

# Newborn Screening Center Mindanao census from 2019 to 2022

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Congenital disorders cause a global estimate of 240,000 deaths in newborns and 170,000 deaths in children ages 1 month up to 5 years every year.<sup>1</sup> In order to detect metabolic, hematologic, or endocrine disorders in newborns, newborn screening (NBS) is conducted in many countries around the world. In the Philippines, NBS was introduced by the Newborn Screening Study Group in 1996, with the aim of establishing the incidence of six metabolic conditions, namely, congenital hypothyroidism, congenital adrenal hyperplasia, galactosemia, phenylketonuria, homocystinuria, and glucose-6-phosphate dehydrogenase deficiency, and creating recommendations for the adoption of NBS nationwide.<sup>2</sup>

The Republic Act No. 9288, otherwise known as the Newborn Screening Act of 2004, requires that the Department of Health shall ensure the establishment and accreditation of newborn screening centers (NSCs) in strategically located areas across the Philippines.<sup>3</sup> At present, there are seven operational NSCs in the country,<sup>4</sup> with the Newborn Screening Center-Mindanao (NSC-Mindanao) in Southern Philippines Medical Center (SPMC) as the only center catering to all NBS facilities all over Mindanao.<sup>5</sup> NSC-Mindanao initially performed screening tests for five disorders, but now tests for a panel of 29 metabolic and other congenital disorders.<sup>6</sup>

This infographic shows data on the number and types of NBS facilities, as well as the number of samples and confirmed diseases screened, across the six different administrative regions of Mindanao, from 2019 to 2022. Currently, there are 1,925 NBS facilities all over Mindanao. As the region where the NSC is located, Region 11 boasts of 461 NBS facilities, a number which is twice that of the Bangsamoro Autonomous Region in Muslim Mindanao (BARMM), which has the lowest number of NBS facilities among the different regions, 232 facilities. Most births in the country occur in primary care facilities and non-specialist birthing centers. Out of the 1,925 NBS facilities in Mindanao, 1,596 (83%) can be found in primary care clinics, 276 (14%) in hospitals (Level 1 to 3 health care service), and the remaining others are distributed in rural health units, diagnostic centers, continuity clinics, and specialty hospitals. In 2019, a total of 352,825 samples were initially screened for congenital and other metabolic disorders. In 2020, when the COVID-19 pandemic started, the total number of screened samples went down to 304,351 (decreased by 14%). A moderate decrease in the number of screened samples was observed in Regions 9 to 13 (12% to 16%), while a huge decline was observed in BARMM (28%). The total number of screened samples started to dwindle in 2021, picked up in 2022, but is still not reaching prepandemic levels. From 2019 to 2022, a total of 37,251 screened samples turned out to be positive for a disease among the panel of metabolic and congenital disorders screened by the NSC. More than half of the samples tested positive for hemoglobinopathies (18,818). A similar number of samples were positive for glucose-6-phosphate dehydrogenase deficiency (17,781). In those four years, there was only one recorded case of cystic fibrosis, with no recorded case for urea cycle defect and biotinidase deficiency.

For the past several decades, the NBS program has become one of the most successful public health screening programs in the Philippines, and even globally, and it has also proven to greatly reduce morbidity and mortality in infancy and early childhood.

## Contributors

CMPA and CXDL contributed to the conceptualization of this article. CMPA wrote the original draft while CXDL rendered the original draft of the infographic. Both authors performed the subsequent revisions, approved the final version, and agreed to be accountable for all aspects of this article and its corresponding infographic.

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## Article source

Commissioned

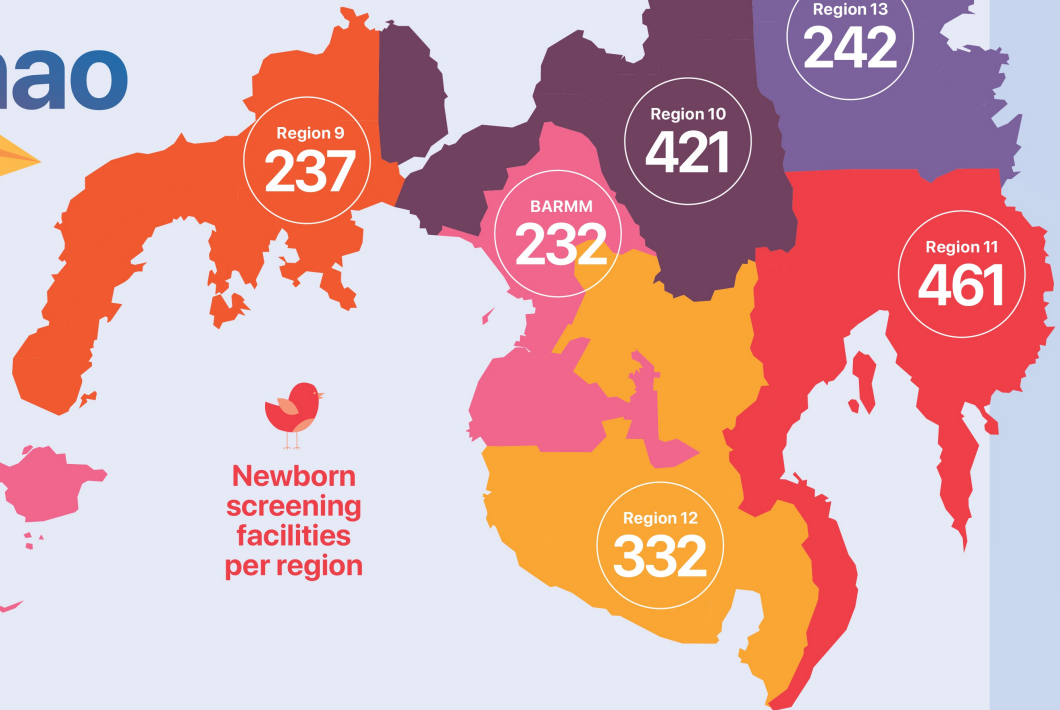
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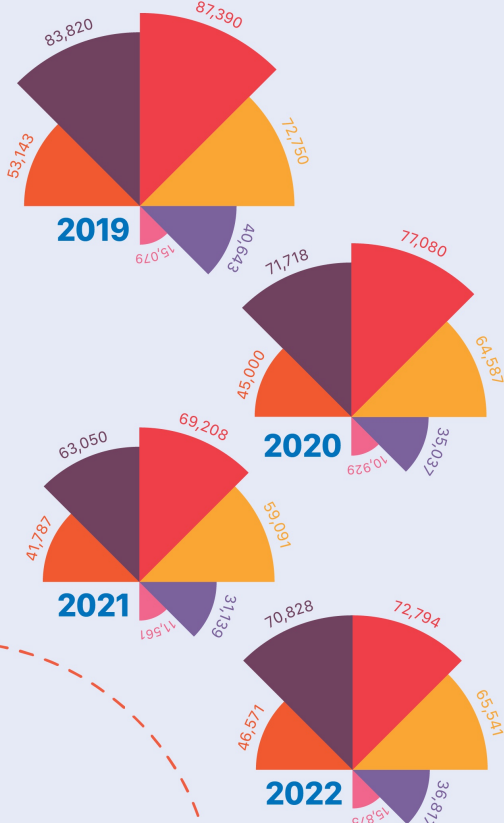


# Newborn Screening Center Mindanao

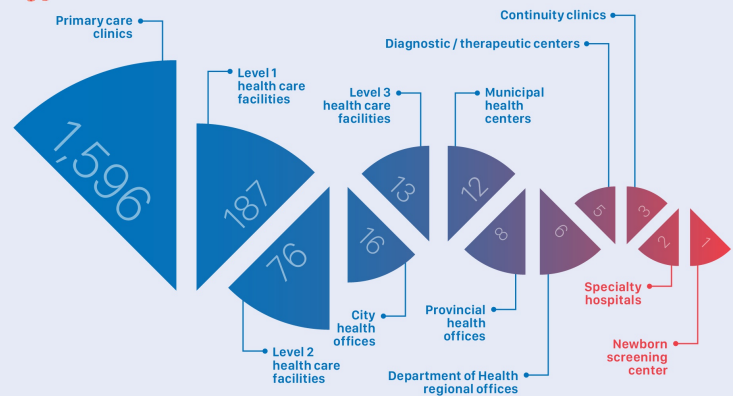
census from 2019 to 2022



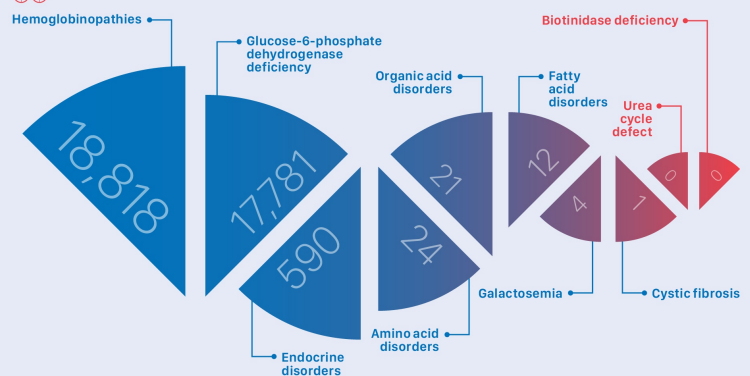
## Number of initial samples screened per region



## Different types of newborn screening facilities



## Total number of cases confirmed



**Competing interests**

None declared

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