THE SOCIETY
FOR IMPLEMENTATION
SCIENCE IN NUTRITION

THE SOCIETY
FOR IMPLEMENTATION
SCIENCE IN NUTRITION

Implementation Science in Nutrition: Rationale, Frameworks and Introduction to the Society

David Pelletier

Society for Implementation Science in Nutrition

Professor of Nutrition Policy

Division of Nutritional Science

Cornell University

Presented at Rollins SPH, Emory University, March 5, 2018

THE SOCIETY FOR IMPLEMENTATION SCIENCE IN NUTRITION

Presentation Outline

1. **The Implementation Opportunity and Challenge**
2. **Definitions, Distinctions and Frameworks**
   - Implementation
   - Implementation research and a classification scheme
   - Implementation science
   - Implementation knowledge
3. **SISN's Integrative Framework**
4. **The Society for Implementation Science in Nutrition**

Part I

The Implementation Opportunity and Challenge

The Opportunity

Scaling Up NUTRITION

ENGAGE • INSPIRE • INVEST

60 countries are leading a **global movement to end malnutrition** in all its forms.

English | Français | Español

UNTRIES SUN SUPPORTERS PROGRES

60 countries and States of Maharashtra and Uttar Pradesh committed to SUN

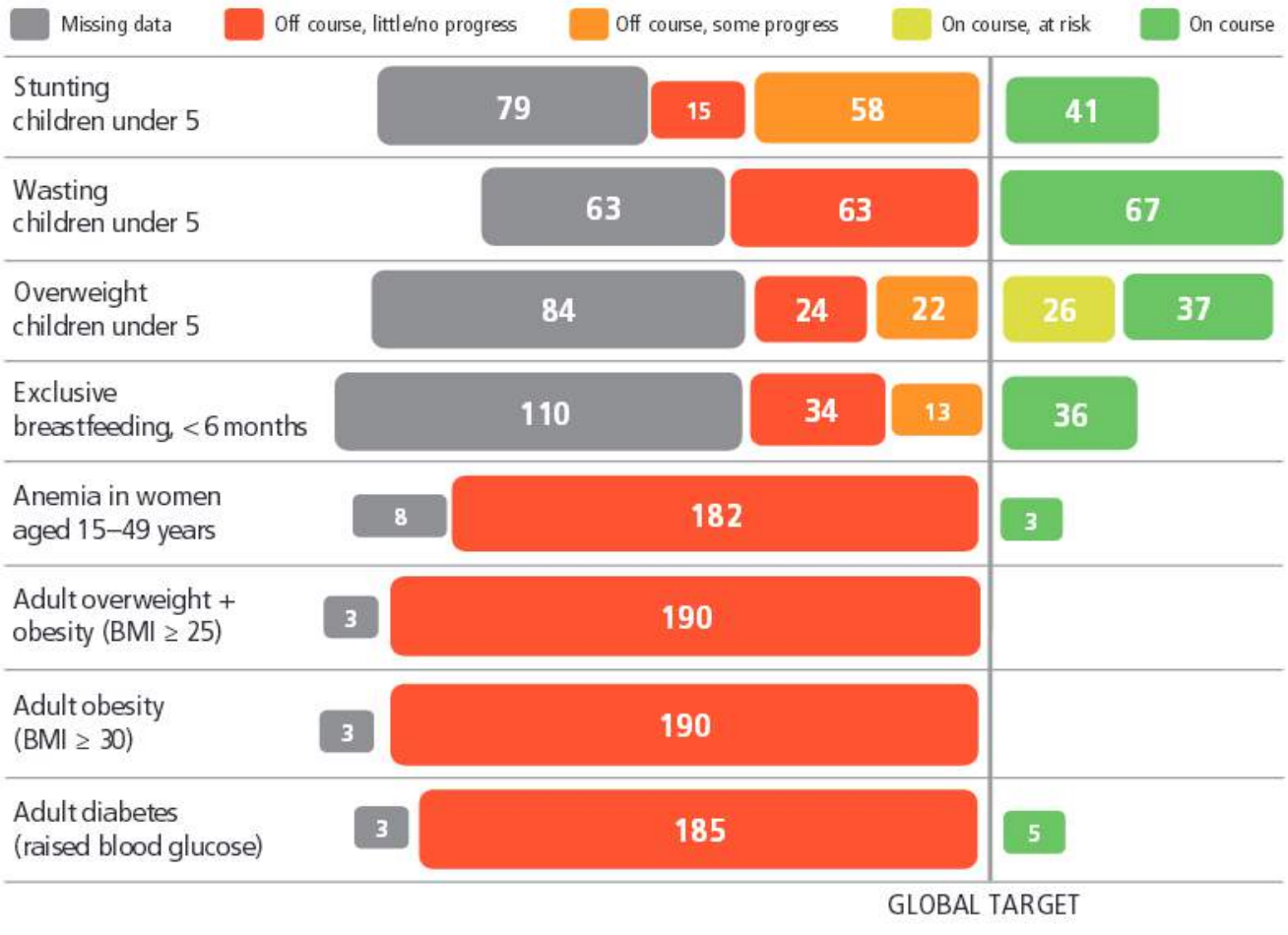
Evolution of Countries and States committed to SUN	
2010	Launch
2011	19
2012	33
2013	41 + 1
2014	54 + 1
2015	56 + 1
2016	57 + 2

Image source: http://scalingupnutrition.org/

THE SOCIETY FOR IMPLEMENTATION SCIENCE IN NUTRITION

The Challenge

FIGURE 2.3 Number of countries at various stages of progress against the global targets on nutrition



Source: Global Nutrition Report 2016

The Challenge

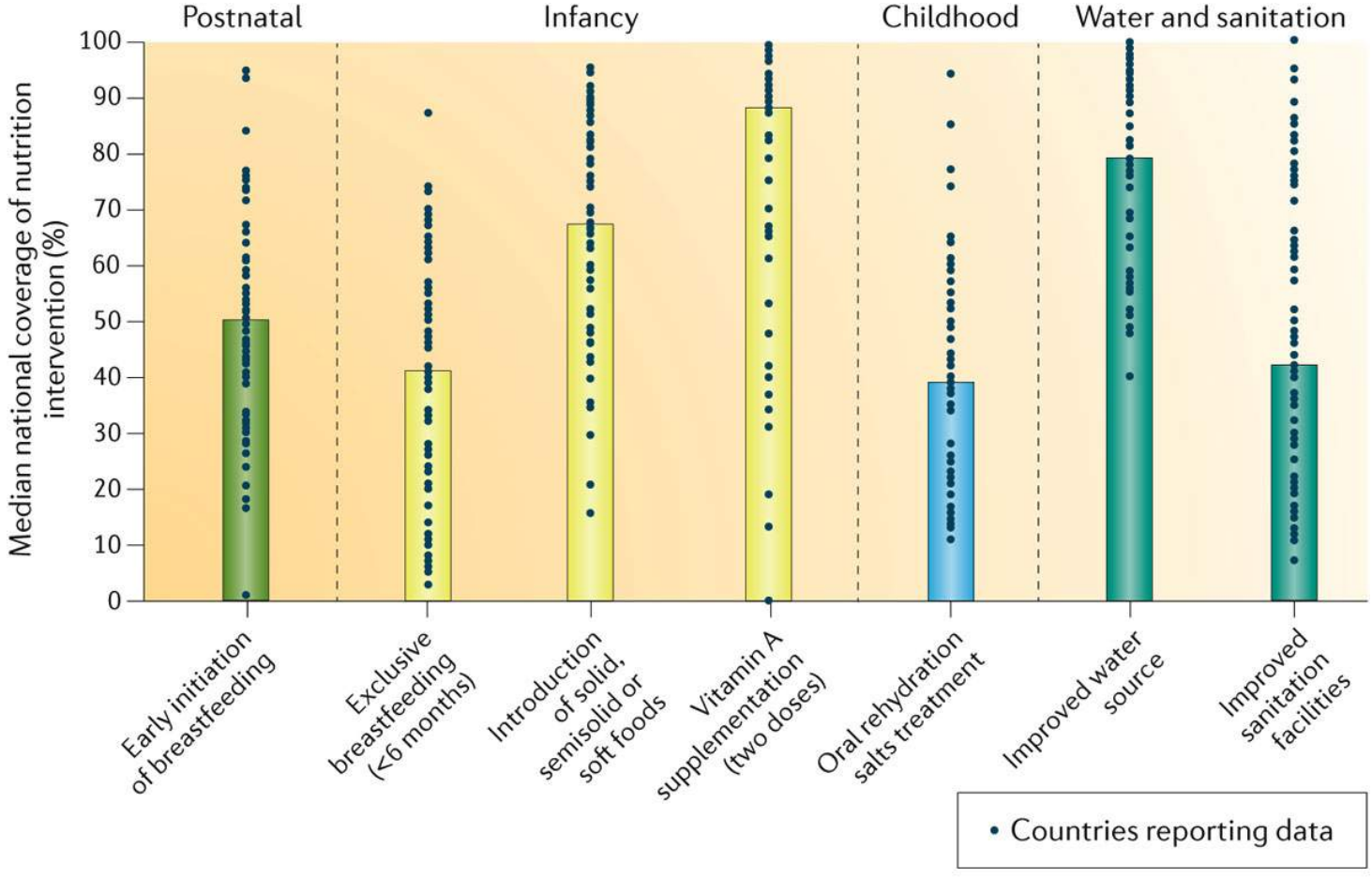


Figure 1: Median coverage and distribution by country of selected nutrition sensitive and specific interventions and behaviors

Source: Bhutta, Z. A. Nat. Rev. Gastroenterol. Hepatol. 2016 Aug;13(8):441-2

The Challenge

The Quality of Health Care Delivered to Adults in the United States

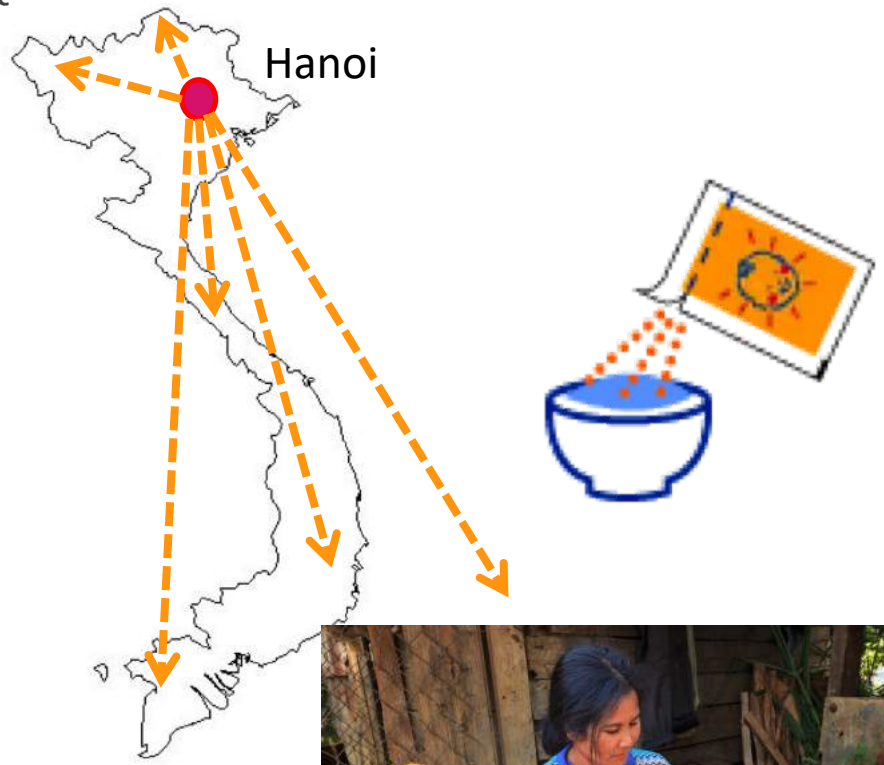
N ENGL J MED 348;26 WWW.NEJM.ORG JUNE 26, 2003

Table 4. Adherence to Quality Indicators, According to Mode.

Mode	No. of Indicators	No. of Participants Eligible	Total No. of Times Indicator Eligibility Was Met	Percentage of Recommended Care Received (95% CI)*
Encounter or other intervention	30	2843	4,329	73.4 (71.5–75.3)
Medication	95	2964	8,389	68.6 (67.0–70.3)
Immunization	8	6700	9,748	65.7 (64.3–67.0)
Physical examination	67	6217	19,428	62.9 (61.8–64.0)
Laboratory testing or radiography	131	5352	18,605	61.7 (60.4–63.0)
Surgery	21	244	312	56.9 (51.3–62.5)
History	64	6711	36,032	43.4 (42.4–44.3)
Counseling or education	23	2838	3,806	18.3 (16.7–20.0)

The Challenge

An Example: What factors might affect the effectiveness of a national micronutrient powder intervention?



A short list:

- Govt approval/registration
- Procurement
- Partner support
- Logistics/ distribution
- Inventory management
- Mother's concerns
- Grandmother's concerns
- Household supplies
- Caregiver knowledge & compliance
- Health worker counseling quality
- Training of health workers
- Broader SBCC initiatives
- etc.

The Reason for the Challenge

Nutrition Interventions

The Black Box of Implementation

Nutritional Status

Nutrition Outcomes

The Reason for the Challenge

Nutrition Interventions

The Black Box of Implementation

Nutritional Status

Nutrition Outcomes

Why We Need Careful Definitions and Thoughtful Frameworks for Implementation Science

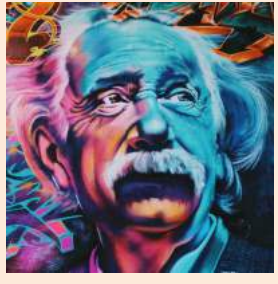
"If all we have is a hammer, everything looks like a nail"

- Conventional notions of "**research**" may not meet the needs of implementers, in terms of the questions, methods, timeliness and dissemination

"If we keep doing what we are doing, we'll keep getting what we're getting"

- Conventional notions of **"implementation"** may not include all the relevant decisions and processes that affect programmatic effectiveness, scale and quality

"We can not solve our problems with the same level of thinking that created them" Einstein



Hammer image source: https://stlong.files.wordpress.com/2011/06/hammer_nail.jpg

THE SOCIETY FOR IMPLEMENTATION SCIENCE IN NUTRITION

Some Sobering Quotes About Implementation

"Information dissemination alone (research literature, mailings, promulgation of practice guidelines) is an ineffective implementation method, and training (no matter how well done) by itself is an ineffective implementation method."

(Fixsen 2005)

"The 'train-and-hope' approach to implementation does not appear to work."

(Stokes & Baer, 1977)

"We are faced with the paradox of non-evidence-based implementation of evidence-based programs."

(Drake, Gorman & Torrey, 2002)

Some Sobering Statistics and Quotes About Research

"We know what to do but we don't know how to do it"

- "Health research is conducted with the expectation that it advances knowledge and eventually translates into improved health systems and population health. However, research findings are often caught in the know-do gap: they are not acted upon in a timely way or not applied at all." (Graham et al., 2018)

- At NIH: $30 billion each year on basic and efficacy research.

- At the Agency for Healthcare Research and Quality (2010): $270 million on research relevant to health quality, dissemination, and outcomes.

"For each dollar spent in discovery, mere pennies are spent learning how interventions known to be effective can be better disseminated." (Glasgow et al., 2012)

Some Sobering Statistics and Quotes About Research

"We know what to do but we don't know how to do it"

- 97% of child health research (2000-4) funded by NIH and BMGF focused on mechanistic research and development of new technologies, with only 3% related to delivery of existing interventions. *(Leroy et al., AJPH 97(2), 2007)*

  But child mortality can be reduced by 62% through coverage of existing interventions (Lancet Child Survival Series, 2003)

- 97% of intervention evaluations in Lancet Paper 3 (2008) were small-scale trials testing the efficacy of interventions, with only 3% testing effectiveness at larger scale

  But stunting can be reduced by 36% through high coverage of existing interventions (Bhutta et al., 2008)

Some Conventional Practices in Implementation and Research

Nutrition Interventions

The Black Box of Implementation

Nutrition Outcomes

Efficacy and Effectiveness Trials

↓

Nutritional Status

Part II

Definitions, Distinctions and Frameworks

Building a Science of Implementation
Frameworks, Syntheses, Terminology, Guidelines and Tools

1. **Frameworks: RTP, Translational, Dissemination and Implementation**
   - A. CDC-Inspired Frameworks
     - DHAP/RTP (Collins 2006, Lyles PRS 2006, Neumann REP 2000)
     - CDC DVP/ISF/QIF/QIT (Wandersman 2008 ISF; Saul 2008, 10 challenges; Meyers 2012)
     - CDC/DHAP/RTP vs CDC/DVP/ISF (Collins, 2012, a comparison)
   - B. The Implementation Process (Durlak, 500 studies of factors affecting implementation)
   - C. Dissemination & Implementation Models (Tabak, 60 models)
   - D. Consolidated Implementation Frameworks (CFIR, Aarons – conceptual, generic)
2. **Capacity (individual, organizational, community)(Flaspohler et al., 2008)**
3. **Support/TA/Brokering Systems (ISF) (Chinman, GTO; Nadeem, updated GTO, Ward on Brokering)**
4. **Reporting Guidelines**
   - A. D/I Research (comprehensive) (Neta, Glasgow et al.)
   - B. Implementation Strategies (Proctor; Gold; Leeman)
   - C. Complex Behavioral Interventions (Michie)
   - D. Implementation Outcomes (Proctor)
5. **D&I Terminology and Constructs Measurement (Rabin)(GEM/NCI)**

Implementation

"Implementation involves systematic and planned efforts within a system (or organization) to introduce and institutionalize a policy, plan, program, intervention, guideline, innovation or practice and ensure its intended effects and impacts."

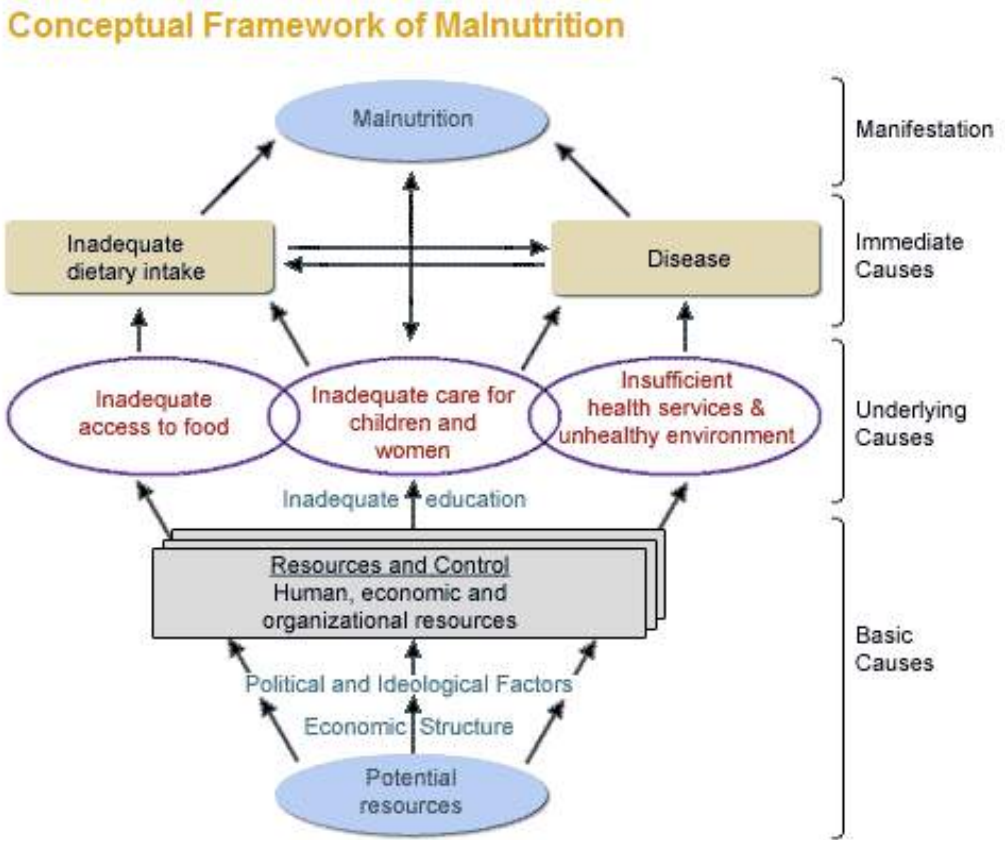
(adapted fromWHO/TDR Implementation Research Toolkit, 2014)

Opening the Black Box of Implementation: The Five Domains Whose Characteristics, Capacities, Dynamics and Fit Affect Implementation Quality

(Adapted from Damschroder et al., *Implementation Science* 4:50, 2009)

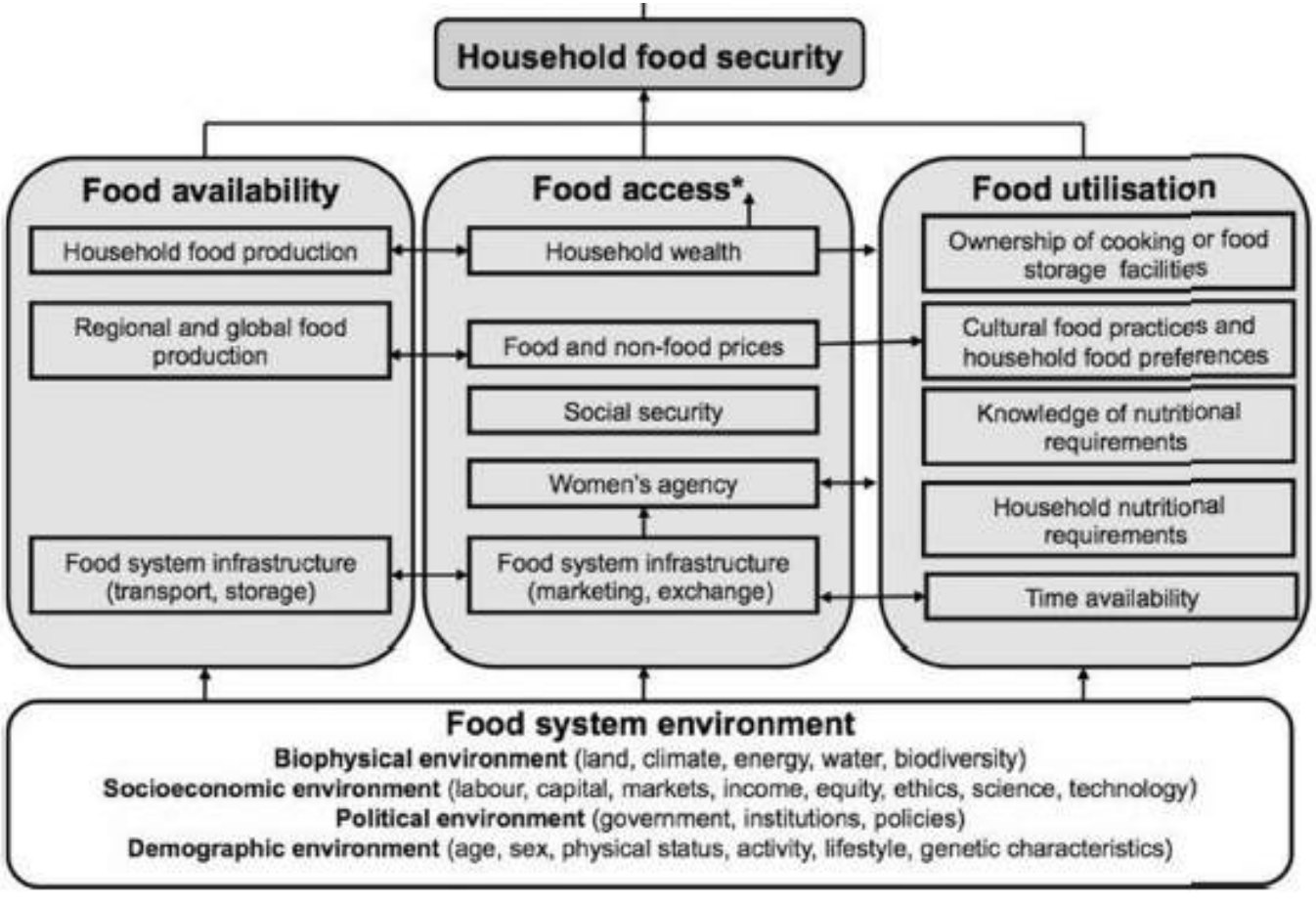
THE SOCIETY FOR IMPLEMENTATION SCIENCE IN NUTRITION

Conceptual Frameworks as Entry Points for Deeper Analysis: Parallels with the UNICEF Nutrition Strategy



THE SOCIETY FOR IMPLEMENTATION SCIENCE IN NUTRITION

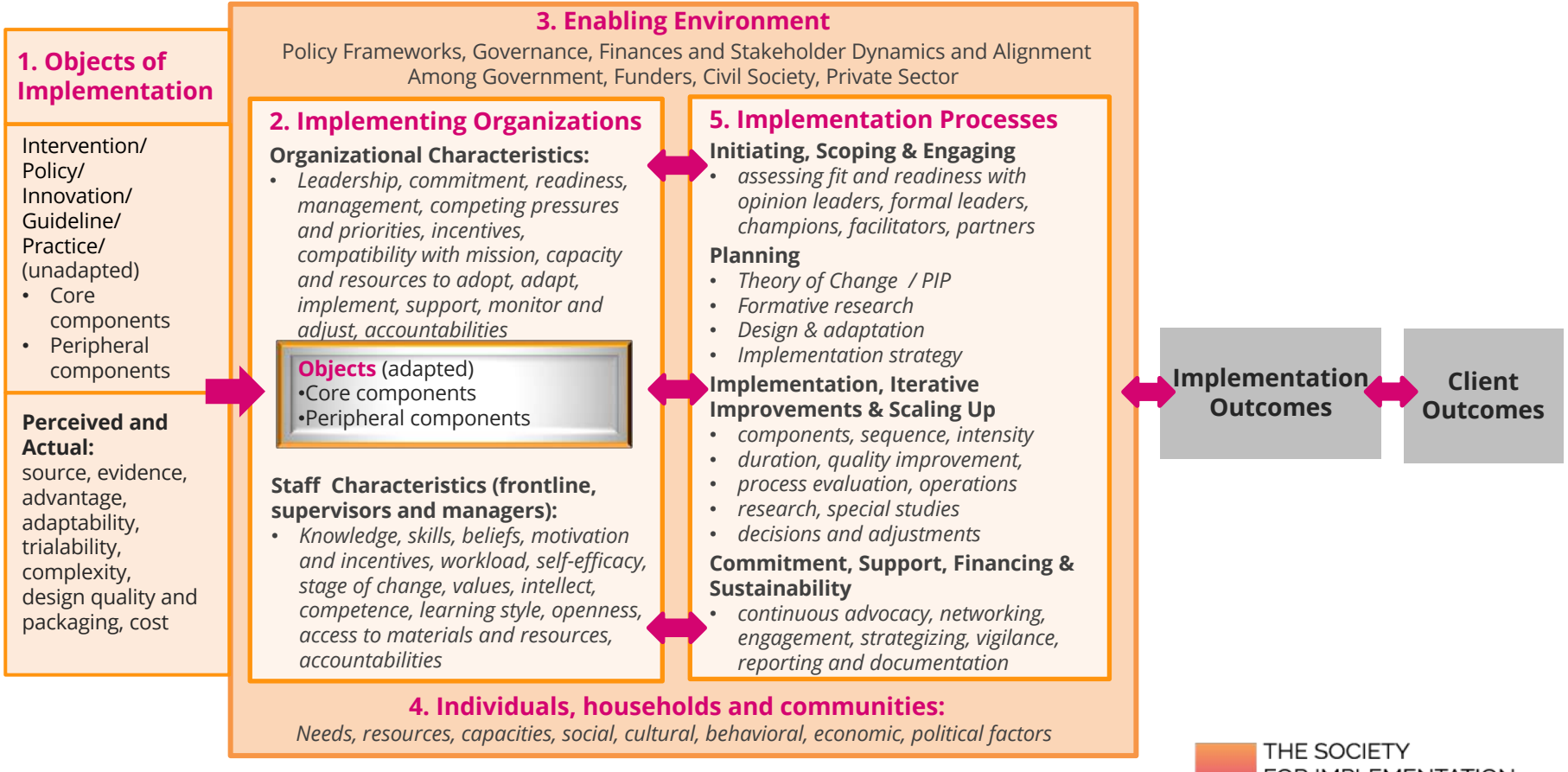
A More Detailed Framework for HHFS



Journal of Health, Population and Nutrition2015**33**:2
https://doi.org/10.1186/s41043-015-0022-0

THE SOCIETY FOR IMPLEMENTATION SCIENCE IN NUTRITION

The Five Domains that Affect Implementation Quality with Specific Factors in Each Domain

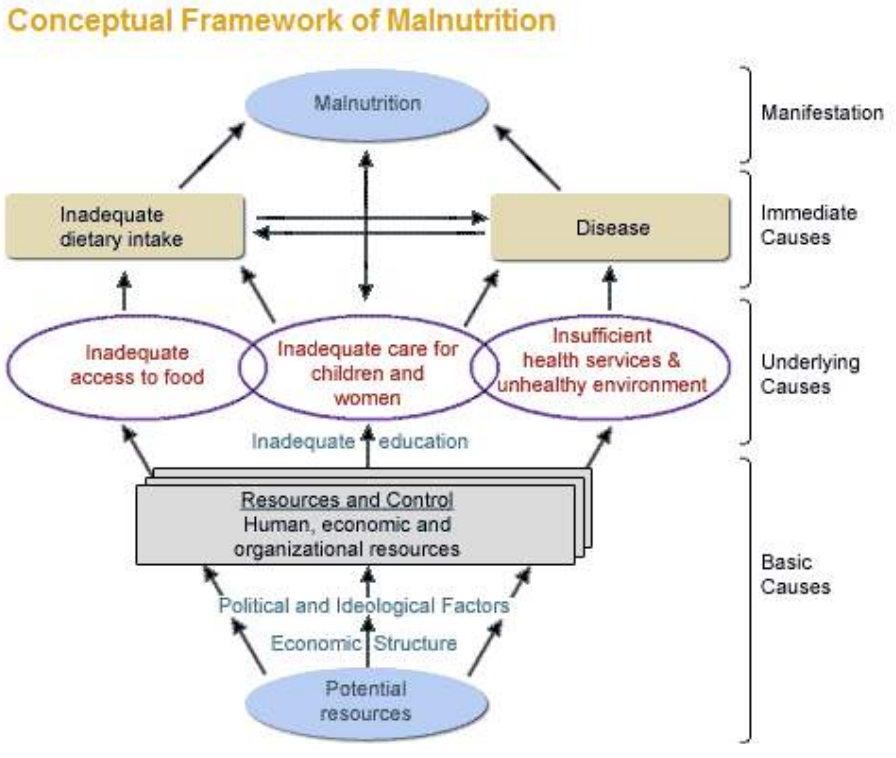


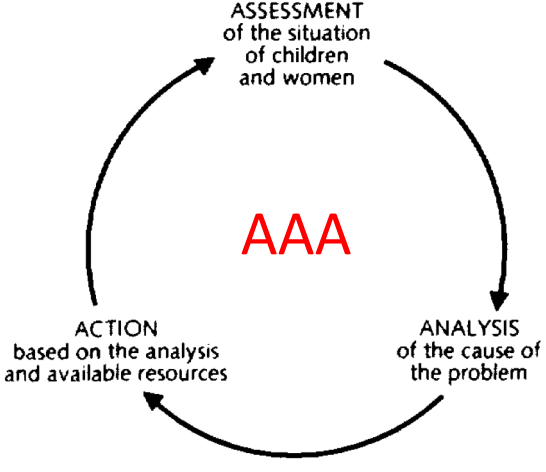
www.implementnutrition.org

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

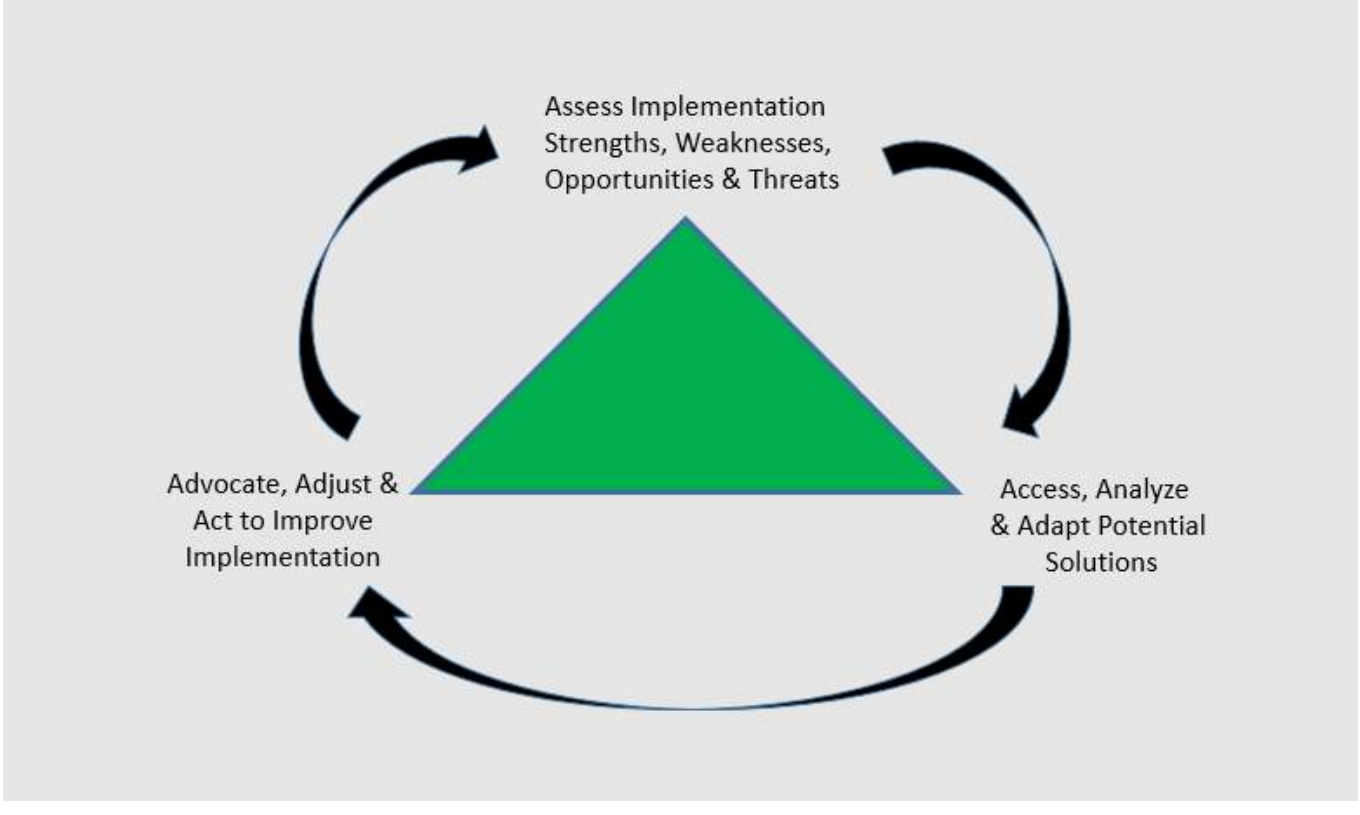
THE SOCIETY FOR IMPLEMENTATION SCIENCE IN NUTRITION

Conceptual Frameworks as Entry Points for Deeper Analysis: Parallels with the UNICEF Nutrition Strategy





Implementation Science as a Triple A Cycle



THE SOCIETY
FOR IMPLEMENTATION
SCIENCE IN NUTRITION

SISN's Five Domains of Implementation: More Detailed Frameworks

1. Objects of Implementation

Intervention/
Policy/
Innovation/
Guideline/
Practice/
(unadapted)

- Core components
- Peripheral components

Perceived and Actual:
source, evidence, advantage, adaptability, trialability, complexity, design quality and packaging, cost

3. Enabling Environment

Policy Frameworks, Governance, Finances and Stakeholder Dynamics and Alignment Among Government, Funders, Civil Society, Private Sector

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

Staff Characteristics (frontline, supervisors and managers):

- *Knowledge, skills, beliefs, motivation and incentives, workload, self-efficacy, stage of change, values, intellect, competence, learning style, openness, access to materials and resources, accountabilities*

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

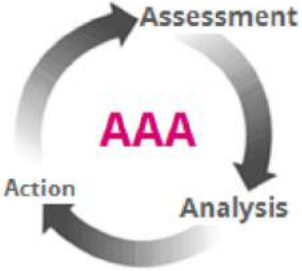
- *components, sequence, intensity*
- *duration, quality improvement,*
- *process evaluation, operations*
- *research, special studies*
- *decisions and adjustments*

Commitment, Support, Financing & Sustainability

- *continuous advocacy, networking, engagement, strategizing, vigilance, reporting and documentation*

4. Individuals, households and communities:

Needs, resources, capacities, social, cultural, behavioral, economic, political factors



Implementation Outcomes ↔ **Client Outcomes**

www.implementnutrition.org

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

THE SOCIETY FOR IMPLEMENTATION SCIENCE IN NUTRITION

Implementation Research (IR)

Implementation Research refers to "a variety of methods of assessment, inquiry and formal research whose purpose is to systematically assess, build on strengths and address potential weaknesses within and between each of the five domains that affect implementation."

(Adapted from WHO/TDR Implementation Research Toolkit, 2014)

A Classification Scheme of Implementation Research

THE SOCIETY FOR IMPLEMENTATION SCIENCE IN NUTRITION

	4. Commitment, Support, Financing and Sustainability		
Diverse Objects of Implementation	**1. Initiating and Scoping**	**2. Planning and Design**	**3. Implementing, Iterative Improvement and Scaling Up**
Nutrition-specific interventions			
Nutrition-sensitive actions			
Operationalizing a national multisectoral nutrition agenda			
NGO projects (typically sub-national)			
Implementation Innovations			

A Classification Scheme of Implementation Research

THE SOCIETY FOR IMPLEMENTATION SCIENCE IN NUTRITION

	4.Commitment, Support, Financing and Sustainability		
Diverse Objects of Implementation	**1.Initiating and Scoping**	**2. Planning and Design**	**3.Implementing, Iterative Improvement and Scaling Up**
Nutrition-specific interventions	diverse forms of assessments, stakeholder analysis, opinion leader research and consultations to guide: agenda setting, identification of policy/ program/intervention options and their fit with a) the problem and b) delivery capacities c) available collaborations/ partnerships and d) available resources	diverse forms of formative research and consultations (at multiple scales/administrative levels) to guide the detailed design of policies/ programs/interventions and development of detailed implementation guidelines, guided by explicit PIPs or Theories of Change.	diverse forms of operations research, special studies, process evaluation, quality improvement/quality assurance schemes and monitoring and evaluation systems.
Nutrition-sensitive actions			
A national multisectoral nutrition agenda			
NGO projects (typically sub-national)			
Implementation innovations			

A Few Examples of IR in the Published Literature

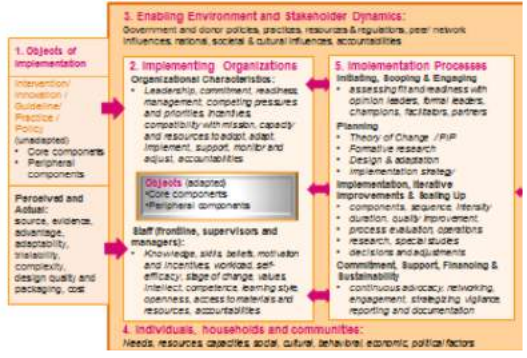
THE SOCIETY FOR IMPLEMENTATION SCIENCE IN NUTRITION

	4.Commitment, Support, Financing and Sustainability 18. Prioritizing and Funding the Uganda Nutrition Action Plan 19. Nutrition Leadership: Drivers and Constraints in Four Countries 20. The Gear Model for Scaling Up Breastfeeding		
Diverse Objects of Implementation	**1. Initiation and Scoping**	**2.Planning and Design**	**3. Implementation, Iterative Improvement and Scaling Up**
Nutrition-specific interventions	1.Stakeholder Perspectives on Regulating School Food in Mexico	2. Ca and IFA Suppl in Kenya	3. IFA in Pakistan 4. IFA Faltering (DHS)
Nutrition-sensitive actions	5. Stakeholder Perceptions of Nutrition-Sensitive Agric in East Africa	6. National Flour Fortification 7. Landscape Analysis of Nutr-Sensitive Agric in Senegal	
Operationalizing a national multisectoral nutrition agenda	8. Intersectoral Convergence in Odisha, India	9. Governance of MSN in Nepal	10. MSN in Burkina, Ethiopia, Mali, Uganda
NGO projects (typically sub-national)		11. IYCF Behavior Change in Bangladesh 12. Mama Sasha (OFSP) in Kenya 13. IYC Foods in Kenya	14.. HKI Homestead FP in Cambodia 15. QI / PDSA cycles
Implementation innovations	16. MNP Delivery Model in Vietnam 17. Program Assessment Guide (PAG)		

Part III

An Integrative Framework for Implementation Science

Implementation Research refers to "a variety of methods of assessment, inquiry and formal research whose purpose is to systematically assess, build on strengths and address potential weaknesses within and between each of the five domains that affect implementation."



A Problem with this Construction:

Given the complexity of implementation, and…
…..the many, many weaknesses in the five domains, and….
…..the inability for implementers to wait for 'research findings'

- **It is NOT feasible to "systematically assess and address (ALL) potential weaknesses within and between each of the five domains during all phases of the implementation process"**

The Practical Solution: A Broad Definition of Implementation Science

"… an interdisciplinary body of theory, knowledge, frameworks, tools and approaches whose purpose is to strengthen implementation quality and impact."

It is NOT just new empirical research – it is "the science of implementation."

Implementation Science and Implementation Knowledge

- A great deal is already known about implementation, such that many of the most common mistakes could be prevented by **applying current knowledge rather than undertaking new investigations;**
- Much of this **current knowledge** has already been packaged into practical tools, frameworks and guidelines that **can be adapted and used in a variety of settings;**
- The **greatest "gap" lies in knowledge utilization**, rather than in generating new knowledge. This knowledge utilization gap exists in nutrition, health, education and most other sectors, and it exists in high income countries as well as low and middle income countries;
- **The most urgent need in nutrition implementation is to close this knowledge utilization gap by making these practical tools, frameworks and guidelines more readily accessible,** through various forms of capacity building, technical assistance, coaching, knowledge brokering and dissemination. This is a research agenda in itself.

Three Categories of Implementation Knowledge

CKE: Contextual Knowledge and Experience (often tacit)

The knowledge and experience of actors in a given country used in everyday decision when planning and implementing programs, including:

- *Stakeholder relations, histories and dynamics,*
- *Capacity strengths and weaknesses,*
- *What has or has not worked, where, when, how, why*
- *Formal and informal administrative procedures, etc.*

CIR: Contextual Implementation Research

Practical inquiries embedded in and connected to implementation in a given country, such as:

- *formative research,*
- *stakeholder analysis,*
- *opinion leader research,*
- *rapid assessments,*
- *operations research,*
- *special studies,*
- *process evaluation,*
- *costing studies,*
- *Delphi studies,*
- *various forms of quality improvement or quality assurance, etc.*

GKE: Global Knowledge and Experience

Published or unpublished findings, frameworks, tools and guidelines from:

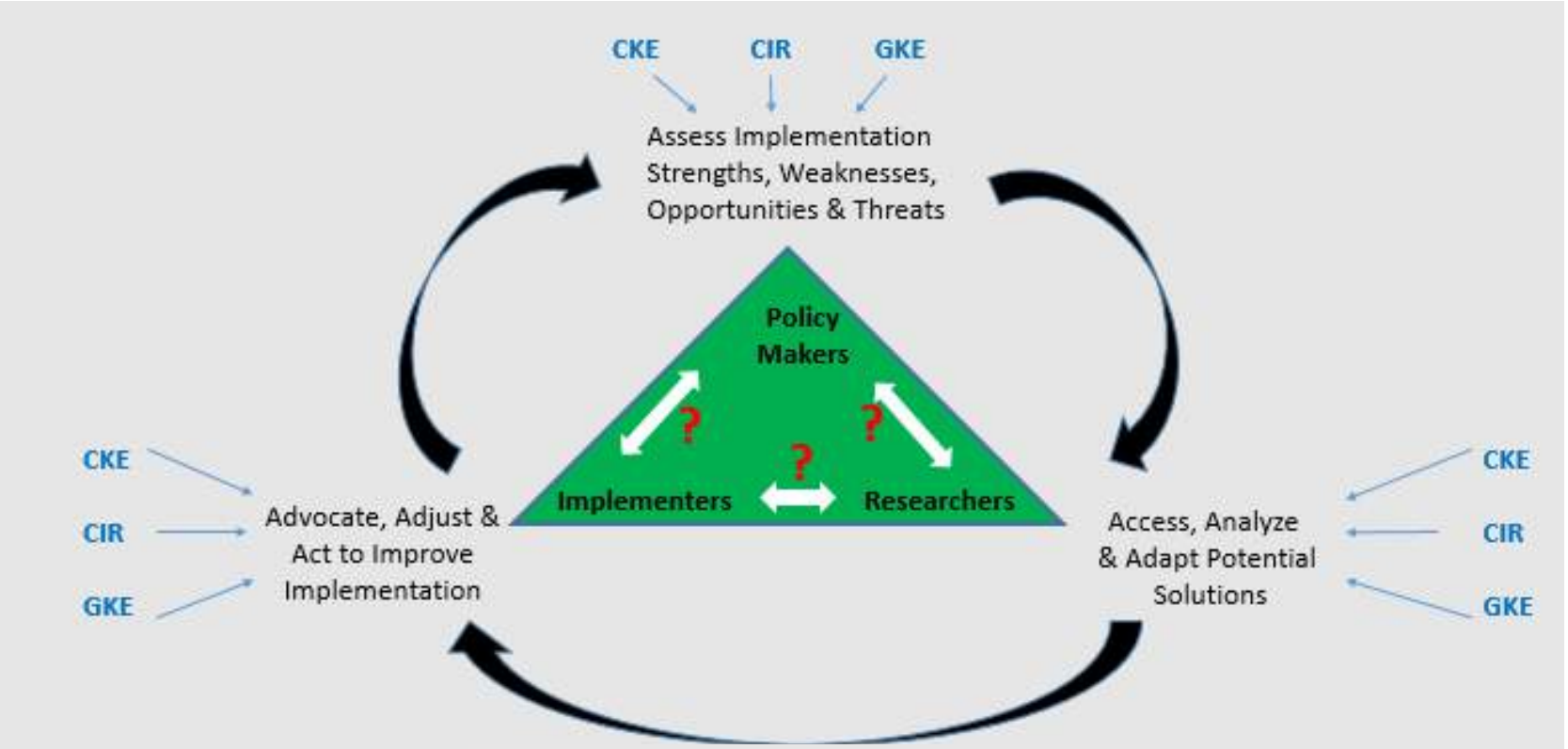
- *implementation research in <u>other</u> countries*
- *implementation experience in <u>other</u> countries*

and

Experiential knowledge of practitioners from other countries

THE SOCIETY FOR IMPLEMENTATION SCIENCE IN NUTRITION

Recognizing Three Categories of Knowledge and Connecting Key Actors in the Triple A Cycle



CKE = contextual knowledge and experience
CIR = contextual implementation research
GKE = global knowledge and experience

THE SOCIETY FOR IMPLEMENTATION SCIENCE IN NUTRITION

SISN's Integrative Framework for IS in Nutrition: Part 1: Using Existing Knowledge

Implementation Science:
Existing and Emerging Knowledge About Implementation

Frameworks, Tools, Guidelines

Capacity Building, Technical Assistance, Knowledge Brokering, Coaching

The Goal

Collaboratively Assess, Build on Strengths and Address Weaknesses in The Five Domains in a Timely Manner During All Phases of Planning and Implementation

1. Objects of Implementation

- Nutrition-specific interventions
- Nutrition-sensitive interventions
- National policies
- Emergency nutrition response
- Implementation innovations, guidelines or practices

3. Enabling Environment
Policy Frameworks, Governance, Finances and Stakeholder Dynamics and Alignment Among Government, Funders, Civil Society, Private Sector

2. Implementing Organization(s) and Staff
In ministries, NGOs, private sector

5. Implementation Processes
Initiation, Planning, Implementation, Sustaining

4. Individuals, Households and Communities
Needs, Resources, Capacities, Social, Cultural, Behavioral, Economic, Political factors

THE SOCIETY FOR IMPLEMENTATION SCIENCE IN NUTRITION

SISN's Integrative Framework for IS in Nutrition: Part 2: Creating and Using New Knowledge

1. Contextual, Tacit and Experiential Knowledge (CKE)

3. Formal and Rigorously Evaluated Implementation Trials, Proofs of Concept & Evaluation of Innovative Implementation Practices (from the same or different settings) (GKE)

Implementation Science: Existing and Emerging Knowledge About Implementation

2. Contextual Implementation Research (CIR)

Frameworks, Tools, Guidelines

Capacity Building, Technical Assistance, Knowledge Brokering, Coaching

The Goal

Collaboratively Assess, Build on Strengths and Address Weaknesses in The Five Domains in a Timely Manner During All Phases of Planning and Implementation

1. Objects of Implementation

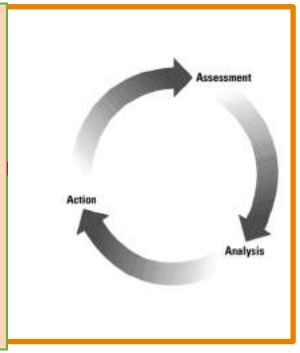
- Nutrition-specific interventions
- Nutrition-sensitive interventions
- National policies
- Emergency nutrition response
- Implementation innovations, guidelines or practices

3. Enabling Environment
Policy Frameworks, Governance, Finances and Stakeholder Dynamics and Alignment Among Government, Funders, Civil Society, Private Sector

2. Implementing Organization(s) and Staff
In ministries, NGOs, private sector

5. Implementation Processes
Initiation, Planning, Implementation, Sustaining

4. Individuals, Households and Communities
Needs, Resources, Capacities, Social, Cultural, Behavioral, Economic, Political factors



THE SOCIETY FOR IMPLEMENTATION SCIENCE IN NUTRITION

How This Differs from Conventional Practices and Business as Usual

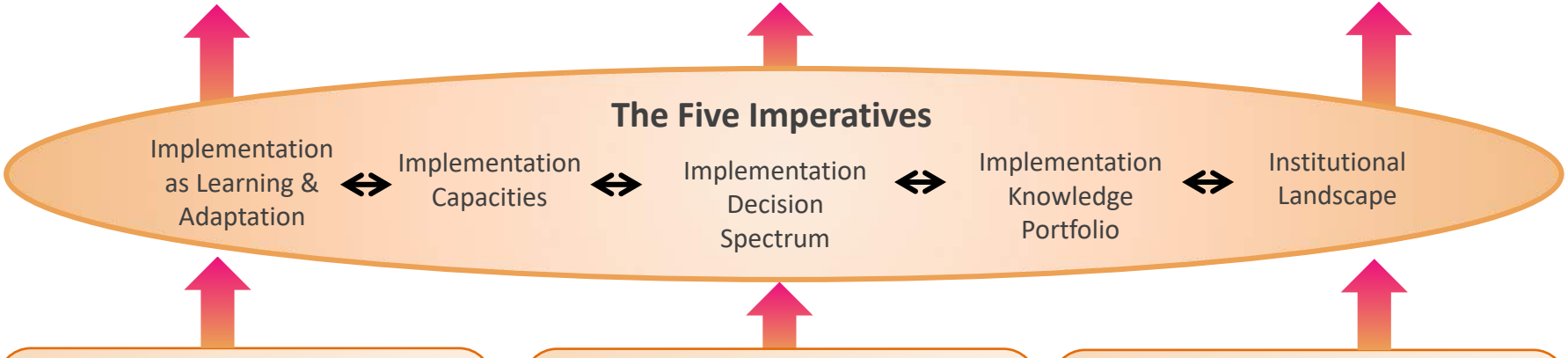
This Framework Cautions Against:

- Focusing on generating new knowledge while neglecting the utilization of existing knowledge
- Privileging scientific knowledge while overlooking the value of contextual, experiential and tacit knowledge
- Emphasizing rigorous trials while neglecting the diverse methods for contextual inquiries
- Emphasizing research on certain objects of implementation (such as nutrition-specific interventions) and neglecting others (such as nutrition-sensitive actions, national multisectoral agendas and implementation innovations)
- Conducting research on field-level implementation processes while neglecting the problems and bottlenecks at the other three stages in the implementation cycle
- Strengthening capacity of implementing organizations and staff (through training) while neglecting critical bottlenecks in the other four domains.

Part IV

The Society for Implementation Science in Nutrition (SISN)

SISN Vision: A world where actions to improve nutrition are designed and implemented with the best available scientific knowledge and practical experience.



Goal 1.
Advance the theory, methods and conduct of implementation science in nutrition

Goal 2.
Strengthen the capacities and support for implementation science

Goal 3.
Create and maintain an innovative and effective implementation science knowledge management system

Goal 4. Ensure that SISN's members are inclusive of all stakeholder categories required for its mission

Goal 5. Ensure that SISN is well-governed, well-managed, appropriately resourced, accountable and sustainable

Current SISN Priorities and Activities

1.Disseminate guidance on IS/IR principles and research methods	Webinars, journal articles
2.Identify and disseminate case studies of implementation science in nutrition (via webinars, briefs, publications, curricula, workshops…)	Ongoing; collab welcome
3.Develop IS/IR training materials and curricula	Planned for 2018/19; collab welcome
4. Funded opportunities for short- and medium-term implementation science capacity development	not yet; collab welcome
5.Increase awareness, funding and use of IR in SUN countries	Planned for 2018/19;
6.Develop curated toolkits to strengthen a variety of implementation tasks	Planned for 2018/19
7.Guidance for deploying innovative mechanisms for technical assistance, knowledge brokering and coaching to facilitate evidence/knowledge uptake	Planned for 2018/19
8.Collaboration in Kenya and Uganda (on anemia control programs) to prospectively learn, document and share lessons on IS/IR	Ongoing
9. SISN membership, Nominations and Elections for the Board in 2018, Working Group members, Core funding	Ongoing

Key Messages

1. The high level commitment to nutrition now creates an urgent need for large-scale implementation and impact

2. Business-as-usual implementation and business-as-usual research is not sufficient: Both must change. Good examples already exist.

3. The "Integrative Framework" presented here provides a way to improve the quality of implementation in a practical and timely fashion, by systematizing, integrating and utilizing diverse forms of knowledge at all stages of the implementation process

4. SISN provides a mechanism for implementers, researchers and other parties to collaborate in this effort

SISN

- Check out our website: www.implementnutrition.org
- E-mail us at: info@implementnutrition.org
- Follow us: @implementnutri

The Society for Implementation Science in Nutrition

THE SOCIETY FOR IMPLEMENTATION SCIENCE IN NUTRITION

References

- Bhutta, Z.A., et al., What works Interventions for maternal and child undernutrition and survival. The Lancet, 2008. 371(9610): p. 417-440.
- Bhutta, Z. A. Nutrition: How will the next 'Decade of Nutrition' be different from the past one? *Nat. Rev. Gastroenterol. Hepatol.* 2016 Aug;13(8):441-2
- Damschroeder et al. Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science Imp Sci 2009 4:50
- Glasgow, R.E., et al., National institutes of health approaches to dissemination and implementation science: Current and future directions. American Journal of Public Health, 2012. 102(7): p. 1274-1281.
- Horton R Maternal and child undernutrition: an urgent opportunity Lancet 2008 Volume 371 (9608) 179 Available from: http://www.thelancet.com/series/maternal-and-child-undernutrition
- International Food Policy Research Institute. Global Nutrition Report 2016: From Promise to Impact – Ending Malnutrition by 2030. Available from: http://globalnutritionreport.org/the-report/
- Leroy, J.L., et al., Current priorities in health research funding and lack of impact on the number of child deaths per year. Am J Public Health, 2007. 97(2): p. 219-23.
- Proctor, E., Silmere, H., Raghavan, R., Hovmand, P., Aarons, G., et al Outcomes for implementation research: conceptual distinctions, measurement challenges, and research agenda. *Adm Policy Ment Health Ment Health Serv Res 2011, 38*, 65 - 76.
- WHO/TDR Implementation Research Toolkit, 2014 Available from: http://www.who.int/tdr/publications/topics/ir-toolkit/en/

References for Case Studies

1. Monterrosa, E.C., et al., *Stakeholder perspectives on national policy for regulating the school food environment in Mexico.* Health Policy and Planning, 2015. **30**(1): p. 28-38.

2. Martin, S.L., et al., *Adherence partners are an acceptable behaviour change strategy to support calcium and iron-folic acid supplementation among pregnant women in Ethiopia and Kenya: Acceptability of adherence partners to support micronutrient supplementation.* Maternal & Child Nutrition, 2016.

3. Bin Nisar, Y., et al., *Perceptions of antenatal iron-folic acid supplements in urban and rural Pakistan: a qualitative study.* BMC PREGNANCY AND CHILDBIRTH, 2014. **14**(1): p. 344-344.

4. Sununtnasuk, C., A. D'Agostino, and J.L. Fiedler, *Iron+folic acid distribution and consumption through antenatal care: identifying barriers across countries.* Public health nutrition, 2016. **19**(4): p. 732-11.

5. Hodge, J., et al., *Is There an Enabling Environment for Nutrition-Sensitive Agriculture in East Africa?* Food and Nutrition Bulletin, 2015. **36**(4): p. 503-519.

6. Pena-Rosas, J.P., et al., *Monitoring and evaluation in flour fortification programs: design and implementation considerations.* Nutrition Reviews, 2008. **66**(3): p. 148-162.

7. Lachat, C., et al., *Landscape Analysis of Nutrition-sensitive Agriculture Policy Development in Senegal.* Food and Nutrition Bulletin, 2015. **36**(2): p. 154-166.

8. Kim, S.S., et al., *Understanding the role of intersectoral convergence in the delivery of essential maternal and child nutrition interventions in Odisha, India: a qualitative study.* BMC Public Health, 2017. **17**(1): p. 161.

9. Webb, P., et al., *Measuring Nutrition Governance.* Food and Nutrition Bulletin, 2016. **37**(4_suppl): p. S170-S182.

10. Pelletier D, Gervais S, Hafeez-ur-Rehman H, Sanou D, Tumwine J. Boundary-spanning actors in complex adaptive governance systems: The case of multisectoral nutrition. Int J Health Plann Mgmt. 2017;1–27. https://doi.org/10.1002/hpm.2468

References for Case Studies (continued)

11. Menon, P., R. Rawat, and M. Ruel, *Bringing Rigor to Evaluations of Large-Scale Programs to Improve Infant and Young Child Feeding and Nutrition: The Evaluation Designs for the Alive & Thrive Initiative.* Food and Nutrition Bulletin, 2013. **34**(3_suppl2): p. S195-S211.

12. Cole, D.C., et al., *Planning an integrated agriculture and health program and designing its evaluation: Experience from Western Kenya.* Evaluation and Program Planning, 2016. **56**: p. 11-22.

13. Tumilowicz, A., et al., *Using implementation research for evidence-based programme development: a case study from Kenya.* Maternal & Child Nutrition, 2015. **11**: p. 1-5.

14. Olney, D.K., et al., *Using Program Impact Pathways to Understand and Improve Program Delivery, Utilization, and Potential for Impact of Helen Keller International's Homestead Food Production Program in Cambodia.* Food and Nutrition Bulletin, 2013. **34**(2): p. 169-184.

15. Coleman, K.J., et al., *The healthy options for nutrition environments in schools (Healthy ONES) group randomized trial: using implementation models to change nutrition policy and environments in low income schools.* International Journal of Behavioral Nutrition and Physical Activity, 2012. **9**(1): p. 80.

16. Nguyen, M., et al., *A Delivery Model for Home Fortification of Complementary Foods with Micronutrient Powders: Innovation in the Context of Vietnamese Health System Strengthening.* NUTRIENTS, 2016. **8**(5): p. 259.

17. Pelletier, D., et al., *The Program Assessment Guide: An Approach for Structuring Contextual Knowledge and Experience to Improve the Design, Delivery, and Effectiveness of Nutrition Interventions.* Journal of Nutrition, 2011. **141**(11): p. 2084-2091.

18. Pomeroy-Stevens, A., et al., *Prioritizing and Funding the Uganda Nutrition Action Plan.* Food and Nutrition Bulletin, 2016. **37**(4_suppl): p. S124-S141.

19. Nisbett, N., et al., *What drives and constrains effective leadership in tackling child undernutrition? Findings from Bangladesh, Ethiopia, India and Kenya.* Food Policy, 2015. **53**: p. 33-45.

Permission For Use

Please share the presentation recording and this pdf of the slides with colleagues and other implementation stakeholders

This presentation and the associated pdf slides may be copied in any form and used for non-commercial purposes provided that:

- The content is not altered
- It is clearly indicated that SISN is the originator of this material
- **Cite as:** Society of Implementation Science in Nutrition *Implementation Science in Nutrition: Rationale, Frameworks and Introduction to the Society, April 2018*
- Available from: https://www.implementnutrition.org/implementation-science-in-nutrition-emory-presentation/
- Please include the following statement when using one or more of the slides in your own presentation: Slide courtesy of the Society for Implementation Science in Nutrition (www.implementnutrition.org)
- Please contact us at info@implementnutrition.org if you require this content in a different format.

THE SOCIETY FOR IMPLEMENTATION SCIENCE IN NUTRITION

THE SOCIETY
FOR IMPLEMENTATION
SCIENCE IN NUTRITION

THE SOCIETY
FOR IMPLEMENTATION
SCIENCE IN NUTRITION