Reproductive Health Clinical Protocol

for

Medical Officers

Government of Nepal
Ministry of Health and Population

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Ramshahpath, Kathmandu
Nepal

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FOREWORD

The Constitution of Nepal 2015 guarantees health to be a fundamental human right and recognizes women's right to safe motherhood and reproductive health (RH). The Government of Nepal is fully committed to ensuring universal access to RH and rights in line with the SDG target 5.6.

Nepal has made significant progress in expanding and improving RH and advancing reproductive rights of women and girls. RH has a long-lasting and significant impact on the health and quality of life of women. However, it is well recognized that more emphasis needs to be given to reaching the poor, marginalized and disadvantaged groups who do not have access to quality RH services. The Safe Motherhood and Reproductive Health Act 2018 obliges the State to provide sexual and reproductive health services to all women, disregarding their conditions and without discrimination.

In order to ensure quality RH services at all level of health facilities, the RH clinical protocol for different cadres of health workers was first developed in 1998. Given the latest evidences and technical advances, the Family Welfare Division has updated the RH clinical protocols for medical officers, staff nurses/auxiliary nurse midwives and paramedics.

We hope that the revised protocols will help health service providers to provide quality RH care based on the latest evidences and technical advances.

I take note with appreciation that a lot of work has been put into the formulation of the protocols. I strongly urge all divisions and centres of Department of Health Services, Ministry of Social Development, and Divisions of Health Services of all provinces, Provincial Heath Directorates, and the stakeholders working in the RH sector to support and ensure the use of these clinical protocols.

I would like to congratulate the Family Welfare Division for taking the lead in updating the RH clinical protocols and thank all who have contributed in revising and updating them.

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FOREWORD

Following the endorsement of the concept of reproductive health (RH) at the International Conference on Population and Development, held in Cairo in 1994, the Government of Nepal developed a national RH strategy in 1998. As part of the national RH strategy to ensure quality of RH services, a set of RH clinical protocols was developed for different cadres of health service providers, i.e. medical doctors, staff nurses, health assistants, auxiliary health workers, and auxiliary nurse midwives, in 1998. These RH clinical protocols were developed as a guide for health workers to deliver quality RH services as per the national standards.

In 2007/08, the clinical protocol for medical officers was revised to incorporate the latest technical advancements. Likewise, the protocols for staff nurses and ANMs were merged into one document and updated

Given the recent technical advances and updates in evidence-based guidelines, the Family Welfare Division led the second round of revisions and updates of the RH clinical protocols. The RH clinical protocols for medical officers, staff nurses/auxiliary nurse midwives and paramedics were updated by incorporating recent policy and technical advances to achieve our goal of improving the overall quality and coverage of RH services in Nepal.

I would like to request all divisions and centres of Department of Health Services, Ministry of Social Development and Divisions of Health Services of all provinces and the stakeholders working in the RH sector to support the implementation and monitoring of the use of these clinical protocols.

I would like to congratulate the Family Welfare Division for taking the lead in updating these protocols, Department for International Development (DFID) for financial support, United Nations Population Fund (UNFPA) for their financial and technical support and Jhpiego for their technical support.

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ACKNOWLEDGEMENT

Based on the National Reproductive Health Strategy, Family Welfare Division has been developing and updating reproductive health (RH) clinical protocols since 1998. In 1998, RH protocols were developed for seven different cadres of health service providers, i.e. medical doctors, staff nurses, health assistants, auxiliary health workers, auxiliary nurse midwives, village health workers, and maternal child health workers.

In 2007–2008, the protocol for medical officers was updated using WHO's evidence-based clinical guidelines, and the protocols for nurses and auxiliary nurse midwives were consolidated into one and updated.

Since 2007/08, there have been several advancements in global medical practices and evidence-based approaches. Global guidelines on RH have been updated based on recent evidences. Likewise, Nepal's human resources for health strategy have been updated, for example maternity and child health workers and village health workers are no longer considered health cadres. Furthermore, Nepal has committed to attaining the Sustainable Development Goal target of advancing the sexual and reproductive health and reproductive rights agenda over the next fifteen years (2016-2030).

Therefore, in order to incorporate recent policy and technical advances, Family Welfare Division decided to update the clinical protocols. Under its leadership, a technical working group (TWG) was formed in August 2017 to provide technical oversight for updating the protocols. Following the formation of the TWG, the RH clinical protocols for medical officers, staff nurses/ANMs and paramedics (HAs/AHWs) were reviewed against global and national best practices. Several workshops and meetings were held to update the protocols.

I am pleased to announce the update of the RH clinical protocols for medical officers, staff nurses/ANMs and paramedics. I would like to acknowledge all individuals and institutions who contributed to this important document. I would like to extend my gratitude to DFID for financial support, UNFPA for financial and technical support and Jhpiego for the technical lead.

I would also like to thank the representatives of various organizations such as CARE, Civil Hospital, Creator's IVF Nepal, FHI, FPAN, GIZ, Green Tara Nepal, H4L, Infertility Center, Ipas Nepal, MIDSON, Kathmandu Model Hospital, MSI, NCASC, NESOG, NHSSP, NSI, Nursing Association of Nepal, Nepal Nursing Council, NEPAS, PESON, PMWH, PSI, SISO Nepal, Teku Hospital (Sukraraj Tropical and Infectious Disease Hospital), TUTH, UNICEF, USAID, and WHO for their valuable inputs in updating these clinical protocols.

I am confident that these clinical protocols will help service providers to deliver quality RH services at all levels of health facilities.

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ABBREVIATIONS

AHW	Auxiliary Health Worker
AIDS	Acquired Immunodeficiency Syndrome
ANC	Antenatal Care
ANM	Auxiliary Nurse Midwife
APH	Antepartum Haemorrhage
ARM	Artificial Rupture of Membrane
ARV	Antiretroviral
ATS	Antitetanus Serum
BCG	Bacile Calmette-Guerin
BP	Blood Pressure
BPM	Beats Per Minute
BT	Bleeding Time
BV	Bacterial Vaginosis
CA	Candida Albicans
CAC	Comprehensive Abortion Care
CEOC	Comprehensive emergency Obstetric Care
COCP	Combined Oral Contraceptive Pills
CPD	Cephalo Pelvic Disproportion
CS	Cesarean Section
CSF	Cerebrosphinal Fluid
CT	Chlamydia Trachomatis
D/D	Differential Diagnosis
DBP	Diastolic Blood Pressure
DIC	Disseminated Intravascular Coagulation
DMPA	Depot Medroxy Progesterone Acetate
DPT	Diphtheria Polio tetanus
DVT	Deep Vein Thrombosis
ECV	External Cephalic Version
EDD	Expected Date of Delivery
FHS	Foetal Heart Sound
FP	Family Planning
G	Gram
G6PD	Glucose 6-phosphate Dehydrogenase
GBV	Gender Based Violence
Gc	Gonorrhea
H/o	History of
Hb	Haemoglobin
HIV	Human Immunodeficiency Virus
HPV	Human Papilloma Virus
HRT	Hormone Replacement Therapy
HW	Health Worker
I/M	Intra Muscula
I/V	Intra Venous
Inj	Injection
IPPV	Intermittent Positive Pressure ventilation
IU	International Unit
IUCD	Intrauterine Contraceptive Device
IUGR	Intra Uterine Growth Retardation
kg	Kilogram

LAM	Lactational Amenorrhoea Method
LFT	Liver function Test
LMP	Lymphogranuloma Venereum
MCHW	Maternal and Child Health Worker
mg	Milligram
$MgSO_4$	Magnesium Sulphate
ml	Milliliter
MO	Medical Officer
MVA	Manual Vacuum Aspiration
NNT	Neonatal Tetanus
NS	Normal Saline
NSV	No Scalpel Vasectomy
O_2	Oxygen
OCP	Oral Contraceptive Pill
ORS	Oral Rehydration Salts
OT	Opportunistic Infection
PA	Per Abdominal
PV	Per Vaginal
PAFP	Post Abortion Family Planning
PCV	Packed Cell Volume
PEP	Post Exposure Prophylaxis
PID	Pelvic Inflammatory Disease
PMTCT	Prevention of Mother to Child Transmission
POC	Products of Conception
PPFP	Postpartum Family Planning
PPH	Postpartum Haemorrhage
PR	Per Rectal
PROM	Premature Rupture of Membranes
R/E	Routine Examination
RBC	Red Blood Cells
RL	Ringers Lactate
RV	Retroverted
SBA	Skill Birth Attendant
SBP	Systolic Blood Pressure
SN	Staff Nurse
STI	Sexually Transmitted Infection
SVD	Spontaneous Vaginal Delivery
TB	Tuberculosis
TPR	Temperature, Pulse, Respiration
TT	Tetanus Toxoid
TV	Trichomonas Vaginitis
USG	Ultra Sonography
UTI	Urinary Tract Infection
VCT	Voluntary Counseling and Testing
VDRL	Venereal Disease Research Laboratory
VHW	Village Health Worker
VILI	Visual inspection with Lugol's Iodine
VSC	Voluntary Surgical Contraception
VVF	Vesico Vaginal Fistula

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BACKGROUND

At the International Conference on Population and Development, held in Cairo in 1994, governments, including that of Nepal, adopted a revolutionary Programme of Action and called for women's reproductive health and rights to take the centre-stage in national and global development efforts. Specifically, the Programme of Action called for all people to have access to comprehensive reproductive healthcare, including voluntary family planning, safe pregnancy and childbirth services, and the prevention and treatment of sexually transmitted infections (STIs). It was also recognized that reproductive health and women's empowerment are intertwined and both are necessary for the advancement of society.

The Constitution of Nepal 2072 has assured the right of access to basic healthcare services. In addition, it guarantees women's right to reproductive health. The Public Health Act 2075 talks about the right to access to quality reproductive health services. Likewise, the Right to Safe Motherhood and Reproductive Health Act 2075 guarantees the right to reproductive health services, counselling and information.

WHO defines reproductive health (RH) as a state of complete physical, mental and social wellbeing and not merely the absence of disease and infirmity in all matters relating to reproductive system and its functions and processes. RH, therefore, includes:

- The right to have a safe sexual life
- The right to have the capability to reproduce and have freedom to decide when and how often to do so
- The right to women to have choices for regulation of fertility which are not against the law
- The right to women and men to be informed of, and to have access to, safe, effective, affordable, and acceptable methods of family planning of their choice
- The right of access to appropriate healthcare services that will enable women to go safely through pregnancy and childbirth and to provide couples with the best chance of having a healthy infant.

In addition to these, it includes gender equity and equality, empowerment of women and the provision of universal access to appropriate health services over the lifecycle. Nepal developed its National Reproductive Health Strategy in 1998, which conceptualizes an integrated approach and merges the previously vertical programmes of family planning, safe motherhood and child health. Before 1998, the same reproductive health services existed as today, but service standards were fragmented and services were not consistently provided at designated health facility levels. Therefore, an essential reproductive health package was developed, which includes the information and services that should be offered at each level of the health system.

However, in order to improve both quality and coverage of this basic package of services, more investment would need to be made in outreach activities, referral mechanisms, clinical training, and provision of commodities.

The Elements of the Essential Reproductive Health Package (as outlined in the National Reproductive Health Strategy), Nepal include:

- Family planning
- Safe motherhood
- Newborn care
- STIs/HIV/AIDS
- Adolescent sexual and reproductive health
- Prevention and management of infertility
- Safe abortion services
- Gynaecological morbidities
- Gender-based violence

In the context of structural changes following federalism, Ministry of Health and Population has developed the National Health Policy 2076. The existing policy and plans support the national objectives of reducing infant, child and maternal morbidity and mortality, as well as contributing to reducing total fertility. The new health policy emphasizes quality health services through universal health coverage; special health services for marginalized communities; multi-sectoral involvement and partnership in health systems of federal structure; health governance; and assurance of financial investment. The strategy includes the provision of basic health services though health facilities free of cost; assurance of access to basic healthcare services; establishment of a two-way referral mechanism, etc.

In the past two decades, Nepal has made notable progress on improving the overall health outcomes of citizens. Between 1996 and 2016, the country impressively reduced under five mortality from 118 to 39 per thousand live births and infant mortality from 78 to 32 per thousand live births. Similarly, it was able to reduce Total Fertility Rate (TFR) from 4.6 to 2.3 during 1996-2016. Despite this progress, the country faced many health challenges, including inequity. Many citizens faced financial, social, cultural, geographical, and institutional barriers in accessing health services. Despite efforts to reduce gender inequality, the women of Nepal are still marginalized in society, which affects their health and wellbeing. For the last few decades, the government has emphasized improving access to healthcare services by expanding health facilities and strengthening community-based interventions.

Nepal Health Sector Strategy 2015-2020 (NHSS) is the primary instrument to guide the health sector till 2020. It adopts the vision and mission set forth by the National Health Policy and carries the ethos of constitutional provision to guarantee access to basic health services as a fundamental right of every citizen. It articulates the nation's commitment towards achieving universal health coverage (UHC) and provides the basis for garnering required resources and investments. NHSS places health at the centre of overall socio-economic development. The strategy stands on four strategic principles; one of these is quality health services. It envisions the establishment of an autonomous accreditation body during the NHSS period for quality assurance of health services in public and private sectors. Furthermore, it emphasizes strengthening research and promoting the use of evidence. This strategy stipulates improved quality of care at point-of-delivery as a second outcome among its nine outcomes. Importantly, NHSS has identified three tracer services; out of these, two (ANC and FP) are RH components.

Based on the National Reproductive Health Strategy, Family Welfare Division has been developing and updating RH clinical protocols since 1998. In 1998, RH clinical protocols--seven protocols in total at all levels of Nepal's health system—were developed for health worker cadre.

In 2007–2008, the protocols for medical officers, staff nurse/ANMs, and paramedics were updated using WHO evidence-based clinical guidelines. The protocols covered nine components: Family planning, Safe motherhood, Newborn care, STD/AIDS, Adolescent sexual and reproductive health, Prevention and management of infertility, Safe abortion service, common Gynaecological problems and Gender-based violence. Since 2007/08, several advancements in global best practices and evidence-based approaches such as WHO's 2015 updates to the Medical Eligibility Criteria; WHO's guidelines on using antiretroviral drugs to treat and prevent HIV infection; and the integration of key respectful maternity care principles and practices and updates in family planning. Therefore, it was urgent to update the clinical protocols.

In this regard, under the authority granted by the Constitution, the federal Ministry of Health and Population has revised and updated these clinical protocols under the leadership of the Family Welfare Division after the study of the global updates and through consultative process. A Technical Working Group (TWG) was formed to provide technical oversight for updating the protocols in August 2017. Following the formation of the TWG, the existing RH Clinical Protocols for Medical Officer, Staff Nurses/ANMs and Paramedics (HAs/AHWs) were reviewed against global and national best practices with technical and financial support from UNFPA and technical support from Jhpiego. Several workshops and meetings were held to update these clinical protocols with support from different technical experts.

These protocols are presented in flow charts, which guide healthcare providers to provide quality reproductive healthcare services. By following the given flow charts, healthcare providers will be able to deal with most of the cases.

Objectives of the Protocols

The overall objective of these protocols is to address the gaps in achieving the goal, i.e. "**improved quality of care at point-of-delivery**". The specific objectives are:

- To improve the quality of care for reproductive health of women, men, children, and adolescents through evidence-based protocols for care
- To standardize RH care at different levels of healthcare and enhance the level of performance to ensure quality
- To improve the efficiency and better utilization of services
- To develop tools for monitoring and evaluation of quality of care and regular auditing of services
- To build accountability of the health system

HOW TO USE THESE PROTOCOLS

Getting started

In general

- Read the protocol from top to bottom, both narrative and flowchart, and get acquainted with the contents as the protocol covers only certain topics.
- Review the protocol quickly, gather necessary supplies and equipment, and then follow along the protocol as per the case.
- At branch points, choose one alternative and follow along that path.

History, Examination and Investigations

History: Important points are listed on the text box of the flowchart of protocol. These points are then explained in detail on the facing (left) page, if needed. For example, in assessing a client for depo provera, the important questions about medical history are listed as a reminder to the provider. Then, these points are explained on the facing page to help the provider make a decision if the method can be given.

Examination: The organs and systems that should be examined are listed in the text box. The facing page reminds the provider about the things to look for in that organ system. For example, in the protocol for Normal Labour and Delivery, the protocol says what to examine during P/V examination. On the facing page, the notes remind the provider to check dilation, effacement, etc.

Investigations: When investigations are possible, it can also help to make a diagnosis. In the majority of cases, however, diagnosis can be accurately made without the need to do investigations.

Using Other Protocols

In some flowcharts, the provider is referred to another flowchart that best manages this situation. For example, in a case of post-partum haemorrhage, the provider should assess for shock and, if diagnosed, move immediately to the shock protocol for management guidance. This does not mean that the original flowchart should be ignored. Therefore, the provider should manage the shock and refer to the original flowchart for management of post-partum haemorrhage.

Referral

At the end of many flowcharts, the provider is encouraged to refer the case to a higher treatment centre for better care. The patient/client should only be referred to a hospital where service providers are available and able to tackle the problem. It will not be helpful and will delay the provision of appropriate care to simply refer "up the chain" if the next facility ‘up the chain’ is not capable of solving the problem. Therefore, providers should be aware of which facilities can provide the necessary services.

In referring the case, the provider should remember to:

- Prepare a summary of the case. This will inform the healthcare team at the receiving institution.
- Explain the need for referral and the process of referral to the patient and her family.
- If the condition calls for it, at least one dose of medicine (such as antibiotics for a sepsis case, or magnesium sulphate for a pre-eclamptic/eclamptic patient) should be given prior to referral.
- An IV line should be placed (if possible) and, if needed, sufficient IV fluid should be given to the patient.
- Evaluate the need for bladder catheterization and refer with it. For example, in the case of obstructed labour or prolonged labour, refer with continuous catheterization.
- If possible, call and inform the referral receiving institute about the case.

Monitoring the use of protocols

Monitoring of provision of care through adherence to protocols should be done as part of regular monitoring and tools developed to achieve the same. Programme evaluations should also use adherence to protocols as an indicator.

COUNSELLING

Counselling is a vital part of maternal and newborn health and family planning services. The term "counselling" is often understood in many different ways. Here, it is focused on counselling for maternal and newborn health and family planning as "an interactive process between the skilled attendant/health worker and a woman and her family during which information is exchanged and support is provided so that the woman and her family can make decisions, design a plan and take action to improve their health".

"With every opportunity, counselling is done using the **"ABHIBADAN"** principles of counselling:

Step	Action to be taken
"A"	*Abhibadan garne* (to greet the client)
"BHI"	*Bhinna nathani awashyakta patta lagauna sodhpuch garne* (assessing the client's need, asking questions without any discriminations)
"BA"	*Badha hatauna suchana upalabdha garaune* (provide information for solving problems and concerns)
"DA"	*Dattachitta bhai sahayog garne* (help wholeheartedly)
"NA"	*Namaskar gardai pheri auna anurodh garne* (bid goodbye and request to come again)

Source: HTSP Participants Handbook 2013

Often in the flowchart of protocol, the provider is instructed to give information to the client (e.g. instructions, warning signs, follow-up visit, etc). The provider should then assess that the client and/or family member understands these instructions, warning signs, etc. If appropriate and available, a printed card or brochure with the information can be given to the client.

Interpersonal Communication Skills

Communicating with the client is very important. While communicating with clients, service providers should use simple appropriate language, which clients can understand. Technical information needs to be at the level of education and language of each client. A good relationship with a client is based not only on what the client hears but also on what she or he observes and feels about the service provider.

INFECTION PREVENTION

The two primary objectives of infection prevention and control (IPC) at health facilities are:

- To prevent infections when providing different services
- To minimize the risk of transmitting serious infections such as hepatitis B and HIV not only to clients but also to service providers and staff, including cleaning and housekeeping personnel.

To prevent problems caused by infection, good surgical technique, including aseptic technique, must be followed to prevent infections. To reduce the risk of infection, contaminated waste must be properly disposed of and instruments and other items should be decontaminated, thoroughly cleaned, and sterilized by autoclaving (high-pressure steam) or heat. If sterilization is not possible, high-level disinfection (HLD) (by boiling or steaming) is the only acceptable alternative.

Standard Precautions

Standard precautions are the minimum infection prevention practices that apply to all patient care, regardless of suspected or confirmed infection status of the patient, in any setting where healthcare is delivered. These practices are designed to both protect health service providers and prevent them from spreading infections among patients.

- Hand hygiene, handwashing
- Personal protective equipment (e.g. gloves, gowns, masks)
- Instrument processing
- Safe injection practices, environmental cleaning
  (Source: CDC)

Hand Hygiene

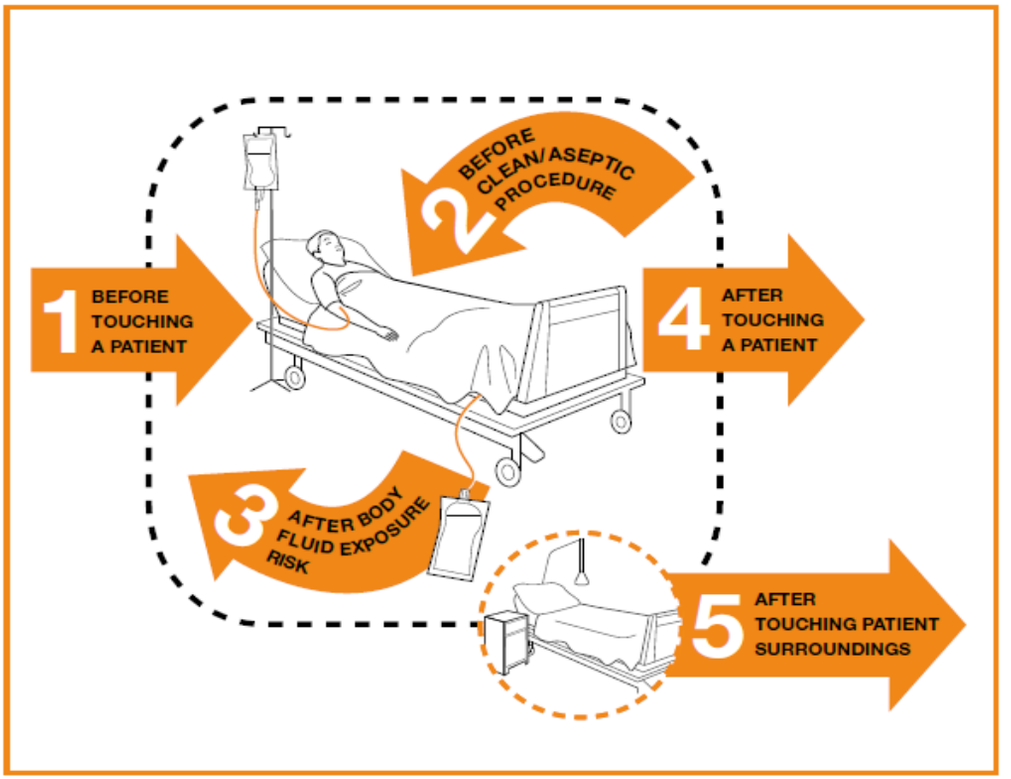
Practising hand hygiene is a simple yet effective way to prevent infections. Cleaning your hands can prevent the spread of germs, including those that are resistant to antibiotics and are becoming difficult, if not impossible, to treat. Hand hygiene is the most important measure to avoid the transmission of harmful germs and prevent healthcare-associated infections.

The goal of hand hygiene is to remove soil, dirt, and debris and reduce both transient and resident flora. Good hand hygiene, including use of alcohol-based hand rubs and handwashing with soap and water is critical to reduce the risk of spreading infections in ambulatory care settings.

Five moments for hand hygiene (WHO 2009)

WHO has implemented the principles of handwashing in the model of "My five moments for hand hygiene". Since its development in the context of the Swiss National Hand Hygiene Campaign and its integration in the WHO Multimodal Hand Hygiene Improvement Strategy, the concept of "My five moments for hand hygiene" has been widely adopted.

1. Before touching patient: Clean your hands before touching a patient when approaching him/her.
   Example: shaking hands, helping a patient to move around, and clinical examination.
2. Before clean/aseptic task: Clean your hands immediately before any aseptic task.
   Example: shaking oral/dental care, secretion aspiration, wound dressing, catheter insertion, preparation of food, medications.
3. After body fluid exposure risk: Clean your hands immediately after an exposure risk to body fluids (and after glove removal). Example: oral/dental care, secretion aspiration, drawing and manipulating blood, clearing up urine, faeces, handling waste.
4. After touching patient: Clean your hands after touching a patient and her/his immediate surroundings, when leaving the patient's side. Example: shaking hands, helping a patient to move around, and clinical examination.
5. After touching patient surroundings: Clean your hands after touching any object or furniture in the patient's immediate surroundings, when leaving even if the patient has not been touched. Example: changing bed linen, perfusion speed adjustment.



Source: The patient zone, health-care area, and critical sites with inserted time-space representation of "My five moments for hand hygiene" (Figure1.21.5b).
Reprinted from Sax, 2007 with permission from Elsevier.

Handwashing

The purpose of handwashing is to mechanically remove soil, debris, and microorganisms from the skin. Handwashing with plain soap and clean water is as effective as washing with antimicrobial soaps (Pereira, Lee, and Wade 1997).[1] In addition, plain soap causes much less skin irritation (Pereira, Lee, and Wade 1990).

Handwashing should be done **before:**

- Examining (direct contact with) a patient
- Wearing examination gloves for routine procedures such as a pelvic examination

Handwashing should be done **after**:

Any situation in which hands may become contaminated, such as:

- Handling soiled instruments and other items
- Touching mucous membranes, blood, or other body fluids (secretions or excretions), and
- Examining a patient.

Hands should be washed with soap and clean water (or an antiseptic hand rub can be used) **after** removing gloves because the gloves may have tiny holes or tears, and bacteria can rapidly multiply on gloved hands due to the moist, warm environment within the glove (CDC 1989; Korniewicz *et al.* 1990).

To encourage handwashing, program managers should make every effort to provide soap and a continuous supply of clean water, either from the tap or from a bucket, and single-use towels.

1 If tap water is contaminated, however, handwashing with plain soap is only effective in removing dirt and debris.

Steps of Handwashing

Wash hands when visibly soiled! Otherwise, use a hand rub.
Duration of the entire procedure: 40–60 seconds

Source: "How to Handwash," © World Health Organization (2009). http://www.who.int/gpsc/5may/How_To_HandWash_Poster.pdf. Accessed May 6, 2016.

Alcohol-Based Hand Rub

The antimicrobial activity of alcohol results from its ability to denature proteins (i.e. the ability to dissolve some microbe components) and kill microbes. Alcohol solutions containing 60–80% alcohol are most effective, with higher concentrations being less effective. This paradox results from the fact that proteins are not denatured easily in the absence of water; as a result, microorganisms are not killed as easily with higher alcohol-based solutions (>80% alcohol). (WHO 2009a)

The use of an alcohol-based hand rub **(**ABHR) is more effective in killing transient and resident flora than handwashing with antimicrobial agents or plain soap and water. It also has persistent (long-lasting) activity. ABHR is quick and convenient to use and can easily be made available at the point of care. It usually contains a small amount of an emollient (e.g. glycerol, propylene glycol, or sorbitol) that protects and softens skin. It should be used at any of the "5 Moments", described earlier in this chapter, unless hands are visibly soiled. (CDC 2002; Girou *et al.* 2002; WHO 2009a)

To be effective, approximately 3–5 mL (i.e. 1 teaspoon) of ABHR should be used. The ideal volume of ABHR to apply to the hands varies according to different formulations of the product and hand size (refer to manufacturer's instructions for use). ABHR should be used, following the steps shown in Figures 1-3, for approximately 20–30 seconds or until the solution has fully dried. Since ABHR does not remove soil or organic matter, if hands are visibly soiled or contaminated with blood or body fluids, hand wash with soap and water. To reduce the buildup of emollients on hands after repeated use of ABHR, washing hands with soap and water after every 5–10 applications of ABHR is recommended.

In C. difficile outbreak settings, handwashing with soap and water is recommended over ABHR as it is more effective than ABHR in removing endospores. If there are only a few cases of C. difficile, normal use of ABHR is recommended (Cohen *et al.* 2010; Siegel *et al.* 2007; WHO 2009a). The need for using soap and water over ABHR during outbreaks of norovirus is an unresolved issue. (Siegel *et al.* 2007; WHO 2009a)

WHO Recommendation on How to Perform Hand Hygiene with ABHR

Source: "How to handrub," © World Health Organization (2009).
http://www.who.int/gpsc/5may/How_To_HandRub_Poster.pdf. Accessed May 6, 2016.

Do not add ABHR to a partially empty dispenser. This practice of "topping off" dispensers may lead to bacterial contamination. The use of refill packets avoids this problem, but if they are not available, the dispensers should first be thoroughly cleaned and dried before refilling. (WHO 2009a)

Personal protective equipment

Personal protective equipment (PPE) items are the protective barriers and respirators used alone or in combination by a healthcare worker (HCW) to protect mucous membranes, airways, skin, and clothing from contact with harmful or infectious agents. PPE may also be used on an infectious patient to prevent the spread of infectious agents (e.g. surgical mask worn by a patient to control the spread of illness).

Types of PPE: For PPE to be effective, it must be available, provide adequate protection, be utilized correctly, and be used in the appropriate situations and settings. Each type of PPE and its intended use are described separately below. In many instances, various types of PPE are used in combination to adequately protect HCWs.

Gloves: There are three types of gloves for use in healthcare facilities:
Sterile gloves are used when performing invasive medical or surgical procedures when sterility is required.

Non-sterile gloves are used by HCWs to protect themselves from blood and body fluids when performing routine patient care.

Utility or heavy-duty household gloves are worn for processing instruments, cleaning equipment and other items, environmental cleaning, handling soiled textile items, and handling contaminated waste to conserve other gloves for patient care.

The most appropriate type of gloves to be worn in a particular circumstance should be carefully selected. Reprocessing and reusing gloves, except for heavy-duty utility gloves, should not be done. (WHO and World Alliance for Patient Safety 2006) Non-sterile gloves for routine patient care are made of a variety of materials (latex, vinyl, and nitrile). If a choice is available, deciding which type of non-sterile glove should be purchased or is most suited for a task should be determined by the following:

Note: Wearing gloves is not a substitute for hand hygiene. Gloves MUST be changed after contact with contaminated items and between patients.

- Degree of risk (low or high) of exposure to blood or potentially infected body fluids
- Length of time required for the procedure
- Possibility of allergies (e.g. to latex) to the different types of gloves

Safe Work Practices

Accidental needle sticks will occur when service providers are doing the procedures, cleaning staffs are processing soiled instruments and housekeeping staffs disposing of waste material.

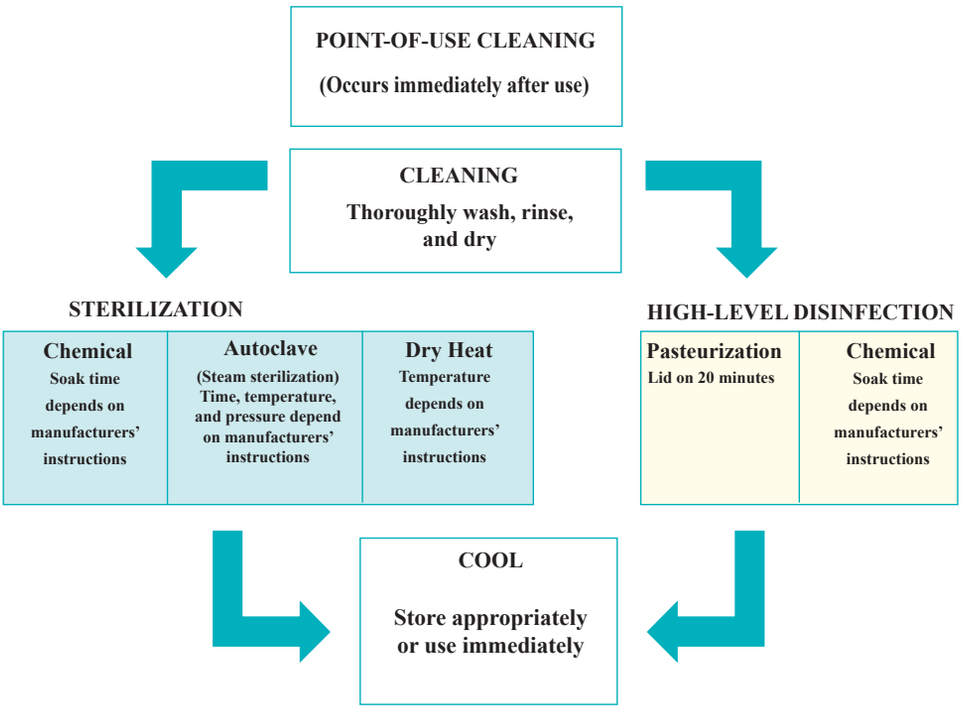
Safety Tips When Using Hypodermic Needles and Syringes

- Use each needle and syringe only once
- Do not disassemble needle and syringe after use
- Do not recap, bend, or break needles prior to disposal
- Dispose of needle and syringe in a puncture-proof container

Never use a syringe for more than one injection. Studies have shown that changing **only** the needle, not the syringe, between clients can result in transmission of hepatitis B virus (HBV), and presumably HIV.

Do not leave a needle inserted in the rubber stopper of a multiple dose bottle. This practice is dangerous because it provides a direct route for bacteria to enter the drug bottle and contaminate the fluid between each use.

Reprocessing Instruments and Medical Devices



Adapted from : Tietijen et al. 2003

Decontamination is the first step in processing soiled surgical instruments and other items, which is done at point of use. For example, soaking contaminated items briefly in 0.5% chlorine solution rapidly kills HBV and HIV, thereby making instruments and other items safer to be handled during cleaning. After instruments and other items have been decontaminated, they need to be **cleaned** and then final processed by either sterilization or high-level disinfection (HLD).

HLD is indicated for processing instruments and medical devices that come in contact with non-intact skin and mucous membranes, but, ideally, not those that contact sterile areas of the body, including the vascular system. For some healthcare facilities in many limited-resource settings, high-level disinfection may be the only option for processing instruments and medical devices in. Healthcare facility teams should do a thorough review of available products, resources, and existing space and layout of the instrument reprocessing areas before selecting a method of high-level disinfection.

Sterilization is indicated for processing instruments and equipment that come in contact with sterile areas of the body. Sterilization results in a 6 log 10 reduction in microbes on the surface being sterilized. A 6 log 10 reduction or kill rate will remove 99.9999% of microbes.

Methods of sterilization include:
Physical methods: moist heat (e.g. steam sterilizer) and dry heat
Chemical methods: liquids (e.g. ortho-phthalaldehyde [0.55%], glutaraldehyde [2.5%]), and gases (e.g. ethylene oxide)

Physical chemical methods: hydrogen peroxide gas plasma (this method is usually not available at healthcare facilities in limited resource settings)

Sterilization is only effective if the cleaning process prior to sterilization is maintained. Other factors impacting the effectiveness of sterilization include the types of microorganisms on the device, the number and location of microorganisms, and the type and amount of organic material surrounding the microorganism that may protect it from the steam or chemical sterility (biofilm). Additionally, the effectiveness of sterilization depends upon

key parameters of the process, which, depending on the process used, include temperature, humidity, pH, water quality, contact time, pressure, and chemical concentration.
Steam sterilization and chemical methods are the most commonly employed methods for sterilization at healthcare facilities.

Remember: For either sterilization or HLD to be effective, decontamination and thorough cleaning of instruments and other items must be done first.

Health Care Waste Management

Medical waste may be non-contaminated or contaminated. Non-contaminated waste (e.g. paper from offices, boxes) poses no infectious risk and can be disposed of according to guidelines on health care waste management. Proper handling of contaminated waste (blood- or body fluid-contaminated items) is required to minimize the spread of infection to clinic personnel and to the local community. Proper handling means:

- Wearing utility gloves
- Decontamination of all the waste
- Transporting solid contaminated waste to the disposal site in covered containers
- Disposing of all sharp items in puncture-resistant containers
- Carefully pouring liquid waste down a utility drain or flushable toilet or latrine
- Burning or burying contaminated solid waste
- Washing hands, gloves, and containers after disposal of infectious waste

Section 1

FAMILY PLANNING

1-1 ASSESSMENT AND EVALUATION OF CLIENT'S NEED

Contraceptive Methods

Spacing methods

- Natural methods: Lactational Amenorrhoea Method (LAM), Fertility Awareness Method (e.g. Standard Days Method, or SDM)
- Barrier: Condoms (male and female)
- Hormonal: Combined Oral Contraceptives (COCs), Depot Medroxyprogesterone Acetate (DMPA), Implants
- Non-hormonal: Intrauterine Contraceptive Device (IUCD)

Limiting methods

- Male sterilization: No Scalpel Vasectomy (NSV)
- Female sterilization: Minilaparotomy (tubectomy), Laparoscopy (tubal ligation)

Client Assessment Requirements

Table: Client assessment requirements for family planning (FP) methods

Procedure	LAM	Condom (Male/ Female)	Hormonal methods (COCs/DMPA/ Implants)	IUCD	Sterilization (female/male)
Screen for pregnancy	No	No	Yes	Yes	Yes
STIs screening (high risk)	No	No	No	Yes	Yes
Medical and reproductive history	Yes	No	Yes	Yes	Yes
Physical Examination					
Blood pressure (BP)	No	No	Yes	No	Yes
Breast examination	No	No	No	No	No
Abdominal examination	No	No	No	Yes	Yes/No
Pelvic examination (bimanual and per speculum)	No	No	No	Yes	Yes/No
Male examination (groin and genitals)	N/A	No	N/A	N/A	No/Yes
Laboratory Test (Female only)					
Haemoglobin (Hb)	No	No	No	No	Yes[1]
Protein and sugar in urine	No	No	No	No	Yes

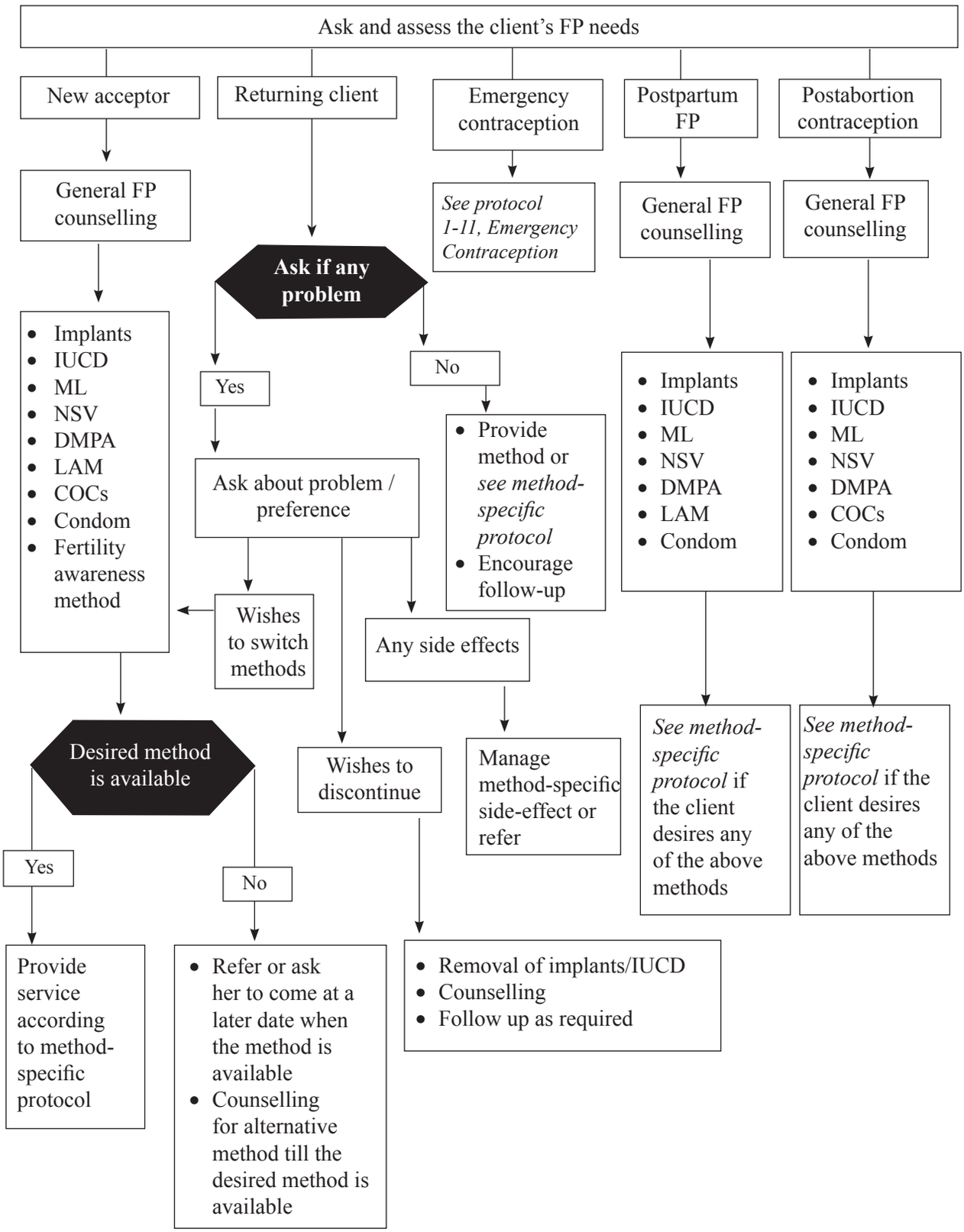
[1] In Nepal, the risk of dying from a pregnancy-related complication is much greater than the risk of dying from complications of the minilaparotomy procedure. A large number of Nepalese women suffer from anaemia and to refuse them minilaparotomy services solely on the criteria of borderline anaemia could defeat the purpose of providing them quality reproductive health services. A physician's decision to conduct minilaparotomy on a severely anaemic client with Hb <7gm/dl or haematocrit (Hct) <20 should be based on her risk of pregnancy-related complications and her access to services versus the risk of operating on an anaemic client.

References

NHTC. 2016. *Comprehensive Family Planning and Counseling (COFP/C) Reference Manual.* Kathmandu: National Health Training Center.

WHO.2018. *Family Planning: A Global Handbook for Providers,* 2018 Edition. Baltimore and Geneva: World Health Organization Department of Reproductive Health and Research (WHO/RHR) and Johns Hopkins Bloomberg School of Public Health/Center for Communication Programs (CCP), Knowledge for Health Project.

1-1 ASSESSMENT AND EVALUATION OF CLIENT'S NEED



1-2 HEALTHY TIMING AND SPACING OF PREGNANCY

Healthy Timing and Spacing of Pregnancy (HTSP) is an intervention to help women and families make an informed decision about the **delay of first pregnancy till 20 years of age** and **the spacing** or **limiting of subsequent pregnancies** to achieve the healthiest outcomes for women, newborns, infants, and children. HTSP is provided within the context of free and informed contraceptive choice, taking into account fertility intentions and desired family size, as well as the social and cultural contexts. It also contributes to improving the nutritional status of mothers and children, which improves their life.

HTSP helps to

- Reduce risk of low birth weight, prematurity, and newborn and infant deaths
- Reduce health risks to mothers after a live birth or abortion and risks to adolescents
- Create awareness and increase demand for family planning services, which is critical to long-term use of family planning

Delay of pregnancy

- Delay the first pregnancy until the age of 20

Spacing of pregnancy

- Wait for at least 24 months after a live birth for next pregnancy
- Wait for at least 6 months after a miscarriage, induced abortion or stillbirth for next pregnancy
- Avoid birth-to-pregnancy intervals longer than 5 years

Note: *Wait for at least 2 years after caesarean section (stillbirth or live birth) to reduce the risk of adverse maternal, perinatal and infant outcomes.*

Limiting pregnancies refers to the use of modern contraceptive methods for those women and couples who do not desire more children.

Importance of HTSP

- Reduces the number and proportion of high-risk pregnancies, especially for women approaching or at advanced maternal age
- Reduces the risk of multiple adverse health outcomes
- Reduces unmet need for family planning

Return of fertility

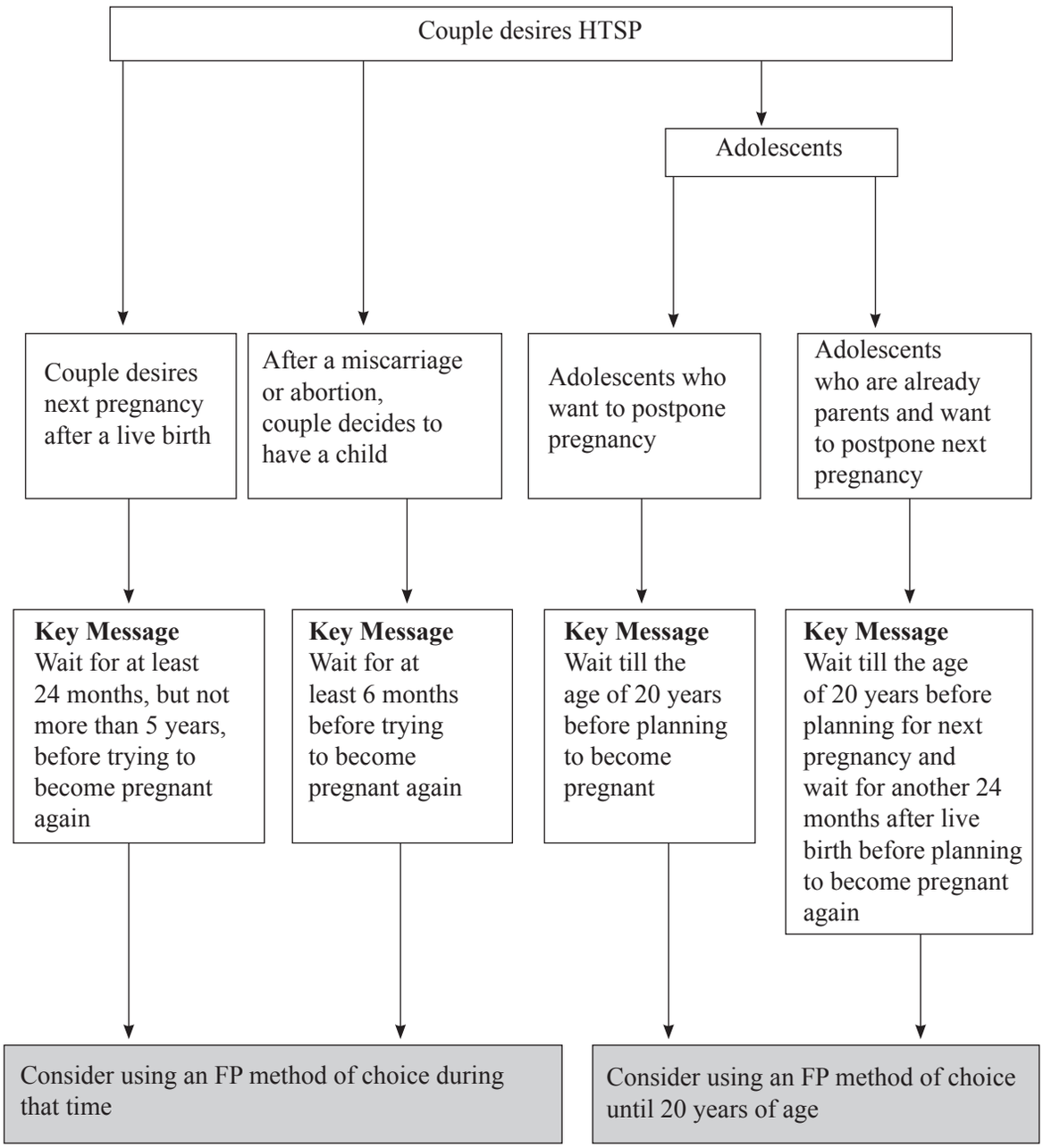
A postpartum woman undergoes physiological changes, which makes postpartum ovulation and menstruation different. Non-breastfeeding women can ovulate and become pregnant as soon as 4 to 6 weeks after delivery.

Fertility is less predictable in breastfeeding women. If they are not exclusively breastfeeding and have started supplemental feeding to their babies, they are at risk of pregnancy even if their menses have not yet returned. To avoid pregnancy, they should see a healthcare provider who can help them choose an FP method that is appropriate for them.

References

FHD. 2013. *Healthy Timing and Spacing of Pregnancy: Orientation Package.* Kathmandu: Family Health Division.
WHO. 2006. *Report of a WHO Technical Consultation on Birth Spacing.* World Health Organization.

1-2 HEALTHY TIMING AND SPACING OF PREGNANCY



1-3 IMPLANTS

Implants are small flexible rods that are placed just under the skin of the upper arm. Each rod contains 75mg of levonorgestrel. It provide long-term pregnancy protection and is very effective for 3 to 5 years, depending on the type of implant.

Timing of insertion
A woman can have her first implant inserted any time if it is certain that she is not pregnant.

Precautions for the use of implants
WHO MEC Category 3 - Unless more appropriate methods are available
- Acute deep vein thrombosis
- Unexplained vaginal bleeding: cause determined and treated before implants can be provided

WHO MEC Category 4 - Method not to be used (Contraindicated)
- Breast cancer
- Liver tumour

Client should return to the clinic if any of the following complaints develop
- Lower abdominal pain/pelvic pain
- Headache (severe)
- Severe pain in the leg (calves or thighs)
- Pus/bleeding at the insertion site
- Chest pain (severe), cough, shortness of breath
- Delayed menses after a long interval of regular menses to exclude pregnancy
- Heavy vaginal bleeding
- Expulsion of a capsule

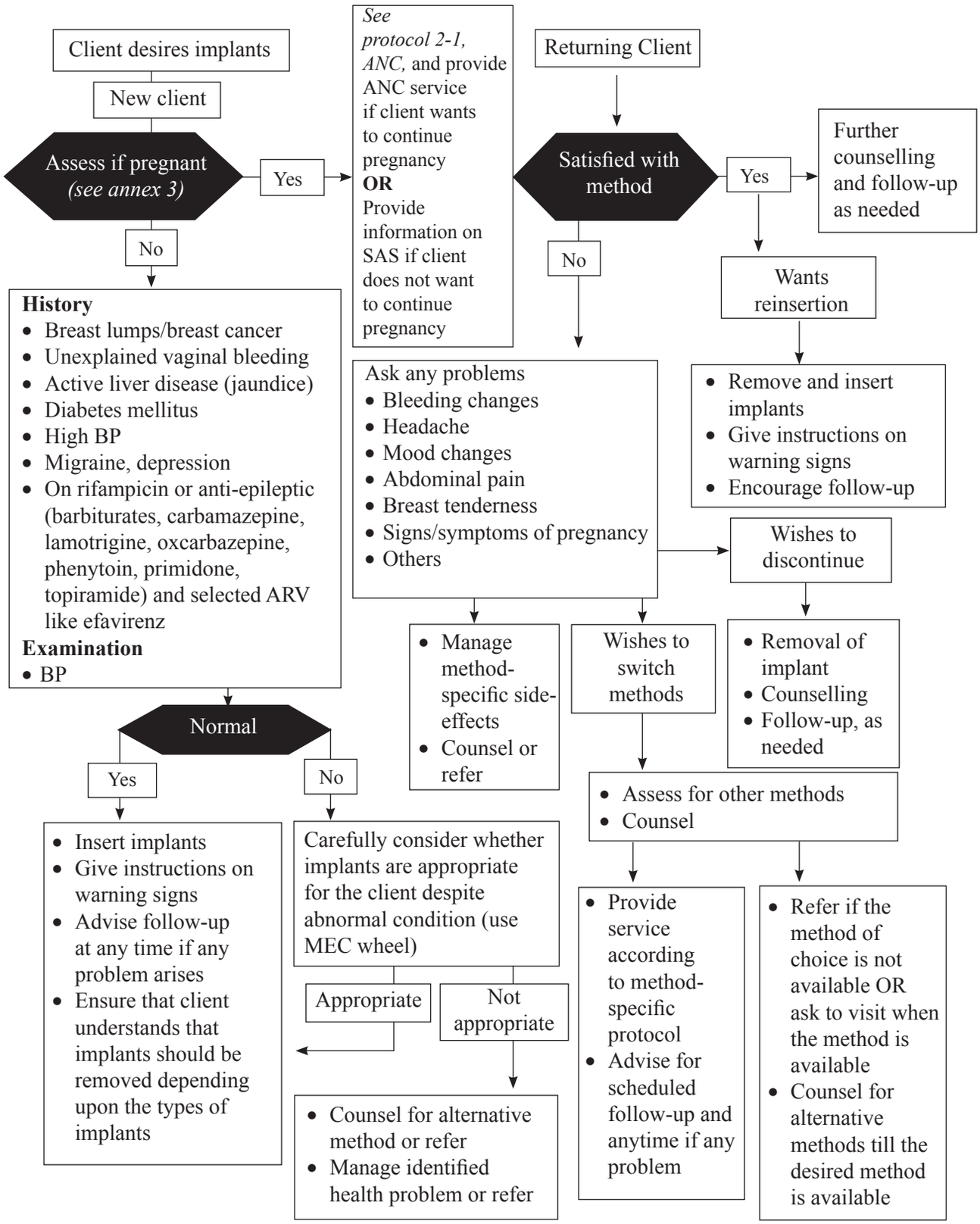
Side-effects	Management
Spotting or bleeding	*See protocol 1-12, Unscheduled Bleeding/Spotting on Hormonal Contraceptives.*
Mastalgia	May resolve after 3 months of use. Consider ibuprofen.
Amenorrhoea	Assess for pregnancy. If not pregnant, reassure and continue using the implants.
Headache	• If mild headache, treat with paracetamol. • If severe headache or blurred vision, refer for evaluation; consider removal of implants.

Effectiveness
Typical use: 99.9%
Perfect use: 99.9%

Note: ***Implants service should be provided by trained service providers.***

References
NHTC. 2016. *Comprehensive Family Planning and Counseling (COFP/C) Reference Manual.* Kathmandu: National Health Training Center.
WHO. *2015. Medical eligibility criteria for contraceptive use,* Fifth edition 2015. Geneva: World Health Organization.
WHO. 2018. *Family Planning: A Global Handbook for Providers*, 2018 Edition. Baltimore and Geneva: World Health Organization Department of Reproductive Health and Research (WHO/RHR) and Johns Hopkins Bloomberg School of Public Health/Center for Communication Programs (CCP), Knowledge for Health Project.

1-3 IMPLANTS



- Anaemic clients can benefit from implants because of decreased bleeding.
- If appropriate, provide methods to anaemic clients, give iron and folate and advise follow-up.
- Implants do not protect against HIV and STIs.

1-4 INTRAUTERINE CONTRACEPTIVE DEVICE

The copper-bearing Intrauterine Contraceptive Device (IUCD) is a small flexible plastic frame with copper sleeves or wire around it. It is inserted into a woman's uterus through her vagina and cervix. It works by causing a chemical change that damages sperm and egg before they can meet.

Timing of insertion

- At any time of menstrual cycle if it is certain that she is not pregnant
- Postpartum
    - Postplacental: within 10 minutes of delivery of placenta
    - Transcaeserean: during C-section after removal of placenta
    - Postpartum: within 48 hours and after 4 weeks
- Postabortion: within 12 days if no infection
- Within 5 days after unprotected sex
- Fully or nearly fully breastfeeding, less than 6 months' postpartum and amenorrhoeic

Precautions for the use of IUCD

WHO MEC Category 3 - Unless more appropriate methods are available

- 48 hours to 4 weeks postpartum
- Severe or advanced HIV (WHO stage 3 or 4)
- Increased risk of STI

WHO MEC Category 4 - Method not to be used (Contraindicated)

- Puerperal sepsis, immediate postseptic abortion
- Malignant gestational trophoblastic disease, cervical cancer, endometrial cancer
- STIs (gonorrhoea, chlamydia)
- Current Pelvic Inflammatory Disease (PID), current purulent cervicitis
- Unexplained vaginal bleeding

Side-effects	Management
Amenorrhoea	Assess for pregnancy • If not pregnant, reassure • If pregnant less than 12 weeks, remove IUCD • If pregnant for more than 12 weeks, do not remove IUCD. • Counsel for risks
Heavy bleeding	Assess for the amount and duration of bleeding • Look for signs and symptoms of anaemia and pregnancy • Assess for pelvic infection, intrauterine or ectopic pregnancy. If no infection and not pregnant, give ibuprofen 400mg every 8 hours for 7 days or indomethacin 25mg every 12 hours after meal for 5 days. OR • Tranexamic acid (1500mg) every 8 hours in divided doses for 3 days, then 1000mg once daily for 2 days
Abdominal pain	Assess for pelvic inflammation or ectopic pregnancy. *See protocol 4-6, Lower Abdominal Pain*. If ectopic pregnancy is suspected, refer immediately
Severe uterine cramps	Per abdominal (PA) examination: rule out tenderness and mass. Reassure and treat with ibuprofen. Consider removal if no improvement and referral
Complaints about strings	Check that IUCD is not expelled. Cut strings if necessary.

Effectiveness

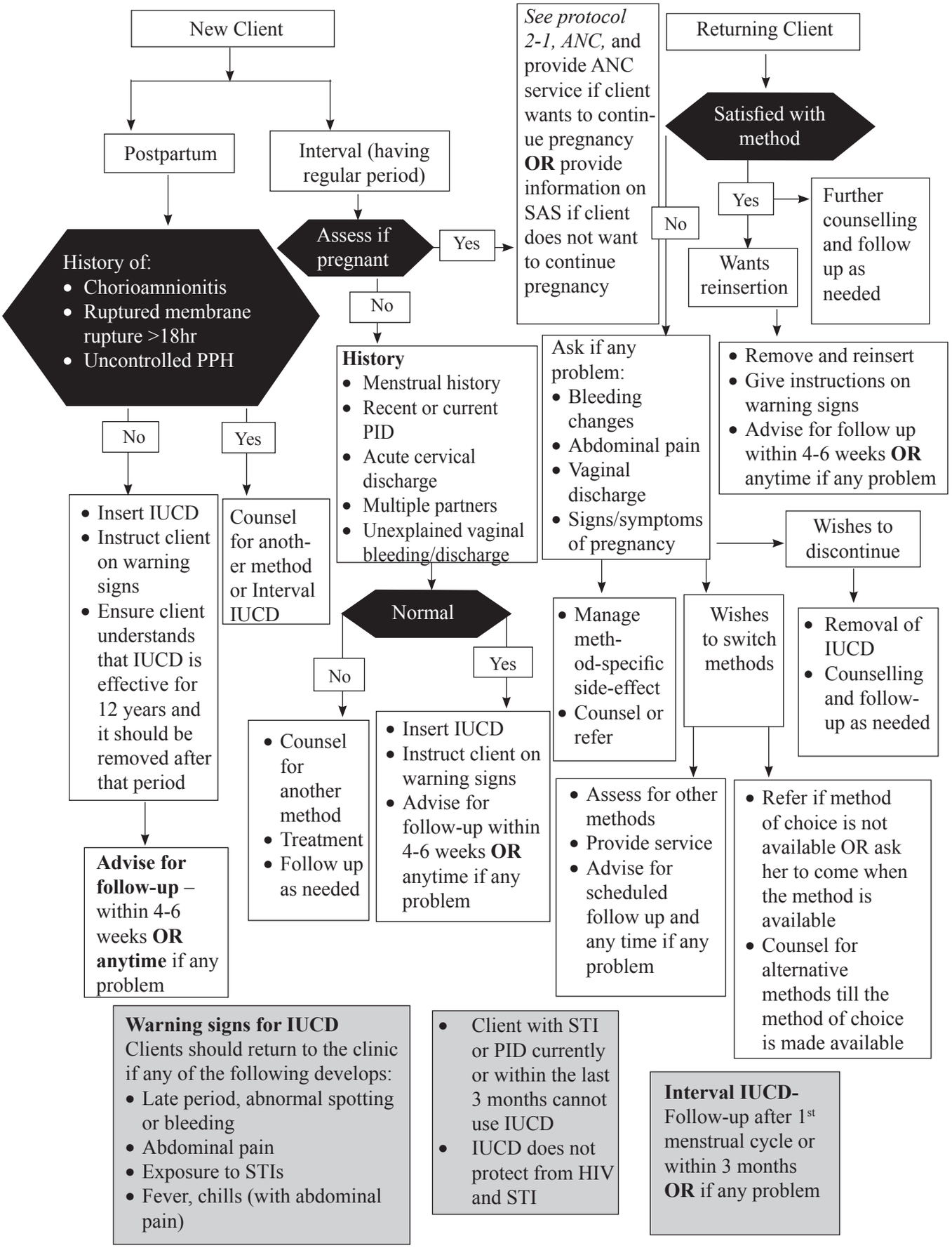
Typical use: 99.8%
Perfect use: 99.8%

Note: IUCD service should be provided by trained service providers.

References

NHTC. 2016. *Comprehensive Family Planning and Counseling (COFP/C) Reference Manual*. Kathmandu: National Health Training Center.
WHO. 2015. *Medical eligibility criteria for contraceptive use,* Fifth edition 2015. Geneva: World Health Organization.
WHO. 2018. *Family Planning: A Global Handbook for Providers*, 2018 Edition. Baltimore and Geneva: World Health Organization Department of Reproductive Health and Research (WHO/RHR) and Johns Hopkins Bloomberg School of Public Health/Center for Communication Programs (CCP), Knowledge for Health Project.

1-4 INTRAUTERINE CONTRACEPTIVE DEVICE



1-5 FEMALE STERILIZATION: MINILAPAROTOMY

Minilaparatomy is a permanent surgical contraception for women intended to provide lifelong, permanent and highly effective protection against pregnancy.

When to perform minilaparotomy
If there is no medical reason to delay, a woman can have **minilaparotomy** any time she wants if it is reasonably certain that she is not pregnant.

- Any time within 7 days of menstruation. If it is more than 7 days after the start of her monthly bleeding, she can have the procedure any time if it is certain that she is not pregnant.
- Immediately or within 7 days after giving birth, or at any time 6 weeks or more after childbirth if it is certain that she is not pregnant.
- Within 48 hours after uncomplicated abortion if she has made a voluntary, informed choice.

Precautions for the use of minilaparotomy
All women can undergo minilaparotomy. No medical conditions prevent a woman from undergoing minilaparotomy, but it should be done with caution, delay, or special arrangements.

Safe for all women
With proper counselling and informed consent, any woman can undergo minilaparotomy safely, including women who:

- Have no children or few children
- Are married or are not married
- Do not have husband's permission
- Are young
- Have just given birth (within the last 7 days)
- Are breastfeeding
- Are living with HIV, whether or not on antiretroviral therapy

In some of these situations, careful counselling is important to make sure the woman will not regret her decision.

Known health benefits
Helps protect against

- Risk of pregnancy
- Pelvic Inflammatory Disease (PID), ovarian cancer

Reduces risk of ectopic pregnancy

Side-effects None

Uncommon to extremely rare *known health risks*

- Complications of surgery and anaesthesia (refer if it occurs)

Postoperative instructions: warning signs

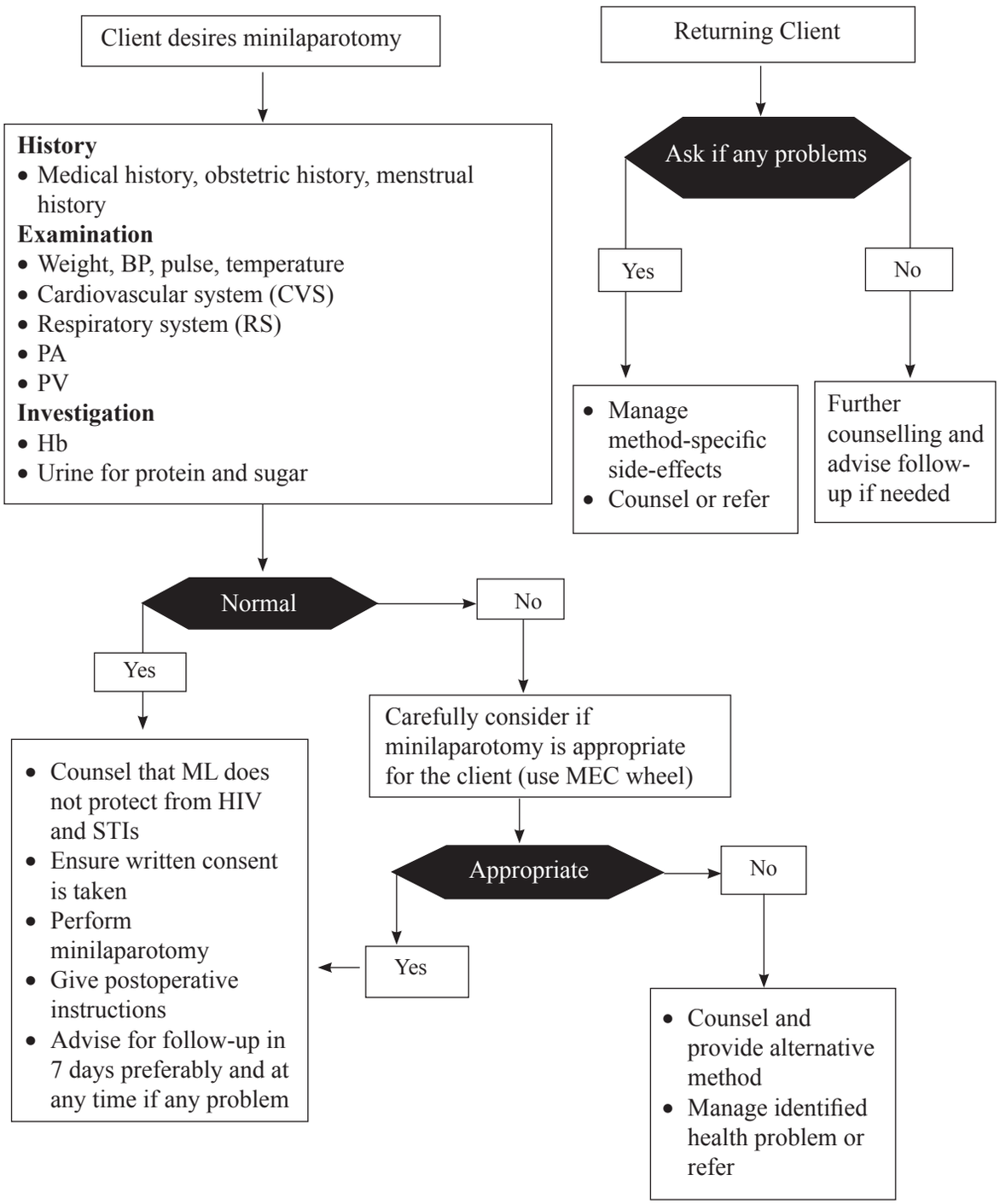
- Fever
- Bleeding or pus from the site of the incision
- Excessive pain
- Light-headedness or giddiness
- Nausea or vomiting

Effectiveness
Typical use: 99.5%
Perfect use: 99.5%

Note: Minilaparotomy service should be provided by trained service providers.

References
NHTC. 2073/074. *Minilaparotomy Reference Manual.* Kathmandu: National Health Training Center.
WHO. 2015. *Medical eligibility criteria for contraceptive use,* Fifth edition 2015. Geneva: World Health Organization.
WHO. 2018. *Family Planning: A Global Handbook for Providers*, 2018 Edition. Baltimore and Geneva: World Health Organization Department of Reproductive Health and Research (WHO/RHR) and Johns Hopkins Bloomberg School of Public Health/Center for Communication Programs (CCP), Knowledge for Health Project.

1-5 FEMALE STERILIZATION: MINILAPAROTOMY



1-6 MALE STERILIZATION: NO SCALPEL VASECTOMY

No Scalpel Vasectomy (NSV) is a permanent method of family planning for male clients. Reversal is possible but is not always successful. It involves a safe and simple surgical procedure and takes 3 months to take effect. The man or couple must use condoms or another contraceptive method for 3 months after the vasectomy.

When to perform NSV
With proper counselling and informed consent, any man can undergo a vasectomy safely anytime.

Precaution for the use of NSV
All men can undergo vasectomy. No medical conditions prevent a man from undergoing vasectomy, but it should be done with caution, delay, or special arrangements.

Safe for all men
With proper counselling and informed consent, any man can undergo vasectomy safely, including men who:
- Have no children or few children
- Are married or are not married
- Do not need wife's permission
- Are young
- Are at high risk of infection with HIV or another STI
- Are living with HIV, whether or not on antiretroviral therapy

In some of these situations, especially careful counselling is important to make sure the man will not regret his decision.

Side-effects None

Complications
Uncommon to rare
- Severe scrotal or testicular pain that lasts for months or years

Uncommon to very rare
- Infection at the incision site or inside the incision (uncommon with conventional incision technique; very rare with no scalpel technique)

Rare
- Bleeding under the skin that may cause swelling or bruising (haematoma)

Abnormal conditions to be reviewed by physician/surgeon
Localized conditions that can make the operation difficult or increase risks

- Large varicocele
- Hydrocele
- Inguinal hernia
- Filariasis (elephantiasis)
- Scar tissues
- Cryptorchidism
- Previous scrotal surgery
- Intra-scrotal mass

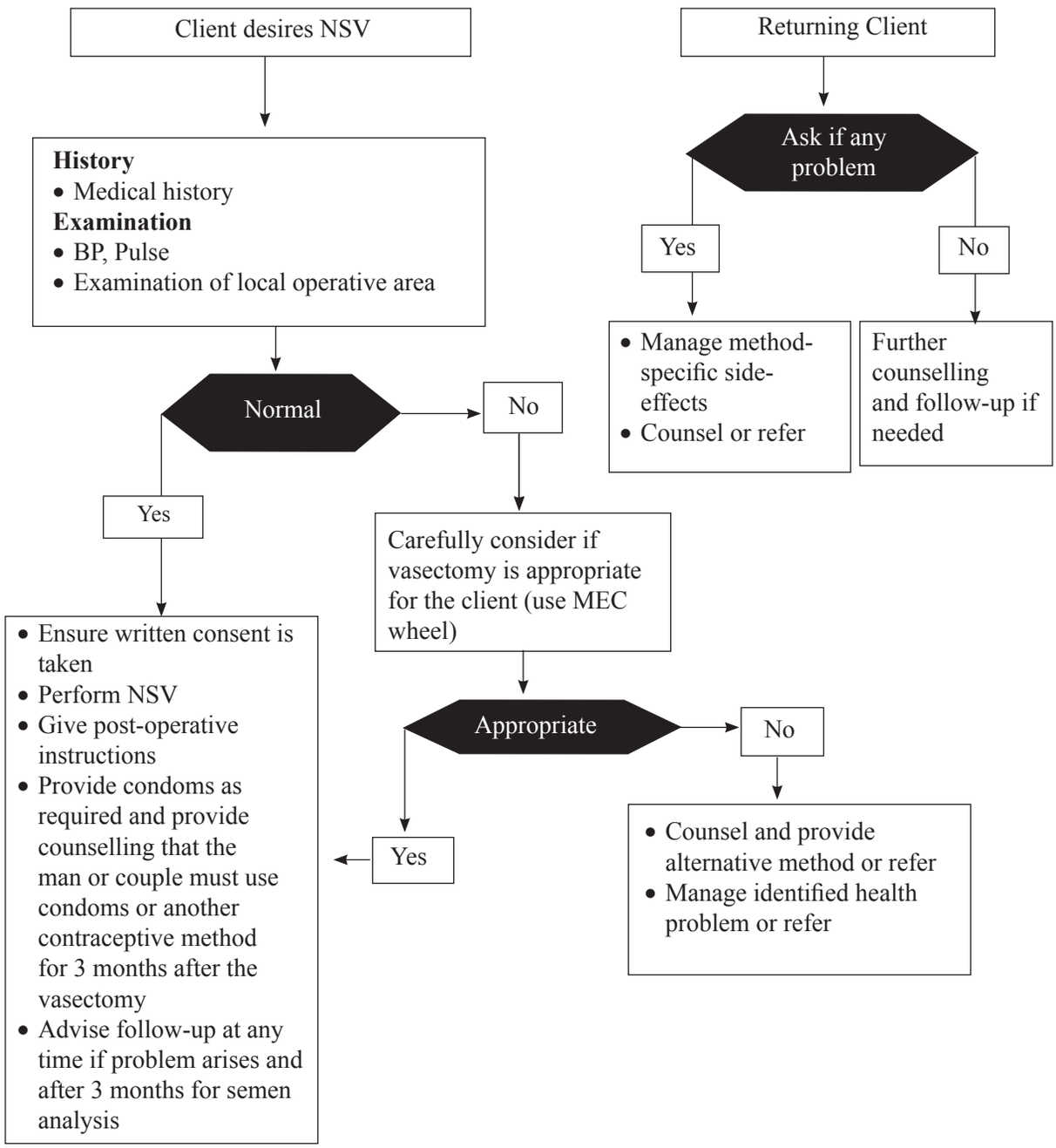
Post-operative instructions
Be on guard for
- Fever
- Bleeding or pus from the site of the incision
- Excessive pain or swelling

Effectiveness
Typical use: 99.85%
Perfect use: 99.9%

Note: NSV service should be provided by trained service providers.

References
NHTC. 2016. *No Scalpel Vasectomy Reference Manual,*. Kathmandu: National Health Training Center.
WHO. 2015. *Medical eligibility criteria for contraceptive use,* Fifth edition 2015. Geneva: World Health Organization.
WHO. 2018. *Family Planning: A Global Handbook for Providers*, 2018 Edition. Baltimore and Geneva: World Health Organization Department of Reproductive Health and Research (WHO/RHR) and Johns Hopkins Bloomberg School of Public Health/Center for Communication Programs (CCP), Knowledge for Health Project.

1-6 MALE STERILIZATION: NO SCALPEL VASECTOMY



1-7 DEPOT MEDROXY PROGESTERONE ACETATE

The injectable contraceptive contains 150mg of depot medroxyprogesterone acetate (DMPA), which is a progestin like the natural hormone progesterone in a woman's body and does not contain estrogen. It is given by intramuscular route and the hormone is then released slowly into the bloodstream.

Timing of injection

- At any time of the menstrual cycle if it is reasonably certain that she is not pregnant
- At 6 weeks post-delivery, she is exclusively breastfeeding and amenorrhoeic
- At any time if not breastfeeding and if it is certain that she is not pregnant
- Just after abortion

Unproven fertility: Nulliparous women who are potential DMPA users should be counselled that DMPA can cause a delay in the return of fertility. But this delay is not associated with infertility.

Precautions for the use of DMPA

WHO MEC Category 3 - Unless more appropriate methods are available

- Liver tumour
- Within 6 weeks post-delivery and breastfeeding
- Blood pressure – systolic blood pressure more than 160mm Hg or diastolic blood pressure more than100mm Hg
- Acute deep vein thrombosis
- Current or history of heart disease and stroke
- Unexplained vaginal bleeding

WHO MEC Category 4 - Method not to be used (Contraindicated)

- Current breast cancer

Warning signs for DMPA

Clients should return to the clinic if any of the following signs develops:

- Lower abdominal pain/pelvic pain
- Headache (severe)
- Depression
- Menstrual irregularity

Side-effects and other health problems

Side-effects	Management
Spotting or bleeding	*See protocol 1-12, Unscheduled Bleeding/Spotting on Hormonal Contraceptives*
Mastalgia	May resolve after 3 months of use. Consider ibuprofen.
Amenorrhoea	Assess for pregnancy. If not pregnant, reassure and continue using DMPA.

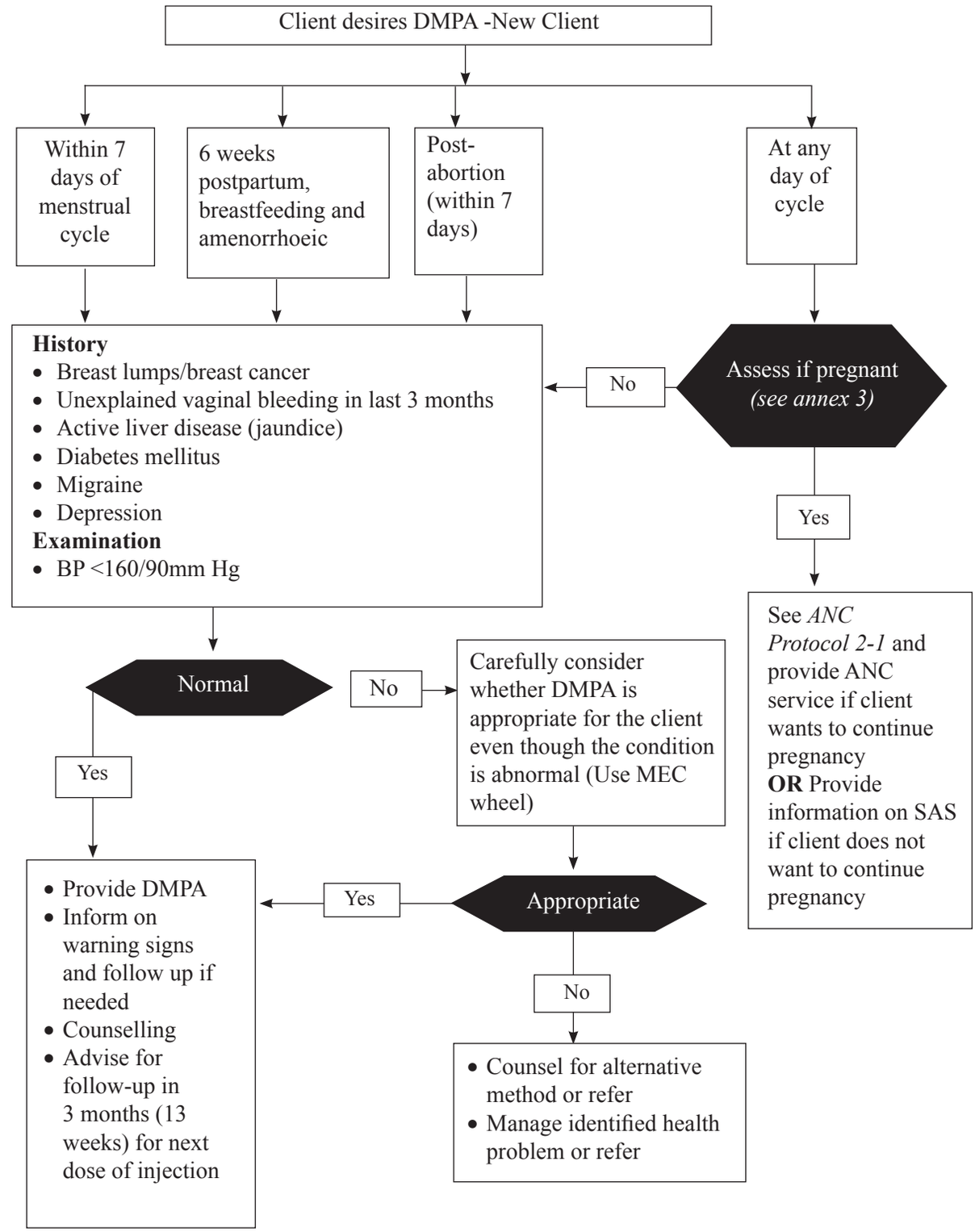
Effectiveness

Typical use: 96%
Perfect use: 99.8%

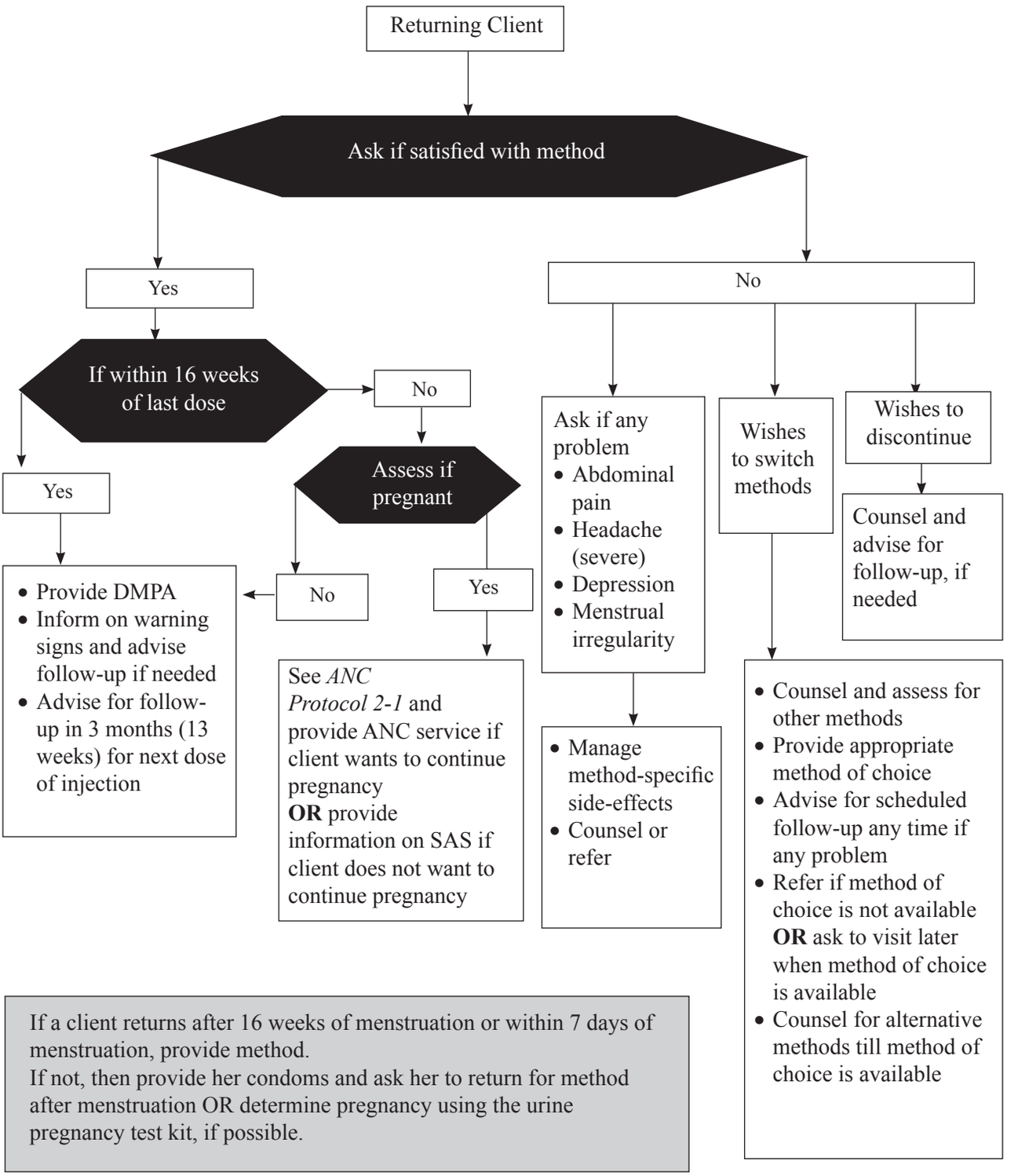
References

NHTC. 2016. *Comprehensive Family Planning and Counseling (COFP/C) Reference Manual.* Kathmandu: National Health Training Center.
WHO. *2015. Medical eligibility criteria for contraceptive use,* Fifth edition 2015. Geneva: World Health Organization.
WHO. 2018. *Family Planning: A Global Handbook for Providers*, 2018 Edition. Baltimore and Geneva: World Health Organization Department of Reproductive Health and Research (WHO/RHR) and Johns Hopkins Bloomberg School of Public Health/Center for Communication Programs (CCP), Knowledge for Health Project.

1-7 DEPOT MEDROXY PROGESTERONE ACETATE



- Counsel that DMPA does not protect from HIV and STIs.
- Anaemic clients can benefit from DMPA because of decreased bleeding.
- If appropriate, provide DMPA to anaemic client, give iron and folate and advise for follow-up


Returning Client
Ask if satisfied with method
Yes
No
If within 16 weeks of last dose
No
Yes
Assess if pregnant
Ask if any problem
• Abdominal pain
• Headache (severe)
• Depression
• Menstrual irregularity
Wishes to switch methods
Wishes to discontinue
Counsel and advise for follow-up, if needed
• Provide DMPA
• Inform on warning signs and advise follow-up if needed
• Advise for follow-up in 3 months (13 weeks) for next dose of injection
No
Yes
See *ANC Protocol 2-1* and provide ANC service if client wants to continue pregnancy **OR** provide information on SAS if client does not want to continue pregnancy
• Manage method-specific side-effects
• Counsel or refer
• Counsel and assess for other methods
• Provide appropriate method of choice
• Advise for scheduled follow-up any time if any problem
• Refer if method of choice is not available **OR** ask to visit later when method of choice is available
• Counsel for alternative methods till method of choice is available
If a client returns after 16 weeks of menstruation or within 7 days of menstruation, provide method.
If not, then provide her condoms and ask her to return for method after menstruation OR determine pregnancy using the urine pregnancy test kit, if possible.

1-8 COMBINED ORAL CONTRACEPTIVES

Combined oral contraceptives (COCs) are pills that contain low doses of two hormones—progestin and estrogen, like the natural hormones progesterone and estrogen in a woman's body. Each low dose COC pill contains 0.03mg ethinyl estradiol (EE) plus 0.15mg levonorgestrel (LNG). COCs are also called "the pill", low-dose combined pills, oral contraceptive pills (OCPs), and oral contraceptives (OCs). It works primarily by preventing the release of eggs from the ovaries (ovulation).

Precautions for the use of COC pills

WHO MEC Category 3 - Unless more appropriate methods are available

- Smoker and more than 35 years of age
- 6 weeks to 6 months post-delivery and breastfeeding
- High BP: systolic 140-159mm Hg or diastolic 90-99mm Hg
- Using different medicines like antibiotics, rifampicin or rifabutin and anticonvulsants

WHO MEC Category 4 - Method not to be used (contraindicated)

- Migraine headache with aura
- Current breast cancer
- Postpartum less than 6 weeks and breastfeeding
- High BP: systolic more than 160mm Hg or diastolic more than 100mm Hg
- History of thromboembolism, acute thromboembolism and deep vein thrombosis
- History of vascular disease and stroke
- Major surgery with prolonged immobilization
- Liver tumours
- Acute/flare hepatitis

Instructions when a pill or pills are missed

Key message	• Take a missed hormonal pill as soon as possible • Keep taking hormonal pills as usual, 1 daily
Missed 1 or 2 active (hormonal) pills? Started new pack 1 or 2 days late?	• Take a hormonal pill as soon as possible (little or no risk of pregnancy)
Missed active (hormonal) pills 3 or more days in a row in the first or second week? Started new pack 3 or more days late?	• Take a hormonal pill as soon as possible when she remembers and then keep taking pills daily, 1 each day • Use a backup method for the next 7 days • Also, if she had sex in the past 5 days, she can consider emergency contraceptive pills (ECPs). *See protocol 1-11, Emergency Contraception*
Missed active (hormonal) 3 or more pills in the third week?	• Take a hormonal pill as soon as possible • Finish all hormonal pills in the pack. Throw away the 7 nonhormonal pills • Start a new pack the next day • Use a backup method for the next 7 days • Also, if she had sex in the past 5 days, she can consider ECPs. *See protocol 1-11, Emergency Contraception*

Warning signs for COCs

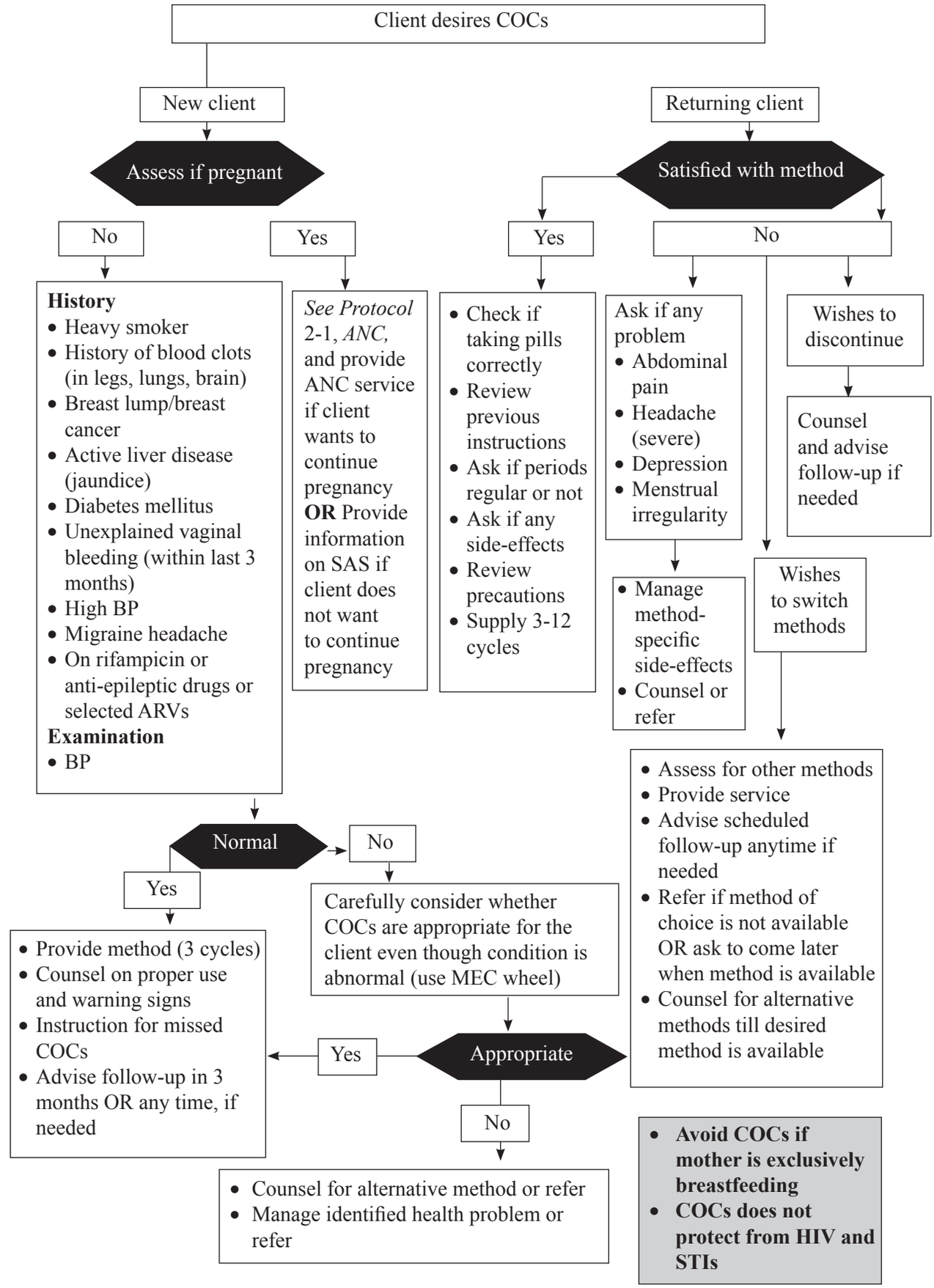
- Lower abdominal pain/pelvic pain
- Headache (severe)
- Eye problem (vision loss or blurring)
- Chest pain (severe), cough, shortness of breath
- Severe leg pain (calves or thighs)

Side-effects	Management
Spotting or bleeding	*See protocol 1-12, Unscheduled Bleeding/Spotting on Hormonal Contraception*
Jaundice	Stop COCs until liver function is normal (e.g. 3 months)
Mastalgia	May resolve after 3 months of use. Consider ibuprofen
Amenorrhoea	Assess for pregnancy. If not pregnant, reassure and continue using COCs

Effectiveness
Typical use: 93%
Perfect use: 99.7%

References
NHTC. 2016. *Comprehensive Family Planning and Counseling (COFP/C) Reference Manual.* Kathmandu: National Health Training Center.
WHO. *2015. Medical eligibility criteria for contraceptive use,* Fifth edition 2015. Geneva: World Health Organization.
WHO. 2018. *Family Planning: A Global Handbook for Providers*, 2018 Edition. Baltimore and Geneva: World Health Organization Department of Reproductive Health and Research (WHO/RHR) and Johns Hopkins Bloomberg School of Public Health/Center for Communication Programs (CCP), Knowledge for Health Project.

1-8 COMBINED ORAL CONTRACEPTIVES



1-9 CONDOM (MALE)

Condoms are the only method that can prevent pregnancy and protect against STIs and HIV. Most of the condoms are made from latex, although some may be made from polyurethane or polyisoprene.

Five basic steps of using a condom

1. Use a new condom for each act of sex.
2. Before the penis comes in contact with vagina, place the condom on the tip of the erect penis with the rolled side out.
3. Unroll the condom all the way to the base of the erect penis.
4. Immediately after ejaculation, hold the rim of the condom in place and withdraw the penis while it is still erect.
5. Dispose of the used condom safely.

Problem	Management
Condom broken or breakage suspected	Use emergency contraception, counsel on other methods
Local irritation or itching in the penis	Choose another method

Effectiveness

- Typical use: 87%
- Perfect use: 98%

References

NHTC. 2016. *Comprehensive Family Planning and Counseling (COFP/C) Reference Manual.* Kathmandu: National Health Training Center.

WHO. 2018. *Family Planning: A Global Handbook for Providers*, 2018 Edition. Baltimore and Geneva: World Health Organization Department of Reproductive Health and Research (WHO/RHR) and Johns Hopkins Bloomberg School of Public Health/Center for Communication Programs (CCP), Knowledge for Health Project.

1-9 CONDOM (MALE)

Client desires to use condoms for spacing or for STIs/HIV prevention

- Counsel on FP methods and STIs
- Counsel on correct and consistent use of condom
- Demonstrate the correct use of condom using a condom model
- Explain safe disposal of used condoms
- Discuss the use and availability of emergency contraception for breakage/failure
- Provide condoms

Any client who chooses to use condoms should be provided with enough supply of condoms. Clients may choose to use them for:

- Prevention of STIs and HIV
- Temporary FP methods until another method can be used
- Backup method

1-10 FERTILITY AWARENESS METHODS

Fertility awareness means that a woman learns how to predict when the fertile time of her menstrual cycle starts and ends. The fertile time is the time when she can become pregnant.

Calendar method
A woman can count calendar days to identify the start and end of her fertile time. The number of fertile days depends on the length of previous menstrual cycles.

- Before relying on this method, the woman records the number of days in each menstrual cycle for at least 6 months.
- The first day of menstrual bleeding is always counted as day 1.
- The woman subtracts 18 days from the length of her shortest recorded cycle.
- This tells her the estimated first day of her fertile time period.
- Then, she subtracts 11 days from the length of her longest recorded cycle.
- This tells her the last day of her fertile time period.

Example: A lady records her menstrual cycle as 28-38 days; her fertile time period is calculated as 28-18 = 10 and 38-11 = 27; so, her fertile period is 10-27 days of her period.

Cervical mucous method
When a woman touches or feels cervical secretions at the vaginal opening, which are thin, slippery and elastic and like an egg white, she might be fertile.

Basal body temperature method
Women's resting body temperature goes up slightly around the time of ovulation (release of an egg), when she could become pregnant.

Sympto-thermal method
It combines observation of cervical mucous method and monitoring of the basal body temperature.

Modified calendar method or Standard Days Method (SDM)
Standard days method (SDM) is applicable only for women who have 26-32 days of menstrual cycle. Days 8 to 19 of every cycle are considered fertile days for all users of the SDM. The couple can have unprotected sex on all other days of the cycle-days 1 to 7 at the beginning of the cycle and from day 20 until her next monthly bleeding begins. The couple can use cycle beads (memory aids), a colour-coded string of beads that indicates fertile and non-fertile days of a cycle, or they can mark a calendar or use some other memory aid.

Periodic abstinence
To avoid unprotected sex during the fertile period.

Withdrawal method
Practice of withdrawing the penis from the vagina and away from women's external genitals before ejaculation to prevent pregnancy.
This method is appropriate for couples who:

- Have no other method available at that time
- Are waiting to start another method
- Have sex infrequently
- Have objection to using other methods

Effectiveness
Effectiveness depends on the user: risk of pregnancy is greater when couples have sex on the fertile days without using another method. Abstaining during the fertile period is more effective than using another method during the fertile period. Pregnancy rate with consistent and correct use varies for different types of fertility awareness methods.
Typical use: 77-88%
Perfect use: 95-98%

References
NHTC. 2016. *Comprehensive Family Planning and Counseling (COFP/C) Reference Manual.* Kathmandu: National Health Training Center.
WHO. 2018. *Family Planning: A Global Handbook for Providers*, 2018 Edition. Baltimore and Geneva: World Health Organization Department of Reproductive Health and Research (WHO/RHR) and Johns Hopkins Bloomberg School of Public Health/Center for Communication Programs (CCP), Knowledge for Health Project.

1-10 FERTILITY AWARENESS METHODS

Client desires fertility awareness method

- Explain the technique of each method:
  - Calendar
  - Cervical mucous
  - Basal body temperature
  - Sympto-thermal
  - Modified calendar method or SDM
- Have client record menstrual cycle for 6 months (except for SDM)
- Consider withdrawal **OR** abstinence during fertile period
- Follow up after 6 months or as per need

- Calculate safe and risk periods of the cycle according to the method chosen
- Encourage follow-up any time as needed
- Counsel on all methods, including availability and use of emergency contraception if needed

1-11 EMERGENCY CONTRACEPTION

Emergency contraception (EC) is a means to prevent unwanted pregnancy. It can be used after unprotected sex as soon as possible within 5 days (120 hours). IUCD and COCs are used as emergency contraception. EC is safe for all women—even women who cannot use ongoing hormonal contraceptive methods.
Each low dose COC pill contains 0.03mg ethinyl estradiol (EE) plus 0.15mg levonorgestrel (LNG).

Situations when EC should be offered

- Unprotected sexual intercourse (unplanned, unexplained, accidental)
- Rape or coerced sex
- Incorrect use of any family planning method
    - Failure of the withdrawal method
    - Incorrectly used fertility awareness-based method
    - Breakage or leakage of condom
    - Missed COCs for 3 or more days or started a new pack 3 or more days late
    - Delay in taking DMPA for more than 4 weeks
    - Expulsion of IUCD

Management of nausea/vomiting (common side-effects)

- Provide anti-emetic (meclizine hydrochloride or promethazine hydrochloride) 1 tablet 1 hour before taking ECPs. Levonorgestrel regimen causes significantly less nausea and vomiting than the combined regimen.
- If client vomits within 2 hours of taking COCs, then repeat the dose of ECPs.

Effectiveness

- ECP is more effective when taken closer to the time of intercourse within a 120-hour window.
- IUCD as emergency contraception is nearly 100% effective.
- Levonorgestrel (e.g. E-Con) is effective up to 99%.
- COCs that are supplied by the government are effective up to 98%; so, can be used as ECPs.

Points to remember

1. EC should be used within 120 hours of unprotected sexual intercourse (UPSI) or earlier.. The sooner the EC is taken after unprotected sex, the more effective it is.
2. EC should not be used as an alternative to other regular FP methods, and the clients coming for EC should also be counselled for other appropriate methods.
3. EC does not protect from STIs and HIV.
4. EC does not cause abortion.
5. Strong cytochrome P450 3A4 (CYP3A4) inducers, e.g. rifampicin, phenytoin, Phenobarbital, and carbamazepine, may reduce the effectiveness of ECPs.

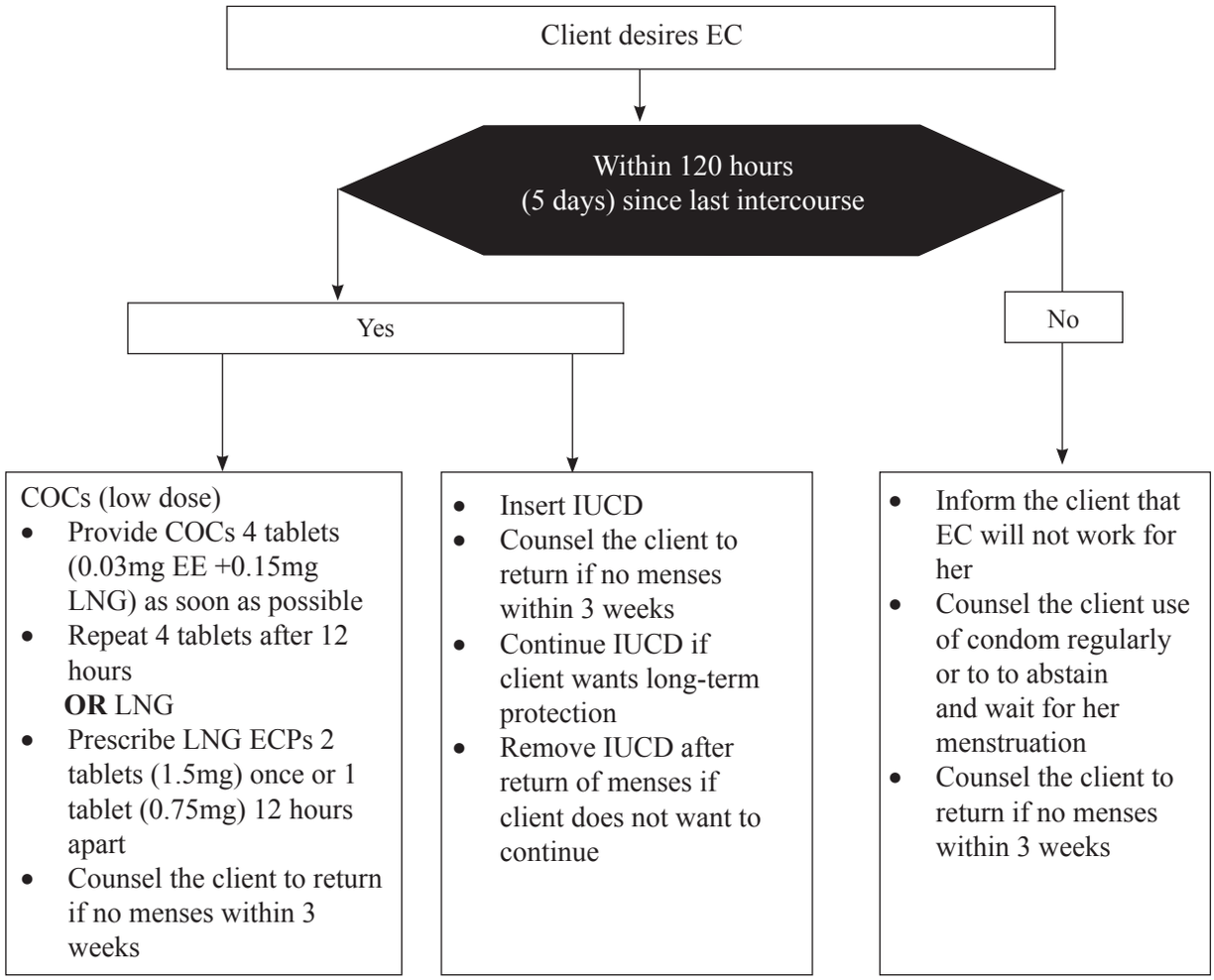
When to start or restart contraception after ECP use The client can start or restart any hormonal method immediately after she takes the ECs, but she needs to abstain from sex or use a backup method for the first 7 days. There is no need for her to wait for her next monthly bleeding.

- The client can start or restart any hormonal on the 6th day after the EC pills. There is no need to wait for the next monthly bleeding.
- If a client decides to use IUCD after taking ECPs, she can have it inserted on the same day she takes ECPs. No need of a backup method. But if she does not have it inserted immediately and returns for the method, she can have it inserted any time if it is determined that she is not pregnant.
- Female sterilization can be done within 7 days of the start of the next monthly bleeding.

References

NHTC. 2016. *Comprehensive Family Planning and Counseling (COFP/C) Reference Manual.* Kathmandu: National Health Training Center.
WHO. 2018. *Family Planning: A Global Handbook for Providers*, 2018 Edition. Baltimore and Geneva: World Health Organization Department of Reproductive Health and Research (WHO/RHR) and Johns Hopkins Bloomberg School of Public Health/Center for Communication Programs (CCP), Knowledge for Health Project.

1-11 EMERGENCY CONTRACEPTION



After 3 weeks, assess her pregnancy status and manage accordingly

- If IUCD is inserted, whether to remove it or not depends on the client's wish
- Non-pregnant client may continue or remove IUCD
- Pregnant, with IUCD in situ, client wants to continue pregnancy:
  - Counsel about risks and consequences with IUCD
  - Refer to a referral centre for removal
- Pregnant with IUCD in situ, client does not want to continue pregnancy:
  - Refer for removal of IUCD and provide information on SAS
- All clients who are in need of emergency contraception should be counselled for an effective FP method
- IUCD does not protect from STIs and HIV

Note: *EC does not protect from HIV and STIs*

1-12 UNSCHEDULED BLEEDING/SPOTTING ON HORMONAL CONTRACEPTIVES

One of the most common side-effects of hormonal contraception is unscheduled irregularly irregular bleeding per vagina. It can be spotting every day to prolonged mild bleeding like menstrual blood flow, to episodes of heavy bleeding to prolonged heavy bleeding. Spotting, irregular mild bleeding not associated with abdominal pain, is common.

History

- Amount of bleeding, pattern of bleeding, with passage of clots associated with abdominal pain
- Spotting, irregular heavy bleeding and prolonged bleeding.

Bleeding might not always be associated with hormonal contraception. Sometimes, bleeding might be due to other diseases, which should be ruled out.

Examination

- Per abdominal (PA) examination: Look for abdominal tenderness, mass.
- Per speculum (PS) examination: Look for cervicitis, growth in the cervix, products of conception (POC) hanging through cervical os.
- Bimanual examination: Look for enlarged uterus, adnexal mass or uterine tenderness and suspected ectopic pregnancy and confirm by urine pregnancy test, if possible.

Medication (make sure whether bleeding is related to these medications or not)

- Patients using rifampicin or anti-epileptic drugs should use a backup method (such as condoms) while taking medication. Alternatively, switch to a higher dose method (such as DMPA) or a non-hormonal method (such as IUCD).
- If the client is using implants, for short-term relief, give 800mg ibuprofen or 500mg mefenamic acid 3 times for 5 days. If this does not help, COCs pills for 21 days is prescribed.
- If the client is using COCs, for short-term relief give 800mg ibuprofen or 500mg mefenamic acid 3 times for 5 days. If she has been taking COCs for more than 1-2 months and above does not help, consider changing the formulation of COCs.
- If the client is using DMPA, she may continue to use the method. For short-term relief, give 500mg mefenamic acid 2 times for 5 days or COCs for 21 days.

Switching method

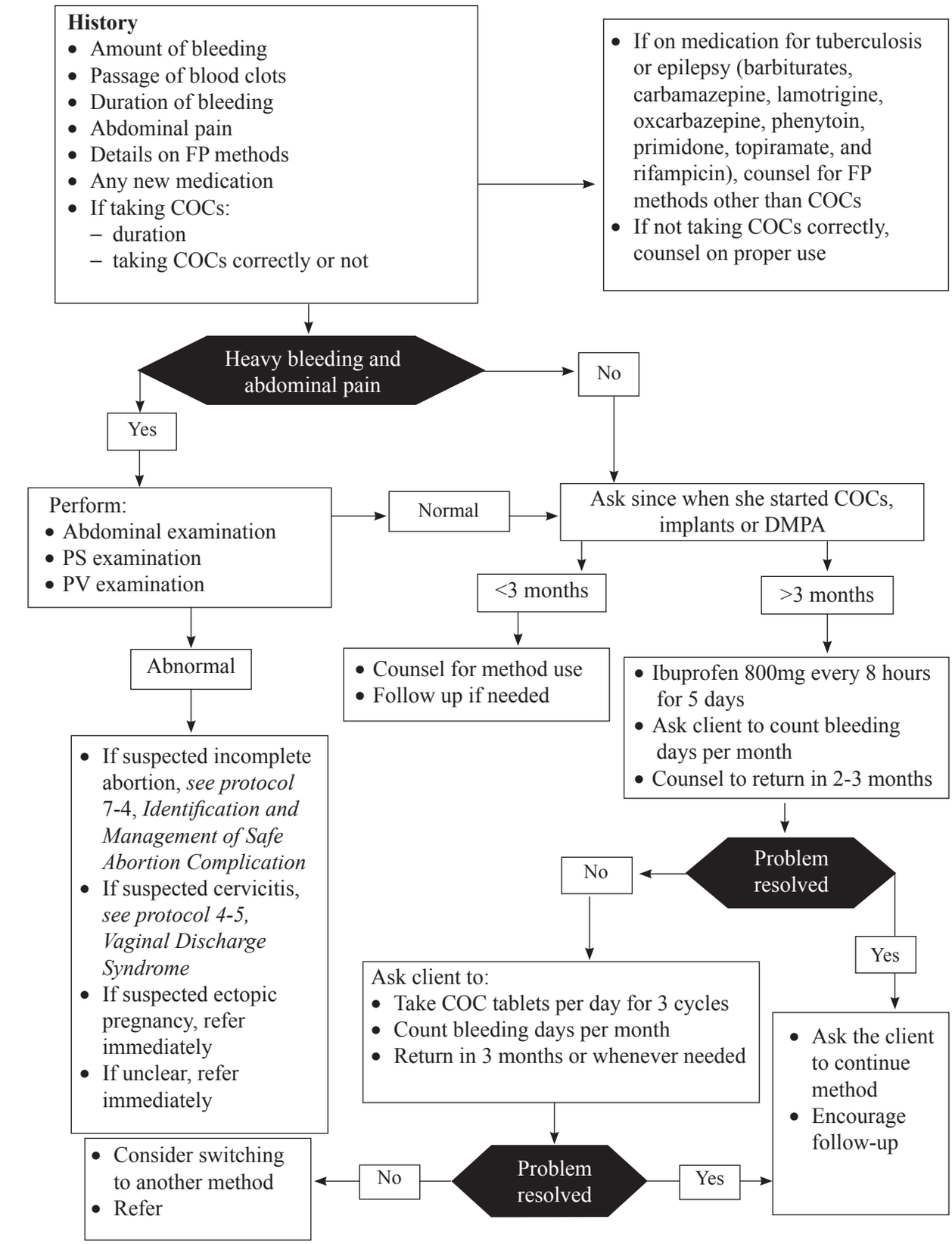
- *For clients on DMPA:* COCs or another non-hormonal method (e.g. IUCD)
- *For clients on implant:* COCs or another non-hormonal method (e.g. IUCD)

References

NHTC. 2016. *Comprehensive Family Planning and Counseling (COFP/C) Reference Manual.* Kathmandu: National Health Training Center.

WHO. 2018. *Family Planning: A Global Handbook for Providers*, 2018 Edition. Baltimore and Geneva: World Health Organization Department of Reproductive Health and Research (WHO/RHR) and Johns Hopkins Bloomberg School of Public Health/Center for Communication Programs (CCP), Knowledge for Health Project.

1-12 UNSCHEDULED BLEEDING/SPOTTING ON HORMONAL CONTRACEPTIVE



1-13 POSTPARTUM FAMILY PLANNING

The opportunity of providing postpartum family planning (PPFP) counselling and services starts from the time when a woman comes to the health facility. It is broadly divided into pre-pregnancy, antenatal checkup (ANC), during admission for delivery, latent phase of labour, immediately after delivery, within 48 hours of delivery (early postpartum period), after 48 hours to less than 6 weeks of delivery, and more than 6 weeks (6 weeks to less than 6 months and 6 months to 1 year within delivery) of delivery. These are the points of contact which health workers can take as an opportunity to provide PPFP.

Return of fertility

The timing of return of fertility for non-breastfeeding mothers is usually around 6 weeks postpartum and for breastfeeding mothers, it is longer than that as suckling inhibits ovulation. The return of fertility, however, is not predictable (conception can occur before the woman has signs or symptoms of the first menses).

Period for uptake of PPFP methods

For all users

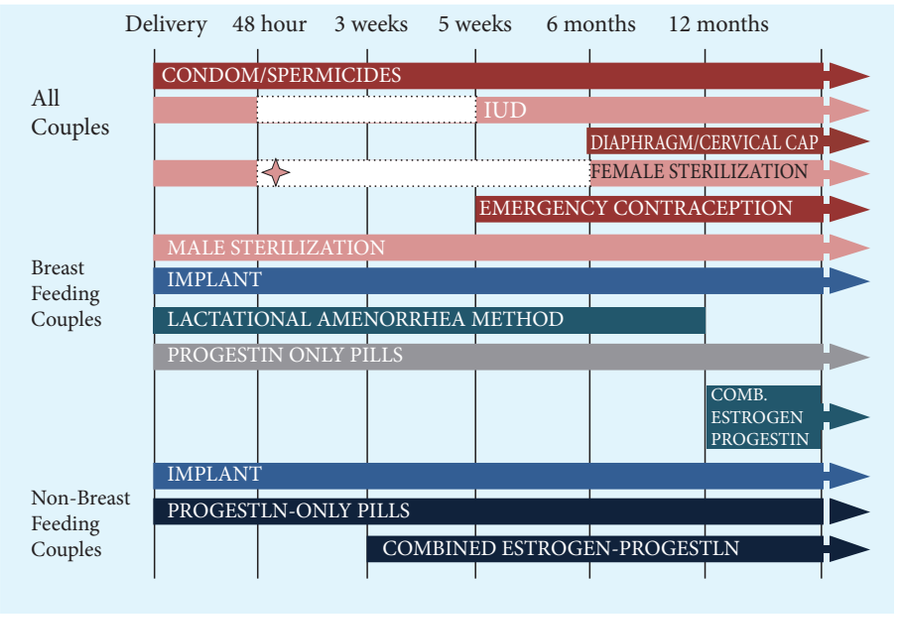
- Condoms: Right after delivery and resumption of sexual activity
- PPIUD: immediately within 48 hours of delivery and after 4 weeks postpartum for 1 year
- Female sterilization: Right after delivery for 7 days and after 4 weeks of delivery
- ECPs: If unsafe sex after 4 weeks postpartum
- Progestin injectable: 6 weeks after delivery

For users who are breastfeeding

- Lactation amenorrhoea method: For 6 months postpartum with exclusive breastfeeding
- Progestin only pills*: Soon after delivery
- Implant: Immediately after delivery

For users who are not breastfeeding

- Progestin only pills*: Soon after delivery
- Combined estrogen-progestin method: after 3 weeks of delivery
- Implant: Immediately after delivery



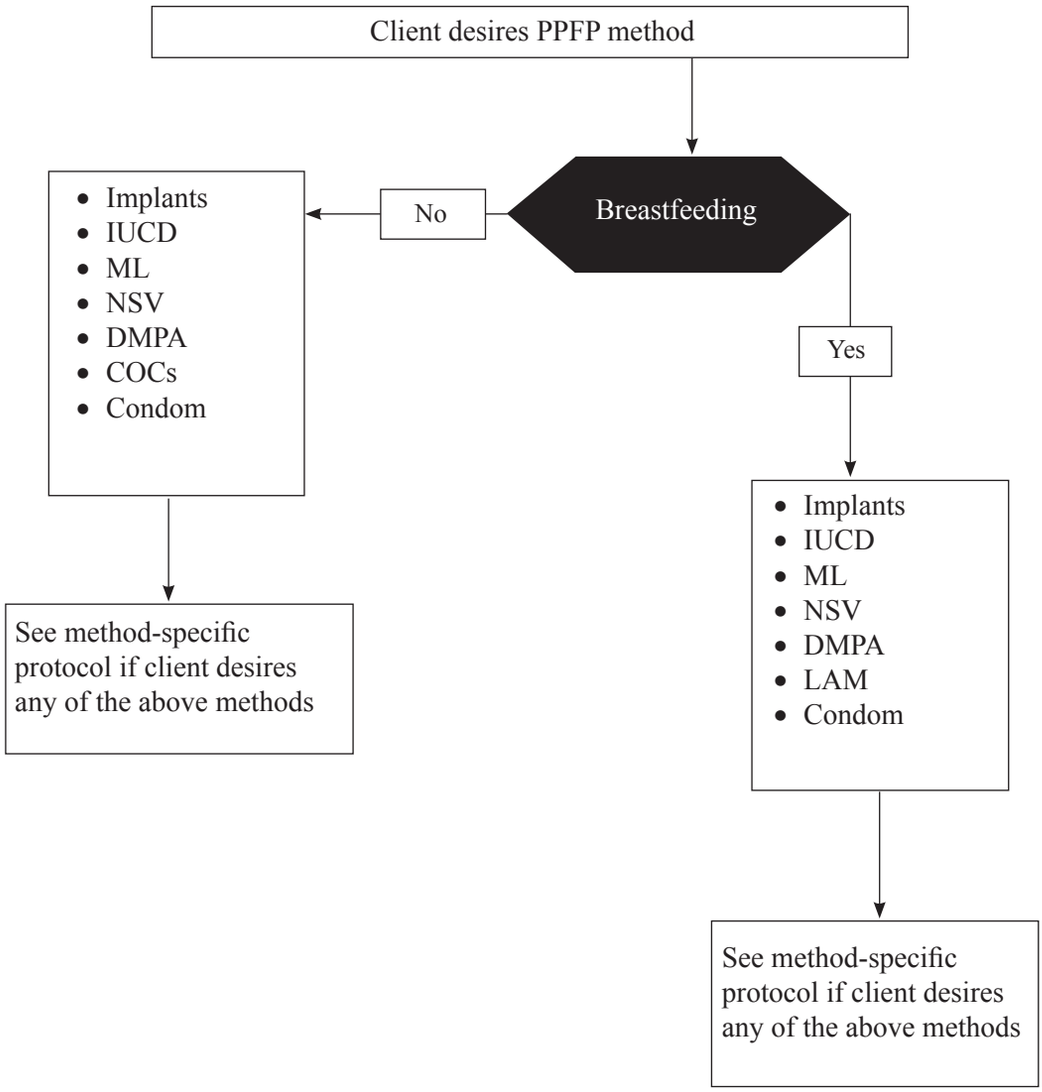
* Not available under routine procurement of GoN at present.

References

WHO. 2013. *Programming Srategies for Postpartum Family Planning.* World Health Organization

WHO. 2018. *Family Planning: A Global Handbook for Providers*, 2018 Edition. Baltimore and Geneva: World Health Organization Department of Reproductive Health and Research (WHO/RHR) and Johns Hopkins Bloomberg School of Public Health/Center for Communication Programs (CCP), Knowledge for Health Project.

1-13 POSTPARTUM FAMILY PLANNING



1-13a LACTATIONAL AMENORRHOEA METHOD

Lactational amenorrhoea method (LAM) is a temporary family planning method based on the natural effects of breastfeeding on fertility. It works primarily by preventing the release of eggs from the ovaries (ovulation). Frequent breastfeeding temporarily prevents the release of the natural hormones that cause ovulation.

Criteria of LAM (These 3 criteria should be present at the same time)

- Mother is less than 6 months postpartum
- Mother is amenorrhoeic
- She is fully or nearly fully breastfeeding her baby:
  - This means that she is breastfeeding her baby on demand (whenever the baby cries)
  - She is not supplementing the child's diet regularly with non-breast milk foods
  - Supplementation should be less than 5% of all feedings

"Fully breastfeeding" includes both exclusive breastfeeding (the infant receives no other liquid or food, not even water, in addition to breast milk) and almost exclusive breastfeeding (the infant receives vitamins, water, juice, or other nutrients once in a while in addition to breast milk).

"Nearly fully breastfeeding" means that the infant receives some liquid or food in addition to breast milk, but the majority of feedings (more than three-fourths of all feeds) are breast milk.

Alternative methods suitable for breastfeeding mother

- IUCD
- Implants
- Male/female sterilization
- DMPA
- Condom
- Fertility awareness methods (provided the comprehension level of client is suitable for this method)

Need to remind breastfeeding mothers about transition from LAM to another modern method either before 6 months or when she reaches 6 months.

Avoid COCs if mother is breastfeeding as the estrogen component of the COCs will reduce breast milk.

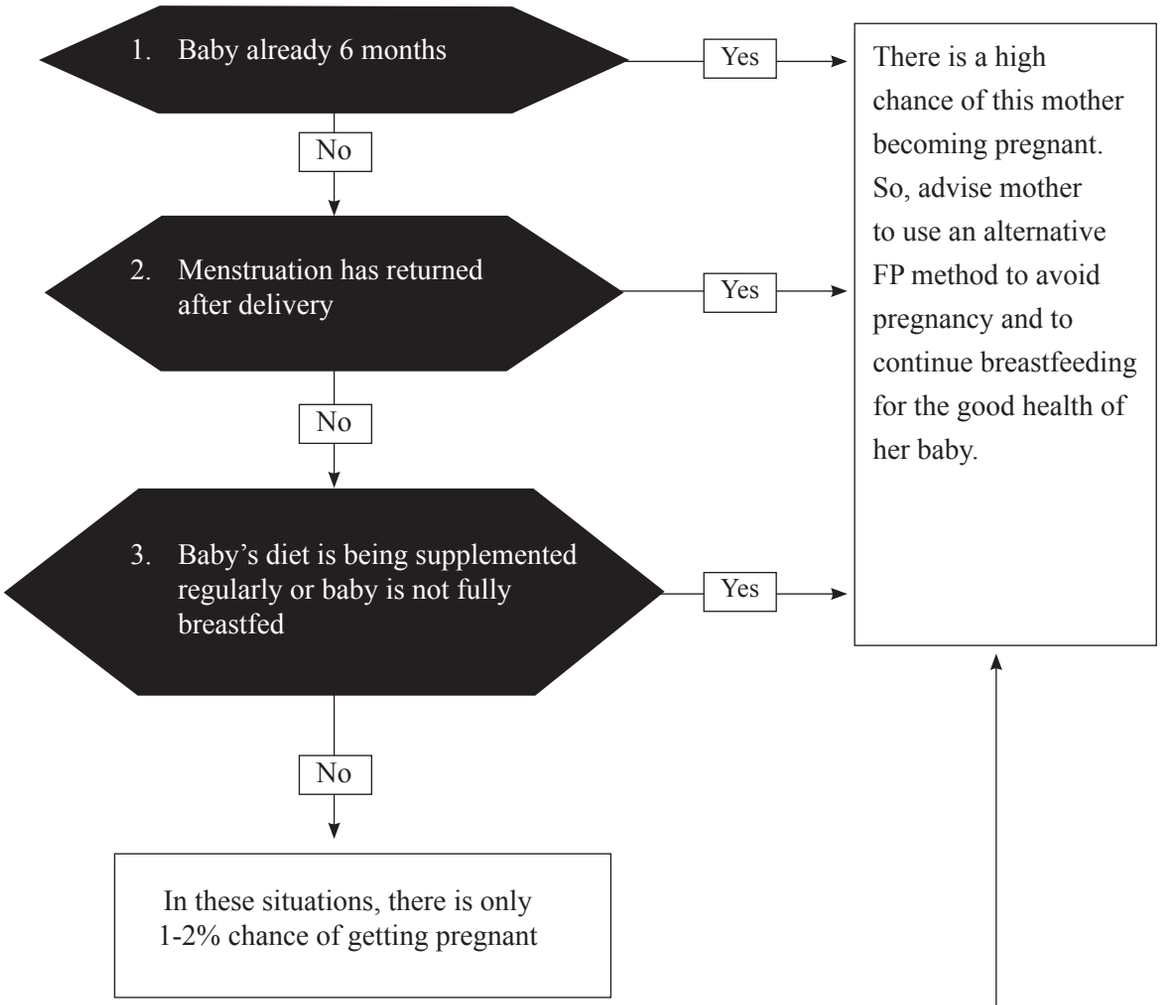
Effectiveness

Typical use: 98%, if fully breastfeeding, menses not returned and is less than 6 months postpartum
Perfect use: 99% in the first 6 months after childbirth

References

NHTC. 2016. *Comprehensive Family Planning and Counseling (COFP/C) Reference Manual*. Kathmandu: National Health Training Center.
WHO. 2018. *Family Planning: A Global Handbook for Providers*, 2018 Edition. Baltimore and Geneva: World Health Organization Department of Reproductive Health and Research (WHO/RHR) and Johns Hopkins Bloomberg School of Public Health/Center for Communication Programs (CCP), Knowledge for Health Project.

1-13a LACTATIONAL AMENORRHOEA METHOD



If any one of the statements responses is **YES**,

Remind mothers about transition from LAM to another modern method either before 6 months or when she reaches 6 months.

Avoid COCs, if mother is breastfeeding LAM does not protect from HIV and STIs

ANNEX 1: WHO MEDICAL ELIGIBILITY CRITERIA 2015 FOR CONTRACEPTIVE USE

Medical Eligibility Criteria for Contraceptive Use

The table below summarizes the World Health Organization Medical Eligibility Criteria for Contraceptive Use. These criteria are the basis for the Medical Eligibility Criteria checklists in most chapters of this handbook on family planning methods. These checklists are based on the 2-level system for providers with limited clinical judgment (see table below). The checklist questions address conditions in MEC categories 3 or 4 that the woman knows of. The boxes "Using Clinical Judgment in Special Cases" list conditions that are in MEC category 3: The method can be provided if other, more appropriate methods are not available or acceptable to the client, and a qualified provider can carefully assess the specific woman's condition and situation.

Categories for Temporary Methods

Category	With Clinical Judgment	With Limited Clinical Judgment
1	Use method in any circumstances	Yes (Use the method)
2	Generally use method	
3	Use of method not usually recommended unless other more appropriate methods are not available or not accepted	No (Do not use the method)
4	Method not to be used	

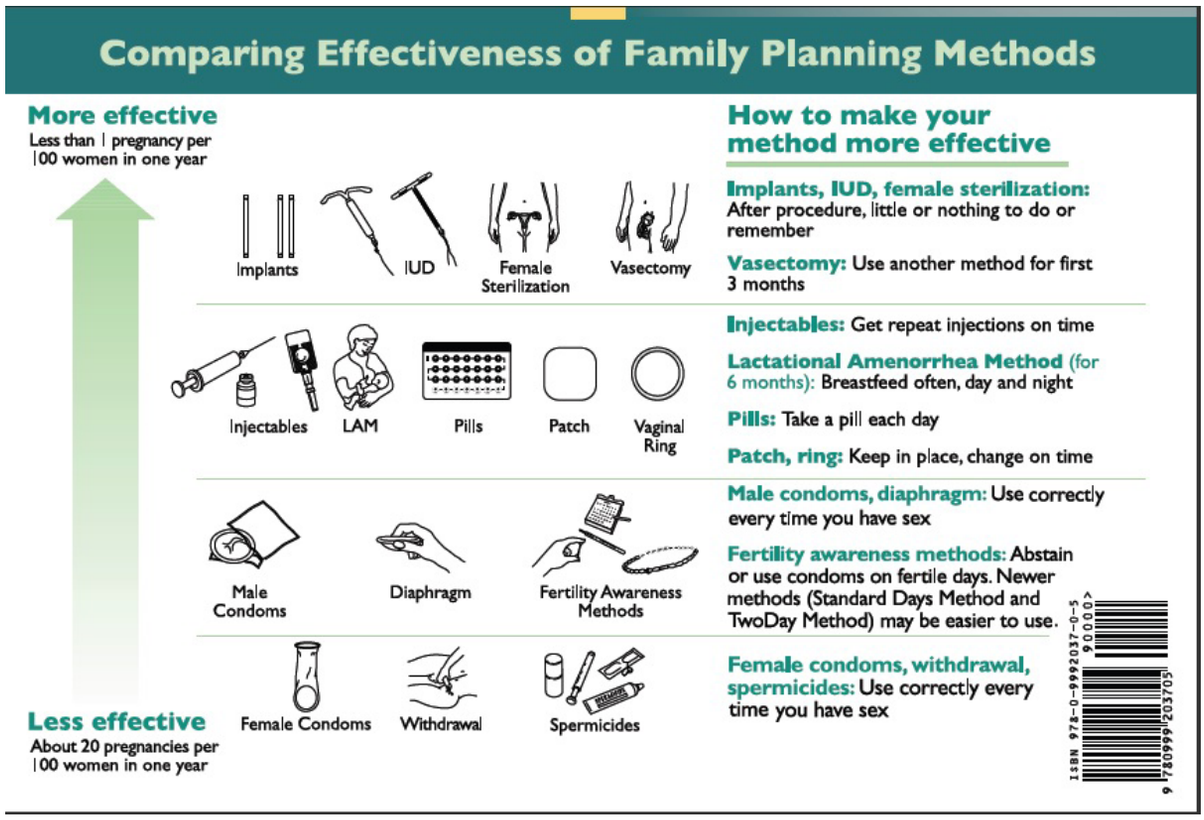
Note: *In the table beginning on the next page, category 3 and 4 conditions are shaded to indicate that the method should not be provided where clinical judgment is limited. Categories that are new or changed since the 2011 edition of this handbook are shown in dark type.*
For vasectomy, male and female condoms, spermicides, diaphragms, cervical caps, and the lactational amenorrhea method, see pp. 397-399. For fertility awareness methods, see p. 399.

Categories for Female Sterilization and Vasectomy

Accept (A)	There is no medical reason to deny the method to a person with this condition or in this circumstance.
Caution (C)	The method is normally provided in a routine setting, but with extra preparation and precautions.
Delay (D)	Use of the method should be delayed until the condition is evaluated and/or corrected. Alternative, temporary methods of contraception should be provided.
Special (S)	The procedure should be undertaken in a setting with an experienced surgeon and staff, equipment needed to provide general anaesthesia, and other backup medical support. The capacity to decide on the most appropriate procedure and anaesthesia support also is needed. Alternative, temporary methods of contraception should be provided if referral is required or there is otherwise any delay.

Source: WHO. 2015. *Medical Eligibility Criteria,* fifth edition.

ANNEX 2: EFFECTIVENESS OF FP METHOD



Source: WHO. 2018. *Family Planning: A Global Handbook for Providers*, 2018 Edition

ANNEX 3: PREGNANCY CHECKLIST

Ask the client questions 1-6. As soon as the client answers "yes" to *any question*, stop and follow the instructions below.

NO		YES
	1 Did your last monthly bleeding start within the past 7 days?*	
	2 Have you abstained from sexual intercourse since your last monthly bleeding, delivery, abortion, or miscarriage?	
	3 Have you been using a reliable contraceptive method consistently and correctly since your last monthly bleeding, delivery, abortion, or miscarriage?	
	4 Have you had a baby in the last 4 weeks?	
	5 Did you have a baby less than 6 months ago, are you fully or nearly-fully breastfeeding, and have you had no mothly bleeding since then?	
	6 Have you had a miscarriage or abortion in the last 7 days?*	

* If the client is planning to use a copper-bearing IUD, the 7-day window is expanded to 12 days.

If the client answered NO to *all of the questions*, pregnancy cannot be ruled out using the checklist.

Rule out pregnancy by other means.

If the client answered YES to *at least one of the questions*, you can be reasonably sure she is not pregnant.

Source: WHO. 2018. *Family Planning: A Global Handbook for Providers*, 2018 Edition

Section 2

SAFE MOTHERHOOD

2-1 ANTENATAL CARE

Definition

Antenatal care (ANC) can be defined as the care provided by skilled health-care professionals to pregnant women and adolescent girls in order to ensure the best health conditions for both mother and baby during pregnancy.

The essential elements of antenatal care are:

- Identification and surveillance of the pregnant woman and her expected child
- Recognition and management of pregnancy-related complications
- Recognition and treatment of underlying or concurrent illness
- Identification and management of gender-based violence
- Screening for conditions and diseases such as anaemia, STIs (particularly syphilis), HIV infection, mental health problems, and/or symptoms of stress
- Preventive measures, including immunization on tetanus toxoid and diphtheria (Td), de-worming, iron-folic acid and calcium supplementation, intermittent preventive treatment with sulphadoxine-pyrimethamine (IPTp-SP), and use of insecticide-treated bed nets (ITN) in malaria-endemic areas
- Advice and support to the woman and her family:
  - To increase awareness of maternal and newborn health needs and self-care during pregnancy and the postnatal period, including the need for social support during and after pregnancy
  - To promote healthy behaviours at home, including healthy lifestyle and diet, safety and injury prevention, support and care in the home, such as advice and adherence support for preventive interventions like iron supplementation, and use of ITN
  - To support care-seeking behaviour, including recognition of danger signs for the woman and the newborn, as well as transport and financial preparation in case of emergencies
  - To help the pregnant woman and her partner prepare emotionally and physically for birth and care of their baby, and breastfeeding
  - To promote postnatal family planning/birth spacing
- Counselling about healthy eating and being physically active during pregnancy is recommended for pregnant women to stay healthy and to prevent excessive weight gain during pregnancy.

Birth Preparedness and Complications Readiness Plan	Danger Signs during Pregnancy
• Encourage institutional delivery and explain why birth in a health facility is recommended • Couple and family counselling on how to prepare for institutional delivery (transport, money, compatible blood donors, companion, and necessary items for mother and baby) • Early recognition of danger signs, labour signs, and immediate visit to the health facility when required	• Fever • Difficulty in breathing • Blurring of vision, severe headache and seizure or convulsion, loss of consciousness • Swelling of face and hands • Severe abdominal pain • Offensive/foul-smelling vaginal discharge • Any amount of bleeding per vagina during any trimester • Vomiting in late pregnancy • Less or loss of foetal movement • Jaundice

References

WHO. 2016. *WHO recommendations on antenatal care for a positive pregnancy experience.* Luxembourg: World Health Organization.

2-1 ANTENATAL CARE

All women are at risk of pregnancy complications and should be encouraged for health institutional delivery.

History	Examination	Investigations
• Age • Gravida/para • Last menstrual period (LMP)/ expected date of delivery (EDD) • Period of gestation (POG) • Foetal movement (after completion of 5th month of pregnancy) • Past obstetric history • Medical/surgical history • Method of family planning used • Smoking, alcohol and drug abuse • Any associated problems	• Height • Weight • Pulse, BP • Oedema • Pallor, jaundice • Breast • CVS and respiratory system • PA examination *(after 12 weeks of pregnancy)* - Abdominal palpation/fundal height - Presentation, position and lie - Foetal heart sound (FHS) (after 20 weeks) • PS examination *(depending on history of vaginal discharge)*	• Haemoglobin (Hb), total count (TC), different count (DC) • VDRL, HIV, HBsAg • Blood grouping/Rh typing • Malarial parasites (in endemic area) • Routine examination (R/E) of urine – albumin, sugar • Blood sugar, glucose challenge test (GCT) if needed at 24-28 weeks • Stool examination (if needed) • USG (before 24 weeks)

Fill up ANC card with history and examination findings

Counsel on:
- Adequate rest
- Harmful effects of smoking and alcohol intake
- Intake of nutritious food and use of iodized salt
- Personal and oral hygiene
- Danger signs of pregnancy
- Birth preparedness plan, including clean delivery practices and emergency plan
- Delivery by skilled health personnel and delivery at health institution
- Postpartum family planning method
- Breastfeeding

Provide:
- Iron and folic acid
- Deworming (after first trimester)
- Td immunization in first visit, then 2nd dose after 1 month (if previously taken, only 1 dose)
- Malaria prophylaxis in endemic areas
- Schedule re-visit

If danger signs during pregnancy are detected, manage appropriately as per instruction given in respective sections

ANC in multiple pregnancy

In addition to ANC protocol, take the following extra precautions:
- *Extra supplement of iron and folic acid*
- *Encourage additional rest (to prevent prematurity), especially during 30-34 weeks*
- *Evaluate for pre-eclampsia*
- *Inform on warning signs*

Birth preparedness and ANC education is aimed to provide an opportunity to discuss birth planning with husband and other family members and gives mother and community members a chance to contribute to women-centered care and increase knowledge of patient rights.

ANC Model

Existing Government of Nepal ANC model	2016 WHO ANC model	Proposed Government of Nepal ANC model
First Trimester (up to 12 weeks)		
	Contact 1: up to 12 weeks	Encourage **contact 1**: up to 12 weeks (diagnosis/counselling)
Second Trimester (13-27 weeks)		
Visit 1: up to 16 weeks		**Visit 1:** up to 16 weeks (confirmation/establish baseline parameters/supplementation)
Visit 2: 24 weeks	Contact 2: 20 weeks	**Visit 2**: 20-24 weeks (anomaly screening/systemic examination/ BP/proteinuria)
	Contact 3: 26 weeks	Encourage **contact 2** at 28 weeks (screening pre-eclampsia/nutrition/ counselling)
Third Trimester (28+ weeks)		
Visit 3: 32 weeks	Contact 4: 30 weeks	**Visit 3**: 32 weeks (preeclampsia/ foetal growth/anaemia)
	Contact 5: 34 weeks	Encourage **contact 3** at 34 weeks (anaemia/symptoms)
Visit 4: 36 weeks	Contact 6: 36 weeks	**Visit 4**: 36 weeks (foetal growth and presentation/preeclampsia/ anaemia)
	Contact 7: 38 weeks	Encourage **contact 4** at 38-40 weeks (birth preparedness/symptoms/ foetal movement – referral, if necessary)
Return for delivery at 41 weeks if not given birth		

Source: Draft Safe Motherhood and Newborn Roadmap, Family Welfare Division, Department of Health Services, 2019

2-2 ANAEMIA IN PREGNANCY

Screening for anaemia is done at the first antenatal visit for all pregnant women. Iron deficiency anaemia is most common in pregnancy and is recognized by level of haemoglobin during the blood test.

Severity of anaemia

Severe anaemia	- Hb less than 7gm/dl
Mild to moderate anaemia	- Hb 7-11gm/dl
No clinical anaemia	- Hb more than 11gm/dl

History

- Tiredness, dyspnoea and breathlessness during routine household/routine work
- Obstetric history: parity, spacing between child birth, complication during child birth (postpartum haemorrhage, antepartum haemorrhage)
- Medical history: history of bleeding from rectum or from other sites, history of malaria or worm infestation
- Personal history: food habit, alcohol consumption or other abuse
- History related to haemoglobinopathies (e.g. sickle cell anaemia)

Examination

Head-to-toe examination, including pallor (conjunctiva, palms, nails, tongue), temperature, pulse, respiration, blood pressure (BP), CVS, per abdominal (PA) examination (in early gestational age, rule out splenomegaly)

Investigation

- Blood: Haemoglobin (Hb), blood grouping, total count (TC), differential count (DC), platelets
- If available, peripheral smear

Urine and stool routine and microscopic examination

Treatment

Advise for iron-rich diet (beans, spinach, banana, stinging nettle *(sisnu)*)

Drugs

- **Albendazole**
  Single dose (400mg) after first trimester (after 12 weeks)
- **Iron**
  Iron tablets (120mg elemental iron +400 mcg folic acid daily from 4 months of pregnancy and continue until 12 weeks postpartum)
- **In malaria-endemic areas, if anaemia is present with fever, consider anti-malarial drugs:**

  The antimalarial drugs considered safe in the first trimester of pregnancy are quinine, chloroquine, clindamycin, mefloquine, and proguanil. Medications contraindicated in pregnancy include primaquine, tetracycline, doxycycline, and halofantrine.

Instructions for taking iron tablets

- Take tablets after food or at night to avoid nausea
- Not to take iron tablet with milk
- If constipated, drink plenty of water and take fibre rich diet
- Not to worry about black stools, as this is normal during iron tablet intake.

Acute, uncomplicated *Plasmodium falciparum* malaria

Quinine salt (dihydrochloride or sulfate) 10mg/kg body weight every 8 hours a day, taken orally, plus clindamycin 300mg every 6 hours for 7 days

Plasmodium vivax, ovale, malariae, knowlesi

Chloroquine 10mg/kg body weight, taken orally, once a day for 2 days, followed by 5mg/kg body weight, taken orally, on day 3.

Women in the second and third trimesters of pregnancy are more likely to have severe malaria than other adults. Parenteral antimalarial drugs should be given to pregnant women with severe malaria in full doses immediately.

Signs of heart failure due to severe anaemia

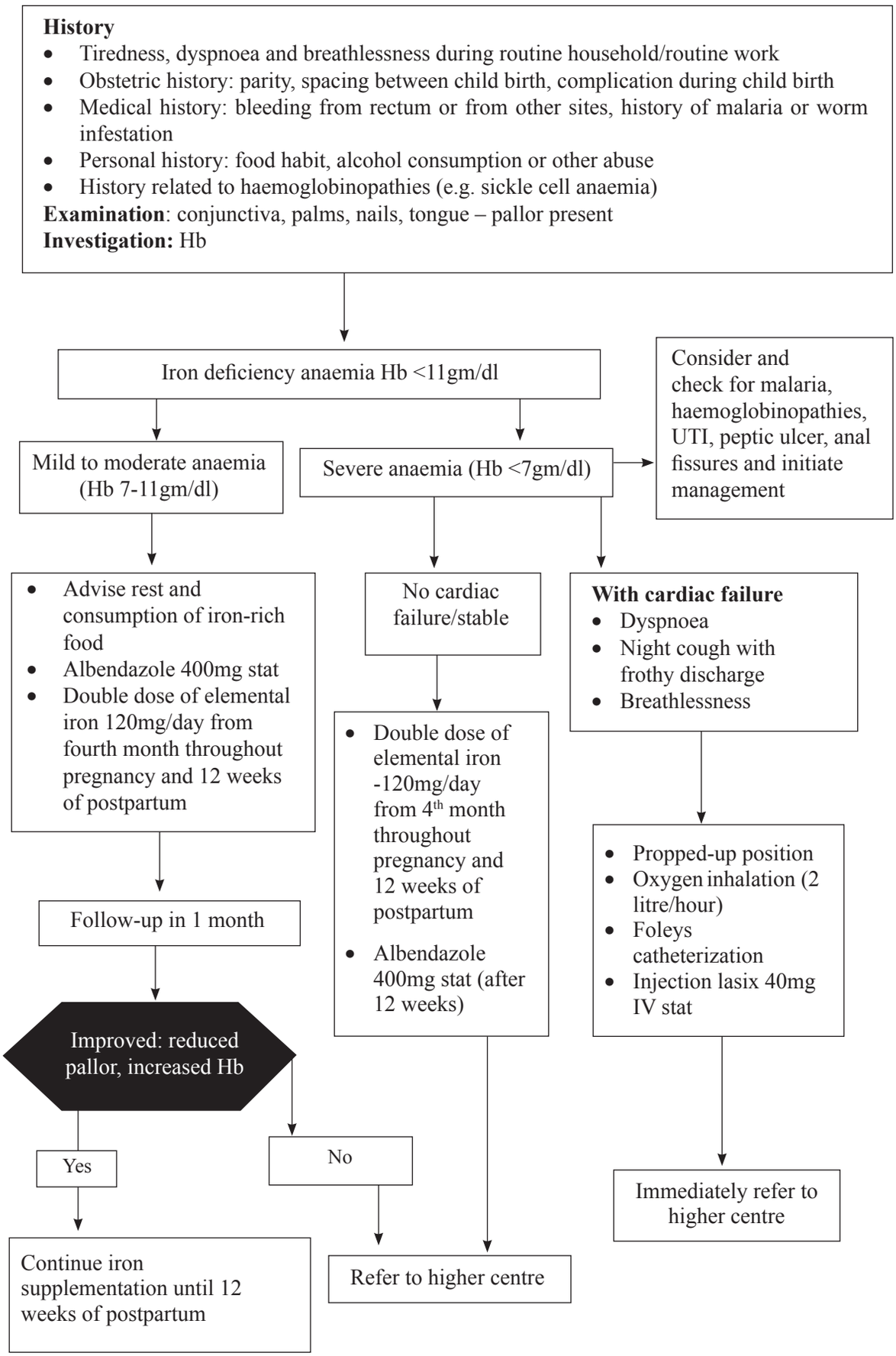
- Dyspnoea/breathlessness
- Pallor
- Raised jugular vein
- Generalized oedema
- Tachycardia
- Blood pressure may or may not change
- Crepitation at the lung bases
- See for associated heart diseases (murmur/ cardiomegaly)

References

International Nutrition Anaemia Consultative Group (INACG). *Guideline for the Use of Iron Supplement to Prevent and Treat Iron Deficiency Anomia.*

WHO. 2017. *Integrated Management of Pregnancy and Childbirth: Managing Complications in Pregnancy and Childbirth: A guide for midwives and doctors, 2nd ed. Geneva:* World Health Organization

2-2 ANAEMIA IN PREGNANCY



2-3 JAUNDICE IN PREGNANCY

Definition

Jaundice is clinically defined as yellow discoloration of eyes and urine. It occurs when serum bilirubin level is more than 2mg/dl (normal 0.2-0.8mg/dl). Acute viral hepatitis is the most common cause of jaundice in pregnancy. Jaundice may be a sign and symptom of severe underlying disease or viral hepatitis and should not be underestimated.

Causes of jaundice in pregnancy

Jaundice unique to pregnancy	Non-obstetric jaundice	Pre-existing liver disease
Intrahepatic cholestasis	Viral hepatitis A, B, C, E	Chronic hepatitis
Severe pre-eclampsia, eclampsia	Obstructive jaundice	Cirrhosis, tumours
Haemolysis, Elevated liver enzymes and low platelet count syndrome (HELLP syndrome)	Haemolytic jaundice, e.g. malaria	
Acute fatty liver	Drug-induced: isoniazid, phenothiazine	
Hyperemesis gravidarum		

Management

- **Intrahepatic cholestasis**: if available, 10-15mg/kg body weight, ursodeoxycholic acid 300mg every 8 hours daily till 2 weeks postpartum
- **Severe pre-eclampsia, eclampsia**: delivery of baby as early as possible (in severe pre-eclampsia within 24 hours, in eclampsia within 12 hours)
- **HELLP syndrome**: prompt delivery of baby. If platelet count is less than 50,000 per microlitre, platelet transfusion should be considered before delivery (caesarean section).
- **Acute fatty liver**: refer to multi-disciplinary tertiary-level hospital
- **Hyperemesis gravidarum**: hospitalization and supportive treatment

Hepatitis B virus (HBV): HBV infection in a pregnant woman poses a serious risk to her infant at birth. Without postexposure immunoprophylaxis, approximately 40% of infants born to HBV-infected mothers will develop chronic HBV infection. Perinatal HBV transmission can be prevented by identifying HBV-infected (i.e. hepatitis B surface antigen [HBsAg]-positive) pregnant women and providing hepatitis B immune globulin and hepatitis B vaccine to their infants within 12 hours of birth; so, screening of pregnant women for HBsAg during each pregnancy is necessary.

Hepatitis E virus (HEV): HEV is a leading cause of significant maternal mortality and morbidity globally. The exact mode of infection of hepatitis E virus remains controversial. The infection may be related to the level of population immunity, sanitary condition, living condition, and other factors. It may be waterborne, zoonotic (undercooked meat), or other food-borne, parenteral, human-to-human, vertical transmission.

Management

- Pregnant woman with hepatitis needs hospitalization
- Evaluate for hepatic encephalopathy - altered mental status, agitation, behaviour and personality changes or changes in sleep-wake cycle (circadian rhythm)
- Other: Hepatitis needs timely referral to specialized hospital after diagnosis.

Acute HEV is self-limiting in immunocompetent patient. However, in patient with poor immunity, or with underlying liver disease, or pregnant woman, it may lead to fulminant hepatitis.
Prevention of HEV transmission in pregnant women in countries like ours should rely on maintaining good hygiene, using safe drinking water, and avoiding street foods and undercooked food.

General management in pregnant women with hepatitis A/E

- Maintain hydration: 250gm sugar in 1 litre of drinking water in 24 hours to prevent hypoglycaemia
- Injection vitamin K by intramuscular (IM) route stat
- Antibiotics
- Syrup lactulose 30ml 2 or 3 times a day for hepatic encephalopathy
- Advise to increase oral intake of water and sugar

Note: *If facility is not available, timely referral of woman with jaundice in pregnancy is highly recommended.*

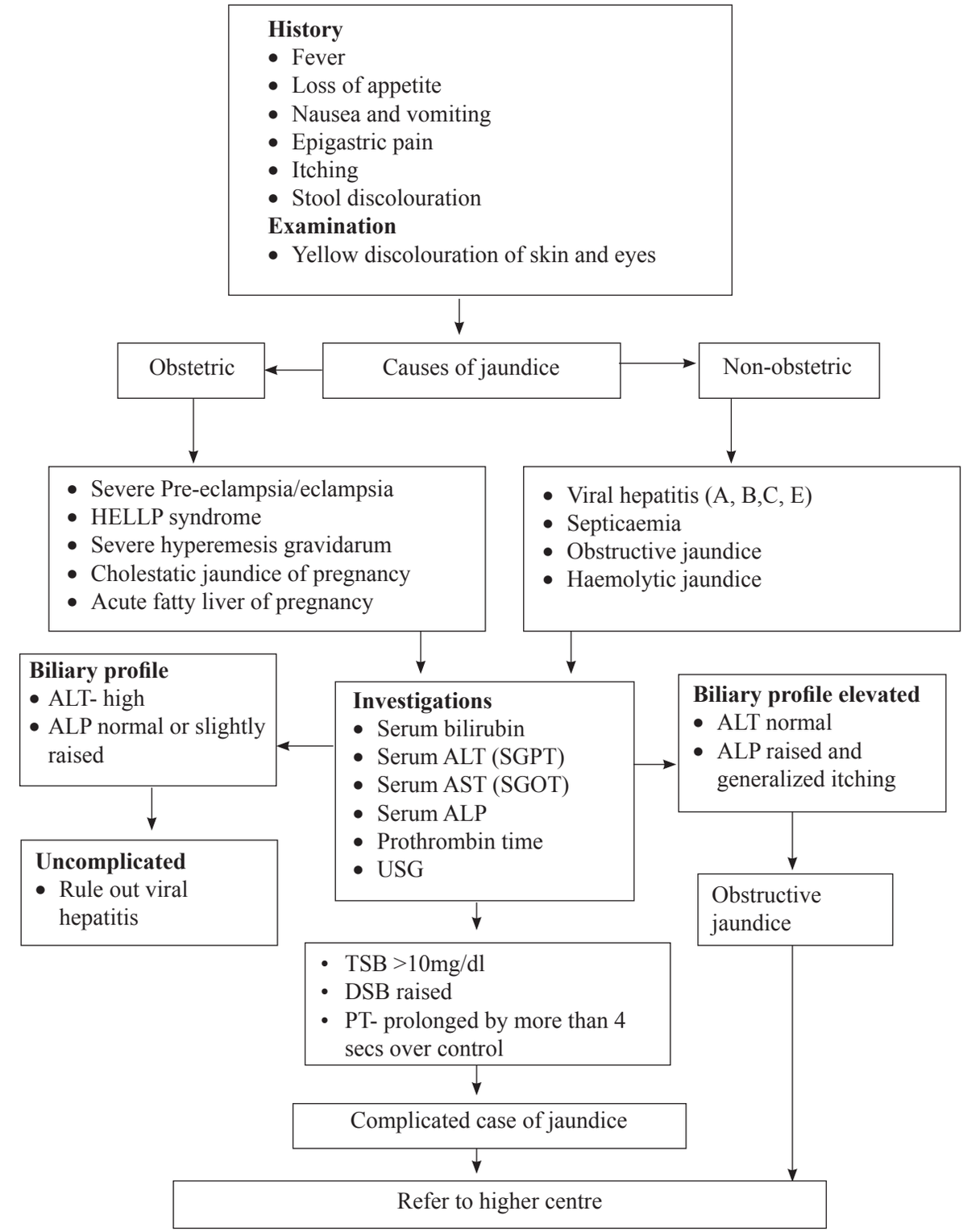
References

Mirazo, S., Ramos, N., Mainardi, V., Gerona, S., & Arbiza, J. (2014). Transmission, diagnosis, and management of hepatitis E: an update. Hepatic medicine: evidence and research, 6, 45–59. doi:10.2147/HMER.S63417

Viral Hepatitis, Centers for Disease Control and Prevention

WHO. 2015. *Guidelines for the prevention, care, and treatment of persons with chronic hepatitis B infection.* Geneva*: World Health Organization.*

2-3 JAUNDICE IN PREGNANCY



Treatment of uncomplicated acute hepatitis

- *Rest and normal diet*
- *Excessive liquids, glucose, fruits, sugarcane juice and coconut water*
- *No paracetamol or NSAID*
- *Follow up with LFT every week, refer if no signs of improvement*

2-4 NAUSEA AND VOMITING IN PREGNANCY

Nausea and vomiting in pregnancy are common up to 16 weeks of amenorrhea. The symptoms are usually benign and overcome by the 14th week of pregnancy.

Hyperemesis gravidarum is defined as intractable vomiting during pregnancy that often leads to fluid and electrolyte imbalance, weight loss of 5% or greater; and nutritional deficiency requiring hospital admission. The aetiology of Hyperemesis gravidarum is poorly understood and it is thought to be caused by endocrine, infectious, psychosocial, and hereditary factors. Nausea and vomiting in pregnancy and hyperemesis gravidarum can have a profound psychosocial effect on women and their families; some women become suicidal or can consider termination.

History
- Period of gestation (POG)
- Previous history of hyperemesis
- Quantify severity
- History to exclude other causes: abdominal pain, urinary symptoms, infection, drug history

Examination
- Weight
- Temperature, pulse, blood pressure, respiratory rate
- Abdominal tenderness
- Signs of severe dehydration
  - Eyes: sunken
  - Tongue: dry, thickly coated or red and raw
  - Skin: inelastic and lustreless
  - Pulse: rapid, 100 or more per minute
  - Blood pressure: low
  - Urine output: low
  - Progressive emaciation

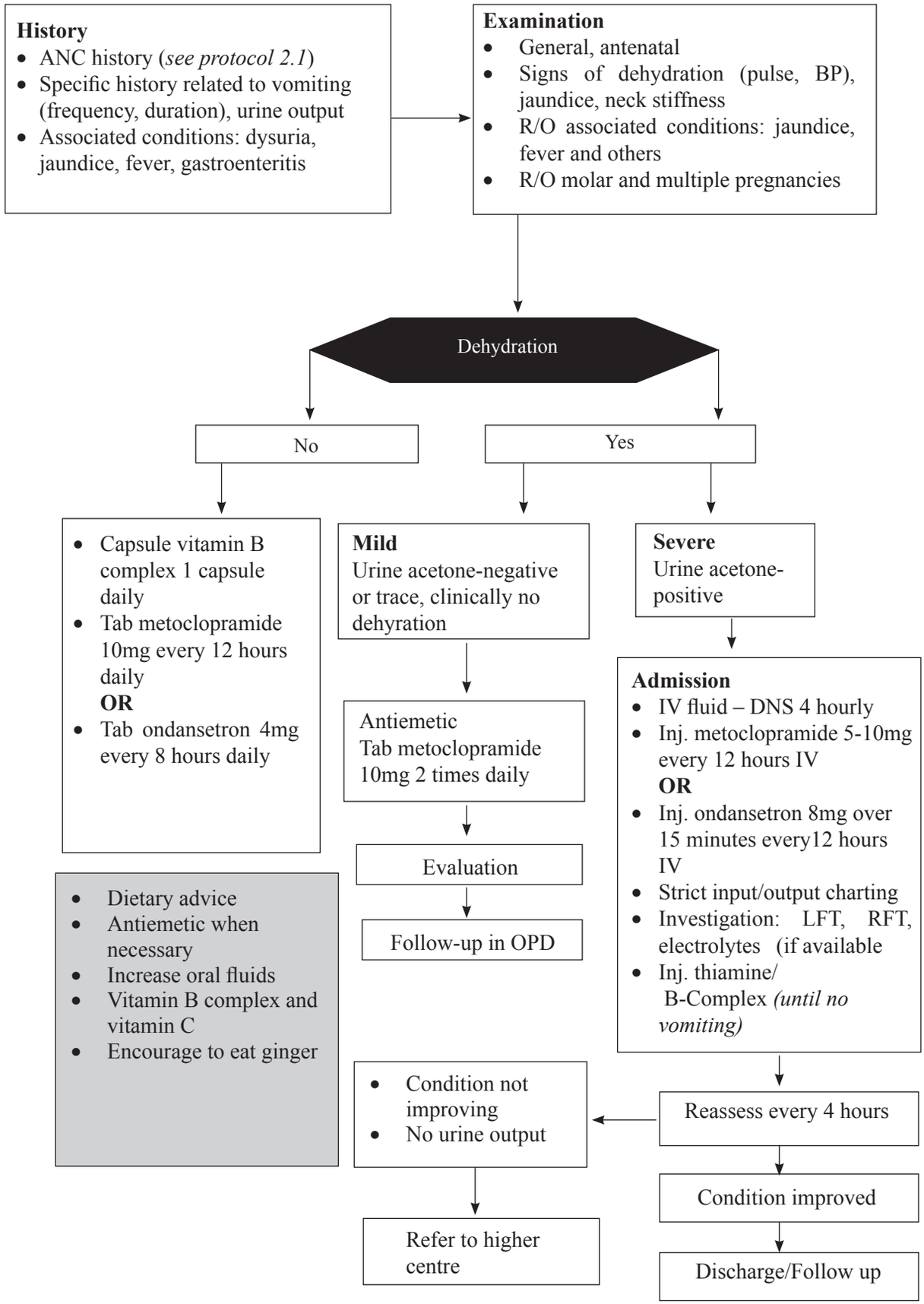
Investigations
- Urine for ketone and routine examination
- Thyroid function test (TFT) and liver function test (LFT) (if facility available)
- Ultrasonogram (USG) of abdomen to rule out molar pregnancy/multiple pregnancy

Treatment
1. Inpatient management should be considered if there is one of the following:
   - Continuous nausea and vomiting and unable to tolerate oral antiemetics
   - Continuous nausea and vomiting associated with ketonuria and/or weight loss despite oral antiemetics
   - Confirmed or suspected comorbidity (such as urinary tract infection and inability to tolerate oral antibiotics)
2. Weigh patient on admission and then twice weekly
3. Intravenous fluids – normal saline
4. Antiemetics
   - Safe in the first trimester
   - Use regularly rather than as per need whilst vomiting
   - Combinations of drugs should be used when not responding to a single antiemetic
   - If severe or persistent hyperemesis gravidarum, the parenteral or rectal route may be necessary

References

- RCOG. June 2016. *The Management of Nausea and Vomiting of Pregnancy and Hyperemesis Gravidarum, Green top Guideline RCOG No 69.* The Royal College of Obstetricians and Gynaecologists.
- *BMJ 2018. Management of Severe Pregnancy Sickness and Hyperemesis Gravidarum, Clinical Updates.*

2-4 NAUSEA AND VOMITING IN PREGNANCY



2-5a NORMAL LABOUR AND DELIVERY

History	Obstetric history
• Age • Gravida/para • Last menstrual period (LMP) • Period of gestation (POG) • Foetal movement *(from 5 completed months)* • Past obstetric history • Medical/surgical history • Method of family planning used • Smoking, alcohol and drug abuse • Any associated problems	• History of (H/O) ante/intra/postpartum complication (history of pre-eclampsia, eclampsia, postpartum haemorrhage (PPH), previous still birth and others) • Previous history of caesarean section and its indication • Detail medical, surgical personal and family history • History of molar pregnancy and recurrent abortion

Assessment

Perform an evaluation of the general condition of the woman, including vital signs (pulse, blood pressure, respiration, temperature) height and weight.

Examination	*Per vaginal (PV) examination on empty bladder:*
Per abdominal (PA) examination • Fundal height • Presentation, position, lie, descent of foetal head • Feel for foetal movements or foetal parts • Count foetal heart rate per minute (FHR)	• Dilatation and effacement • Station and position of foetal head • Check liquor (fluid) • Moulding • Bleeding
Examination of CVS and respiratory system	

Warning signs in labour

- Heavy bleeding per vagina: see protocol 2-8*, Antepartum Haemorrhage*
- High BP: see protocol 2-9, *Pre-eclampsia*
- Fits/convulsions: see protocol 2-10, *Eclampsia*
- Breech presentation, abnormal lie or hand prolapse
- Cord prolapse

Maternal distress	Foetal distress
• Sunken eyes	• Foetal bradycardia: FHR less than 110 per minute
• Dry tongue	• Foetal tachycardia: FHR more than 180 per minute
• Acetone breath	• Irregular foetal heart rate
• Tachycardia: heart rate more than 100 per minute	• Excessive moulding
• High respiratory rate	• Meconium stained liquor on rupture of membrane

Management for foetal distress - prompt delivery of foetus. Refer for caesarean section (C-section) if patient is in early labour or instrumental delivery if patient is in second stage of labour.

Use partograph to assess the progress of labour. The partograph is a graphical presentation of the progress of labour and relevant details of foetal and maternal condition during labour. It is the best tool to detect whether labour is progressing normally or abnormally and to warn as soon as possible if there are signs of foetal distress or if the mother's vital signs deviate from the normal range.

Supportive care during labour and childbirth

- Respectful maternity care: maintain dignity, privacy and confidentiality
- Ensure freedom from harm and mistreatment, and enable informed choice and continuous support
- Enable pregnant woman to have companion of choice for personal support
- Ensure effective communication between maternity care-providers and pregnant women and her caretaker in labour using simple and culturally accepted methods
- Maintain cleanliness of pregnant woman and her environment
- Ensure mobility
- Encourage the pregnant woman to empty her bladder regularly
- Encourage the pregnant woman to eat and drink sufficiently
- Teach deep breathing exercises for labour and delivery
- Non-pharmacological and pharmacological pain management during labour
- Help the woman in labour who is anxious, in fear or in pain
- Active management of third stage should be practised in all women after delivery
- Practise delayed cord clamping (1-3 minutes)

References

NHTC. 2016. *Maternal and Newborn Care, Learning Resource Package for Skilled Birth Attendants, Reference Manual*. Kathmandu: National Health training Centre.

WHO. 2017. *Integrated Management of Pregnancy and Childbirth: Managing Complications In Pregnancy And Childbirth: A Guide for midwives and doctors, 2nd ed. Geneva: World Health Organization*

WHO. 2018. *WHO recommendations: intrapartum care for a positive childbirth experience*. Geneva: World Health Organization.

2-5b ESSENTIAL NEWBORN CARE

Essential newborn care is the basic care given to every newborn from birth up to 28 days. It is necessary to have an assistant to receive the baby and give essential newborn care immediately after delivery.

Purposes of essential newborn care

1. To meet the baby's basic needs for health (warmth, normal breathing, feeding, and infection prevention)
2. To make sure the baby breastfeeds within the first hour of birth
3. To advise and encourage the mother to breastfeed exclusively
4. To detect signs of problems so that early action can be taken
5. To advise the mother and family about baby care and recognize danger signs
6. To make plans for continuing care (immunizations, growth monitoring, etc.)

Ensure infection prevention measures before delivery and at every examination

- Hand washing
- Use sterile equipment, supplies and disinfected surfaces
- Follow universal precautions

Newborn needs to be received in a clean, warm and safe atmosphere when born.

- Ensure labour room is always prepared before each delivery.
- Ensure availability of necessary equipment, supplies and medicine for immediate newborn care.
- Ensure that all surfaces, linens, supplies, and equipment are clean.
- Adjust room temperature (25-28°C), prevent draught and prepare needed warm, dry clothes for baby.
- Prepare warm, dry, flat surface in case resuscitation is needed.
- Ensure enough light to assess baby's breathing and colour.
- Prepare for recording of newborn information in appropriate forms.
- Talk to the mother and companion throughout the process.

Immediate newborn examination

Conduct a quick examination of the baby to ensure that the baby is well and has no gross congenital abnormality.

Help the mother to start breastfeeding within first hour of birth

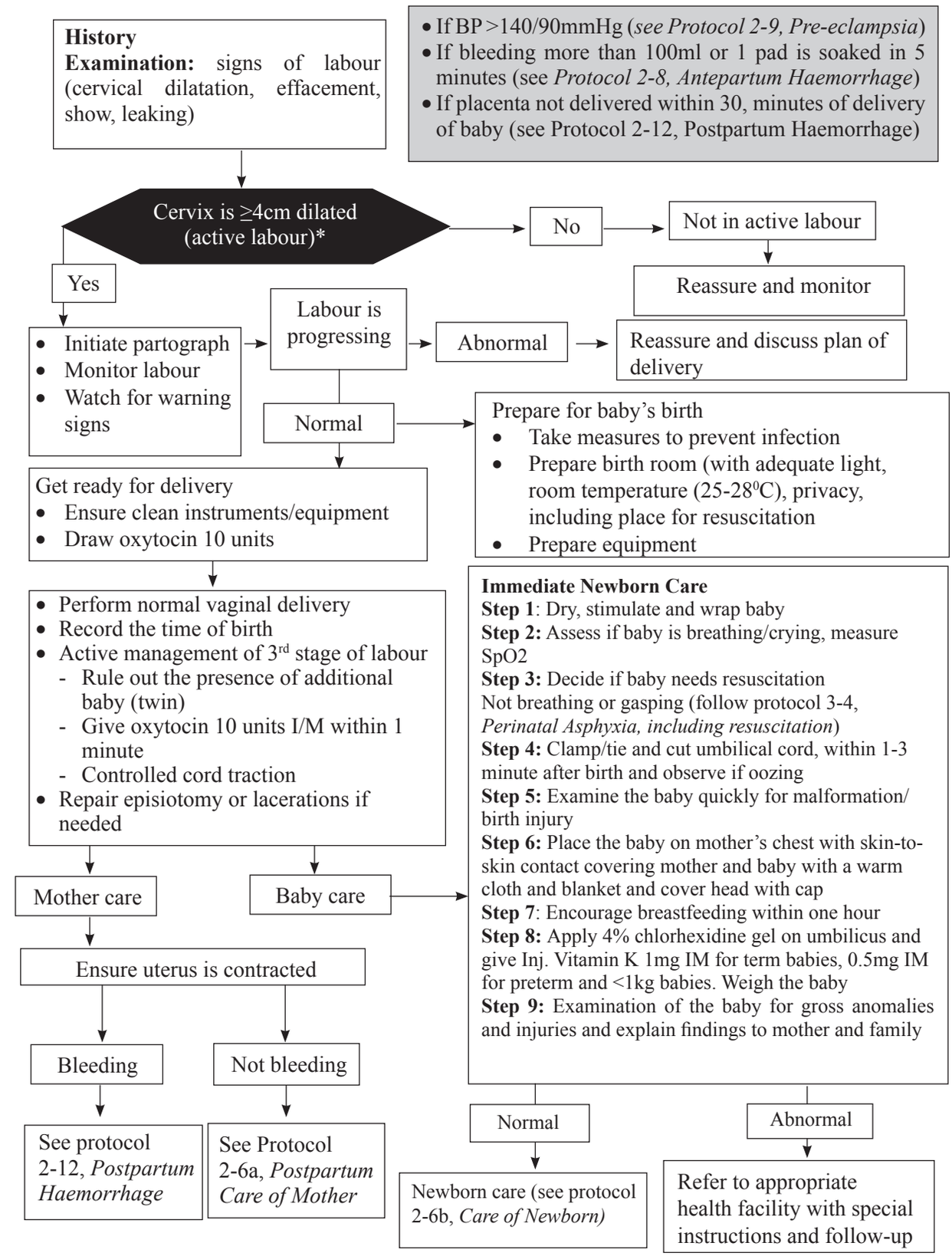
1. Help mother to be in convenient position and handover baby to mother.
2. Help mother to manage baby's position.
3. Check for good attachment.
4. Check for good sucking.
5. Do not limit the time of sucking and encourage breastfeeding.

References

WHO. October 2013. *WHO Recommendations on Postnatal care of the mother and newborn.* Geneva: World Health Organization.

NHTC. 2016. *Maternal and Newborn Care, Learning Resource Package for Skilled Birth Attendants, Reference Manual.* Kathmandu: National Health training Centre.

2-5a and 5b NORMAL LABOUR, DELIVERY AND ESSENTIAL NEWBORN CARE



* In 2018, the definition for active first stage of labour is revised as "Cervical dilatation from 5cm until full dilatation". (Source: WHO recommendations, Intrapartum care for positive childbirth experience, 2018). With the adaptation of this definition by the country, revised partograph will be used.

2-6a POSTPARTUM CARE OF MOTHER

All mothers and babies need at least four postnatal check-ups in the first 6 weeks.

Schedule for Postnatal Care

- First: at 24 hours
- Second: on day 3 (48-72 hours),
- Third: between day 7 and 14 after birth
- Fourth: 6 weeks after birth

Monitor mother every hour for 4 hours after delivery, then every 4 hours until discharge.
Provide postnatal care during first 24 hours to all mothers and babies regardless of place of delivery. Ensure mothers and their newborn baby stay at a health facility for at least 24 hours, if possible.

History

- Details of delivery
- Voiding of urine after delivery
- Bleeding
- Abdominal pain (if more than normal menstrual cramps)
- Pain at perineal area
- Feeding history

Consideration for rhesus (Rh) immunoglobulin

- If mother is Rh positive: no action
- If mother is Rh negative: check the Rh status of baby:
  - If baby is Rh negative: no action
  - If baby is Rh positive: consider Rh immunoglobulin within 72 hours

Examination

General examination

- Skin and mucous membrane: anaemia
- BP, pulse, temperature: if BP is greater than 140/90mmHg (see protocol 2-7, *Pre-Eclampsia*)
- Breast examination: engorgement, redness, nipple (cracked, retracted)
- Extremities: calf tenderness

Per abdominal examination

- Height of uterus (involution of uterus), tenderness, abnormal mass.
- If caesarean section, examine the wound

Per vaginal examination

- Lochia/bleeding, episiotomy stitch, perineum (perineal tenderness and perineal wound) and swelling, continuous leakage of urine or stool from vagina

During discharge counsel on:

- Personal hygiene
- Family planning
- Immunization
- Nutrition
- Exclusive breastfeeding
- Danger signs in postpartum period and in her newborn
- Follow-up schedule

Warning signs (woman should come to health facility if any of these signs is present):

- Fever (38°C or 100.4°F)
- Severe headache, convulsions
- Breast engorgement, tenderness, redness
- Calf pain or tenderness
- Continuous and/or heavy bleeding
- Infected episiotomy, caesarean section wound/tear
- Tender uterus
- Not able to pass urine
- Offensive vaginal discharge with or without fever
- Continuous leakage of urine or stool or both from vagina
- Insomnia or depression

Healthy Timing and Spacing of Pregnancy

FP choices for postpartum women (see method-specific protocol for details)

- LAM: during exclusive breastfeeding
- Condom: can use at any time but intercourse should be delayed until mother recovers (4-6 weeks)
- COCs: can be started at 6-8 weeks postpartum if breastfeeding or at 3 weeks postpartum if not breastfeeding
- DMPA: can be started at 6 weeks of postpartum if breastfeeding or immediately if not breastfeeding
- Implants: can be inserted immediately
- IUCD: can be inserted within the first 48 hours or after 6 weeks
- Postpartum sterilization: can be performed within 7 days or after 6 weeks of postpartum
- No scalpel vasectomy*:* can be performed at any time once the health of the child is established

References

WHO. October 2013. *WHO Recommendations on Postnatal care of the mother and newborn.* Geneva: World Health Organization.

NHTC. 2016. *Maternal and Newborn Care, Learning Resource Package for Skilled Birth Attendants, Reference Manual.* Kathmandu: National Health training Centre.

2-6b CARE OF NEWBORN

All mothers and newborns need at least four postnatal check-ups in the first 6 weeks.

Schedule for Postnatal Care

- First: at 24 hours
- Second: On day 3 (48-72 hours)
- Third: Between day 7 and 14 after birth
- Fourth: 6 weeks after birth

History

- Obstetric history, detail history of delivery, condition of baby at birth
- Immediate care provided to baby, exclusive breastfeeding
- Information on activity of baby (actively crying, excessive sleepy/hard to wake up),
- Ask mother and family whether they think baby is well (healthy) or not.

Physical Examination

- Respiratory rate
- Colour: pallor, jaundice, central cyanosis
- Heart rate
- Temperature (axillary)
  Posture and movements: arms and legs are flexed
- Activity- muscle tone and alertness
- Skin: blisters, pustules, cut, bruise, birth mark, skin tag, thrush
- Eyes: discharge, stickiness
- Mouth: lips, gums, and palate intact
- Chest: breast nodules maybe enlarged in both girls and boys at birth
- Abdomen: rounded and soft, umbilical cord tied tightly, dry and not bleeding
- Back and spine: any swelling or defect over spine
- Girl's external genital organs: vaginal opening present (discharge is normal if white and bloody vaginal discharge that starts on day 2 or 3 and continues up to day 7 of birth)
- Boy's external genital organs: urethral opening, one or two testes felt in the scrotum
- Check position, sucking, attachment, and mother-baby interaction while breastfeeding

Newborn Danger Signs

- Cyanosis
- Not sucking well
- Fast breathing (breathing rate of more than 60 per minute)
- Severe chest in-drawing, grunting
- Less or no spontaneous movement
- Fever (temperature more or equal to 37.5°C)
- Low body temperature (temperature less than 35.5°C)
- Jaundice in first 24 hours of life, or yellow palms and soles at any age
- One large boil or multiple pustules all over the body
- History of convulsions

Counselling to mother (Dos and Don'ts)

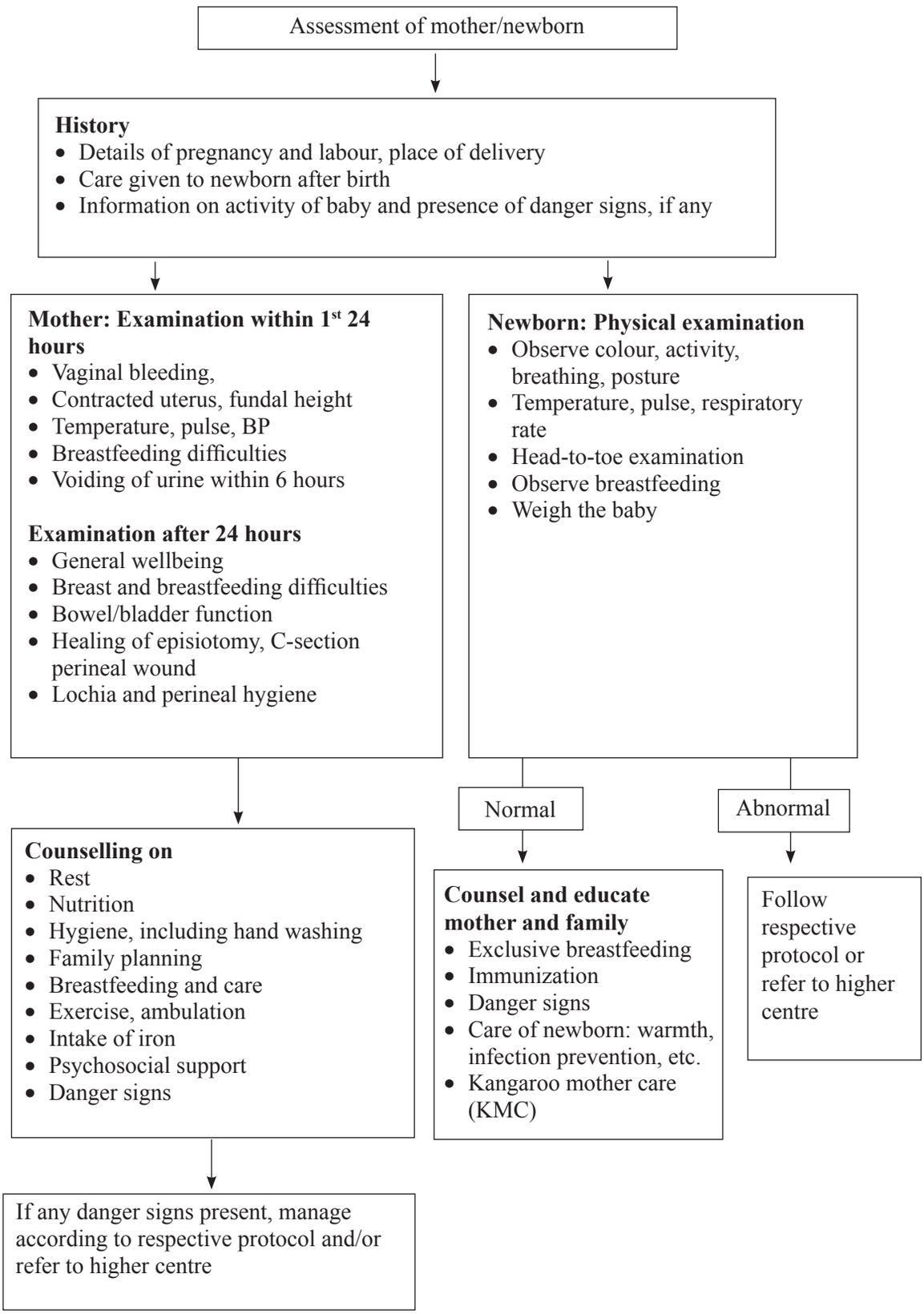
- Exclusive breastfeeding
- Immunization
- Danger signs
- Regular intake of iron, folic acid and nutritious food by mother
- Not to put oil in eyes, ear, nose, and umbilicus and not apply *kajal* or *gajal*
- Not to squeeze newborn's breast
- Not to warm baby by using coal and fire
- Not to give vigorous massage to the newborn
- Not to give water or any other medicine without consulting doctor

Reference

WHO. 2017. *Integrated Management of Pregnancy and Childbirth: Managing Complications In Pregnancy And Childbirth: A Guide for midwives and doctors, 2nd ed. Geneva: World Health Organization*

NHTC. 2016. *Maternal and Newborn Care, Learning Resource Package for Skilled Birth Attendants, Reference Manual.* Kathmandu: National Health training Center.

2-6a 6b POSTPARTUM CARE OF MOTHER AND CARE OF NEWBORN



2-7 SHOCK

Definition

Shock is characterized by failure of the circulatory system to maintain adequate perfusion of the vital organs. Shock is a life-threatening condition that requires immediate and intensive treatment.

Signs of shock

- Fast, weak pulse (more than 110 per minute)
- Systolic BP less than 90mm Hg
- Pallor, sweating, cold, and clammy skin
- Anxiousness, confusion and unconsciousness
- Rapid breathing (more than 30 per minute)
- Scanty urine output (less than 30ml per hour)

General Management

- Seek help
- Keep airway open
- If the woman is unconscious, turn her on lateral position
- Monitor vital signs (BP, pulse, respiration, temperature, and state of consciousness)
- Elevate the feet
- Keep the patient warm with blanket
- Open IV line and collect blood for Hb, blood group and Rh
- Start IV infusion in both arms with large bore cannula or needle (16 gauge or larger)
- Continuous catheterization

After the woman is stabilized, look for causes of shock.

Specific Management

- Rapidly infuse IV fluids (normal saline or ringer's lactate) initially at the rate of 1 litre in 15-20 minutes, give at least 2 litres in the first hour and maintain accordingly.
- Monitor vital signs (BP, pulse, respiration, temperature) every 15 minutes till patient is stable (pulse: 90bpm; systolic BP: 100mm Hg, urine output: 30ml/hour) and when patient is stable, monitor vital signs every half an hour, then every 2 hours and later every 4 hours till the patient is stable.
- Maintain urine output.
- Oxygen administration at 6-8 litre/minute by mask or nasal cannula.
- If needed, start resuscitation.
- Do bedside clotting test (*see annex 1*).
- Watch for volume overload (pulmonary oedema).

Refer with detailed written referral slip

- Arrange for vehicle.
- Keep the patient warm while transferring.
- Turn the head on one side.
- Keep IV line open and continue infusion.
- Continue oxygen administration.
- Keep airway open and clear.
- Accompany the patient by medical staff if possible

References

WHO. 2017. *Integrated Management of Pregnancy and Childbirth: Managing Complications In Pregnancy And Childbirth: A Guide for midwives and doctors, 2nd ed.* Geneva: World Health Organization

NHTC. 2016. *Maternal and Newborn Care, Learning Resource Package for Skilled Birth Attendants, Reference Manual.* Kathmandu: National Health training Centre.

2-7 SHOCK

Assessment: Identify woman at risk of impending shock

Signs of shock:

- Fast, weak pulse (>110/minute)
- Systolic BP <90mm Hg
- Pallor, sweating, cold and clammy skin
- Anxiousness, confusion, unconsciousness
- Rapid breathing (>30/minute)
- Scanty urine output (<30ml/hour)

Shout for help

Identify cause of shock

- PPH, APH, intra-abdominal haemorrhage in ruptured ectopic pregnancy

Management

- Put in left lateral position
- Maintain ABC
- If the woman is unconscious, turn her on lateral position
- Monitor vital signs (BP, pulse, respiration, temperature and state of conscious)
- Elevate the foot
- Keep the patient warm with blanket
- Open IV line and collect blood for Hb, blood group and Rh
- Start IV infusion in both arms with large bore cannula or needle (16 gauge or larger)
- Give oxygen 6-8 litres
- Continuous catheterization

Treat underlying cause, if possible

Suspect or anticipate shock, if there is:

- Bleeding in early pregnancy (e.g. abortion, ectopic or molar pregnancy)
- Bleeding in late pregnancy or labour (e.g. placenta praevia, abruptio placentae, ruptured uterus)
- Bleeding after childbirth (e.g. ruptured uterus, uterine atony, tears of the genital tract, retained placenta or placental fragments)
- Infection (e.g. unsafe or septic abortion, amnionitis, endometritis, acute pyelonephritis)
- Trauma (e.g. injury to uterus or bowel during abortion, ruptured uterus, tears of genital tract)

Woman not responding

CPR, if needed

Refer, with detailed written referral slip

- Arrange for vehicle
- Keep the patient warm while transferring
- Turn the head on one side
- Keep IV line open and continue infusion
- Continue oxygen administration
- Keep airway open and clear
- Accompany the patient by medical staff if possible

2-8 ANTEPARTUM HAEMORRHAGE

Definition
Antepartum haemorrhage (APH) is vaginal bleeding after 22 weeks of pregnancy or vaginal bleeding in labour before delivery.

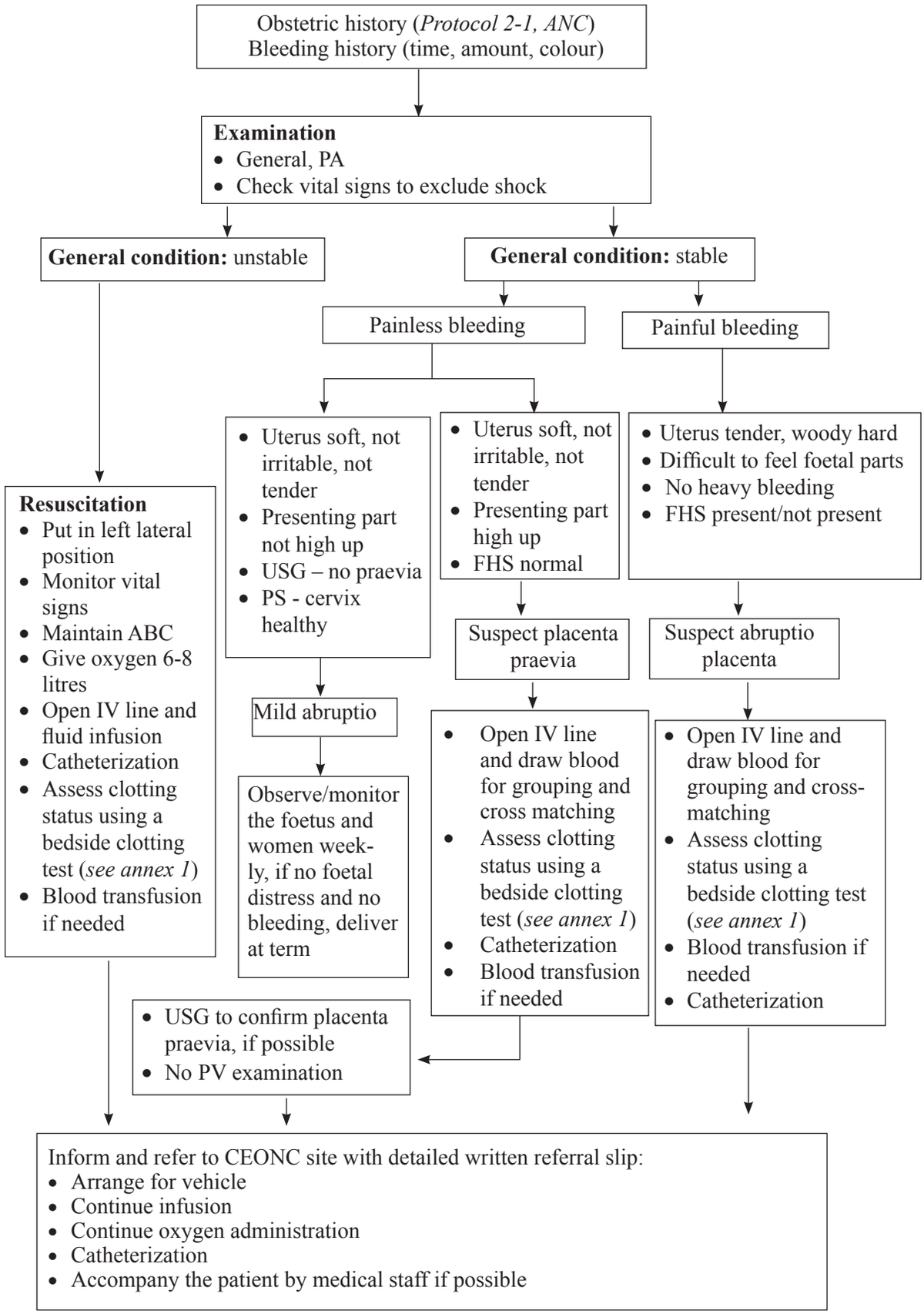
Diagnosis of antepartum haemorrhage

Presenting symptom and other symptoms and signs typically present	Symptoms and signs sometimes present	Probable diagnosis
• Bleeding after 22 weeks • Intermittent or constant abdominal pain	• Shock • Tense/tender uterus • Decreased/absent foetal movement • Foetal distress or absent foetal heart sounds • Dark coloured blood	Abruptio placenta
• Bleeding (intra-abdominal and/or vaginal) • Severe abdominal pain (may decrease after rupture)	• Shock • Abdominal distension/free fluid • Abnormal uterine contour • Tender abdomen • Easily palpable foetal parts • Absent foetal movements and foetal heart sounds • Rapid maternal pulse	Ruptured uterus
• Bleeding after 22 weeks gestation • No abdominal pain	• Shock • Bleeding may be precipitated by intercourse • Relaxed uterus • Foetal presentation not in pelvis/lower uterine pole feels empty • Normal foetal condition • Fresh bleeding	Placenta praevia

Signs of shock (*see* protocol 2-7, *Shock*)

Reference
WHO. 2017. *Integrated Management of Pregnancy and Childbirth: Managing Complications in Pregnancy and Childbirth: A Guide for Midwives and Doctors, 2n ed.* Geneva: World Health Organization.

2-8 ANTEPARTUM HAEMORRHAGE



2-9 PRE-ECLAMPSIA

Pre-eclampsia: New onset of hypertension and proteinuria after 20 weeks of gestation in two readings 4 hours apart.

Mild pre-eclampsia: Systolic BP greater than or equal to 140 and/or diastolic BP greater than or equal to 90 after 20 weeks of gestation with proteinuria less than or equal to 2+.
Severe pre-eclampsia: Systolic BP greater than or equal to 160 and/or diastolic BP greater than or equal to 110 after 20 weeks of gestation with proteinuria more than 2+.

History
- Duration of pregnancy: establish if the pregnancy is greater than or less than 37 weeks
- Signs and symptoms like: headache, difficulty in breathing, blurred vision/seeing spots, epigastric pain, nausea, vomiting, oliguria, oedema of hands and face

Examination
- BP: diastolic more than 90mm Hg
- Chest: assess lungs for crepitation (pulmonary oedema)
- PA examination: examine for fundal height, liver tenderness, foetal heart sound
- Deep tendon reflexes: brisk reflexes are a sign of hyperreflexia

Management of severe pre-eclampsia
- If diastolic BP is higher than 110, give nifedipine 5mg orally (sublingual can cause acute fall in BP).
- Take BP 30 minutes after nifedipine dose.
- If diastolic BP is still higher than 110, repeat dose.
- Repeat as necessary to keep diastolic BP in the range of 90-100mm Hg.
- Give magnesium sulphate ($MgSO_4$).

Magnesium sulphate is the drug of choice for preventing and treating convulsion in severe eclampsia and eclampsia.

Magnesium sulphate ($MgSO_4$) regimen for severe pre-eclampsia and eclampsia

Loading dose
- Give 4gm of 20% magnesium sulphate solution IV over 5 minutes.
- Follow promptly with 10gm of 50% magnesium sulphate solution: give 5gm in each buttock as a deep IM injection with 1ml of 2% lignocaine in the same syringe.
- Ensure aseptic technique when giving magnesium sulphate deep IM injection. Inform the woman that she will feel warm when magnesium sulphate is given.
- If convulsions recur after 15 minutes, give 2gm of 50% magnesium sulphate solution IV over 5 minutes

Maintenance dose
- Give 5gm of 50% magnesium sulphate solution with 1ml of 2% lignocaine in the same syringe by deep IM injection every 4 hours in alternate buttocks. **Continue treatment for 24 hours after delivery or the last convulsion, whichever occurs last.**

Note: 1 ampoule contains 2ml = 1gm = 50% weight by volume

Ongoing monitoring
Patients receiving magnesium sulphate should be monitored hourly as follows:
- Level of consciousness: usually sleepy but arousal
- Keep diastolic BP in the range of 90-100mm Hg
- Respiratory rate: usually 16 respiration/minute or greater
- Lungs: watch for pulmonary oedema
- Deep tendon reflexes: usually minimal
- Urine output: watch for oliguria (less than 30ml/hour or 120ml in 4 hours)
- Foetal heart sounds: magnesium sulphate results in a normal decrease in variability

Signs of toxicity
Withhold or delay magnesium sulphate if:
- Respiratory rate is less than 16 breaths per minute.
- Patellar reflexes are absent.
- Urinary output is less than 30ml/hour in the past 4 hours.

Keep antidote (calcium gluconate) ready
In case of respiratory arrest:
- Assist ventilation (mask and bag, anaesthesia apparatus, intubation tube).
- Give calcium gluconate 1gm (10ml of 10% solution) IV slowly until calcium gluconate begins to antagonize the effects of magnesium sulphate and respiration begins.

Reference
WHO. 2017. *Integrated Management of Pregnancy and Childbirth: Managing Complications in Pregnancy and Childbirth: A Guide for Midwives and Doctors, 2nd ed.* Geneva: World Health Organization.

2-9 PRE-ECLAMPSIA

History: headache, difficulty in breathing, blurred vision/seeing spots and epigastric pain, nausea, vomiting, oliguria, oedema of hands and face, duration of pregnancy
Examination: BP: diastolic more than 90mm Hg

Assess severity of pre-eclampsia

Mild

Admit the woman
- Estimate gestational age
- Counsel/inform woman and family
- Provide normal diet
- Monitor BP 4 hourly
- Monitor urine output daily
- Assessment of foetal wellbeing: daily foetal kick count
- USG for estimated foetal weight, Amniotic fluid index (AFI), if possible

Investigations: Platelet, RFT, LFT, urine for albumin (coagulation profile, if available)

- <37 weeks: If BP decreases to normal levels and her condition remains stable, give inj. dexamethasone 6mg IM, 4 doses 12 hours apart for foetal lung maturity
- >37 weeks: Plan for delivery or refer to CEONC site

If develops severe pre-eclampsia refer to CEONC site

Discharge: counselling for monitoring of BP and foetal well-being twice weekly and watch for signs and symptoms of severe preeclampsia
Follow-up in 1 week

If stable, monitor BP and foetal well-being until 37 weeks and plan for delivery

Severe

Admit the woman
- Estimate gestational age
- Counsel/inform woman and family
- Monitor
  - BP every 4 hours
  - Urine albumin twice daily
  - Urine output daily
- Keep vein open
- Advise investigation for pre-eclampsia

- <34 weeks:
  - Prevent seizures- administer $MgSO_4$ as per regime
  - Anti-hypertensive
  - Monitor BP, respiratory rate, urine output and FHR hourly
- >34 weeks:
  - Prevent seizures- administer MgSO4 as per regime
  - Anti-hypertensive
  - Injection dexamethasone for lung maturity
  - Monitor BP, respiratory rate, urine output and FHR hourly

Refer to-CEONC site

If BP is persistently raised in spite of antihypertensive, refer after giving loading dose of $MgSO_4$

- If systolic BP is 160mm Hg or higher and/or diastolic BP is 110mm Hg or higher, start antihypertensive.
- If signs of severe pre-eclampsia appear, even if her BP is normal, admit the woman and manage as severe pre-eclampsia and refer to CEONC site or, if in CEONC site, inform senior for further management.

2-10 ECLAMPSIA

Eclampsia: Systolic BP is 140mm Hg or higher or diastolic BP is 90mm Hg or higher associated with convulsion after 20 weeks of gestation. It is a convulsive state in a pregnant woman not attributable to other cerebral conditions such as epilepsy.

History
- Duration of pregnancy: establish if the pregnancy is greater than or less than 37 weeks
- Number of fits, time when fit started (inquire with attendant)
- Oedema of hands/face

Examination
- BP: systolic more than 140mm Hg, diastolic more than 90mm Hg after 20 weeks of gestation
- Chest: assess lungs for crepitation (pulmonary oedema)
- Per abdomen (PA) examination: liver tenderness, foetal heart sound (FHS)
- Deep tendon reflexes: brisk reflexes are a sign of hyperreflexia

Goals of immediate care	Goals of post-fit care
• Control convulsion • Control hypertension • Delivery of the baby • Prevent injury	• Prevent recurrence of fits • Treat high BP

Management of high BP
- If diastolic BP is higher than 110mm Hg, give tablet nifedipine 5-10mg orally, and take BP again after 30 minutes of nifedipine dose.
- If diastolic BP is still higher than 100mm Hg, repeat nifedipine dose.
- Repeat as necessary to keep diastolic BP in the range of 90-100mm Hg (the maximum total dose is 30mg in the acute treatment phase of 90 minutes).

A key factor in anticonvulsive therapy is timely and adequate administration of anticonvulsive drugs. Convulsions in hospitalized women are most frequently caused by under-treatment.

Magnesium sulphate is the drug of choice for preventing and treating convulsions in severe pre-eclampsia and eclampsia. *For magnesium sulphate regime, see protocol 2-9, Pre-eclampsia.*

Optimal timing for delivery
Delivery should be considered as soon as the woman's condition has stabilized. The decision about the optimal timing of childbirth should be made on an individual basis, taking into account, among other factors, gestational age, maternal and foetal status and wellbeing, cervical favourability, and urgency.

Severe pre-eclampsia and eclampsia are managed similarly, except that birth must occur within 12 hours of onset of convulsions in eclampsia.

Referral for tertiary-level care
Consider referral if:
- HELLP-syndrome (haemolysis, elevated liver enzymes and low platelets), coagulopathy
- Persistent coma lasting more than 24 hours after convulsion
- Severe pre-eclampsia and maternal and foetal wellbeing cannot be adequately monitored
- Uncontrolled hypertension despite treatment with antihypertensive
- Oliguria that persists for 48 hours after giving birth

Reference
WHO. 2017. *Integrated Management of Pregnancy and Childbirth: Managing Complications in Pregnancy and Childbirth: A Guide for Midwives and Doctors, 2nd ed. Geneva: World Health Organization*.

2-10 ECLAMPSIA

History
- Duration of pregnancy
- Number of fits, time when fit started (inquire with attendant)
- Oedema of hands/face

Examination
- BP
- Chest: assess lungs for crepitation
- PA examination: liver tenderness, foetal heart sound
- Deep tendon reflexes

Eclampsia

Immediate care
- Call for help
- Place patient in left lateral position
- Remove objects from around the patients
- Give oxygen 4 litre/ minute by mask
- Clean airways and place oral airway
- Start IV line
- Continuous catheterization
- Monitor vitals

Control fits

Loading dose of $MgSO_4$ - 4gm IV over 5-7 minutes and 5gm IM in each buttock

Control hypertension

Treat with antihypertensive if: systolic BP ≥160mm Hg diastolic BP ≥100mm Hg with Nifedipine- 5-10mg orally stat and repeat after 30 minutes if response is inadequate

Delivery within 12 hours vaginally or by C-section

Refer to CEONC site

STOP $MgSO_4$, if
- Urine output <30ml/hour
- Respiratory rate <16/min
- Absent patellar reflex

At CEONC site
Continue with maintenance dose of $MgS0_4$ (if loading dose given)
- 5gm $MgSO_4$ IM every 4 hours in alternate buttock for 24 hours after delivery or after the last fit, whichever occurs last

Keep antidote ready, in case of respiratory arrest
- Assist ventilation (mask and bag, anaesthesia apparatus, intubation)
- Give calcium gluconate 1gm (10ml of 10% solution) IV slowly over 3 minutes, until respiration begins to counteract the effect of $MgSO_4$

Expedite delivery

Refer to higher centre if woman develops HELLP syndrome, coma for more than 24 hours after convulsion, maternal and foetal monitoring is not possible, uncontrolled hypertension or convulsion even with medication and persisting oliguria

Investigation: CBC, RFT/LFT, coagulation profile, blood group

2-11 OBSTRUCTED LABOUR

Definition

Obstructed labour is the labour in which presenting part of the foetus cannot progress into the birth canal with foetal distress and third-degree moulding despite adequate uterine contractions.

The **latent first stage** is a period of time characterized by painful uterine contractions and variable changes of the cervix, including some degree of effacement and slower progression of dilatation up to 4cm for first and subsequent labours. The **active first stage** is a period of time characterized by regular painful uterine contractions, a substantial degree of cervical effacement and more rapid cervical dilatation from 4cm until full dilatation for first and subsequent labours. The duration of active first stage (from 4cm until full cervical dilatation) usually does not extend beyond 10 hours in first labours, and usually does not extend beyond 8 hours in subsequent labours.

The **second stage** is the period of time between full cervical dilatation and birth of the baby, during which the woman has an involuntary urge to bear down, as a result of expulsive uterine contractions. Women should be informed that the duration of the second stage varies from one woman to another. In first labours, birth is usually completed within 2 hours, whereas in subsequent labours, birth is usually completed within 1 hour.

Unsatisfactory progress in labour can lead to prolonged and obstructed labour and must be recognized and addressed promptly to reduce the risk of ruptured uterus and other complications.

Identify the problems

- Cervical dilatation is to the right of the alert line on the partograph.
- The woman has been experiencing labour pain for 12 hours or more without delivery (prolonged labour).
- Cervix fully dilated and woman has urge to push, but there is no foetal descent.

Management

- Monitor vital signs
- Maintain airway, breathing, circulation (ABC)
- Monitor foetal heart rate
- Give oxygen 2-4 litres per minute
- Open IV line and fluid infusion
- Continuous catheterization
- Refer to CEONC site for delivery by caesarean section

References

NHTC. 2016. *Maternal and Newborn Care, Learning Resource Package for Skilled Birth Attendant, Reference Manual.* Kathmandu: National Health Training Center.

WHO. 2017. *Integrated Management of Pregnancy and Childbirth: Managing Complications in Pregnancy and Childbirth: A Guide for Midwives and Doctors, 2nd ed.* Geneva: World Health Organization

WHO recommendations Intrapartum care for a positive childbirth experience. Geneva: World Health Organization; 2018.

2-11 OBSTRUCTED LABOUR

History
- Age
- Disability affecting pelvic bone
- Obstetric history: indication for previous C-section
- Still birth if any
- Duration of labour pain
- Pattern of uterine action (contraction increased or stopped)
- Membrane status (if ruptured – duration, colour of liquor)
- If referred with partograph, check whether cervical dilation crosses the alert or action lines

Examination

General
- Regular head-to-toe examination, including weight
- Observe maternal/foetal distress
  - Dehydration
  - Temperature
  - FHR
- Signs of pre-shock
  - Rapid and weak pulse
  - Decreased Urinary output
  - BP
  - Increased respiration rate

Abdominal: sign of obstruction
- Presenting part 5/5 palpable
- Frequent, strong and long contraction
- Bandl's ring may be seen
- FHS may not be heard

Vaginal
- Oedema of vulva
- Dry hot vagina
- Oedematous cervix
- Dilatation of cervix
- Caput/moulding
- Station high up

Causes
- Cephalo pelvic disproportion, big baby
- Abnormal presentation, transverse lie
- Foetal anomaly: conjoined twin hydrocephalus
- Pelvic tumours (fibroids, ovarian)

Risk factors
- Young age of mother (<17 years)
- Short stature (less than 145cm)
- Previous history of prolonged/ obstructed labour
- No regular ANC

Management
- Monitor vital signs
- Maintain ABC
- Monitor foetal heart rate
- Give oxygen 2-4 litres per minute
- Open IV line and fluid infusion
- Continuous catheterization
- Caesarean section

If C-section facility is not available, refer to CEONC site

Notes
- Be cautious of uterine rupture and obstetric fistula
- To prevent obstetric fistula, refer the woman with continuous catheterization

2-12 POSTPARTUM HAEMORRHAGE

Definition

Postpartum haemorrhage (PPH) is defined as vaginal bleeding in excess of 500ml after childbirth, or any amount of blood loss, which affects the general condition of the mother after childbirth.

Primary PPH: increased vaginal bleeding within the first 24 hours after childbirth.

Secondary PPH: increased vaginal bleeding following the first 24 hours after childbirth.

> Even healthy, non-anaemic women can have catastrophic blood loss. Bleeding can occur at a slow rate over several hours and the condition might not be recognized until the woman suddenly enters into shock.

Immediate Management

- Shout for help
- Perform a rapid evaluation of the woman's general condition, vital signs (pulse, BP, respiration) and level of consciousness
- If shock is suspected, manage immediately (*see* protocol 2-7*, Shock*)
- Massage the uterus to expel blood and blood clots
- Give oxytocin 10 units IM
- Start an IV infusion with isotonic crystalloids (e.g. ringer's lactate)
- Arrange blood for possible transfusion
- Catheterize bladder
- Determine the cause of PPH

Diagnosis of vaginal bleeding after childbirth

Signs and symptoms typically present	Signs and symptoms sometimes present	Cause
• Immediate PPH[a,b] • Uterus soft and not contracted	• Shock	Atonic uterus
• Immediate PPH[a,b]	• Complete placenta • Uterus contracted	Tears of cervix, vagina or perineum
• Placenta not delivered within 30 minutes after delivery	• Immediate PPHa,b • Uterus contracted	Retained placenta
• Portion of maternal surface of placenta missing, or torn membranes with vessels	• Primary PPHa,b • Uterus contracted	Retained placenta fragments, pages
• Uterine fundus not felt on abdominal palpation • Slight or intense pain	• Inverted uterus apparent at vulva • Immediate PPH[a.c]	Inverted uterus
• Bleeding occurs more than 24 hours after delivery • Uterus softer and larger than expected for elapsed time since delivery	• Bleeding is variable (light or heavy, continuous or irregular) and foul-smelling • Anaemia	Delayed PPH
• Immediate PPH[a] (bleeding is intra-abdominal and/or vaginal) • Severe abdominal pain (may decrease after rupture)	• Shock • Tender abdomen • Raised maternal pulse	Ruptured uterus

[a] Bleeding in the first 24 hours after childbirth.

[b] Bleeding may be light if a blood clot blocks the cervix or if the woman is lying on her back.

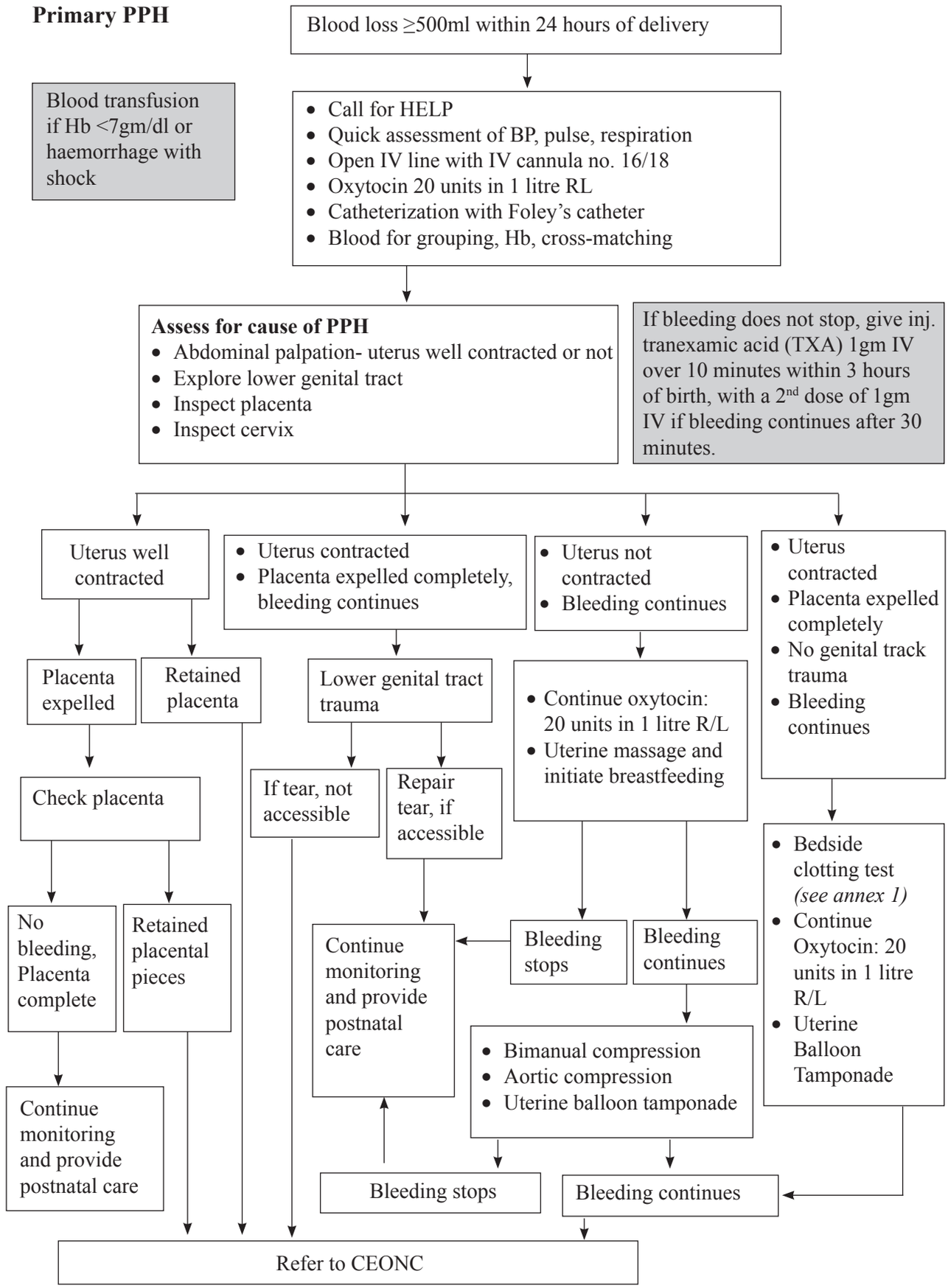
[c] There might be no bleeding with complete inversion

References

WHO. 2017. *Integrated Management of Pregnancy and Childbirth: Managing Complications in Pregnancy and Childbirth: A Guide for Midwives and Doctors, 2nd ed.* Geneva: World Health Organization

WHO recommendations: uterotonics for the prevention of postpartum haemorrhage. Geneva: World Health Organization;

2-12 POST-PARTUM HEMORRHAGE



2-13a COMMON POSTPARTUM COMPLICATIONS

Postpartum emotional distress is fairly common after pregnancy, like:

- Mild postpartum blues (affecting about 80% of women)
- Postpartum depression
- Psychosis

"Postpartum blues" refers to mild depressive symptoms (i.e. sadness, tearfulness, irritability, and anxiety), insomnia and decreased concentration. It develops within two to three days of giving birth and typically peaks over the next few days and resolves within two weeks. Women with postpartum blues are at increased risk of developing postpartum minor depression or major depression.

Postpartum depression occurs in early postpartum weeks or months and may persist for a year or more. Facilitating the presence of a companion of choice during pregnancy, labour, childbirth, and the postpartum period may help prevent postpartum depression.

Risk factors for postpartum depression include:

- Previous postpartum depression
- Active or previous mental illness
- Being a member of a vulnerable population
- Traumatic childbirth, new born/infant admitted in an intensive care
- History of being a neglected child

Postpartum depression requires psychological counselling and ongoing support by service providers and family members.

Severe postpartum depression may be associated with psychosis.

Mood and Anxiety Disorders		
Disorder	**Symptoms**	**Management**
Postpartum Blues	Irritability, anxiety, fluctuating mood and increased emotional reaction	Counselling Mild sedatives- Tablet phenergan 30mg-60mg at bedtime
Postpartum depression	Excessive guilt, anxiety, depressed mood, insomnia, hypersomnia, suicide tendency and fatigue	Refer for psychiatric consultation
Postpartum psychosis	Agitation, hallucinations, disorganized behaviour, cognitive impairment	Refer for psychiatric consultation

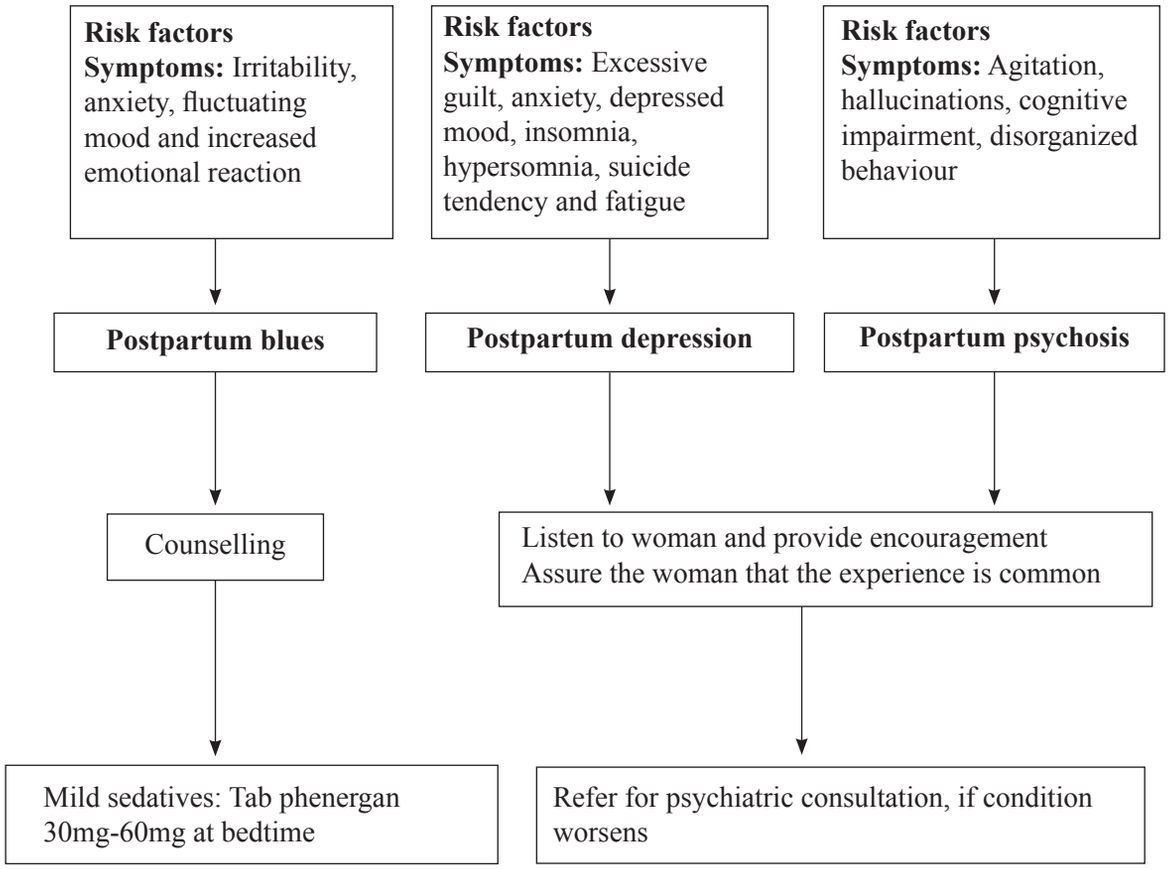
References

WHO. 2017. *Integrated Management of Pregnancy and Childbirth: Managing Complications in Pregnancy and Childbirth: A Guide for midwives and doctors, 2nd ed.* Geneva: World Health Organization

HSE Clinical Programme in Obstetrics and Gynaecology. 2017. *Medication Guidelines For Obstetrics and Gynaecology, First Edition, Volume 2, Antimicrobial safety In Pregnancy and Lactation*

2-13a. COMMON POSTPARTUM COMPLICATIONS

Postpartum Mood/Anxiety Disorder



2-13b COMMON POSTPARTUM COMPLICATIONS

Other common postpartum complications are puerperal pyrexia, puerperal sepsis, mastitis, breast abscess, urinary tract infection/pyelonephritis and deep vein thrombosis.
These complications of puerperium most frequently occur in second and third weeks but may often be seen within 6 weeks of puerperium.

Puerperal pyrexia: A rise of temperature reaching 38°C or more measured on two separate occasions at 24 hours, apart after the first 24 hours within the first 10 days following delivery. Anaemia, malnutrition, antepartum haemorrhage, and other complications in pregnancy, careless repeated vaginal examinations in labour, intra-uterine manipulations, trauma to the genital tract and prolonged labour are some of the predisposing factors leading to postpartum pyrexia. Puerperal pyrexia may be due to infection of the genital tract, acute mastitis, infection of the urinary tract, thrombophlebitis, and other general systemic infections, which are unrelated to parturition, like typhoid, pneumonia, malaria, etc.

Puerperal sepsis: An infection of the genital tract, which occurs as a complication of delivery, is termed as puerperal sepsis.

Clinical features
- General: fever, loss of appetite, body ache, vomiting, in severe case of infection, loss of consciousness, pre shock and shock
- Specific: uterine/pelvic/abdomen tenderness, foul-smelling lochia and blood-mixed lochia for longer period

Investigation
In all cases, a culture from the upper part of the vagina must be taken and in severe cases, blood culture should be done. A catheter specimen of the urine should be examined for pus cells and for culture and sensitivity. In areas where typhoid, malaria and other fevers are prevalent investigations should be carried out to rule out these, e.g. examination of blood smear for malarial parasites, blood culture for *B. typhosus*.

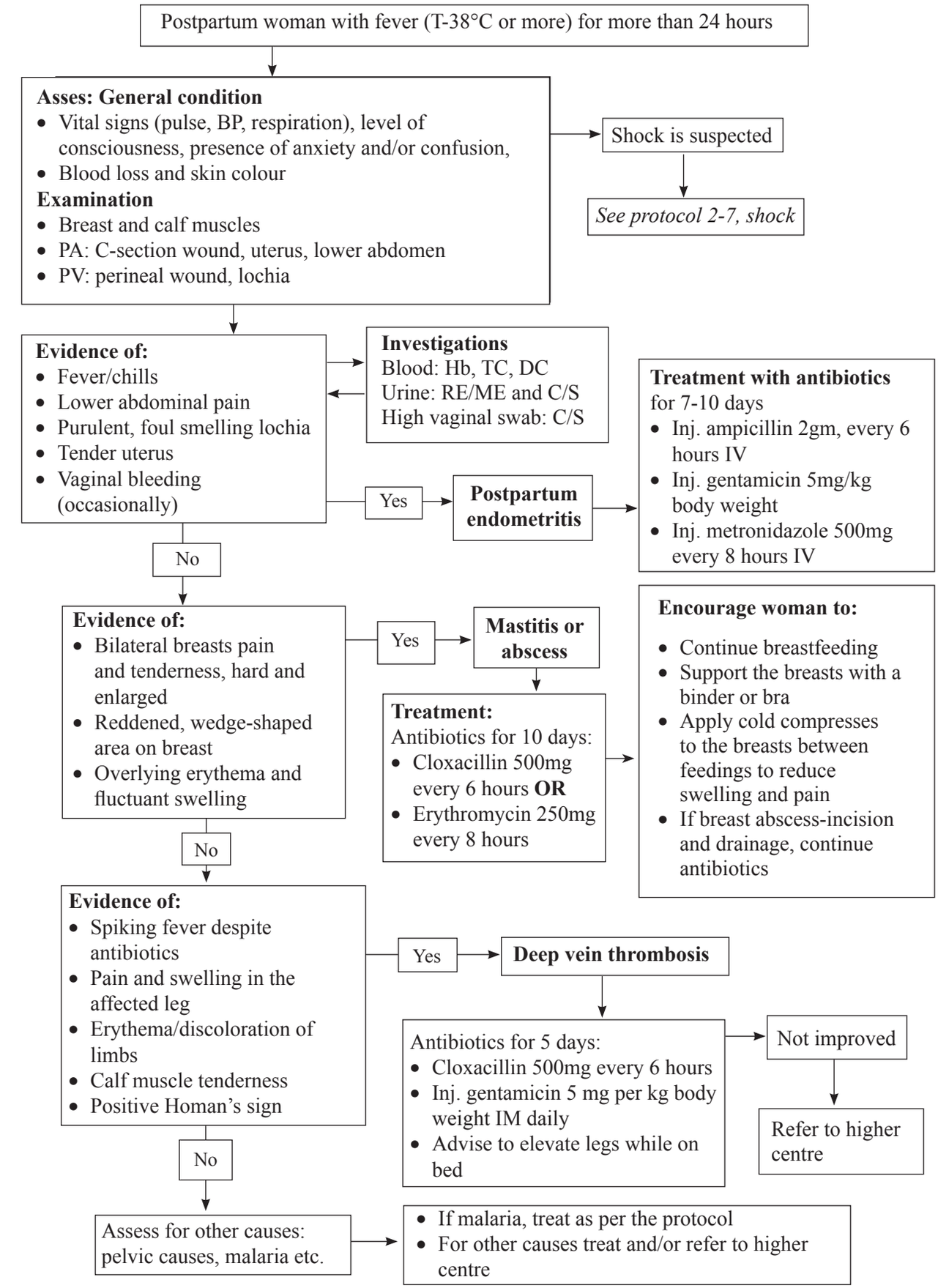
Management
General
- Room with adequate light and ventilation
- Diet must be nutritious with plenty of fluid
- Maintain personal hygiene
- Adequate rest and sleep
- Advise to empty the bladder frequently
- Appropriate treatment to prevent spread of infection outside the pelvis

Specific
Antibiotics according to the results of culture and sensitivity test. The most commonly used antibiotics are:
- Inj. ampicillin 2gm IV stat every 6 hours
- Inj. gentamicin 3-5mg/kg/body weight
- Inj. gefotaxim 1gm every 8 hours
- Inj. metronidazole 500mg every 8 hours IV

Surgical
Incision and drainage of abscess

References
NHTC. 2016. *Maternal and Newborn Care, Learning Resource Package for Skilled Birth Attendant, Reference Manual.* Kathmandu: National Health Training Center.
WHO. 2017. *Integrated Management of Pregnancy and Childbirth: Managing Complications in Pregnancy and Childbirth: A Guide for midwives and doctors, 2nd ed.* Geneva: World Health Organization.

2-13b COMMON POSTPARTUM COMPLICATIONS



2-14 INTRAUTERINE FOETAL DEATH

Definition
Intrauterine foetal death (IUFD) is defined as an infant delivered without a sign of life after 22 weeks of gestation or weighing more than 500gm when gestational age is not known. Intrauterine death can be the result of foetal growth restriction, foetal infection, a cord accident or congenital anomalies. If mother reports no foetal movement and on auscultation, if foetal heart sound is not heard, then suspect IUFD.

Confirm by
Ultrasound (if available): Signs include absent foetal heart activity, abnormal foetal head shape, reduced or absent amniotic fluid, and doubled-up foetus.

Investigations
Clinical assessment and laboratory tests should be recommended to assess maternal wellbeing (including coagulopathy, blood grouping, haemoglobin (Hb), total count (TC), differential count (DC), bleeding time (BT), clotting time (CT), and platelets.

If routine ANC blood investigation is not done then following tests should be done: HIV, HBsAg, VDRL, blood grouping, Hb, TC, DC, BT, CT, Platelets.

Counselling
- If the woman is unaccompanied, an immediate offer should be made to call her husband and family members.
- Explain the problem to the woman and her family.
- Discuss the options of expectant or active (induction of labour) management with them. Reassure the woman that, in 90% of cases, the foetus is spontaneously expelled during the waiting period with no complications.
- If expectant management is planned, await spontaneous onset of labour during the next four weeks.
- Active management should be considered, if
  - platelets are decreasing
  - four weeks have passed without spontaneous labour
  - fibrinogen levels are low or
  - woman requests for it

References
RCOG. February 2017. *Late IUFD and Stillbirth, Green-top Guideline No 55.* The Royal College of Obstetricians and Gynaecologists.
WHO recommendations: induction of labour at or beyond term. Geneva: World Health Organization; 2018.
WHO. 2017. *Integrated Management of Pregnancy and Childbirth: Managing Complications in Pregnancy and Childbirth: A Guide for midwives and doctors, 2nd ed.* Geneva: World Health Organization.

2-14 INTRAUTERINE FOETAL DEATH

Woman comes with the complain of less/no foetal movement:
Take detailed history, gestational age verification, maternal vitals

↓

Confirmation of IUFD
- History of less or no foetal movement
- PA: fundal height, FHS +/-
- USG
- A second opinion should be taken

↓

IUFD confirmed
- If woman is alone, ask her to call husband or family member

↓

Counselling
- Reassurance
- Expectant vs active management

↔

Investigation

↓

If active management is opted

↓

Refer to higher centre with companion

Expectant Management
- To be decided on mother's preference, medical condition, no sign of infection, coagulopathy and other obstetric complications like PE/E
- Twice weekly investigations if woman preferred expectant management
- Do not wait for >4weeks (risk of coagulopathy)

Active management ***(Only in CEONC site)***
- Recommended: Vaginal delivery
- Induction of labour
- Blood should be available

If facility available, do following investigations:
- Hb, TC, DC, platelets, PT/INR
- VDRL, HBsAg, HIV
- Random blood sugar, CRP
- TFT
- Blood group, Rh type

If investigation facility not available refer to higher centre

2-15 URINARY TRACT INFECTION

Definition

Urinary Tract Infections (UTI) are common in pregnancy and includes Cystitis (1-3%), Asymptomatic Bacteriuria (2-10%) and Pyelonephritis. It is also called bladder infection and is a bacterial inflammation in the urinary tract. It results from hormonal ureteral dilation, hormonal ureteral hypoperistalsis, and pressure of the expanding uterus against the ureters.

Asymptomatic Bacteriuria is defined as the presence of at least 100,000 organisms per ml of urine in an asymptomatic patient. Dysuria, increased frequency and urgency of urination, retropubic/suprapubic pain, abdominal pain and fever infrequently present in **Cystitis** (infection of urinary bladder).

Pyelonephritis

Diagnosis of acute pyelonephritis should be considered if a woman presents with:

- Fever more than or equal to 38ºC with chills and rigor
- Anorexia, nausea and vomiting
- Frequency, urgency, burning micturition, and dysuria
- Flank pain, retropubic/suprapubic pain, loin pain, and tenderness

Patient may have serious consequences like preterm labour, maternal sepsis, acute respiratory distress syndrome (ARDS), and even maternal death. So prompt and aggressive treatment is needed.

Management

- Urine sample for routine and microscopic examination
- Urine for culture and sensitivity (C/S)
- Referral of patient, if lab facility is not available

Empiric treatment (amoxicillin is recommended) should be done while waiting for the results. Change the antibiotics, if needed, as per culture report.

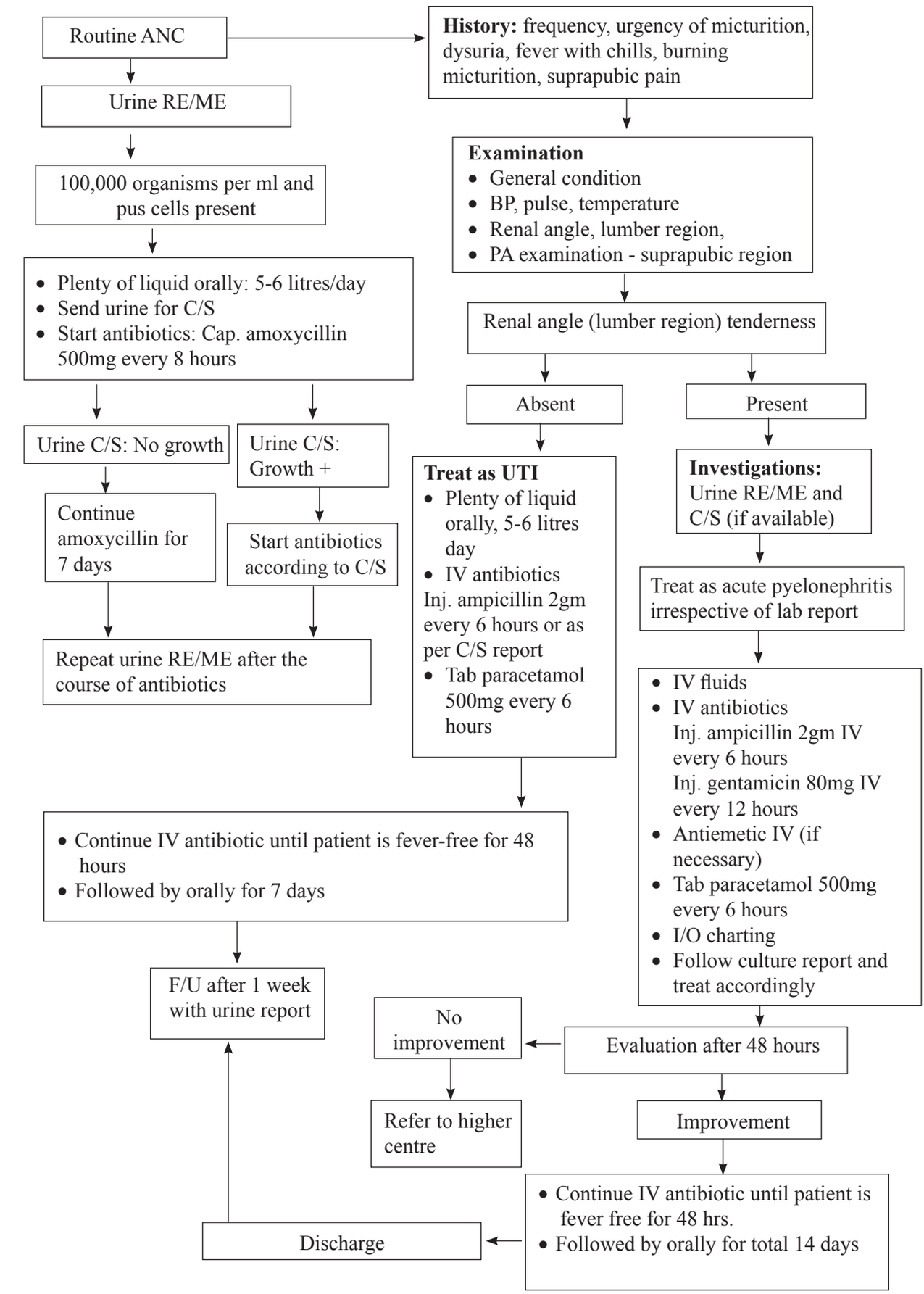
Criteria of cure

After the course of antibiotics, if repeated urine culture shows sterile, the disease is considered to be cured.

Reference

WHO. 2017. *Integrated Management of Pregnancy and Childbirth: Managing Complications in Pregnancy and Childbirth: A Guide for midwives and doctors, 2nd ed.* Geneva: World Health Organization.

2-15 URINARY TRACT INFECTION



2-16 PRETERM LABOUR

Definition
Preterm labour is defined as regular uterine contraction with progressive cervical effacement and dilation between 22 to less than 37 weeks of gestation.

Diagnosis: Gestational age 22 weeks to less than 37 weeks, four regular uterine contractions in 20 minutes, accompanied by one of the following: prelabour rupture of membrane (PROM), cervical dilation greater than 2cm, effacement exceeding 50%.

Antenatal Corticosteroid Therapy is recommended for woman at risk of imminent preterm delivery. It improves newborn outcomes.

Doses
- Betamethasone 12mg IM, 2 doses 24 hours apart
  OR
- Dexamethasone 6mg IM, 4 doses 12 hours apart

> If adequate childbirth and preterm newborn care facilities, including resuscitation, thermal care, feeding support, infection treatment and safe oxygen use, are not available in your setting, **refer the woman** to a hospital where adequate facilities are available before she gives birth; consider administration of the first dose of antenatal corticosteroids before transfer.

Tocolytic treatment is not recommended for a woman at risk of imminent preterm delivery for improving newborn outcomes. Tocolytic drugs (e.g. nifedipine) is given to provide a window for administration of antenatal corticosteroids and/or in-utero foetal transfer to an appropriate neonatal health care setting. It **should not be used** in the following conditions:
- Preterm pre-labour rupture of membranes (PPROM)
- Chorioamnionitis
- Placental abruption
- Cardiac disease

Routine **antibiotic** administration is not recommended for women in preterm labour with **intact amniotic membranes and no clinical signs of infections.** If amniotic **membranes are ruptured or there are clinical signs of infection**, an antibiotic is given to reduce the risk of chorioamnionitis in the mother and the risk of neonatal infections.

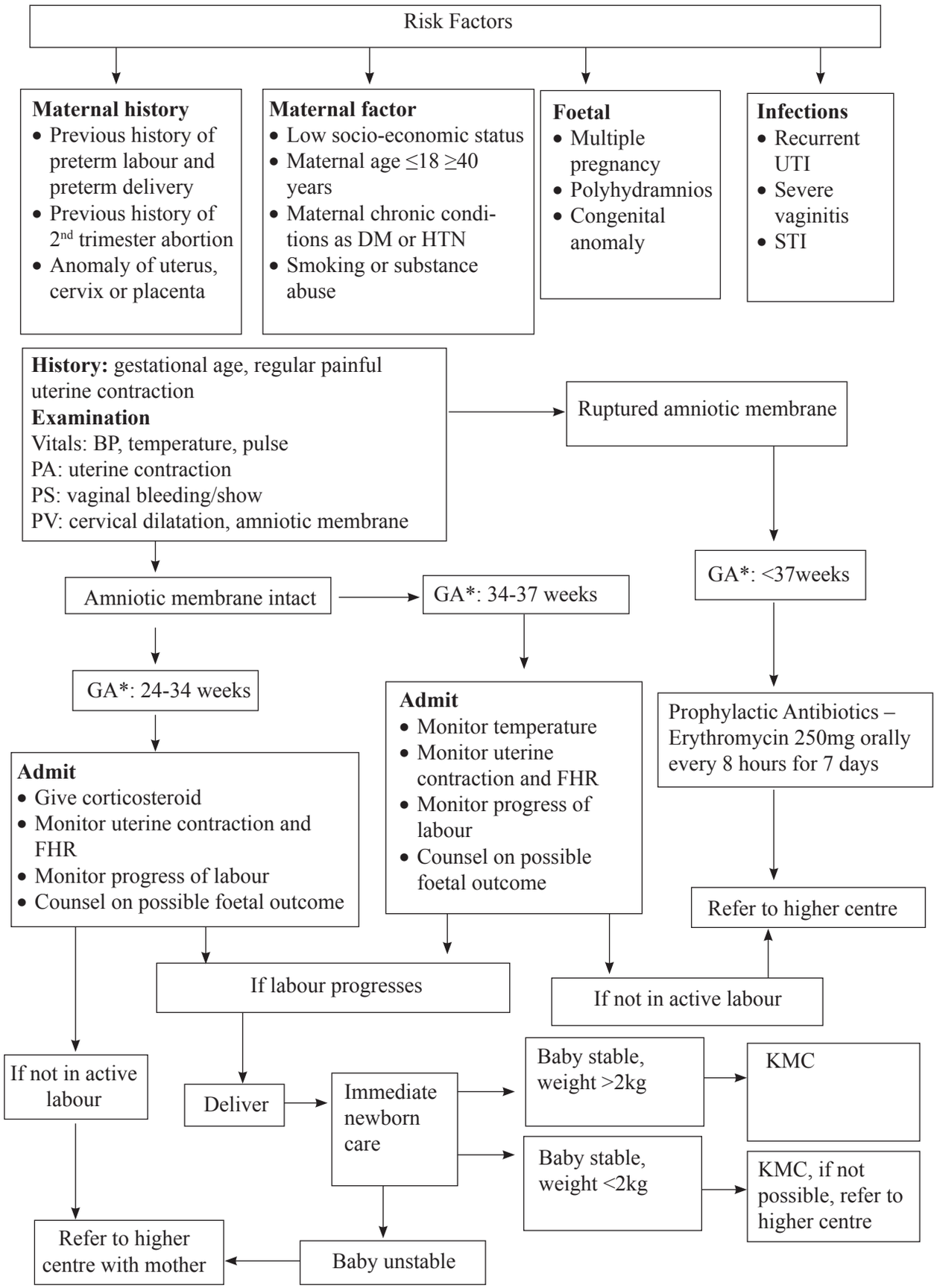
> **Note:** Do not use amoxicillin plus clavulanic acid (co-amoxiclav) in case of PPROM. It increases the risk of necrotizing enterocolitis.

If **labour continues and gestation is less than 37 weeks:** Monitor progress of labour using the partograph. Routine delivery by caesarean section for the purpose of improving preterm newborn outcomes is not recommended regardless of cephalic or breech presentation. Avoid vacuum-assisted birth as the risks of intracranial bleeding in the preterm baby are high.

Counsel on possible neonatal outcome before referring to a higher centre for better neonatal care.

References
WHO recommendation on intervention to improve preterm birth outcome, 2015. France. World Health Organization.
WHO. 2017. *Integrated Management of Pregnancy and Childbirth: Managing Complications in Pregnancy and Childbirth: A Guide for midwives and doctors, 2nd ed.* Geneva: World Health Organization.

2-16 PRETERM LABOUR



*GA: Gestational Age

2-17 PRELABOUR RUPTURE OF MEMBRANES

Definition

Prelabour rupture of membranes (PROM) is rupture of membranes before labour has begun or watery leakage from vagina after 22 weeks of pregnancy before the onset of labour. PROM can occur either when the foetus is immature or preterm (i.e. before 37 weeks) and is called preterm PPROM—or when the foetus is mature (term).

It is important that the gestational age is accurately assessed (ideally confirmed by ultrasound scan in early pregnancy) and rupture of membranes confirmed in order to avoid inadvisable corticosteroid and antibiotic administration.

Diagnosis of spontaneous rupture of membrane

Do not perform vaginal examination, as it does not help to establish the diagnosis and can introduce infection but perform per speculum examination.

- Confirm diagnosis by presence of pool of fluid in the vagina or fluid coming from the cervix using high-level disinfected speculum.
- Typical odour of amniotic fluid confirms the diagnosis.
- Exclude urinary incontinence.

Signs of Intrauterine Infection

- Maternal tachycardia
- Fever more than 38ºC
- Foetal tachycardia
- Uterine tenderness
- Foul smelling discharge
- Dirty blood stained discharge

Management

Antibiotic administration is recommended for women with PROM.

If infection is suspected, continue antibiotics postpartum until 48 hours after patient becomes afebrile (routine administration of antibiotics for 7 days is not necessary)

Prophylactic antibiotics is given to reduce maternal and neonatal infection

Erythromycin 250mg every 8 hours, orally for 7 days **PLUS**

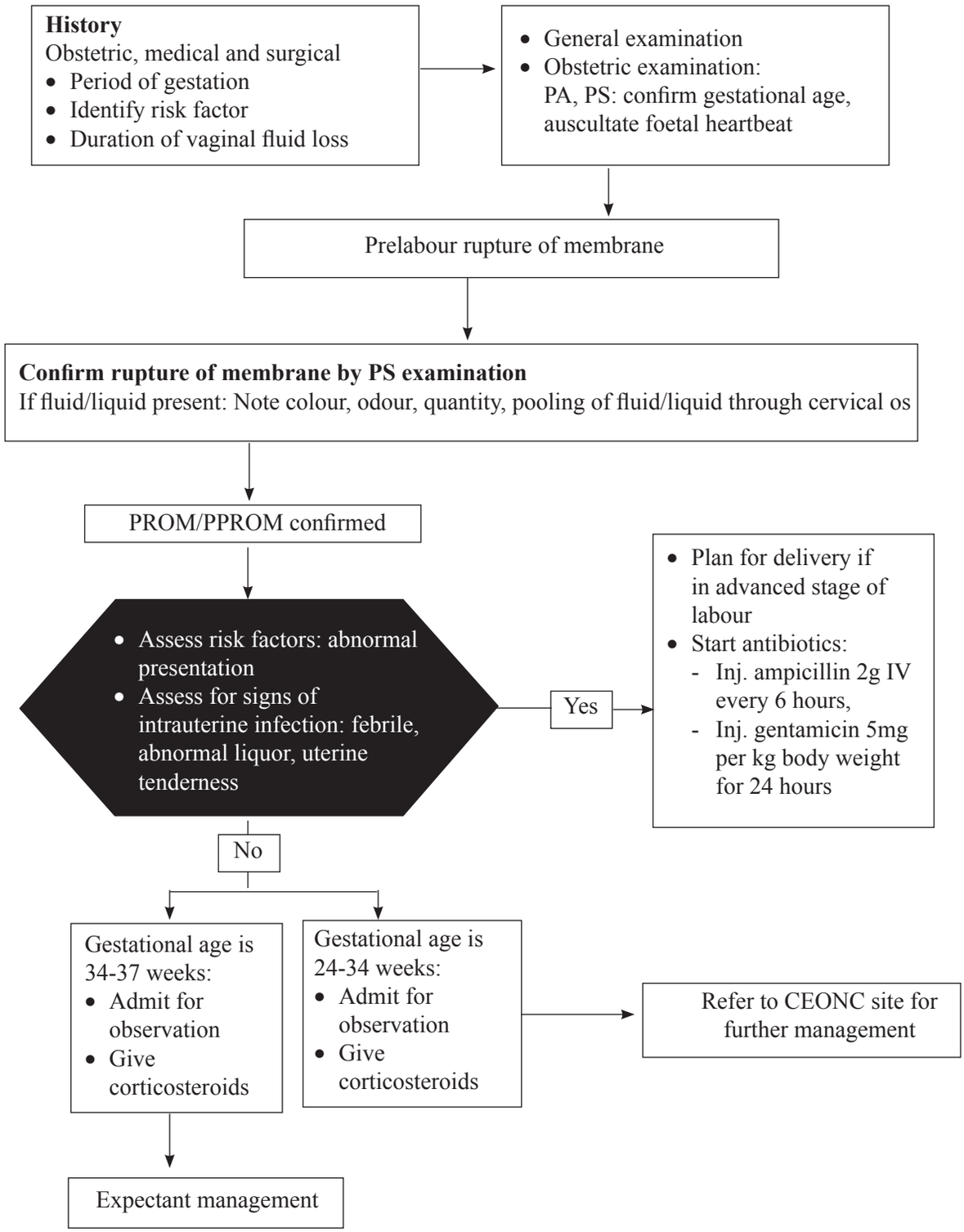
Corticosteroid

- If gestational age is less than 34 weeks and **there is no evidence of infection**, give betamethasone 12mg IM, 2 doses 24 hours apart **OR** Dexamethasone 6mg IM, 4 doses 12 hours apart.

References

WHO. 2017. *Integrated Management of Pregnancy and Childbirth: Managing Complications in Pregnancy and Childbirth: A Guide for midwives and doctors, 2nd ed.* Geneva: World Health Organization.

2-17 PRELABOUR RUPTURE OF MEMBRANE



Antibiotics if risk factor present (chorioamnionitis, PROM >16 hours)
Inj. ampicillin 2gm IV every 6 hours
Inj. gentamicin 5mg per kg body weight IV over 24 hours

ANNEX 1: BEDSIDE CLOTTING TEST

How to perform bedside clotting test:

- Take 2ml of venous blood into a small, dry, clean, plain glass test tube (approximately 10mm x 75mm).
- Hold the tube in a closed fist to keep it warm (±37°).
- After four minutes, tip the tube slowly to see if a clot is being formed or not. Then tip it again every minute until the blood clots and the tube can be turned upside down.
- Failure to form a clot after seven minutes or formation of a soft clot that breaks down easily suggests coagulopathy.
- If a clotting test shows failure of a clot to form after seven minutes or a soft clot that breaks down easily, suspect coagulopathy.

ANNEX 2: WHO RECOMMENDATIONS ON THE USE OF UTEROTONICS FOR THE PREVENTION OF POSTPARTUM HAEMORRHAGE (PPH)

Context	Recommendation	Category of recommendation
Efficacy and safety of uterotonics for PPH prevention	1. The use of an effective uterotonic for the prevention of PPH during the third stage of labour is recommended for all births. To effectively prevent PPH, only *one* of the following uterotonics should be used: • oxytocin (Recommendation 1.1) • carbetocin (Recommendation 1.2) • misoprostol (Recommendation 1.3) • ergometrine/methylergometrine (Recommendation 1.4) • oxytocin and ergometrine fixed-dose combination (Recommendation 1.5).	Recommended
	1.1 The use of oxytocin (10 IU, IM/IV) is recommended for the prevention of PPH for all births.	Recommended
	1.2 The use of carbetocin (100 µg, IM/IV) is recommended for the prevention of PPH for all births in contexts where its cost is comparable to other effective uterotonics.	Recommended
	1.3 The use of misoprostol (either 400 µg or 600 µg, PO) is recommended for the prevention of PPH for all births.	Recommended
	1.4 The use of ergometrine/methylergometrine (200 µg, IM/IV) is recommended for the prevention of PPH in contexts where hypertensive disorders can be safely excluded prior to its use.	Context-specific recommendation
	1.5 The use of a fixed-dose combination of oxytocin and ergometrine (5 IU/500 µg, IM) is recommended for the prevention of PPH in contexts where hypertensive disorders can be safely excluded prior to its use.	Context-specific recommendation
	1.6 Injectable prostaglandins (carboprost or sulprostone) are not recommended for the prevention of PPH.	Not recommended
Choice of uterotonics for PPH prevention	2. In settings where multiple uterotonic options are available, oxytocin (10 IU, IM/IV) is the recommended uterotonic agent for the prevention of PPH for all births.	Recommended
	3. In settings where oxytocin is unavailable (or its quality cannot be guaranteed), the use of other injectable uterotonics (carbetocin, or if appropriate ergometrine/methylergometrine, or oxytocin and ergometrine fixed-dose combination) or oral misoprostol is recommended for the prevention of PPH.	Recommended
	4. In settings where skilled health personnel are not present to administer injectable uterotonics, the administration of misoprostol (400 µg or 600 µg, PO) by community health workers and lay health workers is recommended for the prevention of PPH.	Recommended

IM: intramuscular; IU: international units; IV: intravenous; PO: orally

Reference

WHO recommendations uterotonics for the prevention of postpartum haemorrhage, 2018

ANNEX 3: RESPECTFUL MATERNITY CARE

While progress has been made in the reduction of maternal mortality during the past several decades, and much attention has been given to skilled attendance at birth, less attention has been given to the abuse and disrespect during maternity care that has been documented and observed globally.

Safe motherhood is more than the prevention of death and disability; it is to encompass respect for women's basic human rights, including respect for women's autonomy, dignity, feelings, choices, and preferences, including companionship during maternity care. Disrespect and abuse during maternity care are a violation of women's basic human rights. In seeking and receiving maternity care before, during and after childbirth, every woman has right to:

- Be free from harm and ill treatment, no one can physically abuse her
- Information, informed consent and refusal, and respect for her choices and preferences, including companionship during maternity care, no one can force her or do things to her without her knowledge and consent
- Privacy and confidentiality, no one can expose her or her personal information
- Be treated with dignity and respect, no one can humiliate or verbally abuse her
- Equality, freedom from discrimination and equitable care, no one can discriminate because of something they do not like about her
- Healthcare and to the highest attainable level of health, no one can prevent her from getting the maternity care she needs.
- Liberty, autonomy, self-determination and freedom from coercion, no one can detain her or her baby without legal authority.

References

USAID. 2013. *A Guide for Advocating Respectful Maternity Care.*
NHTC. 2016. *Maternal and Newborn Care, Learning Resource Package for Skilled Birth Attendant, Reference Manual.* Kathmandu: National Health Training Center.

Section 3

NEWBORN CARE

3-1 IDENTIFICATION OF SICK NEWBORN (TRIAGE)

The signs of a sick newborn are often non-specific. Early identification and prompt management of these conditions are very important for saving the lives of newborn. The most important signs of sick newborn are:

- Not feeding well/excessive irritability
- Less active/impaired consciousness
- Fast breathing (more than 60/minute)
- Slow breathing (less than 30/minute)
- Chest in-drawing
- Grunting
- Convulsions
- Bulging fontanelle
- Floppy or stiff
- Fever (more than 37.5^0C)
- Hypothermia (less than 36.5^0C)
- Umbilical redness/discharge/bleeding
- More than 10 pustules or bullae or swelling, redness or hardness of skin
- Pallor/cyanosis
- Not passed stool and urine in the first 48 hours of life

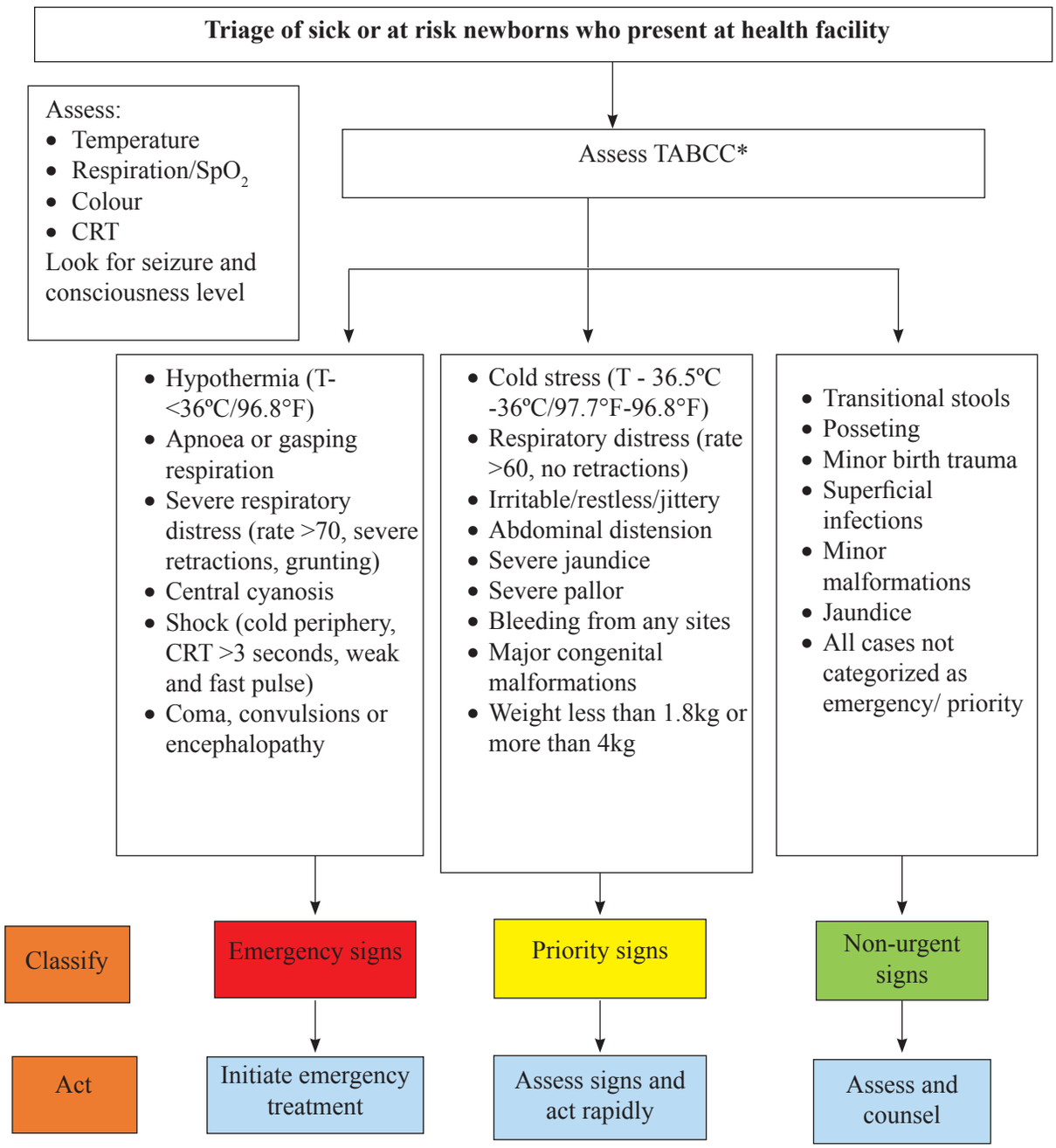
Presence or absence of above signs and symptoms can categorize the newborns into **normal**, at **risk** and **sick**. This will help in prioritizing the newborn and providing prompt evidence-based management.

Triage of sick newborns: Triaging of sick newborns is sorting of sick newborns by rapid screening to prioritize management.

References

CHD. 2016. *National Neonatal Clinical Protocol. Kathmandu: Child Health Division.*
CHD. 2073. *Comprehensive Newborn Care Training Package for Level II Hospital Care.* Kathmandu: Child Health Division.

3-1 IDENTIFICATION OF SICK NEWBORN (TRIAGE)



- Newborns classified as "**emergency**" require urgent intervention and emergency measures. All such newborns will be admitted to special newborn care unit (SNCU) after initial stabilization.
- Newborns classified as "**priority**" are sick and need rapid assessment and admission to SNCU.
- Newborns classified as "**non-urgent**" do not require urgent attention but require further assessment and counselling.

* TABCC
T – Temperature
A – Airway
B – Breathing
C – Circulation
C – Consciousness/convulsion

ASSESSMENT AND TREATMENT OF NEWBORNS DISPLAYING EMERGENCY SIGNS

Assess for emergency signs (in all cases)			Treat emergency signs
TEMPERATURE	Cold to touch (abdomen)	**IF POSITIVE** →	• Re-warm hypothermic babies (neonate) • Rapidly re-warm if there is severe hypothermia <32ºC (89.6°F) up to 34°C (95°F) and then re-warm gradually • Maintain blood glucose • Make sure the neonate is warm
AIRWAY AND BREATHING	• Not breathing or gasping or • Central cyanosis or • Severe respiratory distress • Respiratory rate 70/min • Severe lower chest in-drawing • Apnoeic spells • Grunting • Unable to feed • SpO2 <90% (if available)	**ANY SIGN POSITIVE** →	• Manage airway • Provide tactile stimulation if apnoeic • If still apnoeic or gasping, provide PPV • Give oxygen • Make sure the neonate is warm
CIRCULATION	• Capillary refill longer than 3 seconds and • Weak and fast pulse (>160/min)	**IF POSITIVE** →	• Give oxygen • Insert IV line and give 10ml/kg normal saline over 30 minutes • Proceed immediately to full assessment and treatment • Make sure the neonate is warm
CONVULSIONS	Convulsions	**IF CONVULSING** →	• Manage airway • Check and correct hypoglycaemia • Give anticonvulsant • Make sure the neonate is warm

3-2 SAFE TRANSPORTATION OF SICK NEWBORN

Recognition of a problem and appropriate stabilization are necessary throughout the transfer process. In developing countries, the problem of transporting small and sick newborns is compounded by several practical constraints. Besides several practical constraints, we should always be prepared well before transport:
Stabilize the newborn before transport.

1. **Assess and stabilize**
   i). **Temperature:** Assess temperature by touch or by using a thermometer.
   - Hypothermia
     - Warm either by placing under a warmer or by providing kangaroo mother care (KMC).

   ii). **Airway:** Assess the airway for patency.
   - Position of the neck
     - Correct the position by putting shoulder roll.
   - Secretions in mouth/nose
     - Suction
   - Chest movements

   iii). B**reathing:** Assess the newborn for breathing efforts.
   - Tactile stimulation
   - Ventilation using a bag and mask with oxygen
   - Respiratory distress may require oxygen supplementation.

   iv). **Circulation:** assess the status of circulation
   - Pulse volume and Capillary Refilling Time (CRT)
     - CRT more than 3 seconds and/or peripheral pulses are poor with normal temperature
       - » Fluid bolus of 10ml per kg normal saline or ringer lactate should be provided over 20-30 minutes.
       - » Reassess for need of further boluses.

   v). **Fluids:** if the newborn is sick, cannot be fed, and needs to be transferred, then intravenous (IV) fluids should be started *(see annex 1, Feeding Guideline)*.
   - Maintain fluid, based on birth weight and age (in days) of life.
   - Start IV fluids after the calculation of presence or absence of abnormal fluid loss.

   vi). **Medications:** assess the need for antibiotics, anticonvulsants, vitamin K

   vii). **Feeding:** assess Assess the newborn for feeding using:
   - If the newborn can be fed, he/she should be fed enteral.
   - Cup or gavages
   - Directly at the breast

2. **Write a note:** write a precise note for the providers at the referral facility.
   – Details of the newborn's condition
   – Need for referral
   – Treatment given to the newborn
3. **Encourage the mother to accompany.**
4. **Arrange a health worker to accompany, if possible.**
5. **Communication**
   - Explain the condition, the prognosis and the reasons for referral of the newborn to the family
   - Explain where to go and indicate whom to contact
   - Inform the referral facility beforehand

References

WHO. 2003. Integrated Management of Pregnancy and Childbirth, Managing Newborn Problems: A guide for doctors, nurses, and midwives. Geneva: World Health Organization.
CHD. 2016. *National Neonatal Clinical Protocol. Kathmandu: Child Health Division.*
CHD. 2073. *Comprehensive Newborn Care Training Package for Level II Hospital Care.* Kathmandu: Child Health Division.

3-2 SAFE TRANSPORTATION OF SICK NEWBORN

In case a newborn needs to be referred, appropriate pre-referral measures need to be taken

Assess and stabilize	Write a note, including	Encourage mother and/ or a family member to accompany	Arrange a health worker to accompany, if possible	Communicate
• Temperature • Airway • Breathing • Circulation • Fluids • Medication • Feeding	• Details of the newborn's condition • Need for referral • Treatment given to the newborn			• Explain the condition, prognosis and reason for referral • Explain where to go • Inform the referral facility beforehand

Care during transport

The accompanying person should be explained to ensure the following:

1. **No noxious stimuli**
2. **Emergent**
   Stabilize and arrange for early referral
3. **No sepsis**
   Infection control practices during transport with minimal handling
4. **Stabilize prior to transport**
5. **Maintenance of warm chain while transport of neonate**
   a. KMC
   b. Properly covered in cotton or cloth
   c. Improvised containers
   d. Transport incubator
6. **Prevention of hypoglycaemia**
   a. Provide feeds
      i. If the newborn is in a position to suck on the breast, he/she should be breastfed
      ii. If he/she can take spoon/cup feeding, expressed breast milk can be provided carefully
      iii. If the distance is long, a nasogastric catheter may be inserted and gavage feeding can be done
   b. If the newborn is very sick, transfer with IV fluid
7. **Maintenance of airway and breathing**
   a. Keep the neck of the newborn in slight extension
   b. Do not cover the newborn's mouth and nose
   c. Gently wipe the secretions from the mouth and the nose with a cotton or cloth-covered finger
   d. Check breathing
      i. Monitor the newborn's breathing
      ii. If the newborn stops breathing, provide tactile stimulation to the soles to restore him/her
      iii. Start bag and mask ventilation
8. **Educate the parents on danger signs during transfer**

Equipment preparation

- Resuscitation box
- Transfer cot
- Portable pulse oximeter, if available
- Portable oxygen
- Patients transfer note and investigation reports
- Ensure the transfer team has a mobile phone, the contact number of the receiving facility and the contact number of a senior doctor on call at the referral facility
- Money for emergency

General Danger Signs

- Apnoea
- Convulsion
- Vomits everything
- Lethargic or unconscious
- Unable to suck or feed

3-3 PERINATAL ASPHYXIA, INCLUDING RESUSCITATION

Definition

Perinatal asphyxia is the term used to describe the condition when the newborn does not begin or sustain adequate breathing at birth and requires resuscitation. Ninety percentage of newborns require no assistance to begin breathing at birth. Of the 10% that do require some help, only 1% need extensive resuscitative measures to survive. Any newborn is at risk of suffering from birth asphyxia, and, therefore, one should be prepared to resuscitate each newborn at birth.

Resuscitation could be successful or unsuccessful.

If resuscitation is successful

- After successful resuscitation, if the newborn breathes, his/her heart rate (HR) is above 100 per minute, SpO2 is more than 90% (colour is pink) and he/she has good tone, then he/she may be handed over to mother. This newborn needs frequent assessments of colour, tone and vital signs for the first six hours.**y for**
- After the resuscitation aided by ventilation with bag and mask or intubation, transfer the newborn to a nursery or higher centre for monitoring and continuing evaluation and support, as they are likely to develop complications like lethargy, breathing difficulty, poor feeding, and convulsions.

When to stop resuscitation?

- Newborn not breathing or gasping after 20 minutes without heartbeat.
- No breathing and HR from the beginning and no improvement even after 10 minutes of effective ventilation, stop resuscitation and do counselling
- HR less than 60/minute and no spontaneous breathing after 20 minutes of ventilation and chest compression, counselling for poor prognosis

If resuscitation is unsuccessful:

- Talk to family and mother about the newborn's death and answer their questions. Ask the mother and family if they want to see and hold the newborn.
- Explain the mother and family about own/mother's care:
  - Rest, support and good diet
  - Management of engorged breasts

After resuscitation, record the following:

- Date and time of birth
- Sex of the newborn
- Newborn's condition at birth (colour, breathing, heart rate)
- Resuscitation
  - Time resuscitation started
  - Steps used (stimulation, ventilation)
  - Time newborn breathed normally
  - Apgar scores
- Care after resuscitation
- Time of death of newborn if the resuscitation was unsuccessful

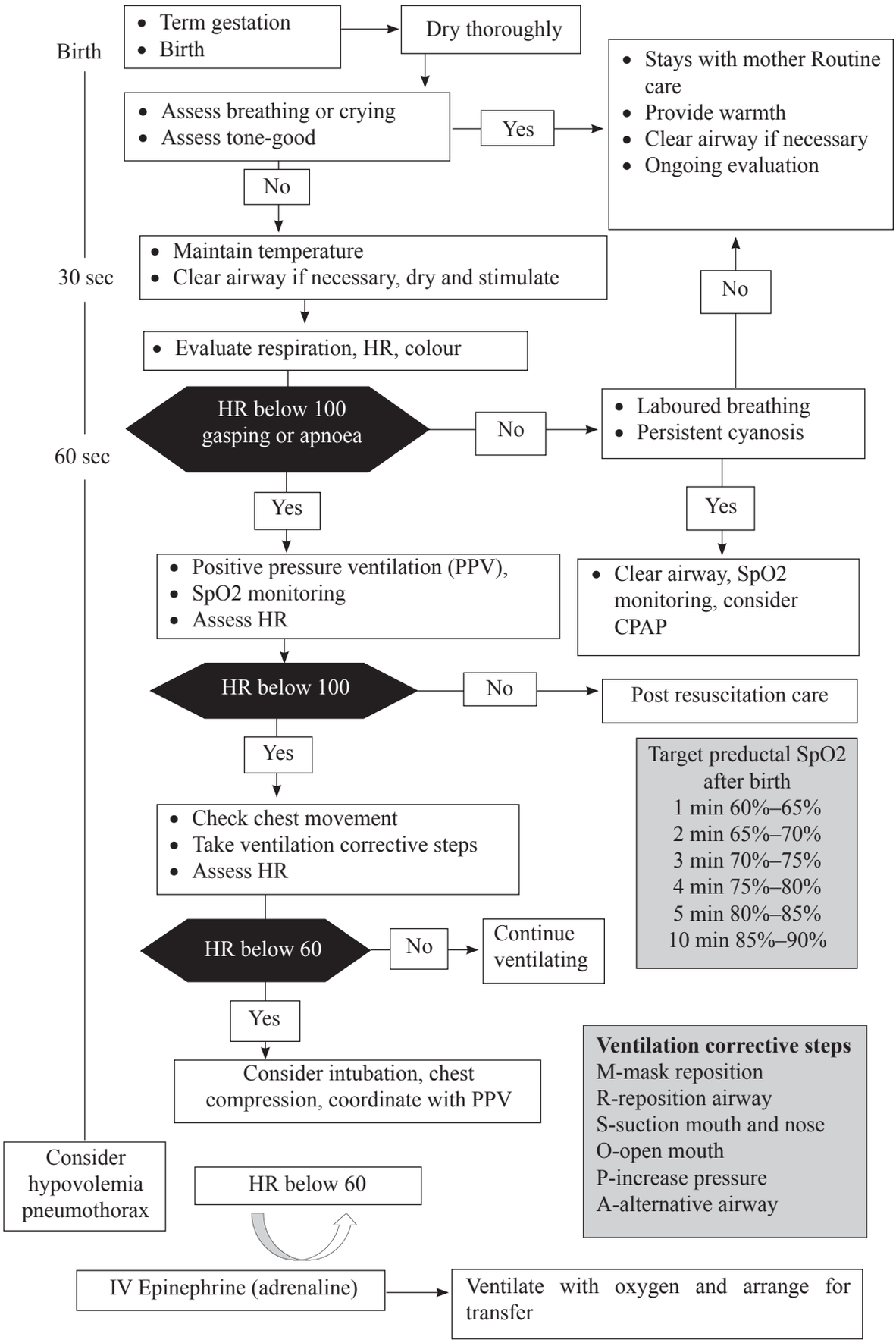
Newborns may suffer from mild, moderate or severe degree of asphyxia.

- In mild asphyxia, newborns may be jittery or hyperactive with increased muscle tone, poor feeding and normal/rapid breathing. These findings usually last for 24-48 hours before resolving spontaneously.
- In moderate asphyxia, newborns may be lethargic, have feeding difficulty and may have occasional episodes of apnoea or convulsions. These problems usually resolve within a week, but long-term neuro-developmental problems are possible.
- In severe asphyxia, the newborn may be floppy or unconscious and does not feed. Convulsions and apnoea may occur for several days. The newborn may improve after several weeks or may not improve at all. If these newborns survive, they usually suffer permanent brain damage.

Reference

AAP. 2016. *Helping Baby Breathe, 2nd Edition.* American Academy of Paediatrics.

3-3 PERINATAL ASPHYXIA, INCLUDING RESUSCITATION



3-4 PRETERM/LOW BIRTH WEIGHT NEWBORN, INCLUDING KANGAROO MOTHER CARE

Definition

A newborn whose weight is less than 2500gm at birth, irrespective of the period of its gestation, is known as a low birth weight (LBW) newborn. LBW newborns have 2-3 times increased risk of mortality.

Clinical types of LBW newborns

1. **Preterm or premature:** baby born at gestational age less than 37 completed weeks
2. **Small for gestational age (SGA):** less than 10th percentile for gestational age or intrauterine growth restriction (IUGR) or small for date (SFD)
   - Gestational age may be term or preterm
   - Newborn is undernourished and undersized

Classification of LBW newborn

1. **Low birth weight newborn:** birth weight less than 2500gm irrespective of the gestational age
2. **Very low birth weight newborn:** birth weight less than 1500gm irrespective of the gestational age
3. **Extremely low birth weight newborn:** birth weight less than 1000gm irrespective of the gestational age

Problems of LBW newborns

There are some problems that are common to both types of newborns:

- Hypothermia
- Hypoglycaemia
- Infections
- Birth asphyxia

Preterm babies are also prone to develop:

- Respiratory distress
- Apnoeic spells
- Feeding difficulties
- Intraventricular haemorrhage
- Necrotizing enterocolitis
- Hyperbilirubinemia

IUGR newborns are also more prone to develop:

- Meconium aspiration syndrome
- Polycythaemia

All **LBW newborns** should receive vitamin K 1mg intramuscular (IM) at birth.

When dealing with LBW newborns, infection prevention measures must be strictly maintained, such as:

- Hand washing
- Early and exclusive breastfeeding
- Care of the umbilical stump
- Avoiding unnecessary interventions such as IV lines and needle pricks

Weight gain and feeding in LBW newborns

Assess the newborn's growth to ensure that she/he is gaining weight adequately.

- It is normal for small newborns to lose weight during the first 7-10 days of life. Birth weight is usually regained by 14 days of life unless the newborn has been sick. For newborns on alternative feeding method, increase the volume of milk in increments of 20ml per kg body weight per day until the volume of breast milk reaches 180 ml per kg body weight per day.

Kangaroo mother care

Kangaroo mother care (KMC) is a universally available and biologically sound method of care for newborns, in particular those who are preterm or of low birth weight. It is defined as early, prolonged skin-to-skin contact between a mother and her LBW newborn. This can take place both in hospital and at home and is usually continued until the newborn reaches at least 2000gm in weight.

Eligibility

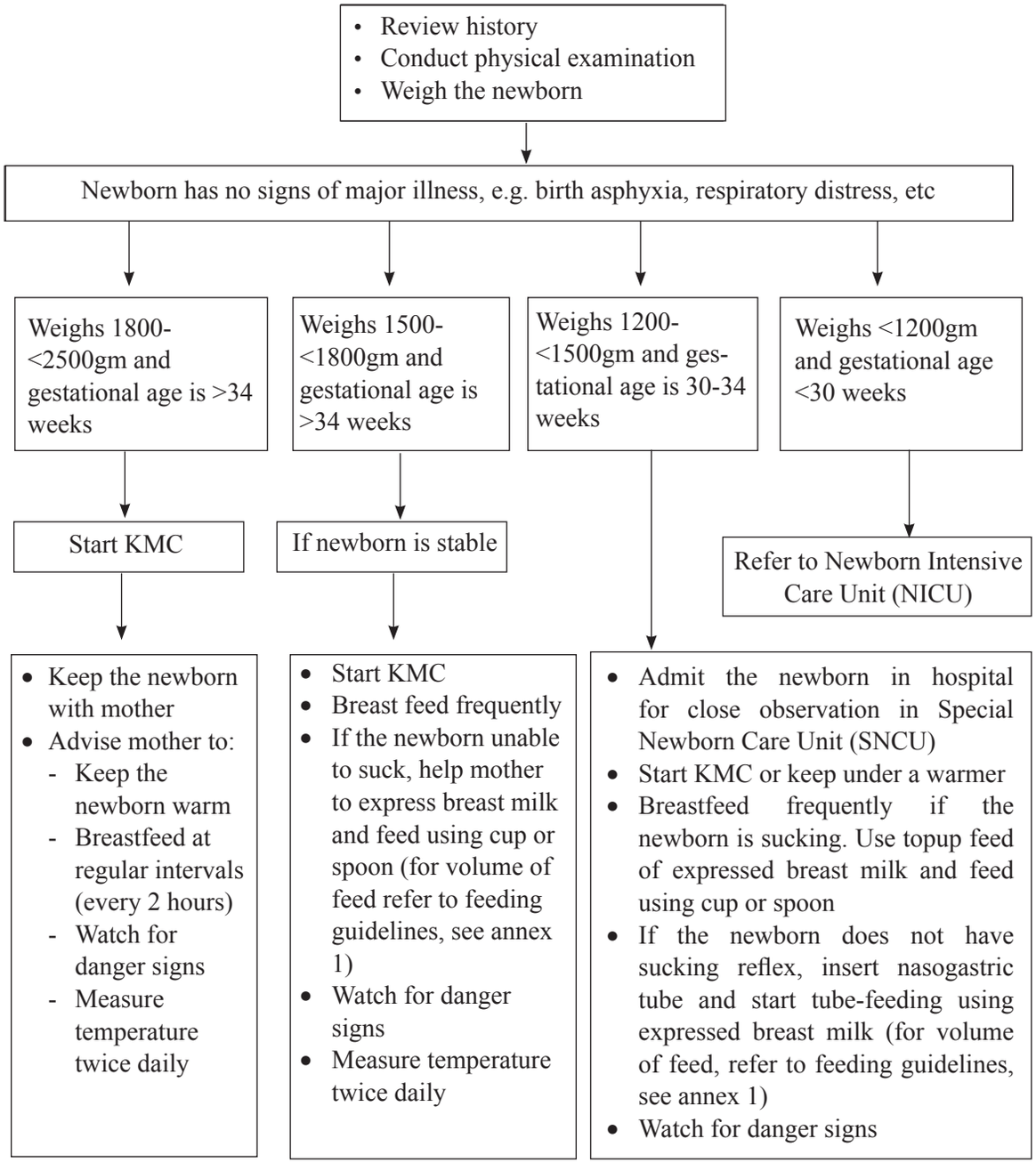
- The willingness of the mother to do KMC.
- The newborn should be in a stable condition: no major illness present such as septicaemia, pneumonia, meningitis, respiratory distress or convulsions.
- Newborns who have been started on antibiotics for suspected infection can start KMC as soon as they are stable.
- Newborns under phototherapy may be evaluated to receive intermittent KMC.

References

CHD. 2074. *Facility Based Integrated Management of Neonatal and Childhood Illness (FBIMNCI) Training Package.* Kathmandu: Child Health Division.

NHTC. 2015. *Care of Low Birth Weight Babies through Kangaroo Mother Care, Training Package.* Kathmandu: National Health Training Centre.

3-4 PRETERM/LOW BIRTH WEIGHT NEWBORN, INCLUDING KANGAROO MOTHER CARE



General danger signs
- Apnoea
- Convulsion
- Vomits everything
- Lethargic or unconscious
- Unable to suck or feed

3-5 IDENTIFICATION AND MANAGEMENT OF HYPOTHERMIA

Definition
Normal axillary temperature for newborns is 36.5 to 37.5 ºC (97.8 to 99 ºF). If the axillary temperature of the newborn is below 36.5 ºC (97.8 ºF), it is known as hypothermia.

Grading of hypothermia
- Cold stress: 36 to less than 36.5ºC (96.8°F to less than 97.7°F)
- Moderate hypothermia: 32 to less than 36ºC (89.6°F to less than 96.8°F)
- Severe hyperthermia: less than 32ºC (less than 89.6°F)

Mechanism of heat loss in newborn
After birth, skin and core temperatures fall by 0.3°C and 0.1°C per minute.

Heat loss in a newborn occurs through four primary routes:
1. Radiation (to surrounding environment not in direct contact with the newborn)
2. Convection (to air flowing in surrounding)
   Conduction (to substances in direct contact with the newborn)
3. Evaporation (of amniotic fluid and moisture from the newborn's skin to atmosphere).

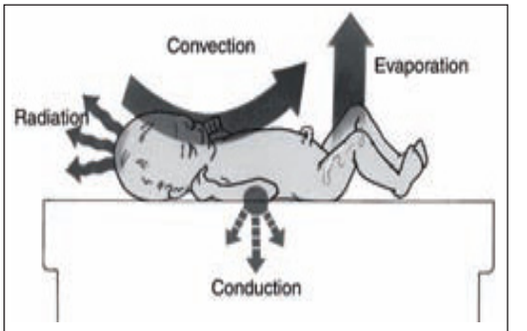


Figure: Mechanism of heat loss

Methods of recording temperature
Touch method
Abdominal temperature is representative of the core temperature. Abdomen skin temperature is assessed by touch with dorsum of hand. The interpretation is as follows:
- Newborn's feet and hands are warm: thermal comfort
- Peripheries are cold, the trunk is warm: cold stress
- Peripheries and the trunk both are cold: hypothermia

Thermometer
WHO recommends the use of low reading thermometer, which can record up to 30°C. American Academy of Paediatrics (AAP) recommends against using mercury thermometers because the glass can break and mercury is poisonous. The best is to use a digital thermometer.

Thermistor probe
Skin temperature can be recorded by a thermistor. The probe is attached to skin over upper abdomen. The thermistor will sense the skin temperature and display on the panel.

The concept of 'warm chain' for prevention of hypothermia. It is a set of 10 interlinked procedures carried out at birth and later stages:
1. Thermal care in delivery room: (temperature of 25-28ºC)
2. Warm resuscitation
3. Immediate drying
4. Skin-to-skin contact
5. Breastfeeding
6. Postpone weighing till the newborn is covered well and give bath to newborn only after 24 hours of life.
7. Newborn should be covered with one (or) two layers of clothes and cap, socks and hand gloves.
8. Newborn and mother should be together for 24 hours in the same bed and breastfed on demand.
9. Warm transportation
10. Training and awareness raising

References
CHD. 2016. *National Neonatal Clinical Protocol. Kathmandu: Child Health Division.*
CHD. 2074. *Facility Based Integrated Management of Neonatal and Childhood Illness (FBIMNCI) Training Package.* Kathmandu: Child Health Division.
WHO. 2003. *Integrated Management of Pregnancy and Childbirth, Managing Newborn Problems: A guide for doctors, nurses, and midwives.* Geneva: World Health Organization.

3-5 IDENTIFICATION AND MANAGEMENT OF HYPOTHERMIA

History

- Gestational age, weight at birth
- Place of delivery, condition of delivery room
- Wiping, drying and not bathing for the first 24 hours
- Birth asphyxia
- Appropriate clothing, skin-to-skin contact with mother
- Breastfeeding well or not

Examination

- Feel newborn's skin (abdomen/back and soles of feet) with hand
- If thermometer available, take axillary temperature
- Check newborn for lethargy, feeding, cry, respiratory rate and effort, heart rate, acrocyanosis, apnoea, sclerema
- Look for signs of prematurity, small for gestational age
- Look for signs of infection
- Rewarm the newborn

Normal temperature

- Cover adequately
- Keep newborn next to mother
- Continue breastfeeding
- Monitor temperature

Hypothermia

Mild hypothermia/ cold stress (36-36.4°C)

- Position newborn skin-to-skin with mother (KMC)
- Cover adequately
- Ensure room is warm
- Continue breastfeeding
- Recheck temperature and respiration in every 1 hour
- Prevent heat loss

Moderate hypothermia (32-35.9°C)

- Cover mother and newborn together adequately using pre-warmed clothes
- Ensure room is warm
- Provide warmth using warmer
- Reassess every 15 minutes. If temperature does not improve, provide additional heat
- Continue breastfeeding

Severe hypothermia (<32°C)

If the temperature rises <0.5°C per hour, look for signs of sepsis, hypoglycaemia and transfer the newborn

If temperature rises:

- Rapid re-warming until newborn is 34°C and then slow re-warming
- Oxygen
- IV fluids (dextrose 10%)
- IV antibiotics
- Reassess every 15 minutes, if temperature does not improve, provide additional heat and refer

3-6 LOCAL INFECTION OF NEWBORN

Risk factors for infection: Preterm/prelabour rupture of membranes, membranes ruptured more than 18 hours before birth, mother had fever higher than 38°C before childbirth or during labour, amniotic fluid was foul smelling or purulent, or mother has documented colonization of group B streptococcus in high vaginal swab.

Superficial/localized/minor infections

- Seen in certain parts of the newborn's body
- Can spread quickly throughout the body and cause neonatal sepsis
- Early and correct management essential to prevent sepsis and possible death

Commonly seen local infections

1. Umbilical cord infection

- Newborn's umbilical cord is swollen/pus collection, draining pus or foul smelling, skin around the umbilical is red and hardened
- The mother needs to be asked if she has received tetanus vaccine during this pregnancy, if the newborn was born at home, what was used to cut the cord and if anything was applied to the cord
- On examination the umbilical infection may be:
  Local: redness and swelling is less than 1cm around the skin and there may be delay in cord separation or healing (cord normally falls off by end of first week of life)
  Severe: redness and swelling extends more than 1cm around the skin and skin around the umbilicus is usually hardened. Umbilicus will be foul smelling, collection and draining of pus may be present, and the newborn may have signs of sepsis.

2. Skin infection

- The newborn has pustules or blisters on the skin, which appear after the first day of life or later.
- During examination, all of the newborn's skin, including the diaper area and folds in the neck, arms and legs, needs to be looked at.
- Skin infection may be:
  Local: if there are fewer than 10 pustules
  Severe: if there are more than 10 pustules or one large boil.

3. Oral tThrush

- The newborn has white patches on the tongue or inside the mouth, which cannot be wiped away easily and bleeds easily.
- The newborn has feeding difficulty.
- The mother may complain of sore nipples when the newborn feeds.

4. Eye infection

- The newborn's eye is red, swollen and draining pus.

Even if the mother has no clinical signs of infection:

- Keep the newborn with the mother and encourage the mother to continue breastfeeding.
- Arrange with an appropriate service that cares for sick newborns to take a blood culture.
- Treat the newborn with prophylactic antibiotics: injection ampicillin (IM or IV) and injection gentamicin for at least three days if strong suspicious of systemic bacterial infection.
- Transfer the newborn for further management to an appropriate service that cares for sick newborns.

If none of the risk factors listed applies, do not treat with antibiotics.

- Observe the newborn for signs of infection for three days: keep the newborn with the mother and encourage her to continue breastfeeding.
- If signs of infection occur within three days, arrange appropriate service that cares for sick newborns to take a blood culture and start the newborn treatment on antibiotics.

References

CHD. 2074. *Facility Based Integrated Management of Neonatal and Childhood Illness (FBIMNCI) Training Package.* Kathmandu: Child Health Division.

WHO. 2003. *Integrated Management of Pregnancy and Childbirth, Managing Newborn Problems: A guide for doctors, nurses, and midwives.* Geneva: World Health Organization.

3-6 LOCAL INFECTION OF NEWBORN

History
- Review pregnancy and delivery history, immunization with TD, cord care at birth and thereafter, delivery site, PROM, etc.

Examination
- Eye, mouth, umbilicus, skin

Eye infection
- After washing hands, mother should be taught how to gently swab the eye from the inner to the outer corner to remove discharge, using boiled water, breast milk or normal saline at least 4 times daily
- 1% tetracycline ointment to the affected eye 4 times daily for 5 days

Oral thrush
- After washing hands, mother should apply clotrimazole suspension or 0.5% gentian violet to the newborn's mouth 4 times daily, and continue for 2 days after the thrush has disappeared

Local umbilical infection
- Clean umbilicus using an antiseptic solution and clean gauze
- Teach mother to swab with 0.5% gentian violet 4 times daily until there is no discharge from the umbilicus

Severe umbilical infection
- Manage as a case of neonatal sepsis

Local skin infection
- Clean the skin using antiseptic solution and clean gauze
- Teach the mother to swab the skin with 0.5% gentian violet 4 times daily until there are no pustules

Severe skin infection
- Manage as a case of neonatal sepsis

3-7 NEONATAL SEPSIS

Definition
It is a clinical syndrome with or without bacteraemia (growth of bacteria in one or more sites) characterized by systemic signs and symptoms of infection, which incorporates septicaemia, pneumonia, meningitis, arthritis, osteomyelitis and urinary tract infection in the first four weeks of life. When clinical and laboratory findings are consistent with bacterial infection but blood culture is sterile, then the newborn is known to have **suspected sepsis**.

Classification
Early onset sepsis: presenting within 72 hours of birth
Late onset sepsis: presenting after 72 hours of birth

History
Poor feeding, lethargy, convulsion, difficulty in breathing, jaundice, eye, cord or skin infection and/or abdominal distension, vomiting and diarrhoea

Risk factors
- Low birth weight (less than 2500gm) or prematurity
- Febrile illness in the mother within 2 weeks prior to delivery
- Foul smelling and/or meconium stained liquor
- Rupture of membranes more than 18 hours
- Single unclean or more than 3 sterile vaginal examinations during labour
- Prolonged labour (sum of the first and second stages of labour is more than 24 hours)
- Perinatal asphyxia (Apgar score less than 4 at 1 minute)
- Foul smelling liquor or any other three risk factors is a need for investigation and treatment

Clinical features of neonatal sepsis on examination
The manifestations of neonatal sepsis are often vague and require high index of suspicion for early diagnosis. The common manifestation is respiratory distress in early onset sepsis and alternation of feeding pattern of established feeding in late onset sepsis. Newborns with sepsis may present with one or more of the following non-specific signs and symptoms:
- Non-specific: hypothermia or fever, lethargy, refusal to suckle, comatose
- Gastrointestinal: abdominal distension, diarrhoea, vomiting, poor weight gain
- Haematological system: severe jaundice, pallor, petechiae, purpura, bleeding
- Cardiovascular: poor perfusion, shock, bleeding and sclerema, bradycardia, tachycardia
- Respiratory: cyanosis, tachypnoea, chest retractions, grunt, apnoea/gasping
- Central nervous system: hypotonia, absent neonatal reflexes, seizures, blank look, high pitched cry, excessive crying/irritability, neck retraction, bulging fontanel
- Hypo/hyperglycaemia
- Metabolic acidosis

If neonatal unit is not available, give first dose of IV antibiotics and refer for further evaluation and treatment

Investigations (if available)
- Blood for culture and sensitivity (C/S)
- Blood for total count and differential count (TC and DC)
- Lumber puncture for cerebrospinal fluid (CSF) study
- Urine for culture and sensitivity
- Chest x-ray

Sepsis screening
Sepsis screening is said to be positive when two or more of the following tests are positive

- Leukopenia: total leucocyte count (TLC) less than 5000 per mm^3)
- Neutropenia: absolute neutrophil count (ANC) of less than 1800 per mm^3)
- Immature to total neutrophil (I/T) ratio is more than 0.2
- Micro erythrocyte sedimentation rate (ESR) more than 15
- C reactive protein (CRP) - positive (more than 1 mg per dl)

Management

- Early recognition, prompt administration of effective and appropriate antibiotic therapy with optimal supportive management is crucial to improve intact survival. No investigation is required as a prerequisite to start treatment. It takes 12 to 24 hours to show any effect of antibiotics. Hence, adequate supportive care is mandatory to improve the survival of newborn with sepsis.

Antibiotic therapy of neonatal sepsis:

Septicaemia or pneumonia

Antibiotic	Each dose	Frequency 7 days		Route	Duration
		Less than and equal to 7 days age	More than 7 days age		
Inj. Ampicillin	50mg per kg per dose	12 hourly	8 hourly	IV	7-10 days
Inj. Gentamicin	5mg per kg per dose	24 hourly	24 hourly	IV	7-10 days

Meningitis

Antibiotic	Each dose	Frequency		Route	Duration
		Less than and equal to 7 days age	More than 7 days age		
Inj. ampicillin	100mg per kg per dose	12 hourly	8 hourly	IV	3 weeks
Inj. gentamicin	2.5mg per kg per dose	12 hourly	12 hourly	IV	2 weeks
Inj. gefotaxime	50mg per kg per dose	6 hourly	6 hourly	IV	3 weeks

Supportive care of a newborn with sepsis

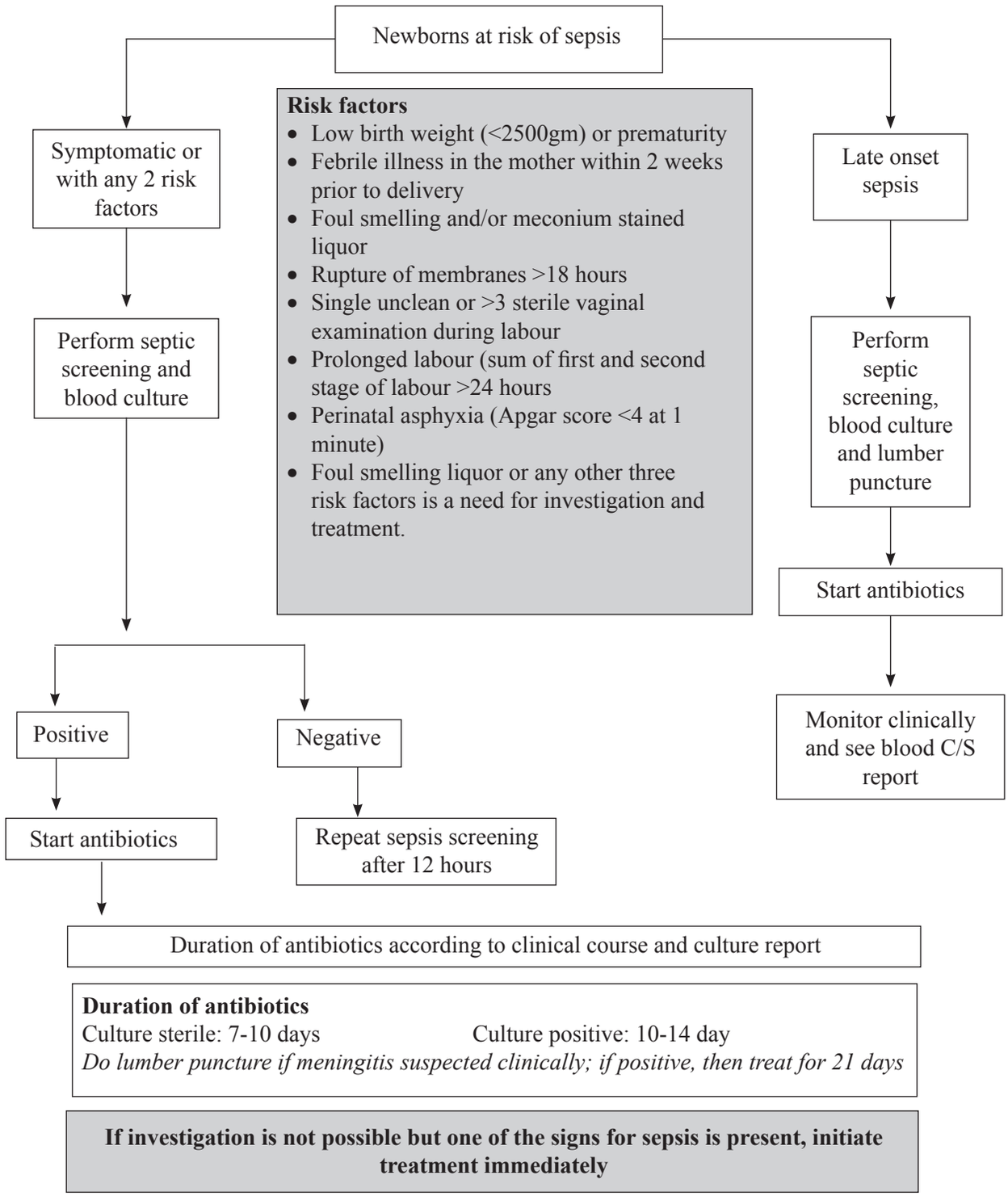
1. Keep the newborn warm
2. Start IV line
3. If CRT is more than 3 seconds, infuse normal saline 10ml per kg over 30 minutes, repeat the same 1-2 times, if perfusion continues to be poor
4. Infuse 10% dextrose 2ml per kg stat
5. Inject Vitamin K 1mg IM if the weight of the newborn is more than and equal to 1000gm and 0.5 mg if the weight of the newborn is less than 1000gm
6. Start oxygen by hood or mask, if cyanosed or grunting
7. Provide gentle physical stimulation, if apnoeic. Provide bag and mask ventilation with oxygen if breathing is inadequate.

8. Avoid enteral feed if hemodynamically compromised, give maintenance IV fluids
9. Consider use of dopamine if perfusion is persistently poor

References

CHD. 2073. *Comprehensive Newborn Care Training Package, For Level II Hospital Care.* Kathmandu: Child Health Division.
CHD. 2016. *National Neonatal Clinical Protocol.* Kathmandu: Child Health Division.
CHD. 2074. *Facility Based Integrated Management of Neonatal and Childhood Illness (FBIMNCI) Training Package.* Kathmandu: Child Health Division.

3-7 NEONATAL SEPSIS



3-8 NEWBORN WITH JAUNDICE

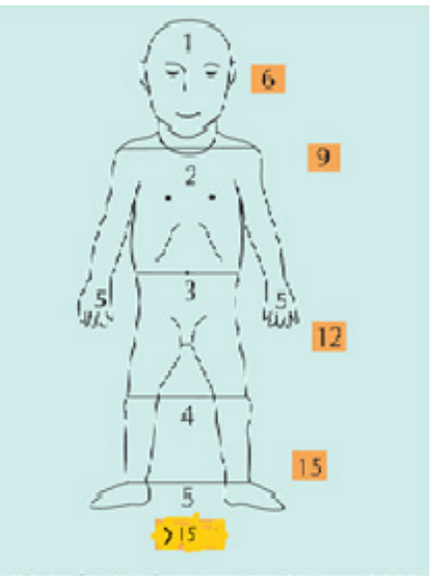
Definition

Jaundice is yellowish discoloration of skin, mucous membranes and sclera, which is a clinical manifestation of hyperbilirubinemia with serum bilirubin level of more than 5mg per dl. Jaundice occurs in 60% term and 80% preterm newborns. The greatest risk associated with hyperbilirubinemia in a newborn is the development of kernicterus. Based on certain characteristics, jaundice may be said to be physiologic or pathologic.

Physiologic jaundice	Pathologic jaundice
Appears after 24 hours (first appears on 2nd or 3rd day of life)	Appears within 24 hours of birth
Serum bilirubin level less than 15mg per dl	Serum bilirubin more than 15mg per dl
Clinically not detected after 14 days	Jaundice persisting after 14 days
Maximum intensity by 4th–5th day in term and 7th day in preterm	Increase of bilirubin more than 5mg per dl per day
Disappears without any treatment	Direct (conjugated) bilirubin more than 2mg pre dl
Newborn is well and active	Newborn may look sick

Clinical estimation of severity of jaundice (Kramer's criteria)

Serum levels of total bilirubin are approximately 4-6mg per dl (zone 1), 6-8mg per dl (zone 2), 8-12mg per dl (zone 3), 12-14mg per dl (zone 4) and more than 15mg per dl (zone 5).



Jaundice which is visible on the face on day 1, on the arms and legs on day 2, and in the palms and soles from day 3 of life should be considered serious and needs to be managed appropriately. Some common causes of jaundice in a newborn (based on time of onset after birth) are:

- Within 24 hours: haemolytic disease of the newborn (Rh and ABO incompatibility), glucose-6-phosphate dehydrogenase (G6PD) deficiency
- Between 24-72 hours: physiologic, sepsis, cephalhematoma, polycythemia
- After 72 hours: sepsis, cephalhematoma, extrahepatic biliary atresia, congenital hypothyroidism, breast milk jaundice

Precautions for phototherapy

- Newborn should be naked.
- Eyes and genitals should be covered.
- Newborn should be kept at a distance of not more than 45cm below the light source.
- They can be kept as close to the phototherapy units as possible.
- Frequent feeding and change of posture every 2 hours should be promoted.
- Once under phototherapy, clinical assessment is not reliable and serum bilirubin must be monitored.

Alert signs (any one)

- Clinical jaundice in the first 24 hours of life
- Total serum bilirubin (TSB) more than 5 mg per dl on day 1 in term neonate, and 10 mg per dl in day 2 of life or 12-13 mg per dl thereafter
- Total serum bilirubin is more than 15mg per dl
- Direct bilirubin (DB) is more than 2g per dl
- Clinical jaundice persisting for more than 2 weeks in full term and more than 3 weeks in preterm newborn

References

CHD. 2016. *National Neonatal Clinical Protocol.* Kathmandu: Child Health Division.
CHD. 2074. *Facility Based Integrated Management of Neonatal and Childhood Illness (FBIMNCI) Training Package.* Kathmandu: Child Health Division.
CHD. 2073. *Comprehensive Newborn Care Training Package, For Level II Hospital Care.* Kathmandu: Child Health Division.
WHO. 2003. *Integrated Management of Pregnancy and Childbirth, Managing Newborn Problems: A guide for doctors, nurses, and midwives.* Geneva: World Health Organization

3-8 NEWBORN WITH JAUNDICE

History
- Assess for risk factors (prematurity, ABO/Rh incompatibility, etc.)
- Poor feeding, lethargy, birth asphyxia

Examination
- Assess severity of jaundice
- Look for cephalhematoma, signs of dehydration and sepsis

If investigation facility is not available, use Kramer's criteria

Measure TSB and use AAP nomograms to decide for need of phototherapy/exchange transfusion based on gestation, postnatal age in hours, presence or absence of risk factors

Physiological jaundice

Counsel and educate mother and family

- No treatment or referral is needed
- Explain that the newborn is normal and the yellow colour will slowly go away.
- Keep the newborn warm
- Continue frequent and exclusive breastfeeding
- Keep the newborn in morning sun light for about an hour
- Assure family and mother that no food restrictions to be followed by mother
- Ask mother to drink lots of fluid
- Educate on danger signs and ask family and mother to keep a close watch for appearance of any danger signs and seek medical help if needed
- Ask mother to come for a follow-up as appropriate

Pathological jaundice

Talk gently with family and explain findings, diagnosis and plan of care and decide type if possible

Conjugated

Refer to higher centre

Unconjugated

Begin phototherapy when indicated and monitor
- Temperature
- Feeding
- Appearance of danger signs, abnormal movements, opisthotonus, shrill cry
- Hydration
- Serum bilirubin if possible at least once in 24 hours. If the serum bilirubin continues to rise after phototherapy and/or it is in the exchange range for the newborn then prepare for an exchange transfusion or refer to a higher centre where exchange transfusion facilities are available

Additional laboratory tests that may be considered in a newborn with jaundice to look for a cause, depending on availability of facilities are:

- Blood type (of newborn and mother) and Coomb's test
- Complete blood count and smear, reticulocyte count
- Direct or conjugated bilirubin
- Evaluate for sepsis if suggested by history and physical exam
- For jaundice present at or beyond 3 weeks of age, evaluate for hypothyroidism and cholestasis (if conjugated bilirubin levels are high)

3-9 NEWBORN WITH BREATHING DIFFICULTY

Definition
Respiratory distress in a newborn is defined as respiratory rate more than 60 per minute and/or any of the following signs: a) grunting, b) chest in-drawing, c) central cyanosis, d) nasal flaring.

Causes
- Pneumonia - most common cause
- Birth asphyxia
- Meconium aspiration/milk aspiration.
- Additional causes: respiratory distress syndrome in premature babies, retained lung fluid, congenital heart disease, tracheoesophageal fistula, diaphragmatic hernia, etc.

History
- Details of obstetric history-period of gestation (POG) at delivery, place and type of delivery, any complications during pregnancy, labour or delivery
- Condition of newborn immediately after birth, any history of asphyxia
- Time when the problems start and worsen and any other symptoms

Clinical signs
- Rapid breathing: more than 60 breaths per minute or slow breathing less than 30 breaths per minute
- Irregular breathing with respiratory pauses (longer than 20 seconds—apnoea)
- Chest in-drawing, grunting, flaring of nostrils
- Cyanosis (severe pneumonia, heart disease)
- Auscultation of chest: crepitations, wheezing

Additional findings
- Scaphoid abdomen (diaphragmatic hernia)
- Meconium stained cord and nails (meconium aspiration syndrome)
- Look for physical features of prematurity
- Look for features of other associated congenital anomalies (congenital heart disease; drooling and feeding difficulties - tracheoesophageal fistula)

Assessment of severity of respiratory distress using Downes score

Score	Respiratory rate	Cyanosis	Air entry	Grunting	Chest retraction
0	Less than 60 per minute	Nil	Normal	None	Nil
1	60-80 per minute	In room air	Mild	With stethoscope	Mild
2	More than 80 per minute	In more than 40% oxygen ($O_{2)}$	Marked	With naked ear	Moderate

- Score of more than and equal to 4 for at least 2 hours during the first 8 hours of life denotes clinical respiratory distress, give oxygen at a high flow rate (5-10 L/min)
- Score of more than and equal to 6 ***or not improving on high flow oxygen*** is an indication for ventilator assistance, organize transfer to a tertiary hospital for assisted ventilation and further diagnosis evaluation
- Give first dose of antibiotics (ampicillin and gentamicin) prior to transfer.

References
CHD. 2016. *National Neonatal Clinical Protocol.* Kathmandu: Child Health Division.
CHD. 2074. *Facility Based Integrated Management of Neonatal and Childhood Illness (FBIMNCI) Training Package.* Kathmandu: Child Health Division.
CHD. 2073. *Comprehensive Newborn Care Training Package, For Level II Hospital Care.* Kathmandu: Child Health Division.
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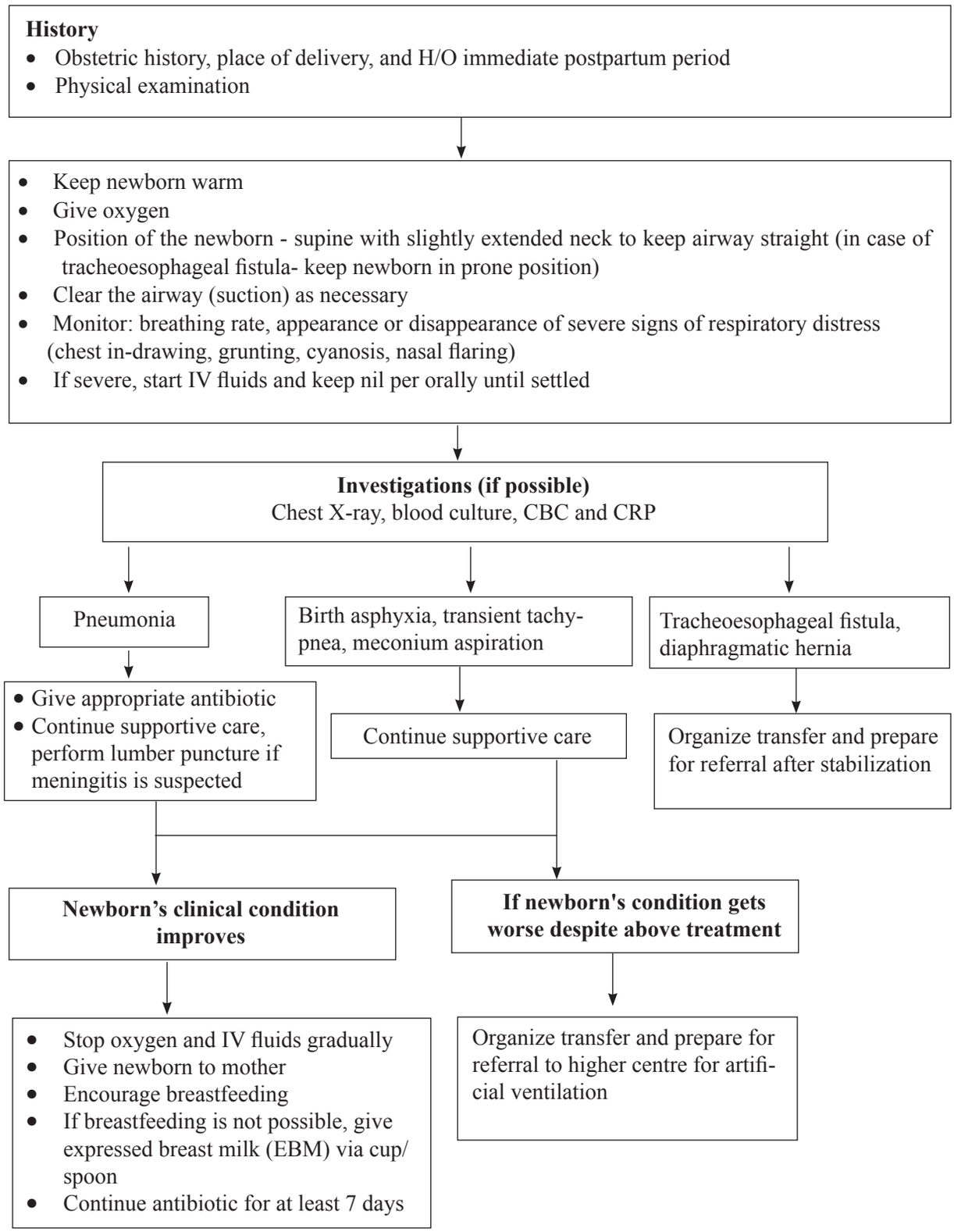
3-9 NEWBORN WITH BREATHING DIFFICULTY



3-10a NEWBORN WITH FEEDING DIFFICULTY

Feeding difficulty is a common problem during the first few days of life. It is usually associated with incorrect breastfeeding technique, preterm or IUGR or illness in the newborn.

Conditions associated with feeding difficulties

1. Suspected sepsis

History

- Change in feeding pattern (normal feeding baby is not feeding well)
- Maternal history of prelabour rupture of membrane (more than 18 hours)
- Fever from onset of labour to three days after birth
- Feeding difficulty usually starts from second or third day of life or even later

Clinical signs

- Newborn has any one sign from the algorithm for neonatal sepsis *(protocol 3-7)*

2. Twin or small baby

Signs/symptoms

- Newborn has physical features of a preterm baby
- Feeding difficulty starts from onset of delivery
- Newborn does not wake up for feeds, feeds slowly and tires quickly
- Newborn usually not ready to breastfeed, although breastfeeding technique is correct

3. Poor attachment/incorrect positioning

Sign/symptoms

- The mother is not able to breastfeed successfully
- Mother has sore nipples/flat or inverted nipple
- Newborn not well-positioned/attached during breastfeeding
- Starts in the first day of birth or later
- Newborn looks well otherwise

4. Cleft lip or palate

Signs/symptoms

- Newborn has cleft lip or cleft palate or both, causing difficulty in sucking

5. Gastrointestinal malformation or obstruction

Signs/symptoms

- Starts from onset of delivery.
- Newborn has coughed, choked and regurgitated feeds since first feeding, e.g. tracheo-esophageal fistula
- Vomits contains milk which may be bile stained, e.g. intestinal atresia
- Newborn may have abdominal distension, e.g. intestinal obstruction, necrotizing enterocolitis
- Nasogastric tube does not pass or the tip of the tube returns
- Frothy secretions from mouth even when the newborn is not being fed
- There may be a history of failure to pass meconium within 24 hours of birth, e.g. Hirschsprung's disease

References

CHD. 2016. *National Neonatal Clinical Protocol.* Kathmandu: Child Health Division.

CHD. 2074. *Facility Based Integrated Management of Neonatal and Childhood Illness (FBIMNCI) Training Package.* Kathmandu: Child Health Division.

CHD. 2073. *Comprehensive Newborn Care Training Package, For Level II Hospital Care.* Kathmandu: Child Health Division.

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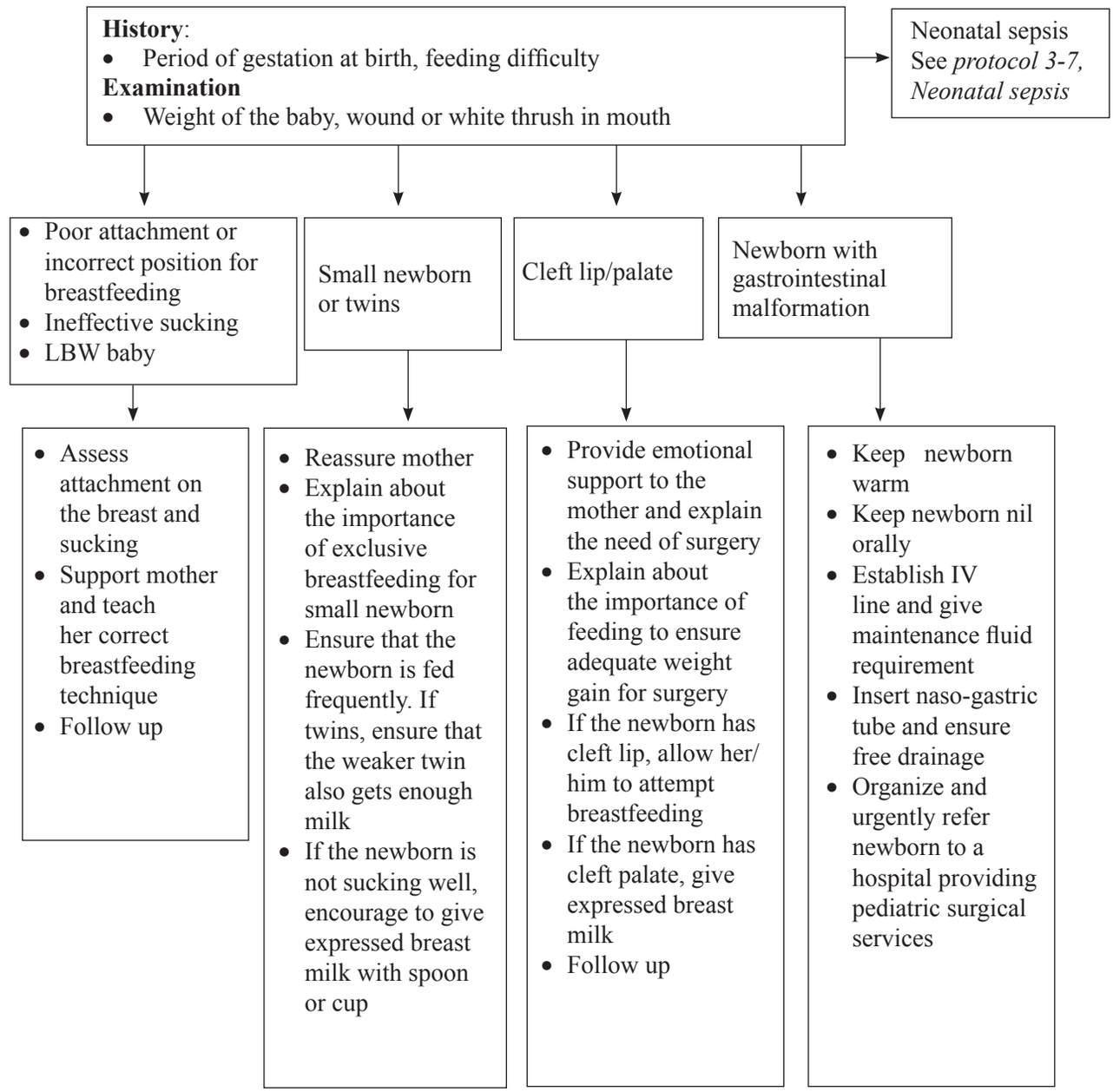
3-10A NEWBORN WITH FEEDING DIFFICULTY



3-10b NEWBORN WITH VOMITING AND/OR ABDOMINAL DISTENSION

Vomiting is said to be present when a newborn brings up a large amount of milk forcefully and regardless of whether he/she is breastfed or fed with a spoon. The vomitus may contain all of the feed that has been given to the newborn and in some cases contain bile or blood. A newborn who is vomiting may also have abdominal distension.

Spitting or bringing up small quantities of milk after a feed is common in a newborn and does not have any effect on her/his growth.

The common causes of vomiting with/without abdominal distension in a newborn are:

- Gastric irritation because of swallowed meconium, maternal blood
- Suspected sepsis
- Suspected gastrointestinal malformation or obstruction
- Necrotizing enterocolitis

To find out the cause, additional questions to ask the mother of a newborn with vomiting with/without abdominal distension are:

- Did the vomiting begin after the first feed or later?
- How long after a feed does the newborn vomit?
- Does the vomitus contain bile or blood?
- Does the newborn vomit, cough or choke or turn blue after every feed since birth?
- Has the newborn passed meconium?
- Was meconium present in the amniotic fluid?
- Does the mother have sore or cracked nipples?
- Does the newborn have abdominal distension?

During examination, do not forget to check if the newborn has an imperforate anus

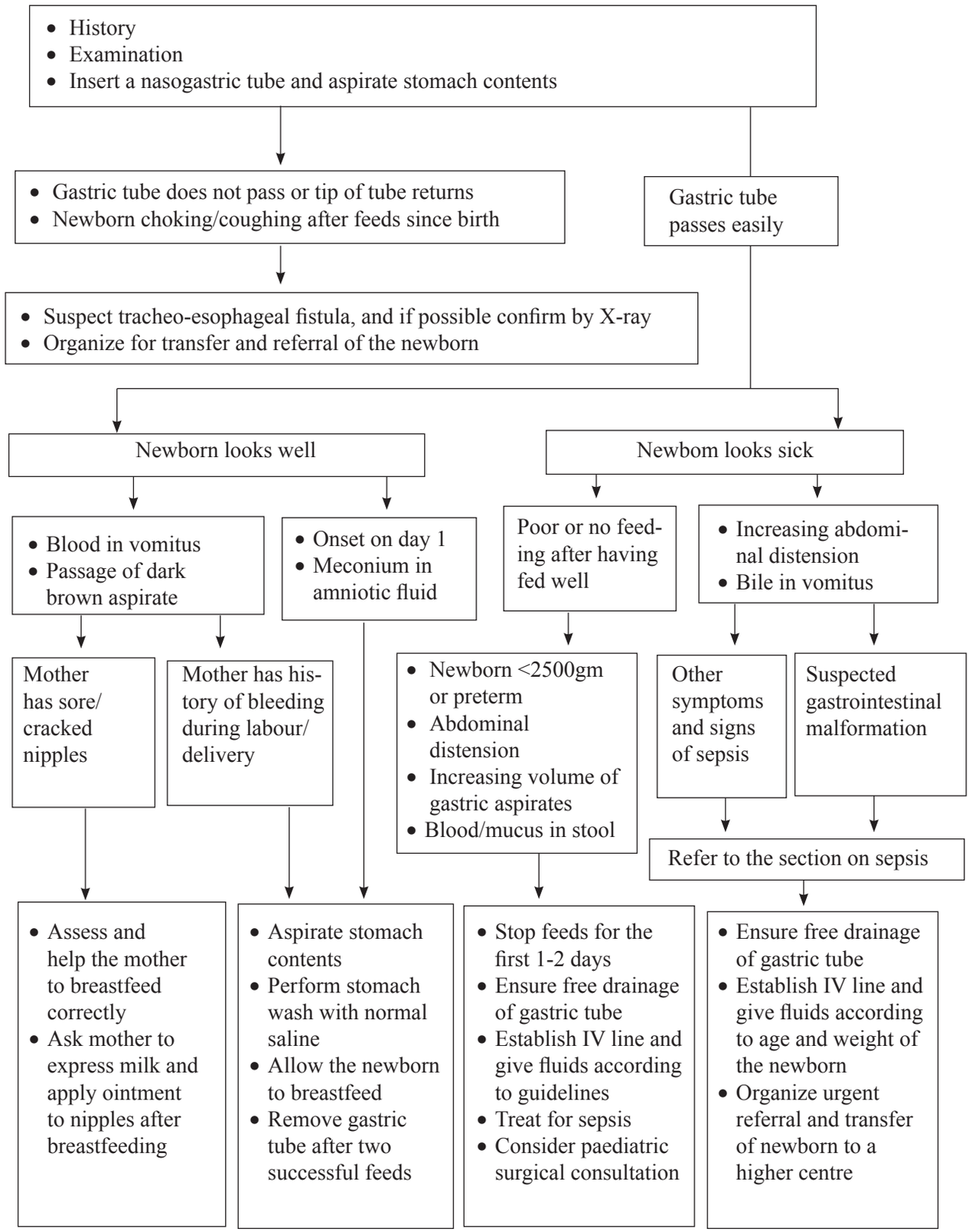
General management of vomiting and/or abdominal distension

- Insert a gastric tube (size 5-8 F) via the nasal route
  - If the tube does not pass or the tip returns and the newborn also has excess secretions that need frequent suctioning, tracheo-esophageal fistula is a possible cause and so the newborn needs urgent referral and transfer her/him to a higher centre for surgery.
  - If the tube passes easily, confirm that the tube is in the stomach and aspirate the stomach contents without using too much force.
- Do not feed the newborn until the probable cause of the vomiting/abdominal distension has been determined.

Reference:

WHO. 2003. *Integrated Management of Pregnancy and Childbirth, Managing Newborn Problems: A guide for doctors, nurses, and midwives.* Geneva: World Health Organization.

3-10b NEWBORN WITH VOMITING AND/OR ABDOMINAL DISTENSION



3-11 NEWBORN WITH HYPOGLYCEMIA

Definition
It is a condition where blood sugar level is less than 45 mg per dl (less than 2.6 mmol) in a newborn.

Newborns at risk of developing hypoglycemia are those with the following conditions:
- Preterm babies
- Newborn of diabetic mother.
- Large newborn baby (birth weight more than 4000gm)
- Small baby (birth weight less than 2000 gm)
- Newborn with feeding difficulty
- Newborn with sepsis, asphyxia, hypothermia, Rh incompatibility

Signs and symptoms
Symptoms due to hypoglycaemia are not specific and include the following:
- Lethargy
- Apnoea
- Cyanosis
- Weak or high pitched cry
- Tremors, jitteriness or irritability
- Convulsions
- Poor feeding, vomiting
- Hypothermia

Effects/impacts of hypoglycemia
Hypoglycaemia may lead to impairment of brain growth and function. Newborns who have suffered from severe prolonged hypoglycaemia can suffer from mental retardation and recurrent seizures later on in life.

Screening for hypoglycemia
As the detection and correction of hypoglycaemia is so important, newborns who are at risk of developing hypoglycaemia or have symptoms that could be due to hypoglycaemia should have their blood glucose levels measured.

Newborns with risk factors (small baby, large baby, infant of diabetic mother, etc.) should have their glucose levels measured within the first 1 to 2 hours of life.

Formula for preparing desired concentration of glucose
The formula for preparing 100ml of fluid with a desired concentration of glucose using 5% dextrose and 25% dextrose solutions is given by the formula **5X-25 =Y** where X is the required percentage of dextrose and Y is the amount of 25% dextrose (in ml) to be made up with 5% dextrose to make a total of 100ml.

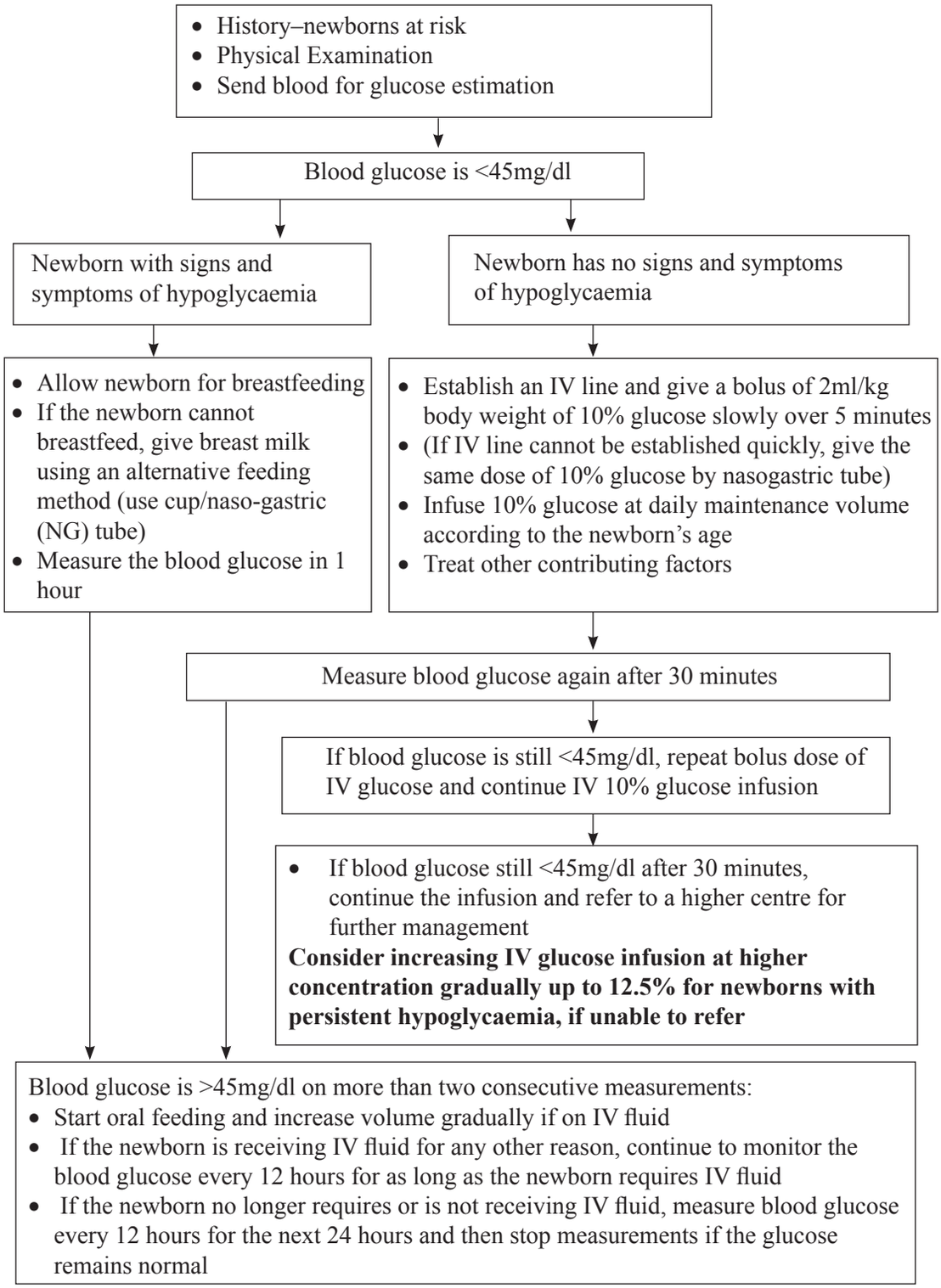
For example, to prepare 100ml of 10% dextrose from 5% dextrose and 25% dextrose, add 5x10-25=25ml of 25% dextrose to the remaining volume, i.e. 100-25 =75 ml of 5% dextrose.

To prepare 100ml of 12.5% dextrose, add 5x12.5-25=37.5ml of 25% dextrose to 62.5ml (100-37.5) of 5% dextrose.

Formula for calculating glucose infusion rate (GIR)
GIR = Rate of IV fluids (in ml/kg/day) x % of dextrose infused (mg/kg/min) /144

References:
CHD. 2016. *National Neonatal Clinical Protocol.* Kathmandu: Child Health Division.
CHD. 2074. *Facility Based Integrated Management of Neonatal and Childhood Illness (FBIMNCI) Training Package.* Kathmandu: Child Health Division.
WHO. 2003. *Integrated Management of Pregnancy and Childbirth, Managing Newborn Problems: A guide for doctors, nurses, and midwives.* Geneva: World Health Organization.

3-11 NEWBORN WITH HYPOGLYCEMIA



3-12 NEWBORN WITH SEIZURES

A newborn with abnormal movements may be having seizure (convulsions), spasms or jitteriness.

Convulsions

Convulsions can be due to asphyxia, birth injury or hypoglycaemia and are also a sign of meningitis or neurological problems. Newborns may have generalized or subtle convulsions.

As the newborn's ability to feed improves:

- Slowly decrease the IV glucose (over a 3-day period) while increasing the volume of oral feeds
- **Do not discontinue the glucose infusion abruptly.**
- Discontinue regular monitoring if blood glucose is 45mg/dl or more on two consecutive measurements

Spasms

Spasm occurs in a newborn with tetanus neonatorum. It is due to the toxin, *tetanospasmin* produced by *Clostridium tetani* in a newborn. Symptoms usually start from day 3 to day 14 of life and not before.

Jitteriness

A newborn who is hypoglycemic may have jitteriness. Like convulsions, jitteriness is characterized by rapid repetitive movements of limbs. However, these movements are of the same amplitude and in the same direction and disappear when newborn's limb is held in a flexed position. Like spasms, jitteriness can be precipitated by sudden handling of the newborn or by loud noises but is usually stopped by cuddling, feeding new born and flexing the limb.

Management of Seizures

- Give oxygen and open intravenous (IV) line
- Give 10% dextrose 2 ml per kg IV (also for the jitteriness)
- Give 10% calcium gluconate 2 ml per kg slowly over an hour with heart rate monitoring
- Start Injection ampicillin/gentamicin/cefotaxime if infection (meningitis) is suspected
- Give phenobarbitone 20 mg per kg dissolved in 10 ml of normal saline (NS) and infuse over 30 minutes
- If seizure continues, 10 mg per kg of injection phenobarbitone can be repeated twice in 15 minutes interval.
- If injection phenobarbitone is not available, injection Phenytoin can be given in the same dose.
- If seizure continues, transfer the newborn to a higher-level facility for further evaluation and management.

***References**:*

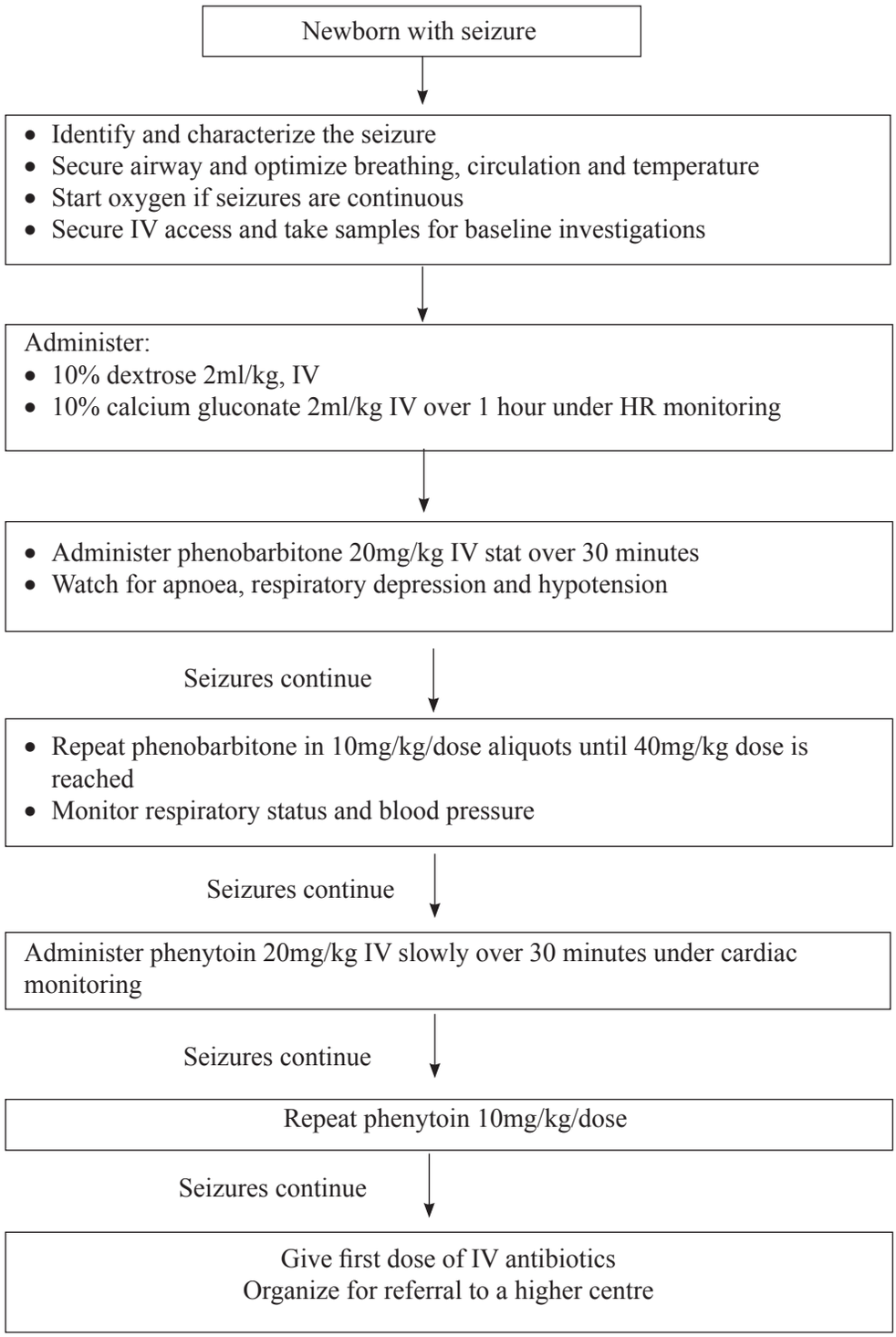
CHD. 2016. *National Neonatal Clinical Protocol.* Kathmandu: Child Health Division.

CHD. 2074. *Facility Based Integrated Management of Neonatal and Childhood Illness (FBIMNCI) Training Package.* Kathmandu: Child Health Division.

CHD. 2073. *Comprehensive Newborn Care Training Package, For Level II Hospital Care.* Kathmandu: Child Health Division.

WHO. 2003. *Integrated Management of Pregnancy and Childbirth, Managing Newborn Problems: A guide for doctors, nurses, and midwives.* Geneva: World Health Organization.

3-12 NEWBORN WITH SEIZURES



3-13 NEWBORN WITH BIRTH INJURY

Definition

A potentially avoidable mechanical injury occurring during labour and delivery.

Conditions associated with birth injury are

- Maternal age (too young/too old)
- Grand multiparity
- Twins (particularly the second)
- Malpresentation
- Large baby
- Instrumental delivery

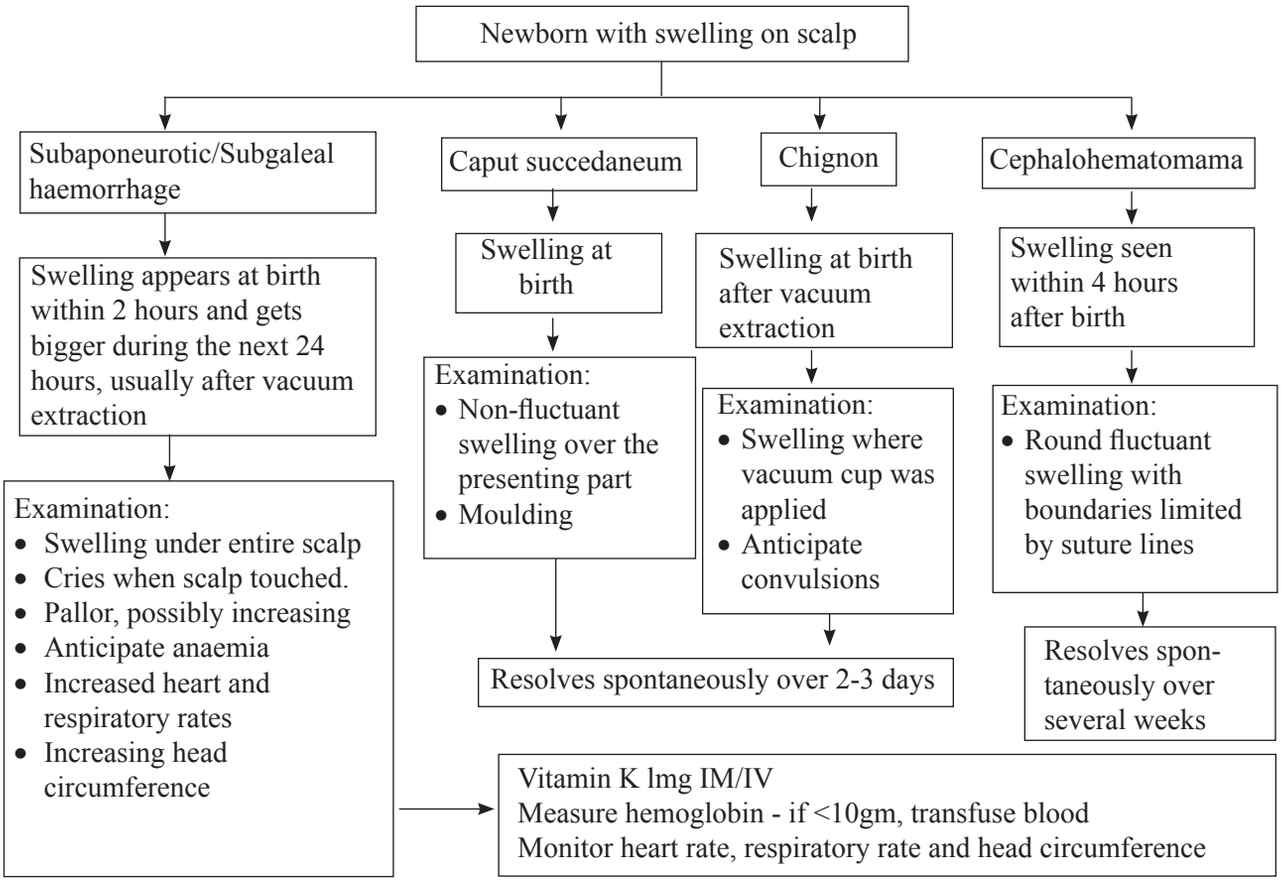
Injuries without visible bleeding: usually associated with history of difficult birth, breech delivery or use of forceps and vacuum. For example:

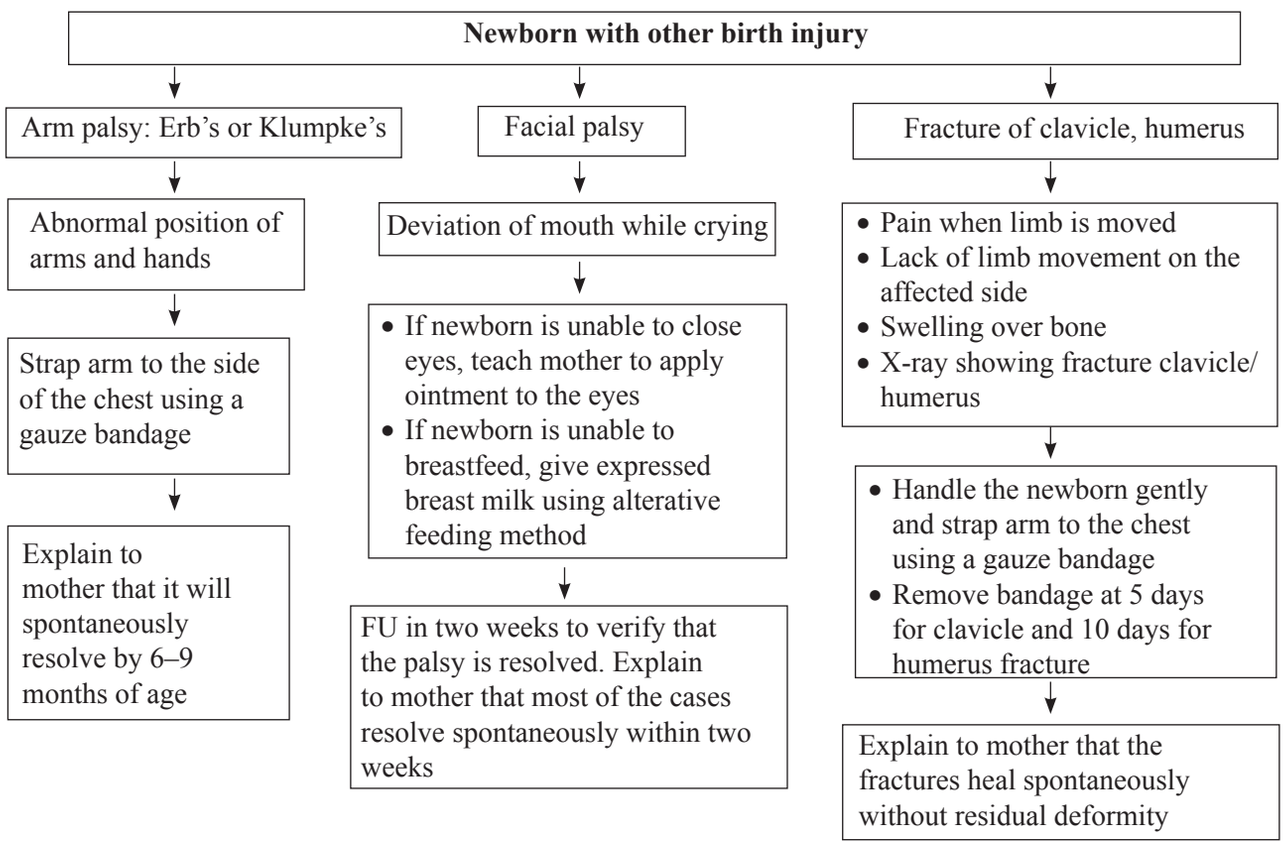
- Swelling over scalp due to caput succedaneum, cephalhematoma, etc.
- Fractures of clavicle, humerus or femur
- Facial palsy, Erb's or Klumpke's palsy

***Reference**:*

WHO. 2003. *Integrated Management of Pregnancy and Childbirth, Managing Newborn Problems: A guide for doctors, nurses, and midwives.* Geneva: World Health Organization.

3-13 NEWBORN WITH BIRTH INJURY





ANNEX 1: FEEDING GUIDELINE TO PROVIDE FLUIDS AND FEEDING FOR LOW BIRTH WEIGHT BABIES

Categories of neonates			
Birth Weight	Less than 1200gm	1200 to 1800gm	More than 1800gm
Gestation	Less than 30 weeks	30-34 weeks	More than 34 weeks
Initial Day	Intravenous fluid	Tube feeding	Breastfeeding If unsatisfactory, give cup/ spoon-feeding.
1-3 days	Tube feeding	Cup/spoon feeding	Breastfeeding
1-3 weeks	Cup/spoon feeding	Breastfeeding	Breastfeeding
4-6 weeks	Breastfeeding	Breastfeeding	Breastfeeding

Note: For babies on tube on cup/spoon feeding

- Use expressed breast milk.
- Put baby to breast before each feed as it promotes lactation and helps baby to learn to suck.
- The above are only guidelines as the feeding of every baby should be individualized.

Fluid requirements of neonate (ml per kg body weight)

Choice of IV fluids

- Determine required volume of fluid as per birth weight and age (see table below)
- Use 10% dextrose for initial 48 hours of life
- After 48 hours, if baby is passing urine, 10% dextrose and 1/5 normal saline (NS)
- If the remixed solution is not available,
    - Take normal saline 20ml/kg body weight
    - Add remaining fluid volume as 10% dextrose
    - Add 1ml KCL per 100ml of prepared fluid

Administration of IV fluids

- Use micro-drip infusion set (where 1ml = 60 micro drops)
- In this device, ml of fluids per hour is equal to the number of micro-drops per minute, e.g. 6ml/hour = 6 micro drops/minute
- Calculate rate of administration, monitor to ensure that micro-dropper delivers required rate

Fluid requirements of newborns

Day of life	Amount of fluids required (ml per kg per day)	
	Birth weight more than 1500gm	**Birth weight less than 1500gm**
1	60	80
2	75	95
3	90	110
4	105	125
5	120	140
6	135	150
Day 7 onwards	150	150

Note:

- An extra 30% for body weight should be added for neonates receiving phototherapy
- These are only general guidelines; the fluid therapy of every baby should be individualized.

Never discontinue the IV fluid abruptly

ANNEX 2: BREASTFEEDING

The best milk for newborn baby is breast milk. All babies should be exclusively breastfed until six months of age. It contains all the nutrients required for normal growth and development of a baby from birth until 6 months of age. After delivery when the baby is wrapped with dry and warm cloth, she/he should be given to mother for breastfeeding, rooming in and immediate breastfeeding, which helps both the mother and baby for bonding, keeping baby warm, stimulates uterine contractions and helps in passive immunity through the colostrum.

Advantages of breastfeeding
Breast milk has perfect nutrients. It is easily digested and efficiently used and protects against infection. Breastfeeding helps bonding and development, helps delay in next pregnancy and costs less than artificial feeding.

Technique of breastfeeding
Most of the mothers can breastfeed successfully, but some mothers require some support to initiate breastfeeding, especially primipara mothers, mothers who had problem during breastfeeding during previous pregnancy, mothers with retracted nipple or unmotivated mothers.

Mother should take any position that is comfortable to her and her baby. For mothers to produce enough milk, the baby must suckle enough in the correct manner. Correct positioning ensures effective suckling and prevents breast engorgement and sore nipples.

Proper positioning involves
- Baby's body is well supported
- The hand, neck and the body of the baby are in the same plane
- Entire body of the baby faces the mother
- Baby's abdomen touches the mother's abdomen

Proper attachment involves
- Baby's mouth is wide open
- Lower lip is turned outwards
- Baby's chin touches mother's breast
- Majority of areola is inside the baby's mouth

General principles of exclusive breastfeeding
- Encourage early and exclusive breastfeeding whenever possible
- Explain to mother and her family the benefits of early and exclusive breastfeeding
- Encourage mother to breastfeed on demand, both day and night and for as long as the baby wants
- Advise mother to offer the second breast once the baby releases the first breast on his/her own
- Advise mother not to force the baby to feed, interrupt a feed before the baby is done, use a pacifier and give the baby any food or drink other than breast milk for the first six months of life.
- Include the family member or support person while discussing breastfeeding.
- Ensure that the mother eats nutritious food and keeps herself clean.
- If the mother or the baby is too sick to breastfeed, advise mother on expression of breast milk.
- Give the baby a breast milk substitute, only if expression is not possible or is contraindicated because of maternal illness and drugs.

Expressing breast milk: To express breast milk adequately and comfortably, it takes 20-30 minutes.

Teach mother to
- Wash hands with soap and water before expression,
- Apply warm compression before expression and cold compression afterwards to reduce swelling,
- Sit comfortably and hold the clean container under the nipple,
- Place the thumb above and the first finger below and behind the nipple approximately 4cm from the base of the nipple,
- Support the breast with the other three fingers,
- Press the breast inwards gently towards the chest wall,
- Press the breast between the forefingers and thumb. Press and release several times.
- Avoid rubbing or sliding fingers along the skin,
- Rotate the position of the thumb/finger around the breast with each compression,
- Express breast milk until milk drips and then express the other breast,
- Alternate between the breasts 5-6 times.

NNEX 3: EMOTIONAL SUPPORT TO THE MOTHER AND FAMILY OF A BABY WHO IS DYING OR HAS DIED

- Allow the mother and family to be with the baby whenever possible.
- Explain what is being done and why.
- Involve the parents in decision making when considering whether further treatment is appropriate.
- If an informed decision has been made to stop resuscitation or the baby's death is unavoidable, focus on providing emotional support to the family.
- Encourage the mother and family to see and hold the baby after death and for as long as they desire, if they wish to.
- Arrange for privacy for the affected family.
- Transfer and referral of newborns.

If the baby needs to be transferred to a tertiary hospital or specialized centre, ensure a safe and timely referral. It is important to prepare the baby for transfer, communicate with the receiving facility and provide care during transfer.

Preparation

- Explain to the family the reason for transfer of the baby
- Discuss referral reason and ask family if it is possible for them to go for referral
- Be gentle and patient in answering all questions
- Transfer mother with baby, if possible, so that she can continue to breastfeed or provide expressed breast milk.
- Ask a relative to accompany the baby and mother, if possible
- Remind them to plan about transportation and funds
- Have a health care provider accompany the baby, if possible
- Prepare the baby for transfer:
  - Ensure the baby's condition is stable before transfer.
  - Give necessary emergency treatment before transfer (e.g. treat hypoglycemia, warmbaby if hypothermic).
  - If serious infection, give the first dose of antibiotics before referral.
  - Ensure that IV line, if present, is secured and the micro dropper is filled with fluid
  - Gather necessary equipment, e.g. oxygen cylinders, ambu bag, supplies, drugs and fluid, etc.

Communication

Contact the receiving facility in advance so that they can be prepared

- Confirm that the facility is able to admit the baby.
- Fill out a referral form with exam findings, referral reason, treatments given, date and time, attending doctor's name and send it with the baby.
- Send mother's antenatal and labour/delivery records and baby's records, if available.

Care during transfer

- Keep the baby in skin-to-skin contact with mother or dressed and covered to keep warm.
- For babies receiving IV fluid, monitor rate and check volume of fluid infused and inspect the IV site every hour.
- For babies receiving oxygen, check the flow and tubing every 15 minutes.
- Assess the baby's respiratory rate every 15 minutes. If the baby is not breathing, is gasping or has a respiratory rate <20 breaths per minute, resuscitate the baby using a bag and mask.
- Stop the vehicle, if necessary, to manage problems.

If referral is delayed, impossible or family refuses

- Continue to support family.
- Continue any treatments available.

Section 4

PREVENTION AND MANAGEMENT OF STIs AND HIV

4-1 URETHRAL DISCHARGE SYNDROME

Urethral discharge syndrome is one of the most common presentations of sexually transmitted infections (STIs) in men, often associated with dysuria (burning while passing urine) and discharge from the urethra. Persistent or recurrent urethral discharge results from poor compliance with prescribed medication, drug resistance or reinfection.

Common causative organisms
- *Neisseria gonorrhoea*
- *Chlamydia trachomatis*
- Occasionally, they may also be caused by *Trichomonas vaginalis*/*Mycoplasma genitalium*/*Ureaplasma urealyticum* and may be of unknown causes (nonspecific urethritis)

Signs and symptoms
- Discomfort or burning while passing urine, increased frequency of urine
- Discharge from urethra, thin to thick, clear to pus
- Obvious discharge (with or without milking urethra) from the urethral opening or from preputial fold
- Erythema of the urethral meatus

Additional information
- Similar symptoms in the sexual partner
- Past history of similar symptoms
- Treatment history

Examination
General examination
- Oral cavity (look for pus-like discharges in pharyngeal clefts)
- Lymph nodes, especially inguinal

Local examination
- Expose genital and perineal areas
- Look for anorectal discharge and any ulcer or growth or blister in anogenital region
- Look at the penis with foreskin forward and pulled back
- Demonstrate and ask the patient to "milk" the penis and show discharge
- Palpate groin for swelling

Treatment
Gonococcal infection: Tablet cefixime 400mg orally single dose **OR** injection ceftriaxone 250mg intramuscular (IM) single dose **PLUS**

Chlamydial infection: Tablet azithromycin 1gm orally single dose **OR** tablet doxycycline 100mg orally every 12 hours for 7 days

Trichomonas vaginalis: Tablet metronidazole 400mg orally every 12 hours for 7 days **OR** tablet tinidazole 500mg orally every 12 hours for 5 days **PLUS**

Mycoplasma infection: Tablet azithromycin 500mg orally once daily for 6 days.

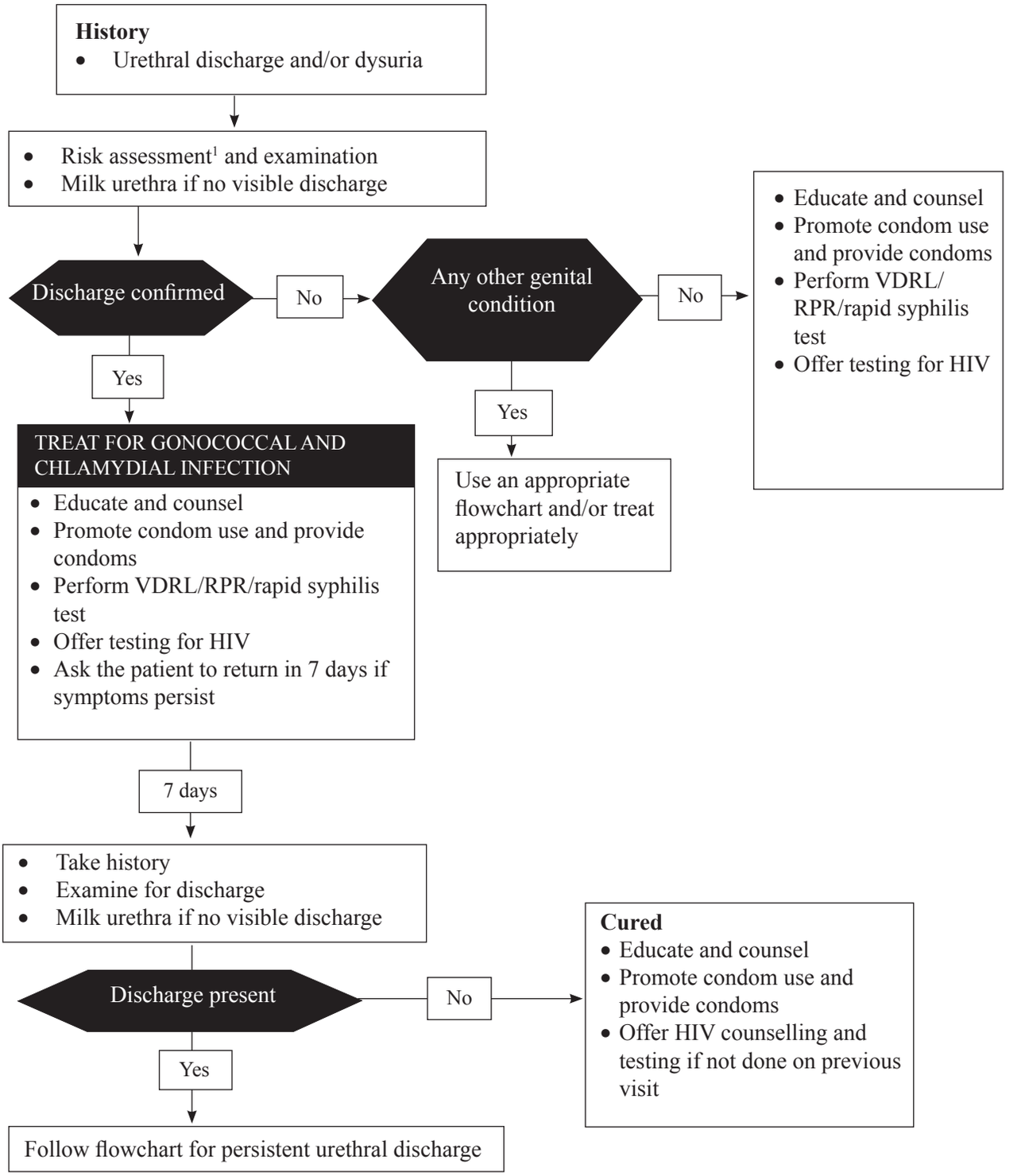
Education and counselling
- Emphasize on 4Cs (compliance, counselling/client education, contact tracking/partner treatment, condoms)
  - Counsel to complete the treatment as prescribed
  - Counsel or educate for reducing the number of partners
  - Counsel or educate for partner/s' treatment
  - Promote condom use, demonstrate and provide condoms.

- Advise to avoid sexual intercourse without using condom till symptoms resolve
- Advise and refer for serological test for syphilis and HIV testing
- Follow up after one week
- Assess risk for: condomless sex, condom breakage or slippage

Reference:

NCASC. 2014. *National Guidelines on Case Management of Sexually Transmitted Infections.* Kathmandu*:* National Centre for AIDS and STD Control.

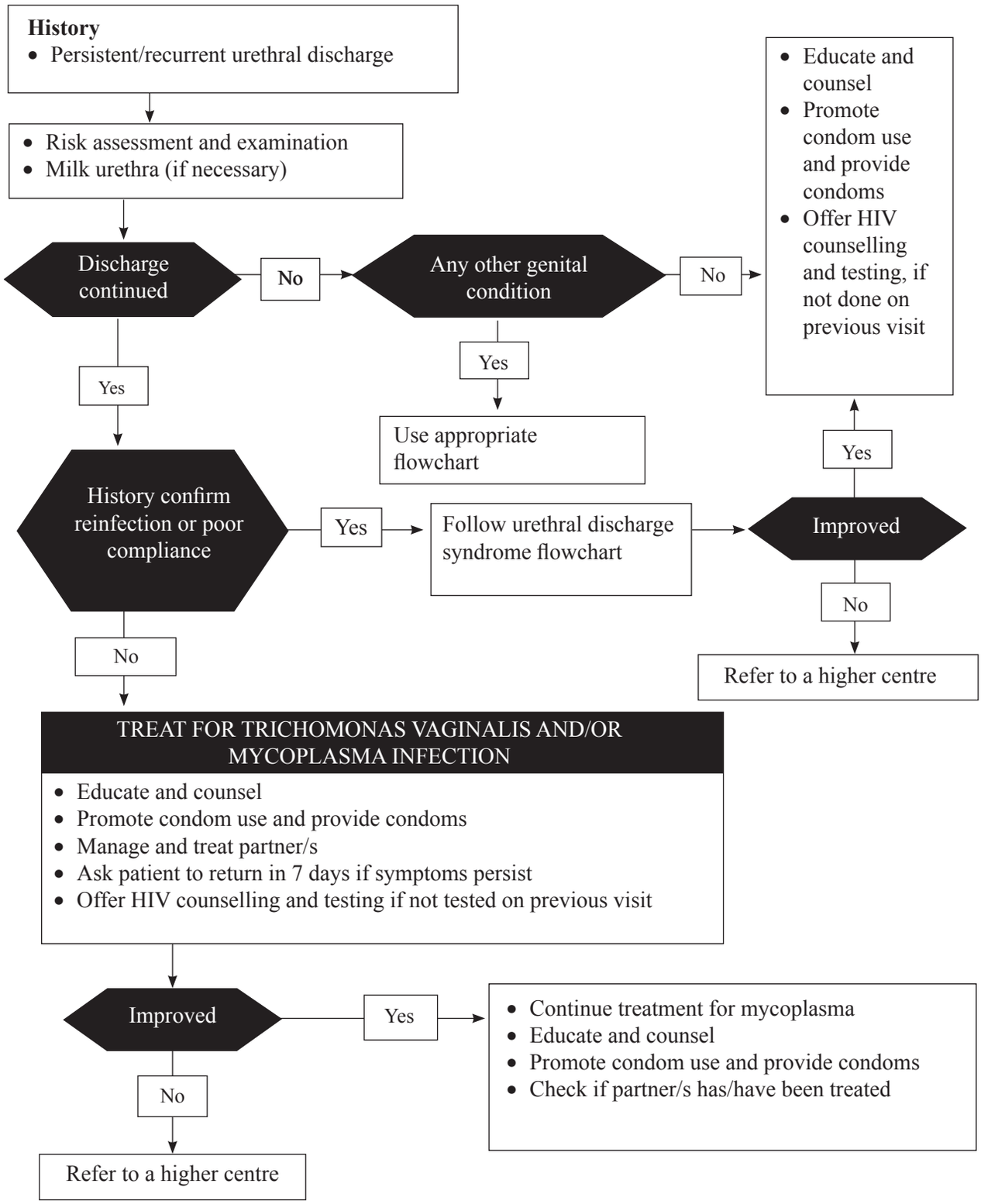
4-1a URETHRAL DISCHARGE SYNDROME



Notes:

1. Assess risk for: condomless sex, condom breakage or slippage
2. If there is no current evidence of discharge, if feasible, encourage the patient to return the following day after holding urine for 4 hours and reassess for discharge
3. If microscopy is available, do Gram stain on urethral smear. If Gram-negative intracellular diplococcic or pus cells (PMNL) >5 PMNL/HPF are seen, treat for gonococcal and chlamydial infections. If no Gram-negative intracellular diplococci but only pus cells are seen, treat for chlamydial infections only.
   (PMNL: polymorph nuclear leucocytes, HPF: high power field)

4-1b PERSISTENT/RECURRENT URETHRAL DISCHARGE SYNDROME



Note: Advise the patient to abstain from sexual intercourse for 7 days after single dose therapy or until completion of 7-day regimen until the symptoms have resolved and until the partner/s is/are treated.

4-2 SCROTAL SWELLING SYNDROME

Inflammation of testis (orchitis) and epididymis (epididymitis) or both (epididymo-orchitis) causes swelling and pain in testis and/or epididymis.

Causative organisms
- *Neisseria gonorrhoea*
- *Chlamydia trachomatis*

Signs and symptoms
- History suggestive of urethral discharge
- Testicular swelling and pain
- Dysuria, increased frequency of urine
- Swelling and tenderness of testis and epididymis
- Urethral and/or anorectal discharge

Additional information needed
- Similar infections in a sexual partner
- Past history of similar symptoms
- Treatment history

General examination
- Oral cavity (look for pus-like discharges in pharyngeal clefts)
- Enlarged lymph nodes, especially inguinal

Local examination
- Expose genital and perineal areas
- Look for anorectal and urethral discharge, ask the patient to "milk" the penis and show discharge
- Examine scrotum for swelling and tenderness, rule out surgical causes
- Palpate groin for swelling

Treatment
Gonococcal infection: Tablet cefixime 400mg orally single dose **OR** injection ceftriaxone 250mg intramuscular (IM) single dose **PLUS**

Chlamydial infection: Tablet azithromycin 1gm orally single dose **OR** tablet doxycycline 100mg every 12 hours for 10 days

Supportive therapy: Bed rest, antipyretics and analgesics and scrotal support until local inflammation and fever subside.

Education and counselling
- Emphasize on 4Cs (compliance, counselling/client education, contact tracking/partner treatment, condoms)
  - Counsel to complete the treatment as prescribed
  - Counsel or educate for reducing the number of partners
  - Counsel or educate for partner/s' treatment
  - Promote condom use, demonstrate and provide condoms
- Advise to avoid sexual intercourse without using condom until the symptoms resolve
- Advise and refer for serological test for syphilis and HIV testing
- Follow up after one week
- Assess risk for: condomless sex, condom breakage or slippage

Reference:
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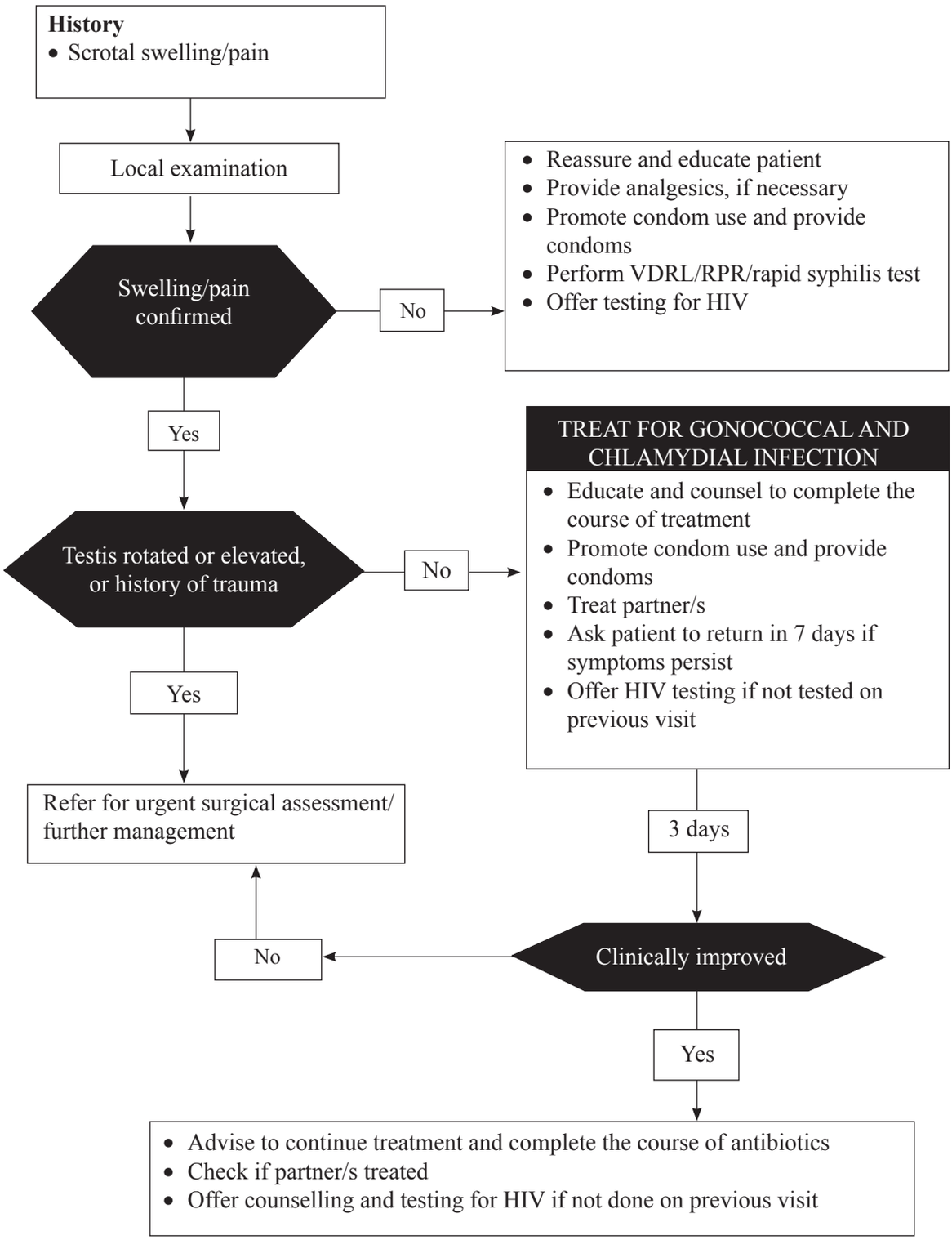
4-2 SCROTAL SWELLING SYNDROME



Note: Surgical causes like trauma, torsion and other infections (e.g. tuberculosis) should always be ruled out. Scrotal swelling can also be due to hydrocele/hernia/varicocele/tumour.

4-3 GENITAL ULCER DISEASE SYNDROME

Genital ulcer disease syndrome (GUDS) is a common sexually transmitted infection (STI) present with genital ulcers with or without inguinal lymphadenitis and can be caused by several organisms.

Causative organisms

- *Treponema pallidum* (Syphilis)
- *Haemophilus ducreyi* (Granuloma inguinale)
- *Herpes simplex virus* (HSV)
- *Klebsiella granulomatis*

Signs and symptoms

- Soreness or pain in genital area
- Ulcers—single or multiple in—the genitalia
- Unilateral or bilateral inguinal lymphadenopathy
- Ulcer at external genitalia, which may be single or multiple, superficial or deep, clean or dirty; at inner surface of the foreskin in male and under the labia (in female), perineum, perianal region, in anus or in oral cavity
- Unilateral or bilateral enlargement of local lymph nodes related to ulcers
- Non-itchy maculopapular rashes on palms and soles and sometimes all over the body

Where to look for ulcers

Male: External genitalia, including the inner surface of the foreskin and the part it normally covers
Female: Examine the skin of the external genitalia and the mucus surfaces by separating the labia
Both sexes or transgender: Ulcers may be present at perineum, perianal region, anus or oral cavity

Additional information needed

- Similar infections in a sexual partner
- Past history of similar symptoms
- Treatment history
- Menstrual and obstetric history in female

Treatment

- Treat for syphilis or chancroid or lymphogranuloma or herpes
- Aspirate fluctuant gland, if required
- Offer syphilis serology and HIV testing
- Advise to keep ulcer clean and dry

Drug treatment as per the relevant condition

Syphilis: Injection benzathine penicillin 2.4 million IU intramuscular (IM) (single dose, if history is of less than two years), 2.4 million IU every week for three weeks (if history is of more than two years). Divide 2.4 million IU into two equal doses (1.2 million each and inject in both buttocks).
Herpes: Tablet **a**cyclovir, 400 mg orally in every 8 hours for 7 days
Chancroid: Tablet azithromycin 1gm orally single dose **OR** tablet ciprofloxacin 500mg orally every 12 hours for 3 days **OR** injection ceftriaxone 250mg IM single dose **OR** tablet erythromycin 500mg orally every 6 hours for 7 days

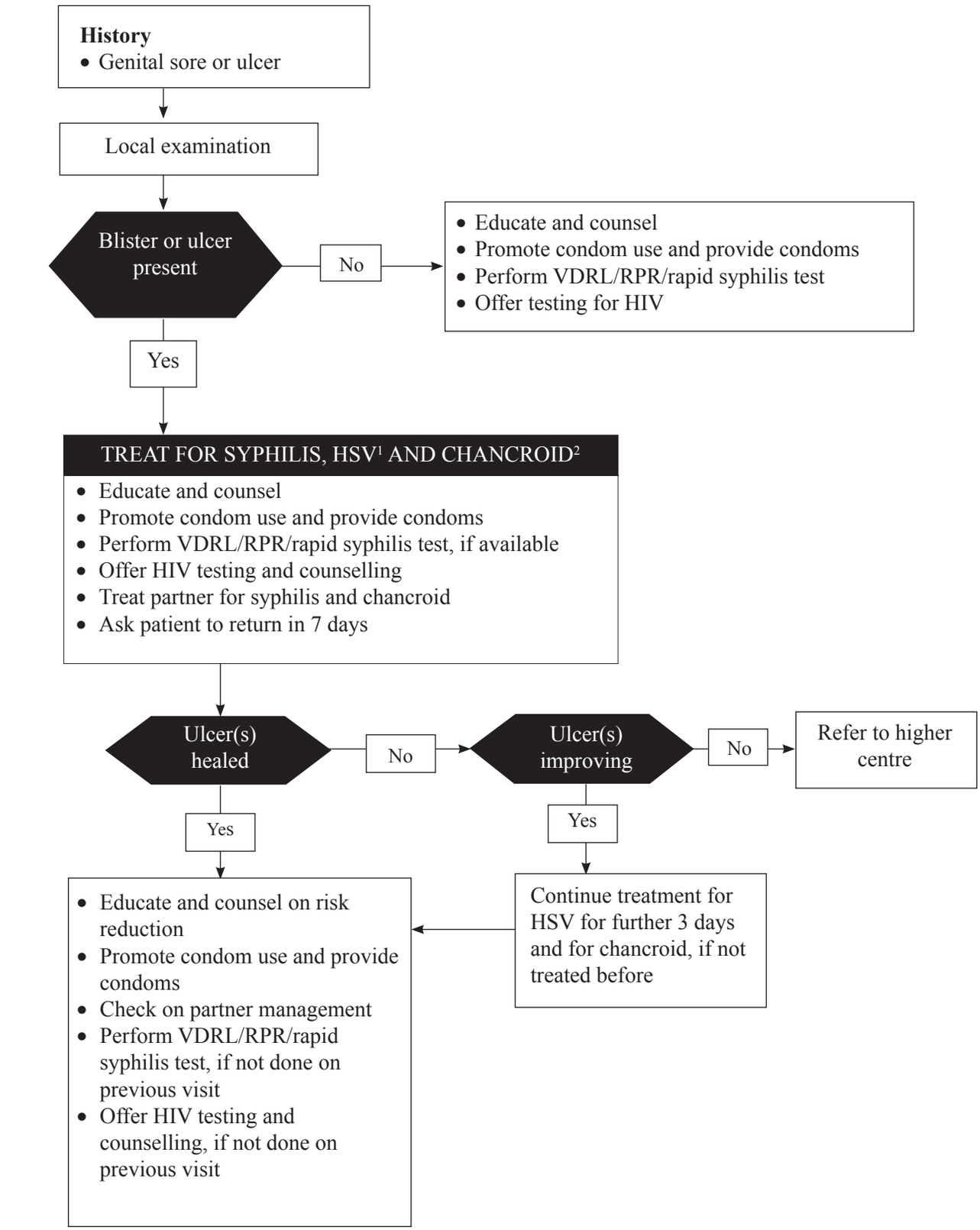
Education and counselling

- Advise to keep ulcer clean and dry
- Emphasize on 4Cs (compliance, counselling/client education, contact tracking/partner treatment, condoms)
  - Counsel to complete the treatment as prescribed
  - Counsel or educate for reducing the number of partners
  - Counsel or educate for partner/s' treatment
  - Promote condom use, demonstrate and provide condoms
- Advise to avoid sexual intercourse without using condom till symptoms resolve
- Advise and refer for serological test for syphilis and HIV testing
- Follow up after one week
- Assess risk for: condomless sex, condom breakage or slippage

Reference:

NCASC. 2014. *National Guidelines on Case Management of Sexually Transmitted Infections.* Kathmandu*:* National Centre for AIDS and STD Control.

4-3 GENITAL ULCER DISEASE SYNDROME



Note:

1. If history of blister present, consider treatment for HSV and if >6 recurrences per year offer suppressive therapy
2. Treat for chancroid where it is prevalent

4-4 INGUINAL BUBO SYNDROME

Inguinal bubo syndrome is characterized by painful swelling in the groin and is caused by different groups of organisms causing STIs.

Common causative organisms
- *Chlamydia trachomatis* (serovar L1-L3)
- *Haemophilus ducreyi* (chancroid)

Signs and symptoms
- Pain/swelling in the inguinal region with or without ulcers in the genitalia
- Unilateral/bilateral, tender/non-tender, single/multiple, solid/fluctuant lymph node swellings in the inguinal region
- Discharging sinus may be present
- Ulcer in the genitalia may be present

Note: Infections of the lower limb and other non-STIs can also cause swelling of the lymph nodes, and these causes should be ruled out.

Additional information needed
- Similar infections in a sexual partner
- Past history of similar symptoms
- Treatment history
- Menstrual and obstetric history in female

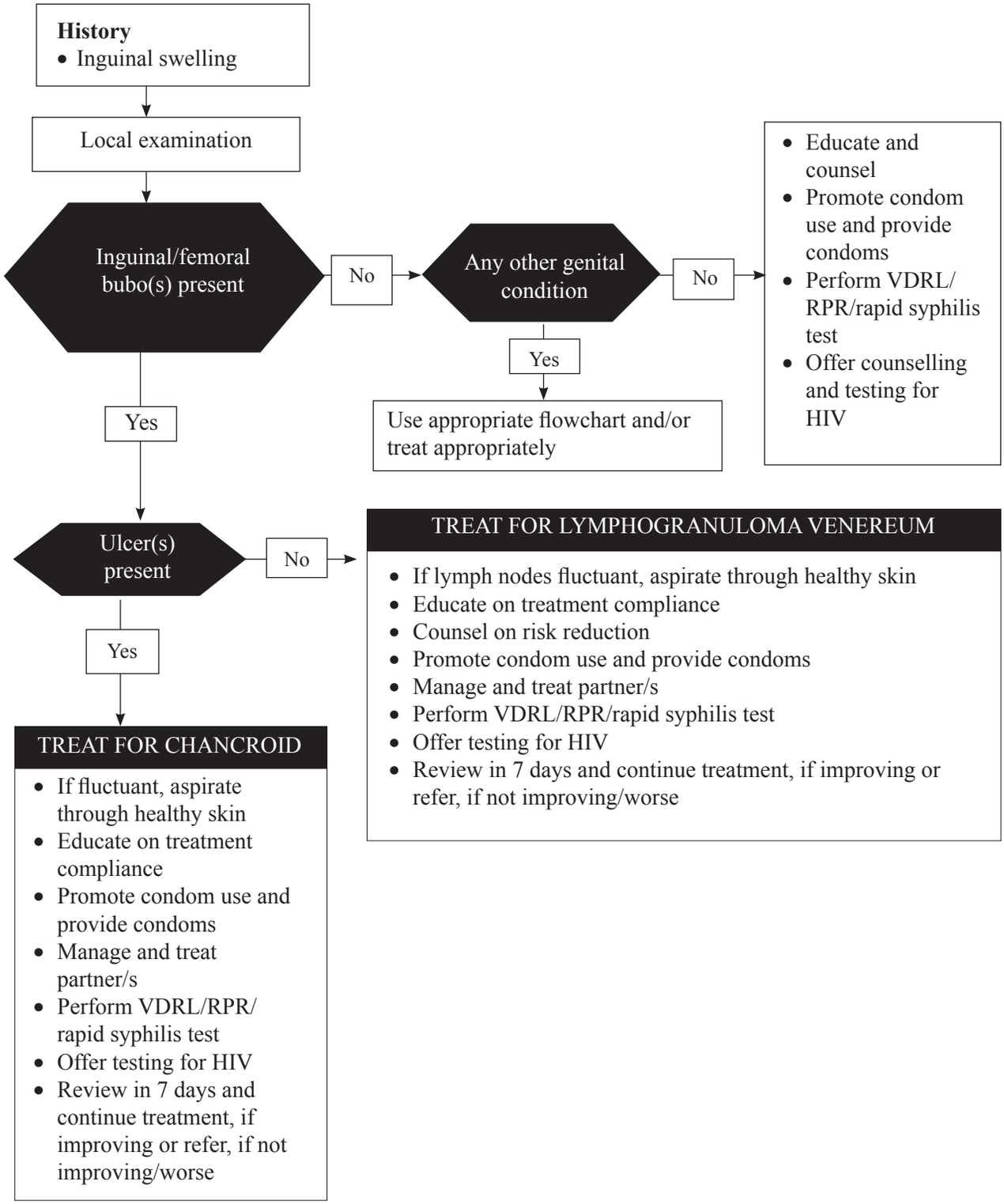
Treatment
Chancroid: Tablet azithromycin 1gm orally single dose **OR** injection ceftriaxone 250mg intramuscular (IM) single dose **OR** tablet ciprofloxacin 500mg orally every 12 hours for 3 days

Lymphogranuloma Venereum (LGV): Tablet doxycycline 100mg orally every 12 hours for 14 days **or** tablet erythromycin 500mg orally every 6 hours for 14 days

Education and counselling
- Emphasize on 4Cs (compliance, counselling/client education, contact tracking/partner treatment, condoms)
  - Counsel to complete the treatment as prescribed
  - Counsel or educate for reducing the number of partners
  - Counsel or educate for partner/s' treatment
  - Promote condom use, demonstrate and provide condoms
- Advise to avoid sexual intercourse without using condom until symptoms resolve. Advise and refer for serological test for syphilis and HIV testing
- Follow up after one week
- Assess risk for: condomless sex, condom breakage or slippage

Reference:
NCASC. 2014. *National Guidelines on Case Management of Sexually Transmitted Infections*. Kathmandu: National Centre for AIDS and STD Control.

4-4 INGUINAL BUBO SYNDROME



Notes:

- Some cases might require treatment longer than 14 days, as recommended above.
- Fluctuant lymph node should be aspirated through healthy skin. Incision and drainage or excision of lymph nodes may delay healing; so, should not be attempted.
- Where there is doubt and/or treatment failure, referral for a diagnostic biopsy is advised.

4-5 VAGINAL DISCHARGE SYNDROME

Vaginal discharge is one of the most common complaints a woman presents with at any health facility. A healthy woman may have a variable amount of clear and white discharge (physiological) from her vagina. This discharge usually increases before and after menstruation and becomes more watery when a woman is in the middle of her menstrual cycle. It also increases during pregnancy, lactation, after sexual activity, while taking combined oral contraceptive pills, and when an intrauterine device is in place. The abnormal or unusual vaginal discharge is due to infection of the vagina or cervix.

Causative organisms
Vaginal infections
- *Candida albicans*
- *Trichomonas vaginalis* (TV)
- *Gardenella vaginalis*

Cervical infections
- *Neisseria gonorrhoea* (NG)
- *Chlamydia trachomatis* (CT)
- Occasionally, *Trichomonas* and *Genital herpes type 2*

Signs and symptoms
- Smelly vaginal discharge, vaginal itching, burning micturition
- Pain during intercourse
- Thick or clear to pus-like, scanty or profuse, odourless or malodorous discharge from vaginal opening or cervical orifice
- Cervical erosion, easily induced cervical bleeding

Additional information needed
- Similar infections in a sexual partner
- Past history of similar symptoms
- Treatment history
- Menstrual and obstetric history

Risk assessment for cervical infection
Consider women at high risk getting cervical infection if:
- sexual partner with symptomatic STIs
- woman had more than one sexual partner last month
- woman's partner has multiple partners

In such conditions, treat for cervicitis, even if there is no clinical or laboratory evidences.

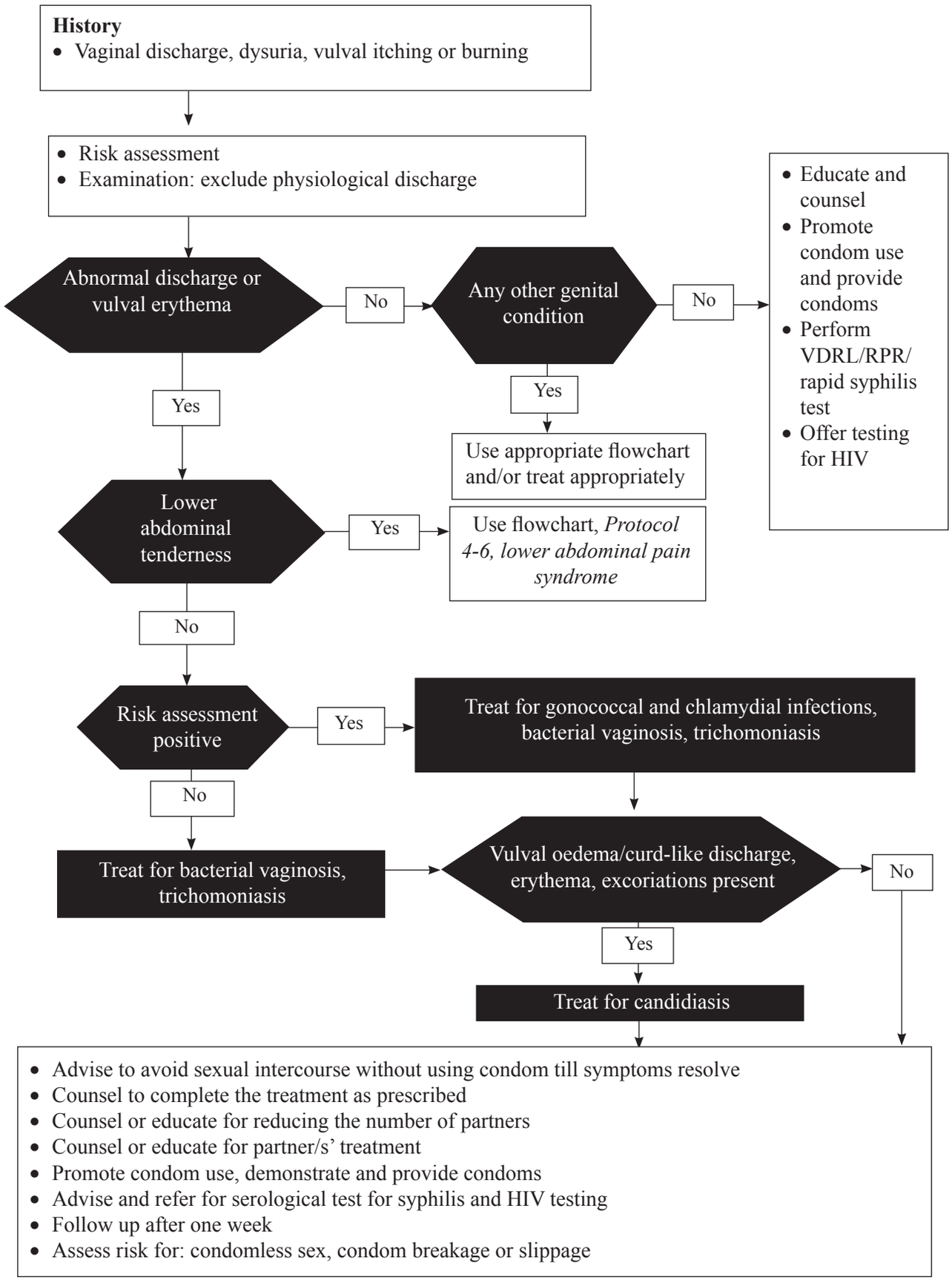
Treatment of vaginal discharge syndrome
Cervicitis (due to *Neisseria gonorrhoea* and *Chlamydia trachomatis*)**:** Tablet cefixime 400mg orally single dose **OR** injection ceftriaxone 250mg intramuscular, single dose **PLUS** tablet azithromycin 1gm single dose **OR** tablet doxycycline 100mg orally every 12 hours for 7 days **OR** tablet erythromycin 500mg orally every 6 hours for 7 days

Vaginitis (due to bacterial vaginosis, Trichomonas vaginitis**):** Tablet tinidazole 2gm orally single dose **OR** 500mg orally 2 times daily for 5 days **OR** tablet metronidazole 400mg orally 2 times daily for 7 days

Candidiasis: Tablet fluconazole 150mg orally single dose **OR** clotrimazole 200mg vaginal pessary to be inserted at bedtime for 3 days
Note: *Doxycycline is contraindicated in pregnancy*

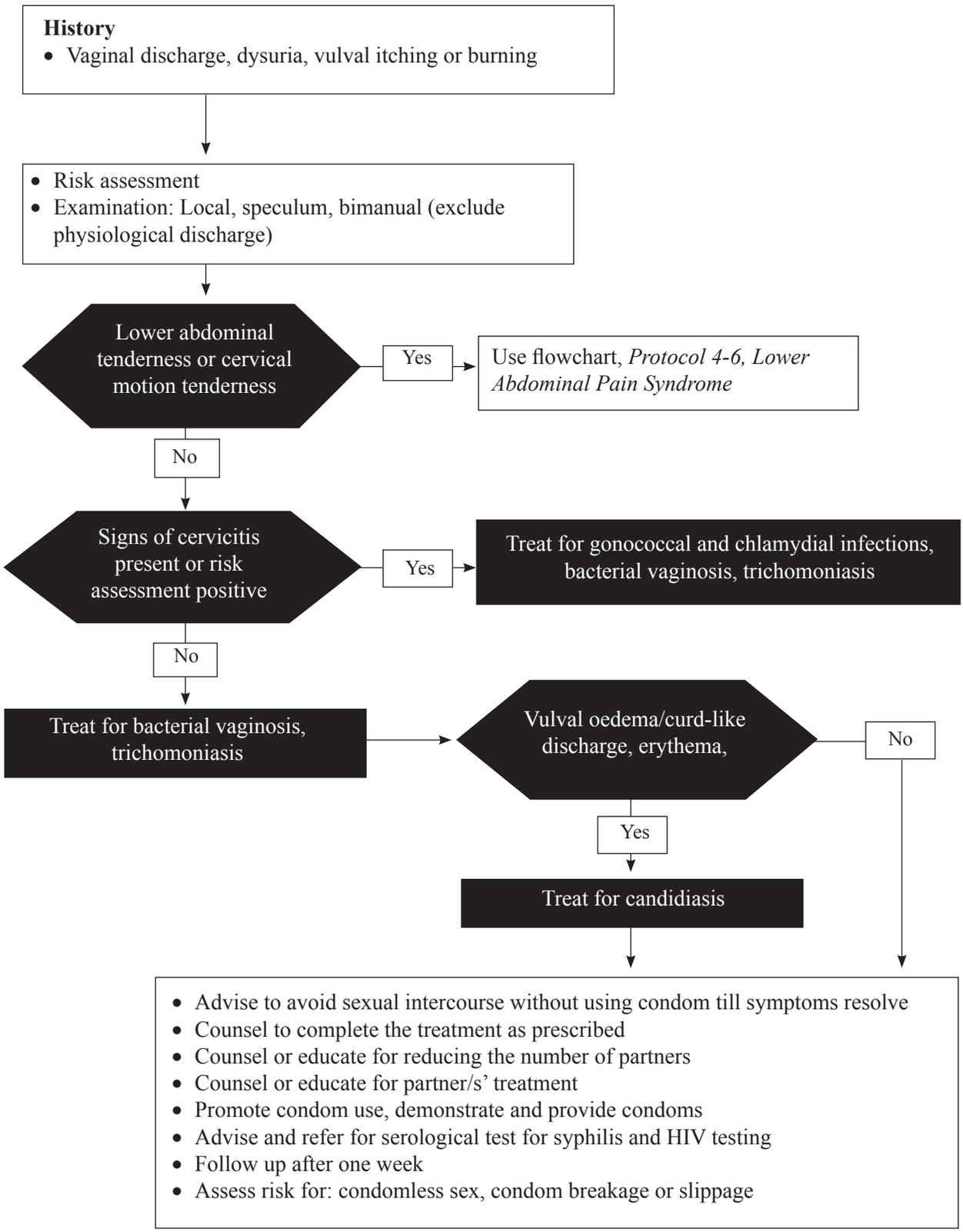
Reference:
NCASC. 2014. *National Guidelines on Case Management of Sexually Transmitted Infections.* Kathmandu*:* National Centre for AIDS and STD Control.

4-5a VAGINAL DISCHARGE SYNDROME



Note: Risk factors such as multiple partners and partner with symptoms are frequently associated with cervicitis

4-5b VAGINAL DISCHARGE SYNDROME (WITH BIMANUAL/SPECULUM EXAMINATION)



Note:

1. Risk factors such as multiple partners and partner with symptoms are frequently associated with cervicitis
2. Signs of cervicitis include cervical mucopus/erosion, easily induced cervical bleeding

4-5c VAGINAL DISCHARGE SYNDROME (WITH BIMANUAL/SPECULUM/ MICROSCOPIC EXAMINATION)

The abnormal vaginal discharge is due to infection of the vagina or cervix. Vaginal discharge can be due to vaginal infection (trichomoniasis, candidiasis or bacterial vaginosis), or can also be due to cervical infection. Cervical infection is most often caused by gonorrhoea and/or chlamydia. It is important to distinguish vaginitis from cervicitis since cervicitis can lead to serious complications such as infertility, PID and ectopic pregnancy. Additionally, the sexual partners of cervicitis patients must also be treated to avoid re-infection.

If lab facilities are available, wet mount and Gram stain have to be done. A finding of leucorrhoea with more than 10 WBC per high power field on microscopic examination of vaginal fluid has been associated with gonococcal/chlamydial infection of the cervix in the absence of trichomoniasis. If not, she should be assessed by the risk factors for her probability of having sexually acquired cervicitis.

Sample collection for laboratory investigations

1. Cervical swab: for cervical infection-Gram stain for gonorrhoea
2. Vaginal swab: from posterior fornix for Candida (KOH-mount), Trichomonas vaginalis (wet mount with normal saline) and whiff test for bacterial vaginosis or Gardnerella infection

Results of laboratory investigation

Cervical swab

Gram-negative diplococci and/or polymorpho-nuclear cell more than 5 per high power field is suggestive of inflammation.

Vaginal swab

- Candida filament for candida infection
- Motile trichomonas for Trichomonas vaginalis (TV)
- Clue cells for bacterial vaginosis (BV)

Treatment

Cervicitis (due to *Neisseria gonorrhoea* and *Chlamydia trachomatis***):** Tablet cefixime, 400mg orally, single dose **OR** injection ceftriaxone, 250mg intramuscular single dose **PLUS** tablet doxycycline 100mg orally, every 12 hours for 7 days **OR** tablet azithromycin, 1gm orally, as a single dose **OR** tablet erythromycin, 500mg orally, every 6 hours for 7 days

Vaginitis (due to **B**acterial vaginosis, *Trichomonas vaginitis***):** Tablet metronidazole, 400mg orally every 12 hours for 7 days **OR** tablet tinidazole, 500mg orally, every 12 hours for 5 days

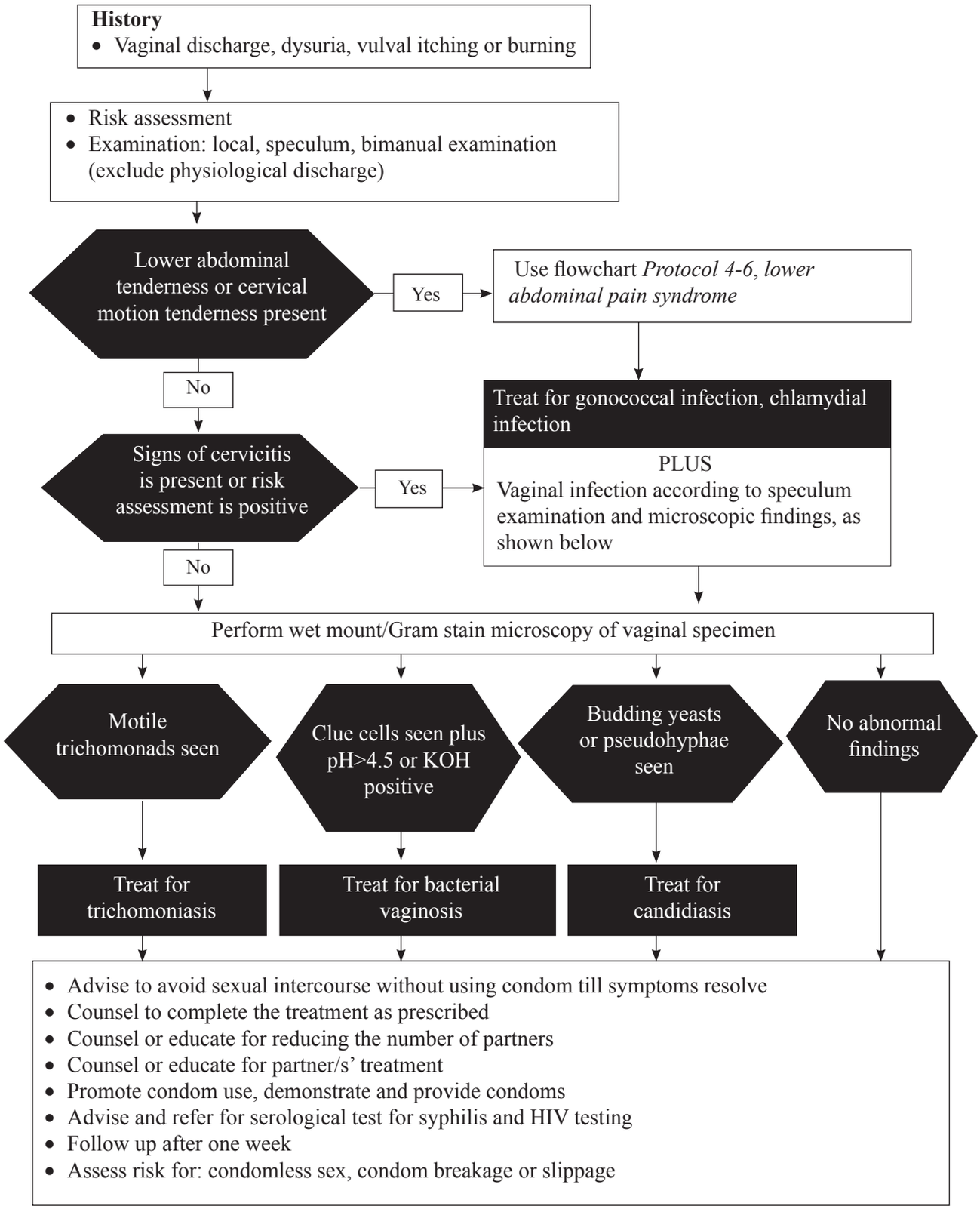
Candidiasis: Tablet fluconazole, 150mg orally, as a single dose **OR** miconazole or clotrimazole, 200mg vaginal pessaries to be inserted at bedtime for 3 days **OR** clotrimazole, 500mg vaginal pessaries to be inserted at bedtime as a single dose **OR** Nystatin vaginal pessaries 100000 IU to be inserted at bedtime for 14 days

Note: Doxycycline is contraindicated in pregnancy.

Reference:

NCASC. 2014. *National Guidelines on Case Management of Sexually Transmitted Infections.* Kathmandu*:* National Centre for AIDS and STD Control.

4-5c VAGINAL DISCHARGE SYNDROME IN WOMEN WITH BIMANUAL/ SPECULUM/MICROSCOPIC EXAMINATION



Notes:

1. Risk factors as multiple partners and partner with symptoms are frequently associated with cervicitis
2. Signs of cervicitis include cervical mucopus/erosion, easily induced cervical bleeding

4-6 LOWER ABDOMINAL PAIN SYNDROME IN WOMEN

The lower abdominal pain syndrome is also called pelvic inflammatory disease (PID). It is an infection of the female upper genital tract (uterus, fallopian tubes, ovaries or pelvic cavities). It is a common complication of STIs in women, which occurs as an ascending infection through the cervix.

Causative organisms

- *Neisseria gonorrhoeae*
- *Chlamydia trachomatis*
- Anaerobic bacteria—*Gardenella vaginalis*, *Haemophilus influenzae*, enteric Gram negative rods, *Mycoplasma hominis*, *Ureaplasma urealyticum,* etc.

Symptoms

- Lower abdominal pain: continuous/intermittent/mild to severe
- Pain on intercourse/pain during urination
- Vaginal discharge
- Sometimes nausea and vomiting
- Fever: low/high grade
- Dysmenorrhea

Signs

- Lower abdominal tenderness, guarding, rebound tenderness
- Vaginal discharge/bleeding
- High temperature (more than 38.5ºC)

Additional information needed

- Similar infections in a sexual partner
- Past history of similar symptoms
- Treatment history
- Menstrual and obstetric history

Abdominal examination

- Abdominal distension
- Tenderness, swelling

Local examination

- External genitalia
- Groins for swelling

Speculum examination

- Cervical erosion/ulcer
- Abnormal (mucopurulent) discharge from the cervix

Bimanual pelvic examination

- Cervical excitation (pain on moving the cervix) may be present

Treatment

Gonococcal infection: Injection ceftriaxone, 250mg intramuscular (IM) single dose **PLUS**

Chlamydial infection: Tablet doxycycline, 100mg orally, every 12 hours for 14 days **OR** tablet erythromycin, 500mg orally, every 6 hours for 14 days **PLUS**

Anaerobic infection: Tablet metronidazole, 400mg orally every 12 hours for 14 days

Conditions for referral

- The diagnosis is uncertain, client in severe condition, nausea, vomiting, high fever of more than 38ºC
- Appendicitis, ectopic pregnancy, peritonitis or pelvic abscess is suspected
- The patient is pregnant
- The patient cannot tolerate or cannot be followed up on ambulatory basis
- The patient fails to respond to the treatment provided on outpatient basis.

Follow up within 3-7 days or sooner if condition does not improve.

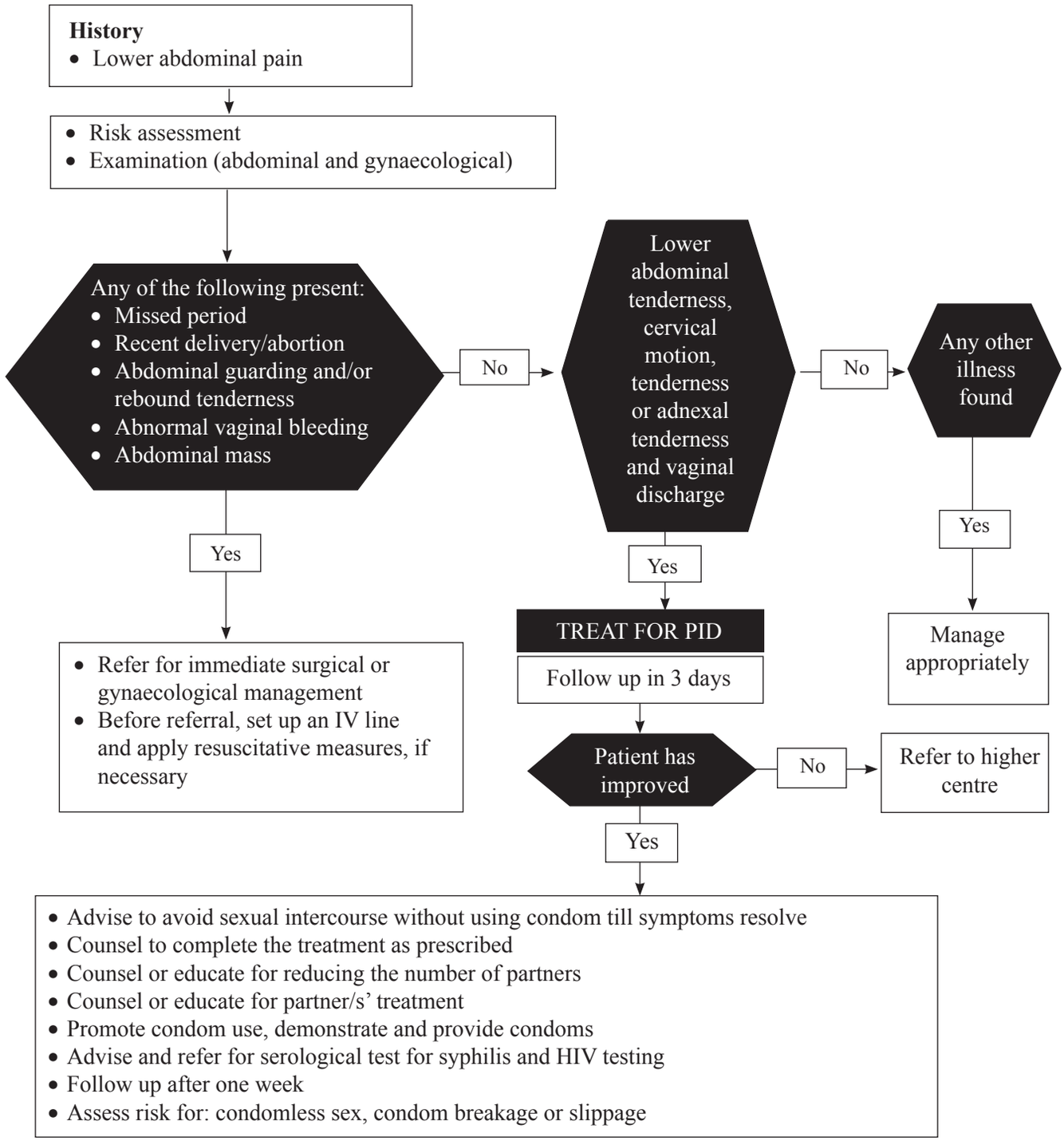
Treatment for hospitalized patients with severe PID: Injection ceftriaxone or other 3rd generation cephalosporin intravenous (IV) daily* **PLUS** tablet **d**oxycycline 100mg orally every 12 hours for 14 days **PLUS** tablet metronidazole 400mg orally every 8 hours for 14 days
*(Duration and doses are determined based on severity after clinical judgment).

Note: This is one of the most difficult syndromes to assess. It is, however, very important to make an early diagnosis of PID to reduce the chances of infertility and other sequelae.

Reference:

NCASC. 2014. *National Guidelines on Case Management of Sexually Transmitted Infections.* Kathmandu*:* National Centre for AIDS and STD Control.

4-6 LOWER ABDOMINAL PAIN SYNDROME IN WOMEN



Notes:

1. Risk factors such as multiple partners and partner with symptoms are frequently associated with cervicitis
2. Patient with acute PID should be referred for hospitalization, when:
   - they have severe illness, nausea and vomiting, and/or high degree fever >38°C
   - the patient is pregnant
   - the patient is unable to follow or tolerate outpatient regimen
   - the patient has failed to respond to the outpatient therapy, or
   - there are clinical signs of tubo-ovarian abscess or pelvic peritonitis

4-7 NEONATAL CONJUNCTIVITIS SYNDROME

Neonatal Conjunctivitis Syndrome, also called Ophthalmia Neonatorum, is a bilateral or unilateral erythema/ swelling of eyelids with purulent discharge due to transmission from infected mother (cervicitis) to child during delivery within 21 days of birth. Cervicitis caused by *Neisseria gonorrhoea*, if not treated early, may lead to blindness. Cervicitis due to *Chlamydia trachomatis* can also cause pneumonia in newborn, which may be fatal and may cause impaired vision.

Causative organisms

- *Neisseria gonorrhoea*
- *Chlamydia trachomatis*
- Rarely, other bacterial or viral infections (non-STI)

Signs

Signs may start from the first day up to 21 days.

- Swelling of the lids
- Conjunctival congestion
- Discharge from the eyes
- Difficulty in opening the lids
- Crusting and ulceration around the lid margin

Diagnosis

Diagnosis is based on the history and risk assessment of STIs in the mother or her partner/s and the clinical findings.

Treatment

Gonococcal conjunctivitis: Injection ceftriaxone, 50mg per kg intramuscular (IM) as a single dose, to a maximum of 125mg total dose or injection spectinomycin, 25mg per kg by intramuscular (IM) as a single dose, to a maximum of 75mg total dose **PLUS**

Chlamydial conjunctivitis: Erythromycin syrup, 50mg per kg per day orally, in four divided doses for 14 days.

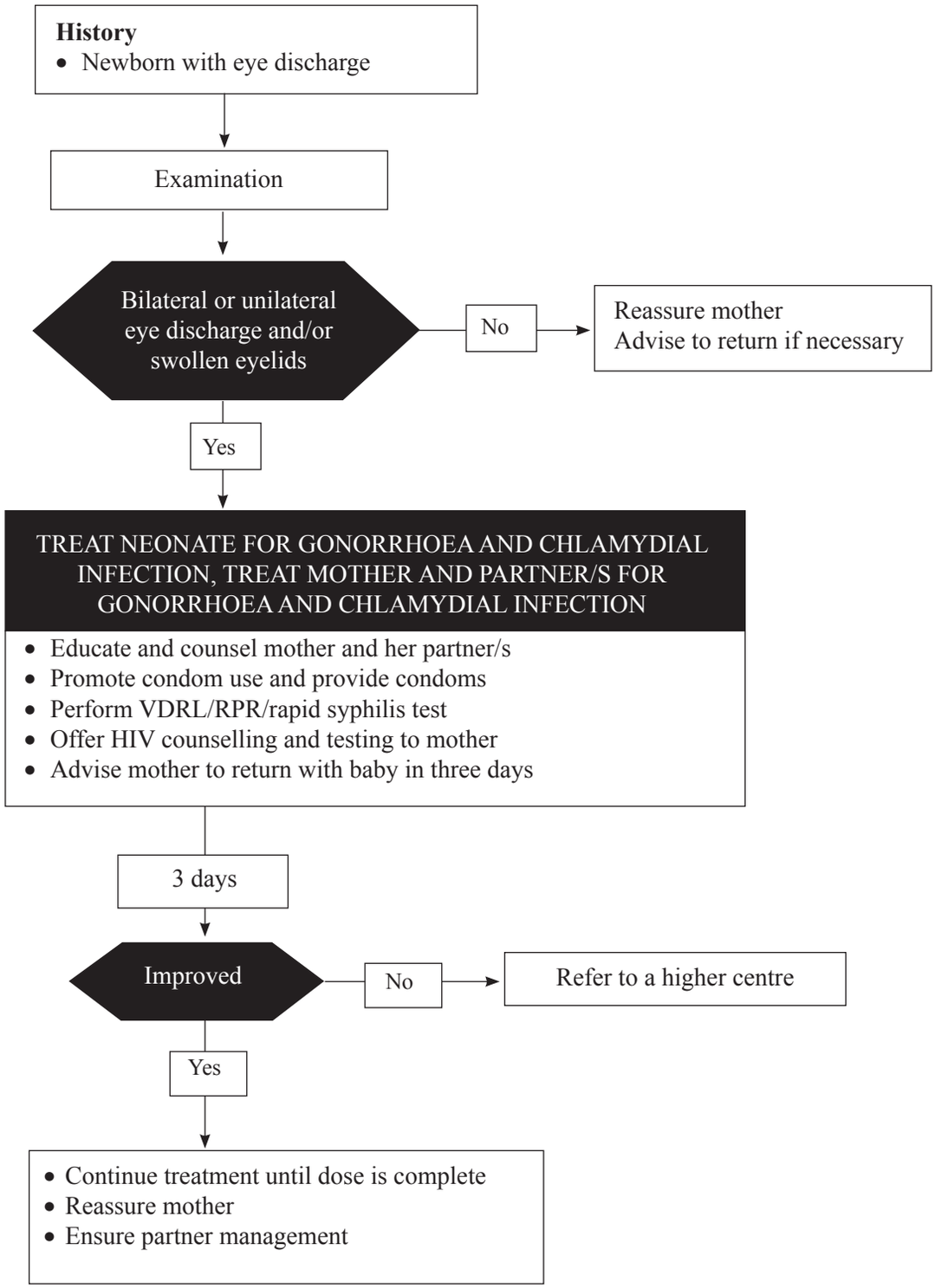
Note:

- When there is visible discharge, advice the mother to clean the baby's eyes starting from the inner to the outer aspect of the eyes with boiled and cooled water or sterile saline, if available, using a clean soft cotton wick.
- The mothers of infants who have gonococcal or chlamydial conjunctivitis should be treated for these infections appropriately, and their sex partners should also be evaluated and treated.

Reference:

NCASC. 2014. *National Guidelines on Case Management of Sexually Transmitted Infections*. Kathmandu: National Centre for AIDS and STD Control.

4-7 NEONATAL CONJUNCTIVITIS SYNDROME



4-8 HIV/AIDS

Human immune deficiency virus (HIV) causes HIV infection in human beings. In the absence of antiretroviral treatment, it may develop acquired immune deficiency syndrome (AIDS). It takes years (7-10 average) to develop AIDS defining illness. Infected person remains asymptomatic for years, during which they can transmit HIV to their partners and children. HIV causes destruction of the CD4+ cells, which are responsible for cell-mediated immunity. Once the number of these cells goes below certain level, the infected person gets many opportunistic infections and cancers.

HIV is transmitted by:
- Sexual contact
- Sharing needles
- From mother to child (vertical transmission)
- Through blood, blood products and transplanted organs

Social activities do not transmit HIV infection, for example:
- Casual contacts – hand shake, hugging, superficial kiss
- Insect bites
- Sharing same house, eating together and sharing common toilet with an HIV positive person
- Studying with an HIV positive child in school
- Taking care of a patient with HIV
- Taking part in the cremation of a person with HIV
- Use of public baths, ponds, and swimming pools with an HIV positive person

Identification
HIV cannot be diagnosed without having HIV test. Key population identified by the National HIV Strategy are female sex workers, clients of female sex workers, people who inject drugs, men who have sex with men, transgender people, temporary migrants, and spouses of migrants are at risk of getting HIV. These people should always be offered HIV testing. Anyone having multiple sexual and injecting partners is at risk of getting HIV. There are no specific clinical features of HIV.

Anyone at risk of HIV should have an HIV test.

***References**:*
NCASC. 2017. *National HIV Testing and Treatment Guidelines.* Kathmandu: National Centre for AIDS and STD Control.
MoHP. 2014. *Healthcare waste management guideline, Department of Health Services.* Kathmandu. Ministry of Health and Population.
Jhpiego. 2018. *Infection Prevention and Control, Reference Manual for Health Care Facilities with Limited Resources.* Baltimore: Jhpiego Corporation.

4-8 HIV PREVENTION MEASURES FOR SERVICE PROVIDERS

Two-level approach to prevent transmission
- Standard precautions
- Transmission-based precautions

Hand hygiene
Protective barriers
- Eye covers, face shields and masks
- Masks
- Gowns and aprons
- Caps
- Clothing
- Footwear and shoes
- Antiseptics

Processing instruments, gloves and other items
The basic infection prevention process, which should be used to prevent disease transmission from contaminated instruments, gloves and other items, are:
- Decontamination
- Cleaning and rinsing
- Sterilization or high-level disinfection

Waste disposal
- Dispose of needles and other sharps using hands-free techniques
- Decontamination, sterilization and safe disposal

- All service providers must follow universal precaution while attending patients with HIV
- Unnecessary injections and procedures must be eliminated

4-9 HIV TESTING AND COUNSELLING

HIV testing for individual diagnosis should be performed according to the National Guidelines for HIV Testing and Counselling (HTC)

Rationale behind HTC

- It may reinforce preventive behaviour in sero-negative people.
- If people know they are sero-positive, they can take preventive measures and link with care and support services.

Requirements of HTC

- All testing must be accompanied by pre- and post-test counselling
- Informed consent before testing is necessary
- Test results must be kept confidential
- Testing procedures and use of test kits must follow protocols as outlined in the National HIV Testing and Treatment Guideline
- Counsellor and laboratory staff must be trained according to the NCASC and NPHL standards

Laboratory tests commonly used in Nepal

HIV testing algorithm of Nepal includes three tests (assay). Determine test is the first test. If the result of the first test comes negative, the case is negative. If the result of the first test comes positive, Uni-gold and Stat-pack need to be performed in parallel. If both of these tests are positive, the case is positive. If one of them comes negative, the test is inconclusive, and the cases should be followed after two weeks.

HIV testing

HIV testing algorithm describes the combination and sequence of specific assays used in each HIV testing strategy. The first test used in algorithm should be highly sensitive. The second and third should have higher specificity.

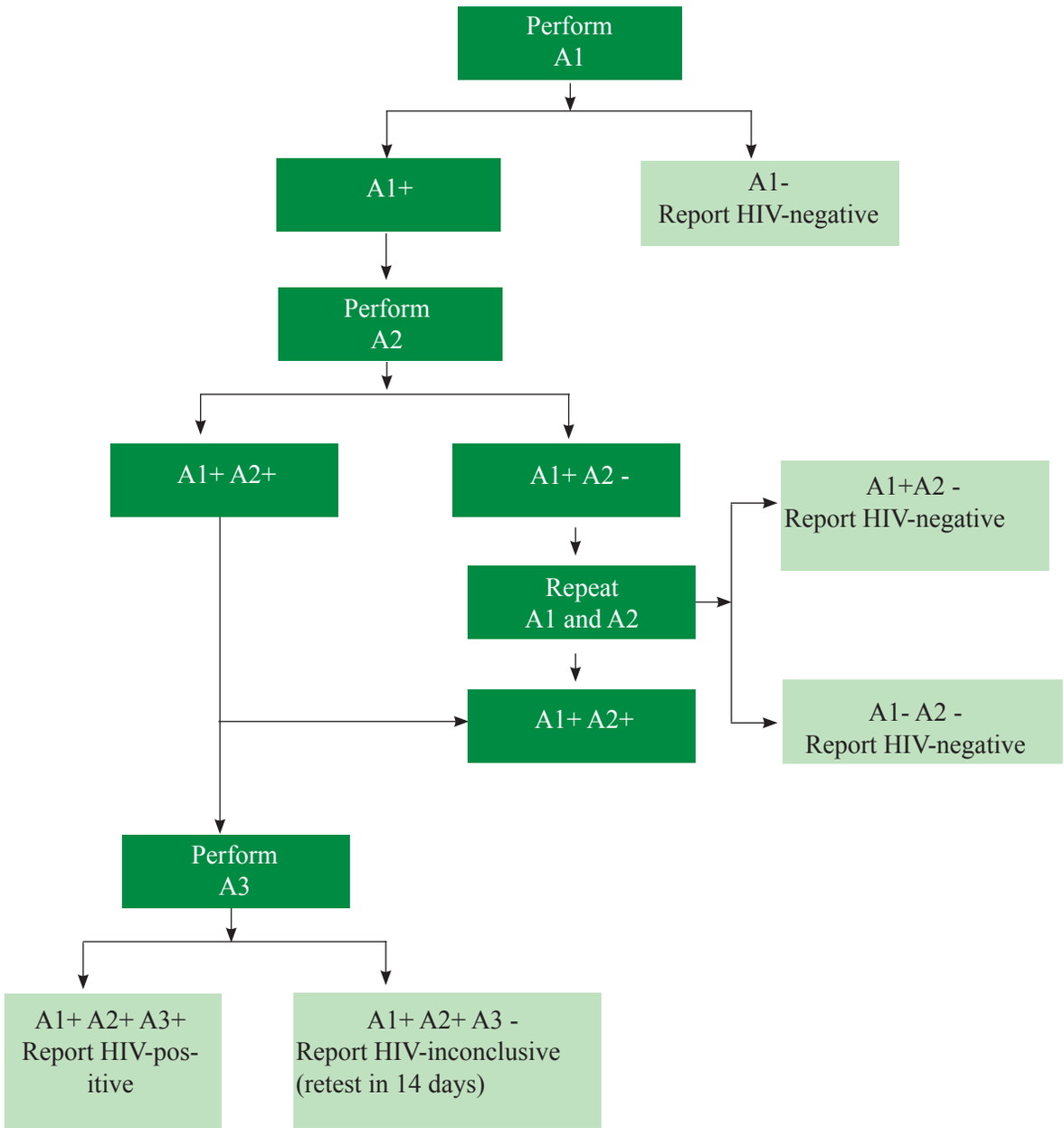
Assay 1 (A1)	Assay 2 (A2)	Assay 3 (A3)
Determine HIV ½	Uni-Gold HIV ½	Stat Pak HIV- ½
SD Bioline HIV 1 and 2		
ABON HIV ½		
ELISA 1		
ELISA 2		

Reference:

NCASC. 2017. *National HIV Testing and Treatment Guidelines.* Kathmandu: National Centre for AIDS and STD Control.

4-9 HIV TESTING

National HIV Testing Algorithm (3-test algorithm)



Note:

1. After retesting in 14 days, if the result is again inconclusive, collect a sample and send it to NPHL for DNA PCR testing. The result of DNA PCR testing confirms HIV status.
2. All HIV infected people should start antiretroviral therapy irrespective of CD4 cell counts (CD4 count is not a criterion for starting antiretroviral therapy - ART). So, all of them should be referred to an ART centre for further evaluation, counselling and to start ART.

4-10 ANTIRETROVIRAL THERAPY

Principles of antiretroviral (ARV) therapy

The principle of antiretroviral (ARV) therapy is to reduce the replication of virus, prevention and treatment of opportunistic infections so that patient survival will be prolonged, with better quality of life.

Goals of antiretroviral therapy

- Maximal and durable suppression of viral load
- Restoration and/or preservation of immunologic function
- Reduction of HIV-related morbidity and mortality
- Improvement of quality of life of HIV-infected person
- Post-exposure prophylaxis (PEP)
- Prevention from getting infection by using as a pre-exposure prophylaxis
- Elimination of vertical transmission of HIV (from mother to child)

Criteria for initiating ART

All HIV-infected people should start ART irrespective of CD4 cell counts (CD4 count is not a criterion for starting ART). So, all of them should be referred to an ART centre for further evaluation, counselling and to start ART.

Reference:

NCASC. 2017. *National HIV Testing and Treatment Guidelines.* Kathmandu: National Centre for AIDS and STD Control.

4-10 ANTIRETROVIRAL THERAPY

Evaluation of patient before starting ART

- Assess the clinical stage of HIV infection
- Identify past HIV-related illness
- Identify current HIV-related illness that requires treatment
- Identify co-existing medical conditions and treatment that may influence that choice of therapy

Before starting therapy, evaluate

- Complete history, including past illnesses, with emphasis on opportunistic infections and other conditions
- Psychological and psychiatric history (depression and other psychological problems are common and should be identified and treated, as necessary)
- Assessment of family and social support
- Practices regarding safe sex and injecting drugs use
- Complete physical examination

Physical Examination

- Body weight of patient
- Skin: look for herpes zoster, Kaposi's sarcoma and HIV dermatitis
- Lymphadenopathy
- Oropharyngeal mucosa: look for candidiasis, Kaposi's sarcoma and hairy leucoplakia
- Examination of optic fundus: look for retinitis and papilledema
- Examination of abdomen, heart, lungs, neurological, musculoskeletal, and genitourinary systems

Laboratory Tests

- TLC, DLC, Hb, platelets
- X-ray chest (sputum for AFB, tuberculin test, if needed)
- ALT/SGPT
- Other biochemistries like blood sugar, lipid profile, as required
- RPR/VDRL/TPHA, hepatitis B and hepatitis C, if needed
- Cervical pap smear and urine pregnancy test as indicated in female
- CD4 cell count and/or total lymphocyte count

Note: National HIV Testing and Treatment Guidelines recommends immediate start of the ART. Investigation should not delay the ART initiation.

4-11 PRE AND POST-EXPOSURE PROPHYLAXIS

Pre-exposure prophylaxis

Pre-exposure prophylaxis (PrEP) is one of the methods of prevention of HIV infection by using oral antiretroviral medicine before risky behaviours. PrEP is recommended to people at substantial risk of acquiring HIV rather than limiting the recommendation to specific populations. Substantial risk of HIV infection is provisionally defined as HIV incidence around 3 per 100 person-years or higher in the absence of PrEP.

PrEP will be implemented with TDF+FTC (3TC)-based regimen and has to be taken once daily.

Before providing PrEP, discuss the following information:

- PrEP is a comprehensive preventive approach with condoms and lubricant, harm reduction, including access to sterile or new injection materials.
- Ensure access to accurate knowledge and information about PrEP.
- PrEP is offered as a choice, free of coercion, and with access to other preventive strategies that may be preferred by individuals at substantial risk.
- HIV testing, HbsAg and serum creatinine levels are done at baseline.
- PrEP can be discontinued if a person taking PrEP is no longer at risk and when this situation is likely to be sustained.
- PrEP users should be provided information that ARV drugs will begin to work only after 7 doses.

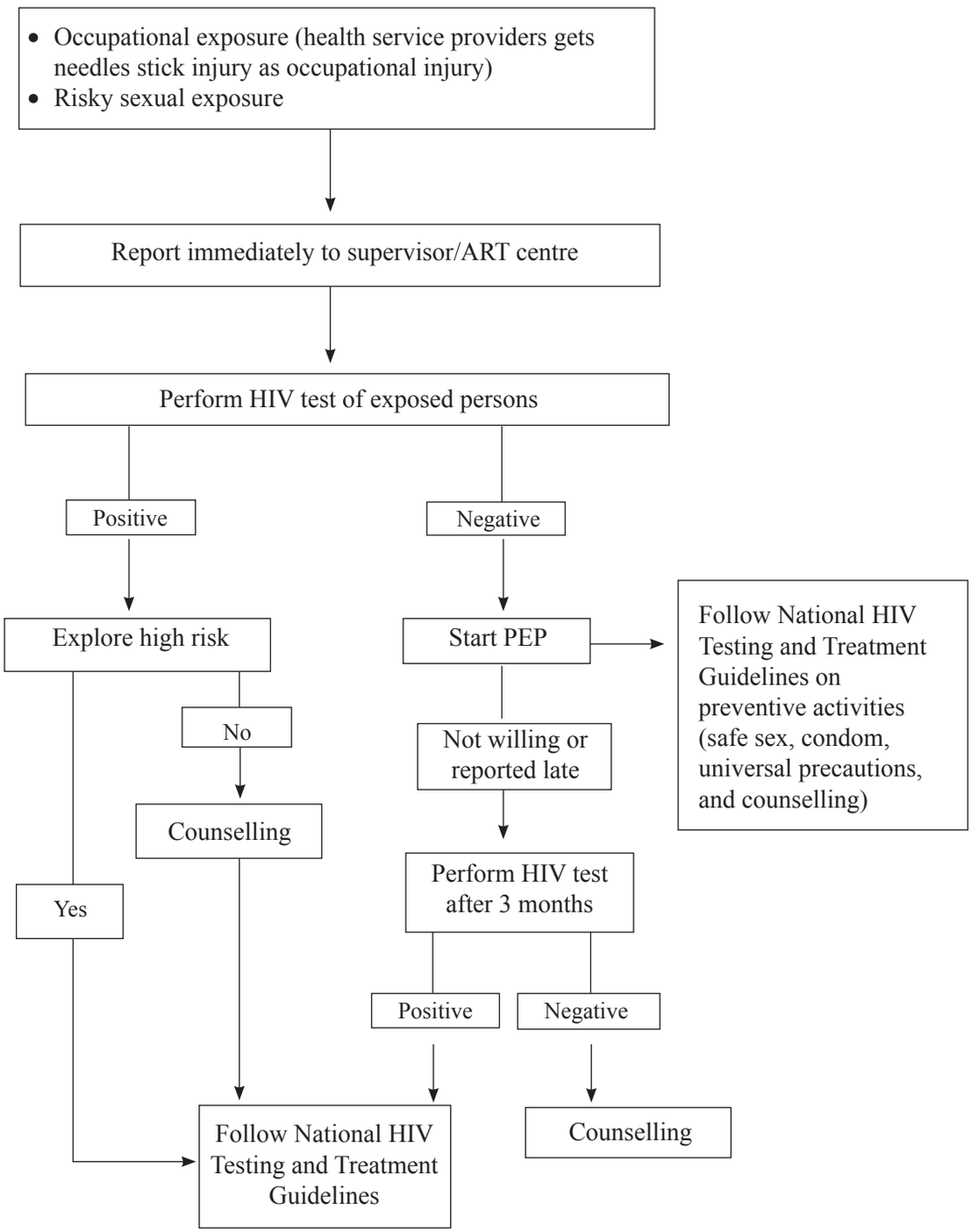
Post-exposure prophylaxis

Post-exposure Prophylaxis (PEP) of HIV infection refers to the use of antiretroviral to protect a person who had exposure to HIV either occupational or other risky exposure like unprotected sexual intercourse with a female sex worker (FSW). The rational is that an antiretroviral treatment started immediately after exposure to HIV may prevent HIV infection. It should be started immediately after exposure; however, it can be given up to 72 hours of exposure.

Reference:

NCASC. 2017. *National HIV Testing and Treatment Guidelines.* Kathmandu: National Centre for AIDS and STD Control.

4-11 POST-EXPOSURE PROPHYLAXIS



4-12 PREVENTION OF MOTHER-TO-CHILD HIV TRANSMISSION ELIMINATION OF VERTICAL TRANSMISSION

Vertical transmission of HIV is the most frequent source of HIV infection in children in Nepal, as in other countries. It is estimated that 15-45% of mothers with HIV infection will transmit HIV during pregnancy and delivery and additional 10-20% will transmit through breastfeeding. Mother-to-child transmission is by far the largest source of HIV infection in children in Nepal. This vertical transmission of HIV can be reduced to 2% or less by intensive interventions such as potent and antiretroviral drugs, caesarean section at 38 weeks of pregnancy and complete avoidance of breastfeeding in addition to offering HIV testing as part of routine antenatal care.

Prevention of mother-to-child transmission (PMTCT) or elimination of vertical transmission (eVT) is a commonly used term for programmes and interventions designed to reduce the risk of mother-to-child transmission of HIV.

Management

- All pregnant women present for ANC should receive the following information:
  - HIV counselling and testing is a routine in ANC
  - Informed consent should be taken
  - Confidentiality is maintained
  - Voluntary HIV testing, post-testing counselling and follow-up
  - Information on safer sex practices
  - Prevention, diagnosis and treatment of STIs
  - Prevention of HIV transmission to infants and young children, including interventions for PMTCT
- Women infected with HIV
  - In addition to the routine antenatal care, she needs information on PMTCT.

PMTCT

- HIV counselling and testing for pregnant women
- All HIV-infected pregnant women should initiate ART and continue it lifelong
- Safe obstetrical care
- Infant feeding counselling and support
- Family planning counselling and services
- Care and support for HIV positive woman and her family members

- HIV-negative women
  - Provision of key information on HIV
  - Explanation of the importance of remaining HIV-negative during pregnancy
  - Breastfeeding as a risk of transmission to the baby of newly infected mother being high
  - Counselling on partner's status, if unknown

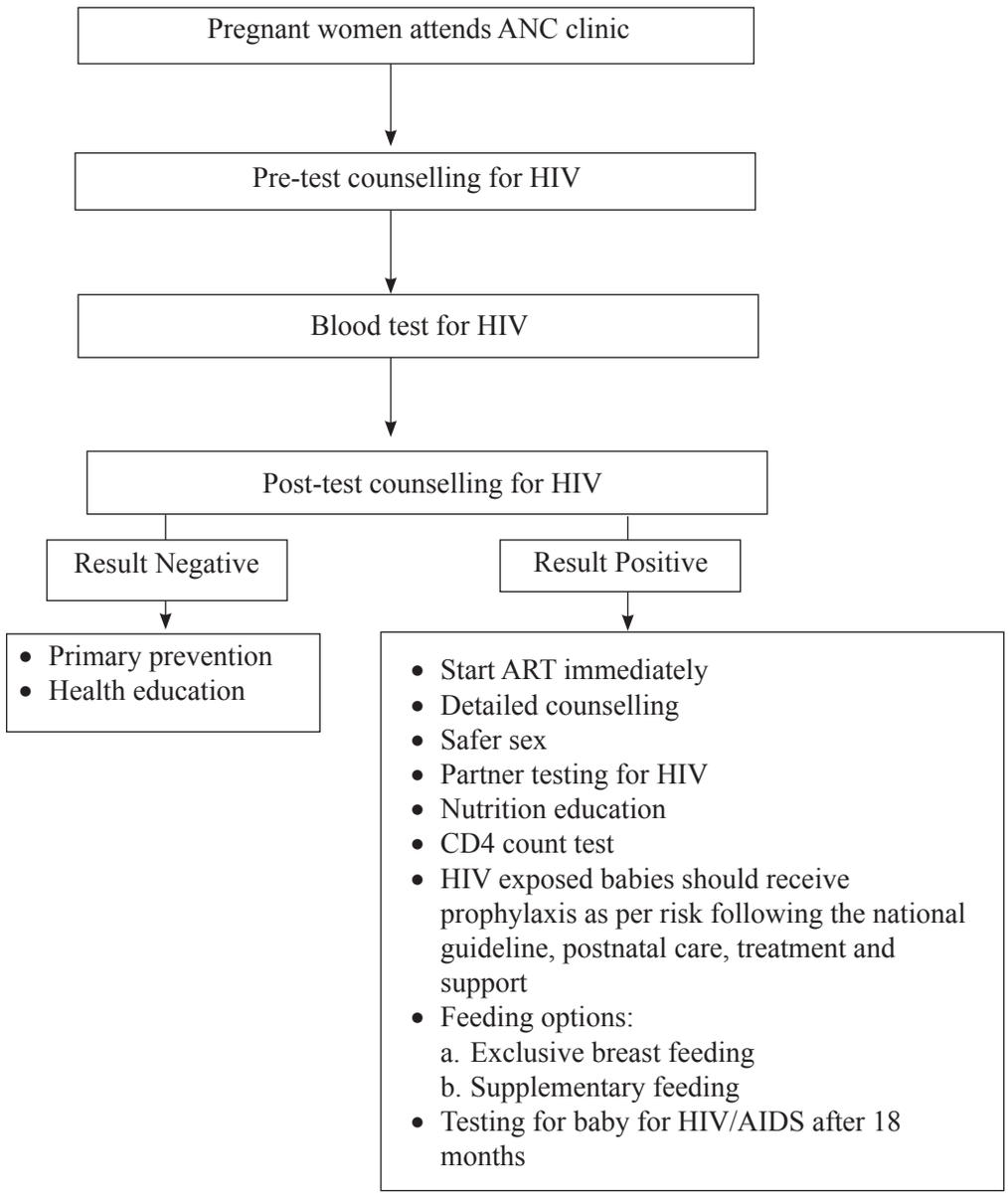
Antiretroviral Prophylaxis Regimens to prevent MTCT

Drug	Intranatal	Postnatal
NVP (Nevirapine)	All HIV-infected pregnant women should receive first-line antiretroviral therapy (TDF+3TC+EFV) and continue it for lifelong	Infant: Single dose NVP 2mg/kg oral immediately after birth NVP should be continued for 6 weeks for low-risk babies (mother on ART with virological suppression by delivery)
ZDV (Zidovudine) and NVP for infant when mother has no ARV prophylaxis	None	Daily dose NVP 2mg/kg and ZDV 4mg/kg AZT (ZDV) plus NVP (dual prophylaxis) should be continued for 12 weeks for high-risk babies (mother not virologically suppressed by delivery time).

Reference:

NCASC. 2017. *National HIV Testing and Treatment Guidelines.* Kathmandu: National Centre for AIDS and STD Control.

4-12 PREVENTION OF MOTHER-TO-CHILD HIV TRANSMISSION ELIMINATION OF VERTICAL TRANSMISSION



Recommendations on breastfeeding

- Breastfeeding should be promoted
- Exclusive breastfeeding for the first 6 months
- Risk of transmitting HIV to infants through breastfeeding is low when the mother is receiving ART and the infant is on ARV prophylaxis
- Pregnant women with HIV who are on ART are recommended to continue breastfeeding
- Breastfeeding should be avoided during mastitis, cracked nipples and, if infant has sores or oral thrush (candidiasis), as there is risk of HIV transmission

Section 5

ADOLESCENT SEXUAL AND REPRODUCTIVE HEALTH

5-1 PROBLEMS OF FORESKIN

The foreskin is the fold of skin that covers the glans penis (head of the penis). At birth, the foreskin and the glans penis are lightly joined. In most boys, by about five years of age, the foreskin can be at least partly retracted (pulled back) and by puberty it is retractable in about 9 out of 10 boys.

Phimosi: It refers to a foreskin that cannot be pulled back because its opening is too small to expand over the head of the penis. This is normal during infancy and childhood.

Paraphimosis: A condition when the foreskin of an uncircumcised male cannot be pulled back over the head of the penis (glans).

Balanitis: It is inflammation of head (glans) of the penis. Balanitis usually leads to posthitis (inflammation of foreskin) except in circumcised patients.

Balanoposthitis: It is inflammation of both foreskin and head (glans) of the penis.

References:

Bailey & Love's Short Practice of Surgery, 26th Edition
Howkins & Bourne. *Shaw's Textbook of Gynaecology.* 17th Edition

5-1 PROBLEMS OF FORESKIN

Adolescent (boy) comes to clinic

Make him comfortable
Ensure confidentiality and privacy

History

- History of problem in foreskin, pain and difficulty in pulling foreskin back
- Soreness in penis, painful micturition

Examination

- Foreskin is difficult to retract
- Signs of inflammation or infection
- Signs of STI syndrome

• Foreskin cannot be retracted (glans cannot be fully uncovered) • No sign of inflammation/ infection	• Foreskin retracted away from glans but cannot be pulled back to normal position • Glans is exposed • Glans and foreskin, both, beyond tight area is swollen	• Sign of inflammation present on glans and foreskin • Discharge (whitish yellowish) present under foreskin and around glans • Discharge not coming out from urethra
Phimosis	Paraphimosis	Balanitis/balanoposthitis
Refer to physician/ surgeon for further management/ surgery	• Give pain relief • Give sedative if needed • Apply topical analgesic	• Advise to retract foreskin daily and wash with mild soap and warm water • Avoid using strong soap/ detergent • Advise tablet flucloxacillin orally in every 6 hours for 7 days **OR** tablet cephalexin orally in every 6 hourly for 7 days • If fungal infection is suspected, apply clotrimazole cream 2 times daily for 7 days
	If not relieved, refer to surgeon	If not relieved, refer to dermatologist

Note:
Use only plain clotrimazole, without steroids

5-2 PROBLEMS WITH ONSET OF PUBERTY IN ADOLESCENT GIRLS

Puberty

It is the period in life when a child experiences physical, hormonal, mental, sexual and social changes and becomes capable of reproduction. As a child becomes an adolescent, the body starts preparing for adulthood. This stage, which lasts from two to five years, is called puberty. During puberty, there is an increase in height and weight. There is also marked growth and development of sexual organs. In girls, puberty typically starts between ages 8 and 13 and may continue until age 19 or older (WHO).

Precocious puberty

When a child begins to develop secondary sexual characteristics much earlier than usual, it is called precocious puberty. Precocious puberty in girls, is breast development, onset of menstruation, and pubic or underarm hair growth at the age of 7 or 8 years. In addition to improved nutrition, genetic, metabolic and environmental factors contribute to the early onset of puberty.

Delayed puberty

In general, we say that puberty is later than normal (or delayed) in a girl when certain changes have not started to occur by a certain age. For example, if a girl has not developed breast bud, or her breasts have not started to increase in size before the age of 14 years, or if there is no appearance of hair around the genital area by the age of 14 years, or her menstruation has not started by the age of 16 years, it could be defined as delayed puberty.

Causes

- Normal variation, often runs in the family
- Poor nutrition
- Chronic illnesses

Consequences of this condition

- Shorter than other girls of the same age
- Psychological and social effects
- Girls may feel anxious and isolated

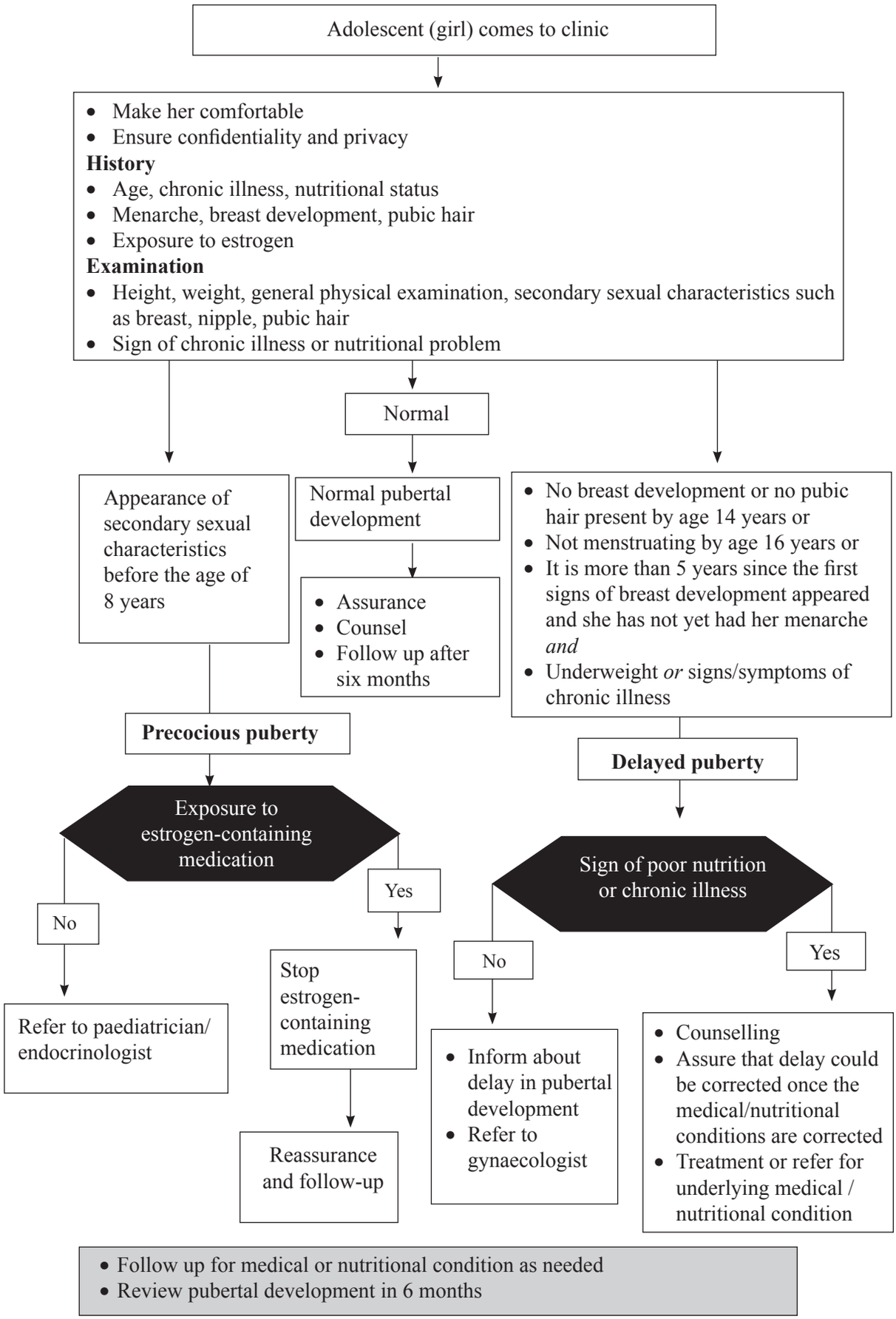
References

Adolescent job aid: a handy desk reference tool for primary level health workers. World Health Organization, 2010

Howkins & Bourne. *Shaw's Textbook of Gynaecology.* 17th Edition

Ashraf Soliman, Vincenzo De Sanctis, et al., Nutrition and pubertal development, Indian Journal of Endocrinology and Metabolism, 2014 Nov; 18 (Suppl 1): S39–S47

5-2 PROBLEMS WITH ONSET OF PUBERTY IN ADOLESCENT GIRLS



5-3 PROBLEMS WITH ONSET OF PUBERTY IN ADOLESCENT BOYS

Puberty

The period in life when a child experiences physical, hormonal, mental, sexual and social changes and becomes capable of reproduction. As a child becomes an adolescent, the body starts preparing for adulthood. This stage, which lasts from two to five years, is called puberty. During puberty, there is an increase in height and weight and in the musculature. There is also marked growth and development of sexual organs. In boys, puberty typically starts between ages 10 and 15 and may continue until age 19 or older (WHO).

Precocious puberty

When a child begins to develop secondary sexual characteristics much earlier than usual, it is called precocious puberty. Precocious puberty in boys is defined as testicular or penile enlargement and genital or body and facial hair growth occurring before the age of 9 years.

Delayed puberty

In general, physical growth much later than average is called delayed puberty. In boys, for example, if the penis has not started to increase in size by the age of 14 years, the testes have not started to enlarge by the age of 14 years, or hair around the genital area has not started to appear by the age of 15 years.

Causes of this condition

- Normal variation in the age
- Poor nutrition
- Chronic illnesses

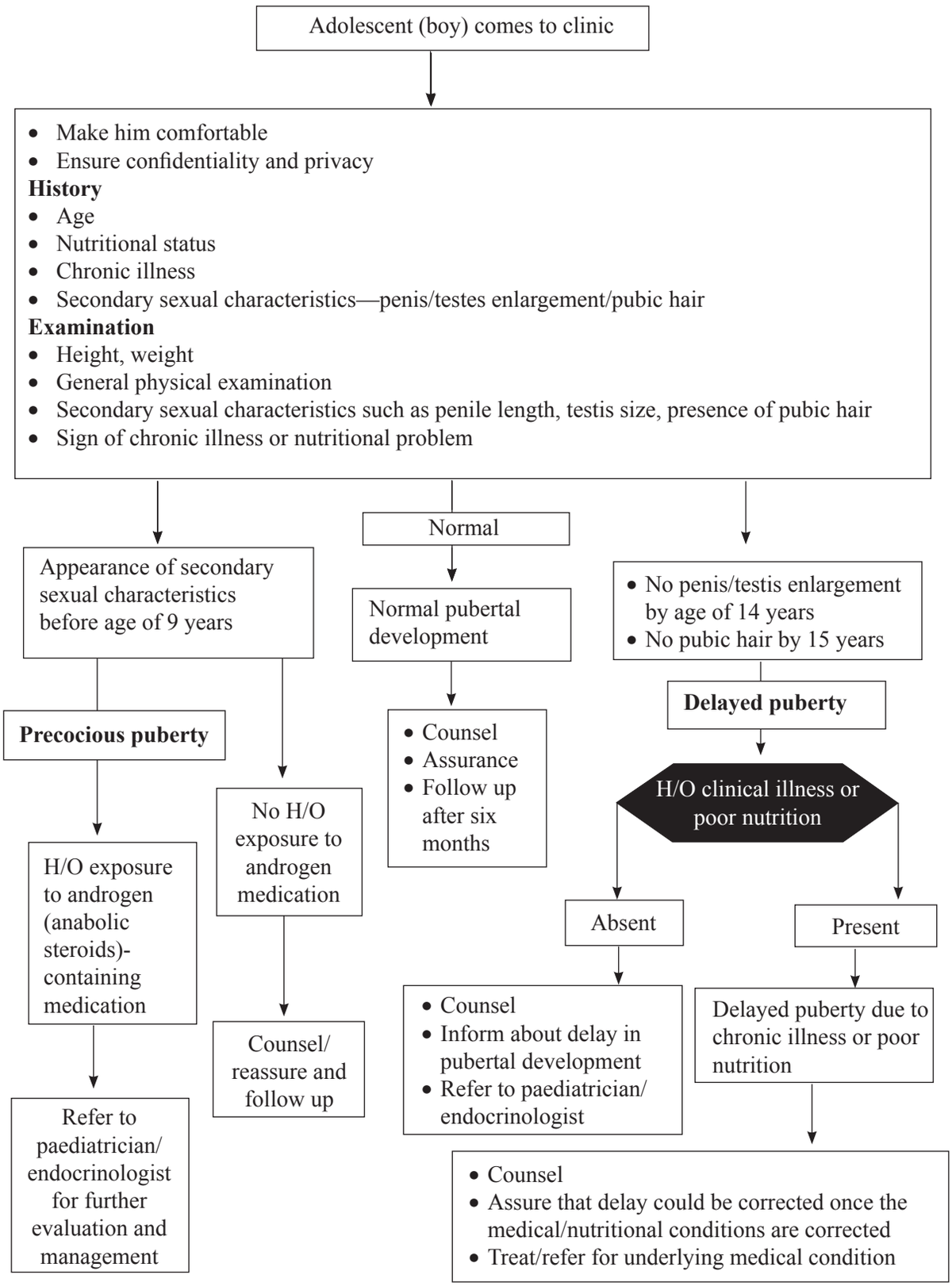
Consequences of this condition

- Shorter than other boys of the same age
- Psychological and social effects
- Boys may feel anxious and isolated

References

Adolescent job aid: a handy desk reference tool for primary level health workers. World Health Organization, 2010
Howkins & Bourne. *Shaw's Textbook of Gynaecology.* 17th Edition

5-3 PROBLEMS WITH ONSET OF PUBERTY IN ADOLESCENT BOYS



5-4 COMMON PSYCHOLOGICAL PROBLEMS DURING ADOLESCENCE

During adolescence phase of development, there is a transition in adolescents from childhood to adulthood. Issues of independence, identity, sexuality, and relationships define this developmental stage. Mental health problems, such as mood disorders, anxiety disorders, and thought disorders (such as schizophrenia), as well as psychosocial disorders, may develop or first become apparent during adolescence. In particular, depression, anxiety, and eating disorders are common during adolescence. Suicide is a major cause of death for this age group. Other causes of death include accidents, unintentional injuries, and homicide.

Depression is common among adolescents.

Suicide: Thoughts about suicide (called suicidal ideation) are more common. Suicidal ideation requires an immediate mental health evaluation; parents should not be expected to determine how "serious" the problem is on their own.

Anxiety often manifests during adolescence, as do **mood disorders** and disruptive behavioural disorders such as oppositional defiant disorder and conduct disorder (range of antisocial types of behaviour).

Mood: Mood is a temporary state of mind and feeling. An abrupt and unaccountable change of mood is called mood swing.

Self-esteem: Confidence in one's own worth or abilities

Body image: The subjective picture or mental image of one's own body

Sexual feeling: An emotional state or reaction pertaining to sex and sexuality

Sexual attraction: An attraction based on sexual instinct or sexual desire

Several psychosocial problems may be associated with substance abuse: Overindulgence in or dependence on an addictive substance, especially alcohol or drugs

Several psychosocial problems cause

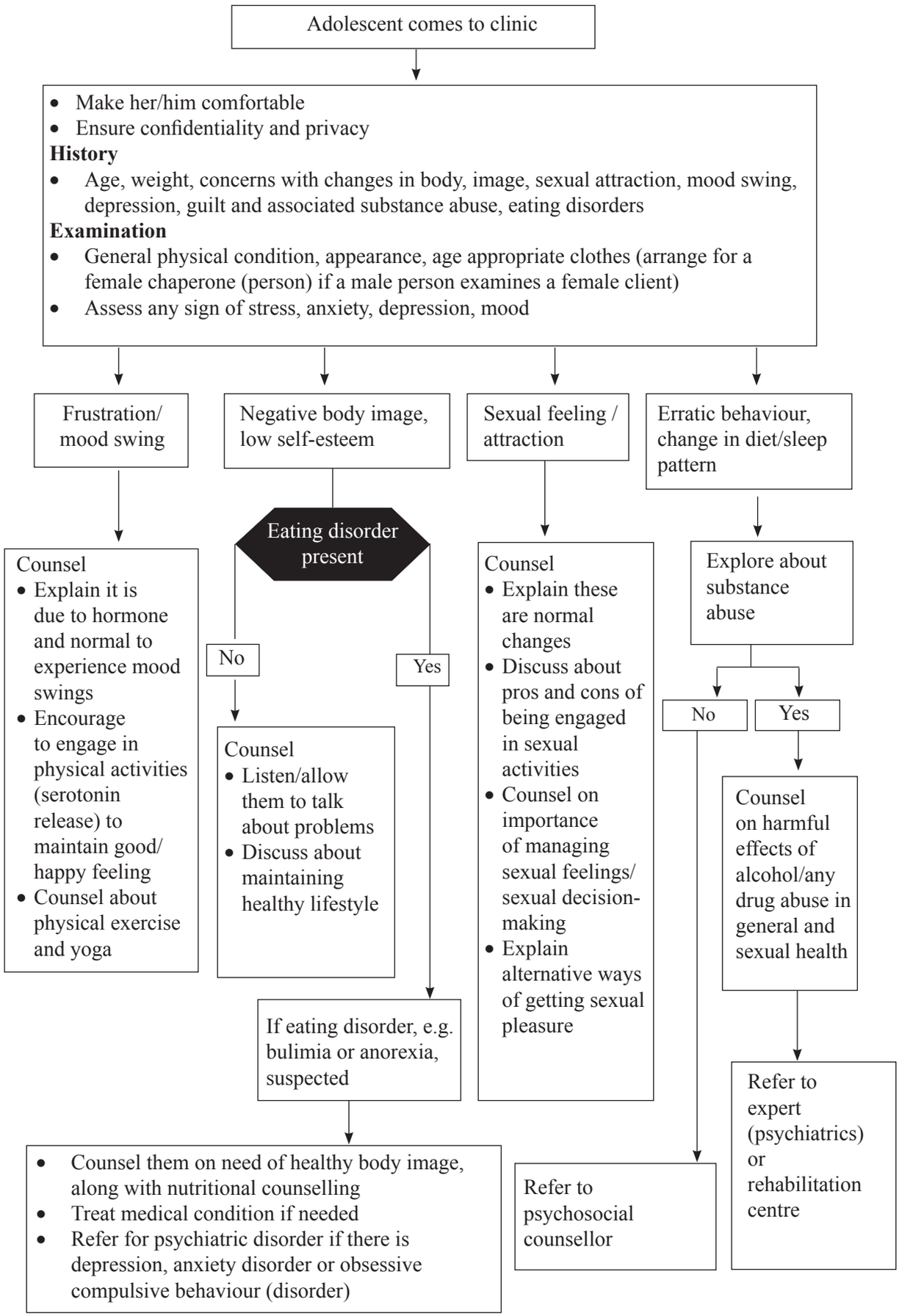
- Unintentional injuries resulting from motor vehicle crashes
- Injuries resulting from interpersonal violence, leading to adolescent death and disability

Eating disorders, such as anorexia nervosa (person presents extreme excuses to avoid eating, are generally thin but they talk about their fat) and bulimia nervosa (person has episode of over-eating, followed by vomiting and is generally within normal weight), these disorders most commonly develop during adolescence and are more common among girls. Many unhealthy behaviours that start during adolescence, such as consuming a poor diet, substance use, and violence, can lead to immediate health problems, long-term disorders, or poor health later in life.

References

Physical and Psychosocial Effects of the Changes in Adolescence Period, Aysel Özdemir*, RN, PhD, et al., International Journal of Caring Sciences May–August 2016, Volume 9, Issue 2, Page 717*
Howkins & Bourne. *Shaw's Textbook of Gynaecology.* 17th Edition

5-4 COMMON PSYCHOLOGICAL PROBLEMS DURING ADOLESCENCE



5-5 COMMON PROBLEMS/CONCERNS RELATED TO PHYSICAL CHANGES DURING ADOLESCENCE

There is rapid change in physical growth during adolescence, which causes many concerns among adolescents due to lack of appropriate information. Many problems are associated with body image.
Common physical changes during puberty in relation to Tanner's Stage are as follows:

SN	Average Age	Development of External Genitalia (Boys)	Development of Breast (Girls)	Pubic Hair (Boys and Girls)	Growth (Boys)	Growth (Girls)
1	Girls: 8 years and less Boys: 9 years and less	Pre-pubertal	Pre-pubertal	Pre-pubertal	5-6 cm/year	5-6 cm/year
2	Girls: 9-11 years Boys: 10-11 years	Enlargement of scrotum and testes	Breast bud stage with elevation of breast and papilla, enlargement of areola	Sparse growth of long, slightly pigmented hair, straight or curled, at base of penis or along labia	5-6 cm/year	7-8 cm/year
3	Girls: after 12 years Boys: around age 13 years	Enlargement of penis, further growth of testes	Further enlargement of breasts and areola	Darker, coarser and more curled hair spreading sparsely over junction of pubes	7-8 cm/year	8 cm/year
4	Girls: around 13 years Boys: around 14 years	Increase in size of penis with growth in breadth (girth), further growth of testes and scrotum	Areola and papilla from a secondary mound above level of breasts	Hair adult type but covering smaller area than in adult; not spread to medial surface of thighs	10 cm/year	7 cm/year
5	Girls: just after age 14 (full height 1-2 year after menarche) Boy: around age 15 (by 18-years of age full growth)	Adult genitalia	Mature stage: projection of papilla only, related to recession of areola	Adult type and quantity, with horizontal distribution	No further increase in height after 17 years	No further increase in height after 16 years

Reference

Howkins & Bourne. *Shaw's Textbook of Gynaecology.* 17th Edition

5-5 COMMON PROBLEMS/CONCERNS RELATED TO PHYSICAL CHANGES DURING ADOLESCENCE

Adolescent comes to clinic

- Make her/him comfortable
- Ensure confidentiality and privacy

History

- Development of primary and secondary sexual characteristics
- Note that adolescents may present with symptom which may not be directly related to their concern, e.g. they may present with lack of sleep/concentration or difficulty to memorize even though they have concern about penile size (boys) or about breast size (girls)

Examination

- General physical condition (arrange for female guardian if a male person examines a female client)
- Development of sexual characteristics

Within range of normal development	Delayed development	Early (precocious) development
• Counsel adolescent about physical changes that occur during adolescence depending upon sex of the adolescent and that everybody goes through them • Counsel that these changes are normal for healthy adolescent development • Counsel him/her to adapt to these changes even if they appear a bit early or late • Counsel them to stay healthy with exercise and nutritional diet	*Refer flowchart: 5-2 or 5-3*	*Refer flowchart: 5-2 or 5-3*

5-6 GYNAECOMASTIA

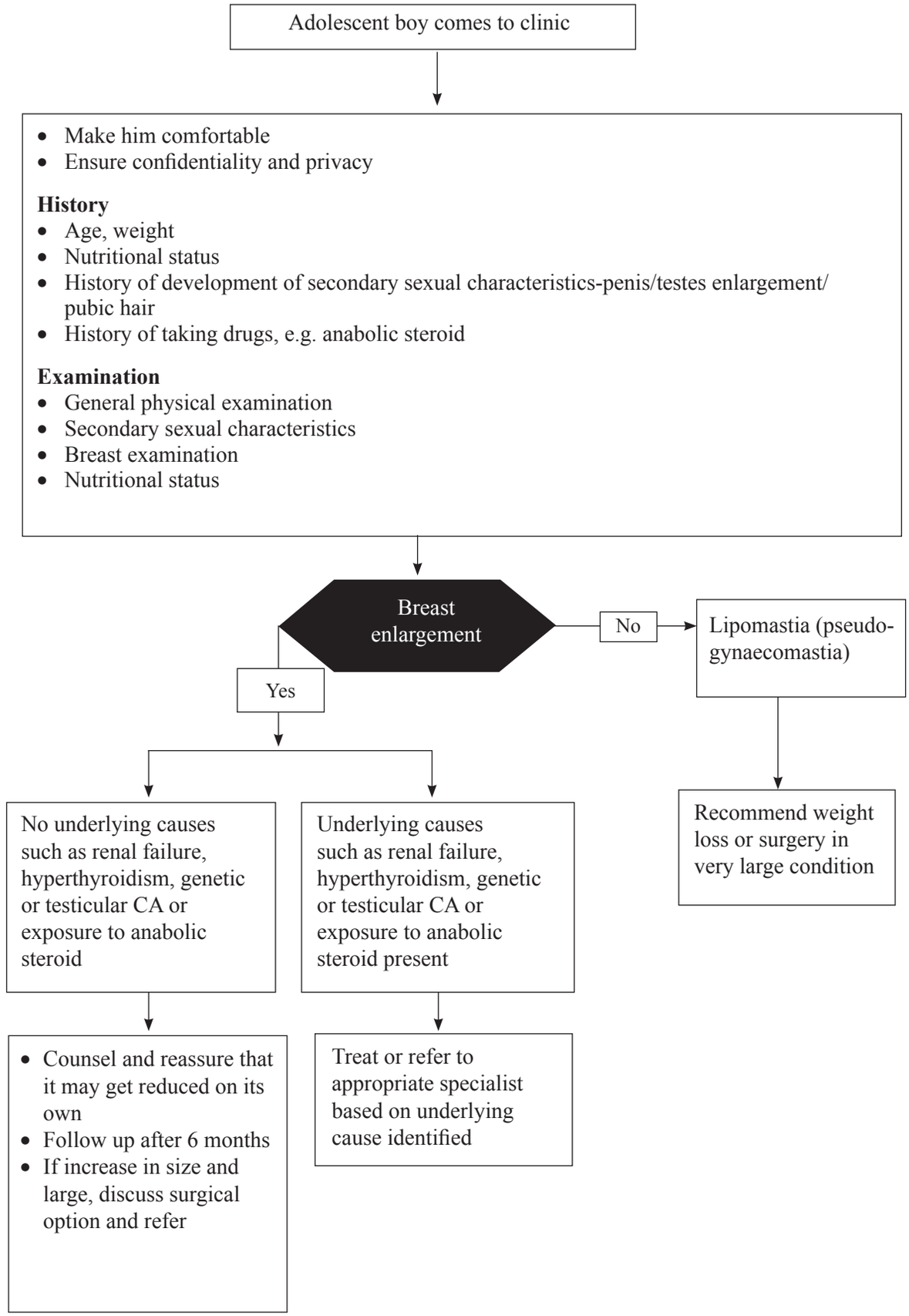
Gynaecomastia
It refers to enlarged breast tissue in boys (men).
True g**ynaecomastia** is an enlargement of the male breast gland because of a hormonal imbalance, but the appearance of enlarged breasts may be ascribed to **pseudo-gynaecomastia** (or false gynaecomastia)**/ lipomastia,** a symptom of excess fat, which deposits on the chest. It can be common and temporary in boys going through puberty.

Symptoms
- Enlargement of male breasts
- Symmetrical but can be unilateral
- Enlargement may be greater on one side even if both sides are involved
- Tenderness and sensitivity may be present

Causes
- Malnutrition and re-feeding (recovery from malnutrition)
- Cirrhosis of the liver, leading to hormonal imbalance
- Disorders of male sex organs (testes), may be genetic or due to testicular cancer
- Chronic renal failure and hyperthyroidism
- Medicines like spironolactone, calcium channel blockers, ACE inhibitors and some antibiotics

References
Howkins & Bourne. *Shaw's Textbook of Gynaecology.* 17th Edition
Algorithm for clinical evaluation and surgical treatment of gynaecomastia, Cordova A, Moschella F, J Plast Reconstr Aesthet Surg. 2008;61(1):41-9. Epub 2007 Nov 5

5-6 GYNAECOMASTIA



Section 6

PREVENTION AND MANAGEMENT OF INFERTILITY

6-1 PREVENTION AND MANAGEMENT OF INFERTILITY

Definition

- **Primary infertility** is failure to achieve a clinical pregnancy after 12 months or more of regular unprotected sexual intercourse. It is an infertility in a couple who have never had a child.
- **Secondary infertility** is a failure to conceive following previous pregnancy, or when a woman is unable to bear a child, due to either the inability to become pregnant or the inability to carry a pregnancy to a live birth.
- **Fecundity** is the probability of achieving a live birth within a single cycle. It is the rate of conception in a given period, which is about 20% in one month.

Incidence

Eighty percent of the couples achieve conception, if they desire, within a year with regular and frequent intercourse (4-5 times a week), 10% achieve conception by the end of the second year. As such, 10% remain infertile by the end of the second year.

Causes

Female	Male	Combined
Ovarian: 21%	Oligospermia/Azoospermia: 26%	Unexplained: 24%
Tubal and peritoneal: 14%		Coital problems: 6%
Cervical: 3%		
Endometriosis: 6%		
Congenital uterine anomaly, blind vagina		

Initial Evaluation

- Evaluation of both partners together
- Ensure privacy during evaluation, gaining the confidence of both partners
- Avoid assigning blame to any partner
- Careful inquiry on sexual history, frequency of intercourse, knowledge about fertile period

Prevention of Infertility

- Prevention of sexually transmitted infections (STIs)
- Early recognition and management of tuberculosis
- Early recognition and treatment of undescended testicles
- Avoid smoking, heavy drinking and drugs

Basic interventions should be tried for 6 months and the couple should be referred for further investigations.

Initial counselling to the couple concerned about delays in conception

- Definition of infertility
- Process of conception, chances of conception, fertile period
- Frequency and timing of sexual intercourse
- Avoid alcohol, smoking
- Avoid heat application on testes, tight underwear
- Obesity, low body weight
- Occupation
- Over-the-counter and recreational drug use
- Folic acid supplementation

Semen Analysis

Should be collected after 2 days of abstinence and evaluated within 1 hour of ejaculation.

Normal parameters:

- Volume: 1.5 ml
- Sperm concentration: 15 million/ml
- Total Sperm count: >40 million sperm per ejaculation
- Motility: 60%
- Pus cells (WBC): 2 to 3 per HPF
- Morphology: >40% normal forms

(Source: WHO, 2010)

Reference:

Howkins & Bourne. *Shaw's Textbook of Gynaecology.* 17th Edition

World Health Organization reference values for human semen characteristics, Hum Reprod Update. 2010 May-Jun;16(3):231-45. doi: 10.1093/humupd/dmp048. Epub 2009 Nov 24.

6-1 PREVENTION AND MANAGEMENT OF INFERTILITY

Initial evaluation of both partners

History (*for female*)
- Age, occupation
- Contraceptive history
- Psychosocial history
- Menstrual history
- Previous pregnancies, including abortion
- Known children outside this (present) union
- Duration of marriage/staying together
- Frequency of sexual intercourse
- Dyspareunia
- Substance abuse: drugs, smoking and alcohol drinking
- Milk secretion from breast, breast pain
- Any stress and anxiety

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Medical history should include
- STIs or H/O urethral discharge
- H/O allergy, intake of drug, like long-term steroids
- Diabetes, mumps, orchitis after puberty
- Surgery on testes or hernia repair
- Major medical problems (thyroid, pituitary, recurrent chest infection)
- Familial genetic disease or infertility
- Psychological problems

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Physical Examination (for female)
- Body weight
- Head to toe examination
- Development of secondary sexual characters and hair distribution
- Hirsutism
- Breast examination
- Abdominal examination
- Pelvic examination

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Lab Investigation
- Serology, ESR, RBS
- Semen analysis and urine analysis
- If lab facility available, perform investigations to rule out STIs

↓

Treatment (based on the findings)
- Urinary tract infection
- STIs

History (*for male*)
- Age, occupation
- Medical and urologic history
- Duration of marriage/staying together
- Frequency and timing of sexual intercourse
- Known children outside this (present) union
- Impotence or difficulty with intercourse
- Substance abuse: drugs, smoking and alcohol drinking
- Any stress and anxiety

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Medical history should include
- STIs or H/O discharge
- H/O previous curettage
- Pelvic Inflammatory Disease (PID)
- H/O allergy, intake of drug like long-term steroids
- Tuberculosis, diabetes
- Abdominal or pelvic surgery
- Major medical problems (thyroid, pituitary)
- Familial genetic disease or infertility
- Psychological problems

↓

Physical Examination (for male)
- Body weight
- Head to toe examination
- Development of secondary sexual characters and hair distribution
- Chromosomal problems and endocrinal problems
- Genital examination:
  - Presence of both testes
  - Size of testes/tenderness
  - Hydrocele, varicocele
- Penis examination: for phimosis, pus collection, hygiene condition

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Lab Investigation
- Serology, ESR, RBS
- Urine analysis
- If lab facility available, perform investigations to rule out STIs

→ Further counselling and referral for further investigations and management

Consider early referral when:
- Woman is more than 35 years
- A woman has a history of recurrent miscarriages
- There is medical history of endocrine disorder, genetic disorder, abnormal pelvic findings
- Man has erectile dysfunction
- A man is azoospermia

Section 7

SAFE ABORTION SERVICES

Safe abortion services is provided in listed health facilities by listed service providers only

7-1 PRE-ABORTION CARE

The first step in providing safe abortion service (SAS) is to establish that the woman is pregnant; if so, to estimate the duration of pregnancy and to confirm that the pregnancy is intrauterine. Determination of the duration of pregnancy is a critical factor in selecting the most appropriate abortion method to minimize the risks associated with induced abortion.

Client Assessment

History

- Menstrual history, gestational age based on last menstrual period (LMP)
- Symptoms: nausea, vomiting and appetite changes. Pregnancy tests and/or ultrasound (if required)
- Pre-existing medical conditions: any chronic illness and medications, allergies to any medication, any other drug intake, including misoprostol or herbs and bleeding disorders
- Obstetric and gynecological history: live births, mode of delivery, abortions, contraceptive use, ectopic pregnancies, bleeding or spotting during this pregnancy, infections or recent abortion-related care
- Sexually Transmitted Infections (STIs), including Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome (HIV/AIDS)
- Any surgical history

Physical examination: Vitals, general examination, cardio-vascular system (CVS) and respiratory system (RS), per abdominal (P/A) examination

Pelvic examination: Explain to woman what you will be doing during examination, what to expect and reassure her.

- Ask the woman to empty her bladder.
- Maintain privacy. Use a cover (e.g. sheet towel, or clothing) to cover the perineum.

Speculum examination

- Use appropriate-sized speculum.
- Take high vaginal swab if infection is suspected or perform visual inspection with acetic acid (VIA) if indicated and if possible infection is suspected, administer antibiotics and do the procedure after half an hour.

Bimanual examination

Confirm pregnancy status and its duration.

Laboratory test

Routine laboratory testing is not a prerequisite for abortion services. The need for routine Rhesus (Rh) immunization for Rh-negative women undergoing early abortion has not been proven by clinical studies and Rh testing is not required to provide abortion services.

Counselling and informed consent

Effective counselling with all the information needed should be provided to the woman seeking abortion (before, during and after the abortion procedure) and it should be ensured that they receive adequate responses to their questions and needs.

- Ensure privacy and confidentiality.
- Provide option: to terminate the pregnancy or not, if desired to continue the pregnancy, provide information on ANC.
- Provide full information on options of abortion services based on gestational age in simple language.
- Explain benefits, risks, alternatives and what to expect with each procedure, including pain management.
- Explain about post-procedure return to fertility, contraceptive options and when they can be given to protect from unintended pregnancies *(see protocol 7.5, Post-abortion Contraception)*.
- Ensure that the woman has given the consent without pressure or coercion.
- Informed consent of the woman seeking abortion services.

Methods of abortion

1. Within 10 weeks of gestation "**medical abortion**" using combination of mifepristone and misoprostol
2. Up to 12 weeks of gestation "**surgical abortion**" using manual vacuum aspiration (MVA)
3. For second trimester "**surgical abortion"** using dilatation and evacuation (D&E) or "**medical abortion"**

References

NHTC, FHD. 2015. *Comprehensive Abortion Care (Cac), Integrated Trainers' Manual, Third Edition, (2015). Kathmandu:* National Health Training Center, Family Health Division.

WHO. 2014. *Clinical practice handbook for Safe abortion.*Geneva: World Health Organization

7-1 PRE-ABORTION CARE

History
- First day of LMP, gestational age
- Gravida/parity/number of living children
- Age of last child
- Contraceptive used in last six months
- Past medical and surgical history
- History of any drug intake and drug allergy (e.g. xylocaine, misoprostol)
- Information on pre-existing conditions
- Blood group and Rh type if known

Examination

Physical examination
- General appearance
- Vital signs
- General health: weakness, anaemia, jaundice
- Check CVS and RS
- Check abdomen for masses and tenderness: uterine size (height of the uterus above the pubic symphysis), any other mass or organomegaly

Pelvic examination
- Inspect external genitalia: vulva/vagina
- Speculum examination: cervix-any abnormal discharge and lesion
- Bimanual examination: position of uterus, size of uterus, mobility, adnexal mass, tenderness on cervical movement or in fornix, check whether size of uterus corresponds with duration of pregnancy or not

If feasible and indicated

Laboratory Investigation
- Hb if patient is anaemic
- Blood group & Rh type
- Pregnancy test and USG if there is doubt about pregnancy, duration of pregnancy, or if there is suspicion of ectopic pregnancy

Uterine size

within 10 weeks	10-12 weeks	>12 weeks
• Counsel and take consent. • Provide MA/MVA as per protocol	• Counsel and take consent • Provide MVA as per protocol	Counsel and refer woman for second trimester SAS

7-2 MEDICAL ABORTION FOR FIRST TRIMESTER WITHIN 12 WEEKS OF GESTATION WITH POST-PROCEDURE CARE

All women seeking SAS need to undergo clinical assessment and counselling prior to undergoing safe medical abortion procedure. Medical abortion (MA) refers to the sequential use of mifepristone, followed by misoprostol.

Steps of Medical Abortion Procedure

1. Day 1: Mifepristone: 200mg orally (1 pill) swallowed in the facility
2. Day 2: Misoprostol 800mcg (four pills: 200 mcg/tab) is administered after 24-48 hours of mifepristone (at home or at facility), either
   i. Sublingually/buccally and after 30 minutes, remaining pill fragments are swallowed. If there is vomiting within 30 minutes of taking the pills, then there is need to take misoprostol again.
   ii. **Or**, Misoprostol 800mcg (four pills) after 24 hours of mifepristone is administered vaginally

Pain-management: NSAIDs- ibuprofen is given with misoprostol or once cramping starts. NSAIDs do not interfere with MA efficacy.

Expected effects: Vaginal bleeding and cramping (should be distinguished from side-effects of medication or warning signs of complications)

Side-effects: such as nausea, vomiting, diarrhoea, fever, warmth, or chills, headache, dizziness are minor side-effects and usually do not require treatment.

Warning signs of complications: Women should contact the health facility (SAS site) immediately if they experience following complications:

- Excessive bleeding soaking more than 2 pads/hour for 2 consecutive hours and that occur at any day after misoprostol
- Fever: 38ºC (100.4ºF**)** or higher that occur at any day after misoprostol
- Unusual or bad-smelling vaginal discharge
- Severe abdominal pain that occur at any day after misoprostol

What to expect after taking the medications (at home and health facility)

- The median time from misoprostol use, to expulsion has been found to be 3 hours (sublingual) and 4 hours (vaginal).
- Most women will not see the expelled pregnancy but just blood and clots and occasionally women with pregnancies between 8 and 9 weeks may see a recognizable embryo.
- After MA with mifepristone and misoprostol, the average duration of bleeding is approximately 14 days.
- Warning signs (excessive bleeding, fever, foul-smelling discharge, severe abdominal pain) indicating the need to return to the health facility
- MVA will be necessary to terminate the pregnancy if MA procedure fails.

Disposal of products: Women may simply flush expelled products down the toilet and dispose of sanitary pads as they used to do after a normal menstrual period.

Unsuccessful medical abortion: Manual vacuum should be performed to treat heavy or problematic bleeding or terminate an ongoing pregnancy.

Postabortion contraception

- Ovulation can take place as early as 8 to 20 days of medical abortion.
- Except for IUCD, all types of long-term and short-term contraceptives can be provided on the day of mifepristone.
- IUCD can be provided as soon as the abortion process is completed.

Follow-up care: Routine follow-up visit after medical abortion is not necessary but can be provided if needed or desired.

References

NHTC, FHD. 2015. *Comprehensive Abortion Care (CAC), Integrated Trainers' Manual, Third Edition, (2015). Kathmandu:* National Health Training Center, Family Health Division.
WHO. 2014. *Clinical practice handbook for Safe abortion.* Geneva: World Health Organization

7-2 MEDICAL ABORTION FOR FIRST TRIMESTER UP TO 12 WEEKS OF GESTATION WITH POST-PROCEDURE CARE

Client wants SAS

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- Confirmed pregnancy: within 10 weeks by clinical assessment
- Consider eligibility and contraindication criteria for the service

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Counsel woman, provide information on MA procedure, post-procedure care, postabortion contraception, and take consent

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Medical abortion procedure steps

- Day 1: mifepristone: 200mg orally
- Day 2: misoprostol after 24-48 hours of mifepristone: 800mcg sublingually, buccally or vaginally (home or health facility)
- Provide pain-management drugs: NSAIDs, ibuprofen given with misoprostol or once cramping starts.
- Postabortion contraception: Except for IUCD, all types of long-term and short-term contraceptives can be provided on the day of mifepristone. IUCD can be provided as soon as the abortion process is completed.
- Scheduling follow-up care: A routine follow-up visit after medical abortion is not necessary.

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Post-procedure care

- When a woman does return to the facility for follow-up care, address her needs and provide comprehensive care.
- Evaluate and discuss any other health or emotional needs, as desired by the woman, and refer her to other services, if needed.

7-3 SURGICAL ABORTION FOR FIRST TRIMESTER UP TO 12 WEEKS OF GESTATION WITH POST PROCEDURE CARE

All women seeking SAS need to undergo clinical assessment and counselling prior to undergoing the safe abortion procedure.

MVA procedure

- Preparation of instruments
  - Check that the aspirator retains a vacuum
  - Availability of more than one Manual Vacuum Aspirator (MVA) with appropriate-sized cannula
- Preparation of woman
  - Pre-medication 30 minutes before the procedure: NSAID- ibuprofen 400-600mg orally and diazepam 5mg
  - Prophylactic antibiotics (doxycycline/azithromycin/metronidazole)
  - Ask woman to empty her bladder
- Cervical preparation with antiseptics
  - Appropriate speculum, No Touch Technique
  - Antiseptic sponges to clean cervix and vagina (if needed)
- Para-cervical block (it is recommended for all MVA procedures)
  - Inject 10ml of 1.0% plain injection lidocaine at (12, 2, 4, 8, 10 o'clock sites) at the cervico-vaginal junction to 3cm depth, with maximum dose of 4.5mg/kg body weight or 200mg total.
  - Possible side effects with intramuscular injection are peri-oral tingling, tinnitus, metallic taste, and dizziness or irregular/slow pulse.
- Cannula insertion: Prefer appropriate and largest size of cannula according to gestational age, which could be inserted easily.
- Suction of uterine contents
- Procedure is stopped when frothing with no tissue passes through cannula, gritting sensation is felt and uterus contracts around cannula and uterine cramping increases.
- If there are any complications during the procedure, manage as per *protocol 7-4, Identification and Management of Safe Abortion Complications*.
- Removal of the instrument
- Inspection of products of conception (POC) to confirm completion under light view box
- Concurrent steps:
  - Inform woman on completion of evacuation procedure and concurrent procedures (as insertion of an IUCD or implant, or repairing a cervical tear) as per need.
  - Safe cleaning of equipment after use**:** all reusable surgical instruments, including MVA plus aspirators and easy grip cannulas used, should follow the processing steps as per the national Infection Prevention (IP) protocol: decontamination – soaking in 0.5% chlorine solution for 10 minutes, cleaning and drying, high level disinfection (HLD) or sterilization, and storage
- Safe disposal of waste contaminated with body fluids (POC can be flushed in the toilet)

Post-procedure care

- Inform the woman that procedure is complete and escort her to the recovery area.
- Monitor the woman's physical status (vital signs immediately and as per need), including bleeding and cramping.
- Provide pain management (evaluate pain level, patterns and manage accordingly).
- Assess and manage complications as per *protocol 7-4*, *Identification and Management of Safe Abortion Complications*.
- Contraceptive counselling and provision as per RH need of the woman.
- Addressing other health needs (anaemia, STIs, HIV, violence, etc.).
- Scheduling follow-up care after an uncomplicated abortion service is not usually necessary but can be provided according to the condition or on request, ideally at 7-10 days.
- Provide discharge instructions (pain relief/medications and prophylactic antibiotics when and how to seek treatment for complications and follow-up care).

References

NHTC, FHD. 2015. *Comprehensive Abortion Care (Cac), Integrated Trainers' Manual, Third Edition, (2015). Kathmandu:* National Health Training Center, Family Health Division.
WHO. 2014. *Clinical practice handbook for Safe abortion.* Geneva: World Health Organization

7-3 SURGICAL ABORTION FOR FIRST TRIMESTER UP TO 12 WEEKS OF GESTATION WITH POST PROCEDURE CARE

Confirmed pregnancy up to 12 weeks

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Counsel woman and provide information about the procedure, what she will likely to experience and take consent

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MVA Procedure Steps

- Preparation of instruments
- Pre-medication
- Bimanual examination (if required)
- Cervical antiseptic prep
- Para-cervical block
- Cervix dilatation (if required)
- Appropriate cannula as per the gestational age
- MVA to evacuate uterine contents
- Inspect POC to confirm completion under light view box
- Complete any concurrent steps
- Process instruments and waste disposal
- If there are any complications, manage as per *protocol 7-4*, *Identification and Management of Safe Abortion Complications*

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Post-Procedure Care

- Escort the women to the recovery area after completion of the procedure.
- Monitor the woman's vital signs.
- Provide pain management (if needed).
- Provide emotional monitoring and support.
- Assess and manage complications as per protocol.
- Contraceptive counselling (ovulation can take place as early as eight days after abortion) and service provision.
- Addressing other health needs.
- Scheduling follow-up care according to her condition and/or request.
- Provide discharge instructions.

7-4 IDENTIFICATION AND MANAGEMENT OF SAFE ABORTION COMPLICATION

Complications are rare during or after uterine evacuation, but they do occur. Major complications can sometimes be avoided by intervening at the right time with proper management. Incomplete abortion following spontaneous or induced abortion can be managed similarly.

Incomplete abortion

After uterine evacuation, some tissues may remain in the uterus. Large amounts of retained tissues can result in heavy bleeding and infection, if untreated.

Signs and symptoms	Management
Vaginal bleeding	Expectant management
Abdominal pain with or without open cervical os.	• Vacuum aspiration (for uterine size up to12 weeks' gestation)
	• Management with tablet misoprostol single dose (uterine size less than or equal to 12 weeks gestation) 400 µg –Sublingual or 600 µg- Oral
	Consider referral in difficult cases

Inclusion criteria	Exclusion criteria
• Cervical os is open • History of vaginal bleeding during this pregnancy • Uterine size <=12 weeks gestation • Woman medically stable **Precaution** • If IUCD in place: Remove before beginning the regimen	• Shock • Severe anaemia • Suspected ectopic pregnancy • Signs of pelvic infection and/or sepsis • Known allergy to misoprostol or other prostaglandin • Haemorrhagic disorder or current anticoagulant therapy

Haemorrhage

Haemorrhage may occur because of incomplete abortion, trauma or injury to the cervix, vagina or uterus, including perforation of the uterus. Infection or uterine atony might be associated.

Signs and symptoms	Management
• Heavy, prolonged bleeding PV • Pallor and weakness • Agitation or disorientation • Drop in blood pressure • Feeling dizzy or fainting • Rapid pulse and • Decreased urine output	• Prompt action to stop bleeding • Replace fluid or blood volume • Monitor blood pressure and heart rate, as shock may develop at any time • Oxygen administration • I/V antibiotics, if needed • Transfusion may be needed • Every service delivery facility must be able to stabilize and treat or refer

Appropriate treatment for haemorrhage depends on its cause and severity, which includes:

- Re-evacuation of the uterus using MVA or misoprostol
- Administration of uterotonic drugs: oxytocin 20 units in 1L IV at a rate of 60 drops per minute, maximum of 3L of fluid
- Uterine balloon tamponade
- Blood transfusion

Infection

The rate of infection after a safe first trimester abortion is low, occurring in less than one in 100 women. Routine use of prophylactic antibiotics with MVA can decrease the rate even further.

Signs and symptoms	Immediate management
• Lower abdominal or pelvic pain • Vaginal bleeding • Fever and chills • Uterine or lower abdominal tenderness on exam • Cervical motion tenderness • Foul-smelling discharge	• Stabilize the woman; if required, provide IV fluid • If retained POCs are suspected to be a cause for infection, re-evacuate the uterus with MVA procedure • Start IV antibiotics

Delayed management

- Hemoglobim, total white blood cell count, differential count, platelet count, and high vaginal swab should be done.
- Treat with broad spectrum antibiotics as per national protocol.
- Evacuation of uterus with MVA after initial antibiotics are given.

If perforation or septic shock is suspected, refer woman under antibiotics to the higher health centre.

Cervical, uterine or abdominal organ injury

Signs and symptoms (during the procedure)	Signs and symptoms (post-procedure)
• Excessive vaginal bleeding • Sudden, excessive pain • Instruments pass further than expected • Aspirator vacuum decreases • Fat or bowel in aspirate • Shock	• Persistent abdominal pain • Rapid heart rate • Falling blood pressure • Pelvic tenderness • Fever and/or elevated white blood cell count • Shock

Management for persistent bleeding from the cervix

- Minor injury of the cervix: apply pressure only
- Repair of the cervix if tear is present

Management for uterine injury

- If perforation is very small and undetected, it may resolve without surgical intervention.
- Give oxytocin 10 units IM, begin antibiotics and watch the vital signs of the woman.
- If perforation is large or patient's condition starts deteriorating then refer for laparotomy with I/V fluids, I/V antibiotics and oxytocin/ergometrine.

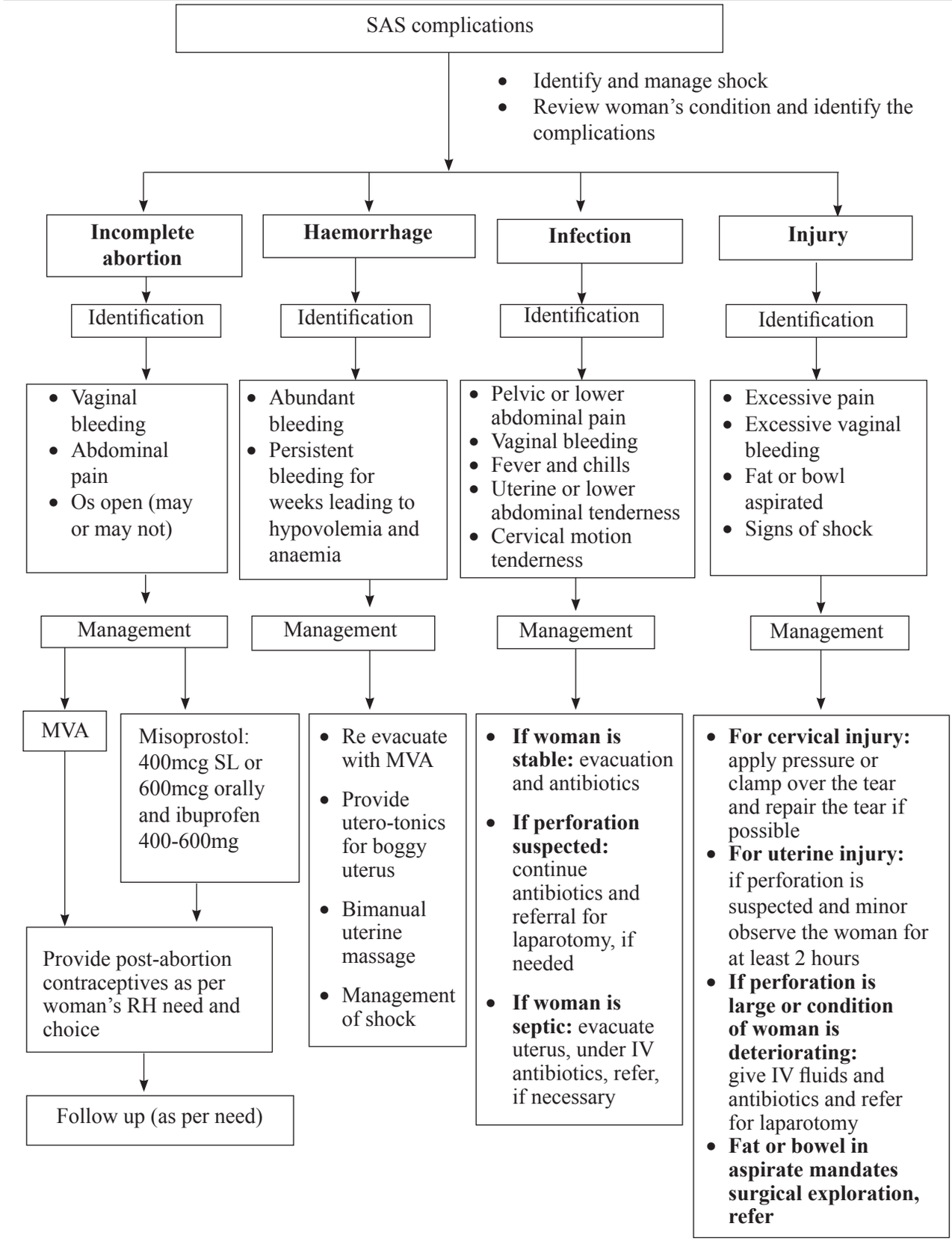
References

NHTC, FHD. 2015. *Comprehensive Abortion Care (Cac), Integrated Trainers' Manual, Third Edition, (2015)*. Kathmandu*:* National Health Training Center, Family Health Division*.*

WHO. 2014. *Clinical practice handbook for Safe abortion.* Geneva: World Health Organization

RCOG. March 2016. *Best practice in comprehensive post-abortion care, best practice paper no. 3.* London*:* The Royal College of Obstetricians and Gynaecologists

7-4 IDENTIFICATION AND MANAGEMENT OF SAFE ABORTION COMPLICATION



NOTE: Refer woman to the higher health facility for further management and surgical treatment whenever needed.

7-5 POST-ABORTION CONTRACEPTION

Linking post-abortion care with family planning services increases access to contraception. This linkage will help in preventing future unintended and unwanted pregnancies and yet another episode of abortion care services. All women seeking SAS should be provided counselling and services for contraception as per the reproductive health need of the woman.

Post-abortion contraceptive counselling (counsel with compassion)

Post-abortion contraceptive services can be initiated immediately after abortion before discharged from the health facility. All women receiving post-abortion care should be provided counselling and information to ensure they understand:

- Pregnancy can occur again before the next menstruation.
- Ovulation may occur as early as eight to twenty days after abortion.
- There are safe, effective contraceptive methods to prevent pregnancy temporarily or permanently; and
- Where and how they can obtain family planning services and appropriate methods.

Post-abortion contraceptive methods

1. Post-MVA: All temporary and permanent methods can be provided immediately.
2. Post-MA: Except IUCD, all temporary contraceptive methods can be provided on the day of mifepristone.

When to start contraceptive method

- Combined oral contraceptives (COCs), Depot Medroxy Progesterone Acetate (DMPA), implants, male condoms and withdrawal can be started immediately in any case, even if the woman has injury to the genital tract or has a possible or confirmed infection.
- IUCD, female sterilization and fertility awareness method can be started once infection is ruled out or resolved or injury to genital tract is healed.

Special consideration

- IUCD insertion immediately after second trimester abortion requires a specifically trained service provider.
- Female sterilization must be decided upon in advance and not while woman is sedated, under stress or in pain. Counsel carefully and be sure to mention available reversible methods.
- Fertility awareness method: A woman can start symptom-based methods once she has no infection-related secretion or bleeding due to injury to the genital tract. She can start calendar-based method after her next monthly period if she is not bleeding due to injury to the genital tract.

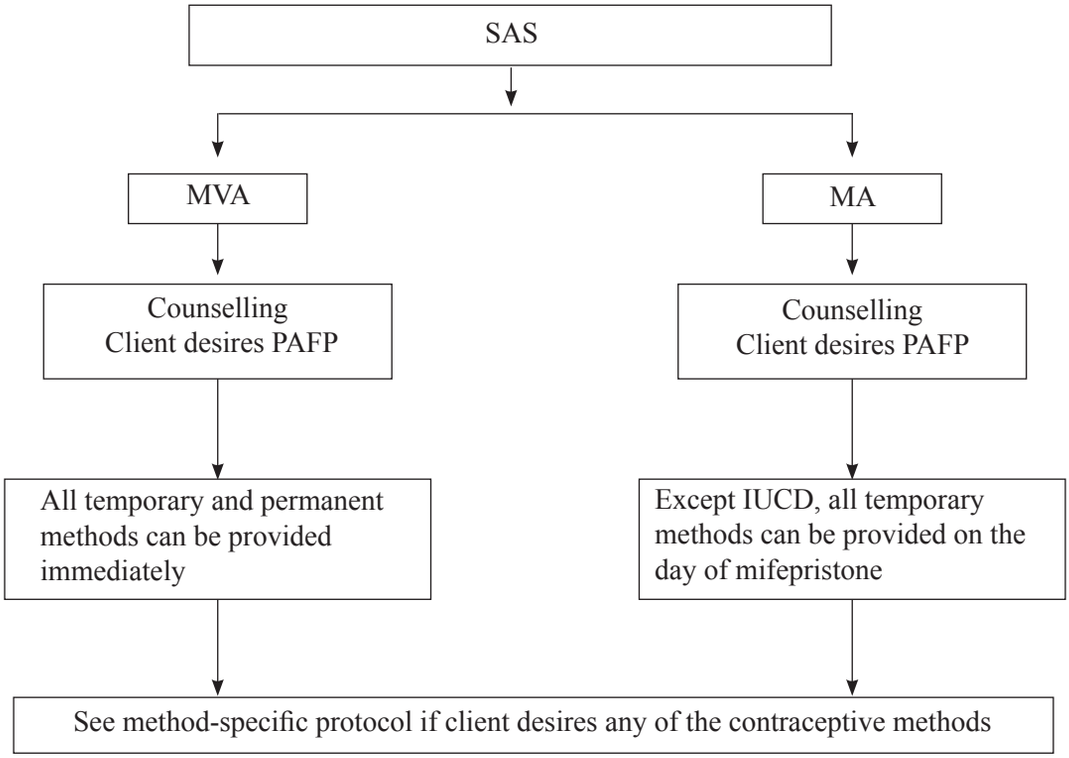
References

NHTC, FHD. 2015. *Comprehensive Abortion Care (Cac), Integrated Trainers' Manual, Third Edition, (2015)*. Kathmandu: National Health Training Center, Family Health Division.

WHO.2018. *Family Planning: A Global Handbook for Providers,* 2018 Edition. Baltimore and Geneva: World Health Organization Department of Reproductive Health and Research (WHO/RHR) and Johns Hopkins Bloomberg School of Public Health/Center for Communication Programs (CCP), Knowledge for Health Project.

WHO. 2014. *Clinical practice handbook for Safe abortion.* Geneva: World Health Organization

7-5 POST-ABORTION CONTRACEPTION



7-6 REFERRAL AND EMERGENCY RESPONSE SYSTEM FOR SAFE ABORTION SERVICE

Women may present for post-abortion care after spontaneous, safe, unsafe or self-induced abortion. Health service providers must be able to recognize and treat or to make an appropriate referral for safe abortion services and for complications that might occur during an abortion, recovery period or later, in post-abortion care. Facilitating referral to services to meet women's needs is an important aspect of quality abortion care; however, social history (e.g. marital status) should not be used to create additional barriers to care. Strong and clear referral linkages to higher-level facility and backup care to emergency services must always be available.

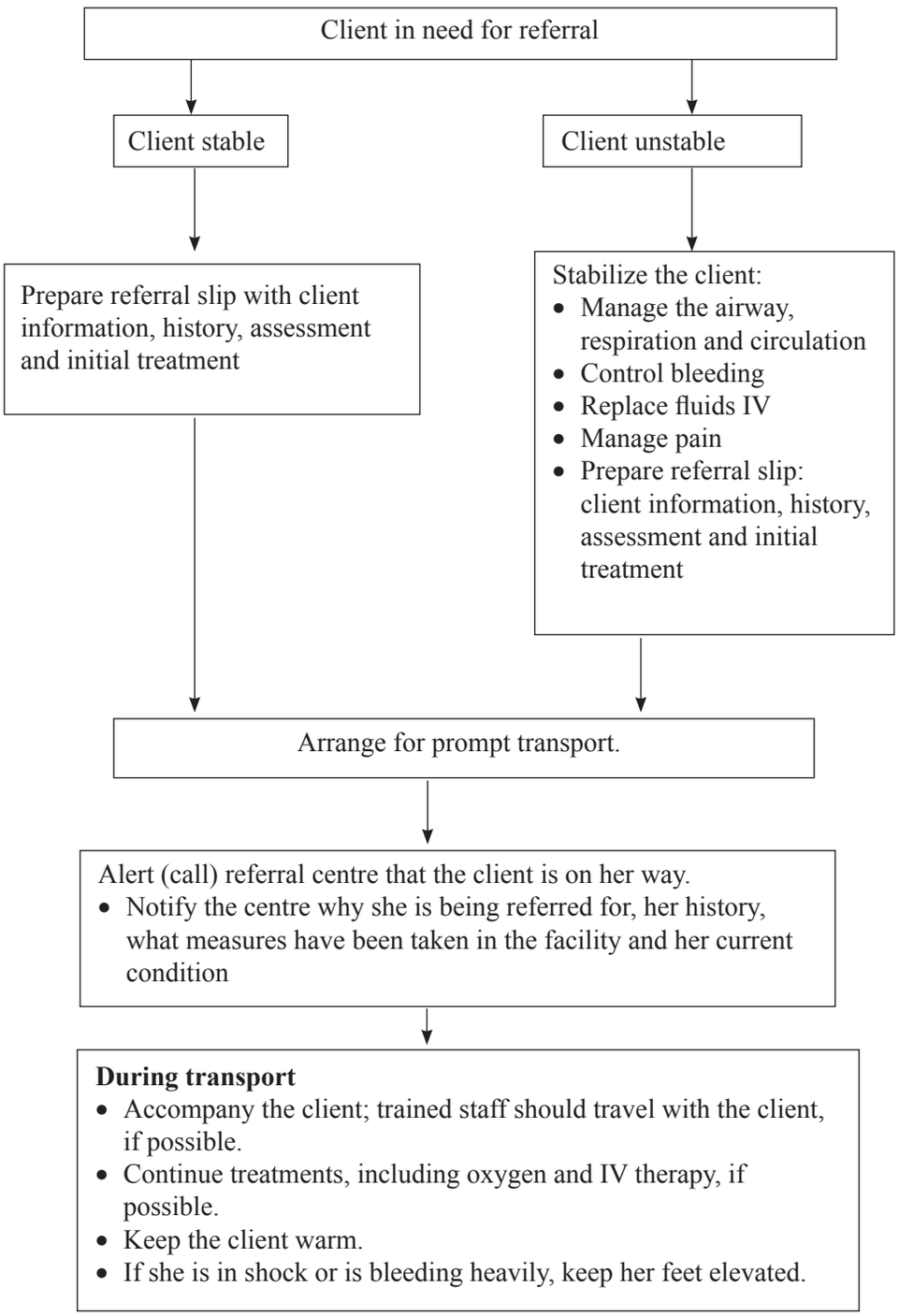
When a woman seeks post-abortion care, the following should be considered:

- Rapid initial assessment and stabilization of the woman.
- Complete clinical assessment, informed consent for continuing treatment. Well-trained service providers should be available for the treatment of complications, including shock. A referral system and transport are necessary in case of referral to a higher-level health centre.
- Supplies: Emergency cart or container with all the medicines and supplies need to be ready.
- Emergency response: Having plans for emergency response in advance saves time, prevents confusion and facilitates appropriate care in extremely urgent scenarios. It may include:
  - On-call health service provider
  - Referral MOU with the referral hospitals
  - Information sharing: If a woman is transferred to a referral hospital, call the referral hospital to notify them that the woman is being transported, why she is being referred for care, her history, what measures have been taken in the facility and her current condition
  - Receive follow-up: Develop a mechanism to receive records or verbal reports of a woman who received emergency care at the referral hospital so that the initial facility can stay informed of such cases and their outcome.
  - Links to communities: to prevent delays in getting women with emergencies to health services such as through community-based emergency transportation systems. Health facility staff can work with community health workers or local health volunteers to refer women in emergency situations to health care services.

Reference

WHO. 2014. *Clinical practice handbook for Safe abortion.* Geneva: World Health Organization.

7-6 REFERRAL AND EMERGENCY RESPONSE SYSTEM FOR SAFE ABORTION SERVICE



Note: Develop a mechanism to receive records or verbal reports of a woman who received emergency care at the referral hospital.

Annex 1

सम्वत् २०७५ सालको ऐन नं. ९
सुरक्षित मातृत्व तथा प्रजनन स्वास्थ्यको अधिकार सम्बन्धिमा व्यवस्था गर्न बनेको विधेयक

परिच्छेद ४
सुरक्षित गभनपतन

१५ सुरक्षित गर्भपतन गर्न पाउने: देहायको अवस्थामा गर्भवती महिलालाई सुरक्षित गर्भपतन गर्न पाउने अधिकार हुनेछ:

(क) गर्भवती महिलाको मञ्जुरीले बाह्र हप्तासम्मको गर्भ,

(ख) गर्भपतन नगराएमा गर्भवती महिलाको ज्यानमा खतरा पुग्न सक्छ वा निजको शारीरिक वा मानसिक स्वास्थ्य खराब हुन सक्छ वा विकलाङ्ग बच्चा जन्मन्छ भनी इजाजत प्राप्त चिकित्साको राय भई त्यस्ती महिलाको मञ्जुरी बमोजिम अट्ठाईस हप्तासम्मको गर्भ,

(ग) जवर्जस्ती करणी वा हाडनाता करणीबाट रहन गएको गर्भ गर्भवती महिलाको मञ्जुरीले अट्ठाईस हप्तासम्मको गर्भ,

(घ) रोग प्रतिरोधक क्षमता उन्मुक्ति गर्ने जीवाणु (एच.आई.भी.) वा त्यस्तै प्रकृतिको अन्य निको नहुने रोग लागेको महिलाको मञ्जुरीमा अट्ठाईस हप्तासम्मको गर्भ,

(ङ) भ्रूणमा कमीकमजोरी भएको कारणले गर्भनै नष्ट हुन सक्ने वा जन्मेर पनि बाँच्न नसक्ने गरी गर्भको भ्रूणमा खराबी रहेको, वंशाणुगत (जेनेटिक) खराबी वा अन्य कुनै कारणले भ्रूणमा अशक्तता हुने अवस्था रहेको भन्ने उपचारमा संलग्न स्वास्थ्यकर्मीको राय बमोजिम गर्भवती महिलाको मञ्जुरीमा अट्ठाईस हप्तासम्मको गर्भ ।

१६. बलपूर्वक गर्भपतन गराउन नहुने:

(१) दफा १५ मा उल्लेखित अवस्थामा बाहेक कसैले पनि गर्भपतन गर्न वा गर्भपतन गराउने नियतले वा गर्भपतन गराउनु हुँदैन ।

(२) कसैले गर्भवती महिलालाई करकाप गरी, धम्की दिई, ललाई फकाई गरी वा प्रलोभनमा पारी गर्भपतन गराउन हुदैन

(३) देहायको कुनै कार्य गरेमा बलपुर्वक गर्भपतन गराएको मानिन्छ ।

(क) उपदफा (२) बमोजिम गर्भपतन गराएमा,

(ख) कुनै रीसइवीले गर्भवती महिलालाई केही गर्दा गर्भ तुहिएमा

(ग) खण्ड (क) र (ख) बमोजिम कुनै कार्य गर्न सहयोग पुऱ्याएमा ।

(४) गर्भपतन गर्ने काम गर्दा तत्काल गर्भपतन नभई बच्चा जिउँदो जन्मी त्यस्तो कामको परिणाम स्वरूप जन्मिएको बच्चा तत्काल मरेमा यस दफाको प्रयोजनको लागि गर्भपतन गराएको मानिनेछ ।

१७. लिङ्ग पहिचान गरी गर्भपतन गर्न नहुने:

(१) कसैले गर्भमा रहेको भ्रूणको लिङ्ग पहिचान हुने कुनै कार्य गर्न वा गराउन हुदैन ।

(२) गर्भवती महिलालाई गर्भको लिङ्ग पहिचान गर्न डर वा त्रास देखाई वा करकाप गरी वा धम्की दिई वा ललाई फकाई वा प्रलोभनमा पारी वा अनुचित प्रभाव, झुक्यानमा पारी, जोर जुलुम गरी दबाब दिन वा बाध्य पार्न हुदैन ।

(३) उपदफा (१) र (२) बमोजिम लिङ्ग पहिचान गरी गर्भपतन गर्न गराउन हुदैन ।

१८. सुरक्षित गर्भपतन सेवा:

(१) तोकिएको मापदण्ड र योग्यता पूरा गरेका इजाजत प्राप्त स्वास्थ्यकर्मीले गर्भवती महिलालाई दफा १५ बमोजिमको सुरक्षित गर्भपतन सेवा उपलब्ध गराउनु पर्नेछ ।

(२) उपदफा (१) बमोजिम उपलब्ध गराउने सेवाको उपयुक्त प्रविधि र प्रक्रिया तोकिए बमोजिम हुनेछ ।

(३) सुरक्षित गर्भपतनको सेवा प्राप्त गर्न चाहने गर्भवती महिलाले इजाजत प्राप्त स्वास्थ्य संस्था वा इजाजत प्राप्त

स्वास्थ्यकर्मीलाई तोकिए बमोजिमको ढाँचामा मञ्जुरीमा दिनु पर्नेछ ।

(४) उपदफा (३) मा जुनसुकै कुरा लेखिएको भए तापनि होस ठेगान नभएको, तत्काल मञ्जुरी दिन नसक्ने अवस्था भएको वा अठार वर्ष उमेर पूरा नगरेको गर्भवती महिलाको हकमा निजको संरक्षक वा माथवरले मञ्जुरीनामा दिन सक्नेछ ।

(५) उपदफा (४) मा जुनसुकै कुरा लेखिएको भए तापनि अठार वर्षभन्दा कम उमेरकी गर्भवती महिलाको हकमा निजको सर्वोत्तम हितलाई ध्यानमा राखी सुरक्षित गर्भपतन सेवा प्रदान गर्नु पर्नेछ ।

१९. गोपनीयता कायम राख्नु पर्ने:

(१) इजाजत प्राप्त स्वास्थ्य संस्था वा इजाजत प्राप्त स्वास्थ्यकर्मीले गर्भवती महिलाको प्रजनन् स्वास्थ्यसँग सम्बन्धित सूचना, कागजात तथा निजलाई प्रदान गरिएको परामर्श र सेवासम्बन्धी सबै अभिलेख गोप्य राख्नु पर्नेछ ।

(२) उपदफा (१) मा जुनसुकै कुरा लेखिएको भए तापनि देहायको अवस्थामा त्यस्ता सूचना, कागजात तथा परामर्शसम्बन्धी अभिलेख उपलब्ध गराउन सकिनेछ:

(क) कुनै मुद्दा मामिलाको अनुसन्धान तथा सुनुवाईको सिलसिलामा अनुसन्धान अधिकारी वा अदालतबाट जानकारी माग भएमा,

(ख) सुरक्षित गर्भपतन सेवा सम्बन्धी अध्ययन अनुसन्धान वा अनुगमानको उद्देश्यले सम्बद्ध महिलाको परिचय नखुल्ने गरी उद्धरण गर्न,

(ग) सम्बन्धित महिला स्वयंले यस सम्बन्धी अभिलेख माग गरेमा ।

Section 8

COMMON GYNAECOLOGICAL PROBLEMS

8-1 ABNORMAL UTERINE BLEEDING

Definition

Abnormal uterine bleeding (AUB) may be defined as bleeding of any variation from the normal menstrual cycle and includes changes in regularity and frequency of menses, in duration of flow, or in amount of blood loss.

Causes

Adolescents and reproductive age group

Hormonal imbalance

- Benign pathology such as polyp, adenomyosis, fibroid uterus, pelvic infections, etc
- Bleeding related to abortion
- Bleeding related to contraceptives such as implants/depot medroxyprogesterone acetate (DMPA)/intrauterine contraceptive device (IUCD)
- Malignant conditions like cervical cancer, endometrial cancer
- Medical disorders such as thyroid dysfunction, bleeding disorder

Perimenopause and post-menopause group

- Hormonal imbalance, benign pathology such as fibroid uterus, pelvic infections, adenomyosis, etc
- Malignant conditions of genital tract such as cervical and endometrial cancer

PALM-COEIN FIGO classification of AUB

- **P**olyp
- **A**denomyosis
- **L**eiomyoma
- **M**alignancy and hyperplasia
- **C**oagulopathy
- **O**vulatory dysfunction
- **E**ndometrial Cancer
- **I**atrogenic, and
- **N**ot classified bleeding related to abortion

History

- Menstrual history, associated symptoms such as post-coital bleeding, intermenstrual bleeding and pelvic pain
- Dyspareunia and vaginal discharge
- Symptoms suggestive of thyroid disorders, e.g. weight gain, mood changes
- Contraceptive history, particularly use of IUCD/DMPA/implant
- Coagulopathies

General examination

- Weight, pulse, blood pressure and anaemia
- Presence of thyroid swelling
- Oedema of feet
- Hirsutism

Abdominal examination

- Any abdominal distention
- Any palpable abdominal mass

Local examination: per speculum (PS), per vaginal (PV))

- Speculum examination to rule out cervical pathology
- Bi-manual pelvic examination to assess the size of uterus and any adnexal mass

Investigations

- Complete Blood Count (CBC)
- Coagulation Profile: bleeding time (BT), clotting time (CT), prothrombin time (PT)
- Thyroid function test (TFT), ultrasonography (USG) (if facilities are available)

Treatment

Establish the cause and treat accordingly

- Haematinics to correct anaemia
- Refer for surgical treatment for removal of pelvic mass/polyps

Non-hormonal treatment

- Prostaglandin synthesis inhibitors such as mefenamic acid 500mg every 8 hours daily during heavy periods **AND/OR**
- Antifibrinolytics such as tranexamic acid 500mg-1gm every 6 hours daily for 3-5 days

Hormonal treatment (only after endometrial biopsy)

- Progestogens cyclical treatment as norethisterone 5mg every 8 hours daily from day 5 to day 26 for a minimum of three cycles or as required
- Continuous progestogens—oral or injectable—depot medroxyprogesterone acetate at 2-3 months interval to achieve amenorrhea
- Combined oral contraceptives (COCs) pills

Hysterectomy is indicated when medical treatment fails.

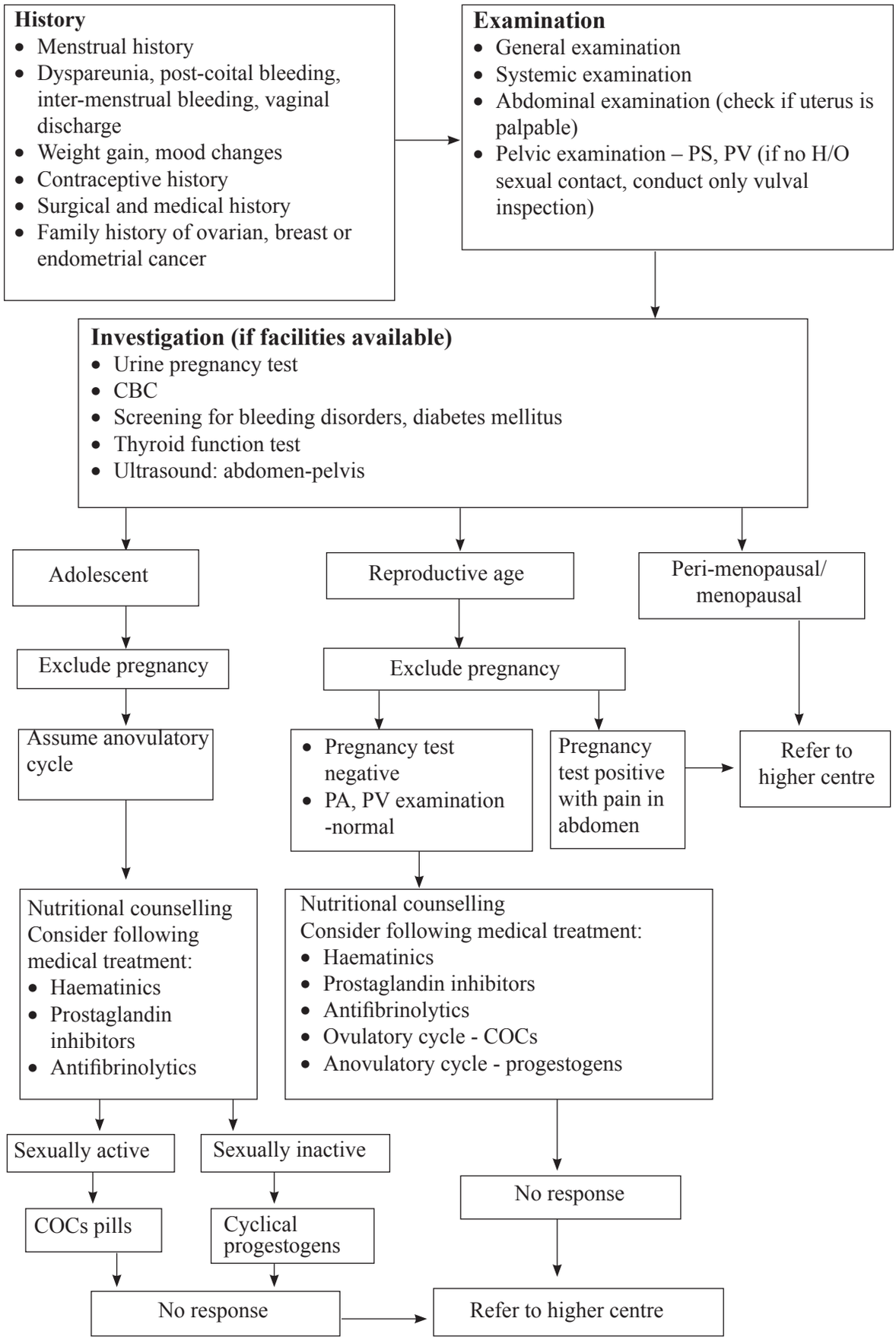
***References**:*

FIGO Working Group on Menstrual Disorders. 2011. *FIGO classification system (PALM-COEIN) for causes of abnormal uterine bleeding in nongravid women of reproductive age.* International Federation of Gynaecology and Obstetrics.

ACOG. 2013. *Management of acute abnormal uterine bleeding in non-pregnant reproductive aged women.* American College of Obstetricians and Gynaecologists

Howkins& Bourne. *SHAW'S Textbook of Gynaecology.* 17th Edition

8-1 ABNORMAL UTERINE BLEEDING



8-2 AMAENORRHOEA

Definition

Amaenorrhoea is the absence of menstruation. It is often classified as either primary (absence of menarche by age 15 years) or secondary (absence of menses for more than three months in girls or women who previously had regular menstrual cycles or six months in girls or women who had irregular menses). Missing a single menstrual period may not be important to assess, but amaenorrhoea lasting 3 months requires investigation.

Causes of Primary Amenorrhoea

- Constitutionally delayed puberty
- Congenital abnormalities such as
  - imperforate hymen
  - uterine agenesis
- Poor nutritional status, weight loss
- Ovarian pathology

Causes of Secondary Amenorrhoea

- Pregnancy
- Anovulation
- Polycystic ovarian syndrome (PCOS)
- Lactational amaenorrhoea
- Depot medroxyprogesterone acetate (DMPA) or implants
- Extremely poor nutritional status (anorexia nervosa)
- Severe anaemia
- Stress, anxiety, emotional upset
- Hypothyroidism
- Tuberculosis
- Pituitary tumours
- Sheehan's syndrome (history of postpartum haemorrhage)
- Asherman's syndrome (uterine synechiae due to vigorous curettage)

Reference:

Howkins& Bourne. *SHAW'S Textbook of Gynaecology.* 17th Edition

8-2 AMENORRHOEA

History: absence of menstruation Amenorrhoea

Absence of menarche by age 15 years

Primary amenorrhoea

Absence of menses >3 months in girls or women who previously had regular menstrual cycles or >6 months in girls or women who had irregular menses

Secondary amenorrhoea

History
- Details of menstrual cycle
- Anxiety/stress
- Weight loss/weight gain
- Marital status
- Sexual contact (regardless of marital status)
- Contraceptive history
- H/O milk secretion
- Secondary sexual characters
- Excessive hair growth

Examination
- General examination
- PA examination
- If no H/O sexual contact, conduct only vulval inspection

If required
- PS examination
- PV examination
  - size of uterus
  - ovary: mass, tenderness

History
- Details of menstrual cycle
- Anxiety/stress
- Weight loss/weight gain
- Marital status
- Sexual contact
- Contraceptive history
- H/O abortion
- H/O breast feeding
- H/O milk secretion
- Excessive hair growth

Examination
- General examination
- Special examination
  - thyroid
  - excessive hair growth
  - breast/pubic hair
- PA examination
  - palpable mass
- If no H/O sexual contact, conduct only vulval inspection
- PS, PV examination
  - size of uterus
  - ovary: mass, tenderness

Investigation
- Urine pregnancy test
- Haemoglobin, CBC

- If pregnancy detected, manage accordingly
- If anaemia, treat accordingly with haematinics and deworming

If pregnancy or anaemia not detected

Refer for further management

8-3 DYSMENORRHOEA

Definition
Dysmenorrhoea is defined as a painful menstruation. It can be primary or secondary.

Primary dysmenorrhoea is menstrual pain without organic disease and is usually due to ovulatory cycles, and **secondary dysmenorrhoea** is menstrual pain associated with an identifiable disease. Common causes of secondary dysmenorrhoea include endometriosis, fibroids (myomas), adenomyosis, endometrial polyps, pelvic inflammatory disease, and the use of an intrauterine contraceptive device.

Differential diagnosis of primary and secondary dysmenorrhoea

Primary dysmenorrhoea	Secondary dysmenorrhoea
Onset shortly after menarche	Onset can occur any time after menarche (typically after 25 years of age)
Lower pelvic or abdominal pain is usually associated with onset of menstrual flow and lasts for 8-72 hours	Women may complain of change in time of pain onset during menstrual cycle or in intensity of pain
Back and thigh pain, headache, diarrhoea, nausea, and vomiting may be present	Other gynaecological symptoms (such as dyspareunia, menorrhagia) may be present
No abnormal findings on examination	Pelvic abnormality on physical examination

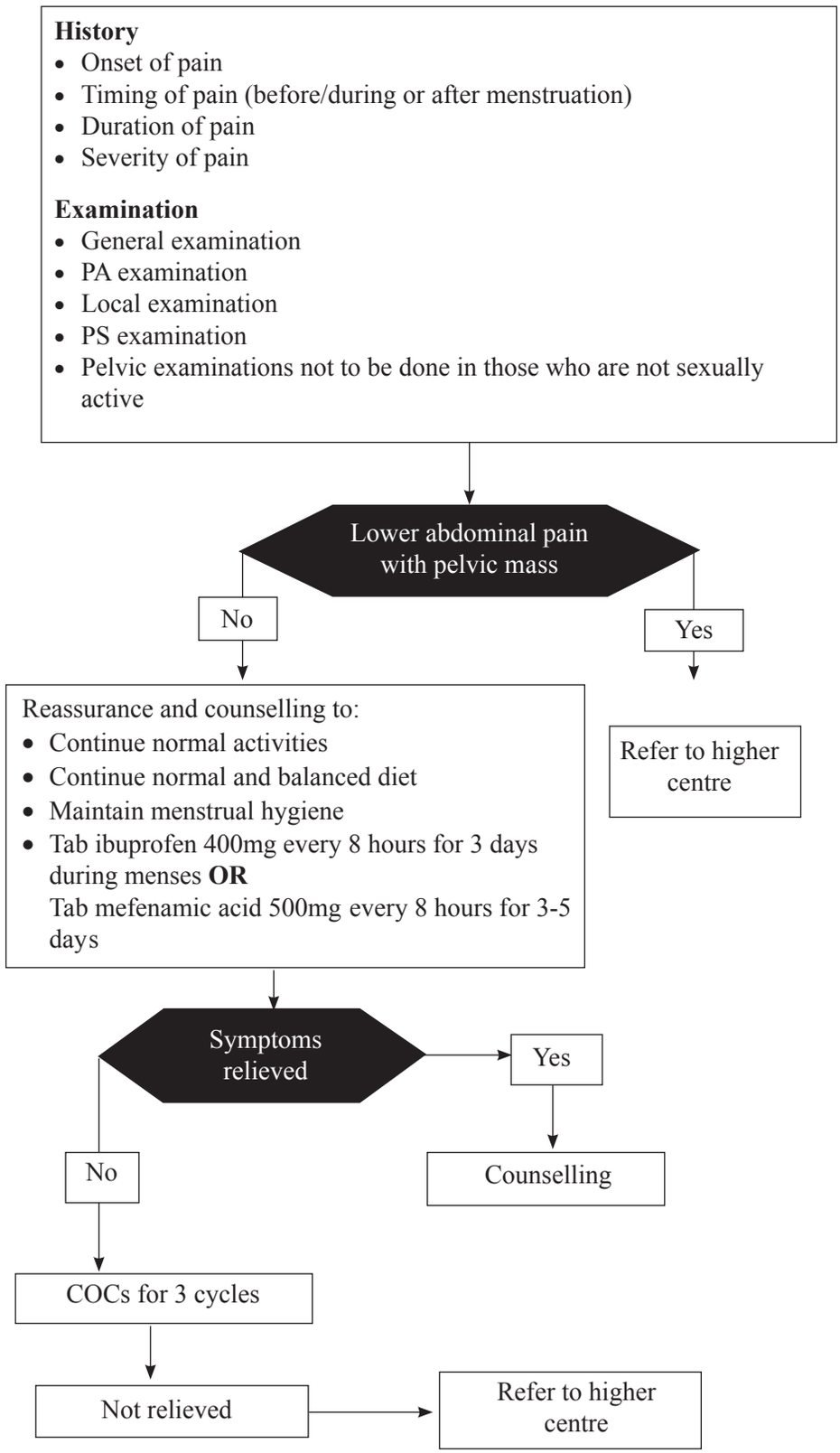
Diagnosis
- History
- Physical examination, if indicated
- Consider pelvic ultrasound if secondary dysmenorrhoea is suspected. Patients who are at risk of STIs should have appropriate swabs taken.

Causes
- Primary dysmenorrhoea is usually due to ovulatory cycles
- Secondary dysmenorrhoea may be due to:
  - Endometriosis/adenomyosis
  - Tubo-ovarian mass
  - Ovarian cyst
  - Congenital anomaly of uterus
  - Cervical stenosis

Management
Treatment for dysmenorrhoea aims to relieve pain or symptoms either by affecting the physiological mechanisms behind menstrual pain (such as prostaglandin production) or by relieving symptoms. Treatments such as paracetamol, aspirin and NSAIDs work by reducing the activity of cyclo-oxgenase pathways, thus inhibiting prostaglandin production. Treatments such as oral contraceptives work by inhibiting ovulation.

Reference:
Howkins& Bourne. *SHAW'S Textbook of Gynaecology.* 17th Edition

8-3 DYSMENORRHOEA



8-4 MENOPAUSE-RELATED PROBLEMS

Definition
Menopause: is defined as cessation of menstruation for at least 12 consecutive months, without another reason for amenorrhoea (such as pregnancy and delivery, hormone therapy, other medical or surgical conditions). The average age of menopause is 48-50 years.

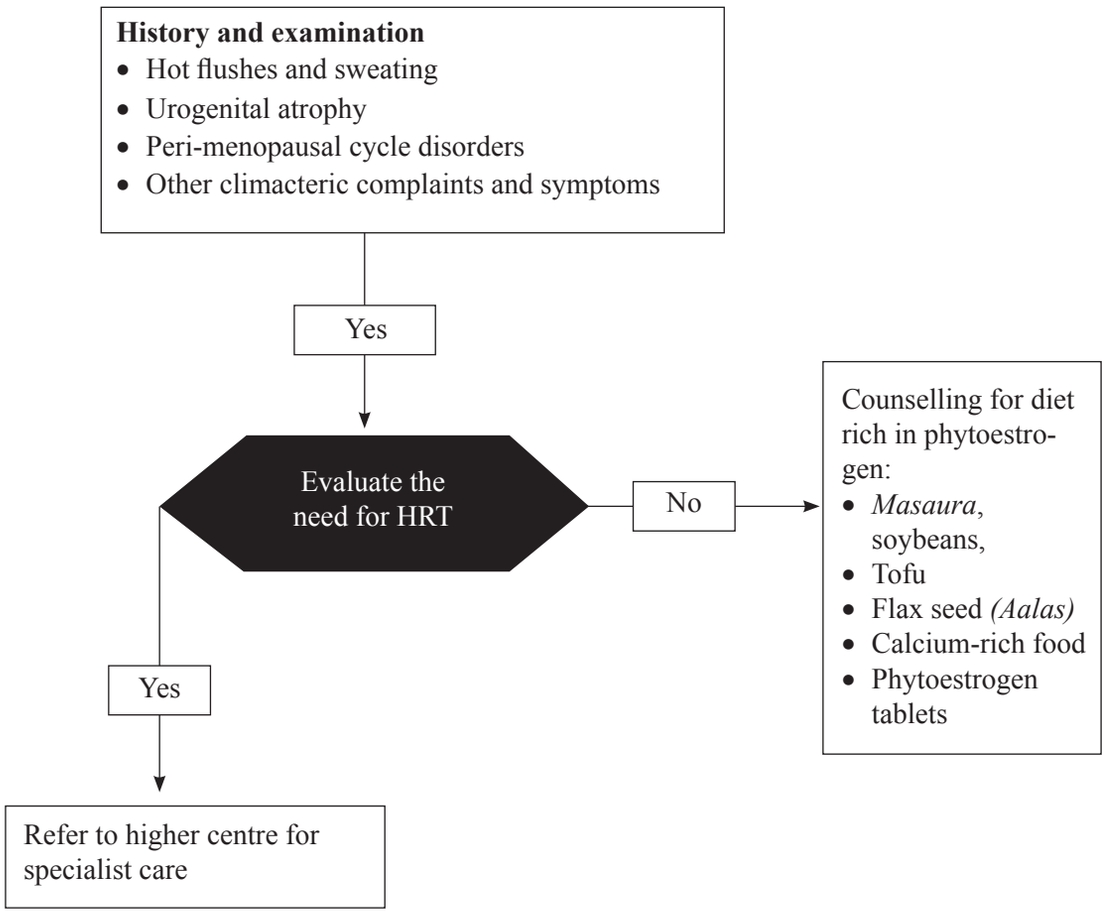
Symptoms
- Irregular, infrequent periods (peri-menopausal women)
- Hot flushes, night sweats
- Anxiety/irritability/mood swings
- Vaginal discomfort, dyspareunia, decreased sexual desire
- Dysuria/recurrent urinary tract infection (UTI)

Concerns
Osteoporosis (fractures), cardiovascular risks, dementia, diabetes mellitus (DM), obesity

Initial assessment
History
- Presenting complaint
- Specific menopausal symptoms
- Detailed gynaecological and menstrual pattern
- Previous medical and family history, including thromboembolic disease, liver diseases, hypertension/heart disease, diabetes, breast or ovarian cancer
- General inquiry about lifestyle such as nutrition, exercise, smoking, and alcohol

Examination
- Height, weight, nutritional status, blood pressure
- Thyroid and breast
- Abdominal examination
- Pelvic examination to look for atrophic changes in vagina, genital prolapse, examination for stress incontinence, assessment for pelvic mass, and screening for cervical cancer

Reference:
Howkins& Bourne. *SHAW'S Textbook of Gynaecology.* 17th Edition


History and examination
• Hot flushes and sweating
• Urogenital atrophy
• Peri-menopausal cycle disorders
• Other climacteric complaints and symptoms
Yes
Evaluate the need for HRT
No
Counselling for diet rich in phytoestrogen:
• Masaura, soybeans,
• Tofu
• Flax seed (Aalas)
• Calcium-rich food
• Phytoestrogen tablets
Yes
Refer to higher centre for specialist care

8-5 BREAST-RELATED PROBLEMS

Breast lumps are a common complaint among women. Approximately 90% of these lesions will be benign, with fibroadenomas and cysts being the most common. However, breast cancer must be ruled out, as one in ten women who are present with a new lump will have cancer.

Painful breast is also common among women and may or may not be present with lumps. It can also be associated with menstrual cycle.

History

- Characteristics of mass: location and duration of lump
- Changes in size: variation with menstrual cycle
- Pain, swelling, erythema, nipple discharge or inversion, dimpling or pitting of breast skin
- Recent breast trauma, breastfeeding
- Menstrual history
- Age at menarche, menopause, first childbearing
- Medical, surgical history
- Radiation exposure
- Family history of breast or ovarian cancer
- Personal history of breast biopsy or surgery
- Smoking
- History of hormone replacement therapy (HRT), drugs known to cause gynaecomastia by increasing prolactin (cimetidine, ranitidine, nifedipine, antiretroviral drugs)

Physical Examination

A complete clinical breast examination (CBE) includes an assessment of both breasts and the chest, axillae and regional lymph nodes. In pre-menopausal women, the CBE is best done the week following menses, when breast tissue is least engorged.

Systematic Approach

- Visual inspection with patient in sitting and supine position
- Patient in supine position with one arm raised – palpate tissue in superficial, intermediate and deep tissue planes
- Examination of axilla, supraclavicular area, neck, and chest wall
- Inspection of nipples for discharge

Search for a suspicious lesion

- General "lumpiness" is normal.
- If no dominant mass on examination, consider ultrasound or mammogram based on patient's age and refer to a specialist.
- If suspicious lesion is found, refer for further management (fine needle aspiration cytology (FNAC), ultrasonography and/or mammography).

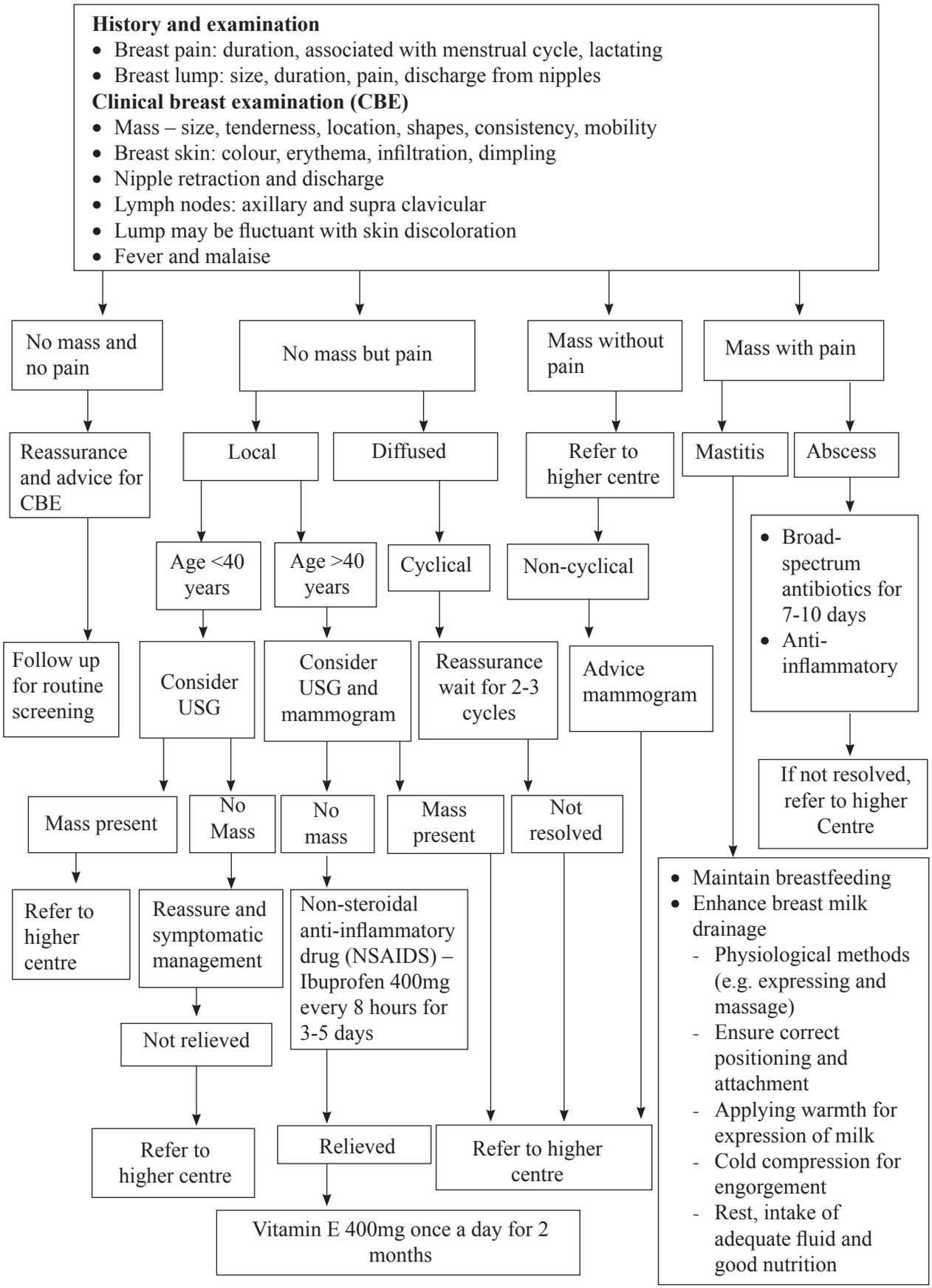
Investigations of breast lump

- USG of breasts preferable in women less than 40 years
- Mammogram of breast preferable in women more than 40 years
- Fine needle aspiration cytology and/or biopsy, diagnostic aspiration: abscess, cyst

References

Klein, S. *Evaluation of Palpable Breast Masses.* American Family Physician. 2005; 71(9)1731-1738
Global Library of Womens Medicine/Sapiens. 2012. Van Beekhuizen, Heleen and Unkels, Regine (eds). *Textbook of gynecology for less-resourced locations.* London.
DC Dutta's. *Textbook of Gynaecology.* 7th Edition, 2016
Howkins& Bourne. *SHAW'S Textbook of Gynaecology.* 17th Edition

8-5 BREAST-RELATED PROBLEMS



Note: CBE can be done anytime but is best done the week following menses, when breast tissue is least engorged

8-6 PRIMARY PREVENTION AND EARLY DETECTION OF CERVICAL CANCER

Cervical cancer is the most common cancer in Nepalese women. Human Papilloma Virus (HPV), transmitted through sexual contact, is the main cause of cervical cancer (HPV 16 and 18). Most HPV infections resolve spontaneously in about 1-2 years; those that persist take 10-15 years to develop cervical cancer. The cure rate for cervical cancer is closely related to the stage of disease at diagnosis and the availability of treatment. Hence, screening is of great importance.

Cervical cancer prevention and screening

Cervical cancer prevention

HPV vaccines are highly effective in preventing HPV infection and reduces developing of cervical cancer in the future by 70%.

Cervical cancer screening

- Screening is examining all women at risk of cervical cancer, most of whom will be without symptoms
- Screening aims to detect precancerous changes, i.e. cervical intraepithelial neoplasia (CIN), which, if not treated, may lead to cancer
- Several tests can be used in screening for cervical cancer:
  - Visual inspection with acetic acid (VIA)
  - Cytology tests: Pap smear (Papanicolaou test, PAP test), liquid-based cytology (LBC)
  - Human Papilloma Virus DNA Test

Screening interval

- Once in five years

Visual inspection with acetic acid **and treatment by cryotherapy/cold coagulation**

Visual inspection with acetic acid can be done at all levels, from health post (HP) to tertiary level, by trained health service providers.

Visual inspection of the cervix using acetic acid means looking at the cervix with naked unaided eyes to detect abnormalities after application of dilute (3–5%) acetic acid or vinegar. The area that is abnormal turns aceto-white, which shows that it may have precancerous lesions. The results are immediately available and further management can be decided.

Screening by visual inspection with acetic acid and immediate treatment of precancerous lesion by cryotherapy/ cold coagulation in the same visit is recommended wherever resources, including trained human resource, are available. This is called single visit approach (SVA).

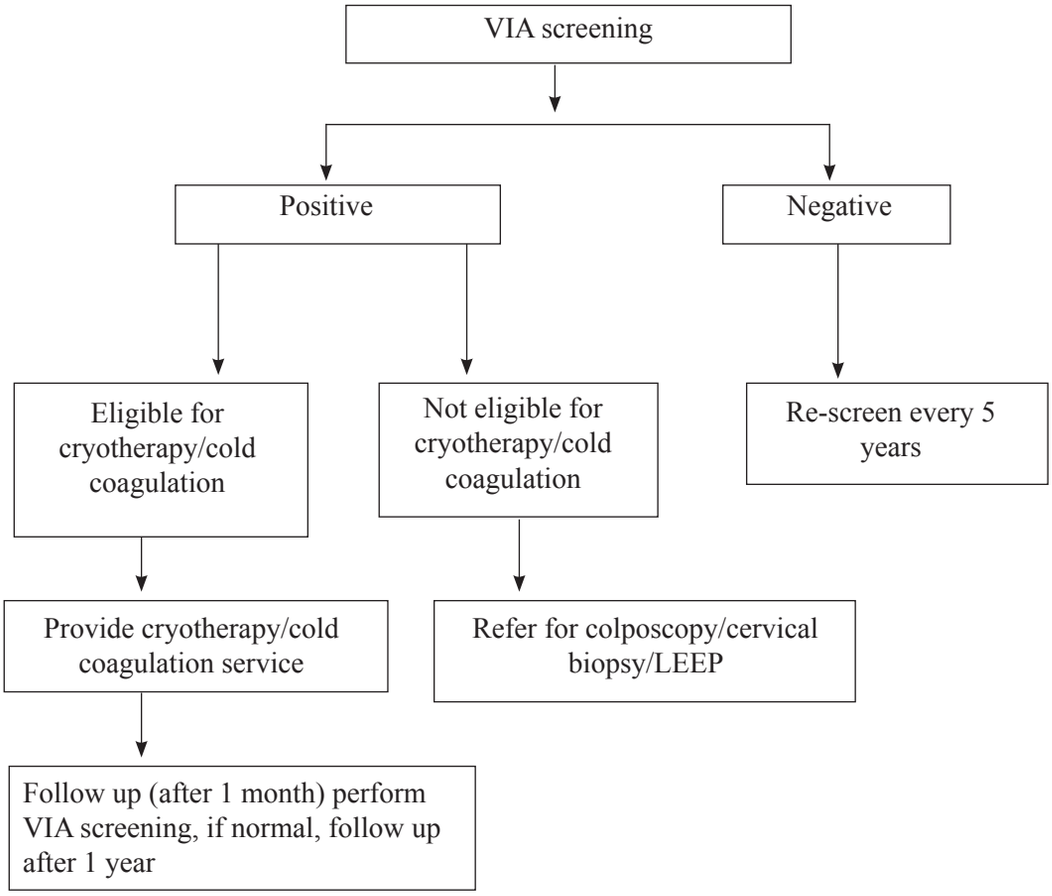
Management of positive screening test

In women with positive screening test, in order to make a definitive diagnosis, further investigation such as colposcopy, cervical biopsy and loop electrosurgical excision procedure (LEEP) may be needed.

***References**:*

FHD.2010. *National guideline for cervical cancer screening and prevention in Nepal.* Kathmandu: Family Health Division
FHD.2015.*Cervical screening and prevention (CCSP) in Nepal, A Reference Manual.* Kathmandu: Family Health Division.
WHO. 2013. *Comprehensive cervical screening prevention and control: A healthier future for girls and women.* Geneva*:* World Health Organization

8-6 PRIMARY PREVENTION AND EARLY DETECTION OF CERVICAL CANCER



Eligibility for cryotherapy/cold coagulation

- Aceto-white lesion covering < 75% of cervix
- Aceto-white lesion should be completely visible, not growing inside the Os (proximal edge should be seen completely
- The cryotherapy probe tip should completely cover the lesion
- Invasive cancer is not suspected
- There is no polyp or scarring that prevents full contact between the cervix and cryo tip
- The woman is not pregnant
- On PV examination - fibroid or ovarian mass is not suspected
- The woman does not have severe infection of vagina and cervix

8-7 PELVIC ORGAN PROLAPSE

Definition

A prolapse represents descent of pelvic organs from its normal anatomical boundaries. It may be classified according to its anatomical position as follows:

- Anterior: including the urethra (urethrocele) and bladder (cystocele)
- Middle: including the uterus or vault descent
- Posterior: containing the rectum (rectocele/enterocoele)

POP-Q Staging Criteria	
Stage 0	Aa, Ap, Ba, Bp= -3 cm and C or D ≤ - (tvl-2) cm
Stage I	Stage 0 criteria not met and leading edge <-1 cm
Stage II	Leading edge ≥ - 1 cm but ≤ + 1 cm
Stage III	Leading edge ≥ + 1 cm but < + (tvl – 2) cm
Stage IV	Leading edge ≥ + (tvl – 2) cm

Assessment of clients presenting with symptoms of POP

Symptoms may or may not be present.

History: Record severity and duration of presenting symptoms, which could be:

- Feeling of a lump at introitus, heaviness in vagina
- Dragging down sensation with or without backache
- Symptom aggravated while standing, walking, lifting weight and eased while lying down
- Difficulty in emptying bladder and need to manipulate manually to facilitate urination
- Increased frequency of urination with or without incontinence on stress, e.g. sneezing, coughing
- Irregular vaginal bleeding and abnormal vaginal discharge if there is ulcer in prolapsed part
- Discomfort and difficulty during intercourse
- Difficulty in defecation, needing digital manipulation

Obstetric history: Number and spacing of births, complications during childbirth, including instrumental deliveries, prolonged labour, manipulation by unskilled attendants, big babies, etc, early resumption of heavy work postpartum

Treatment history: Insertion of ring pessary, Kegel's exercise

General examination

Pelvic examination: examination should be done in dorsal or left lateral position (Sim's position). Bladder should be moderately full to see stress incontinence.

1. Inspection of the perineum:
   - Obvious uterine descent, cystocele, rectocele, enterocele
   - Signs of previous vaginal tears/perineal tears/gapping of introitus or any other abnormalities
   - Signs of atrophic changes, any ulceration in the prolapsed part, or sign of keratinization
   - Ask the woman to cough and separate the labia while looking for urinary leakage
2. Speculum examination: Sim's speculum:
   - Any descent on rest and on coughing or bearing down to see the degree of descent
   - Any abnormality on cervix and vagina
3. Digital/bimanual examination:
   - Size, position and mobility of the uterus and any adnexal mass
   - Feel for the tone of levator ani muscle

Treatment: Conservative management is possible with silicon ring pessary and pelvic floor exercise. Surgical treatment is offered for stage III and IV prolapse and selected stage II cases if symptoms are severe, unresponsive to non-surgical management, and clearly due to prolapse.

Pessary care: There are no clear guidelines for pessary care

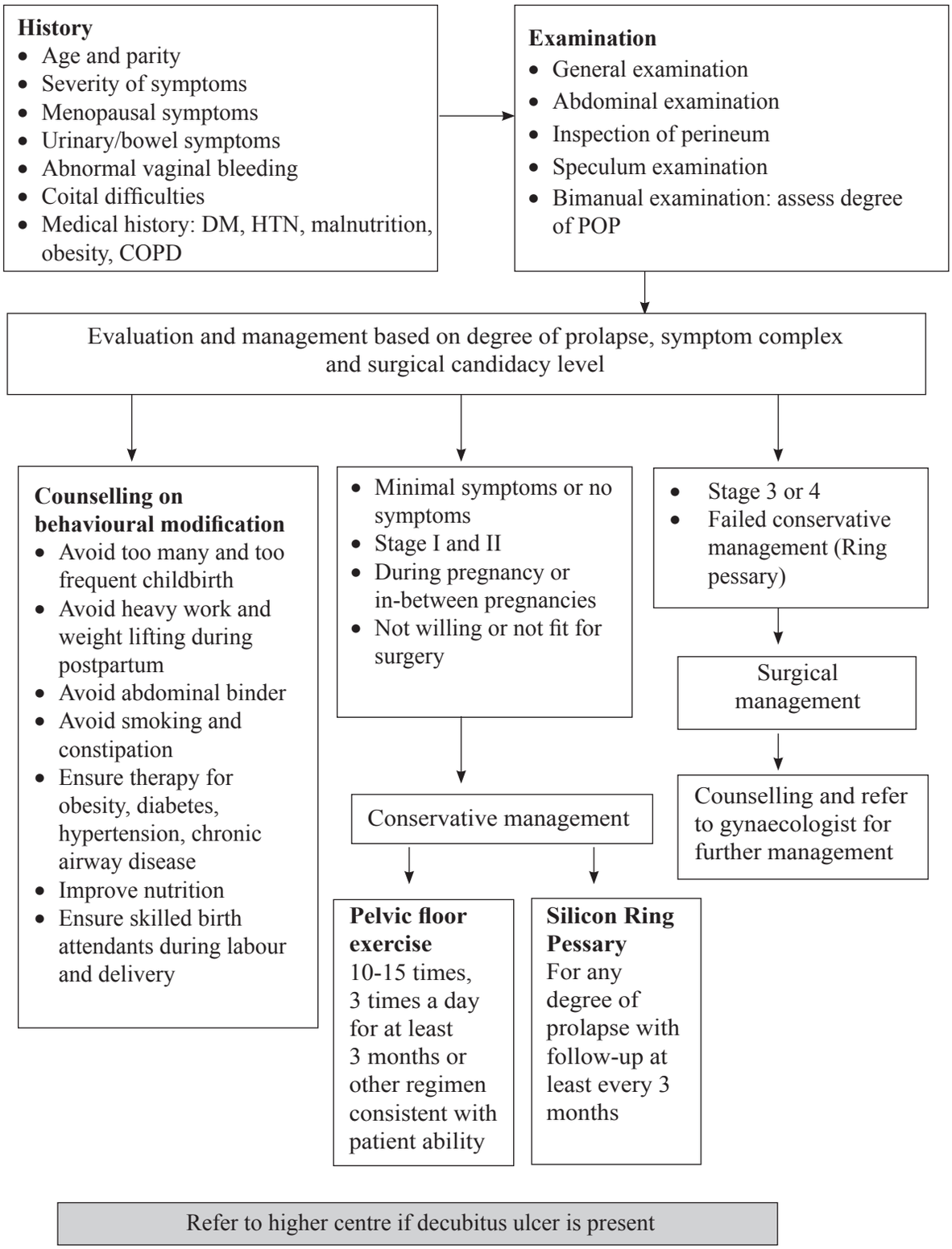
- Instructions on removal and care should be provided
- Within 2-4 weeks, check to see if the client is satisfied or whether another size is needed
- Advise the client to remove the silicon ring pessary at least every 3 months and reuse it after washing it with water or mild soapy water
- Women who are not able to perform self-care should return for follow up at 3-month intervals

References:

NHTC. September 2015.*Management of Pelvic Organ Prolapse for Doctors, Reference and Learner's Guide.* Kathmandu: National Health Training Center.

FHD.2012.*Pelvic Organ Prolapse Clinical Protocol.* Kathmandu: Family Health Divison.

8-7 PELVIC ORGAN PROLAPSE



8-8 PELVIC MASS

Pelvic mass may originate from gynaecologic organs (cervix, uterus, uterine adnexa) or from other pelvic organs (intestine, bladder, ureters, skeletal muscle, bone), which may be benign or malignant. The initial detection and evaluation of a pelvic mass requires a high index of suspicion, a thorough history and physical examination, and careful attention to subtle historical clues.

The most common symptoms reported by women with ovarian cancer are pelvic or abdominal pain, increased abdominal size, bloating, urinary urgency, frequency, or incontinence, early satiety, difficulty in eating, and weight loss. These vague symptoms are present for months in about 93% of patients with ovarian cancer. Timely and appropriate laboratory and radiographic studies are also required.

Type of mass tends to vary by age group

Puberty: hematocolpos, hematometra: menstrual blood collection in vagina/uterus due to obstruction of outflow as in imperforate hymen or congenital malformations of the uterus, cervix, or vagina

Women of reproductive age: pregnancy, fibroids, ovarian cysts, ectopic pregnancy, endometriosis, tubo-ovarian mass, ovarian cancer, benign tumours—dermoids, fibroma

Postmenopausal women: fibroids, ovarian cysts/tumours, masses are more likely to be cancer of ovary, endometrium or cervix, resulting in uterine collection (hydrometra, hematometra or pyometra)

Non-gynaecological causes of pelvic mass: full bladder, appendicular mass, pelvic kidney, gastrointestinal stromal tumour (GIST), retroperitoneal sarcoma

History

- Mass: site, duration, change in size
- Associated symptoms: abdominal or pelvic pain, site of pain, onset, duration, type and intensity, relation with menstruation
- Vaginal bleeding (preceding amenorrhoea)
- Fever, nausea, vomiting, purulent vaginal discharge may indicate inflammatory pathology–PID, tubo-ovarian abscess, appendicitis, appendicular lump
- Menstrual history–menarche, cycle, amenorrhoea, dysmenorrhoea
- Past history/family history of cancer–breast, gastro-intestinal tract cancer, ovarian cancer

Physical Examination

- Vital signs and a general assessment – lymphadenopathy
- Chest auscultation to evaluate for pleural effusion
- Breast examination to evaluate for any lump
- Abdominal examination to assess for ascites, masses, tenderness, hepato-splenomegaly or increased girth
- Pelvic examination: PS and PV examination

Investigations

- Urine pregnancy test
- Radiology: USG, CT Scan, MRI (CT scan/MRI would be better for tumour-related pathologies)
- Tumour marker studies: CA–125, CEA in adults (for epithelial ovarian tumours)
- Alpha-fetoprotein (AFP), B-hCG, LDH in younger patients (for germ cell ovarian tumours)

Treatment

- If urine pregnancy test is positive, manage accordingly
- If mass is found, refer for further evaluation and definitive management

Risk factors for ovarian cancer include: age more than 60 years, early menarche, late menopause, nulliparity, infertility, personal history of breast or colon cancer, family history of breast, colon, or ovarian cancer

References:

American College of Obstetricians and Gynaecologists. Management of adnexal masses. Obstet Gynecol. 2007; 110(1):201-214.

Guidelines for Referral to a gynecologic oncologist: rationale and Benefits. The Society of Gynaecologic Oncologists. Gynecol Oncol. 2000 Sep;78(3 Pt 2):S1-13.

Givens V, Mitchell GE, Harraway-Smith C, Reddy A, Maness DL.. Diagnosis and Management of Adnexal Masses. American Family Physician. 2009 Oct 15;80 (8):815-20.

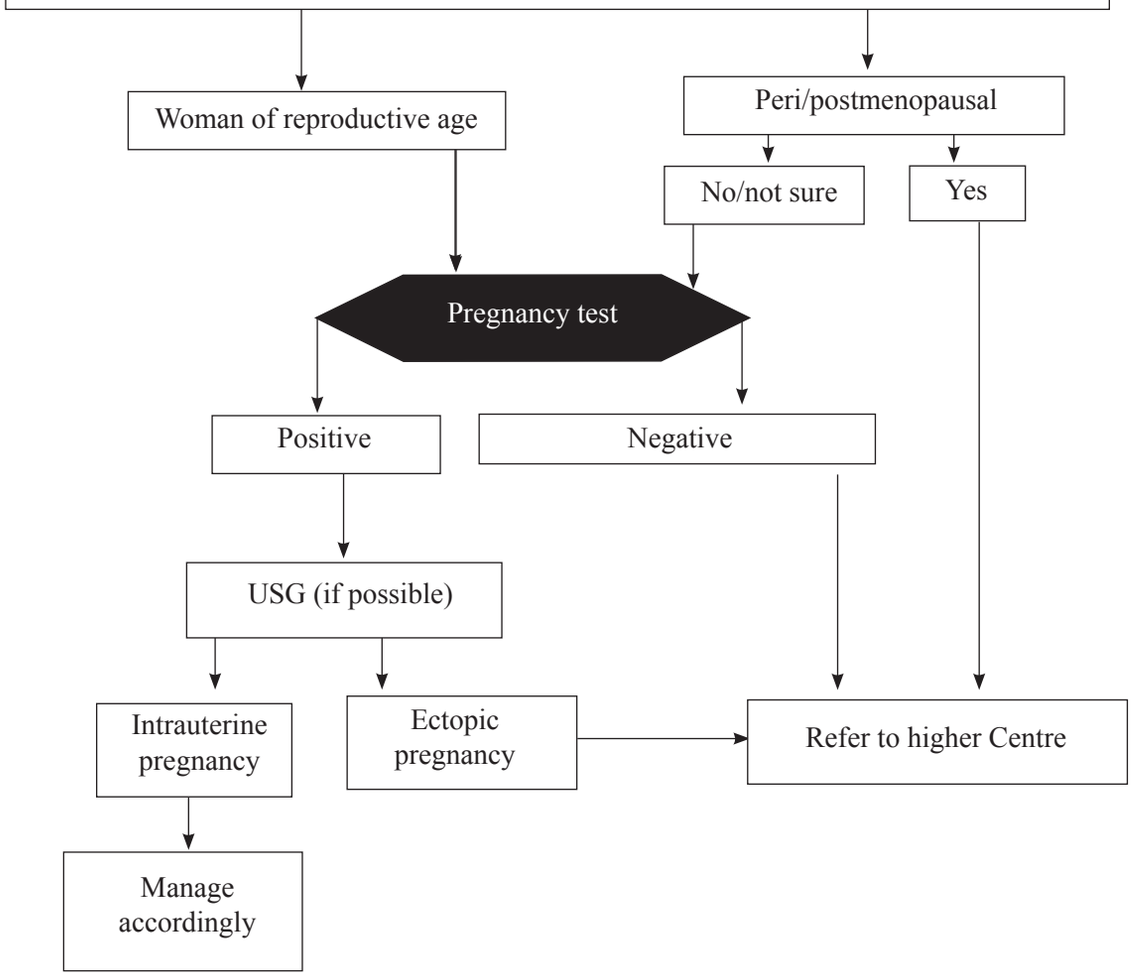
8-8 PELVIC MASS

History

- Mass: site, duration, change in size, associated symptoms: pain, relation with menstruation
- Vaginal bleeding
- Urinary and bowel symptoms
- Fever, nausea, vomiting, purulent vaginal discharge may indicate inflammatory pathology–PID, tubo-ovarian abscess, appendicitis, appendicular lump
- Menstrual history: menarche, cycle, amenorrhea, dysmenorrhoea
- Past history/family history of cancer: breast, GI tract cancer, ovarian cancer

Examination

- Vital signs and lymphadenopathy
- Chest auscultation
- Breast examination
- Abdominal examination to assess for ascites, masses, tenderness, hepato-splenomegaly, or increased girth.
- Pelvic examination: PS and PV examination



8-9 URINARY INCONTINENCE AND OBSTETRIC FISTULA

Definition
Urinary incontinence is an involuntary leakage of urine, which is objectively demonstrable, and a social and hygiene problem.
Common causes for urinary incontinence include:

1. Urethral cause:
   - Urethral sphincter incompetence (genuine stress incontinence, GSI)
   - Overactive bladder (detrusor instability)
   - Retention with overflow
   - Miscellaneous, e.g. drugs and urinary tract infections
   - Functional – psychosomatic
2. Extra-urethral cause:
   - Congenital, e.g. ectopic ureter, bladder extrophy
   - Fistula (ureteric, vesicle, urethral)

The main causes of urinary incontinence are GSI, an overactive bladder and obstetric fistula.

History

- Frequency, nocturia, urgency, urge incontinence, stress incontinence, voiding patterns, drinking habits, drugs, medical problems, quality of life
- Labour history: duration
- Onset of incontinence after delivery

Physical examination: General, abdominal, pelvic: atrophic vaginitis, uterine descent, vaginal wall prolapse
If visible leaking seen from vagina, advise for urine examination.

Conservative Management

- Counselling for behavioural changes
  - Adequate water (1.5 litre/day)
  - Manage constipation
  - Pelvic floor exercises
- Bladder retraining: instructing patient to void at predetermined intervals. Pelvic floor exercises--Kegel's exercise

Obstetric fistula
Obstetric fistula (OF) occurs when there are open defects between the female genital organs and adjacent urinary, and colorectal tracts create urinary or fecal incontinence. These defects, literally holes, allow urine or stool to leak into the vagina. In developing nations, where pregnant women often give birth with minimal or no obstetric care, fistula most often occur as a result of several days of prolonged or obstructed labour.

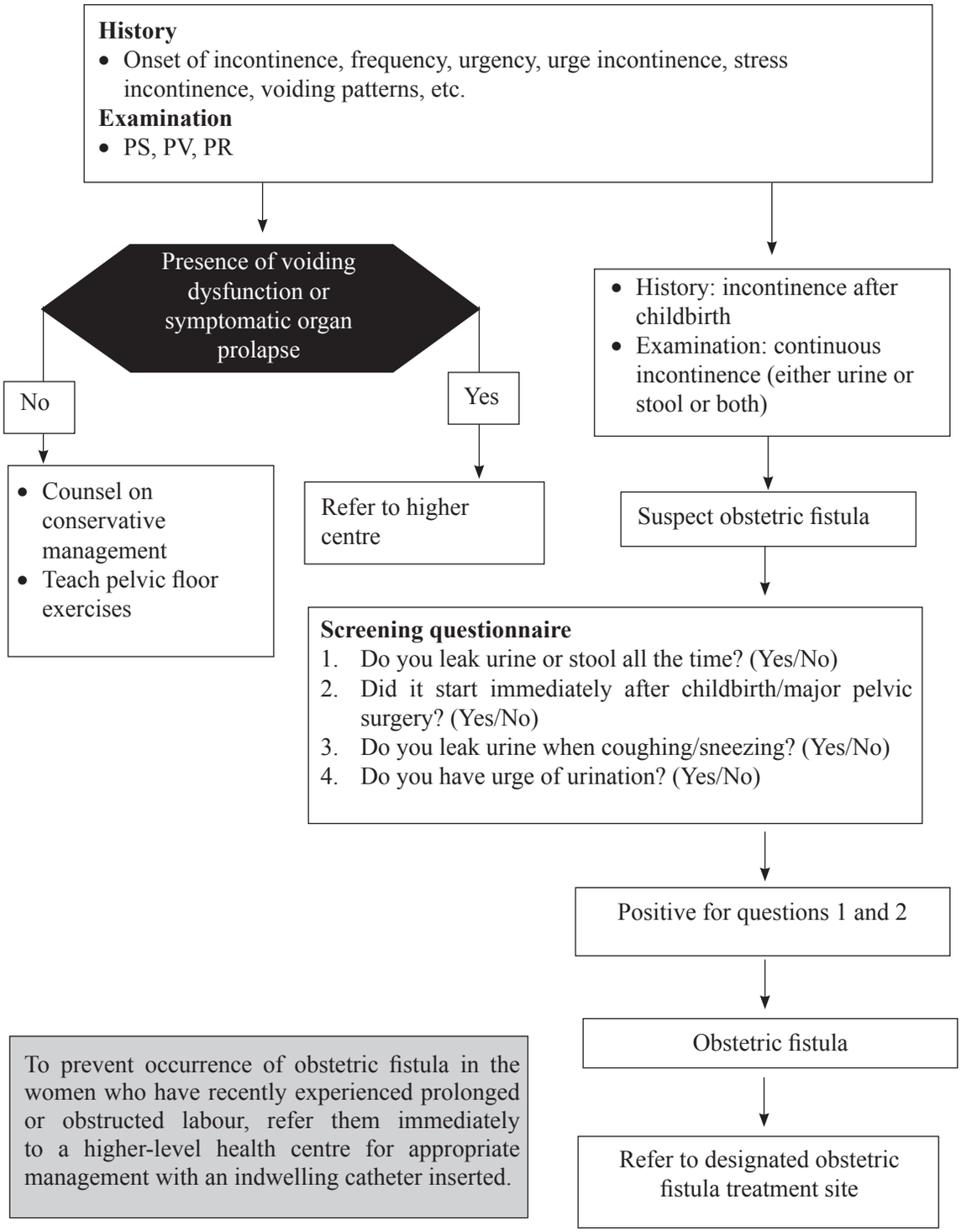
Screening of women with obstetric fistula has to be done through the below-listed four questions:

1. Do you leak urine or stool all the time? (Yes/No)
2. Did it start immediately after childbirth/major pelvic surgery? (Yes/No)
3. Do you leak urine when coughing/sneezing? (Yes/No)
4. Do you have urge of urination? (Yes/No)

Women who are positive for questions 1 and 2 are likely to have fistula.

***Reference*:**
NHTC. March 2015.*Management of Obstetrics Fistula for Health Care Providers, Reference Manual.* Kathmandu. National Health Training Center.

8-9 URINARY INCONTINENCE AND OBSTETRIC FISTULA



To prevent occurrence of obstetric fistula in the women who have recently experienced prolonged or obstructed labour, refer them immediately to a higher-level health centre for appropriate management with an indwelling catheter inserted.

Section 9

GENDER-BASED VIOLENCE

9-1 IDENTIFICATION OF GENDER-BASED VIOLENCE SURVIVORS

Definition

"Violence that is directed against a woman because she is a woman or violence that affects women disproportionately. It includes acts that inflict physical, mental, or sexual harm or suffering, threats of such acts, coercion and other deprivations of liberty.[1]" Gender-based violence (GBV) is a grave social and human rights concern.

Background

NDHS 2016: Key Findings

- **22%** of women have ever experienced **physical violence** since age 15.
- **7%** of women have ever experienced **sexual violence**.
- **26%** of ever-married women have experienced **spousal violence**, whether physical, sexual, or emotional.
- **22%** of women who have experienced physical or sexual violence have **sought help**.
- **66%** of women never tell anyone about their experiences or seek help.

Classification

- Sexual violence:
  - Rape
  - Sexual assault
- Physical assault
- Forced marriage
- Denial of resources
- Psychosocial/emotional abuse

Health service providers' role

Health service providers may be the survivor's "first point of contact" and their role is to:

- Identify the survivor (*see box no. 9.1*)
- Provide care to the survivor (treatment and psychosocial counselling)
- Forensic evidence collection (medico-legal information)
- Recording and reporting
- Make appropriate referrals (multi-sectoral networks such as higher health facility, civil society organizations at central, provincial, local and community levels, shelter, rehabilitation centres
- Multi-sectoral coordination

High-Risk Individuals

- Unaccompanied women
- Single female who is head of household
- Children and young adults
- Children in foster care
- Physically and mentally disabled men and women
- The homeless or poor
- Individuals in prison or in detention
- Individuals with a past history of rape or sexual abuse
- Individuals in an abusive intimate or dependent relationship
- Victims of war or armed conflict situations

References

MoHP. 2015 .*Clinical Protocol for Gender Based Violence.* Kathmandu. Ministry of Health and Population.

WHO.2018. *Family Planning: A Global Handbook for Providers,* 2018 Edition. Baltimore and Geneva: World Health Organization Department of Reproductive Health and Research (WHO/RHR) and Johns Hopkins Bloomberg School of Public Health/Center for Communication Programs (CCP), Knowledge for Health Project.

WHO. September 2014. *Health care for women subjected to intimate partner violence or sexual violence: a clinical handbook.* Geneva: World Health Organization.

[1] https://www.ohchr.org/EN/Issues/Women/Pages/VaW.aspx

9-1 IDENTIFICATION OF GENDER-BASED VIOLENCE SURVIVORS

Box 9.1

Suspect that a woman has been subjected to violence if she has any of the following symptoms:

- Symptoms of depression, anxiety, post-traumatic stress disorder, or sleep disorders
- Suicidal tendency or ideation or self-harm
- Alcohol or other substance use
- Unexplained chronic gastrointestinal symptoms
- Unexplained reproductive symptoms, including pelvic pain and sexual dysfunction
- Adverse reproductive outcomes, including multiple unintended pregnancies or terminations, or both, delayed pregnancy care, or adverse birth outcomes
- Unexplained genitourinary symptoms, including frequent bladder or kidney infections
- Repeated vaginal bleeding and STIs
- Chronic pain (that is vague and clinically unexplained)
- Traumatic injury, particularly if repeated and with vague or implausible explanations
- Problems with the central nervous system—headaches, cognitive problems, or hearing loss
- Repeated health consultations with no clear diagnosis
- Intrusive partner or husband in consultations

Box 9.2

Health service providers should ask all clients about violence
Health care providers should routinely ask all clients about violence only if they are trained in asking about violence and offering first-line support, if privacy and confidentiality can be ensured, and if referral linkages to other support services are in place.

9-2 MANAGEMENT OF ADULT SURVIVORS

Medical management of adult GBV survivors involves evaluation of the survivor regarding treating injuries, infections and other consequences that occur because of the GBV, as well as documentation of medico-legal evidence. The management of medical emergencies should be a priority, but at the same time, the time-dependent preventive treatments (e.g. emergency contraception) should also be provided.

Sexual assault is a traumatic experience, both emotionally and physically. Survivors may have been sexually assaulted by one or several people and in different circumstances, once or repeatedly over a period. Therefore, it is very important that an examiner understands that the survivors may react in different ways. The manner in which they react may be affected by the way in which they are received and treated by law enforcement officers and the medical community. Hence, it is important to conduct these examinations in an empathetic, understanding, ethical and non-judgmental manner, which would give them confidence and reassurance. This approach helps health service providers establish a rapport with the survivor, which leads to a higher quality medico-legal examination and management.

The responsibility of the examiner is to follow the national guidelines and protocol for providing the survivor with appropriate care, documenting the findings, and finally sending a comprehensive report with an opinion to a court of law to help in the administration of justice, as needed and requested by the survivor and appropriate referral, as needed.

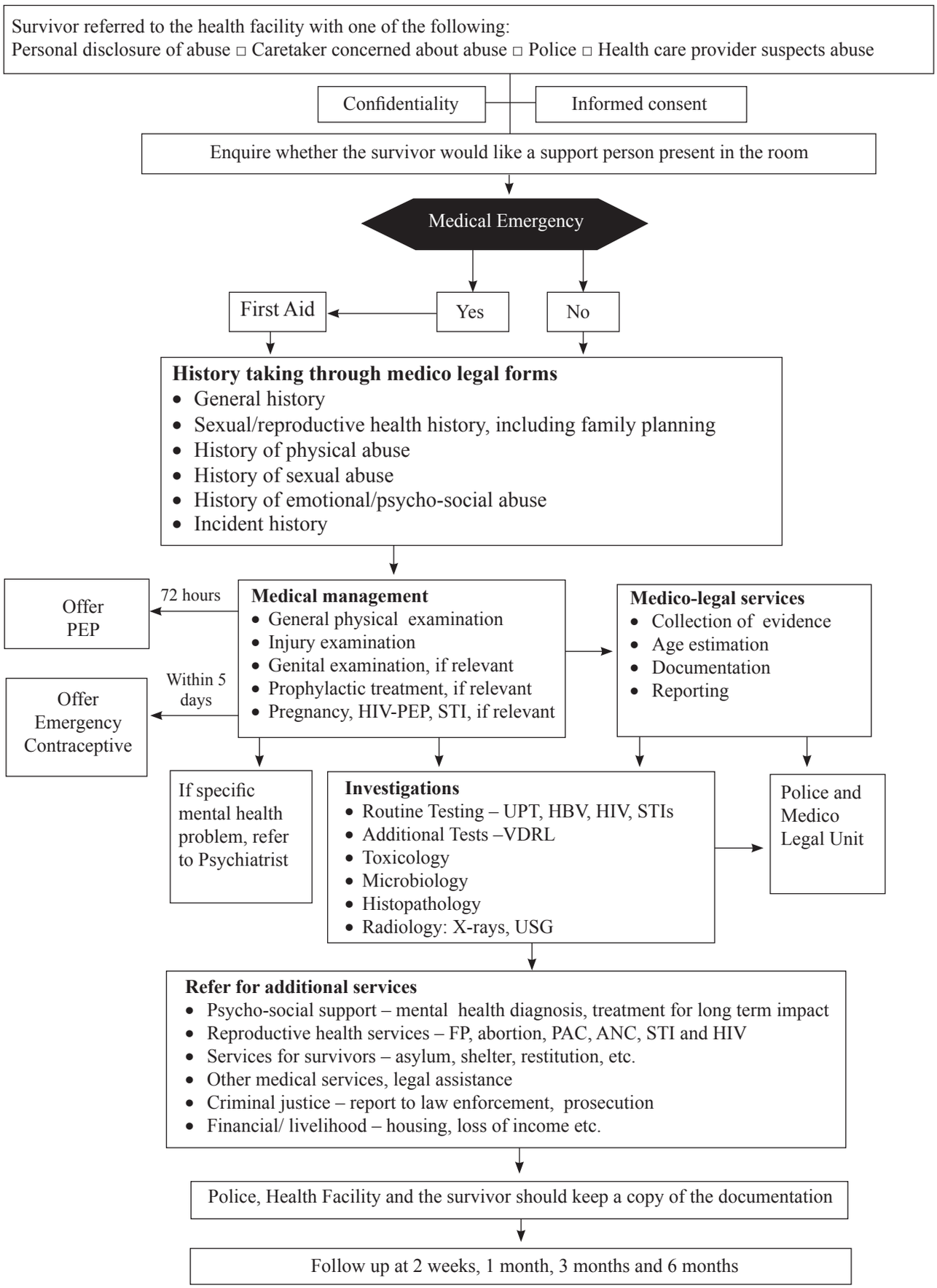
Guiding principles in working with GBV survivors

- Confidentiality and privacy
- Right to information
- Ensuring safety
- Empowering the survivor
- Gender sensitivity and equity

References

MoHP. 2015. *Clinical Protocol for Gender Based Violence.* Kathmandu. Ministry of Health and Population.
WHO. September 2014. *Health care for women subjected to intimate partner violence or sexual violence: a clinical handbook.* Geneva: World Health Organization.

9-2 MANAGEMENT OF ADULT SURVIVORS



9-3 MANAGEMENT OF CHILDREN AND ADOLESCENT SURVIVORS

Children around the world, including Nepal, experience violence in a range of settings, including at home and in the family, in school and other educational settings, in care and justice systems, in workplaces and in the community. The consequences of violence against children include both the immediate personal impacts and the damage that they carry forward into later childhood, adolescence and adult life. Despite its devastating consequences on the child's physical, psychological, behavioural, and economic life, these experiences often remain unnoticed and under-reported at home or at health facility unless in extreme conditions.

The potential for damage to the child increases with increasing frequency and severity of victimization over time. Therefore, it is important to identify violence as early as possible and intervene to stop it. Health professionals have an important role in child protection because, except in very remote rural areas, infants and small children are usually taken to the health facility on a routine basis. Health service providers should be aware of the following physical and behavioural problems to watch for in children to identify survivors of GBV.

Physical Indicators	Behavioural Indicators
Unexplained genital injury	Regression in behaviour, or attaining developmental milestones
Recurrent vulvo-vaginitis	Problems at school: academic deterioration, school refusal/avoidance
Vaginal or penile discharge	Isolation
Bedwetting and faecal soiling beyond the usual age	Restlessness, irritability and aggressive behaviour
Anal complaints (e.g. fissures, pain, bleeding)	Acute traumatic response such as clingy behaviour and irritability in young children
Pain on urination	Sleep disturbances
Urinary tract infection	Eating disorders
STIs	Depression
Pregnancy/presence of sperm	Poor self-esteem
	Inappropriate sexualized behaviours
	Suicidal/homicidal thoughts

Special consideration should be made during the management of children and adolescent survivors, special attention should be taken while taking consent. There are some injuries which are very highly or moderately specific to child abuse. Children and adolescents with severe medical complications like convulsion, persistent vomiting, and stridor in a clam child, lethargy or unconsciousness, inability to drink or breastfeed need to be admitted.

References

MoHP. 2015. *Clinical Protocol for Gender Based Violence.* Kathmandu. Ministry of Health and Population.
WHO. September 2014. *Health care for women subjected to intimate partner violence or sexual violence: a clinical handbook.* Geneva: World Health Organization.

9-3 MANAGEMENT OF CHILDREN AND ADOLESCENT SURVIVORS