Purpose of Work

To better understand how data visualization tools (DVTs) for nutrition audiences in India support key stakeholder information needs, we conducted a landscaping of 10 publicly accessible DVTs that were produced or refreshed within the past 5 years. For each DVT, we reviewed: (1) goal and audience; (2) design features; (3) indicator domains and data sources; and (4) dissemination strategy and user support. Out of 10 DVTs, we conducted interviews with 7 DVT Producers\(^1\) to understand their DVT’s theory of change, intended users, outputs, dissemination processes, user engagement strategies, and production/maintenance.

Why visualize data?

- Data visualizations tools (DVTs) are defined as outputs that help people understand the significance of data by placing it in a visual context (e.g., bar graphs, maps, etc.).
- Data visualizations can be helpful because human brains more rapidly process visuals compared to text and data is often more persuasive in graphs or other visualized formats\(^2\).

\(\text{Figure 1: Different types of DVTs support different types of goals and decisions – DVTs rarely fall into just one of these types}\)

\(\text{Dashboard}\)
- **Dashboard**s present key performance indicators to achieve goals on a single screen – at-a-glance, often used for operations or management

\(\text{Scorecard}\)
- **Scorecard**s compare performance across indicators to display status and monitor progress, often used for advocacy and accountability purposes

\(\text{Index}\)
- **Indices** aggregate several indicators into a single indicator (or composite score) to rank units, often used for advocacy and accountability

\(\text{Profile}\)
- **Profiles** provide a snapshot of how a geographic region is doing in a particular sector, often used to spread awareness across broad audiences

\(\text{1 DVT producers were responsible for conceptualizing, deciding DVT content, commissioning designers, and managing the DVT.}\)
\(\text{2 Evergreen, Stephanie DH. Effective Data Visualization: The Right Chart for the Right Data. SAGE Publications, 2016.}\)
Key Findings are based on desk review and DVT producer interviews.

Finding #1: There is a growing number of nutrition DVTs in India tailored to national policies that can facilitate in-country decision-making.

We found 10 publicly-available nutrition DVTs in India, 9 of which were launched in a 24-month timeframe. They are tailored to national policies and priorities by including the following types of information:

Figure 2: Ways in which Indian DVTs in nutrition are tailored to national policies and priorities

<table>
<thead>
<tr>
<th>Findings by sector</th>
<th>Sub-national data</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 Health</td>
<td>National 7</td>
</tr>
<tr>
<td>3 Agriculture</td>
<td>State 8</td>
</tr>
<tr>
<td>5 Education</td>
<td>District 8</td>
</tr>
<tr>
<td>4 WASH</td>
<td></td>
</tr>
</tbody>
</table>

Multiple sectors contribute to the immediate, underlying and basic determinants of nutrition and data can help users to understand multisectoral pathways.

DVTs that include indicators by relevant sector sub-categories

- 3 Range of nutrition outcomes (high/medium/low)
- 4 National programs such as Janani Suraksha Yojana (JSY)
- 1 Service delivery platforms such as Visited by ASHA
- 5 Disaggregated variables (e.g. caste/rural vs urban, sex, etc.)

Additional indicators will help users to provide in-depth analysis and to facilitate dialogue.

Finding #2: Most nutrition DVTs reviewed have a clear purpose and audience but few specified how their DVT will contribute to users taking action (e.g. a Theory of Change).

The majority of Indian DVTs are designed for 1) planning, implementation, and monitoring and 2) accountability. They target multiple audiences, most commonly government stakeholders. Most DVTs did not have a clear goal statement on their website. Findings from desk review and DVT Producers interview suggest that there was a lack of mention around:

- A set of explicit decisions and/or behavior in the target audience they are trying to influence
- A clear pathway of how making the data available in the DVT format leads to the desired change

Positive examples of DVTs with specific aims and audience, which presents pathways to achieve goal are below.

The POSHAN District Nutrition Profiles (DNPs) target specific district-level stakeholders and are regularly used during decision-making meetings

- A focused theory of change with targeted set of decision makers at district level (District Panchayati Raj Officers, District Program Officers, Medical Officers, etc.)
- The goal of DNPs is to create awareness, facilitate evidence-based discussions, and mobilize action for nutrition at the district level.
- Actionable indicators includes coverage indicators, immediate and underlying determinants and impact indicators.
- Active engagement strategy: POSHAN team held regular trainings with district officials and nutrition stakeholders on DVT use in planning and decision making.
Finding #3: Information in DVTs may be difficult to interpret when they include visualizations without adequate explanation or use different data sources and definitions for the same indicator when compared to other DVTs.

- These data sources vary in sample methodology (e.g. whether data was collected at household or facility level) and time and frequency of data collection, and therefore can yield different statistics.
- In some cases, the data source appeared to be the same as they quote the same estimate but the documentation of the indicator definition was incomplete, making it difficult to confirm.

The most common types of indicator definition differences fell into four categories:

Figure 3: Indicator definition differences of change definitions used in Indian DVTs may cause confusion

The Champions of Change Dashboard target district officials to monitor progress of critical indicators in Aspirational District Programme

- Target audience are government stakeholders (national, state and district), researchers, and development partners.
- The goal is to track performance of 115 Aspirational Districts Programme* across 5 domains, health and nutrition being one.
- 13 actionable indicators and 31 data points includes input, coverage, and few impact indicators.
- Reference user guides are available that lists methodology and indicator selection criteria and data sources.
- Engagement strategy: NITI Aayog coordinates with state and district officials through WhatsApp groups and regular meetings are held to seek suggestions and dashboard is updated.

Finding #4: Most DVTs reviewed lack input and intervention coverage indicators on adolescence, lactation and newborn care

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3 Menon, Purnima; Avula, Rasmii; Sarswat, Esha; Mani, Sneha; Jangid, Manita; Singh, Anamika; Kaur, Supreet; Dubey, Alok Kumar; Gupta, Shuchita; Nair, Divya; Agarwal, Pulkit; and Agrawal, Nitya. 2020. Tracking India’s progress on addressing malnutrition: What will it take? POSHAN Policy Note 34. New Delhi, India: International Food Policy Research Institute (IFPRI). https://doi.org/10.2499/p15738coll2.133750
When compared to the India Nutrition Indicator Framework\(^3\) (2020) to identify what data is available for tracking the progress of POSHAN Abhiyaan\(^4\), input and intervention coverage indicators on adolescence, lactation and newborn care are missing in most DVTs. Many indicators from the India Nutrition Indicator Framework are not currently being tracked in any of the Indian DVTs we reviewed. This finding aims to only inform the type and extent of indicators across input, coverage, determinants and outcomes covered in DVTs. Many of these DVTs were produced before India Nutrition Indicator Framework was published and each DVT has their own theory of change.

**Finding #5: Half of the DVTs reviewed provide user support**, such as user guides, and/or trainings on nutrition data, interpretation and its use.

**Finding #6: Few DVTs deployed systems for soliciting user feedback** in DVT development process.

DVT producers have not adequately engaged users before development to understand user needs and data literacy. Only 2 DVTs did some form of user research before developing their DVT, such as POSHAN DNPs. Many producers aimed to keep their DVTs “simple”, however few mentioned considering their audience’s data literacy in the design.

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\(^3\) POSHAN (Prime Minister’s Overarching Scheme for Holistic Nutrition) Abhiyaan – India’s flagship programme to improve nutritional outcomes for children, pregnant women and lactating women was launched in March 2018.
This analysis was led by International Food Policy Research Institute (IFPRI), along with Results for Development Institute (R4D) as part of the Data for Decisions to Expand Nutrition Transformation (DataDENT) initiative. DataDENT is a four-year initiative (2017-2021) that aims to transform the availability and use of nutrition data by addressing gaps in nutrition measurement and advocating for stronger nutrition data systems. DataDENT is funded by the Bill & Melinda Gates Foundation, and is implemented by three institutions: Institute for International Programs (IIP) at the Johns Hopkins Bloomberg School of Public Health, the International Food Policy Research Institute (IFPRI), and Results for Development (R4D).

**Recommendations to DVT producers:**

1. Build DVTs around a theory of change, including identifying (a) which decisions by which stakeholders they aim to support, and (b) what actions are needed to deliver change.
2. Collaborate with other Indian DVT producers to improve synergies across DVTs, in terms of goal, design and uniformity to indicator definitions.
3. Include additional input and coverage indicators that align with the DVT’s theory of change.
4. Continue to support users to better use and interpret the data from DVTs.
5. Further strengthen the design and use of the DVT, by conducting user research to understand data literacy and user needs.

More information on the study can be found on the DataDENT website here.

Sources: https://anemiamuktibharat.info/feedback, https://www.dashboard.nintata.res.in/#/contact

Notes: There may be differences in terms of the approach, information collected, and usefulness of information gathered via active and passive feedback. Active = DVT seeking out feedback in person or over email vs passive = something that just sits on the DVT website for anyone who has thoughts.