

Data visualization tools for nutrition: Supporting decision-makers globally and in India

BACKGROUND

Significant progress has been made in nutrition data and measurement since the 2014 Global Nutrition Report called for a “nutrition data revolution.” While more data is now available to support decision-makers, challenges remain, such as accessing trend data to track progress or analyzing and interpreting data.

Well-designed data visualization tools (DVTs) have the potential to present data in a way that can be easily interpreted. Examples of DVTs are shown below in Figure 1.

Figure 1: DVT types and examples



STUDY OBJECTIVE

To review existing global and India DVTs in nutrition to understand:

1. How DVTs are organized, to assess differences and similarities across DVTs.
2. How current DVTs could more effectively support the use of data for decision-making.

METHODS

Conducted a landscaping of 22 global and 9 India DVTs in nutrition to examine how they contribute to the nutrition landscape. Three selection criteria were used, DVTs must: (1) be publicly accessible, (2) cover multiple countries at the global level, or cover India only for the India review, and (3) be recently refreshed (within the past 5 years).

Four parameters were used to review DVTs:

- Goal and audience** (i.e., accountability and planning, implementation, and monitoring)
- Domains and data** (i.e., intervention coverage, nutritional status)
- Output structure** (i.e., chart types used to visualize data)
- Dissemination** (i.e., timing and method of dissemination)

Stakeholder interviews (N=14) were conducted at the global level to validate findings from the desk review and to better understand how DVTs are used to support decision-making. India stakeholder interviews are in progress.

KEY FINDINGS

1. There is a growing number of nutrition DVTs both globally and in India
 - Several DVTs with overlapping content are launched during the same time period, which could contribute to confusing messages and fatigue
 - In India, 9 DVTs in nutrition have been launched between 2017-2018 to support government and development partner programs; most of these were generated to monitor progress under POSHAN Abhiyaan– India’s National Nutrition Mission. Many of these DVTs report on common indicators but use different data sources (e.g. DHS vs administrative), presenting different data to users
2. Very few DVTs have clear and focused theories of change
 - Both globally and in India, most of the DVTs reviewed do not have explicitly clear theories of change in terms of the audience or decisions they are trying to influence. Such DVTs may not achieve their goals, or meet decision-maker needs
 - Example: the POSHAN District Nutrition Profiles have a clear theory of change and also include coverage indicators, immediate and underlying determinants, and discussion questions for users
3. More coverage indicators are needed to support decision-making
 - In India, we found that outcome indicators were common, but coverage indicators for interventions along the continuum of care were limited, especially in adolescence and newborn care (Figure 2)
 - Coverage indicators are important because they can tell a decision-maker whether or not to take action, by tracking the reach and progress of program interventions

Figure 2: Availability of indicators in Indian DVTs by domain

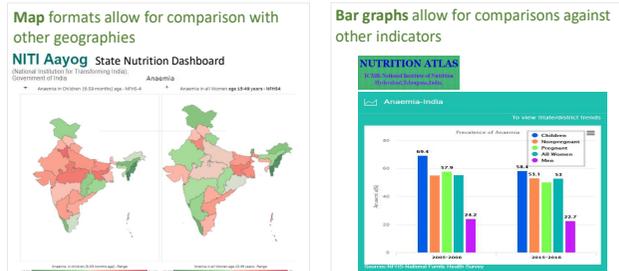
Data Visualization Tools (DVTs)	Intervention coverage							Determinants	Outcomes
	Adolescence	Preconception	Pregnancy	Childhood & Postnatal care	Newborn care	Lactation	Early childhood		
Champions of change									
Anemia Mukti Bharat Dashboard									
NITI Aayog State Nutrition Dashboard									
Nutrition Atlas									
Nutrition India									
POSHAN District Nutrition Profiles									
Tata NIN: State of food and nutrition									
The Brookings India Health Monitor									

*Note: the Jan Andolan Dashboard is not included in the table above because it is an activity-based dashboard to track government programs and activities under POSHAN Abhiyaan.

4. Different ways of visualizing the same data may lead to different decisions

Both globally and in India, DVTs display the same indicators in a variety of ways (see example in Figure 3). The choice of how to visualize data should be based on the DVT’s goals, as well as users’ decision needs and data literacy levels

Figure 3: Different visualizations of the same statistic: Anemia prevalence in India



RECOMMENDATIONS

Recommendations for DVT producers

- Have a clear theory of change**
 - Which decisions (by which users) does the DVT aim to support?
 - What supporting actions are needed to deliver change?
- Include actionable indicators** that align with the DVT’s theory of change
- Test data visualization formats with targeted users**

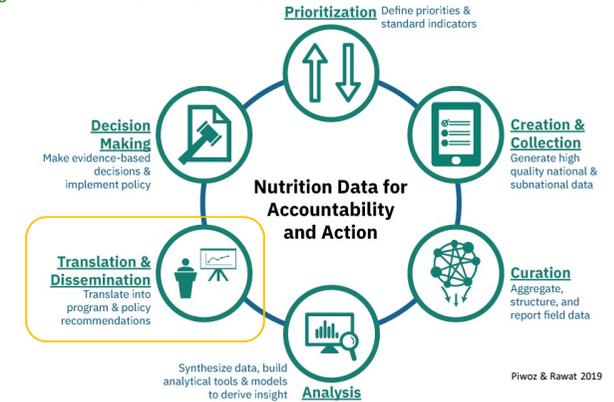
Recommendations for global community of DVT producers and funders

- Support coordination** among the global DVT community to increase synergies, reduce inefficiencies, and share learnings across DVTs
- Convene DVT producers that report on common indicators** to reduce differences in definitions and divergent messages

CONCLUSION

To improve policies and scale up programs to reduce malnutrition, decision-makers need access to information to plan, implement, and monitor programs, as well as hold them accountable. A critical component of information flow is how data is presented to decision-makers, as the human brain processes visuals more rapidly than text (Evergreen 2016). The Nutrition Data Value Chain (Figure 3) conceptualizes how data ultimately influences nutrition decisions, and how DVTs (part of Translation & Dissemination) are a part of this process.

Figure 4: Nutrition Data Value Chain



The growing number of DVTs in nutrition is a positive reflection of the greater emphasis on data for decision-making, but also a challenge, given the inefficiencies in the landscape. The global community and individual countries should adopt DVTs as tools to improve nutrition actions keeping in mind purpose, audience, data and visualization.

A slide deck on the full global landscaping may be found on datadent.org.