For a comprehensive, child-centered approach to undernutrition

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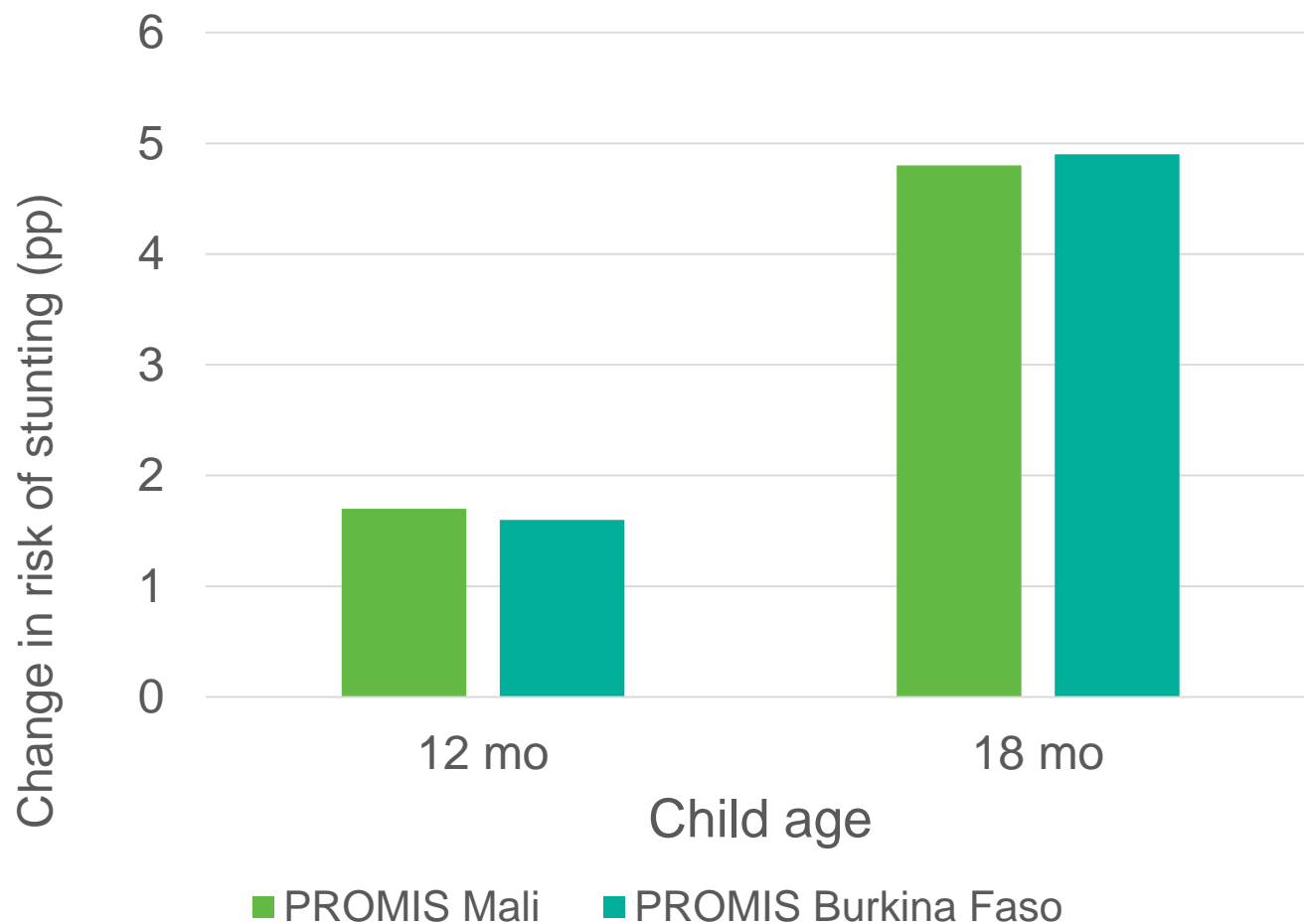
Landscape – Child undernutrition

Landscape – Child undernutrition

- **Silos!** Health systems - infectious diseases - nutrition

- **Silos!** Wasting vs. stunting or acute vs. chronic malnutrition
  - Both indicator of a deficient environment, albeit of different severity
- Community-based Management of Acute Malnutrition
  - Poor treatment coverage (10-30% coverage)
  - Poor coordination between SAM and MAM treatment **Silos?!**
  - Screening coverage? Which platforms? **Silos?!**
  - High relapse rates
  - Frequent stockouts (not only for nutrition)
- Simplified approaches are being developed that hold great potential
  - A simplified strategy is no excuse for a poorly performing health system
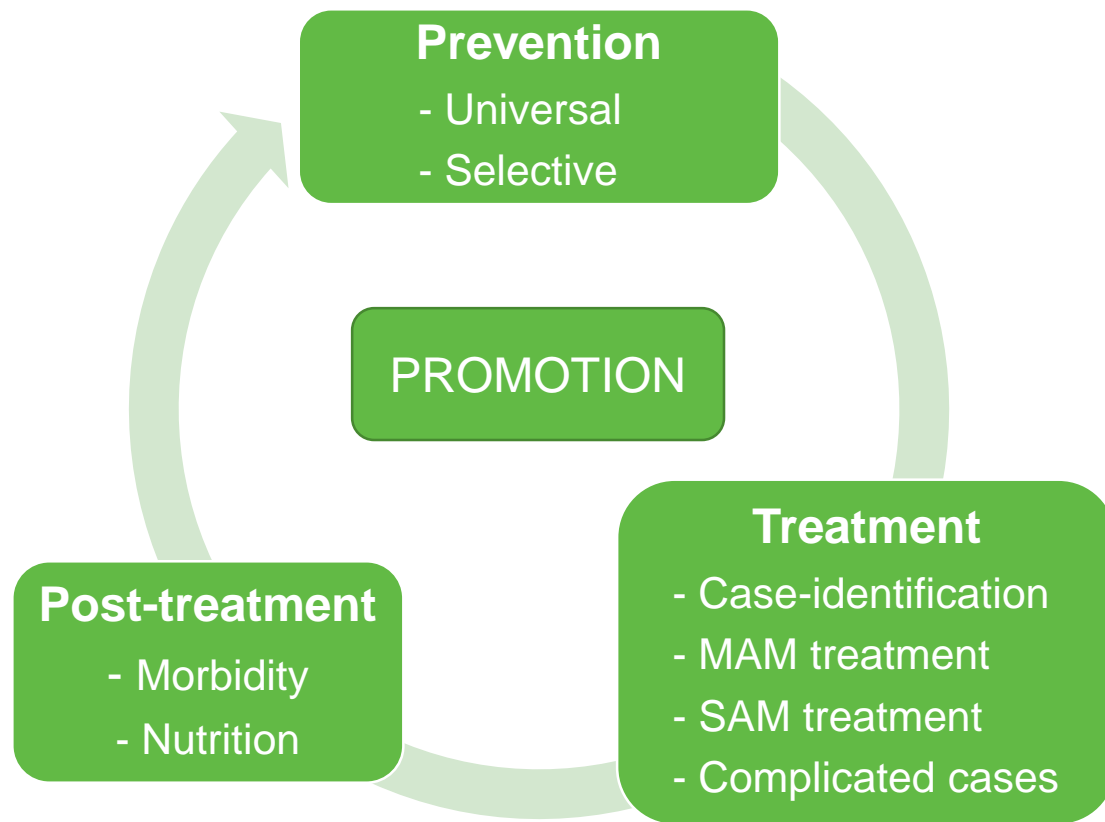 - Rigorous evaluation please!

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Comprehensive: acute malnutrition and subsequent stunting

Change in risk of stunting (pp) vs Child age

- 12 mo: PROMIS Mali 1.7, PROMIS Burkina Faso 1.6
- 18 mo: PROMIS Mali 4.8, PROMIS Burkina Faso 4.9

Legend: ■ PROMIS Mali ■ PROMIS Burkina Faso

PROMIS studies (Huybregts et al. 2017 BMC Public health)

- ▪ PROMIS data:
  - o Per month of SAM (over last 6 months) the risk of stunting increases with 1.7-5 pp.
  - o Model adjusted for season, sex, previous stunting

- ▪ Previous work by Schoenbuchner et al (2019) in the Gambia:
  …being wasted increases the odds of becoming stunted (3 mo later) by a factor of 3.2…

Comprehensive: continuum of care (CoC)

Prevention
- Universal
- Selective

PROMOTION

Post-treatment
- Morbidity
- Nutrition

Treatment
- Case-identification
- MAM treatment
- SAM treatment
- Complicated cases

- **Contacts/platforms**
  - Vaccination at HC/ campaigns
  - Child health days/Deworming/Vit A
  - AM screening campaigns
  - Village-based IYCF BCC
  - Blanket feeding
  - Growth monitoring
  - MAM consultation
  - SAM consultation
  - Sick child consultation
  - Community health worker
  - Health army/volunteers
  - ….

- How can promotion, prevention, treatment and recovery management be implemented using these different platform to ensure CoC

Delivery and demand-side incentives to reduce barriers?

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Comprehensive: Child-centered care (CCC)

- Partnership between health services and child (and caregiver).

- Generic treatment algorithms ⇔ Individual approach

- Broad in-depth assessment of all possible causes underlying MAM or SAM and context that accompanies treatment

- Not all platforms are suitable for CCC
  - eg. growth monitoring vs. door-to-door screening campaign

- CCC might not be enough for MAM treatment (cf Nikiema et al 2014 AJCN)

Treating moderate acute malnutrition in first-line health services: an effectiveness cluster-randomized trial in Burkina Faso[1–4]

Laetitia Nikièma, Lieven Huybregts, Patrick Kolsteren, Hermann Lanou, Simon Tiendrebeogo, Kimberley Bouckaert, Séni Kouanda, Blaise Sondo, and Dominique Roberfroid

ABSTRACT

Background: Management of moderate acute malnutrition (MAM) is, currently, focused on food supplementation approaches. However, the sustainability of these strategies remains weak in low- and middle-income countries. In food-secure settings, an educational/behavioral intervention could be an alternative for improving MAM management.

Objective: This study compared the effectiveness of weekly context-appropriate child-centered counseling (CCC), with an improved corn-soy blend [corn-soy blend with added micronutrients (CSB++)] or a locally produced ready-to-use supplementary food (RUSF), in treating MAM through first-line rural health services.

Design: We used a cluster randomized controlled trial design with 3 arms, involving 18 rural health centers (6 by arm) and children aged 6–24 mo with uncomplicated MAM. In the first arm (CCC), trained health workers provided weekly personalized counseling to caretakers. In the 2 other arms, children received weekly either 455 g CSB++ or 350 g locally produced soy-based RUSF. Both food supplements provided ∼250 kcal/d.

Results: The recovery rate after 3 mo of treatment was significantly lower with CCC (57.8%) than with CSB++ (74.5%) and RUSF (74.2%) ($P < 0001$). Mothers' attendance at health facilities was also substantially lower in the CCC arm ($P < 0001$); this arm had a high defaulter rate ($P < 0.003$). When the analysis was adjusted for attendance, we did not find a significant difference between the 3 arms, with incidence rate ratios of 1.14 (95% CI: 0.99, 1.31) and 1.13 (95% CI: 0.98, 1.30) for the CSB++ and RUSF arms, respectively, compared with the CCC arm.

Conclusion: Whereas supplement-based treatment of MAM was found to be more effective than the provision of CCC, we hypothesize that appropriate and specific nutrition counseling centered on children's needs, through primary health facilities, might be an alternative strategy for MAM treatment in rural food-secure areas, provided that attendance at counseling sessions by the caregiver is ensured. This trial was registered at clinicaltrials.gov as NCT01115647. *Am J Clin Nutr* 2014;100:241–9.

moderate acute malnutrition [MAM; weight-for-height z score (WHZ) <-2 and ≥-3] has, however, been lagging behind (3). This is unfortunate because MAM is much more prevalent than SAM and increases the risk of morbidity and mortality on its own (4, 5). For some time, no clear consensus has existed on the best management possible for moderately malnourished children (3, 6).

Food supplements commonly distributed for MAM treatment are either fortified blended flours, such as corn and soy blended flour, or lipid-based supplements, usually referred to as ready-to-use supplementary food (RUSF). The World Food Program is now proposing a new formula of corn and soy blended flour, the CSB++, which is improved by adding a micronutrient mix covering 15 micronutrients, oil, sugar, and skimmed milk. The efficacy of this new product on MAM treatment must be tested in different contexts. Moreover, although RUSFs are nutritionally balanced, nutrient and energy dense, easy to store and resistant to bacterial growth, they present the major limitation of relying on manufactured and often imported products. It is thus important to test the efficacy of locally produced RUSF by using substitutes for milk powder.

Recent trials that have used these 2 types of product in MAM treatment have shown that these food supplements, either CSB or RUSF, can be effective in treating MAM (7–11). However, most

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Example of integrating preventive SQ-LNS and BCC into AM screening platforms: PROMIS studies in Mali and Burkina Faso

RESEARCH ARTICLE

Impact on child acute malnutrition of integrating small-quantity lipid-based nutrient supplements into community-level screening for acute malnutrition: A cluster-randomized controlled trial in Mali

Lieven Huybregts*, Agnes Le Port, Elodie Becquey, Amanda Zongrone, Francisco M. Barba, Rahul Rawat, Jef L. Leroy, Marie T. Ruel
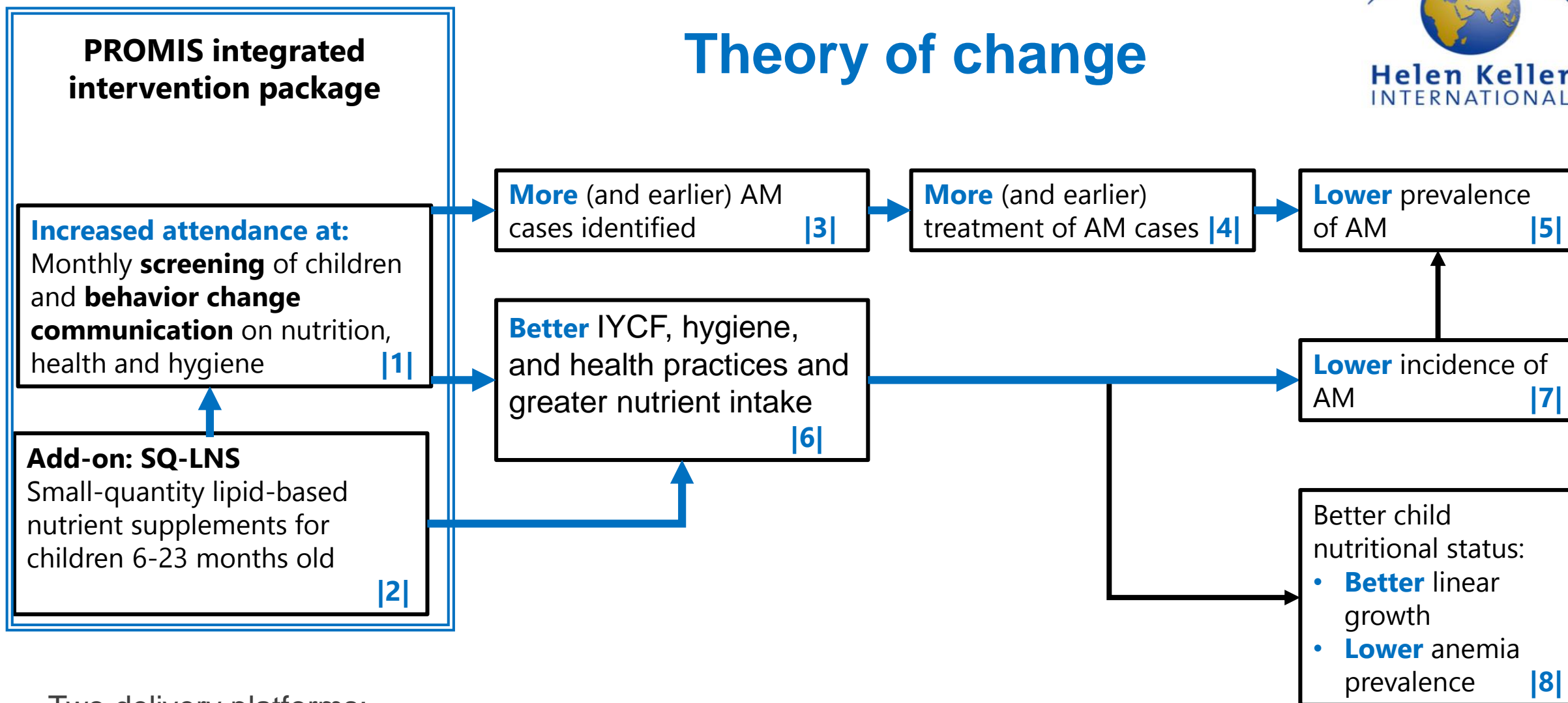
PLOS | MEDICINE

RESEARCH ARTICLE

Impact on child acute malnutrition of integrating a preventive nutrition package into facility-based screening for acute malnutrition during well-baby consultation: A cluster-randomized controlled trial in Burkina Faso

Elodie Becquey*, Lieven Huybregts, Amanda Zongrone, Agnes Le Port, Jef L. Leroy, Rahul Rawat, Mariama Touré, Marie T. Ruel
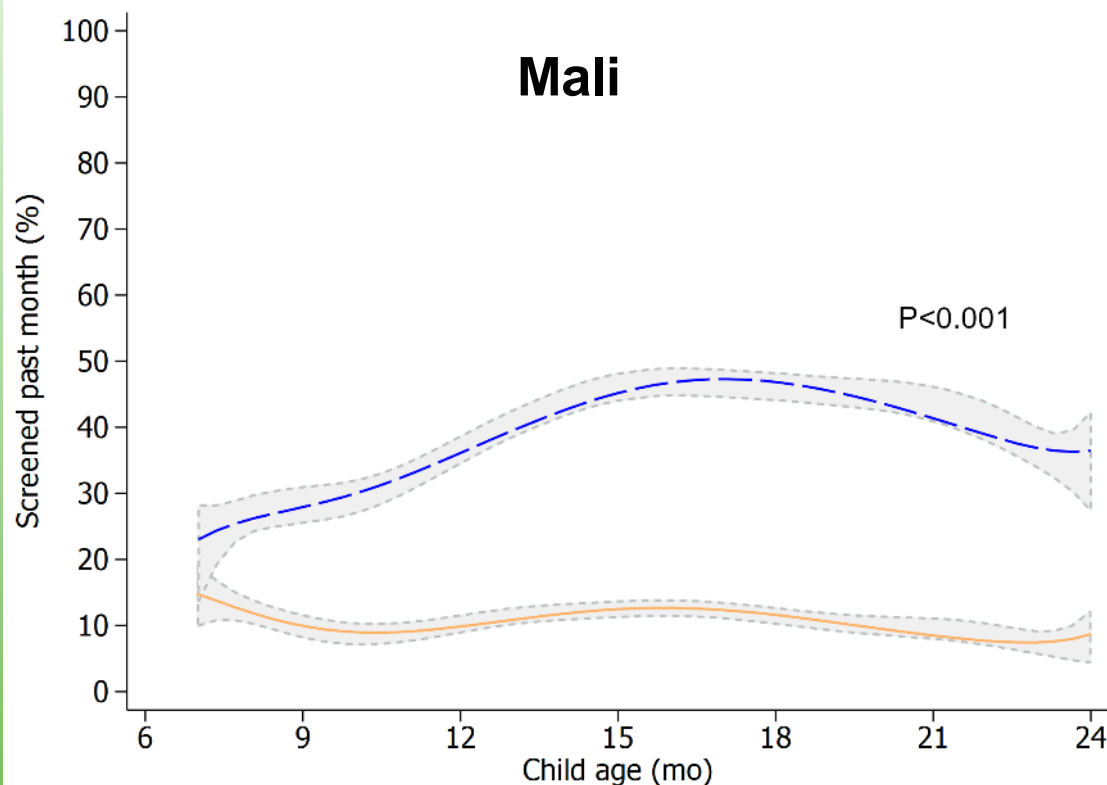
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Theory of change

PROMIS integrated intervention package

Increased attendance at:
Monthly **screening** of children and **behavior change communication** on nutrition, health and hygiene |1|

Add-on: SQ-LNS
Small-quantity lipid-based nutrient supplements for children 6-23 months old |2|

More (and earlier) AM cases identified |3|

More (and earlier) treatment of AM cases |4|

Lower prevalence of AM |5|

Better IYCF, hygiene, and health practices and greater nutrient intake |6|

Lower incidence of AM |7|

Better child nutritional status:
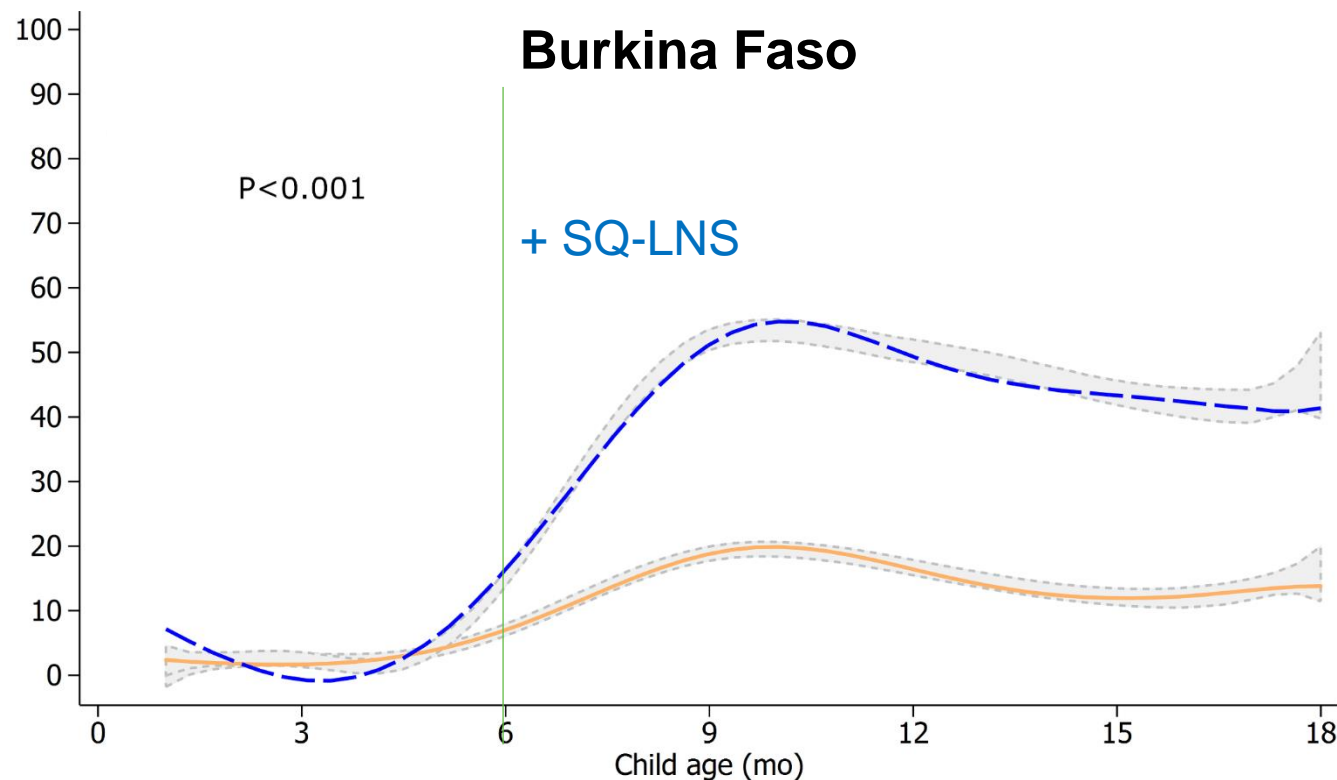• **Better** linear growth
• **Lower** anemia prevalence |8|

○ Two delivery platforms:
   1. At village-level (community-based platform) in Mali
   2. During well-baby clinics (growth monitoring) at health center level (facility-based) in Burkina Faso

PROMIS : Impact on screening coverage, but not on treatment coverage

Mali

Platform: Village-based BCC

Burkina Faso

P<0.001

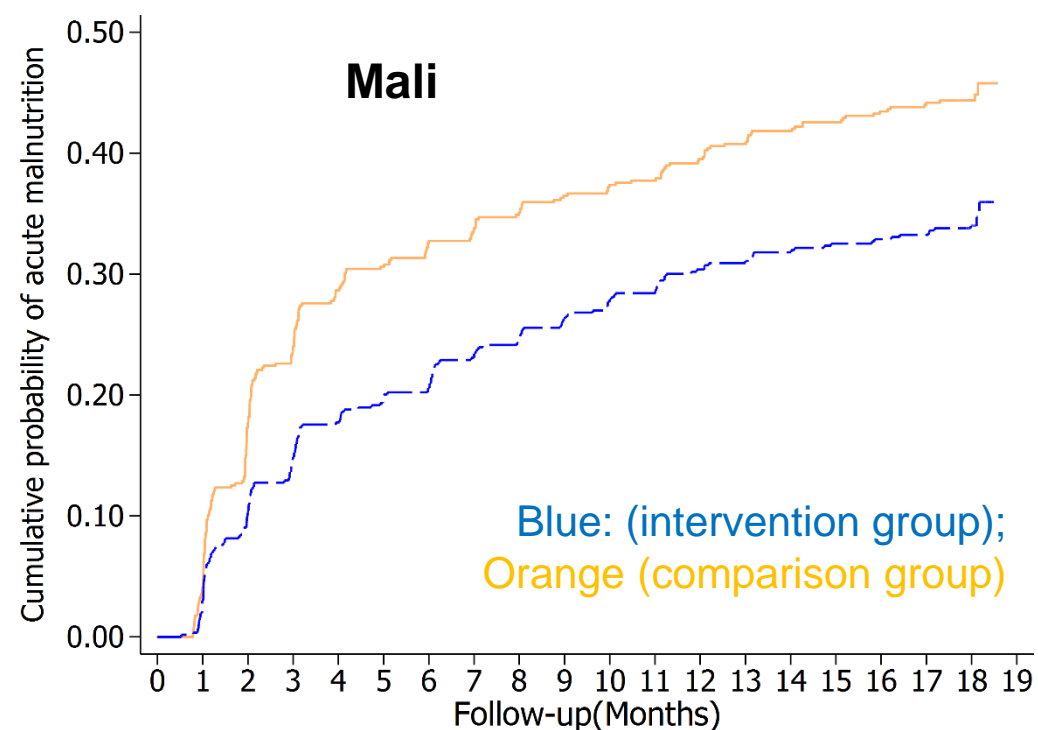+ SQ-LNS

Well-baby consultations at health center

Blue: (intervention group)
Orange (comparison group)

- Impact on screening coverage did not translate into an impact on treatment coverage

PROMIS: Impact on prevention of Acute Malnutrition, linear growth and anemia

- o In Mali, risk of developing new AM episode was 29% lower in intervention group. No impact in Burkina Faso.

  => Higher coverage of SQ-LNS (72% vs. 45% Burkina Faso).

Today's focus

- What is the impact of continuum of care intervention focusing on preventive nutrition behavior change and MAM treatment on child nutrition and caregivers' knowledge and behaviour in Sudan (Marlene Hebie & Hatty Barthorp)

- How does an outpatient treatment program perform in children suffering from concurrent wasting and stunting in Uganda? (Gloria Obeng-Amoako Adobea Odei et al)

- How to organize CMAM in a way that it reaches tribal migratory population in India? (Pawankumar Patil et al.)

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