

DOH-RO 10 Holds NBS Refresher Course

To discuss the issues and concerns faced by newborn screening facilities (NSFs) in implementing the program, DOH-RO 10 conducted the two-day Refresher Course for NBS Coordinators at Pearlmont Hotel, Cagayan de Oro City, on April 23-24, 2018.

Twenty-one doctors, nurses, medical technologists, and midwives from facilities with high unsatisfactory samples reported by NSC-Mindanao (NSC-M) together identified contributing factors for unsatisfactory samples and common errors in sample collection.

The activity was facilitated by NBS Coordinators of DOH-RO 10. Gil Bernard D. Samante discussed the common NSF errors and unsatisfactory samples, while Pauline Angela F. Balansag explained NSF protocols. On the second day, participants underwent a collection of sample practicum at the Northern Mindanao Medical Center

(NMMC), after which Udall Armand Cabading reviewed the flow of long-term follow-up in NBS Continuity Clinics (NBSCC). *GBsamante*

Right: An NBS coordinator demonstrates proper sample collection.

Below: Organizers and participants of the Refresher Course pose for a photo after the event in Cagayan de Oro City.



Central Visayas Holds Series of NBS Workshops

A series of training workshops on newborn screening was held in Central Visayas from March to April 2018, bringing a total of 90 participants from different NSFs in the region.

The workshop provided participants with the necessary knowledge to implement newborn screening in their respective NSFs and an opportunity to perform actual heel-prick as well. Batches of workshops were held at the DOH-RO in Cebu City on March 1-2 for the South Cebu Province; March 13-14 for the first batch in Bohol Province at Bohol Tropics Resort, Tagbilaran City; April 10-13 for the four provinces in the region at Hotel Asia, Cebu City; and at Reyna's The Haven and Gardens, Tagbilaran City for the second batch in Bohol Province. The last batch was held on April 24-25 at Dumaguete Royal Suites Inn, Dumaguete City, Negros Oriental. *RVValdevieso*

NSFs in Central Visayas Undergo NBS Orientations, Updates

Critical knowledge and skills in collecting quality blood samples and reliable data, together with focused and directed interventions, help achieve program outcomes for newborn screening.

For this reason, continuous orientation, reorientation, updates, and data validation activities are conducted for members of the NBS Team to constantly remind them of the proper collection of blood samples.

In Negros Oriental and Siquijor, activities toward this end were conducted at Dumaguete Royal Suites Inn, Dumaguete City, on March 22-23, 2018, and at Reyna's The Haven and Gardens, Tagbilaran City, on April 19-20 for the first batch in Bohol Province.



Clockwise from the top: Organizers and participants come together for a class photo; Governor Celestino Gallares Memorial Hospital hosts the participants for the heel-prick training; participants conduct a heel-prick practicum on a newborn.

These activities were organized through the collaboration of NBS Provincial Coordinators and Lourenz Oliver Panes, Project Development Officer at NSC-Visayas, who discussed blood sample collection and presented the performance reports of each facility. *RVValdevieso*

NBS Advocacy Seminar Reaches Primary School in San Fernando, Cebu

Health education and promotion are one of the best tools in providing better

health information to the community. With this in mind, DOH-RO 7 conducted an advocacy seminar at a primary public school near the Rural Health Unit in the San Fernando, Cebu, on March 7, 2018.

The activity aimed to raise awareness and provide health information to parents and teachers on the importance and benefits of newborn screening.

The activity was a team effort of the Rural Health Unit, the school staff, and Ma. Lorraine M. Gemperoso, the NBS Provincial Coordinator of Cebu Province. *RVValdevieso*

Midwives Groups Help Intensify NBS Advocacy



Midwives play an important role in promoting newborn screening in the communities. The formal partnership between national NBS program implementers and midwives started on February 3, 2009, after the officers of several midwives organizations in the Philippines participated in a consultative workshop to identify strategic solutions and critical roles their organizations could undertake to support the program.

Midwives Association of the Philippines (IMAP); and the Association of Philippine Schools of Midwifery.

A month after, the officers and members of the said organizations signed a joint resolution identifying areas for collaboration to advocate NBS. These include awareness campaigns and public health education on NBS among its members and the general public, lobbying for the issuance of ordinances on NBS for the newborn population, and pursuing the inclusion of NBS in the midwifery curriculum, among others.

In the most recent activity of IMAP-Central Luzon Chapter, expanded

newborn screening was included in the topics discussed to its more than one thousand members during the chapter's convention and scientific seminar on December 1, 2017. It was held on at the Kingsborough Convention Center, San Fernando City, Pampanga, with the theme "Challenges in Midwifery Profession: Now and Beyond."

Dr. Crislyn Samia, Follow-up Manager of NSC-Central Luzon (NSCCL), discussed the importance of timely collection and sending of quality NBS samples for testing, the significance of prompt follow-up of positively screened babies, and the benefits of expanded newborn screening. *NDelaCruz*

CHO-San Jose City Serves 38 Barangays in One Day

In 2017, 3,118 newborns were screened in the City of San Jose, Nueva Ecija. In an effort to screen all newborns in the municipality in the succeeding years, an intensive awareness campaign on newborn screening was launched before the end of the year.

Headed by Dr. Marissa B. Bunao, CHO-San Jose tapped the help of four Rural Health Units (RHUs) in reaching out to the barangays. Almost 700 pregnant women in the city were educated on the importance of having their babies

undergo newborn screening, in addition to the pre-marriage counselling and prenatal check-ups in birthing stations.

NBS brochures and diapers were also distributed to pregnant mothers who attended the activity, while indigent patients were given free newborn screening services. *NDelaCruz*

A staff from one of the RHUs delivers a lecture on NBS at Brgy Sto. Nino 1.



IN FOCUS Swift Action from Tanauan City Government

When DOH released Administrative Order No. 2014-0045, or the Guidelines on the Implementation of the Expanded Newborn Screening Program, four years ago, advocacy campaigns for Expanded NBS (ENBS) in the CALABARZON area immediately followed. As a result, more NSFs started offering the expanded program to their clients. Remarkable this may be, however, one hindrance arose: PhilHealth covers only the regular newborn screening in its Newborn Care Package.

The City Government of Tanauan took action and provided funds to Pagaspas Birthing Home and Sambat Birthing Home, both under the City Health Office of Tanauan. According to the NBS

Coordinator Domingo Austria, the effect of the city government's action started in February 2016 when the funds came in, which was sourced from the Gender and Development Program.

Free ENBS were offered to babies whose mother was a Tanauan resident. At the start, they offered free ENBS only to babies delivered in the city's birthing homes, but now, they can accommodate outborn babies, or those born at home, delivered on the way to a health facility, and then transferred postnatally to another facility.

Austria said that before they lobbied for the program, they had done benchmarking activities with other

provinces and close monitoring and coordination with the Sangguniang Bayan. The team's efforts and hard work paid off when the Sanggunian enacted City Ordinance No. 2014-40 titled "An Ordinance Establishing and Adopting the DOH Guidelines on BEMONC and Maternal and Child Care Package."

Looking back, Austria noted that for any successful program implementation, it is important to establish working partnerships, networks, and support mechanisms. *FDimaculangan*

Domingo Austria (seated second from the left) together with the staff of the City Health Office of Tanauan.



DOH-RO 10 Addresses Demand for More NBS Training

As demand for more NBS training programs continues to increase, DOH-RO 10 conducted two batches of learning activities in one month—March

20-21 and March 22-23 attended by 25 and 31 participants, respectively—at Pearlmont Inn, Cagayan de Oro City.

Dr. Janelyn De Vera, a pediatrician assigned at NBSCC in Region 10, discussed the newborn screening panel of disorders. Other topics presented during the trainings were protocols on NBS, PhilHealth accreditation, and filing of PhilHealth claims.

Actual heel-prick practicum followed on the second day of both trainings at the Northern Mindanao Medical Center and J. R. Borja General Hospital, respectively. *RAguilar*

The Regional NBS Team with the participants of the first batch of training from government newborn screening facilities



16TH NATIONAL NEWBORN SCREENING CONVENTION

I would like to welcome and invite each and everyone of you, staunch believers in NBS, to the 16th National Newborn Screening Convention to be held at the PICC on October 9 and 10, 2018.

It is an exciting time for Expanded NBS as we continue to grow, responsive to the parents and caregivers of babies who test positive to one of the 28 diseases covered by our ENBS.

Two days ago, I was notified that one of my babies delivered in our hospital tested positive to a Fatty Acid Disorder (CPT2 or Carnitine Palmitoyl Transferase 2 Deficiency), an autosomal recessive inherited genetic disorder that has 3 main types, one of them, a lethal form. It is a condition that prevents the baby from using certain fats for energy, particularly during periods without food or fasting. I suddenly was in panic mode as the address listed under the mother's name was in Dasmariñas, Cavite, quite far from where we are and the mother was not responding to our calls. In due time, she responded and immediately brought the baby back to us. It was one of these moments where you realize how true ENBS is in potentially saving the lives of our babies.

Expanded NBS is the way to go if we are to help save more lives. For this reason alone, we are presenting in our next convention current data and experiences that may prove helpful and fruitful to our day to day practice in Pediatrics.

I am hopeful that all of you will continue to support the cause of NBS and, once again, invite you all to our forthcoming convention.

See y'all there!

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Success Story: Maguling Health Center



Michael Ballesteros (left), medical technologist at Maguling Health Center, prepares a patient for blood collection.

Barangay Maguling observed that many babies who screened positive for G6PD Deficiency from its health facilities did not undergo confirmatory testing. The accessibility of a G6PD confirmatory testing center seemed to be a challenge for the affected patients.

The nearest center is the General Santos Doctors Hospital in General Santos City, which is 117 kilometers away from Maguling. The fare would cost about 150 pesos for one person. Add that to the confirmatory testing fee and the other expenses the parents would prepare for the trip.

The team at Maguling Health Center saw these constraints to patients in Maitum, Sarangani, to forgo G6PD confirmatory testing. To address these, they allocated a budget to sponsor selected patients for G6PD confirmatory testing. So, on April 27, 2018, the Maguling Health Center and Birthing NBS Team conducted a blood collection for G6PD testing; it was spearheaded by Municipal Health Officer Dr. Junie F. Basnilio and George Yabes Birthing Home NBS Coordinators Josielyn Nabor and Rosalina Roxas. The team also invited Dr. Conchita Abarquez, NSC-M Unit Head, to facilitate the blood sample collection from patients and to conduct a lecture on newborn screening and G6PD Deficiency.

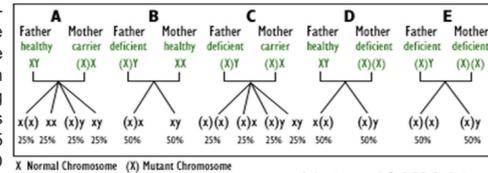
The activity gathered 75 patients and parents, barangay officials and health staff, and midwives from nearby municipalities. As a result, 26 initially G6PD-deficient patients were recalled, and 17 of them got free confirmatory testing. The blood samples collected from the patients were brought by the NSC-M Team to Davao Medical School Foundation Hospital for testing, and 92% of them were confirmed G6PD-deficient.

Maguling Health Center and Birthing Home has been a PhilHealth-accredited newborn screening facility since 2014, serving Muslims and indigenous people communities and the adjacent municipality of Palimbang, Sultan Kudarat. The facility is also a catchment of Maitum Rural Health Unit and George Y. Yabes Maternity Home. *PBermudez/ JNabor/ RRoxas*

IN THE KNOW

Glucose-6-Phosphate Dehydrogenase (G6PD) Deficiency

What is G6PD? Glucose-6-phosphate Dehydrogenase (G6PD) Deficiency is an enzyme defect affecting around 400 million people worldwide. According to the Philippine NBS data as of December 2013, 1 out of 55 screened newborns has G6PD Deficiency. G6PD Deficiency is an X-linked disorder found in both sexes, but more males are affected. Female carriers are asymptomatic.



(X)Y – Deficient, Symptomatic; (X)X – Deficient, Symptomatic; (X)X – Carrier

Pathophysiology. G6PD is an enzyme that is present in all cells but is much valued in red blood cells (RBCs). G6PD is needed for the first step in the Hexose Monophosphate Pathway (HMP). The pathway produces the reduced nicotinamide adenine dinucleotide phosphate (NADPH) that functions as an electron donor in maintaining glutathione in its reduced form (GSH). GSH serves as an antioxidant that protects the cells against oxidative damage. The HMP is the only source of NADPH in RBCs, thus the deleterious effect of G6PD deficiency in RBCs exposed to oxidative stress. Such oxidative stress is brought about by food products, drugs, chemical compounds, and infection. A short list of these agents is available on the succeeding pages.

Clinical Features. The most common clinical manifestation of G6PD Deficiency is hemolytic anemia induced by various oxidative stresses as mentioned above. The patient presents sudden onset of tea-colored urine, jaundice, and pallor. Hereditary nonspherocytic hemolytic anemia may also occur in patients with

severe G6PD Deficiency. In neonates, G6PD Deficiency may present with prolonged jaundice which is attributed to impaired liver function as supposed to hemolysis. The dreaded effect of neonatal jaundice is kernicterus or the deposition of bilirubin (product of hemoglobin catabolism), which causes permanent damage to the brain or death. Other disorders associated to G6PD Deficiency are decreased RBC lifespan and cataract formation. Although there is a high prevalence of G6PD Deficiency, there are only few severe cases of hemolysis that have been documented, and most of them are foreign reports.

Diagnosis. The currently used method in the diagnosis of G6PD Deficiency is the spot fluorescence test as part of the newborn screening panel. Screening-positive patients should immediately undergo confirmatory testing based on estimation of enzyme activity by quantitative analysis of the rate of NADPH production from NADP. DNA analysis is already available but is not used as a diagnostic method.

Management. There is no cure for G6PD

Deficiency, but the main goal in the management is avoidance of oxidative insults and blood transfusions for acute hemolytic crisis. Confirmed cases may also be referred to a pediatric hematology for assessment and advice.

Prognosis. Most G6PD-deficient patients live a normal life without the clinical features indicated above. Since there is no way of telling who will develop hemolytic crisis, avoidance of oxidative stress and consultation with a physician are advised if with febrile illness.

Patient Education. Parents should be educated regarding their child's disorder, specifically the drugs and food that cause oxidative stress, and thus should be avoided. It is also important to emphasize that infection is a common cause of hemolytic crisis in G6PD-deficient patients; hence, all affected patients should see their doctor during febrile illness for management. Parents are also advised to mention to their physicians that the patient have G6PD Deficiency during consults. As this is an inheritable disease, X-linked, genetic counseling should be done.

Source: *Fact Sheets for Doctors, May 2016, accessed at www.newbornscreening.ph on May 4, 2018.*

*Prevalence of 1:58 as of December 2017

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PHILIPPINES | 03 MARCH 2018

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Organizers and participants of the National Newborn Screening Consultative Workshop share a light moment during the three-day activity in Manila.

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National Implementers Gather for NBS Consultative Meeting

To resolve common program implementation issues in the regions, the Department of Health (DOH)–Family Health Office, in collaboration with the National Institutes of Health–Newborn Screening Reference Center, conducted the National Newborn Screening Consultative Workshop at Bayview Hotel Manila on April 18-20, 2018.

The three-day workshop, which was attended by Regional NBS Coordinators, Newborn Screening Center (NSC) Unit Heads, and Continuity Clinic medical specialists and nurses, focused on the implementation of strategic directions and agreements among stakeholders and bridging the gaps toward effective and high-quality program implementation.

The participants also resolved remaining issues on the Strategic Plan for Newborn Screening 2017-2030 and worked on the combined plan of actions among DOH–Autonomous Region of Muslim Mindanao, DOH Regional Offices (ROs), and Continuity Clinics for the next three years. The group also discussed the status of salary standardization, fund management, mechanics for the payment of unsatisfactory samples, and new strategies to improve Expanded NBS (ENBS) coverage in the regions.

Officers and staff of the Continuity Clinics had a separate session to discuss a standard tool for the monitoring of developmental milestones or outcome indicators of endorsed patients called the Parents' Evaluation of Developmental Status (PEDS) tool, which will be used in consultation with the Philippine Society for Developmental and Behavioral Pediatrics.

Finally, the participants underwent a communication workshop to hone their skills in conveying important newborn screening messages to health professionals, partner stakeholders, and the general public effectively.

Number of Babies Screened as of April 2018 : **11,129,657**