



What Does Nutrition Cost? New Resources in Costing Complex Nutrition Interventions

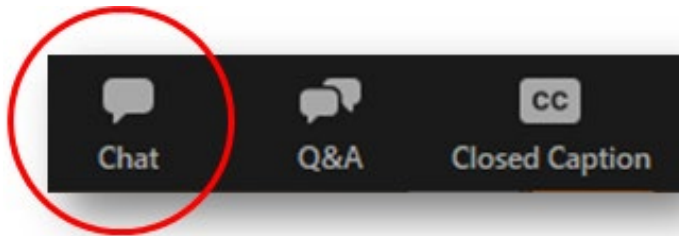
April 26, 2023
10:00-11:00 AM EDT (GMT -4)



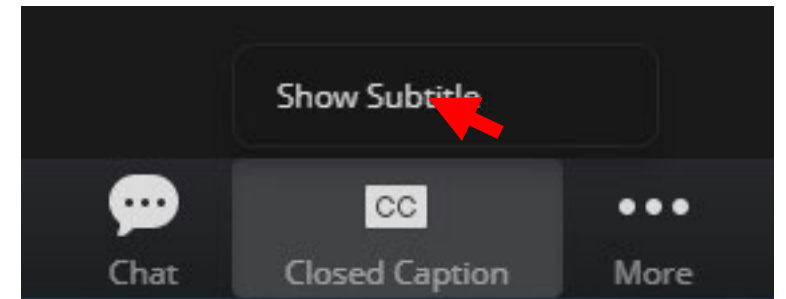
Zoom Webinar Reminders



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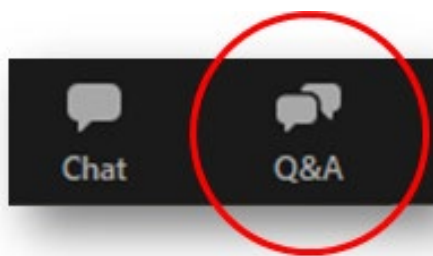


- Please send a message to *Everyone* in the chat box to introduce yourself, send in your questions, or ask for support during today's webinar.
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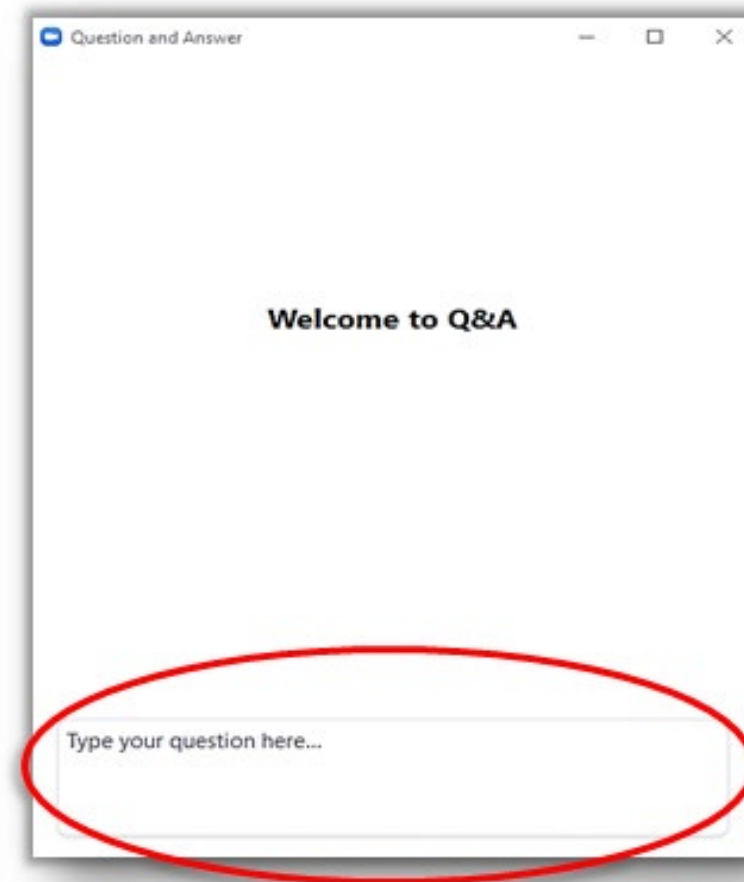


Zoom Webinar Reminders

Please submit your questions for the panelists in the Q&A box.



Panelists will either reply back to you via text in the Q&A box or will answer your question during the QA discussion portion of the webinar.



Agenda

1. Opening Remarks
2. What are the costs of multisectoral approaches to improved maternal and child nutrition? New resources in costing complex nutrition interventions
3. The business case for investing in nutrition social and behavior change
4. Q&A Discussion
5. Closing

Opening Remarks

Setting the stage: economic evaluations and cost-effectiveness for nutrition



Rebekah Pinto

Deputy Chief, Nutrition and Environmental Health Division, USAID
Bureau for Global Health

What are the costs of multisectoral approaches to improved maternal and child nutrition? New resources in costing complex nutrition interventions.



Carol Levin

Clinical Associate Professor, University of Washington; Project Director,
Strengthening Economic Evaluation for Multisectoral Strategies for Nutrition

What are the costs of multisectoral approaches for improved maternal and child nutrition?

New resources in costing complex nutrition interventions

USAID Advancing Nutrition
April 26, 2023

Carol Levin, PhD
Department of Global Health, University of Washington



Evidence on costs and benefits of multi-sectoral nutrition-sensitive programming is missing and this delays progress



Multi-sectoral nutrition-sensitive actions are **critical** to achieve the WHA targets for nutrition by 2025 and the SDGs



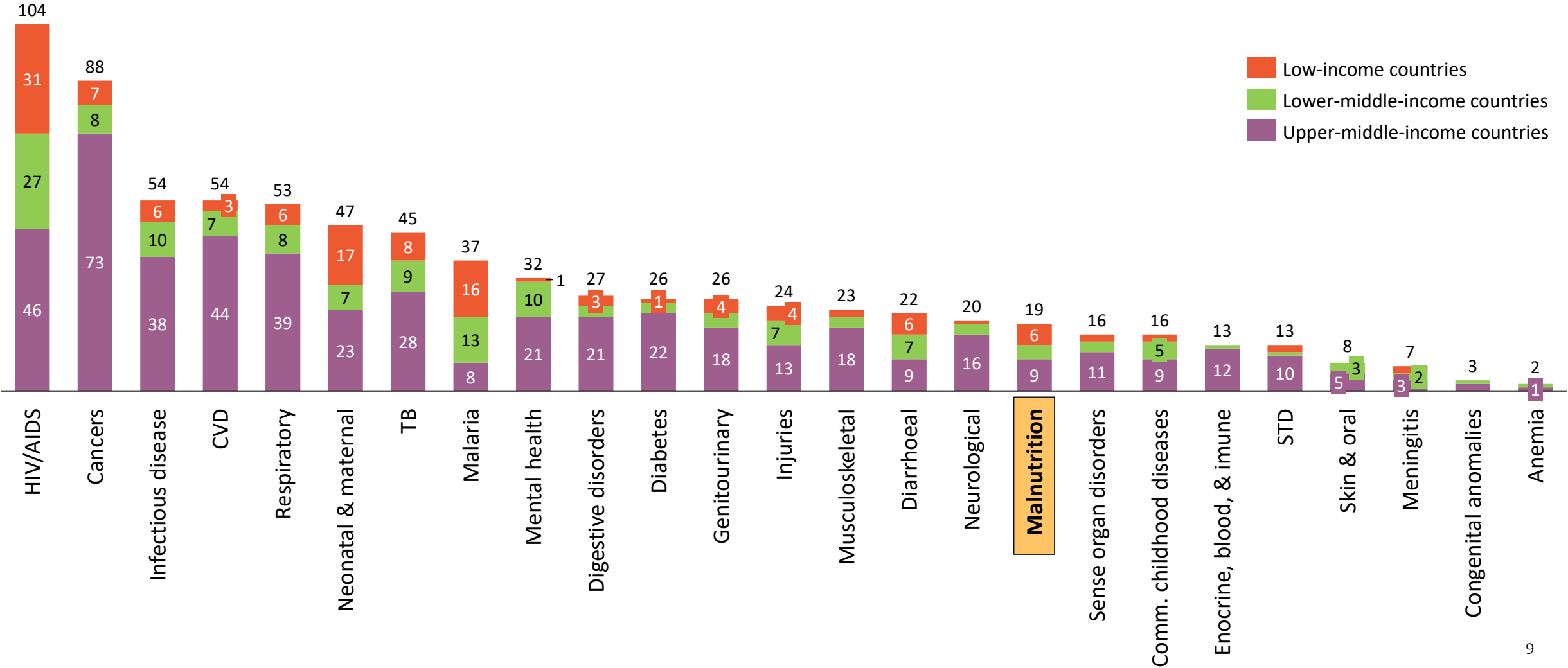
Decision-makers rely on available evidence to inform **strategic planning, priority setting, and resource allocation** for multi-sectoral nutrition programming



But evidence on program costs and benefits is lacking and this limits the ability of decision-makers to invest in nutrition

Economic evaluation is used to support decision-making in health, with some health areas more advanced than others

Number of economic evaluations by health area and income group



Source: Pitt, C., Goodman, C., & Hanson, K. (2016). Economic evaluation in global perspective: A bibliometric analysis of the recent literature. Health Economics, 25, 9–28

Examples where economic evaluation evidence has been used to strengthen decision-making and priority setting

- **Health technology assessment and innovations**

- Eg, in the introduction of new vaccines or investment in underutilized vaccines that are cost-effective (HPV, HepB, etc)

- **Intervention prioritization**


- Eg, CEA is critical in identifying a package of interventions for UHC, otherwise the intervention won't be included
- Eg, in the development of ART treatment guidelines and other policies

- **New program development or scale-up**

- Eg, Benefit-cost analysis of wheat flour fortification by the Copenhagen Consensus led to the creation of Haiti's first food fortification program

- **Funding decisions**

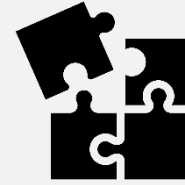
- Eg, GAVI and Global Fund investment cases



SEEMS-Nutrition
Common Approach to
Economic Evaluation

SEEMS-Nutrition is developing a common approach to guide how economic evaluations for nutrition are conducted

- 1 Develop a typology of interventions
- 2 Map impact pathways and identify program activities, inputs, and costs
- 3 Develop standardized cost data collection tools and collect cost data alongside impact evaluation
- 4 Compare program costs and benefits to reflect the relevant question/decision and sector



**Standardized data
across programs
and countries**

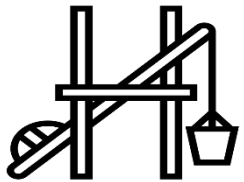


**Relevant
information to
decision makers**



**Stronger evidence
for nutrition**

Tally program costs and compare with benefits

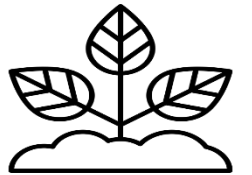
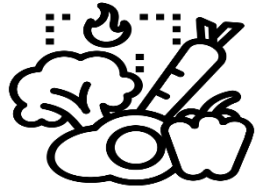


Created by ElcaliP from Noun Project

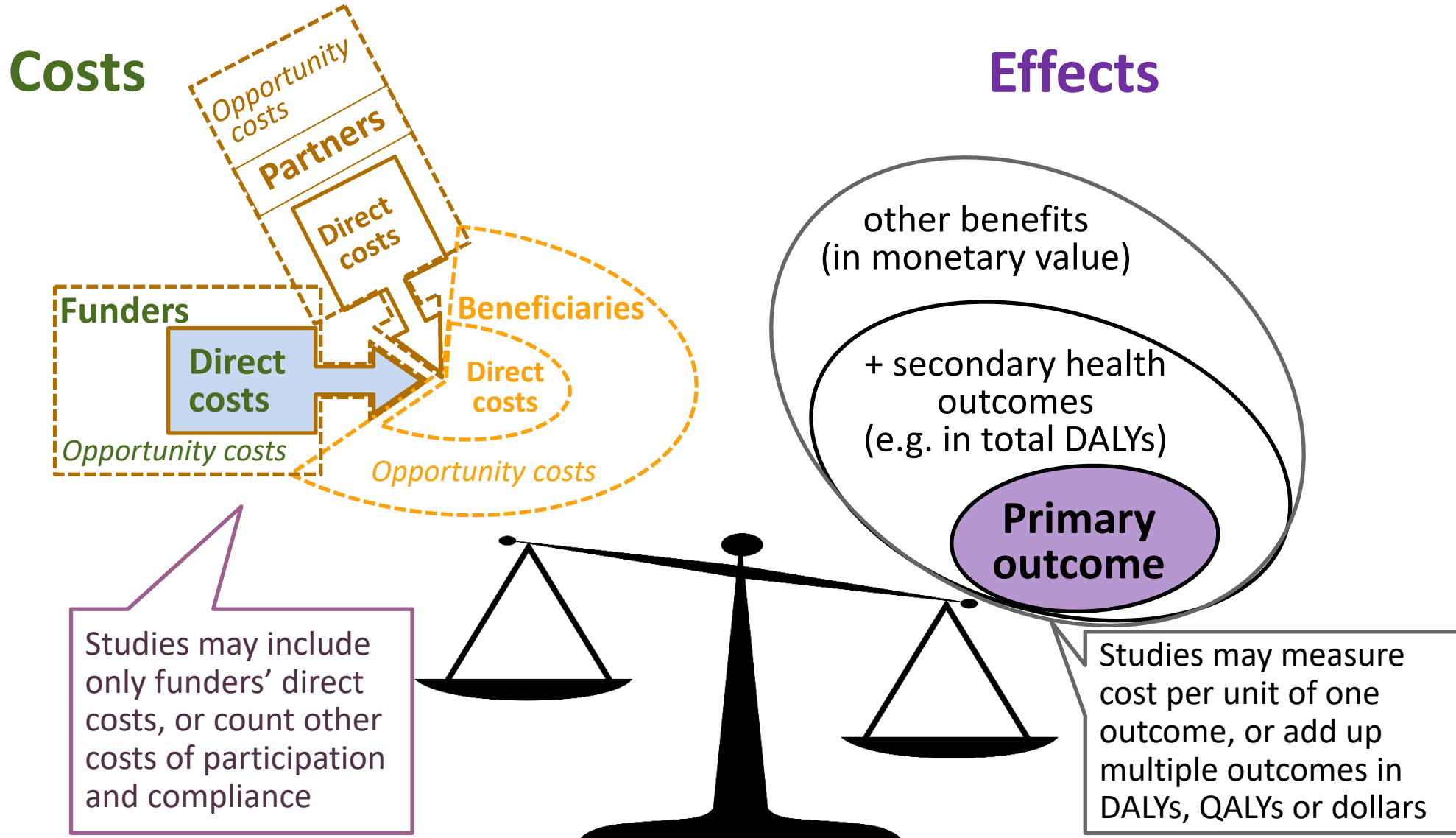


Costs

Benefits

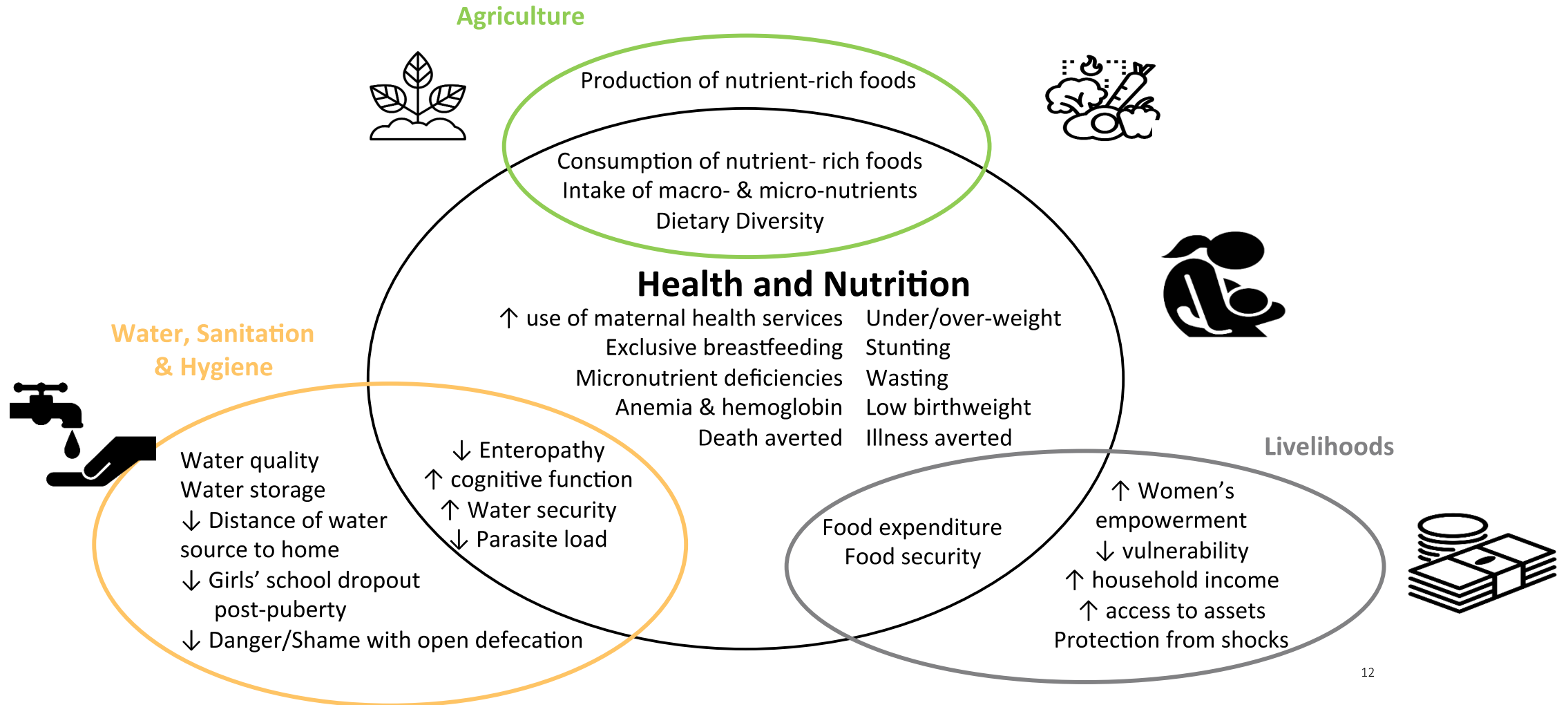


Take a comprehensive approach to evaluate cost data



Range of outputs and outcomes

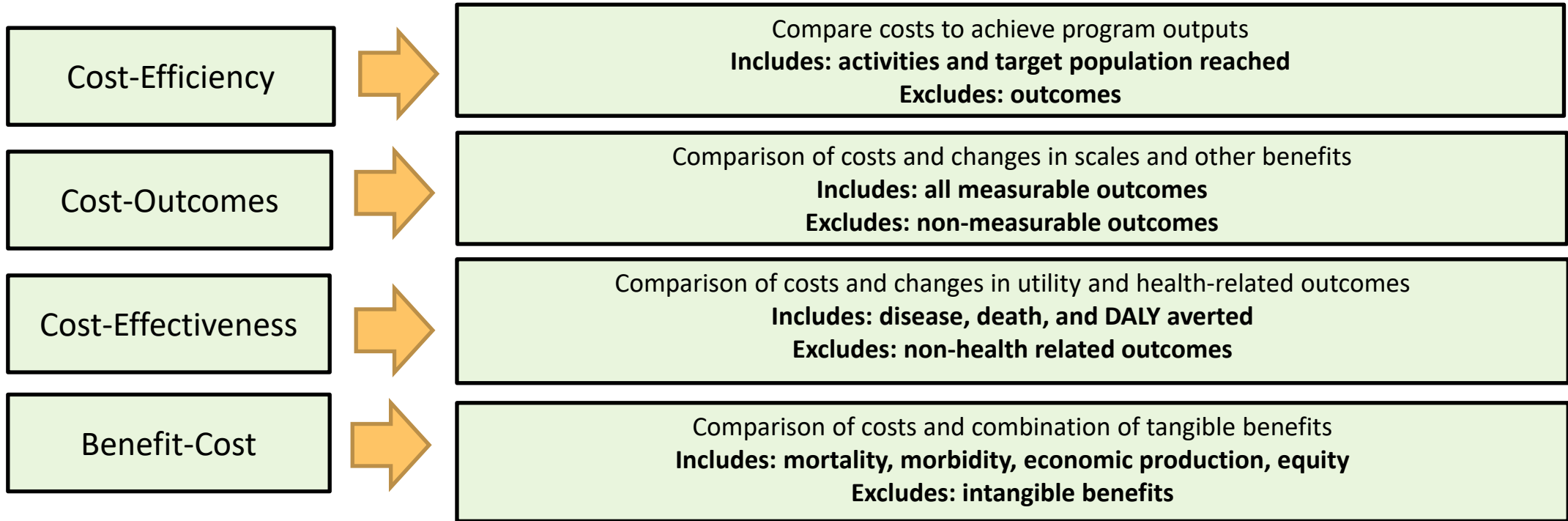
Figure 1. Measurable multisectoral benefits across the impact pathway to improved nutrition



Measure multisectoral costs and benefits

SEEMS-Nutrition is working on strengthening the measurement of multisectoral benefits!

Analysis



The SEEMS-Nutrition common approach initially applied to 6 nutrition projects to generate data on costs and benefits

Nepal



Suaahara II

A scaled up multisectoral nutrition strategy aiming to improve nutrition outcomes in women and children in 42 of Nepal's 77 districts.

Burkina Faso



Soutenir l'Exploitation Familiales pour Lancer l'Elevage des Volailles et Valoriser l'Economie Rurale (SELEVER)

An integrated poultry value chain and nutrition intervention to improve nutrition status and diets.

Kenya



MoreMilk

A market-based intervention in the informal dairy sector to generate nutrition and health benefits for children

Bangladesh



Targeting and realigning agriculture to improve nutrition (TRAIN)

A maternal and child health and nutrition behavior change communication strategy integrated within an agricultural credit program aiming to improve production diversity and income generation.

Malawi



Nutrition Embedded Evaluation Programme Impact Evaluation (NEEP-IE)*

A community-based pre-school meals and household food production intervention to improve children's diets, currently planning for nationwide scale up.

Kenya



Marketplace for Nutritious Foods

A skills-building and financial investment project to create local markets full of diverse, nutritious, and affordable foods.

* Indicates retrospective analysis



Insights from costing complex multisectoral nutrition interventions

SBCC Activities in SEEMS-Nutrition projects

Nepal



A scaled up multisectoral nutrition strategy aiming to improve nutrition outcomes in women and children in 42 of Nepal's 77 districts.

SBCC Component

- Training improve MIYCN and WASH practice, nutrition screening and referrals (multisectoral collaboration)
- Mass media campaigns for nutrition and health behaviors

Burkina Faso



SELEVER

An integrated poultry value chain and nutrition intervention to improve nutrition status and diets.

SBCC Component

- Behavior change communication campaigns
- Social marketing campaigns

Bangladesh



TRAIN

A maternal and child health and nutrition behavior change communication strategy integrated within an agricultural credit program aiming to improve production diversity and income generation.

SBCC Component

- Nutrition BCC included in treatment arms

Malawi



NEEP-IE

A community-based pre-school meals and household food production intervention to improve children's diets, currently planning for nationwide scale up.

SBCC Component

- Training on nutrition needs and optimal feeding practice for young children.

Nutrition-sensitive value chain (NSV) Activity Coding

NSV Type	Entry Points	NEEPIE	TRAIN	SELEVER	SUAHAARA II
Supply	Diversification & promotion	<ul style="list-style-type: none"> Materials development Home visits Input provision Training 	<ul style="list-style-type: none"> Materials development Home visits Input provision Training Community events 	<ul style="list-style-type: none"> Materials development Home visits Input provision Training Community events 	<ul style="list-style-type: none"> Materials development Home visits Input provision Training Community events
Demand	BCC	<ul style="list-style-type: none"> Materials development School meals Training 	<ul style="list-style-type: none"> Materials development Home visits Input provision Training 	<ul style="list-style-type: none"> Materials development Training 	<ul style="list-style-type: none"> Materials development Community events Home visits Training
Enabling Environment	Childcare	<ul style="list-style-type: none"> Community events Caregiving Preschool meetings Training 	<ul style="list-style-type: none"> Community events Home visits Materials Development Training 	<ul style="list-style-type: none"> Community events Training 	<ul style="list-style-type: none"> Materials dev. Community events Home visits Training
	Gender				
	Poultry value chain/Market				
	Multiple				
Shared costs	Coordination	<ul style="list-style-type: none"> Integration & coordination M&E Awareness raising 	<ul style="list-style-type: none"> Integration & coordination M&E Awareness raising 	<ul style="list-style-type: none"> Integration & coordination M&E Awareness raising 	<ul style="list-style-type: none"> Integration & coordination M&E Awareness raising

Total and unit costs across four programs

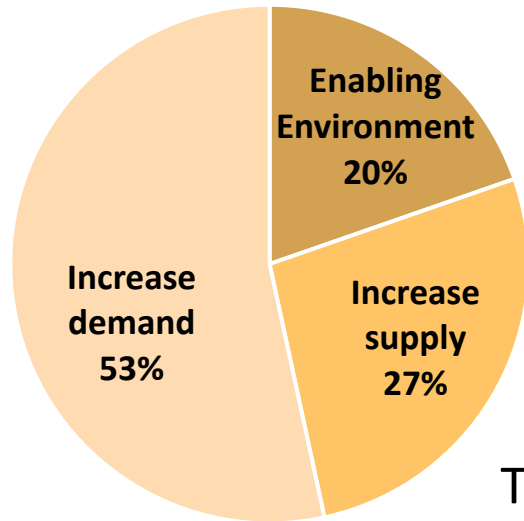
(For the full project period)

Cost Metric	NEEP-IE Malawi		TRAIN Bangladesh		SE LEVER Burkina Faso		Suaahara II Nepal (average district)*	
Total incremental costs	\$197,377		\$795,040		\$18,084,728		\$3,352,920	
	<i>No.</i>	<i>Unit cost</i>	<i>No.</i>	<i>Unit cost</i>	<i>No.</i>	<i>Unit Cost</i>	<i>No.</i>	<i>Unit cost</i>
Cost per participant	4,806	\$160	7,090	\$112 (\$65-\$157)	86,150	\$209	24,024	\$130

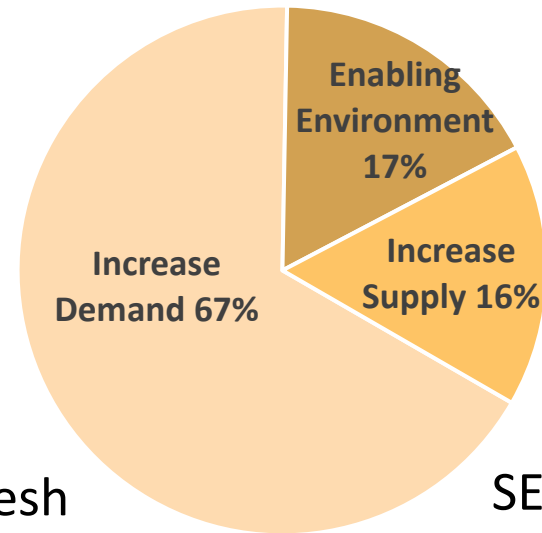
*Suaahara II was a national program with financial costs of US\$ 60 million over 5 years, and reaching over 878,000 annually; costs based on a sample of districts, including national and district costs

Cost drivers mapped to the NSV chain

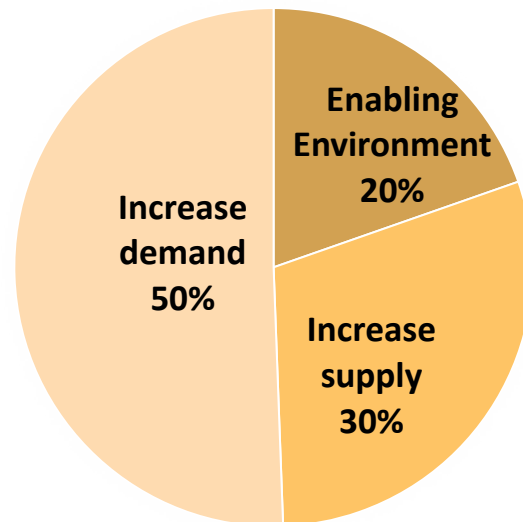
NEEPI Malawi



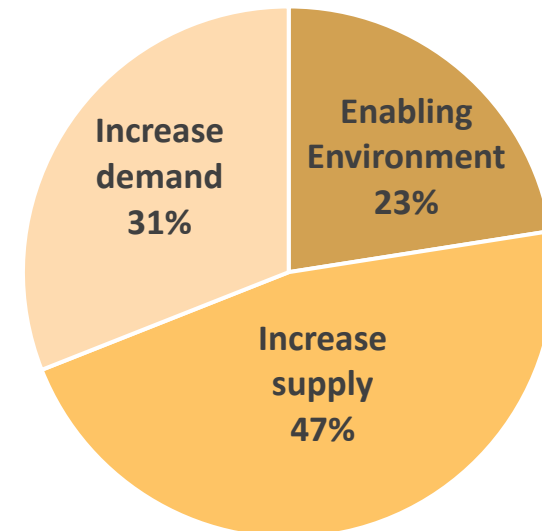
Suaahara II Nepal



TRAIN Bangladesh



SE LEVER Burkina Faso



Demand-pathway
driven interventions

How do these costs compare with interventions with BCC from the literature (limited) ?

Intervention	Country	Sectors	Unit costs (USD)	Type/Source	Reference
1. Interpersonal or group personal communication	Nepal, Nigeria	Health, Nutrition	Approx. \$6-7 (\$4 -11) per person	Literature review (2018)	Breakthrough Research, Avenir Health, 2023
3. Enhanced homestead food production intervention in rural Cambodia	Cambodia (Rural)	Agriculture, health, Nutrition	\$929 per household	Primary data collection: Financial and economic costs	Dragojlovic N, et al. 2020
2. Promotion of production and consumption of OFSP through Ante-natal (ANC)	Kenya (Rural)	Agriculture, health, Nutrition	\$155 per pregnant woman; \$110 per mother-baby Dyad	Primary data collection; Financial costs	Levin et al. 2019

New findings reveal new insights

We've been underestimating costs.

We have narrowed the range from previous studies.

Critical to include opportunity costs of frontline volunteer workers and participants economic costs/

Opportunity costs of these programs is high.

Repeated exposure is necessary, but costly.

Household visits are costly; without frequent engagement and reinforcing messages, without refresher trainings, don't see sustained behavior change.

Advantages of the SEEMS-Nutrition Common Approach

- Generate estimates of **unit cost** and **net benefit** that are **comparable** across diverse, complex programs
- Disaggregation of cost by **activity** allows for robust assessment of cost drivers
- Generic tools lower the bar to integration of costing into evaluations of multi-sector nutrition programs



SEEMS-Nutrition Website

<https://sites.google.com/uw.edu/seems-nutrition/>



The SEEMS-Nutrition project is developing a common approach guide to measure the costs and benefits of multisectoral nutrition strategies, building on standard economic evaluation methods.

We offer a comprehensive set of cost data collection tools to support the scaling up of solutions to enhance nutritious food systems in a rapidly evolving environment of decreasing child and maternal mortality and increasing income, urbanization, commercialization, and globalization.

Acknowledgements

- UW team:
 - Carol Levin, Christopher Kemp, Esther Choo, Jolene Wun, Chloe Puett, Hiwot Weldemariam, Bethany Pavel, Jonny Crocker, Stephanie Edlund-Cho
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The business case for investing in nutrition social and behavior change



Nicole Bellows
Senior Associate, Avenir Health

Breakthrough RESEARCH

Business Case for Investing in Social and Behavior Change for Nutrition

April 26, 2023

*Nicole Bellows, PhD
Senior Associate at Avenir Health*



Breakthrough RESEARCH

- Flagship social and behavior change (SBC) project for USAID Global Health Bureau to drive the generation, packaging, and use of innovative SBC research to inform programming
- Six-year project from August 2017 to July 2023
- USAID headquarters and mission-supported activities
- Avenir Health leads the SBC costing and cost-effectiveness portfolio



What is SBC?

Definition: Social and behavior change (SBC) is a process that refers to activities or interventions that seek to understand and facilitate voluntary changes in behaviors and the social norms and environmental determinants that drive them. SBC interventions are grounded in a number of different disciplines, including community mobilization, marketing, advocacy, behavioral economics, human-centered design, communication, and social psychology.

SBC ACTIVITIES

- **Mass media** (radio campaigns, TV campaigns, billboards/posters/flyers)
- **Community media** (live dramas, awareness raising, community radio)
- **Interpersonal communication** (individual, group, peer counseling; can include community engagement)
- **Digital and social media** (mobile text messages, nudges/reminders, social media)
- **Provider communication training** (address provider attitudes and communication skills)

Activity objectives

- To examine the cost-effectiveness of SBC for breastfeeding and complementary feeding
- Evaluate the value of SBC for nutrition with an evidence-based model
- Highlight any gaps in the literature where further research is needed

KEY OUTCOMES

Early initiation of breastfeeding within first hour (**EIBF**)

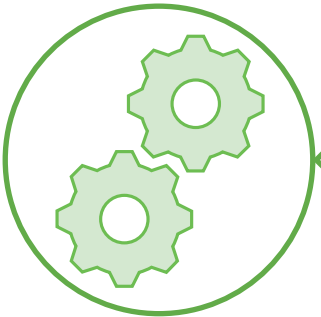
Exclusive breastfeeding for the first six months (**EBF**)

Complementary feeding to ensure adequate nutrition 6-23 months (**CF**)

Overall approach



1. Synthesize literature on impact of SBC interventions on key nutrition behaviors and SBC unit costs



2. Use syntheses to build a model that can examine cost-effectiveness of nutrition SBC



3. Apply model to location-specific contexts as illustrative investment scenarios

Literature syntheses

Examine literature for pathways to impact

Examine impact of SBC interventions on intermediate determinants



link 1



Examine impact of intermediate determinants on key nutrition health behaviors

link 2



link 3

Examine direct link on impact of SBC interventions on key nutrition behaviors

Within each link, group study results looking at the same general relationship and calculate the median odds ratio (OR) to be used in the impact model.

Summary of findings

LINK 1: SBC interventions to intermediate determinants (73 studies extracted)

- Median ORs range from 1.30 to 2.77
- Most data linking SBC interventions to intermediate determinants are for IPC, which were further subdivided into IPC subtypes (individual, group, IPC+ others)

LINK 2: Intermediate determinants to behaviors (84 studies extracted)

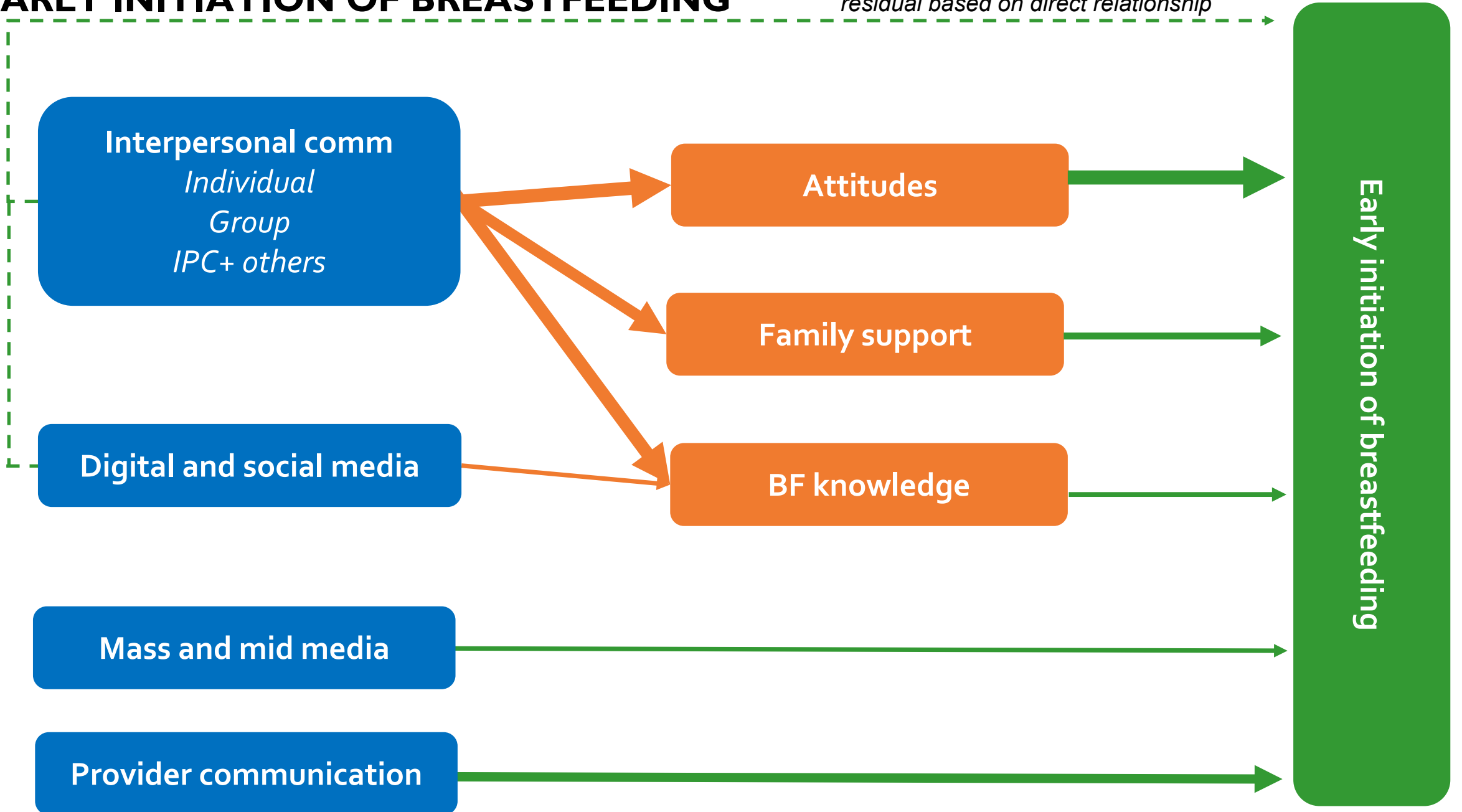
- Median ORs range from 1.16 to 2.31, lower for CF
- More intermediate determinants identified for BF compared to CF
- Early initiation of BF is an intermediate determinant for Exclusive BF

LINK 3: SBC interventions to behaviors (133 studies extracted)

- Median ORs range from 1.08 to 3.27
- OR highest for IPC + other IPC (e.g., community engagement)
- Mass media and provider communication have direct relationship only (no intermediate pathways)

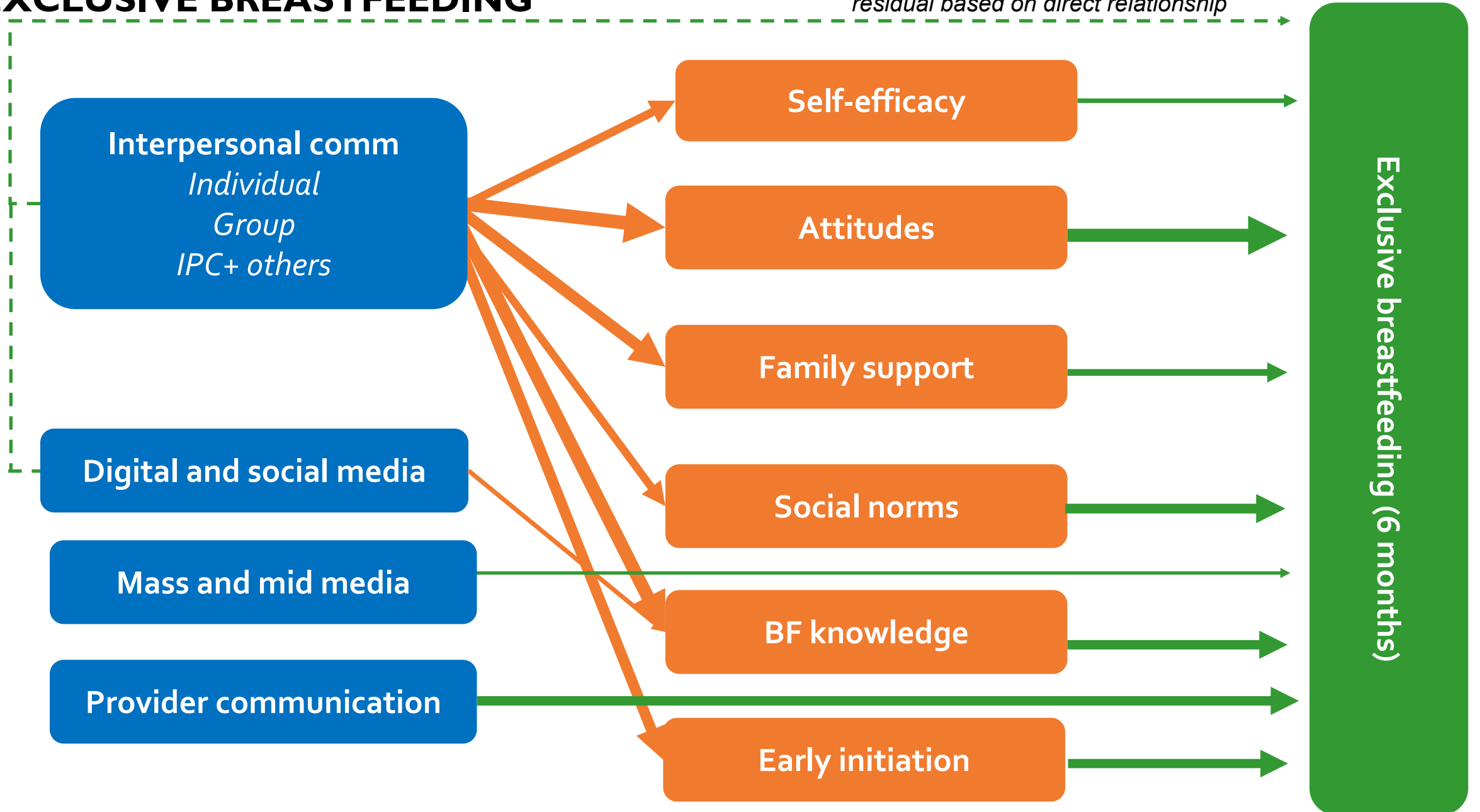
EARLY INITIATION OF BREASTFEEDING

residual based on direct relationship

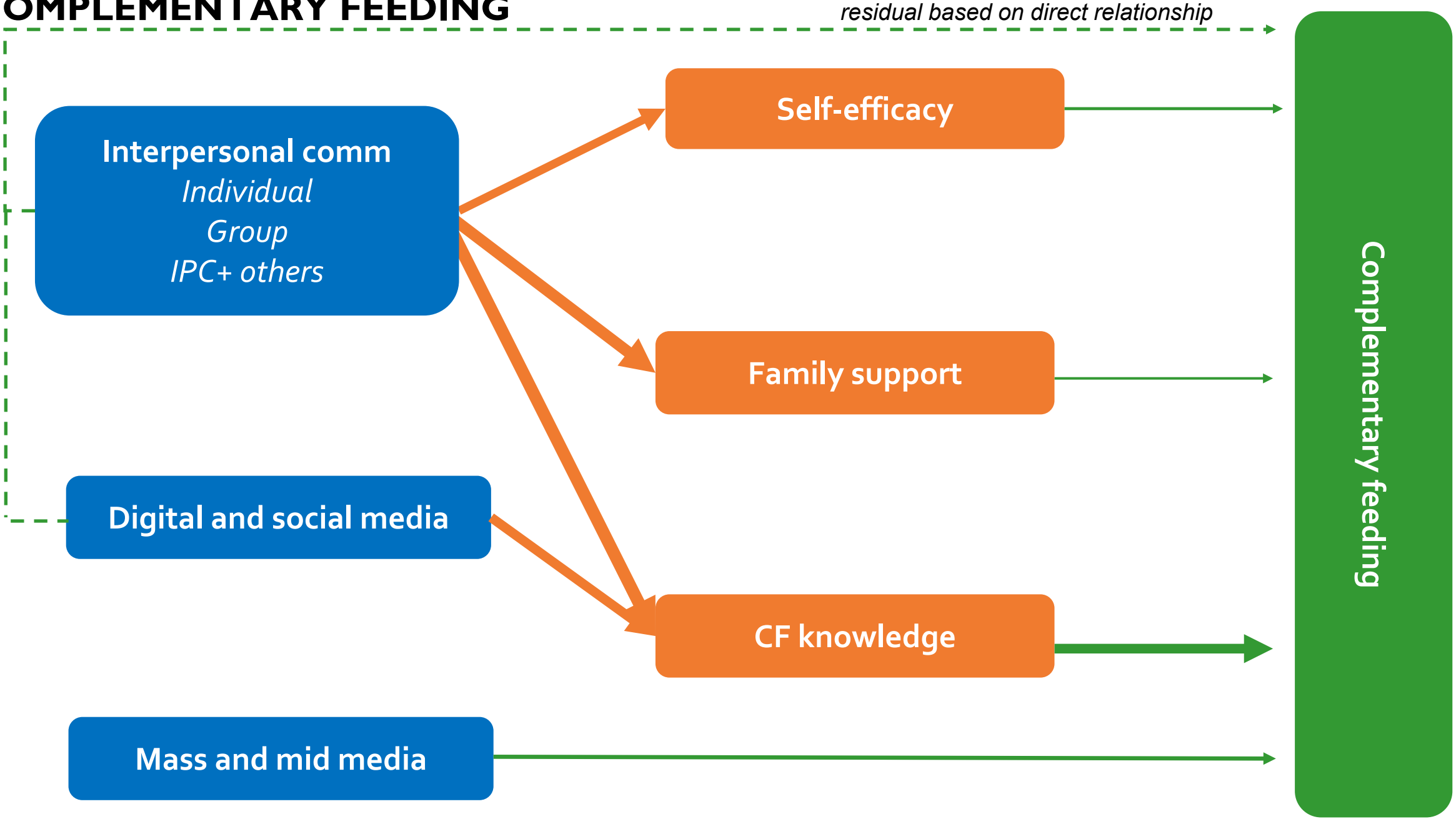


EXCLUSIVE BREASTFEEDING

residual based on direct relationship



COMPLEMENTARY FEEDING



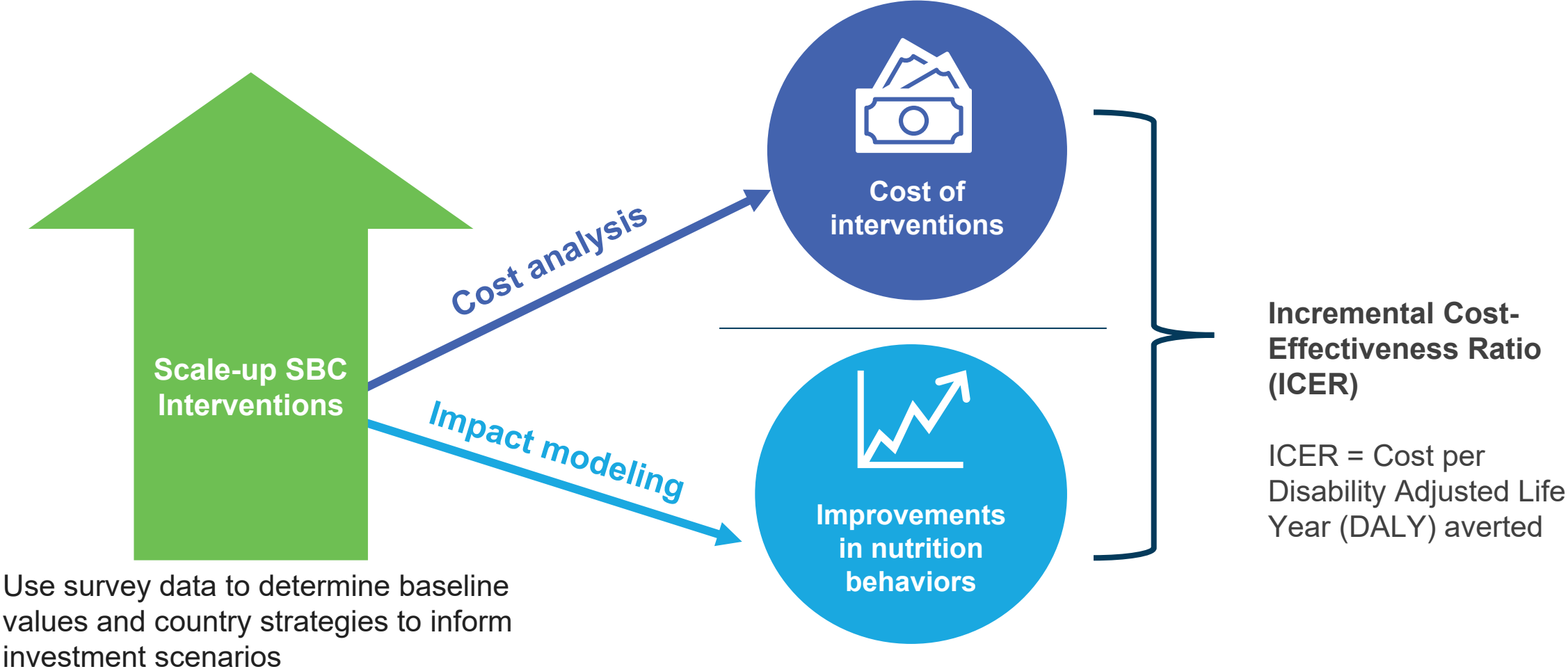
SBC costing tool for unit cost per person reached

<https://breakthroughactionandresearch.org/creating-sbc-cost-repository>

SBC intervention	Nigeria	Nepal
Radio	\$0.29 (0.22 – 0.41)	\$0.25 (0.19 – 0.35)
Live drama	\$0.47 (0.35 – 0.66)	\$0.44 (0.22 – 0.89)
Phone/SMS	n/a	\$0.84 (0.63 – 1.18)
Individual IPC	\$6.77 (4.61 – 10.95)	\$6.76 (4.60 – 10.93)
Group IPC	\$6.62 (4.51 – 10.71)	n/a
IPC + other SBC	\$6.94 (4.73 – 11.22)	n/a
Provider behavior change	\$2.51 (1.26 – 5.03)	n/a

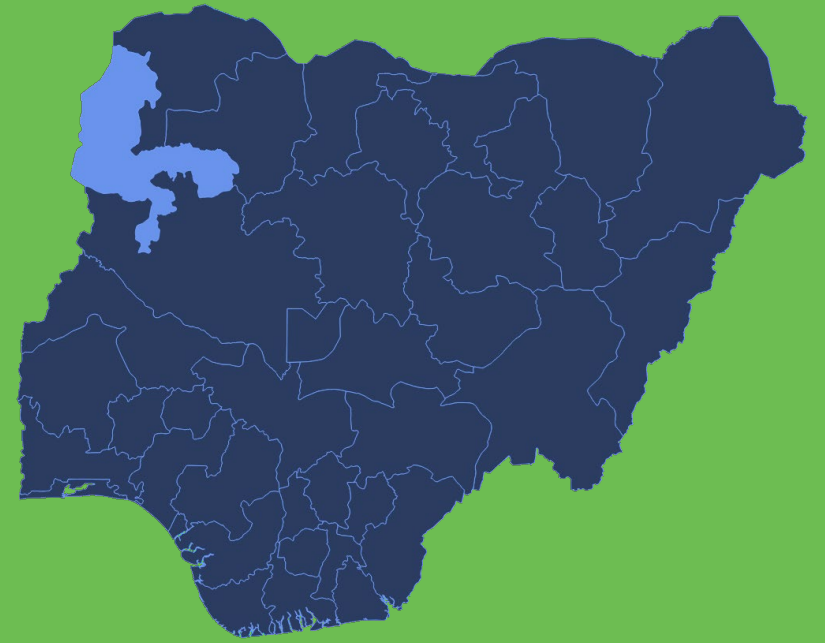
Modeling cost-effectiveness

Modeling cost-effectiveness for SBC



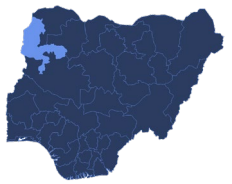
How do we determine cost-effectiveness?

- An illustrative 5-year budget is operationalized as the number of estimated people reached each year by SBC interventions given the unit costs
- The median OR for each SBC intervention is applied to those exposed, calculating the improvements in health outcomes, which are then modeled in the Lives Saved Tool
- Calculate the **ICER = SBC intervention costs / Total DALYs averted**
- Benchmark the ICER against international standards for cost-effectiveness of health interventions based on gross domestic product (GDP) per capita
 - *Highly cost-effective* (ICER < 1 times GDP per capita)
 - *Cost-effective* (ICER between 1 and 3 times the GDP per capita)
 - *Not cost-effective* (ICER > 3 times GDP per capita)



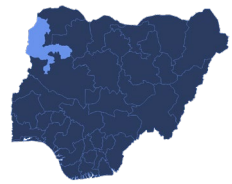
Model application – Kebbi State, Nigeria

First application: Kebbi State, Nigeria



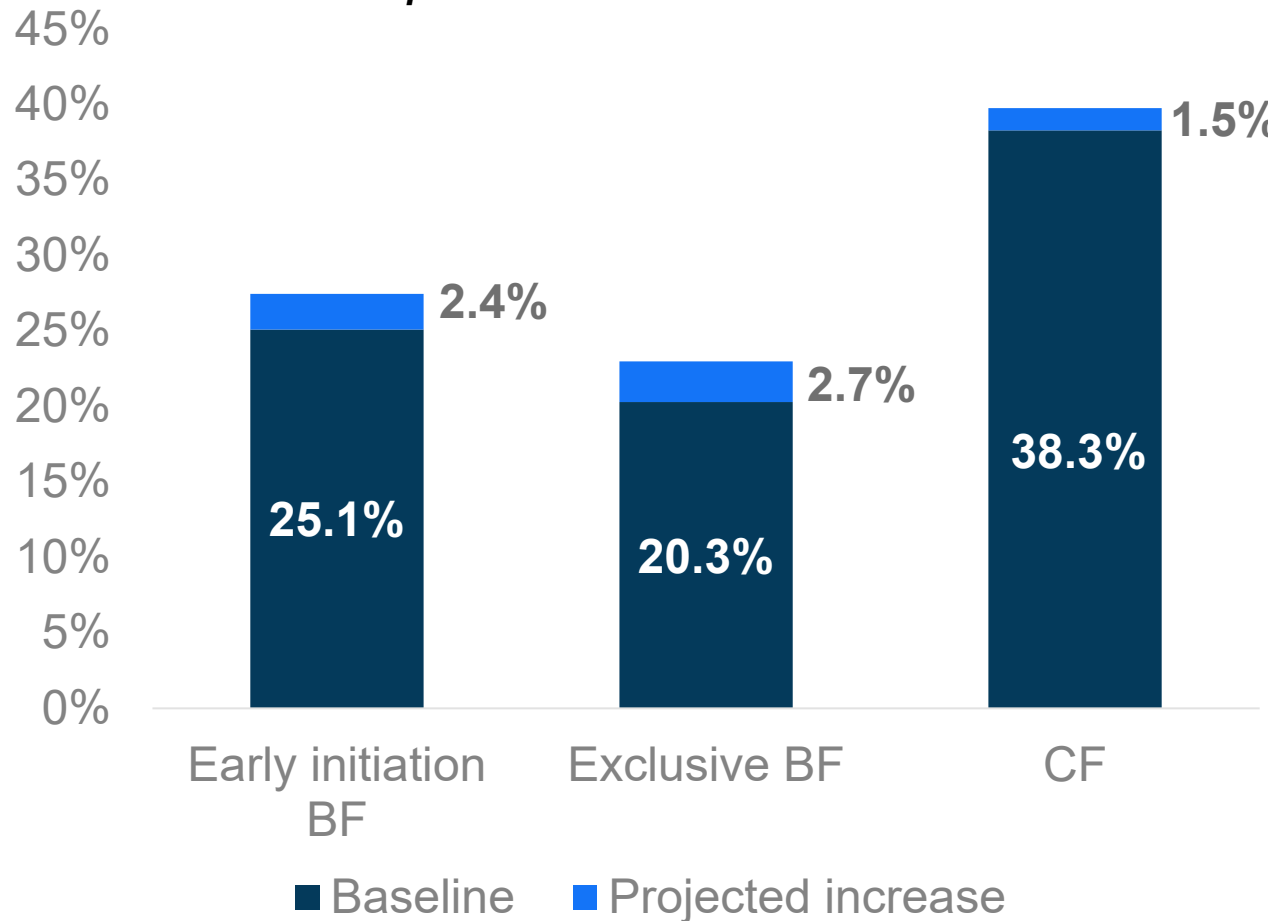
Data sources

- Existing Kebbi state Spectrum file for population data
- DHS 2018 for proportion of women in Kebbi who are pregnant or have a child under the age of 2 years and baseline outcome variables for early initiation, exclusive breastfeeding, and complementary feeding
- Breakthrough RESEARCH BSS baseline survey for baseline intermediate determinants values
- National Multisectoral Plan of Action for Food and Nutrition in Nigeria and Kebbi State Annual Operational Plans for Health Sector (2020-2022) for guidance on illustrative investment of approximately \$1 million USD over five years



Impact results

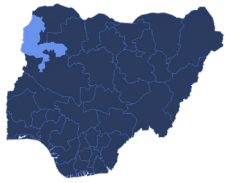
Improvements in behavioral outcomes



Key health impacts



Results indicate that SBC investments for nutrition are highly cost-effective



Cost per DALY averted





Model application – Nepal

Second application: Nepal



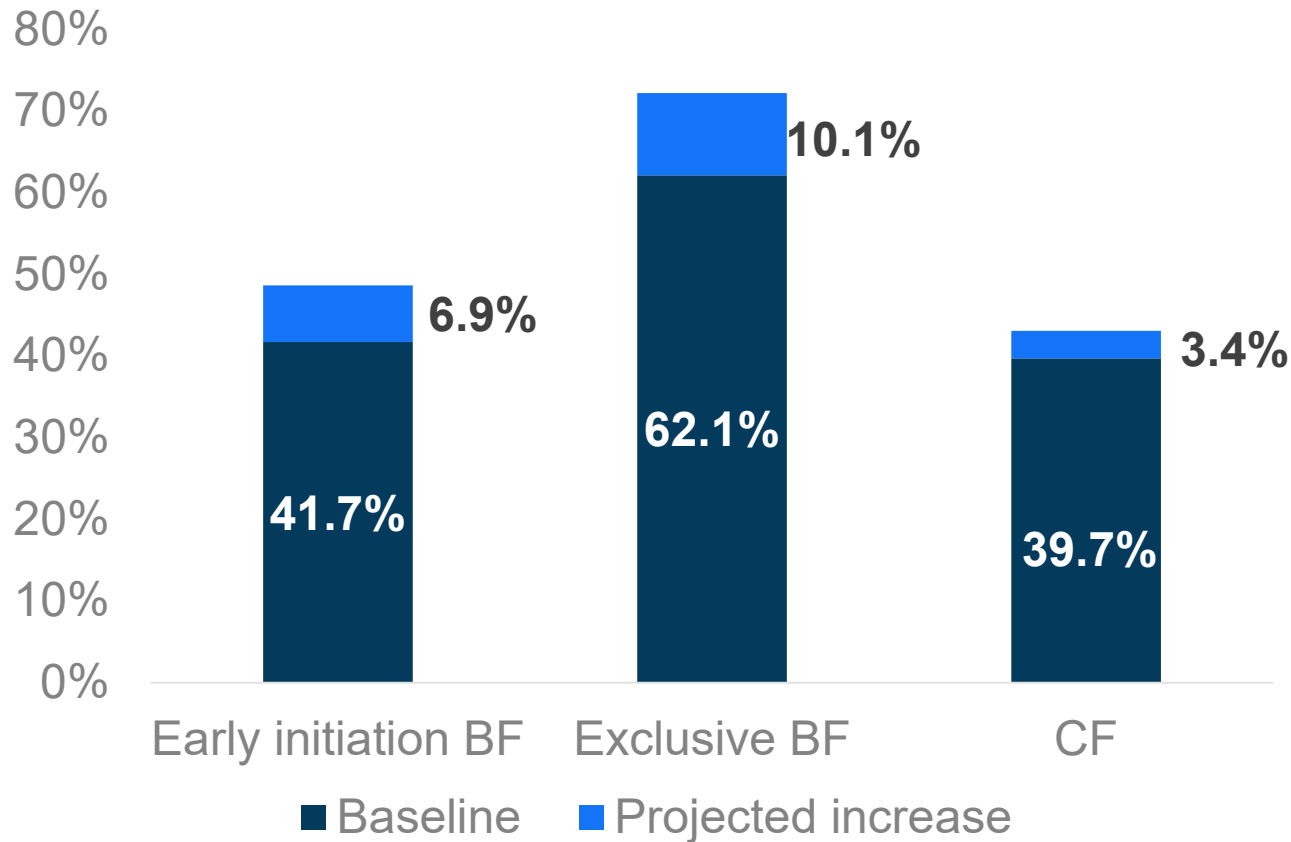
Data sources

- Existing Nepal Spectrum file for population data
- DHS 2016 for proportion of women in Nepal who are pregnant or have a child under the age of 2 years and baseline outcome variables for early initiation, exclusive breastfeeding, and complementary feeding
- Suaahara II Annual Survey 2019 and relevant SBC nutrition literature for starting intermediate determinants values
- Suaahara II five-year workplan (2016-2021) for illustrative investment guidance

Impact results



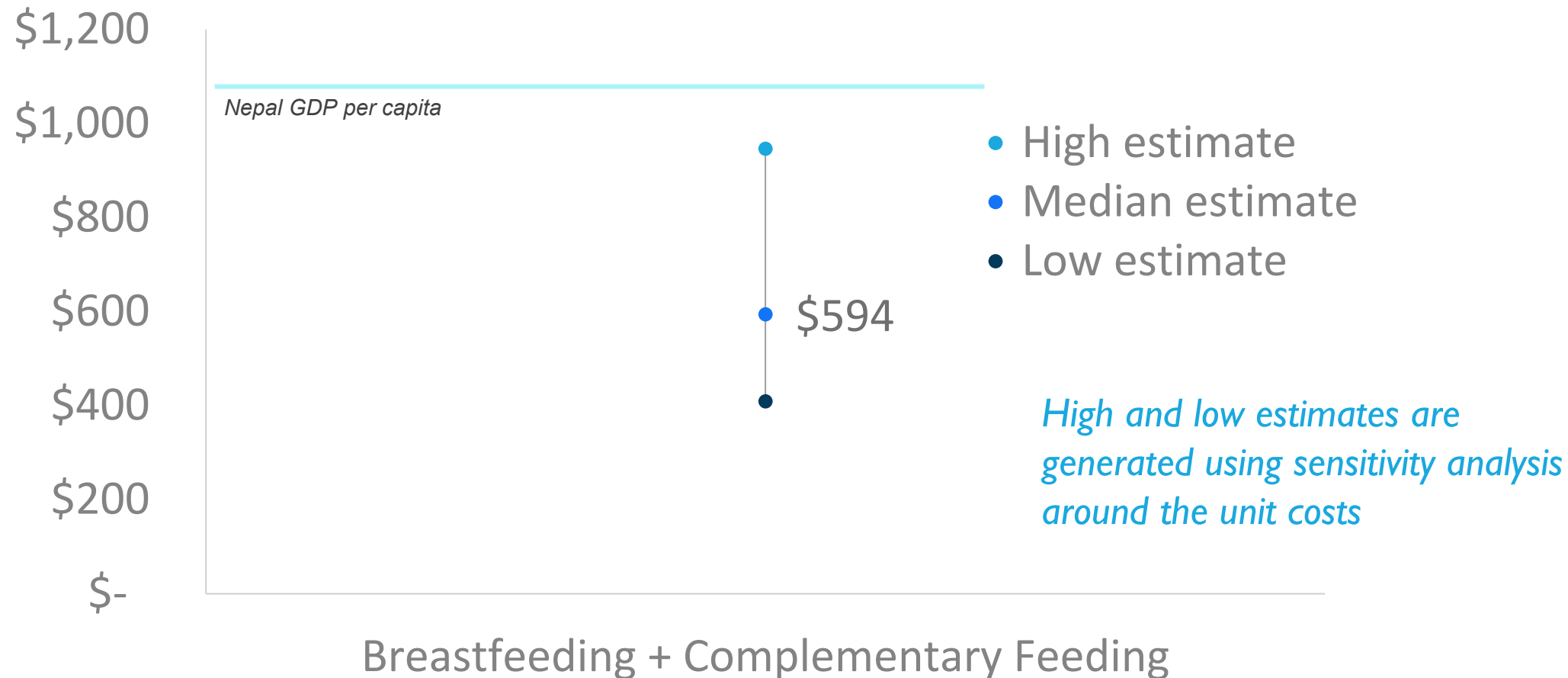
Improvements in behavioral outcomes



Key health impacts



Results indicate that SBC investments for nutrition are highly cost-effective



Discussion

Key findings

- Based on these model applications, SBC for BF/CF is **highly cost-effective** according to the WHO criteria, with ICERs of \$124 per DALY averted in Kebbi State, Nigeria and \$594 per DALY averted in Nepal.
- Difference in ICERs between the two locations is driven primarily due to higher infant and child mortality rates in Kebbi State compared to Nepal.
- More research is needed to better understand the pathways to impact from SBC to BF/CF outcomes.

Limitations

- Model uses median odds ratios and median unit costs and does not account for the effectiveness and costs of specific interventions
- Investment scenarios are approximated based on document review and do not necessarily reflect all activities occurring in country
- Model is based on available baseline data, some of which used proxy measures
- Does not capture potential efficiencies of integrated SBC

Implications of findings

- Advocate for the continued and/or increased investments in SBC for BF/CF behaviors as highly cost-effective interventions
- Not all intermediate determinants are represented in the model (e.g., social norms) due to lack of evidence; more research is needed to explore new pathways to impact
- Looking forward, the business case model could be leveraged to examine cost-effectiveness of specific programs or to estimate the most cost-effectiveness allocation of resources in SBC programming

More information available in the full report

TECHNICAL REPORT

The Business Case for Social and Behavior Change for Breastfeeding and Complementary Feeding



FEBRUARY 2023

www.breakthroughactionandresearch.org/business-case-sbc-fp/



For more information on the SBC business cases or other SBC costing work:

<https://breakthroughactionandresearch.org/technical-areas/cost-effectiveness/>

or contact Nicole Bellows at nbellows@avenirhealth.org



BreakthroughAR



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Breakthrough ACTION + RESEARCH



Breakthrough_AR

Breakthrough RESEARCH catalyzes social and behavior change (SBC) by conducting state-of-the-art research and evaluation and promoting evidence-based solutions to improve health and development programs around the world. Breakthrough RESEARCH is a consortium led by the Population Council in partnership with Avenir Health, ideas42, Institute for Reproductive Health at Georgetown University, Population Reference Bureau, and Tulane University.

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Question and Answer Discussion

Please submit questions for the panelists in the Q&A box



Carol Levin

Clinical Associate Professor, Global Health; Project Director, Strengthening Economic Evaluation for Multisectoral Strategies for Nutrition



Nicole Bellows

Senior Associate, Avenir Health



Thank you!

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10:00-11:00 AM EDT (GMT -4)





USAID ADVANCING NUTRITION

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