Integrating nutrition into health systems: what the evidence advocates

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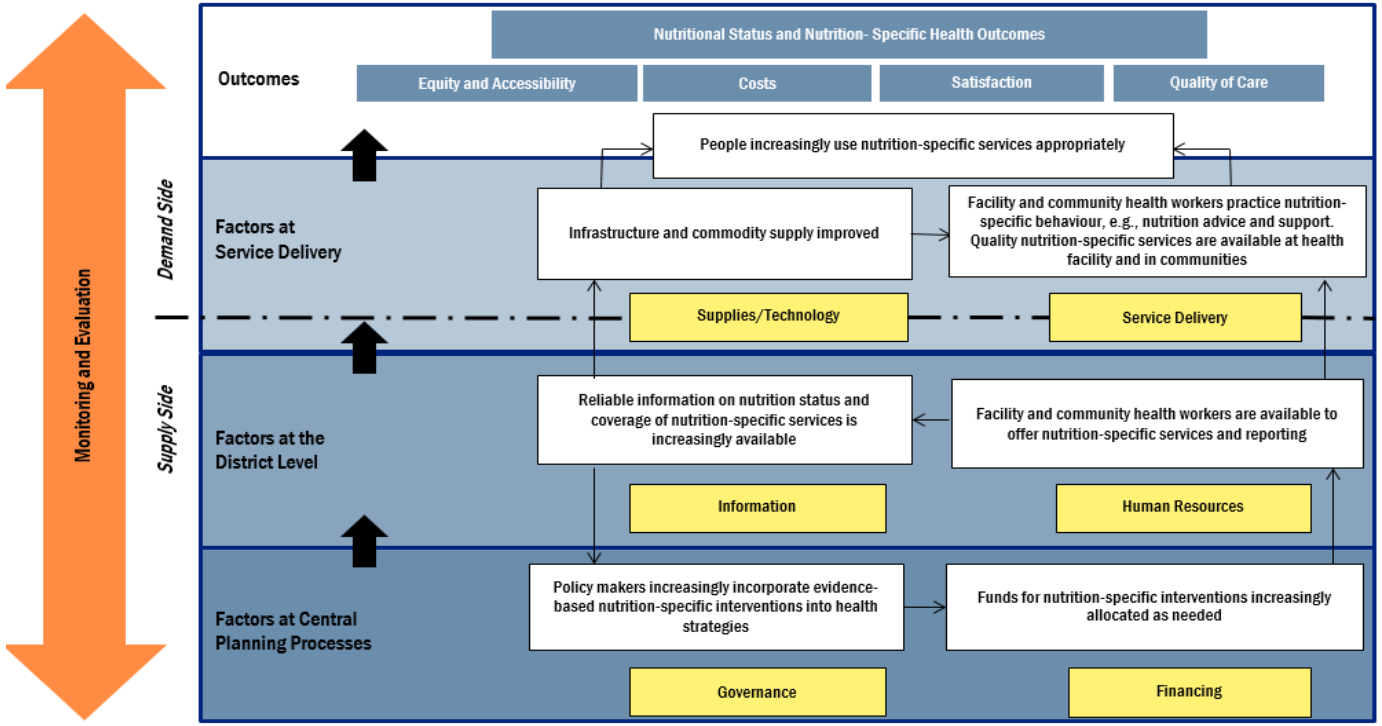
Background

- Scaling up evidence-based interventions could impact nutritional status
- Vertical scale-up might not suffice unless as a temporary measure or a rapid response
- Health programs and the contexts in which they operate are complex
- It is difficult to establish which points of integration are the most effective

Objective of Review

- To map the existing integration platforms, describe an innovative conceptual framework, and review the evidence on integrated health and nutrition programs and their impacts on specific nutrition outcomes

Conceptual Framework



Integration Definition

We defined nutrition integration as

"*the extent of adoption and eventual assimilation of nutrition interventions into critical health system functions (building blocks)*"

Eligibility

- **Inclusion criteria:** Peer-reviewed publications evaluating programs integrating nutrition-specific interventions with other programs without any date restrictions
- **Exclusion criteria:**
  - Studies evaluating the impact of stand-alone programs on nutrition outcomes
  - Studies evaluating the impact of packaged delivery of interventions in which nutrition interventions were a part of the package
  - Did not integrate nutrition interventions into existing health systems and did not follow our definition of integration

Methods

- Used PRISMA statement for systematic review
- Searched MEDLINE, PubMed & CENTRAL till Oct 2017
- Two abstractors screened titles, abstracts, and full texts through the Covidence® screening and extraction tool to identify relevant studies
- A third reviewer resolved any disagreements on the selection of studies.

Analysis

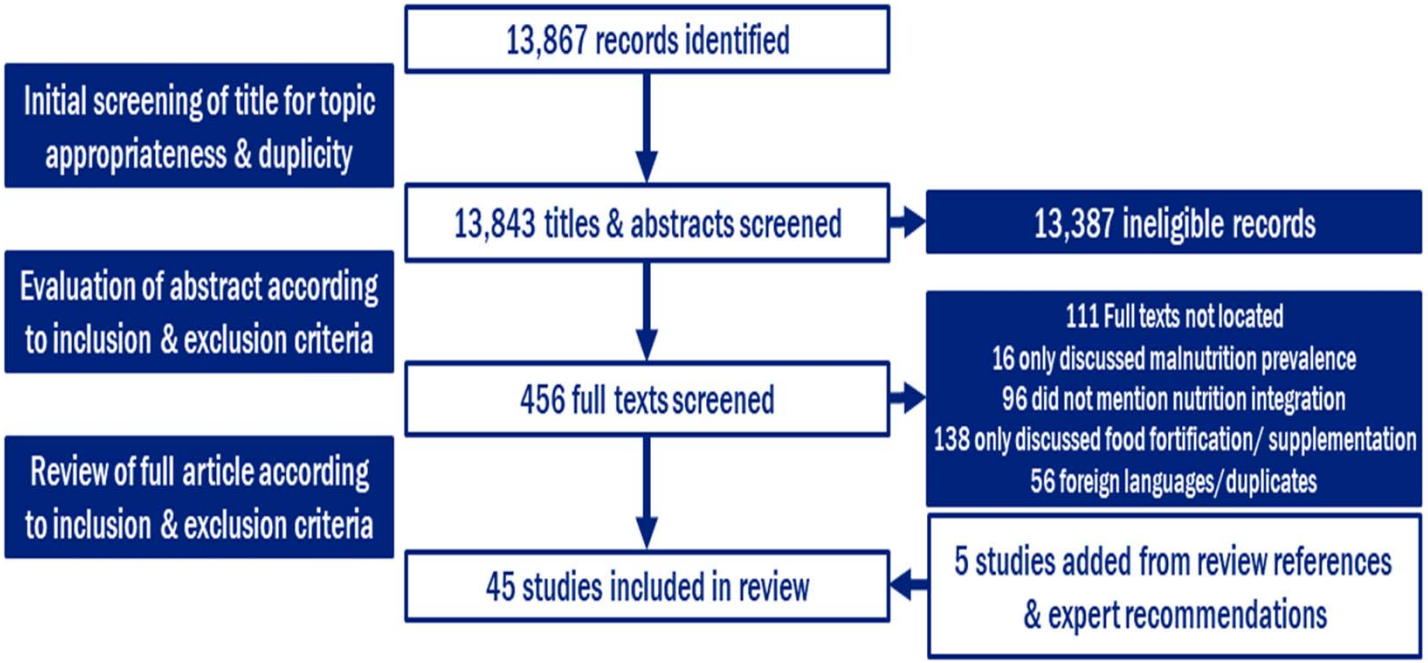
- We mapped the integrated programs based on the primary programs
- We assessed the extent of integration in the identified six WHO building blocks
- We calculated mean scores for each building block and graphically depicted the integration through spider web charts
- We analyzed the quantitative impact on nutrition and non-nutrition outcomes through meta-analysis (where possible)

Extent of Integration in each Building Block

	Degree of integration		
Building blocks	1 = not integrated	2 = partially integrated	3 = fully integrated
Governance	Complete governance of the nutrition-specific interventions is under an independent body other than the primary programme	Nutrition-specific interventions' governance is shared with the primary programme governance	Complete governance of the nutrition-specific interventions is under the primary programme
Financing	Finances provided solely by an entity separate from the primary programme	Sharing of finances between the primary programme and the nutrition-specific interventions	All the financial requirements are met through the primary programme
Information systems	The nutrition-specific interventions have separate data procedures, rather than being included in the primary programmes	Nutrition-specific interventions have separate data procedures, in addition to being somehow included in existing procedures for the primary programme	Data collection for the nutrition-specific interventions is through existing primary programmes mechanisms
Health workforce	Additional staff carry out the nutrition-specific interventions, parallel to the primary programme staff	Existing staff and additional staff jointly carry out the interventions of the primary programme and the nutrition-specific interventions	The existing staff of the primary programme performed the entire duties of the nutrition-specific interventions
Supplies and Technology	The nutrition-specific interventions have separate logistics and distribution support, separate from the primary programmes	Nutrition-specific interventions use existing logistic and distribution support, along with their own new channels	Existing distribution channels are used for the delivery of the nutrition-specific interventions
Service delivery	Nutrition-specific interventions have service delivery centres or mode of delivery separate from the primary programme	Nutrition-specific interventions partially carried out through the existing primary programmes service delivery mechanisms	All the nutrition-specific interventions are delivered through the primary programme channel

Main Findings

Search Flow Diagram



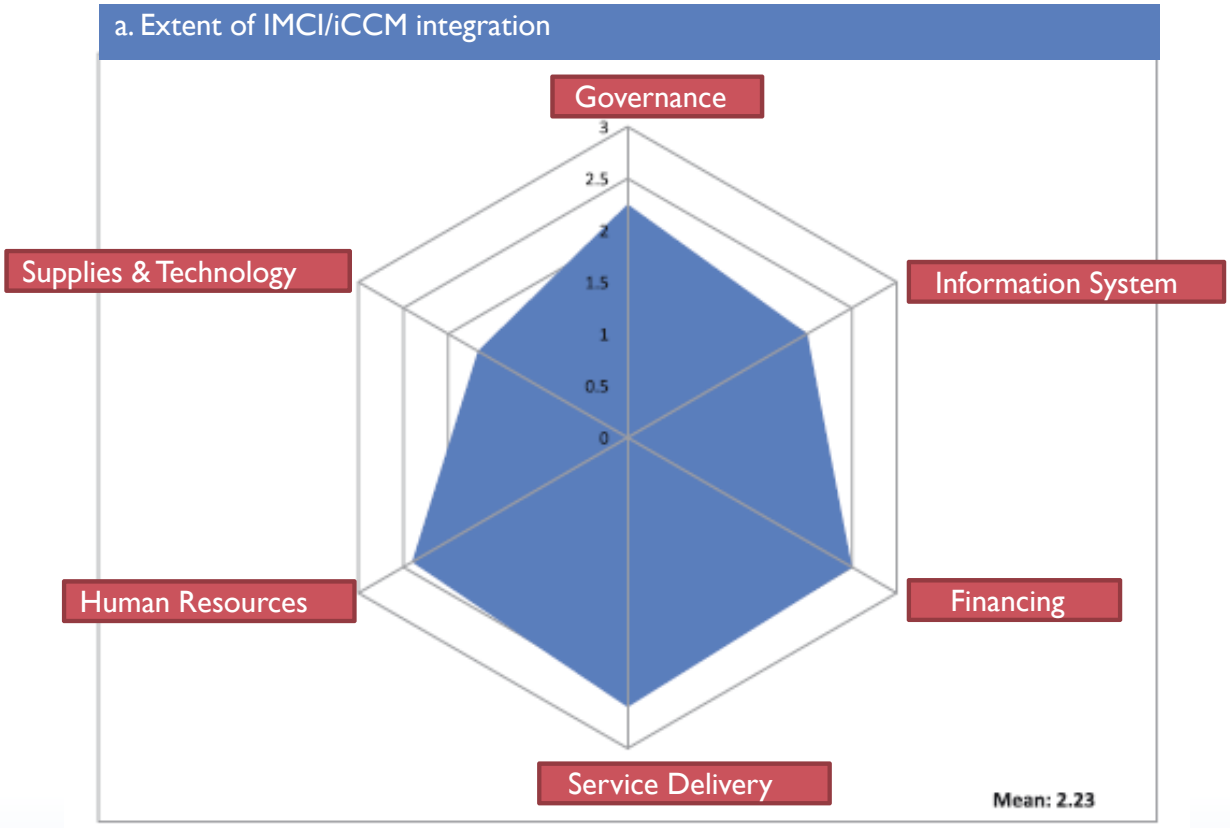
Mapping Nutrition Integration based on the Primary Programs

Primary programs, or "integration platforms," included:

- Nutrition interventions integrated with the Integrated Management of Childhood Illness and integrated community case management (IMCI/iCCM) (12 studies from 6 programs)
- Integrated management of severe and moderate acute malnutrition (SAM/MAM) into health services (10 studies from 6 programs)
- Integrated nutrition interventions into Child Health Day (CHD) (2 studies from 2 programs)
- Integrated nutrition interventions into immunization (6 studies from 6 programs)
- Nutrition interventions into social programs, including ECD (3 studies from 2 programs) and cash transfers (1 study from 1 program)
- Others (11 studies from 8 programs)

Nutrition Interventions Integrated with IMCI/iCCM

Extent of Integration

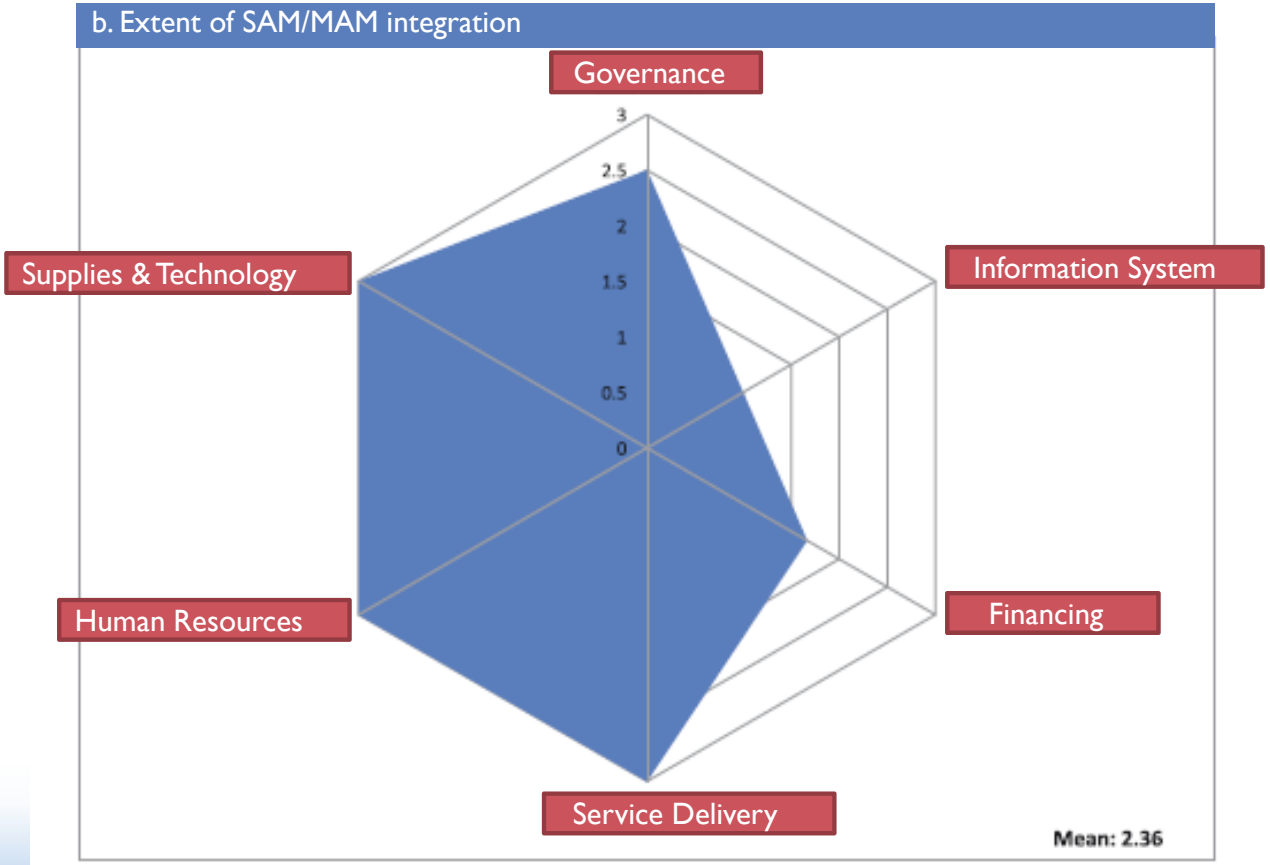


Quantitative Impact

Outcomes	Pooled effect sizes [RR and 95% CIs]
Integrated nutrition and IMCI/iCCM programmes	
Child younger than 6 months exclusively breastfed	RR: 1.27 [0.70, 2.30]; three studies I^2 = 98%; random model
Child aged 6–9 months receiving breast milk and complementary feeding	RR: 1.24 [0.56, 2.71]; two studies; I^2 = 100%; random model
Wasting in children aged 0–23 months (<−2 WHZ)	RR: 1.08 [0.93, 1.24]; three studies; I^2 = 32%; fixed model
Stunting in children aged 24–59 months	RR: 1.04 [0.97, 1.11]; two studies; I^2 = 0%; fixed model
Care seeking for children with danger signs	**RR: 1.44 [1.18, 1.75]; three studies; I^2 = 76%; random model**
Child illness correctly classified	RR: 6.48 [0.19, 223.87]; two studies; I^2 = 97%; random model
Child with pneumonia correctly treated	**RR: 2.65 [1.17, 6.02]; three studies; I^2 = 79%; random model**

Integrated management of SAM/MAM into Health Services

Extent of Integration

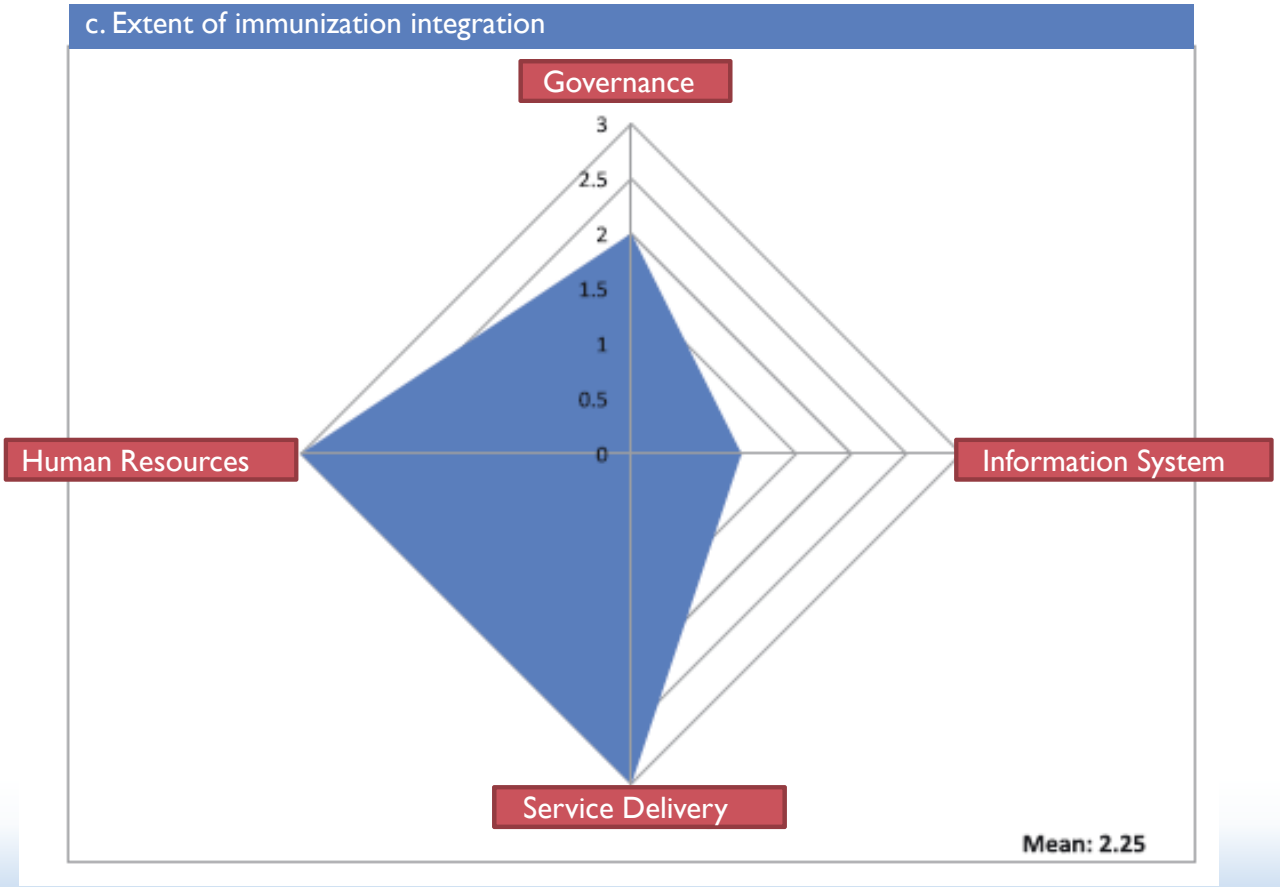


Quantitative Impact

- Meta-analysis could not be conducted
- Recovery from SAM ranged from 18% in a facility based management program in India; 23% in the primary care health care system in Ethiopia; 50% in South Africa; 65% in the community component in India; and 70% in Zambia
- Recovery from MAM in Zambia program was around 80% and children with HIV infection who were able to initiate antiretroviral therapy had lower mortality (RR 0.23; 95%CI 0.10, 0.57; P = 0.0008)

Integrated Nutrition Interventions into Immunization

Extent of Integration



Quantitative Impact

Outcomes	Pooled effect sizes [RR and 95% CIs]
Initiated breastfeeding within first hour	RR: 3.74 [1.21, 11.62]; two studies; I^2 = 99%; random model
Underweight	RR: 0.47 [0.13, 1.69]; three studies; I^2 = 89%; random model

Nutrition Interventions Integrated with Social Programs (ECD and Cash Transfers)

Social Safety Nets & Nutrition

- Extent of integration and quantitative analysis could not be done due to very limited number of studies in the domain
- A single study on integrated nutrition and cash transfer program reported significantly higher SAM recovery, lower MAM and SAM relapse in the integrated group
- Change in weight, WAZ, WHZ and BMI z-score were also significantly better
- There was no difference in change in height/length, height/age, or mid-upper arm circumference

Key Messages

- Nutrition-specific interventions were integrated with various programmes including IMCI/iCCM, child health days, immunisation, ECD and cash transfers
- Commonly integrated nutrition-specific interventions included counselling of mothers on early initiation of breastfeeding, exclusive breastfeeding, infant and young child feeding practices, growth monitoring, supplementary feeding, micronutrient supplementation, and early identification, management and referral for SAM and MAM
- Lack of rigorous quantitative data & information on nutrition-specific indicators
- Evidence suggested a positive impact on a few nutrition outcomes with no adverse effects on the delivery of primary program
- Domains of governance, service delivery and human resources were well-integrated; while information system, financing and medicines/technologies were the least integrated domains

Conclusion

- Scarce data around integrated nutrition programs
- Mixed evidence and information gaps
- Evidence suggest potential for integrating nutrition interventions into health and related programs
- Future integrated programs should take into account all aspects of the building blocks to ensure efficiency, long-term sustainability, and impact

For more information, please visit

www.mcsprogram.org

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