**BACHELOR OF SCIENCE IN NURSING: COMMUNITY HEALTH NURSING**

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| **COURSE MODULE** | **COURSE UNIT** | **WEEK** |
| **CM2** | **CM2-CT5** | **10** |
| **NEWBORN SCREENING** |



* Read course and unit objectives
* Read study guide prior to class attendance
* Read required learning resources; refer to unit terminologies for jargons
* Proactively participate in classroom discussions
* Participate in weekly discussion board (Canvas) Answer and submit course unit tasks



At the end of this unit, the students are expected to:

Cognitive:

1. Describe the testing used for NBS and for diagnosing inborn errors of metabolism
2. Justify the purpose of newborn screening.
3. Recognize the protocols of NBS.
4. Differentiate the difference between Newborn Screening and Expanded Newborn Screening

Affective:

1. Listen attentively during discussion.

Psychomotor:

1. Take part in discussion and group activities.

2. Apply health evaluation appropriate for health care needs of the patient.

3. Express opinions and thoughts about NBS protocol.



Nursing Care of the Community “A comprehensive text on community and public health nursing in the Philippines” 1st Edition Zenaida Famorca

Nursing Practice in the Community 4th Edition Araceli Maglaya

Public Health Nursing in the Philippines 10th Edition National League of Philippine Government Nurses



**DESCRIPTION**

The Comprehensive Newborn Screening (NBS) Program was integrated as part of the country’s public health delivery system with the enactment of the Republic Act no. 9288 otherwise known as Newborn Screening Act of 2004. The Department of Health (DOH) acts as the lead agency in the implementation of the law and collaborates with other National Government Agencies (NGA) and key stakeholders to ensure early detection and management of several congenital metabolic disorders, which if left untreated, may lead to mental retardation and/or death.

Early diagnosis and initiation of treatment, along with appropriate long-term care help ensure normal growth and development of the affected individual. It has been an integral part of routine newborn care in most developed countries for five decades, either as a health directive or mandated by law.  It is also a service that has been available in the Philippines since 1996. Under the DOH, NBS is part of the Child Development and Disability Prevention Program at the Disease Prevention and Control Bureau.

**VISION**

The National Comprehensive Newborn Screening System envisions all Filipino children will be born healthy and well, with an inherent right to life, endowed with human dignity; and reaching their full potential with the right opportunities and accessible resources

**MISSION**

To ensure that all Filipino children will have access to and avail of total quality care for the optimal growth and development of their full potential.

**GOAL**

To reduce preventable deaths of all Filipino newborns due to more common and rare congenital disorders through timely screening and proper management

**What is newborn screening?**

Newborn Screening (NBS) is a simple procedure to find out if your baby has a congenital disorder that may lead to mental retardation or even death if left untreated.

**What is Expanded Newborn Screening (ENBS)?**

The expanded newborn screening program increased the screening panel of disorders from six (6) to more than twenty-eight.

**Why is it important?**

Most babies with metabolic disorders look “normal” at birth. By doing ENBS, metabolic disorders may be detected even before clinical signs and symptoms are present. As a result of this, treatment can be given early to prevent consequences of untreated conditions.

**When is it done?**

ENBS is ideally done immediately after 24 hours from birth.

**How is it done?**

A few drops of blood are taken from the baby’s heel, blotted on a special absorbent filter card and then sent to Newborn Screening Center (NSC).

**Who will collect the sample for ENBS?**

The blood sample for ENBS may be collected by any of the following: physician, nurse, medical technologist or trained midwife.

**Where is ENBS available?**

ENBS is available in hospitals, lying-ins, rural health units, health centers and some private clinics.

**How much is ENBS?**

Expanded newborn screening costs ₱1750 and is included in the Newborn Care Package (NCP) for PhilHealth members.

**What is Newborn Care Package?**

NCP is a PhilHealth benefit package for essential health services of the newborn during the first few days of life. It covers essential newborn care, expanded newborn screening, and hearing screening tests.

**What are the eligibility conditions for newborn to avail of the NCP?**

Newborns are eligible for NCP if **ALL**of the following are met:

• Either of the parents are eligible to avail of the benefits,

• Born in accredited facilities that perform deliveries, such as hospitals and birthing homes; and

• Services were availed of upon delivery.

**How can results be claimed?**

Results can be claimed from the health facility where ENBS was availed. Normal ENBS results are available by 7 - 14 working days from the time samples are received at the NSC.

Positive ENBS results are relayed to the parents immediately by the health facility. Please ensure that the address and phone number you will provide to the health facility are correct.

**What is the meaning of the newborn screening result?**

A NEGATIVE SCREEN means that the ENBS result is normal.

A POSITIVE SCREEN means that the newborn must be brought back to his/her health practitioner for further testing.

**What must be done when a baby has a positive ENBS result?**

Babies with positive results must be referred at once to a specialist for confirmatory testing and further management.

**What happens to the dried blood samples after screening?**

After the dried blood spot has been tested, it will be stored in a secure locked area. The stored sample is retained to allow for normal quality assurance and may be used for ethics committee approved researches for the benefit of the public.

**Why screen your baby?**

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| **DISORDER** | **Effect if NOT SCREENED** | **Effect if SCREENED and MANAGED** |
| ORGANIC ACID DISORDERS | · Developmental delay· Breathing problems· Neurologic damage· Seizures· Coma· Early death | AliveMost will have normal development with episodes of metabolic crisis |
| ENDCORINE DISORDERS | · Severe Mental Retardation· • Death | NormalAlive |
| FATTY ACID OXIDATION DISORDER | · Developmental and physical delays· Neurologic impairment· Sudden death· Coma· Seizure· Enlargement of the heart & liver· Muscle weakness | Usually healthy in between episodes of metabolic crisesAlive |
| HEMOGLOBINOPATHIES | · Painful crises· Anemia· Stroke· Multi-organ failure· Death | AliveReduces the frequency of painful crisesMay reduce the need for blood transfusions |
| UREA CYCLE DEFECT | · Seizure· Mental Retardation· Death | AliveNormal Intelligence |
| AMINO ACID DISORDERS | · Mental retardation· Coma and death from metabolic crisis | AliveNormal growthNormal intelligence for some, learning problems to others |
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**Basic Emergency Obstetric and Newborn Care (BEmONC)** provider Facilities

A BEmONC provider facility is a primary level health facility tasked to provide the integrated MNCHN service package that include basic emergency obstetric and newborn care (BEmONC) and is either a –

a. Barangay health station (BHS),

b. Rural health unit (RHU),

c. Lying-in clinic,

d. Birthing home,

e. District hospital, or

f. Any other similar structure.

To enable the BHS and RHU BEmONC providers to respond to the access factors and function effectively, the following amenities should be considered in its structural design:

a. Delivery room

b. At least a 2-bed capacity Ward: 1 bed for the mother and newborn and another bed with a “pull-a-bed” feature for the birth companion and small children. The ward also doubles as a labor room.

c. A small kitchen appropriately furnished.

d. A toilet and bath with appropriate fixtures.

e. A sleeping quarter for health staff.

f. A waste management facility that includes a placenta pit.

Hospital BEmONCs Hospital BEmONC providers shall offer the same amenities except for the structural design which should include:

a. Labor room appropriately furnished

b. Delivery room

c. A scrub room for the doctors and nurses

d. A maternity ward with rooming-in feature for the newborn

e. A toilet and bath with appropriate fixtures

f. A sleeping quarter for health staff

g. A waste management system that includes a placenta pit

BEmONC provider facilities are made attractive and comfortable with privacy and space for an accompanying “birth companion” (family member, friend, TBA or BHW) as well as for minor children in cases where leaving them at home is not possible.

CEmONC provider facilities are departmentalized according to medical specialties and are usually large, adequately and appropriately equipped and staffed by competent CEmONC Teams (CTs). Clients referred from BEmONC facilities can reach these facilities within 1-hour travel time.

The CEmONC Teams and the Itinerant Teams (ITs) are based in these facilities. Its structural design features the following amenities:

a. Emergency Room

b. Admission Room

c. Pharmacy

d. Well equipped laboratory

e. Blood station appropriately equipped and furnished

f. Labor room

g. Delivery room

h. An obstetric operating room

i. Sterilization or autoclave room

j. A recovery room

k. A Newborn Intensive Care Unit

l. A breastfeeding lounge

m. A scrub room for the doctors and nurses

All health facilities providing emergency obstetric and newborn care (BEmONC and CEmONC) should be equipped with:

a. Radio or telephone for easy contact with a designated higher-level facility should advice or referral be needed

b. An emergency transport system that is based at the facility or community for a reasonable fee.

Since CEmONC and hospital BEmONC providers also caters to other cases, small children are not allowed to accompany their mothers to the hospital. This is to protect them from hospital- acquired infections. In this regard, an arrangement should be made with the concerned C/WHTs for either a TBA or BHW to take care of the small children at home while their mother is giving birth in the hospital.

B. Equipment Requirements Emergency Obstetric and Newborn Care (EmONC) provider facilities should have the required vital equipment to enable them to deliver quality WHSM services to clients. Vital equipment are the most basic equipment needed to operate BEmONC and CEmONC provider facilities in accordance with the standards of the service delivery model and are considered “first priority” in judging the operational capability of the facility.

Basic Emergency Obstetric and Newborn Care Equipment

a. Vital Equipment

1) Vaginal speculum set of 6

2) NSD Kit (that contains: artery forceps or clamp, dissecting forceps, needle holder, scissors, sterile disposable gloves, urinary catheter, sponge forceps, vaginal speculum, sterile blade, absorbable sutures, sterile cord clamp, plastic sterile disposable sheet for the mother)

3) Adult ambubag

4) Pediatric ambubag + mask

5) Simpson’s forceps (optional)

6) Suction machine portable 2 L capacity

7) Oxygen tank with regulator/gauge

8) Spare oxygen gauge

9) Kelly pad

10) Bassinet

11) Cervical inspection set

12) NSV (no scalpel vasectomy) set

13) IUD (intra-uterine device) kit

14) Cut down or minor surgical set

15) Microscope

16) Nebulizer

17) Pediatric stethoscope

18) Doppler

19) Baby weighing scale

20) Non-mercury pediatric sphygmomanometer

21) Non- mercury body thermometer

22) Mucus extractor (bulb suction apparatus)

b. Furniture and Fixtures

1) Delivery bed with stirrups

2) Bassinet

3) Revolving stool

4) Droplight

5) Emergency light

6) Ward beds with side railings

7) IV stand

Comprehensive Emergency Obstetric and Newborn Care Equipment

1.) Vital Equipment

1.) Vaginal speculum set of 6

2.) Laparotomy pack (caesarian section kit)

3.) Portable anesthesia machine

4.) Incubator

5.) Transport incubator (optional)

6.) Curettage set

7.) NSD kit (that contains: artery forceps or clamp, dissecting forceps, needle holder, scissors, sterile disposable gloves, urinary catheter, sponge forceps, vaginal speculum, sterile blade, absorbable sutures, sterile cord clamp, plastic sterile disposable sheet for the mother)

8.) Adult ambubag

9.) Suction machine (portable 2 L capacity)

10.) Pediatric ambubag + mask

11.) Simpsons forceps

12.) Suction machine (mobile 6 L capacity)

13.) Oxygen tank with regulator /gauge

14.) Nitrous oxide with regulator/gauge

15.) Cervical inspection set

16.) BTL (bilateral tubal ligation) set

17.) IUD (intra-uterine device) kit

18.) Microscope

MNCHN Staffing Requirement

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| Community Level: BHS and RHU | BEmONC Provider Facility |
| 1 Midwife per Barangay Health Station (BHS) | 3 BEmONC Teams per hospital BEmONC provider (1 Team per 8-hour shift) 1 BEmONC Team per RHU/BHS: |
| 1 Community/Women’s Health Team (WHT) per barangay. Composition of the C/WHT: • Midwife • Barangay Health Workers (BHWs) • Traditional Birth Attendants (TBAs) | Composition of the BEmONC Team: Hospital: • 3 doctors (1 per shift) • 3 nurses (1 per shift) • 3 midwives (C/WHT) (1 per shift) • 1 medical technologist on call per ILHZ or CEmONC-BEmONC Cluster For RHU: 1 doctor, 1 nurse, 3 midwives (1 per 8-hour shift). For BHS: 1 RHU doctor and 1 PHN “on call,” 1 midwife with WHT members as assistants (TBAs and BHWs) |

CEmONC provider facilities staffing requirement

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| CEmONC Provider Facility |
| Composition of the CEmONC Team: • 3 doctors preferably obstetric – gynecology specialist or GP trained in CEmONC (1 per shift) • 1 anesthesiologist or GP trained in anesthesiology (on call) 29 • 1 pediatrician (on call) • 3 OR nurses (1 per shift) • Maternity ward nurses (2 per shift) • 3 Medical technologists (1 per shift) |
| Composition of the Itinerant Team • 1 doctor (surgeon) • 2 nurses (or 1 nurse 1 midwife) |



Website:

<https://www.newbornscreening.ph/index.php?option=com_content&view=section&layout=blog&id=3&Itemid=60>

Institute of Human Genetics <http://ihg.upm.edu.ph/node/127>

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**Comprehensive -** complete; including all or nearly all elements or aspects of something

**Metabolic** -relating to or deriving from the metabolism of a living organism

**Newborn screening** - is the practice of testing all babies in their first days of life for certain disorders and conditions that can hinder their normal development

**Sample**– a specimen taken for scientific testing or analysis.



Study Question:

Download a research article on the topic ‘Newborn Screening. Submit a 200-300-word essay reflection.



*Books*

Nursing Care of the Community “A comprehensive text on community and public health nursing in the Philippines” 1st Edition Zenaida Famorca

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*Websites*

EBSCOhost.com