Implementation science and research in nutrition scale up efforts

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- **Other**
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Presentation objectives

- Connect nutrition interventions to delivery platforms and define implementation research
- Showcase examples of implementation research in nutrition
- Reflect on challenges and opportunities in the context of addressing wasting in South Asia
1. Definitions: Implementation research in nutrition
Defining terms

- **Interventions:** Things we want to get out there
  - Iron-folic acid supplements
  - Zinc tablets with oral rehydration salts
  - Information
  - Nutritional counseling
  - Food supplements
  - RUTF
  - Treatment protocols

- **Delivery platforms:** Ways in which we can get things out there
  - Primary health center, well-child check-up
  - Primary health center, antenatal care
  - Community outreach program with home visits by health workers
  - Mass media campaign
  - Facility-based platforms for treatment
No standard coverage indicator related to screening or treatment for severe wasting
SUBNATIONAL ANALYSES SHOW FURTHER VARIABILITY (COVERAGE BY STATE IN INDIA)

Data from coverage indicator related to screening/growth monitoring not available yet

Sources: NFHS-4. RSoC data was used for indicators on pregnancy registration, food supplementation during pregnancy, lactating and for children, visits by health worker, pediatric IFA and deworming for children.

Menon et al 2017
But, why this gap?

The Black Box of Implementation

Nutrition Interventions

Nutrition Outcomes

The Black Box of Implementation

Slide credit: D. Pelletier and the Society for Implementation Science in Nutrition
Opening the Black Box of Implementation (Five Domains)

1. Objects of Implementation
- Nutrition-specific interventions
- Nutrition-sensitive interventions
- National multisectoral agendas
- NGO projects (usually sub-national)
- Implementation innovations

2. Implementing Organization(s)
- Frontline workers, supervisors and managers

3. Enabling Environment:
- Government, funders, civil society, private sector

4. Individuals, households and communities

5. Implementation Processes
- Initiation, Planning & Design, Implementation, Sustaining

Adapted from Damschroeder et al., *Implementation Science* 4:50, 2009

Slide credit: D. Pelletier and the Society for Implementation Science in Nutrition
SISN’s Five Domains of Implementation: Black Boxes Within Black Boxes

1. Objects of Implementation
   Intervention/Innovation/Guideline/Practice/Policy
   (unadapted)
   • Core components
   • Peripheral components

2. Implementing Organizations
   Organizational Characteristics:
   • Leadership, commitment, readiness, management, competing pressures and priorities, incentives, compatibility with mission, capacity and resources to adopt, adapt, implement, support, monitor and adjust, accountabilities
   Objects (adapted)
   • Core components
   • Peripheral components

3. Enabling Environment and Stakeholder Dynamics:
   Government and donor policies, practices, resources & regulations, peer/ network influences, national, societal & cultural influences, accountabilities

4. Individuals, households and communities:
   Needs, resources, capacities, social, cultural, behavioral, economic, political factors

5. Implementation Processes
   Initiating, Scoping & Engaging
   • assessing fit and readiness with opinion leaders, formal leaders, champions, facilitators, partners
   Planning
   • Theory of Change / PIP
   • Formative research
   • Design & adaptation
   • Implementation strategy
   Implementation, Iterative Improvements & Scaling Up
   • components, sequence, intensity
   • duration, quality improvement,
   • process evaluation, operations
   • research, special studies
   • decisions and adjustments
   Commitment, Support, Financing & Sustainability
   • continuous advocacy, networking, engagement, strategizing, vigilance, reporting and documentation

AAA

Adapted from Damschroeder et al., Implementation Science 4:50, 2009
Pathway to impact for nutrition interventions

**INPUTS** (Domain 1)
- Intervention design & implementation plans, training content, training plans

**PROCESSES**
- (Domains 2, 3) Upstream Processes
  - Management capacities
  - Training processes, motivations
  - Production capacities
- (Domains 2, 3) Midstream Processes
  - Supervision & management processes
  - Supply chain for foods/MNS
- (Domain 4) Downstream Processes
  - Frontline capacities, work loads
  - Local supply chain/stock issues
  - Local product promotion

**OUTCOMES**
- (Domain 5) Quality, scale equity of service delivery, access to products and food
- (Domain 6) Utilization/demand of services, foods and products
- (Domain 5, 6) Coverage/Adherence

**IMPACTS**
- (Domain 7) IMPROVED NUTRITION BEHAVIORS
- IMPROVED NUTRITIONAL STATUS

**Contextual factors** at national and organizational level affecting implementation and sustainability, including stakeholders

**Contextual factors** at community and household levels affecting demand, utilization, adherence and sustainability, including individual capacities of user communities

* Domains 1-7 are defined below.
Implementation research is the systematic approach to understanding and addressing barriers to effective and quality implementation of nutrition interventions, strategies and policies (typically in specific contexts)"

(WHO/TDR Implementation Research Toolkit, 2014)
What do implementation research studies on look like?

- Formative research studies
- Process evaluations nested in impact evaluations
- Experimental studies with operational end-points
- Stand-alone operational assessments
- Responsive rapid studies/analytics
- Costing studies
- Creative routine monitoring
- Implementation-focused analyses of secondary data?
Scaling up: nine key elements

Scaling Up Impact on Nutrition: What Will It Take?¹⁻⁴

Stuart Gillespie,⁵* Purnima Menon,⁶ and Andrew L Kennedy⁷

⁵International Food Policy Research Institute (IFPRI), Brighton, United Kingdom; ⁶IFPRI, New Delhi, India; and ⁷IFPRI, Washington, DC

1) Clear vision and goal for impact
2) Intervention characteristics
3) Enabling operational context
4) Catalysts, champions, ownership
5) Relevant pathways

6) Operational and strategic capacities
7) Adequacy, stability and flexibility of funding
8) Enabling policy and governance system
9) Mechanisms for learning & accountability

Gillespie, Menon and Kennedy, Advances in Nutrition, 2015
Scaling up is highly dependent on operational contexts and implementation research needs to help shed light on the intersection

*Intervention complexity with implementation context complexity*

<table>
<thead>
<tr>
<th>Simpler intervention</th>
<th>Complex intervention</th>
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<tbody>
<tr>
<td><strong>Simpler context</strong></td>
<td><strong>Complex (multi-component) behavioral change communication intervention through community-based nutrition-focused NGO program platform.</strong></td>
</tr>
<tr>
<td>Vit A supplementation through campaign.</td>
<td>Agricultural diversification intervention through nutrition-focused NGO program platform.</td>
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<td>Distribution of micronutrient powders to homes through NGO</td>
<td></td>
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<tr>
<td>platform</td>
<td></td>
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<tr>
<td><strong>Complex context</strong></td>
<td><strong>Integrated complex behavioral change communication, micronutrient supplementation and agricultural extension intervention through women’s self-help groups and links with government health systems.</strong></td>
</tr>
<tr>
<td>Vit A/iron-folate/calcium supplementation, nutrition</td>
<td><strong>Integrated continuum of care (community to facility and back to community) for screening, identification, referral, treatment and follow-up and management, of severe acute malnutrition through multi-purpose, multi-tiered government system</strong></td>
</tr>
<tr>
<td>counseling through multi-purpose, multi-tiered government</td>
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<tr>
<td>health system</td>
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Some challenges with implementation research

- The best place to do this research is within and with programs being implemented.
- Requires reconciling research objectives and values with program implementation objectives and values
- Requires adequate funding for research on implementation and utilization of programs
- Funding and publication bias can discourage relevant research.
- Contextual factors are critically important, especially social, organizational and political contexts
2. Some examples of implementation research in nutrition
Example 1. Results from behavior change intervention evaluations targeting infant feeding in Bangladesh, Ethiopia and Vietnam (children 6-23 months)

Bangladesh context: outreach program, household food diversity & resources. Vietnam context: facility-based program → lower reach to women with children >6 mo of age; high at baseline, low potential to benefit; economic constraints on food purchase were low. Ethiopia context: outreach program, low household food diversity and resources.
Results from breastfeeding behavior change intervention evaluations in Bangladesh, Ethiopia and Vietnam (children 0-6 months)

Ethiopia context: outreach program, low participation of women in workforce

Bangladesh context: outreach program, low levels of women in workforce

Vietnam context: facility-based program, lower reach, high participation of women in workforce, formula marketing rampant

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<thead>
<tr>
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<th>Baseline 2010</th>
<th>Endline 2014</th>
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<tbody>
<tr>
<td>VN - Intensive</td>
<td>18.9</td>
<td>72.4</td>
</tr>
<tr>
<td>VN - Non intensive</td>
<td>17.8</td>
<td>57.8</td>
</tr>
<tr>
<td>BD - Intensive</td>
<td>48.5</td>
<td>87.6</td>
</tr>
<tr>
<td>BD - Non intensive</td>
<td>28.4</td>
<td>82.8</td>
</tr>
<tr>
<td>ET</td>
<td>53.5</td>
<td></td>
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</tbody>
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% Exclusively breastfed
Utilization of nutrition counseling at health facilities in Vietnam was less than optimal despite availability and quality [demand side constraints]

Nguyen et al., 2015
**Example 3: Multiple interventions, across the continuum of care, 2 major delivery platforms, (Odisha, India)**

**INDIA NFHS-3 – had a question on weight measurements in the ICDS!**

**Eighteen percent** of children age 0-59 months in areas served by an *anganwadi* centre have had their weight measured in an AWC. **Orissa is the only state where more than half of the children under age five were weighed in an *anganwadi* centre.** There are 11 states where **not even 10 percent of children** in areas covered by an *anganwadi* centre were weighed in an AWC. With the exception of Bihar and Uttar Pradesh, all these states belong to the North and Northeastern regions. With 24 percent of children under age 5 being weighed, Himachal Pradesh is an exception in the northern region. Similarly, Meghalaya, Mizoram and Sikkim are exceptions in the northeastern region, as at least 23 percent children under age five are weighed in each of these three states.
Example 4: Integrating nutrition interventions in routine health systems in Bangladesh: *sick child visits*

- Weighed and recorded weight
- Measured and recorded height
- Clinically diagnosed for SAM
- Demonstrate IYCF practice using visual job aids
- Checked child's weight against a growth chart
- Counseled on ensuring Vitamin A capsule
- Give age specific advice on inclusion of salt in complementary food
- Used BCC materials to raise awareness on nutrition
- Counseled mothers on food and care required for underweight children

N=>500 sick child case management observations

Saha et al., 2015; Billah et al., *BMC Public Health, forthcoming*
Reflections from implementation research I have been involved in

- Interventions
  - Challenges vary tremendously by intervention type
  - Even seemingly simple interventions have significant systems and capacity needs
  - People must want the intervention (e.g., facility-based counseling is not usually demanded)

- Delivery platforms
  - Reach and maturity of the platform is critical
  - Ability to assure quality and intensity differs by context, even for same type of platform
  - Assuring intervention coverage even within “at-scale” delivery platforms require investments in monitoring, incentives and systems capacities
3. Approaching implementation research in the context of preventing and treating wasting
ISSUES TO CONSIDER IN IMPLEMENTATION RESEARCH ON WASTING PREVENTION AND TREATMENT

Prevention

Identification

Treatment

Prevention of relapse

**Continuum of prevention and treatment for wasting**

**Illustrative questions**

How to effectively deliver preventive actions to address undernutrition – at scale? What platforms work best for children? Preventive actions?

What platforms and approaches integrated into platforms are most effective to support screening and prevention?

How to match treatment modalities to context? How best to integrate treatment with preventive programs?

How to motivate and support staff that deliver these programs?

How best can we set up supportive systems to prevent relapse?

What are the most feasible “graduation criteria”?

COSTING STUDIES!
Closing thoughts

- Tremendous opportunities and a great need to invest in understanding how to support effective interventions both for prevention and treatment of malnutrition.
- Implementation research, embedded in the systems of intervention delivery, can help identify ways to strengthen delivery.
- Key areas for wasting-focused implementation research are on integration with prevention, screening and identification, development and validation of coverage measurements, uptake and adherence, prevention of relapse, and more.

Photo: P. Menon, 2013, Uttar Pradesh
An implementation research framework and agenda

ANNALS OF THE NEW YORK ACADEMY OF SCIENCES
Issue: A Global Research Agenda for Nutrition Science

Strengthening implementation and utilization of nutrition interventions through research: a framework and research agenda

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Undernutrition among women and children contributes to almost half the global burden of child mortality in developing countries. The impact of nutrition on economic development has highlighted the need for evidence-based solutions and yielded substantial global momentum. However, it is now recognized that the impact of evidence-based interventions is limited by the lack of evidence on the best operational strategies for scaling up nutrition interventions. With the goal of encouraging greater engagement in implementation research in nutrition and generating evidence on implementation and utilization of nutrition interventions, this paper brings together a framework and a broad analysis of literature to frame and highlight the crucial importance of research on the delivery and utilization of nutrition interventions. The paper draws on the deliberations of a high-level working group, an e-consultation, a conference, and the published literature. It proposes a framework and areas of research that have been quite neglected, and yet are critical to better understanding through careful research to enable better translation of global and national political momentum for nutrition into public health impact.
FURTHER READING ON LINKING WASTING AND STUNTING

Building Convergence in Science, Programs, and Policy Actions on Child Undernutrition: Symposium Rationale and Overview$^1, 2$

Program Responses to Acute and Chronic Malnutrition: Divergences and Convergences$^1 - 3$

Gilles Bergeron$^4, x$ and Tony Castleman$^5$

$^4$Food and Nutrition Technical Assistance Project, FHI Development 360, LLC. Washington, DC; and $^5$Institute for International Economic Policy, Elliott School of International Affairs, The George Washington University, Washington, DC

ABSTRACT

Program approaches for addressing acute malnutrition and those for addressing chronic malnutrition have grown in different directions. Their specialization has led to productive advances in the efficacy of specific interventions but has also created divergences in implementation. Greater convergence and integration between the 2 sets of approaches would help programs respond to the diversity of conditions faced in the field and enable a more comprehensive continuum of care from prevention to treatment. After reviewing the causes of the differences in approach, this paper examines programmatic and scientific challenges to greater convergence and suggests steps to promote effective integration of acute and chronic malnutrition services. Steps include strengthening community linkages between program platforms, assessing the degree and type of integration needed in various situations, identifying cost efficiencies, and developing joint tools where possible. Adv. Nutr. 3: 242–249, 2012.