



Navigating data quality

Part 3: Global estimates of severe acute malnutrition (SAM) treatment coverage

Intro

Slide 1:

- Hello and welcome back to ENN's navigating data quality presentation series.
- My name is Stephanie Wrottesley and I will be taking you through the third and final presentation of this series, during which we will be unpacking global estimates of severe acute malnutrition (SAM) treatment coverage, focusing on where these estimates come from and what we should keep in mind when using and interpreting them.

What is meant by coverage?

Slide 2:

- So, what do we mean by coverage?
- Coverage can be defined as the proportion of all people needing or eligible to receive a service who actually receive that service.
- There are two types of coverage estimates related to SAM and these include:
- **Geographical coverage:** which measures availability of SAM treatment services.
- **Treatment coverage:** which measures the proportion of children with SAM who receive therapeutic care.
- Since the availability of services does not equate with service access and uptake, geographical coverage will always be greater than treatment coverage.
- In this presentation we will be focusing on treatment coverage, for which methods can be either:
- **Direct:** which involve assessments and surveys using a combination of qualitative and quantitative data collection methods, particularly at sub-national and, to an extent, national levels.
- They include SQUEAC and SLEAC methods: the SQUEAC method is a comprehensive, iterative tool that provides coverage estimates, along with information on barriers and boosters to coverage, mostly at the health district level. The SLEAC method is designed to give rapid information on the spatial representation of coverage and is mostly used at regional and sometimes national levels.
- **Or, methods can be indirect:** meaning they are based on national estimates and prevalence figures → these indirect methods are used to assess and monitor global SAM treatment coverage and we will be unpacking these in more detail during the rest of the presentation.

Global coverage estimates

Slide 3:

- Estimating the global coverage of SAM treatment is really important in tracking progress towards reducing the prevalence of childhood wasting and understanding the challenges that remain in achieving global targets.
- By global coverage we are referring to the: Number of children with SAM admitted for treatment over an annual period (in other words an estimate of the number of **children treated**)/Total number of children with severe acute malnutrition (or the **burden of SAM**).

Slide 4:

- Looking at current global estimates, the State of Acute Malnutrition dashboard shows that, in 2019:
- 14.3 million children under 5 years of age had SAM and 5.7 million children with SAM were treated.

This is an improvement since 2009 when:

- 25 million children globally had SAM and only 1.1 million children with SAM were treated.

Slide 5:

- BUT, the number of children affected by SAM is still too high
- AND, too many children still go untreated.

Slide 6:

- Finally, if these numbers are used as a basis for global estimates of treatment coverage it is important to understand: where the numbers come from and their limitations.
- This will help us to better interpret them.

Where do the numbers come from?

Slide 7:

- So, where do the numbers come from? The estimate of the numbers treated comes from the UNICEF NutriDash database.
- The estimate of burden comes from the Joint Malnutrition Estimates (JME) published by UNICEF, the World Health Organization (WHO) and the World Bank Group.

Children treated - NutriDash

Slide 8:

- The Nutridash database was developed in 2009 to collect data on SAM treatment.
- It has since evolved to capture a wide range of nutrition programme data from 159 countries:
- The database includes information on key nutrition-specific interventions and nutrition programme data.
- This data is derived from national information systems and surveys; and is collected via web-based questionnaires with the support of UNICEF country offices and in consultation with national governments and partners.

- Data cleaning and validation is carried out using standardised quality criteria and inconsistencies, duplications and gaps are identified.
- The data is stored, analysed and presented at country, regional and global levels.

Slide 9:

- This slide shows an example of an output from the NutriDash online dashboard which documents the number of children treated.
- You can see that the estimate of 5.7 million children treated reported on the dashboard is the same as the estimate reflected on the State of Acute Malnutrition dashboard.
- As previously mentioned, this number suggests that we are only reaching a small proportion of the children with SAM globally. However, it is important to note that these global figures are likely an underestimate of the total number treated as:
- Not all countries report on all indicators; for example, in 2018 only 79/104 UNICEF country offices responded to the SAM NutriDash module.
- The quality of reported data also relies on the quality of national reporting systems for nutrition programmes, and this varies substantially between countries.
- It is therefore likely that more children are being treated at country level, but are not all captured in the national estimates that are reported to UNICEF on an annual basis.

Slide 10:

- In addition, globally there is a gap in community-based treatment for infants under six months of age, as well as a lack of data captured and presented for this age group, so admissions to treatment are likely not captured for many children who require it
- Figures for the numbers treated, and therefore coverage, do not capture any information on the quality of care

Burden - JME

Slide 11:

- If we look at the other side of the coverage equation, we have our estimate of the global burden of SAM.
- This is informed by annual estimates released as part of the JME. These estimates are also used in the Global Nutrition report.
- This process was initiated in 2011 and involves:
- The multi-agency collective of UNICEF, the WHO and the World Bank Group conducting a joint review of all available data to produce a harmonised country-level dataset. This dataset provides estimates for the prevalence of wasting and severe wasting, as well as for stunting and overweight.
- Burden is calculated by multiplying the prevalence estimate by the latest under-five population estimate from the survey year.
- A multi-level model is then applied to the country-level dataset to produce regional and global estimates.
- Country consultations are conducted prior to publishing the annual estimates, with the main purpose being to ensure the estimates include all recent and relevant country data; and to engage with and receive feedback from national governments on the estimates.

- Following review of the input received from national governments during the country consultations, any additional sources are included in the JME country dataset and the estimates are finalised and disseminated.
- The annual update is disseminated through various knowledge products, for example a key findings report, an interactive dashboard and a series of databases.

Slide 12: primary data sources

- The primary source dataset contains data from national-level sources: which include surveys such as Multiple Indicator Cluster Surveys (MICS), Demographic Health Surveys (DHS) and SMART surveys, as well as some administrative data from national surveillance systems
- Each data source is reviewed and this includes review of at least the final report with full methodological details and results, but ideally also a data quality assessment which has been conducted and flags potential limitations.
- The primary dataset contains the point estimate, as well as the standard error, 95% confidence interval and unweighted sample size if available.
- If microdata (or raw survey data) are available and allow for recalculation of the estimate this is done to ensure that the estimate adheres to the standard definition for the respective indicator.

Slide 13: reanalysis and comparability

- This re-analysis of data takes into account:
 - Growth standard used: JME uses 2006 WHO growth standard.
 - Exclusion of implausible z-scores: JME standard approach excludes children with WHZ $>+5$ or <-5 .
 - Calculation of age in days.
 - Oedema: JME excludes oedema when assessing malnutrition status.
- When the raw data is not available but it is known that the survey methods don't meet the standard definition, adjustments may be made for:
 - Age: in order to include the full 0-59 month age group.
 - Area of residence: to ensure the data is nationally representative.
 - Growth reference: if the 2006 WHO growth standard was not used.

Where multiple survey results exist, preference is given to:

- Re-analysed results
- Survey results that include all indicators
- Results that include the full age range (0-59/60 months)
- The latest applicable data for the survey year

Slide 14: data quality considerations

- The WHO and UNICEF maintain aligned data quality review processes for inclusion of survey results.
- As a minimum, inclusion of survey results requires that they have and/or can be re-analysed to meet the following criteria:
 - Employs a cross-sectional population-based random sample.
 - Covers the full, or nearly full, age range of children 0 to 59/60 months.
 - Has a minimum sample size of 400.
 - Utilises standard measurement techniques for height and weight (WHO, 2008).

- Provides full documentation of survey design, implementation and analysis.
- Derives estimates based on the WHO Growth Standards using the standard indicators and cut-off points.

Slide 15: data availability considerations

- While the JME are updated annually, the country-level data generally come from cross-sectional surveys that are collected infrequently, generally every three to five years, in most countries.
- This means that the country-level estimates will only be updated when new data is available. In addition, a lack of high-quality anthropometric data in many countries limits inclusion of up-to-date estimates at national, regional and global levels.
- The original (2012) dataset included 639 nationally representative surveys from 142 countries/territories conducted from 1985-2011.
- 28/142 countries or territories only had estimates from 2005 or earlier.
- In comparison, the 2020 dataset consists of 997 data sources from 157 countries/territories.
- Across countries and territories, estimates represent the most recent data available between the year 2000 and 2020.
- Within this time frame, less than half of countries have at least one data point from within the last 5 years and a quarter of countries have no data at all.
- It is also important to note that, with the exception of four surveys, data on child height and weight were not collected in 2020 due to physical distancing policies. These latest estimates are therefore based almost entirely on data collected before 2020 and do not take into account the impact of the COVID-19 pandemic.

Slide 16: other considerations

- It is also important to keep in mind that global wasting estimates likely **underestimate** the burden because:
- They may miss **incident cases** occurring over time
 - The data from national-level surveys consider prevalent cases (at a given point in time) but not incident cases and no global estimates currently account for children who are affected by and need treatment for severe wasting over the entire year.
 - To account for this, it has been recommended that a single incidence correction factor of 1.6 be used in all settings where there are data on prevalent but not incident cases
 - But data published in 2021 from 352 sites in 20 countries indicated that incidence correction factors vary widely within and between countries. This means that even if a single correction factor is used, severe wasting burdens would likely be underestimated in high-burden settings.

For more information on this I refer you back to the first presentation in this series, during which my colleague Eilise discussed interpreting nutrition surveys.
- **Seasonal peaks** may also be missed in country-level survey data since these estimates reflect wasting prevalence at the time of the survey and do not consider seasonal variation.
 - More information on this topic is provided by Phil during the second presentation of the series.

Closing remarks

Slide 17:

- All of these factors are important to consider when interpreting global estimates of SAM treatment coverage. While these estimates are the best that we have, and are based on rigorous methodology, the limitations must be acknowledged and help us to better interpret annual estimates and monitor progress globally.
- More information can be found at the links presented.

Slide 18:

- Thank you so much for listening and also a huge thank you to our donors, IrishAid and The Eleanor Crook Foundation, who supported the preparation of this presentation.
- We hope you have enjoyed this presentation and would really appreciate feedback on this and any other presentations that you have watched in this series. On the MediaHub page where you found this video there is a link to a very short survey that will only take a couple of minutes to fill in. We would love to know how useful you have found these short presentations, what we could improve on, and your thoughts on future topics. We would be very grateful if you could make time to help us improve similar work going forwards. Thank you for your time.