Use of positive indicators in official statistics of child health

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At both the national and subnational levels (provinces, regions, municipalities, districts) countries use what we call as negative indicators to assess and monitor the health of the child population; they are considered negative in the sense that they correspond to adverse events (mortality, morbidity, etc.) in relation to the reference population. The paradigm of these indicators is infant mortality, but there are other similar indicators (mortality in children 1–4 years of age, specific morbidity, etc.). Their relevance is unquestionable, but they are insufficient because they do not fully express the health situation of the reference population. For example, when we say that infant mortality in a region is 8‰, one wonders: how is the health of the 992 children who do not die? And to answer this question there are not (actually, there were not) adequate indicators. That is why “it is necessary to have indicators that express the health and well-being of the population as a whole.”

This is not our original idea; it has been extensively described by epidemiologists, pediatricians, health specialists, researchers, politicians, international health agencies, the United Nations, and even international personalities, such as Amartya Sen (Nobel Prize in economics) and Joseph Stiglitz (former president of the World Bank).

From our perspective, these indicators should be called positive indicators for 2 reasons: 1) they express desirable events, and 2) they refer to the entire population.

In the case of children aged 0 to 5 years—a truly critical period of life (including the emblematic period of the “first 1000 days”)—there is no doubt that the most appropriate indicators are physical growth and psychomotor development. These two processes express, like no other indicator, the convergence of social and biological determinants on a population’s health. James Tanner synthesized this idea masterfully with the phrase “growth is the mirror of society.”

Public health agencies need average figures, central values that express the health of the entire population as a whole. Therefore, it is necessary to summarize the growth and development of children aged 0 to 5 years in average values, both for physical growth and psychomotor development.

Summarizing the physical growth of a group of children in a neighborhood, municipality, province, or country in terms of an average growth curve for weight, height, and body mass index offers no major methodological difficulties if each health worker measures once a year the weight and height of all children aged 0 to 5 years who attend a spontaneous consultation (for a health checkup, immunizations, etc.). With a minimum of

\textit{doi: http://dx.doi.org/10.5546/aap.2024-10394.eng}


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500 children and the statistical methods available, it is possible to develop the curves mentioned above, which express the average growth of the population of interest.

However, summarizing psychomotor development and obtaining a development index is more complicated. Until now, there were no satisfactory methods because those available were based on the average scores obtained in the individual assessment of each child’s development, others were based only on questionnaires and, finally, other methods are very complex because they attempt to compare the development of children among different countries.

In recent years, we have been working on the preparation of a suitable method to generate a development index. In order to establish a method for assessing development in population groups, after reviewing available guidelines, we defined the characteristics it should include: it should be a reliable method, based on information collected at the primary level of care; it should be part of the daily care activities (without the need for special surveys); and children should be assessed with culturally compatible guidelines (in the case of Argentina, based on our national reference).

Based on these conditions, after several years of work, we have managed to develop a method that, instead of evaluating the development of each child considering many milestones (something impossible to achieve at the primary level of care because of the time it consumes), considers very few milestones in each child, so that 500 individuals are enough to calculate the development index for the whole group.

We have used it successfully in municipalities and at a national level. In addition, we were able to obtain information on the “tempo of development,” i.e. the speed at which the group achieves a milestone after the other. These positive indicators of physical growth and psychomotor development could be introduced into the official statistics of all jurisdictions. The method is not designed to search for individual children at home, but simply to take the measurements as they attend spontaneous consultations. Both anthropometric and developmental data are sent to a processing center which, in turn, generates the positive indicators through a very specific statistical process.

The methodology is flexible, since it allows the introduction of outcome measures (such as day care center attendance); it is reliable, because it is based on measurements made by previously trained personnel; and it is cost-effective, since once the personnel (both those who collect the data and those in charge of processing them) have been trained, it is not necessary to introduce other materials or resources. It is worth noting that all the information collected for the development of these indicators is conveniently dissociated from personal data to safeguard the privacy of the subjects.

The system provides a baseline that allows monitoring the health of a specific population, the assessment of routine public policies, and the evaluation of specific interventions. The implementation of this method would have a profound impact on child health monitoring.

Well into the 21st century, reducing mortality should not be a sufficient goal of mother and child programs; it is necessary to promote a positive growth and development for children.

REFERENCES