrigerated, should be destroyed by incineration to prevent potential causation of the diseases

## 5.7 Possible vaccine adverse events

1. Local.
2. Systemic reaction.
3. Skin reaction.
4. Renal complication.
5. Neurological complication.
6. Paralytic complication.
7. Encephalitic complication.

## Frequently Asked Questions:

1. A child who is 10 months old has not received any immunizations. What are the vaccines that can be given to her?

- The child should receive BCG, measles, and the first dose of Penta vaccines with OPV drops, and Vitamin A syrup.

2. At what age can pentavalent vaccine be administered?

- Penta vaccine can be given to any child aged more than 6 weeks old and up to 1 year of age or older.

3. How we can prevent a baby from getting Hepatitis B whose mother already has Hepatitis B?

- By giving first dose of the Hepatitis B vaccine and HBIG within 12 hours after birth.

## 5.8 Polio Eradication initiative

The Polio Eradication Initiative (PEI) is a global program with the target of a polio free world, polio can be eradicated because:

1. Polio only affects humans, and there is no animal reservoir
2. Presence of an effective and inexpensive vaccine exists.
3. Immunity against polio is life-long.
4. Short time survival of the polio virus in the environment.

### Golden Strategies of Polio Eradication:

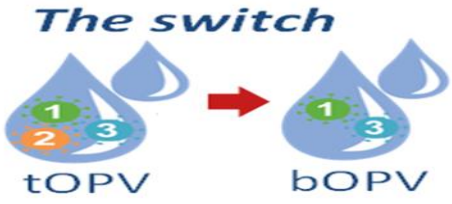
1. **Routine immunization:** With coverage rate of at least 95% at both national and district level.
2. **Polio national immunization days (NIDS):** Two rounds of vaccination are done a month apart nationwide during the low transmission season (spring and autumn).
3. **Acute flaccid paralysis (AFP) surveillance:** Any case with acute and flaccid paralysis in children under the age of 15 years must be reported.
4. **Mopping up (cleaning up):** Even if one case occurs in a previously polio clean area, or in high risk areas, we implement door-to-door immunization in limited areas.

## 5.9 End-game issues strategy by end-2018

End-game strategic plan is a global certification of wild poliovirus eradication by the end of 2018.

- End-2014 Interruption of residual wild poliovirus transmission
- During 2015/16 Synchronized switch of trivalent OPV with bivalent OPV globally

The withdrawal of OPVs began in **April 2016 with a switch from trivalent OPV (tOPV) to bivalent OPV (bOPV), removing the type 2 component (OPV2) from immunization programs**




- End-2018 Global Certification
- During 2019 bOPV Cessation

# Section 6 – School Health Services

## 6.1 School health services

School health services are one of the cornerstones of the implementation of primary health care. School health services are basic primary care services for individuals (children, students and teachers) enrolled in Kindergarten until their graduation from the university.

**Objectives:**

1. To examine targeted groups for early detection of medical conditions and their treatment.
2. To minimize the spread of all communicable diseases in the schools.
3. To identify environmental deficiencies at the schools and follow up for correction by the concerned authorities.
4. Health and environmental awareness for all students, academic professionals and staff in schools.

All details of the examination and treatment of students should be documented.

## 6.2 Target groups in School Health Services

Students, teachers, teacher supervisors and workers in educational institutions. The annual plan specifically targeted kindergarten students and the first stage in primary and secondary school.

## 6.3 Types of school health activities

**1- Visual acuity (Eyesight) Examination**

a) The examination board shall be placed on the wall at the same level of vision in a lit room opposite the window.
b) The student must stand at six meters from the board or three meters in the event there is a mirror.
c) Always begin the examination with the right eye, enter the results, then examine the left eye.
d) Cover the eye with a trial frame while ensuring not to press too hard.
e) Point below the letter to be read with a black stick or a black pen. The student must point with his hand to the direction of the letter or the opening.
f) Be patient and encourage the student during the examination.

g) The student must see more than half the letters on the line. If they cannot identify less than half the letters, move down the degree of the line.
h) Degree 6/6: the denominator is stable and represents the distance of six meters between the student and the board.
i) Visual acuity of 6/18 and below requires a referral to a health center for an eye examination or hospital.
j) Visual acuity that ranges from 6/24 to 6/60 in the better eye and does not improve even with prescription eyeglasses, requires a referral to a specialist in the ophthalmological unit.

## 6.4 Visual acuity

The eye's ability to distinguish the shape and details of objects. A normal eye can focus the light falling on it in the pupil of the eye retina.

**Poor eyesight:**

Low visual acuity detected in the eyesight examination board up to 6/18 in both eyes after correction with eyeglasses.

**Degree of eyesight:**

| # | From | To | Diagnosis |
|---|---|---|---|
| 1 | 6/6 | 6/18 | Normal |
| 2 | 6/24 | 6/60 | Poor eyesight |
| 3 | Sensitive to light and counting the fingers at 3 meters | | Very poor eyesight |
| 4 | Not sensitive to light | | Blindness |

## 6.5 Hearing Testing

To detect hearing impairment as hearing impairment greatly impacts the student's performance.

The whisper test is the simplest hearing test to conduct on students. When weak hearing is suspected, or weak hearing is proven, the student is referred to the hearing and speech center or the ear, nose, and throat consultation clinic in hospitals.

## 6.6 Mouth and Dental Health

To enhance the health of mouth and teeth and to reduce the rate of cavities in students of elementary schools and children in kindergartens and nurseries.

The dentists working at primary health care centers shall visit these targeted schools at the beginning of the academic year and examine the teeth of students. The targeted schools must be nominated for every dental unit and the administration of those schools shall be notified of their inclusion in the program.

The dentists shall make at least two awareness visits annually to every school.

## 6.7 Follow up Control of Communicable Diseases

a) Compulsory leave system shall be applied for all students contracted communicable diseases for specific periods to ensure end of communicability period.

b) Ensure cleanliness and sterilization of the school health facilities and the use of the required sterilizers and encourage students' personal hygiene.

c) Ensure meeting the vaccine requirements against communicable diseases according to the immunization program.

d) Follow up and verify the student files and contact them personally.

e) Immediately report to district and DOH level.

f) Follow up any incident of communicable disease that affects more than one class.

g) Follow up on the cleanliness of the canteen, to ensure the canteen is providing healthy conditions for foods available. Ensure that the workers in the canteen obtain the health certificate that are free of communicable diseases.

h) Follow up on the quality of chalk, hanging posters and folder distribution in the classrooms that encourage awareness and the prevention of communicable diseases like cholera, typhoid, food poisoning and viral hepatitis.

## 6.8 Health awareness activities

a) Hold lectures on the causes and prevention methods of communicable diseases.

b) Hang posters about hygiene methods and the importance of washing the hands prior to eating and after exiting the bathrooms.
c) The necessity of not keeping food for a long time prior to consuming it.
d) Instructions not to purchase exposed food.
e) To encourage students to bring their own drinking water.
f) To impose health monitoring on school canteens.
g) Encourage health awareness through the preparation of epidemic booklets, leaflets and scientific films about these diseases.

### 6.9 Environmental Sanitation

a) To provide potable water throughout the academic year.
b) Provide sanitation facilities corresponding to the number of students at every school.
c) Periodical examination of the water tanks and regular testing of the percentage of chlorine and bacterial testing of the water.

### 6.10 Assessment of Nutritional status

Conduct measurement of weight, height and BMI. Document and refer detected cases to the hospital within the geographic location.

### 6.11 Provision of Special health care services

Health care services for children with special needs (handicap children, behavioral disorders, attention deficits, hyperactivity disorders and substances abuse).

# Section 7 – Non-Communicable Diseases

## 7.1 Screening programs in PHCCs for:

### Hypertension

According to WHO hypertension in adults aged 18 years or older is: Systolic blood pressure ≥140 mmHg and/or diastolic blood pressure ≥90 mmHg on the average of two or more readings taken at each of two or more visits after initial screening.

**Classification of blood pressure for adults:**

| Blood pressure class | Systolic blood pressure (mmHg) | Diastolic blood pressure (mmHg) Normal |
|---|---|---|
| Normal | <120 | And <80 |
| Prehypertension | 120 – 139 | Or 80 – 89 |
| Stage 1 hypertension | 140 – 159 | Or 90 – 99 |
| Stage 2 hypertension | ≥160 | Or ≥ 100 |

## Types of hypertension:

1- Essential (primary) hypertension: Unknown cause, represents over 90% of the cases. It is associated with a known risk factor (s)

2- Secondary hypertension: represents less than 10% of all cases. It is defined as hypertension resulting from one or more of identifiable cause.

## 7.2 Target groups for Health Screening:

1- People who attend PHCCs above 20 should be screened for hypertension.

2- People who attend PHCCs age 40 and above should be screened for Diabetes Mellitus.

Patients who are already diagnosed with these diseases and pregnant women are not included in this program.

**Prerequisite criteria for Screening:**

1- Be sure to target correct age group (20 years old and above).
2- Check whether it is the first visit or not (already diagnosed or not known as a case of hypertension).
3- Documentation of basic sociodemographic data about the attendee.
4- Filling of special screening format and keeping it attached to outpatient ticket.
5- Documentation of PHC Doctor name and medical unit.

### Screening tests:

1- Check blood pressure.
2- The result of the measurement must be documented in the screening format.
3- If the measurement was in prehypertension stage, give health education to the patient about healthy lifestyles.
4- If the measurement result was stage 1 or stage 2 hypertension, mark on the screening format as hypertension case and refer him/her to the PHC doctor with full patient data.
5- Document the finding in the screening registry book. If the patient was already known as a case of hypertension:
   a) Measure the blood pressure and document the result.
   b) Refer him/her to the PHC Doctor with full data.
   c) Don't document the case in the registry book.

## 7.3 Health education for major lifestyle modifications for hypertensive patients

1. Weight reduction in those individuals who are overweight or obese.
2. Dietary Approaches to Stop Hypertension (DASH): Adoption of diet plan which is rich in potassium and calcium with dietary sodium reduction.
3. Practicing moderate, intense physical activity.
4. Cessation of smoking.
5. Reduction of alcohol intake if individual consumes alcohol.

Appropriate lifestyle modifications may eliminate the need for drug therapy in patients with borderline hypertension. Decrease the dose and/or the number of drugs needed in patients with established hypertension and reduce cardiovascular risk.

Patients treated only with lifestyle modifications should be seen after 3-6 months. After their blood pressure is stabilized, they should be seen every 6-12 months to reinforce the necessity and goals of maintaining these modifications of lifestyle.

Periodic checkup for patient with antihypertensive drug therapy. More frequent visits will be necessary for patients with stage 2 hypertension or with complicating co morbid conditions.

## Measurement of Blood Pressure at the PHCC:

1. The auscultatory method of BP measurement with a properly calibrated and validated instrument should be used.
2. Persons should stop smoking and consuming coffee drinks for at least 30 minutes before the examination. Patient should be seated quietly for at least 5 minutes in a chair, with feet on the floor, and arm supported at heart level.
3. Measurement of BP in the standing position is indicated periodically, especially in those at risk for postural hypotension, diabetics and for the elderly.
4. An appropriate-sized cuff should be used to ensure accuracy. Obese patient's need an appropriate sized cuff, otherwise false high BP will be recorded.
5. At least two measurements should be made and take the average. Both Right (RT) and Left (LT) arm BP should be measured in the initial visit and the arm with the higher BP should be considered for diagnosis of hypertension and treatment decisions. Clinicians should provide the specific BP numbers and BP goals to patients, both verbally and in writing.

Diagnosis of hypertension is not based on the first assessment. Blood pressure measurement should be taken three separate times one to several weeks from the initial assessment to confirm the diagnosis.

## 7.4 Steps for proper blood pressure measurement technique

1- Expose the upper arm. Remove any tight or restrictive clothing from the arm.
2- Evaluate the patient's bare upper arm for the appropriate size cuff.
3- Place the cuff on the patient's bare upper arm, with the lower edge of the cuff 2.5 cm above the antecubital fossa, with the center of the cuff bladder over the brachial artery.
4- Palpate brachial artery pulse.
5- Inflate the cuff until pulsation disappears.
6- Deflate the cuff.
7- The point of disappearance is the estimated systolic pressure.

8- Wait 15-30 seconds, then place the bell head of the stethoscope over the brachial artery and inflate the bladder to 30 mmHg above estimated SBP.
9- Allow the cuff to slowly deflate at a rate of 2-3 mmHg per second while listening for repetitive sounds.
10- Record the pressure at which the first of at least two repetitive sounds is heard. This is the systolic blood pressure (phase1 sounds)
11- Record the pressure at which the last regular sound is heard. This is the diastolic blood pressure (phase 5 sounds)
12- Continue to listen during full deflation to confirm disappearance of the heart sounds.

## 7.5 Diabetes mellitus

Diabetes mellitus is a metabolic disorder of multiple etiology characterized by chronic hyperglycemia with disturbances of carbohydrates, fat and protein metabolism resulting from a defect in insulin secretion, insulin resistance, or both. (WHO, 1999).

**Classification of Diabetes:**

1. **Type I** – this is found most commonly in children and young people, although with good care is found increasingly in older individuals. It is characterized by total deficiency of insulin. Approximately 10% of all diabetics have Type I diabetes.
2. **Type II** –It is found primarily in older adults, but increasingly found even in obese young adults. Approximately 80% of all diabetics have type II diabetes, and most of these will also develop the metabolic syndrome as they age. It is characterized by relative resistance to insulin.
3. **Gestational Diabetes** – This is characterized by a relative glucose intolerance with hyperglycemia during pregnancy. Although it may improve following delivery, it is also associated with an increased risk of frank diabetes later in life.
4. **Other causes of diabetes** – these are relatively uncommon but include various disorders of the pancreas.

## 7.6 Diagnosis of Diabetes Mellitus

- Clinical suspicion with any of the following symptoms:

1. Polyuria (frequent urination)
2. Polydipsia (thirst and frequent drinking of water or other fluids)
3. Weight loss

- Intermittent blurring of the vision
- Lab Diagnosis is established with one of four possible tests, as follows:

1. Fasting plasma glucose ≥ 126 mg/dl (7.0 Mmol/L), which is confirmed with a second elevated reading on a separate day. Fasting should be for minimum of 8 hours.
2. Two-hour postprandial plasma glucose ≥ 200 mg/dl (11.1 Mmol/L) (ideally 75 mg. glucose in water)
3. Casual (without regard to the time since the last meal) plasma glucose ≥ 200 mg/dl (11.1 Mmol/L), together with any of the above suspicious symptoms
4. HbA1c measurement ≥ 6.5% using a standardized method of testing

**Pre-diabetes** (Impaired fasting glucose and impaired glucose tolerance):

Hyperglycemia that is not sufficient to meet the diagnostic criteria for diabetes is categorized as either impaired fasting glucose or impaired glucose tolerance.

## 7.7 Screening activities for Diabetes Mellitus

1- Screen all adults over 40 years of age with fasting blood sugar and blood pressure every 2-3 years

2- Screening Adult 35 years of age with any of the following:
   a. Positive family history of cardiovascular disease
   b. Obesity
   c. Gestational diabetes or large babies

3- Checking whether it is the first visit or not (already diagnosed or not known as a case of diabetes).

4- Documentation of basic data about the attendee (age, gender, occupation, address and date of attendance).

5- Filling of special screening format and keeping it attached to outpatient ticket.

6- Documentation of PHC Doctor name and medical unit.

- If the result of screening test was less than 126mg/dl or 7mmol/L, there is no diabetes mellitus and the case marked as negative.
- If the result of screening test was equal to 126mg/dl or 7mmol/L or above, diabetes mellitus is present, and the case should be marked positive. Document the result and refer him/her to the PHC Doctor for a feedback report.

- When the patient refers to the hospital for further investigations, document referral in the file system and follow up all feedback reports.

**Impaired Glucose Tolerance by Type of Test**

| Test | Pre-Diabetes Values (Impaired glucose tolerance) |
|---|---|
| Fasting Plasma Glucose | 100- <126 mg/dl (5.6- 7 Mmol/L) |
| Oral Glucose Tolerance Test (2hr PP) | 140 - <200 mg/dl (7.8-11.1 Mmol/L) |
| HbA1c | 5.5% – 6.4% |

## 7.8 Health Education and Patient/Family Counseling

The aim of health education is to assist diabetics to become more knowledgeable about their disease and more proficient in self-management. Patient education should begin at the time of diagnosis and continue at every visit. Diabetes is generally a permanent problem and will require life-long management.

- Diabetes can be controlled with effort, but requires daily attention
- Control of blood sugar will prevent or delay microvascular symptoms:
  a. Advise for home blood glucose monitoring.

## 7.9 Breast Cancer among women

The aim is a reduction of the incidence of the disease and the associated morbidity and mortality.

**Basic approaches for Cancer Control:**

1. **Prevention:** includes attempts to minimize or eliminate exposure to carcinogenic agents to reduce individual susceptibility to their effect.
2. **Early Detection and Screening:** increasing awareness of the signs and symptoms of cancer contributes to its early diagnosis. Screening of apparently healthy individuals can disclose cancer in early stages when treatment would be effective.
3. **Treatment and Palliative Care**: cancer treatment is becoming increasingly effective in early diagnosed cases.

Early Diagnosis and Screening, especially when combined with adequate therapy offer the most immediate hope for a reduction in breast cancer mortality.

## 7.10 National Program for Early Detection of Breast Cancer in Iraq

### Periodic Screening for Breast Cancer in Primary Health Care

Routine breast cancer screening activity within primary health care services for all women who attend primary health care centers, in addition to referral centers and specialized clinics for early detection of breast cancer in all 18 governorates. Within these centers and clinics, breast cancer early detection techniques are promoted including:

1. Clinical Breast Examination (CBE)
2. Breast Self-Examination (BSE)
3. Mammography
4. Ultrasonography (U/S)
5. Fine Needle Aspiration Cytology (FNAC)

### Women Screening for Breast Cancer:

Breast cancer is the most common cancer among women in the world, comprising 23% of the female cancers. It is also the leading cause of cancer-related deaths, case-fatality rates being highest in low resource countries. (Anderson BO et al 2008).

## 7.11 Early Detection and Screening for Breast Cancer

The detection of a breast mass in an apparently healthy woman before it is palpable is a technique that saves lives and saves breasts. All women are candidates for screening since all women are at risk for breast cancer development. Thus, breast cancer screening programs have a most favorable effect on the early diagnosis of the disease.

**Diagnostic Approaches to Breast Lesions:** there are three major techniques commonly used to evaluate breast masses: physical examination, mammography and fine needle aspiration (FNA) cytology.

## 7.12 Physical Breast Examination and Breast-Self Examination

This is an inexpensive, non-invasive method of detection that can be taught to patients. Although degrees of competence, profession and thoroughness vary, it has been shown that approximately 60-90% of all breast cancers are

usually found either by the patient herself during Breast Self-Examination (BSE) or by Clinical Breast Examination (CBE).

## 7.13 Clinical Breast Examination (CBE)

CBE is a physical examination of the breast performed by healthcare providers, (such as physicians, community nurses, midwives). Repeating the CBE can be a useful diagnostic tool when breast asymmetry is detected, as asymmetry is commonly transient. Persistence of an abnormality increases the pretest probability of the disease.

## 7.14 Breast Self-Examination (BSE)

Educational information on the technique of BSE can be accomplished utilizing commonly available pamphlets. During the examination women should look for:

1. Breast asymmetry.
2. Thickening, dimpling or skin retraction.
3. Nipple retraction or surface changes as redness, ecchymosis or excoriation.
4. Spontaneous nipple discharge.
5. Any lump or nodularity which has not been noted previously during earlier exams.

### Steps to perform Clinical Breast Examination CBE:

The patient should be examined in both the upright and supine positions. She must be disrobed from the waist up allowing the examiner to visualize and inspect the breasts.

Inspection should be done while the patient is in three standing positions:

1- Arm relaxed at the sides.

2- Hands pressed firmly on the waist (to contract the pectoral muscles so that any other areas of retraction can be visualized) and leaning forward.

3- Arms over the head so the lower part of the breast can be inspected.

What we look for:

- Changes in breast contour such as swelling, changes in color and shape.
- Change in the direction of the nipple.
- Dimpling or puckering of the skin.
- "Orange peel" appearance of the breast skin.

**Palpation:** should be done with the three middle finger pads; it should cover the whole area of each breast including the lymph nodes, underarms and

upper chest from collarbone to below the breasts and from the armpits to the breastbone.

## General Ground Rules in Breast Self-Examination BSE

1. Use flat part of fingers.
2. Use powder or soap solution to allow fingers to slide smoothly over skin.
3. Palpate breast in systematic fashion to not miss any part.
4. Check nipples for discharge or skin changes.
5. Always palpate axillary lymph nodes (palpable nodes suspicious for cancer) and axillary tail of breast.

**Inspection:**

**Step 1:** Begin by looking at your breasts in the mirror with your shoulders straight and your arms on your hips. What should you look for: Color, shape, size of both breasts that are evenly shaped without visible distortion or swelling. If you see any of the following changes, bring them to your doctor's attention:

- Dimpling, puckering and bulging of the skin.
- A nipple that has changed position or pushed inward instead of sticking out (inverted nipple).
- Redness, soreness, rash, or swelling.

**Step 2:** Raise the arms overhead or put the hands behind the head and look for the same changes.

**Step 3:** Put your hands in the middle of the abdomen and push downward with the shoulders stretched forward to look for the shape of your breasts.

**Palpation:**

**Step 4:** Examine each breast separately and feel for any new lumps, changes, or irregularities. Use the palmar aspect of the fingers (i.e. the pads of the fingers not the tips) moving in a circular or grid-like pattern.

**Step 5:** Examine the tail of both breasts. The nipple should also be examined during this time. First, squeeze the nipple and check for any discharge.

**Step 6:** Lie down with a pillow or folded towel under the right shoulder and place the right arm behind the head. Check the entire breast and armpit area. The exam should then be repeated on the left breast, using the finger pads of the right hand.

## 7.15 Breast Cancer Screening in High Risk Women:

1. Women who have personal history of breast cancer (specifically in a first degree relative).
2. Women who have history of other premalignant breast lesions (atypical ductal or lobular epithelial hyperplasia).
3. Women who have mutations in BRCA1 and BRCA2 genes.
4. Women who had been exposed to radiation during early years of life especially in the chest region.
5. Women with very dense breast tissues. In these groups of women, early detection of breast cancer should follow the next schedule:
   - Breast self-examination is performed monthly since the age of twenty years and continues throughout lifetime.
   - Clinical breast examination is performed annually since the age of twenty and continues throughout lifetime.
   - Screening mammogram is performed every 3 years at the age group 30-39 years.
   - Ultrasound examination is recommended annually starting at the age of 30 years. Taken into consideration all clinical features and history or physical examination which suspect breast cancer.

### Schedule of Iraqi Program for Screening for Breast Cancer

| **A. For Low Risk Women** | | | | |
|---|---|---|---|---|
| **Test Age** | **Age (in years)** | | | |
| | 20 - 29 | 29 30 | 40 - 49 | ≥ 50 |
| **BSE** | Monthly | Monthly | Monthly | Monthly |
| **CBE** | Every 2- 3-years | Every year | Annually | Annually |
| **Mammogram** | - | - | Every 2 years | Annually |
| **B. For High Risk Women** | | | | |
| **Test** | **Age (in years)** | | | |
| | 20 - 29 | 30 -39 | 40 - 49 | ≥ 50 |
| **BSE** | Monthly | Monthly | Monthly | Monthly |
| **CBE** | Annually | Annually | Annually | Annually |
| **Mammogram** | - | Every 3 years (with Annual Ultrasound) | Annually | Annually |

## 7.16 Other Imaging Techniques:

1- Ultrasonography.
2- Magnetic Resonance Imaging (MRI). The sensitivity of the MRI as screening

tool for breast cancer is over 95% but its specificity is low, with a range of 53%-70%.

3- Magnetic Resonance Imaging (MRI). The sensitivity of MRI as screening tool for breast cancer is over 95% but its specificity is low, with a range of 53%-70%.
4- Other Non-Imagining Techniques
   a) Fine Needle Aspiration Cytology (FNAC)
   b) Core Needle Biopsy (CNB)
   c) Triple Assessment Diagnostic Test: The triple test uses a combination of physical examination, imaging studies, and FNA cytology as an alternative to surgical excision to establish that a breast mass is benign.

# Section 8 – Communicable Diseases

## 8.1 Control of communicable diseases

**Communicable disease** is any illness that arises from transmission of an infectious agent or its toxic product from an infected person, animal or reservoir to a susceptible host, either directly or indirectly through an intermediate plant or animal host, vector, or environment.

**Natural history of communicable diseases:**

The sequence of events that happen one after another, over a period of time, in a person who is not receiving treatment:

- Exposure
- Infection
- Clinical presentation (outcome)

## 8.2 Basic Concepts in communicable diseases:

1. **Communicable diseases** are caused by infectious agents that can be transmitted to other people from an infected person, animal or a source in the environment. Communicable diseases constitute the leading cause of health problems in most developing countries.
2. **A case**: refers to an individual who has the disease.
3. **Standard case definition**
   A standard case definition is an agreed set of criteria used to decide if a person has a particular disease. Use of standard definitions ensures that every case is detected and reported in the same way, regardless of where or when it occurred or who identified it.
   The set of criteria include signs and symptoms listed in the nationally agreed standard case definition for that disease. For example, the measles standard case definition might be: fever and maculopapular rash and cough or coryza or conjunctivitis.
4. **Endemic**: when the communicable diseases persist in a community at a relatively constant level for a very long time and the number of individuals affected remains approximately the same; for example: Typhoid, Tuberculosis.
5. **Susceptible host**: Individuals who are likely to develop a communicable disease after exposure to the infectious agents.
6. **Risk factors**: Factors that increase the susceptibility of a host to the development of a communicable disease. Some risk factors arise from

outside the individual – such as poor personal hygiene and poor control of reservoirs of infection in the environment.

7. **Reservoirs of infectious agents**: A reservoir is the place where the infectious agent is normally present before infecting a new human.
8. **Infected hosts**: Are humans and animals which serve as reservoirs for infectious agents.
9. **Not infected hosts (vehicles)**: Non-living things like water, food and soil can be reservoirs for infectious agents.
10. **Zoonoses (singular**, **zoonosis)**: Diseases in which the infectious agents can be transmitted from animal hosts to susceptible humans.
11. **Control:** The reduction of disease incidence, prevalence, morbidity or mortality to locally acceptable a level with Continues intervention measures to maintain the reduction. Example diphtheria, pertussis.
12. **Elimination:** Reduction of incidence a specified disease to zero in a defined geographical area with Continued intervention measures.
13. **Eradication:** It is reduction to zero of the worldwide incidence of infection caused by a specific agent, the complete interruption of transmission and the extinction of the causative agent so that it no longer exists in the environment. As a result, intervention measures are no longer needed. Example: smallpox.
    Cockburn's definition1 is "Eradication is the extinction of the pathogen that causes the infectious disease in question.

## 8.3 Modes of transmission

The route by which an infectious agent is transmitted from a reservoir to another host is called the mode of transmission. It is important for you to identify different modes of transmission because prevention and control measures differ depending on the type.

1-**Direct transmission** refers to the transfer of an infectious agent from an infected host to a new host, without the need for intermediates such as air, food, water or other animals. Direct modes of transmission can occur in two main ways:

**Direct Transmission Through**

- Touching
- Sexual intercourse
- Biting
- Direct projection of droplets
- Across the placenta

a) **Person to person:** The infectious agent is spread by direct contact between people through touching, biting, kissing, sexual intercourse or direct projection of respiratory droplets into another person's nose or mouth during coughing, sneezing or talking. A familiar example is the transmission of HIV from an infected person to others through sexual intercourse.

**Indirect Transmission Through**
- Airborne
- Vehicle-borne
- Vector-borne

b) **Transplacental transmission:**

This refers to the transmission of an infectious agent from a pregnant woman to her fetus through the placenta. An example is mother-to-child transmission (MTCT) of HIV.

2-**Indirect modes of transmission** Indirect transmission occurs when infectious agents are transmitted to new hosts through intermediates such as air, food, water, objects or substances in the environment, or other animals. Indirect transmission has three subtypes:

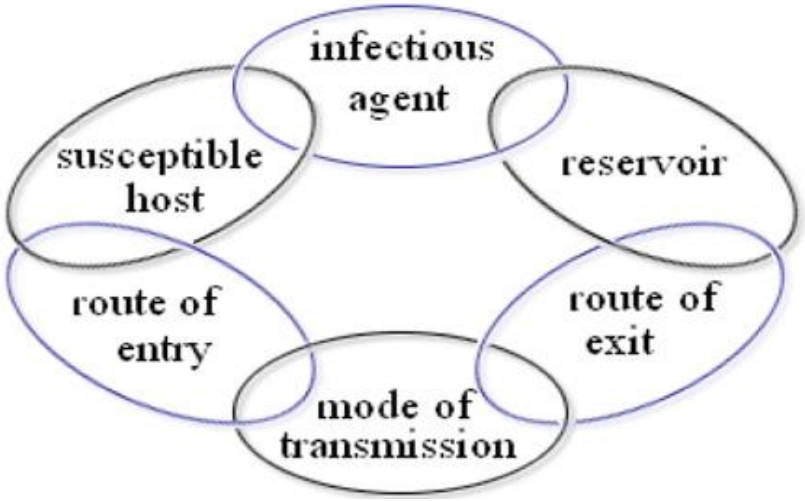
A) **Airborne transmission**: The infectious agent may be transmitted in dried secretions from the respiratory tract, which can remain suspended in the air for some time. For example, the infectious agent causing tuberculosis can enter a new host through airborne transmission.

B) **Vehicle-borne transmission**: A vehicle is any non-living substance or object that can be contaminated by an infectious agent, which then transmits it to a new host.
Contamination is the presence of an infectious agent in or on the vehicle.

C) **Vector-borne transmission**: A vector is an organism, usually an arthropod, which transmits an infectious agent to a new host.

**Factors involved in the transmission of communicable diseases:**
Six major factors can be identified: the infectious agent, the reservoir, the route of entry, the mode of transmission, the route of exit and the susceptible host. We will now consider each of these factors in turn.

Figure illustrates the Chain of Infection




## 8.4 Classification of communicable diseases according to mode of transmission

**2- Respiratory diseases (e.g., colds) affect the head and chest**

They are spread by:

a) Coughing, sneezing, and breathing,
b) Touching nasal mucus, saliva, and eye discharge.

**3- Gastrointestinal diseases (e.g., infectious diarrhea) affect the stomach and intestines**

They are spread by:

a) Touching stool, vomit, or contaminated surfaces.
b) Eating food contaminated by stool.
c) Drinking or bathing in water contaminated by stool.

**4- Dermatologic diseases (e.g., ringworm) affect the skin and hair**

They are spread by:

a) Touching skin or hair.
b) Sharing items such as clothes, hats, towels, and hairbrushes that touch skin or hair.

**5- Blood-borne diseases (e.g., hepatitis B) affect the entire body**

They are spread by:

a) Getting blood onto broken skin.
b) Receiving blood transfusions.
c) Sharing needles used for injections, piercing, or tattoos.
d) Having sexual contact that shares body fluids.

## 8.5 Classification of communicable diseases according to time of notification

**Group 1:** Immediate and urgent notification diseases within 24 hours and should be documented within communicable diseases registry

| Non-EPI-Targeted Diseases | EPI-Targeted Diseases |
|---|---|
| 1-Acute Flaccid Paralysis (AFP) Surveillance<br>2-Acute Poliomyelitis<br>3-Diphtheria<br>4-Pertussis (whooping cough)<br>5-Measles and Rubella (German measles)<br>6-Meningococcal Disease<br>7-Tetanus &Neonatal Tetanus | 1. Influenza H1N1, H5N1<br>2. Cholera<br>3. Rabies<br>4. Malaria<br>5. Food Poisoning<br>6. Hemorrhagic fever<br>7. Suspected infection with Ebola virus<br>8. Suspected infection with coronavirus<br>9. Cutaneous Leishmaniasis and Visceral Leishmaniasis<br>10. Any communicable disease outbreaks<br>11. Unusual health events or deaths |

**Group 2:**

Submitted within zero weekly report and documented within communicable diseases registry.

| EPI-Targeted Diseases | Non-EPI-Targeted Diseases |
|---|---|
| 1-Acute Flaccid Paralysis (AFP)<br>2-Suspected Measles<br>3-Neonatal Tetanus neonatorum<br>4-Diphtheria<br>5-Acute diarrhea<br>6-Mumps<br>7-Suspected German Measles<br>8-Meningococcal meningitis | 1-Cutaneous and Visceral Leishmaniasis<br>2-Confirmed Cholera<br>2-Confirmed Hemorrhagic fever<br>3-Rabies<br>4-Malaria<br>5-Confirmed cholera<br>6-Chicken Pox<br>7-Confirmed H1N1, H5N1<br>8-Confirmed Coronavirus<br>9-Cutaneous or pulmonary anthrax |

**Group 3:**

Submitted monthly according to age and gender categories and should be documented within communicable disease registry and

| EPI-Targeted Diseases | Non-EPI-Targeted Diseases |
|---|---|
| 1-Acute Flaccid Paralysis (AFP)<br>2-Acute Poliomyelitis<br>3-Diphtheria<br>4-Pertussis (whooping cough)<br>5-Confirmed Measles<br>6-Confirmed Rubella (German measles)<br>7- Mumps<br>6-Tetanus<br>7-Neonatal Tetanus<br>8-Acute Infective Viral Hepatitis A, B, C and E<br>9-Clinical diagnosed infective hepatitis | 1-Confirmed Typhoid fever<br>2-Suspected Typhoid fever<br>3-Confirmed Cholera<br>4-Confrmed Hemorrhagic fever<br>5-Cutenous and Visceral leishmaniases<br>6- Toxoplasmosis<br>7-Hydatid disease<br>8-Brucellosis<br>11-Chicken pox<br>12- Rabies<br>13- Animal bite<br>13- Schistosomiasis<br>14- (Worm infestation)<br>15- (Amebiasis & Giardiasis)<br>16-Meningococcal meningitis,<br>Viral meningitis, Septic meningitis<br>17-Bacilary dysentery<br>18-Typhos fever<br>19-Scabies<br>20-conformed coronavirus infection<br>21- Confirmed H1NI and H5N1<br>22-Food poisoning<br>23-Hospital Pneumonia |

## 8.6 Key concepts of prevention and control

### 1- Prevention measures:

All measures which are applied before the occurrence of a communicable disease to protect a community from getting it and to reduce the number of cases locally in the future.

**Prevention of water borne diseases:**

1. Improve quality and quantity of drinking water at source, at the tap, or in the storage vessel.
2. Interrupt routes of transmission by emptying accumulated water sources.

3. Chlorinate water.
4. Change hygiene behavior (ex: hand washing).
5. Take care in disposing of waste and human and animal feces.
6. Proper use of latrines by adults and children.
7. Proper use and maintenance of water supply, sanitation systems, pumps and wells.
8. Good food hygiene (ex: protect food from flies).

## 8.7 Preventive measures for vector borne diseases

1. Avoid areas with vector-borne disease outbreaks.
2. Be aware of peak exposure times and places.
3. Wear long sleeves and pants.
4. Check for ticks.
5. Bed nets.
6. Insecticides and spatial repellents.

**2- Control measures:**

All measures which are applied to reduce the severity of the disease in that person, and to prevent transmission of the infectious agent to other members of the community.

**Examples of control and preventive measures:**

1. **Vaccination**: Vaccines are the most effective tool for prevention of EPI-targeted diseases.
2. **Hand washing**: the single most effective way to prevent the spread of germs.
3. **Covering your cough**: an effective way to reduce the spread of germs when coughing and sneezing.
4. **Appropriate gloving**: an effective way to help prevent the spread of germs. Gloves are not a substitute for hand washing. See standard precautions below.
5. **Proper diapering procedures**: to reduce the spread of germs found in stool to hands, objects, and the environment.
6. **Cleaning, sanitizing, and disinfection**: to reduce the presence of germs in the environment.
7. **Food safety**: to reduce the spread of germs from improperly cooked and handled food.
8. **Avoid sharing personal items**: encourage children, students, and staff to NOT share items such as water bottles, food, utensils, beverages, straws, toothbrushes, lip gloss, lip balm, lipstick, towels,

head gear, combs, brushes, etc. to prevent the spread of germs to others.

9. **Promote self-care**: promote and encourage personal and general hygiene.
10. **Cleaning**: Mechanical process (scrubbing) using soap or detergent and water to remove dirt, debris, and many germs. It also removes imperceptible contaminants that interfere with sanitizing and disinfection.
11. **Sanitizing**: Chemical process of reducing the number of disease-causing germs on cleaned surfaces to a safe level. This term is usually used in reference to food contact surfaces or mouthed toys or objects.
12. **Disinfecting**: Chemical process that uses specific products to destroy harmful germs (except bacterial spores) on environmental surfaces.
13. Widespread use of **insecticide-treated mosquito nets (ITNs)** is recommended as a prevention measure for malaria.

| Control Measures | Preventive Measures | Diseases classification |
|---|---|---|
| EPI-Targeted Diseases: e.g., (Acute Poliomyelitis, Diphtheria, Pertussis (whooping cough) measles, Tetanus & Neonatal Tetanus) | Vaccination and general, personal hygiene, hand washing and personal protective equipment. | Treatment of the cases follow up and examination of contacts for early examination and treatment of any other cases, vaccination of susceptible individuals, health education about signs and symptoms of the diseases and preventive control measures, improve nutrition, avoid overcrowdings, and improve ventilation. |
| Non-EPI-Targeted Diseases: e.g., (Cholera, Influenza H1N1, H5N1 Food Poisoning, Brucellosis, Chicken pox, Amebiasis, Typhoid and Paratyphoid fever | Hand washing, personal protective equipment, gowns, masks, protective eye wear and gloves. | |

## Surveillance

Surveillance is data collection for action, It is also defined as ongoing, systematic collection, analysis and interpretation of health-related data essential to the planning, implementation, and evaluation of public health practice**.** Surveillance is undertaken to inform disease prevention and control measures

### Characteristics of effective surveillance system:

1. Useful;
2. Efficient;
3. Flexible;
4. Representative;
5. Simple

### Types of the Surveillance

- **Passive surveillance** involves passive notification through regular reporting of disease data by all facilities that see patients or test specimens.
- **Active surveillance:** It involves visiting health facilities, talking to health-care providers and reviewing medical records to identify suspected cases of the disease under surveillance. **Active surveillance** is usually used when a disease is targeted for eradication or elimination, It is also used for outbreak investigations.
- **Sentinel surveillance** involves notifications from a limited selected number of reporting sites (usually referral hospitals), with a high probability of seeing cases of the disease in question, It is used when high-quality data are needed about particular disease that cannot be obtained through a passive system.

## Standard Precautions:

One aspect of standard precautions is the use of barriers. The purpose of using barriers is to reduce the spread of germs to staff and children from known and unknown sources of infections and prevent a person with open cuts, sores, or cracked skin (non-intact skin) and their eyes, nose, or mouth (mucous membranes) from having contact with another person's blood or body fluids.

**Examples of protective barriers:**

1) **Gloves (preferably non-latex)** when hands are likely to be soiled with blood or body fluids.

2) **CPR (cardiopulmonary resuscitation) barriers**
3) **CPR mask or shield**.
4) **A bandage** to cover a wound on a child or staff member to absorb or contain drainage from their wound. This prevents the escape of bodily fluids rather than protecting from fluids that have escaped.

**Emergency measures for control of communicable diseases**

| | |
|---|---|
| 1-Shelter and site planning | 6-Health services |
| 2-Sanitation and hygiene | 7-Vector control |
| 3-Food safety | 8-Environmental control |
| 4-Water supply | 9-Epidemic preparedness and response |
| 5-Health education | |

## 8.8 Acute Flaccid Paralysis (AFP)

**AFP case:** Any patient under 15 years of age with acute, flaccid paralysis, or any person of any age in whom a clinician suspects polio.
**Contact:** A contact is defined as a child less than five years of age who has been in direct contact with the index Acute Flaccid Paralysis (AFP) case.
AFP cases within one week prior to the onset of paralysis and/or within two weeks after onset of paralysis.

## 8.9 Types of AFP surveillance

1- **Routine surveillance for AFP ("zero reporting")**

Immediate notification of AFP in children <15 years of age is required. AFP should also be included in the weekly and monthly reporting system. When no case of AFP is detected, reporting units should still send weekly and monthly reports indicating zero cases.

2- **Active surveillance for AFP**
Active surveillance is a strategy to actively collect information by visiting health facilities. A designated person should make visits to hospitals and rehabilitation centers.

3- **Active AFP case finding**

Looking for AFP cases in the community.

## 8.10 Key components of Acute Flaccid Paralysis surveillance

a) Detect and investigate all cases of AFP in children <15 years.
b) Collect 2 stool specimens, collected at least 24 hours apart, within 14 days of onset of paralysis.

c) Conduct virological testing of stool specimen in WHO-accredited lab.
d) Conduct 60-day follow-up for residual paralysis.
e) Classify cases according to WHO scheme.

## 8.11 AFP surveillance and laboratory performance indicators

1- Non-polio AFP rate in children <15 years of age. (Target > 2/100,000)
   - Non-polio AFP rate = number of reported non-polio AFP cases < 15 X 100000 / total number of children < 15 years of age.
   - The non-polio AFP rate is an indicator of surveillance "sensitivity". If it is < 2/100000 then the surveillance system is probably missing cases of AFP.
2- Completeness of weekly and monthly reporting. (Target ≥ 90%)
   - % complete = number of monthly reports received x 100% / number of monthly reports expected
3- Timeliness of weekly and monthly reporting. (Target ≥ 80%)
   - % Timely = number of reports receive before a specified deadline x 100% /number of monthly reports expected.
4- Reported AFP cases investigated ≤ 48 hours of report (Target ≥ 80%)
5- Reported AFP cases with 2 specimens collected < 14 days since onset. (Target ≥ 80%).
6- Reported AFP cases with a follow-up exam at least 60 days after paralysis onset to verify the presence of residual paralysis or weakness. (Target ≥ 80%).
7- Specimens arriving at national laboratory < 3 days of being sent (Target ≥ 80%)
8- Specimens arriving at laboratory in «good condition ». (Target ≥ 80%). "Good condition" means that upon arrival:
   a) There is ice or a temperature indicator (showing < 8°C) in the container.
   b) The specimen volume is adequate (8-10 grams).
   c) There is no evidence of leakage or desiccation.
   d) Appropriate documentation (laboratory request/reporting form) is completed.
9- Specimens with a turn-around time < 14 days (Target ≥ 80%). The turn-around time is the time between specimen receipt and reporting of results

10- Stool specimens from which non-polio enterovirus was isolated (Target ≥ 10%).

This is an indicator of the quality of the reverse cold chain and how well the laboratory can perform in the routine isolation of entero-viruses.

### 8.12 An epidemiological week:

It is referred to as an epi week, it is simply a standardized method of counting weeks to allow for the comparison of data year after year. Each epi week begins on a Sunday and ends on a Saturday.

The first epi week of the year ends, by definition, on the first Saturday of January, if it falls at least four days into the month. By defining the epi week, we can ensure that all parties count weeks the same way, understanding that epi week n refers to the same period.

### 8.13 The Weekly Epidemiological Record (WER)

Weekly Epidemiological Record (WER) serves as an essential instrument for the rapid and accurate dissemination of epidemiological information on cases and outbreaks of diseases under the International Health Regulations and on other communicable diseases of public health importance, including emerging or re-emerging infections.

## 8.14 National TB program in Iraq

**Vision:** TB-free country with elimination of the disease as public health problem by 2050.

**Objectives:**

1. Achieve universal access to high quality care for all TB patients including vulnerable populations.
2. Ensure universal access to diagnosis, treatment and care for Drug-Resistant TB (DR-TB)
3. Protect and promote the human rights in TB prevention, care and control.

### 8.15 Direct Observation Treatment Short Course Strategy (DOTS):

DOTS is a WHO strategy, based on the priority to ensure that all sputum smear positive pulmonary TB patients complete a full course of short course chemotherapy with direct observation of swallowing the drug during the period of treatment or at least during the initial phase of treatment.

The main advantage of DOTS is that treatment of TB cases under direct supervision, only when a second person directly observes a patient swallowing the given medication then can be certain that the patient is actually receiving the prescribed treatment regimen. The treatment observer ensures that the medication is taken at the correct interval and in the correct dosage. This benefit both the patient and the community. DOTS ensure high cure rate and dramatic reduction in the development of drug resistance.
Any adverse effects and treatment complications can be quickly identified & addressed.

**The DOTS strategy required five conditions:**

1. The political will of the government.
2. Existence of laboratory networks to identify smear positive pulmonary TB patients.
3. A network of peripheral health centers.
4. Regular supply of drugs and reagents.
5. Organization of permanent surveillance system in order to supervise the tasks of program and to evaluate its epidemiological impact.

**Reasons to use DOTS**

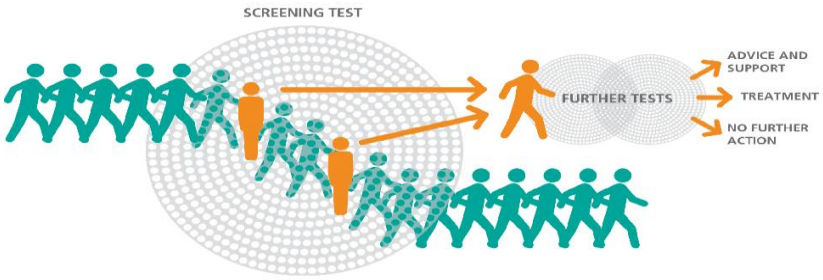
1- Cure the patient.
2- Prevents new infection.
3- Stop MDR tuberculosis.
4- Cost effective.
5- Community based.
6- Extends lives of AIDS patients.
7- Protects the workforce.
8- Protects the international travelers.
9- Stimulates economies.
10-Proven effectiveness

### 8.16 Phases for efficient TB treatment:

1. Initial intensive phase: associating at least four major anti TB drugs administrated daily for two months.
2. Continuation phase during the next four months with two major anti TB drugs.

## 11.1 Screening programs:

Screening is the process of identifying healthy people who may have an increased chance of a disease or condition. The screening provider then offers information, further tests and treatment. This is to reduce associated problems or complications. Illustration of the screening process, in diagram below, a large group of people accept the offer of a screening test.




At each stage of the screening process, target people can make their own choices about further:

1) Tests
2) Treatment
3) Advice
4) Support

In any screening program there are false positive and false negative results:

a) false positive: wrongly reported as having the condition
b) false negative: wrongly reported as not having the condition

## Wilson criteria for appraising the validity of a screening program

1. The condition being screened for should be an important health problem.
2. The natural history of the condition should be well understood.
3. There should be a detectable early stage.
4. Treatment at an early stage should be of more benefit than at a later stage.
5. A suitable test should be devised for the early stage.
6. The test should be acceptable.
7. Intervals for repeating the test should be determined.
8. Adequate health service provision should be made for the extra clinical workload resulting from screening.
9. The risks, both physical and psychological, should be less than the benefits.
10. The costs should be balanced against the benefits.

## Types of Screening programs:

- **Mass screening**: Mass screening means the screening of a whole population or a subgroup. It is offered to all, irrespective of the risk status of the individual (during studying surveys).
- **High risk or selective screening**: High risk screening is conducted among risk populations only (screening of pregnant women during antenatal care services).
- **Multiphasic screening**: The application of two or more screening tests to a large population at one time instead of carrying out separate screening tests for single diseases (Screening program for chronic non-communicable diseases like Hypertension, Diabetes Mellitus and Ca breast).

# Section 9 – Mental Health Programs

## 9.1 Mental health:

Mental health is a level of psychological well-being, or an absence of mental illness. It is the "psychological state of someone who is functioning at a satisfactory level of emotional and behavioral adjustment". According to WHO mental health includes "subjective well-being, perceived self-efficacy, autonomy, competence, inter-generational dependence, and self-actualization of one's intellectual and emotional potential, among others."

## 9.2 Primary mental health care (PMHC):

Primary mental health care (PMHC) is an integral part of services delivered by primary care teams. It encompasses health promotion, prevention, early intervention, and treatment for mental health and/or addiction issues; putting in place strategies to prevent mental disorders.

Integrating mental health services into PHC is one of WHO's most fundamental health care recommendations and helps in reducing the stigma for people with mental disorders and their families. In addition, mental health services allow improved access to care, prevention and detection, treatment and follow-up of mental disorders. It can help in reducing the chronicity of the problem while improving social integration, both for the people with mental disorders and his/her household. In 2008 the Ministry of Health began a systematic program to integrate mental health provision into primary care.

## 9.3 Primary Mental Health Services Package

### A. Prevention of mental disorders

- Coordination with other health units within PHCC to carry out health activities that protect against mental disorders.
- Awareness of mental health issues and ways to achieve them and prevent the mental disorders. Targets teachers, school students, prospective couples, pregnant women and mothers, families in general and families of patients.

### B. Early detection and diagnosis of mental disorders

According to mh-GAB guideline which was adapted by MOH

## 9.4 Management of common mental disorders in PHCs according to WHO Manual (mh GAP)

Launched in 2008 by WHO to address the lack of care, especially in low- and middle-income countries, for people suffering from mental, neurological, and substance use disorders. It includes guidance on evidence-based interventions to identify and manage the priority of the following conditions:

1) **Depression (Moderate-Severe Depression)**: In typical depressive episodes, the person experiences depressed mood, loss of interest and enjoyment, and reduced energy leading to diminished activity for at least 2 weeks.
2) **Psychosis**: Psychosis is characterized by distortions of thinking and perception, as well as inappropriate or narrowed range of emotions. Incoherent or irrelevant speech may be present. Hallucinations, delusions or excessive and unwarranted suspicions may also occur.
3) **Bipolar disorders**: This disturbance consists on some occasions of an elevation of mood and increased energy and activity (mania), and on others of a lowering of mood and decreased energy and activity (depression).
4) **Epilepsy/Seizures**: Epilepsy is a chronic condition, characterized by recurrent unprovoked seizures.
5) **Developmental Disorders**: Developmental disorders include intellectual disability and mental retardation as well as pervasive developmental disorders including autism, which begin in childhood.
6) **Behavioral disorders**: Behavioral disorders include more specific disorders such as hyperkinetic disorder, attention deficit hyperactivity disorder (ADHD) and many more. Behavioral symptoms of varying levels of severity are very common in the population.
7) **Dementia**: Dementia is a syndrome due to illness of the brain, which is usually chronic and progressive in nature. It produces changes in a person's mental ability, personality and behavior, and while it can occur at any age, it's more common in older populations.
8) **Alcohol Use and Alcohol Use Disorders**: includes acute alcohol intoxication, harmful alcohol use, the alcohol dependence syndrome, and the alcohol withdrawal state. Acute intoxication is a transient condition following intake of alcohol resulting in disturbances of consciousness, cognition, perception, affect or behavior.

9) **Drug Use and Drug Use Disorders**: Conditions include acute sedative overdose, acute stimulant intoxication or overdose, harmful or hazardous drug use, cannabis dependence, opioid dependence, stimulant dependence, benzodiazepine dependence, and their corresponding withdrawal states.

10) **Self-harm/Suicide**: Suicide is the act of deliberately killing oneself. Self-harm is a broader term referring to intentional self-inflicted poisoning or injury, which may or may not have a fatal intent or outcome. Any person over 10 years of age experiencing any of the following conditions should be asked about thoughts or plans of self-harm in the last month and about acts of self-harm in the last year.

11) **Other Significant Emotional or Medically Unexplained Complaints**: Anxiety, depressive or medically unexplained somatic symptoms. People in this category may experience either "normal" distress or a mental disorder not covered in the mh-GAP
    a. Any of the other priority conditions (see mhGAP Master Chart)
    b. Chronic pain
    c. Acute emotional distress

## 9.5 mh-GAP-IG Master Chart:

Users of the mh-GAP-IG need to start at the top of the assessment and management section and move through all the decision points to develop a comprehensive management plan for the person.

### Assessment priorities

| Common presentation | Condition to be assessed |
|---|---|
| 1. Low energy, fatigue, sleep or appetite problems<br>2. Persistent sad or anxious mood; irritability<br>3. Low interest or pleasure in activities that used to be interesting or enjoyable<br>4. Multiple symptoms with no clear physical cause (e.g. aches and pains, palpitations, numbness)<br>5. Difficulties in carrying out usual work, school, domestic or social activities | **Depression** |
| 1. Abnormal or disorganized behavior (e.g. incoherent or irrelevant speech, unusual appearance, self-neglect, unkempt appearance)<br>2. Delusions (a false firmly held belief or suspicion) | **Psychosis** |

| Common presentation | Condition to be assessed |
|---|---|
| 3. Hallucinations (hearing voices or seeing things that are not there)<br>4. Neglecting usual responsibilities related to work, school, domestic or social activities<br>5. Manic symptoms (several days of being abnormally happy, too energetic, too talkative, very irritable, not sleeping, reckless behavior) | |
| 1. Convulsive movement or fits/seizures<br>2. During the convulsion: loss of consciousness or impaired consciousness, stiffness, rigidity, tongue bite, injury, incontinence of urine or feces<br>3. After the convulsion: fatigue, drowsiness, sleepiness, confusion, abnormal behavior, headache, muscle aches, or weakness on one side of the body | **Epilepsy / Seizures** |
| 1. Delayed development: much slower learning than other children of same age in activities such as: smiling, sitting, standing, walking, talking, communicating and other areas of development, such as reading and writing<br>2. Abnormalities in communication; restricted, repetitive behavior<br>3. Difficulties in carrying out everyday activities normal for that age | **Developmental Disorders**<br><br>**Children and adolescents** |
| 1. Excessive inattention and absent-mindedness, repeatedly stopping tasks before completion and switching to other activities<br>2. Excessive over-activity: excessive running around, extreme difficulties remaining seated, excessive talking or fidgeting<br>3. Excessive impulsivity: frequently doing things without forethought<br>4. Repeated and continued behavior that disturbs others (e.g. unusually frequent and severe temper | **Behavioral Disorders**<br><br>**Children and adolescents** |

| Common presentation | Condition to be assessed |
|---|---|
| tantrums, cruel behavior, persistent and severe disobedience, stealing)<br>5. Sudden changes in behavior or peer relations, including withdrawal and anger | |
| 1. Decline or problems with memory (severe forgetfulness) and orientation (awareness of time, place and person)<br>2. Mood or behavioral problems such as apathy (appearing uninterested) or irritability<br>3. Loss of emotional control – easily upset, irritable or tearful<br>4. Difficulties in carrying out usual work, domestic or social activities | **Dementia**<br>**Older people** |
| 1. Appearing to be under the influence of alcohol (e.g. smell of alcohol, looks intoxicated, hangover)<br>2. Presenting with an injury<br>3. Somatic symptoms associated with alcohol use (e.g. insomnia, fatigue, anorexia, nausea, vomiting, indigestion, diarrhea, headaches)<br>4. Difficulties in carrying out usual work, school, domestic or social activities | **Alcohol Use Disorders** |
| 1. Appearing drug-affected (e.g. low energy, agitated, fidgeting, slurred speech)<br>2. Signs of drug use (injection marks, skin infection, unkempt appearance)<br>3. Requesting prescriptions for sedative medication (sleeping tablets, opioids)<br>4. Financial difficulties or crime-related legal problems<br>5. Difficulties in carrying out usual work, domestic or social activities | **Drug Use Disorders** |
| 1. Current thoughts, plan or act of self-harm or suicide<br>2. History of thoughts, plan or act of self-harm or suicide | **Self-harm / Suicide** |

➡ **Management:** Management advice is too detailed to be included in this guideline.

## Psychosocial health of children:

Higher screen use is linked to behavioral issues, lower self-esteem, and lower psychological well-being. There is a link between physical activity and mental wellbeing or just feeling good. These effects include:

- Stress relief
- Improved mood
- Increased self-esteem
- Improved sleep quality

**'Screen time'** is the time spent using a screen-based device, such as a smartphone, tablet, computer, or television. Screens can be used for educational or work purposes, and also for recreational purposes.

The American Academy of Pediatrics (AAP) 2018 is dedicated to the health of all children to limit children's exposure to screens. The recommended limits are**:**

| # | Age limit | *screen time per day* | Intervention |
|---|---|---|---|
| 1 | Infant (0-2 years) | 0 *hours* | High quality television content is OK as long as a parent watches with them |
| 2 | Pre-School (2–4 years) | 1 *hour* | With parents watching alongside to interpret and discuss what they're watching. |
| 3 | School-Age & Adolescents (5–17 years) | *2 hours* | with limits to ensure screen time doesn't displace sleeping, playing, conversation and physical activities |

# Section 10 – Health Promotion

## 10.1 Health promotion

Health promotion is to advocate to address the full range of potentially modifiable determinants of health, including actions that allow people to adopt and maintain healthy lives and those that create living conditions and environments that support health.

'Health promotion' as defined by the Ottawa Charter (1986) as the process of enabling people to increase control over and to improve their health (WHO 1986). The Ottawa Charter identifies three basic strategies for health promotion: advocacy for health to create the essential conditions for health, enabling all people to achieve their full health potential, and mediating between the different interests in society in the pursuit of health.

### Prerequisites for Health

The fundamental conditions and resources for health are:

1- Peace,
2- Shelter,
3- Education,
4- Food,
5- Income,
6- A Stable Eco-System,
7- Sustainable Resources,
8- Social Justice, and Equity.

Improvement in health requires a secure foundation in these basic prerequisites.

## 10.2 Health education

Health education is often confused with health promotion or thought of as a separate entity. It is one aspect of health promotion and falls within the developing personal skills strand of the Ottawa Charter.

"Health education comprises consciously constructed opportunities for learning involving some form of communication designed to improve health literacy, including improving knowledge and developing life skills which are conducive to individual or community health."

Health education has limitations: it is not a strategy that can be used to initiate and support long-term behavioral change. It is most effective if part of a broader health promotion plan (WHO 1998).

Health education is a process of teaching others and creating awareness about different health issues. It has a very important role in sustaining the required behavior change and health promotion activities.

**Goal:**

To encourage the adoption of healthy behaviors and health seeking practices among population, ultimately resulting in better health outcomes.

**Objectives:**

1. To raise awareness of the rights to importance of primary health care services.
2. To improve the capacity of health service providers and community partners to communicate key health messages.
3. To increase the demand for utilization of PHC services.
4. To engender sustained PHC practices, adoption of healthy behaviors and health seeking practices and building community involvement in health.

## 10.3 Community Involvement in Health Communication

Community members can participate in conveying specific health messages. Community health achievements could be celebrated with festivals and parties to enhance community spirit.

## 10.4 PHC Focus Areas

1. Antenatal Care
2. Hospital Deliveries
3. Postnatal & New Born Care
4. Family planning
5. Maternal and Childhood Nutrition
6. Immunization
7. Hygiene and safe water practices
8. Non-communicable diseases
9. Communicable diseases
10. Others area according to MOH needs and priorities in time

### 10.5 Behavioral Change Communication (BCC) strategy

This strategy can help in addressing challenges in health issues, solving problems, and building sustainable organizational and community participation systems for health promotion in a way that ensure that the individuals, families and communities have more control of their own health.

The change process requires collaborated efforts among various sectors especially the organized media effort that is based on studying knowledge, attitudes and behaviors related to traditions and customs imposed and inherited by the community. Sustainable behaviors and practices help in establishment of community participation in health process.

## 10.6 Communication

Communication is considered the primary tool in PHCTs to improve relationships with patients and interaction with the community, political and management levels, across different levels of care, and between team members.

At the primary level of care, communication occurs during a consultation where care is provided for persons with health conditions in early stages of natural progression that are not yet well-defined.

The cornerstone of effective communication is the ability to listen and to accomplish this in an active manner. Patient–health care provider communication is a fundamental skill of medical and nursing practice.

**Communication skills in a health care setting include:**

1. Explaining diagnosis, investigation and treatment.
2. Involving the patient in the decision-making.
3. Communicating with relatives.
4. Communicating with other health care professionals.
5. Seeking informed consent/clarification for an invasive procedure or obtaining consent for a post-mortem.
6. Dealing with anxious patients or relatives.
7. Giving advice on lifestyle, health promotion or risk factors.

**Verbal communication:**

Verbal refers to what we say with words. It is the ability to explain and present the ideas in clear language, to diverse audiences. Oral communication requires the background skills of presenting, audience awareness, critical listening and body language.

**Non-verbal communication:**

It is the ability to enhance the expression of ideas and concepts through the use of body language, gestures, facial expressions and tone of voice, and also the use of pictures, icons, and symbols. Nonverbal components are more important than verbal components. Good communication can improve patient outcome, patient and health care provider satisfaction.

## Some specific examples of Non-Verbal Communication

**1-Gestures & Movements**

a) Head – nodding, shaking, tilted
b) Arms – crossed, open
c) Hands – in pockets, covering mouth
d) Fingers – laced, pointing, playing with hair, tapping
e) Legs & feet – crossed, tapping

**2-Facial Expressions**

a) Whole face – smiling, frowning, surprise
b) Eye Contact (very important)
c) Eyebrows – raised, upturned
d) Mouth – lips pursed, down-turned

**3-Positioning & Orientation**

a) Where sitting or standing relative to others
b) Physical Contact
c) Posture/Stance
d) Feedback sounds – agreement, impatience, surprise, grunts
e) Tone

### 10.6 Effective communication

Effective interpersonal communication (IPC) is one of the most important elements for improving client satisfaction, compliance and health outcomes. Communication between people is usually comprised of the words used (7%), the way words are used or stressed (tone), emotions (13%) and body language (80%).

### 1.8 Risk Communication

Risk communication is defined as the open two-way exchange of information and opinion about harms and benefits. (BMJ 2012;344: e3996). The primary goal of risk communication is to help people understand risk and make decisions that keep families and communities as safe as possible.

**Principles of Risk Communication**

Effective risk communication is critical and should follow several guidelines:

1. Public health officials must openly acknowledge uncertainty in a risk situation.
2. There must be coordination amongst healthcare professionals involved in health communication to make sure health messages conveyed through a variety of media to the public are consistent in order to avoid confusion.

3. Ethical risk communication involves transmitting information that is technically correct.
4. Public health officials must identify and dispel rumors and false public beliefs regarding the disease.
5. Timely and transparent transmission of accurate information.

**Hearing**: It is purely physical.

**Listening**: Listening is an essential part of a good communication loop. Listening skills involve being receptive to others and being able to understand another person's perspective.

## 10.7 Criteria of active listening to the speaker:

1. Facing speaker squarely.
2. Open posture.
3. Maintaining eye contact.
4. Nodding of the head.
5. Smile.

## 10.8 Strategies to enhance effective listening:

1. Not interrupting the speaker – give them space and time to say what they have to say. Stop talking – you can't listen if you are talking!
2. Focusing – actively attend to the other person's words, ideas, and feelings. Ask for more detail or ask them to expand on certain things.
3. Use paraphrasing – means to provide a concise response to the listeners' words to reflect that you have understood their message using own words. For example, "So what you're saying is …"
4. Use summarizing – formulate a brief statement containing key words and/or feelings that person has said.

**Receiving and Acting on Feedback:**

Good feedback is meant to be of benefit. To use it constructively we need to:

1. Be open and receptive.
2. Listen carefully to what is being said.
3. Consider the implications – examine the value of what has been said.
4. Be aware of immediate reactions – don't react instantly.
5. Concentrate on the content.
6. Question if we don't understand – ask for clarification.
7. Ask for help/suggestions/ideas, "What if I did it this way?".
8. Identify key issues that require change.

# Section 11 – Cross-Cutting Issues

## 11.2 Referral system

A referral system is a two-way system, i.e., patients and conditions referred from primary health care center with a special completed form and in compliance with certain rules and instructions are to be received at the referral level in an appropriate manner and provided with the necessary care or services needed.

The referring PHC center should be informed about all the details of the patient's condition, investigation done for the patient and their findings, procedures and interventions.

1) A clear system for referrals and feedback on referrals is in place.
2) Patient referral pathways must always be kept in mind when referring a patient.
3) All patients are referred to the next level of care when their needs fall beyond the competency of PHCC health care and personnel.
4) Patients with a need for additional health or social services are referred as appropriate.
5) Every PHCC is able to arrange transport for an emergency within at least one hour.
6) Referrals within and outside the PHCCs are recorded appropriately in the registers.

**Objectives:**

1. Clients receive optimal care at the appropriate level and at an affordable cost.
2. Hospital facilities are used optimally and cost-effectively by improving the continuum of care for patients.
3. Clients in need of specialized services can access them in a timely way.
4. Primary health services are well utilized and their role in both prevention and curative aspects is enhanced.

**Initiating Facility**: It is the first facility (level) that starts the referral process Receiving Facility: It is the facility which accepts the referred case. At the end of their involvement, they should prepare a back referral on the lower part of the referral forms to let the initiating facility know what has been done. This completes the referral loop between the two facilities.

## Key reasons for referral:

1. To seek expert opinion regarding the client.
2. To seek additional or different services for the client.
3. To seek admission and management of the client.
4. To seek use of diagnostic and therapeutic tools.
5. To meet the client's expectation to be seen by specialist.

## 11.3 Monitoring and evaluation

### Monitoring

A process of measuring, recording, collecting and analyzing data on actual implementation of the program and communicating it to the program managers so that any deviation from the planned operations are detected, diagnosis for causes of deviation is carried out and suitable corrective actions are taken.

**Objectives:**

1. To provide concurrent feedback on the progress of activities
2. To identify the problems in their implementation
3. To take corrective action

**Monitoring process**

a) Detecting deviations from plans
b) Diagnosing causes for deviations
c) Taking corrective action

**Levels of Monitoring**

1. Managers at top level: They must develop health plans based on objectives, goals, devise strategy and allocate necessary resources.
2. Managers at the middle level: They are more concerned with whether they are getting desired output from the inputs that are being utilized.
3. Managers at the operational level: They must supervise actual operations and to ensure that planned activities are being carried out as per schedule.

### Evaluation

It is the objective assessment of an ongoing or recently completed project, program or policy, its design, implementation and results. It answers the question "What has happened as a result?". It is a systematic way of learning from experience and using the lessons learned to improve current activities and promote better planning by careful selection of alternatives for future action.

**Objectives:**

1. To assess whether the desired results of a programs have been achieved if not how it should be redesigned.
2. To improve health programs and the health infrastructure.
3. Allocation of resources in current and future program.

**Basic steps of Evaluation:**

1. Establishing standards and criteria
2. Planning and methodology
3. Collecting data
4. Analyzing the data
5. Taking action
6. Re-evaluation

**What is to be Evaluated?**

1. Evaluation of structure
2. Evaluation of process
3. Evaluation of outcome

**Who is performing Evaluation?**

1. The planner
2. Research group
3. Those responsible for health development
4. Those responsible for implementation
5. The community

**Indicators:**

The indicators based on a valid, reliable, reproducible, repeatable, sensitive, specific and relevant are used to monitor and evaluate the various activities.

**Types of indicators for evaluation**

1. Input indicators
2. Process indicators
3. Output indicators

## 11.4 Supervision

The term "supervision" has its origin in two Latin words: super, meaning "above" vision, meaning "I see". In a hierarchical organization no one can claim to work without proper supervision. Supervision is defined as two ways dynamic as a cooperative relationship between the leader and one or more person to accomplish a particular job. Supervision is more than a process, it is a spirit which animates relationship between levels of organization and which includes maximum accomplishment, or when unsuccessful generates

administrative paralysis. Supervision aims at satisfying both: work and workers.

## Setting up a supportive supervision system

The three main' **Rs**' for an effective supportive supervision system are :

1) **R**ight supervisors — a core set of supervisors, well trained on supportive supervision techniques and with updated information and skills on immunization issues.

2) **R**ight tools — availability of training materials and job aids to update skills of health workers during supervision visits, and checklists and forms for recording recommendations and following up.

3) **R**ight resources — sufficient vehicles, per diems, time allocated for supervision and follow-up.

## Styles of supervision:

| # | Indicator | Facilitative supervisor | Traditional supervisor |
|---|---|---|---|
| 1 | Approach | emphasizes mentoring, joint problem solving, and two-way communication with supervisees (Subordinates). Adoption of a facilitative approach leads to collective problem solving to continuously improve the quality of care. | Fault finding through routine inspection, tends to be results-oriented, Traditional leadership tends to operate from a place of power. Actions are driven by external motivation. |
| 2 | Problem–solving | believes it's his or her job to help a team discover a solution and teaches problem-solving techniques. | often attempts to provide all the answers. |
| 3 | Style | consultant available for the team to use as a sounding board for ideas. | is inclined to control the ideas of a team. |

| | | | |
|---|---|---|---|
| 4 | Communication | provides full disclosure and checks understanding. | determines what information to share and assumes understanding. |
| 5 | Accountability | knows he owns the problem, but the team owns the solution | believes he is accountable for the answers. |
| 6 | Direction | supervisor is a part of the team and provides input. | provide instructions on what's to be done. |
| 7 | People | people are multifaceted, with bodies, minds, and spirits. | tends to focus more on results of the team's efforts than on the composition of the team. |

## Supervision and support of primary healthcare staff

To be an effective supervisor, you need to be skilled in each of the Three areas.

Primary healthcare staff must be adequately supervised, monitored and supported by health professional and specialists if integration is to discuss difficulties in management and to provide advice on interventions to be carried out by primary care staff.

## 11.5 Major Components of Supervision:

**1-Administrative supervision:** Relates to ensuring that work is performed and is performed in a manner that is consistent with the national health policies.

**2-Educational supervision:** Educational supervision involves teaching a supervisee skill, while also developing their self-awareness at the same time or how to provide specific services to specific clients.

**3-Supportive supervision:** Used to enhance job performance by decreasing job related stress that interferes with work performance. Supervisor increases the supervisee's motivation and helps develop a work environment that enhances work performance.

## 11.6 Motivation

It is defined as: "an externally induced behavior which occurs in order to bring about or maintain need fulfillment".

**Methods of motivation:**

1) Achievement
2) Recognition
3) Advancement
4) Working conditions
5) Responsibility
6) Organizational policy
7) Technical supervision
8) Interpersonal relations
9) Salary and compensations
10) Job security

## 11.7 Medical Records at primary health care centers

Primary Health Care Centers (PHCCs) are overloaded with vertical and integrated programs: e.g. MCH, IMNCH, EPI, Health Promotion, and School Health, Control of Communicable Diseases, Screening programs for Diabetes Mellitus and Hypertension, etc. All the activities of these programs need to be documented in a manner to help track patients through individual log books with clinical data aggregated by disease or condition. This data is recorded separately from the formal Medical Unit Registry Book, which also includes separate records for statistics, laboratory records, X-rays, nursing, and ultrasound.

Primary Health Care Patient records resulting from these vertical interventions, as well as the formal medical unit registry books, places an additional burden on PHC staff and compromises the comprehensiveness of each patient's history. The impact of these data collection efforts has resulted in the Medical Unit Registry Book not being a comprehensive record on its own.

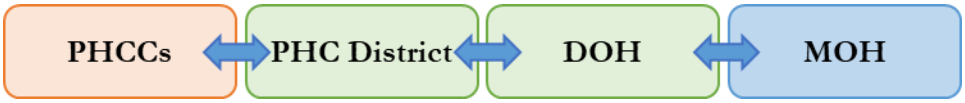
Flow of data within the medical records information system:

1. **PHC level**: essential data from the medical records is collected, validated and entered into approved reporting formats and reported monthly by the designated staff at the PHC facility to district office.

2. **District office**: performs quality checks, consolidate reports and sends to the directorate of health directorate/statistical section.
3. **DoH/Statistical Section**: performs quality checks, consolidates and submits combined monthly reports from both district office and hospitals and sends to MOH on a monthly basis.
4. **MoH**: monitors reporting activities from all health directorates on regular basis. In turn, MoH ensures that feedback and summary reports are provided on a monthly basis. Some reports are submitted at least quarterly to health directorates.

**Determine data flow**

A series of visits were conducted by the MR TWG to a number of PHC centers to assess data collection, flow, entry, and processing, analyses, and reporting and feedback mechanism. The process is outlined below:




## 11.8 Types of current data flows and management:

| # | Current data level | Processing and Management | |
|---|---|---|---|
| 1 | Client medical records | Submitted as monthly report in special statistical forms which indicate No. of attendees, pattern of diseases, No. and types of services, resources available and stock of medical supplies and medicines | • Data verification. Always keep original copies of medical records |
| 2 | District office compiles reports | Compiles reports and sends them on monthly bases to the health directorate at governorate (DoH) level/statistical section. | • Data Quality Check and feedback to PHCCs, tracking reports<br>• Take action according to situation and authorization |
| 3 | DoH/statistical section compiles | DoH/statistical section compiles and submits monthly reports to MoH. | • Data Quality Check and feedback to districts racking reports<br>• Take action according to situation and authorization |
| 4 | Central MOH | • Data Quality Check and feedback to governorates<br>• Data analysis and use at national level in evaluation of the national PHC programs and revision of the national policy | |

## Indicators of data required for documentation

As a basic principle, data collection should be only for those required to obtain the necessary information, monitoring services or decision making according to the objectives of the national primary health care programs. Developing tools (recording and reporting formats) must provide information essential for the reporting variables required for indicators.

### Electronic Health Records (EHR)

The current paper-based system is incapable of providing comprehensive information on health status in Iraq, and there is ongoing process of policies development for new electronic health record system.

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**S**



**T**

# Primary Health Care Programs
# Learner's Guide

This learning materials include eleven sections of condensed content of basic programs in primary health care services.

**First Edition 2018**

It aims to of essential knowledge and skills for medical, health, nursing students and healthcare providers in the implementation of primary health care while orientating their knowledge toward community-based health care services. The expected outcomes are to enable the students and healthcare providers to take proactive roles in identifying and analyzing health needs at the population and individual levels with reactive response to these needs and apply concepts of Primary Health Care in a programmatic manner. The goal of this guide is to educate and train medical, health, nursing students and healthcare providers to be knowledgeable and skilled in provision of public health services.

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