

INTERNATIONAL SYMPOSIUM ON
**Understanding the Double Burden of
Malnutrition for Effective Interventions**

Understanding children who are
both wasted and stunted: What
we know from exploring existing
data

Dr Mwangome Martha

The Wasting and stunting Technical Working
Group





Irish Aid

Department of Foreign Affairs
An Roinn Gnóthaí Eachtracha



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FROM THE AMERICAN PEOPLE

ENN



KEMRI | Wellcome Trust

Why this project?

STUNTING



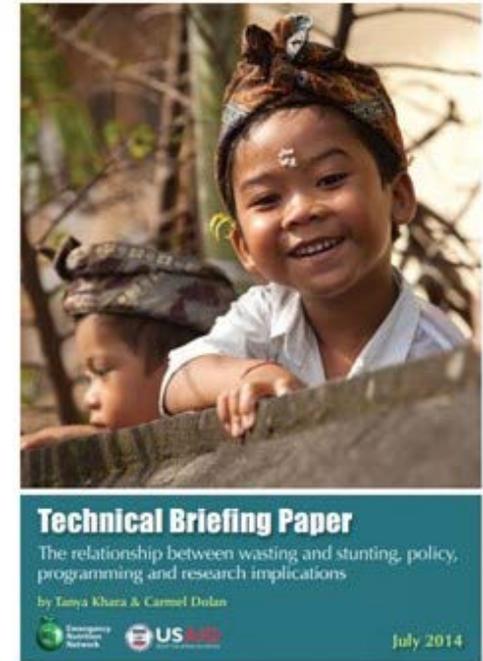
WASTING



Is this justified?

Wasting and Stunting (WaSt) project

- i. Technical Interest Group
- ii. Review of evidence -Technical Briefing Paper
- iii. Research prioritisation
- iv. Mining of existing data
- v. Publication & Influencing



RESEARCH ARTICLE

Research Priorities on the Relationship between Wasting and Stunting

Chloe Angood^{1*}, Tanya Khara¹, Carmel Dolan¹, James A. Berkley^{2,3}, WaSt Technical Interest Group¹

Technical Interest group

Wasting and Stunting Technical Interest Group (WaSt TIG)

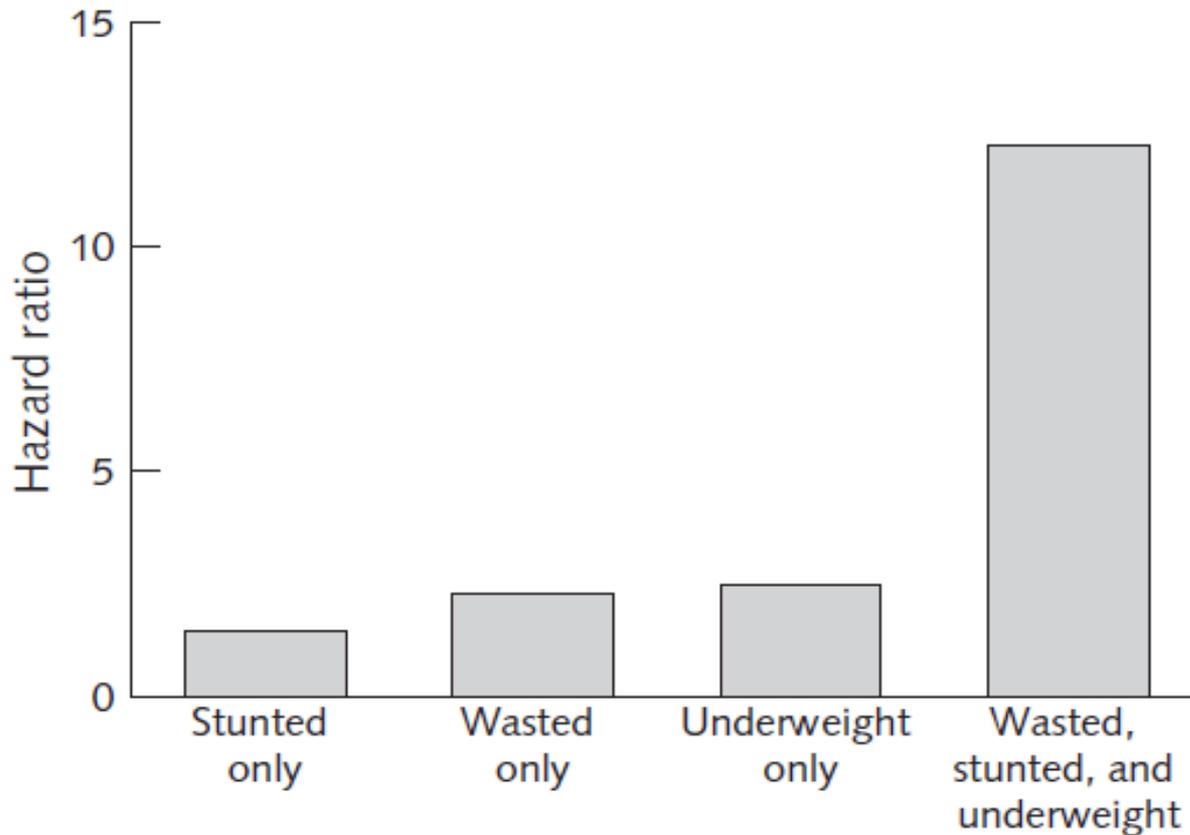
Abigail Perry (DFID), **André Briend** (Independent), **Andrew Hall** (Independent), **Andrew Prendergast** (St Bartholomew's and Queen Mary), **Bernadette Cichon** (No Wasted Lives), **Carlos Grijalva-Eternod** (IGH/UCL*), **Carmel Dolan** (ENN), **Caroline Wilkinson** (UNHCR), **Dolores Rio** (UNICEF), **Dominique Robenfroid** (Institute of Tropical Medicine, Antwerp), **Erin Boyd** (OFDA), **Heather Stobaugh** (RTI), **Jay Berkely** (KEMRI/Wellcome Trust research programme, Kenya), **Jeanette Bailey** (IRC), **Jillian Waid** (HKI), **Jonathan Wells** (GOS-ICH-UCL^), **Kay Dewey** (University of California Davis), **Kevin Phelan** (ALIMA), **Leisel Tally** (CDC), **Mark Manary** (University of St Louis), **Mark Myatt** (Brixton Health), **Marko Kerac** (LSHTM), **Martha Mwangome** (KEMRI/Wellcome Trust research programme, Kenya), **Nancy Aburto** (WFP), **Natasha Lelijveld** (LSHTM), **Paluku Bahwere** (Valid International), **Patrick Webb** (Friedman School of Nutrition Science and Policy, TUFTS), **Saul Guerrero** (ACF), **Sheila Isanaka** (T.H Chan School of Public Health, Harvard), **Silke Pietzsch** (Independent), **Simon Schoenbuchner** (University of Cambridge), **Sophie Moore** (Kings College London, MRC Cambridge), **Stephanie Richards** (Bloomberg School of Public Health, Johns Hopkins University), **Tanya Khara** (ENN), **William Checkley** (Bloomberg School of Public Health, Johns Hopkins University), **Zita Weise Prinzo** (WHO), **Zulfiqar Bhutta** (Aga Khan University, Sick Kids).

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You may see some names you recognise

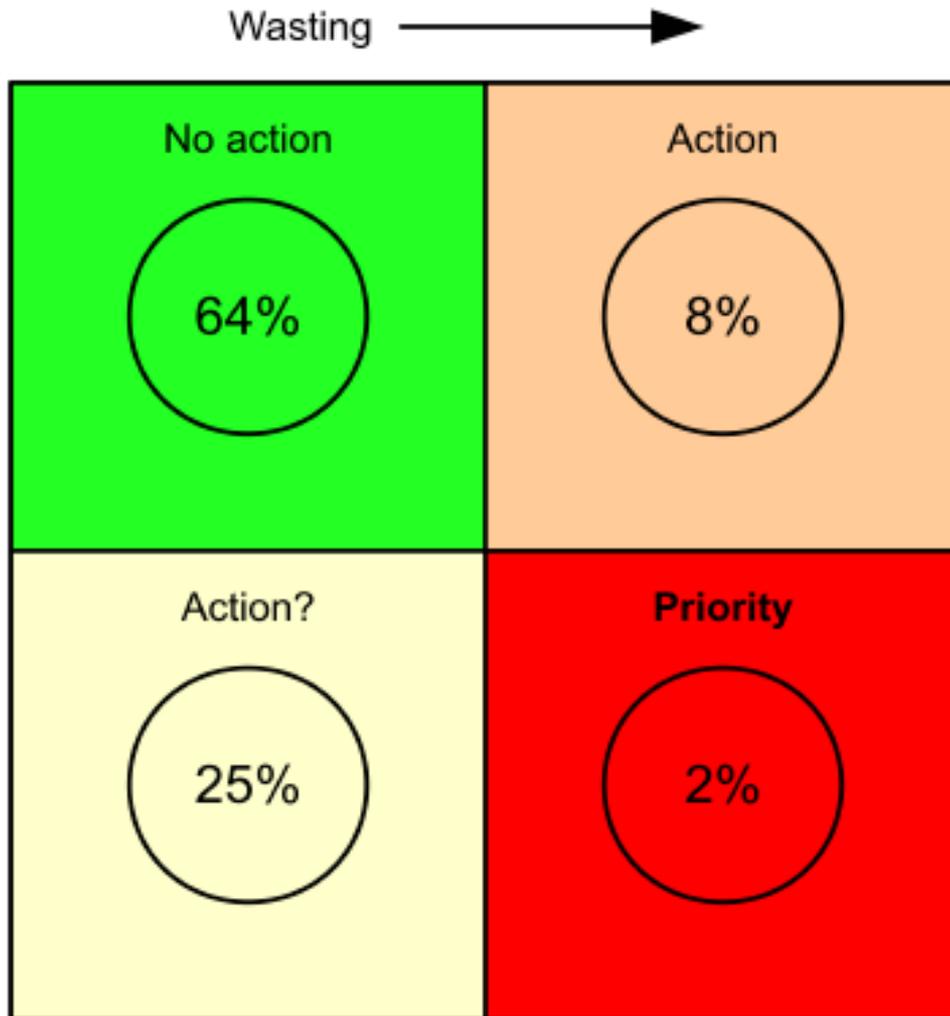
Review of evidence: Why is concurrence important?



(McDonald, Olofin et al. 2013)

Children wasted, stunted and underweight (multiple deficits) conveys similar risk of death to severe wasting

Review of evidence: Waterlow's action diagram



Waterlow childhood malnutrition as a public health problem (BMJ 1974; 4: 88-90)

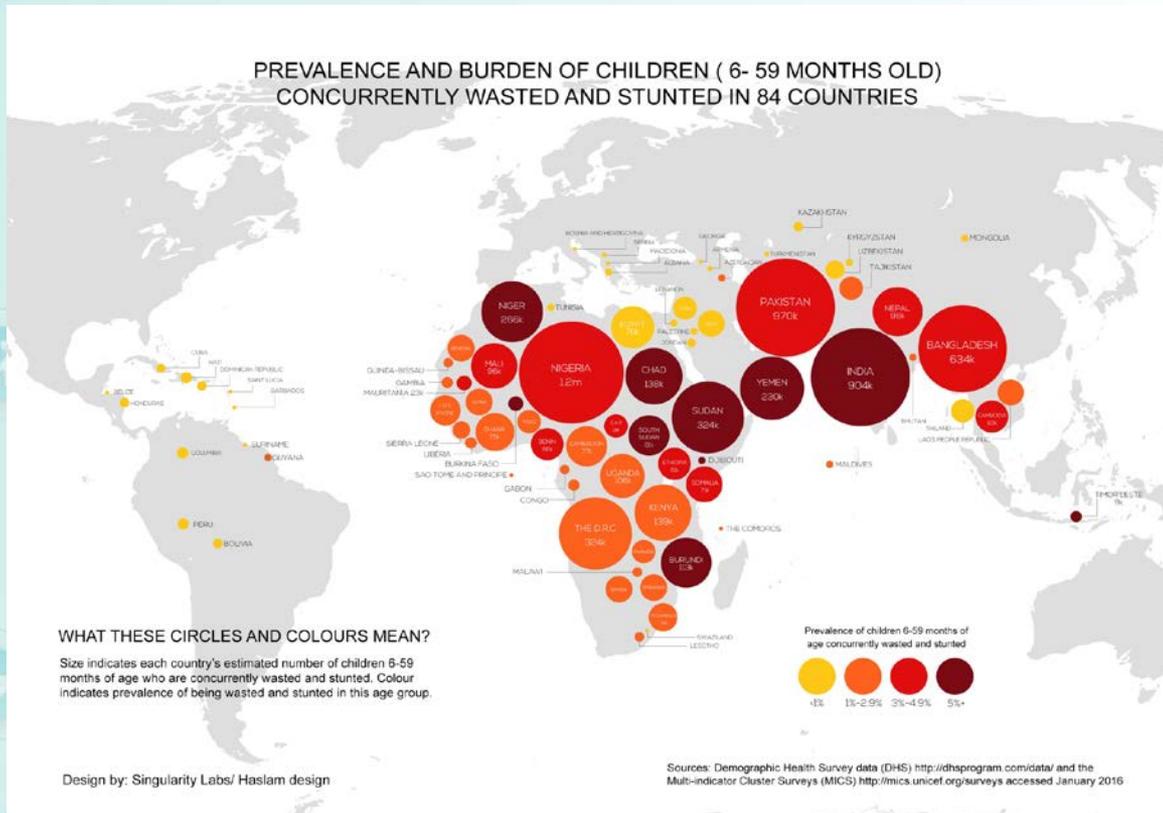
Children who are both wasted and stunted are a priority

No clear evidence base for the current prioritization criteria

Mining of existing data: Questions

- Prevalence – How many children are affected?
- Who is most affected – Age and sex patterns?
- How best can they be identified – Which anthropometric measures best identifies WaSt in children?
- Concurrence and its association with mortality – How does underweight interact with WaSt?

What is the prevalence of concurrence?

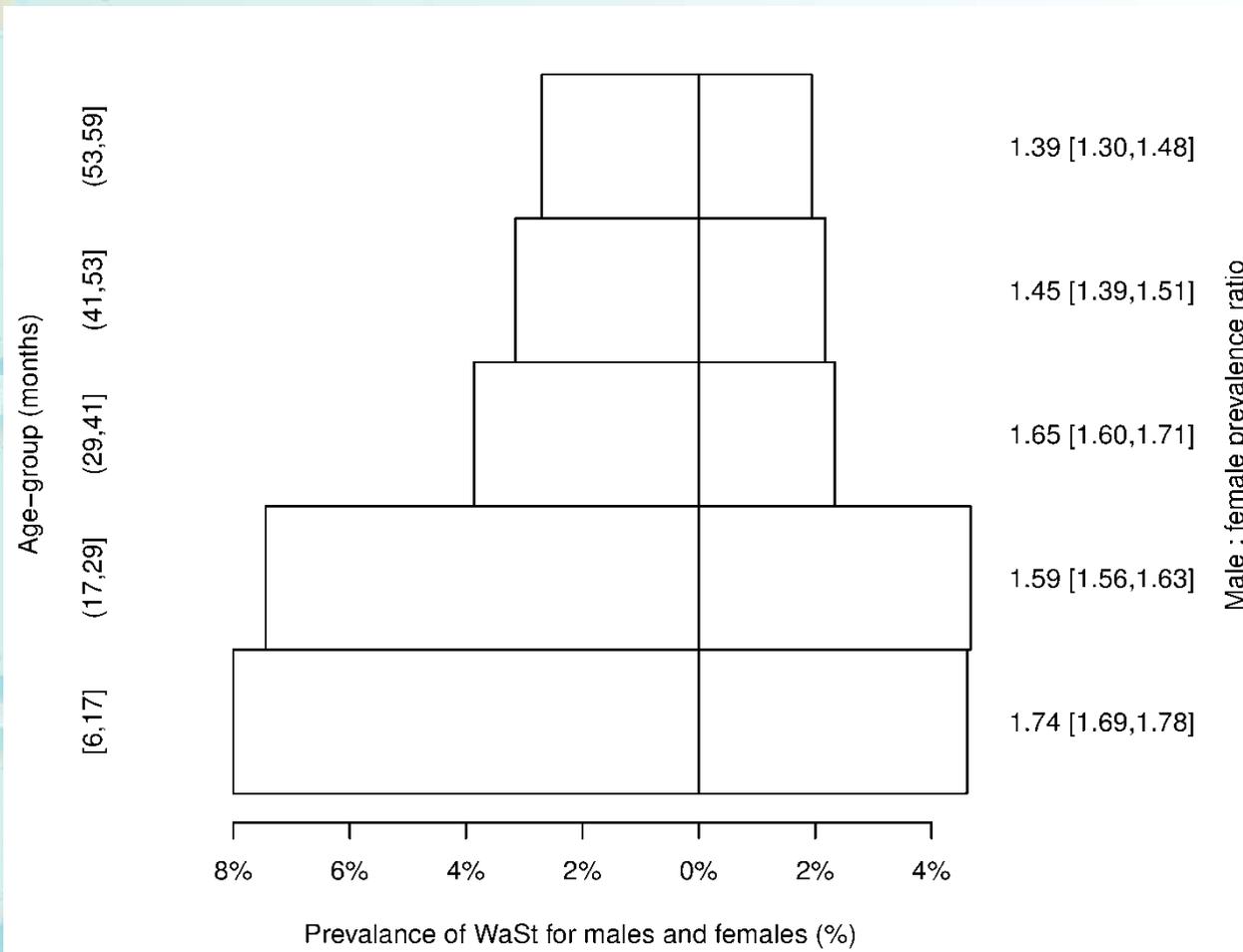


- Ranging from 0% to 8%
- 9 countries >5%
- Pooled prevalence 3.0% (95% CI 2.97 to 3.06)
- Burden ~ 6 million children (6-59m)

Concurrence to be routinely reported

Are these children being reached?

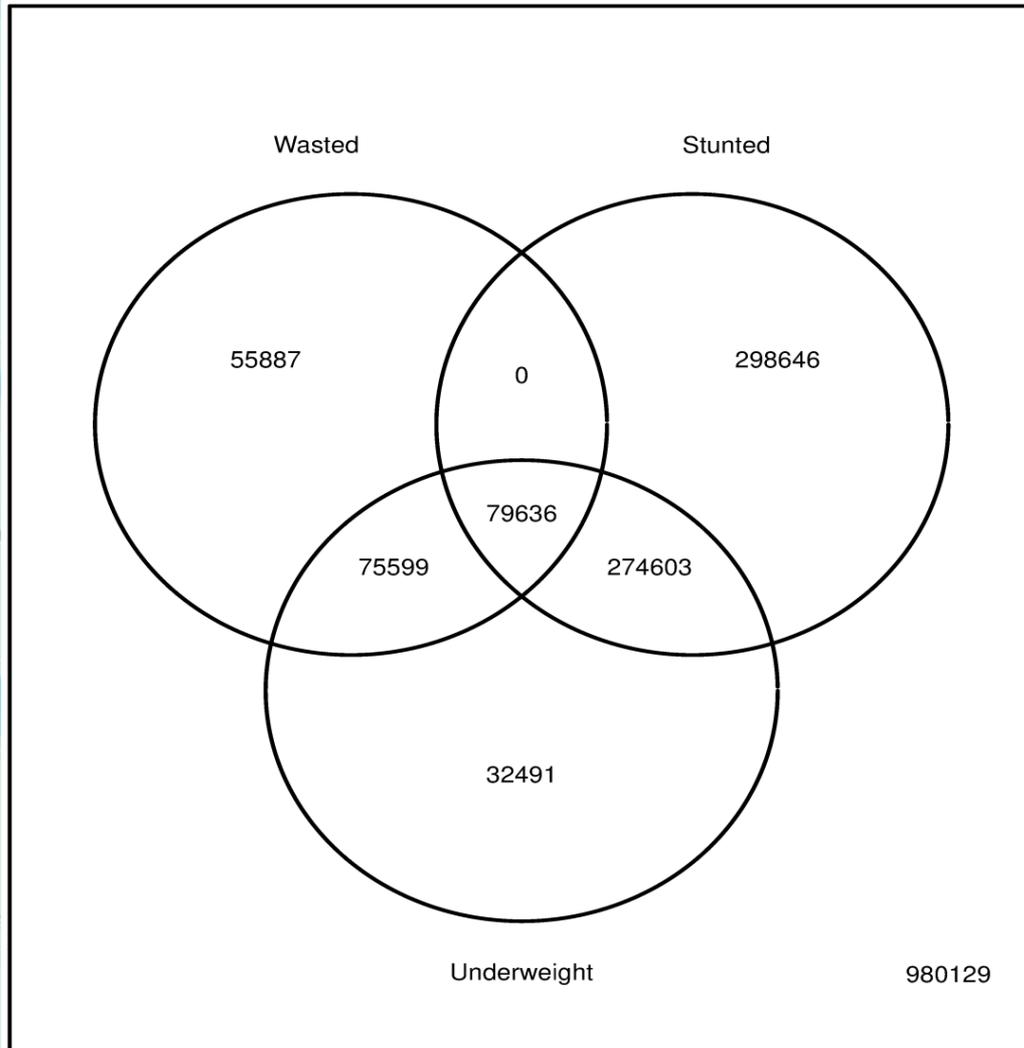
Who is most affected by concurrence?



SMART Surveys (1992-2015)

- 51 countries
- 1.8 million children
- More likely younger and more likely boys

Relationship between WaSt and underweight?



Myatt et al. *Archives of Public Health* (2018) 76:28
<https://doi.org/10.1186/s13690-018-0277-1>

Archives of Public Health

RESEARCH

Open Access

Children who are both wasted and stunted are also underweight and have a high risk of death: a descriptive epidemiology of multiple anthropometric deficits using data from 51 countries

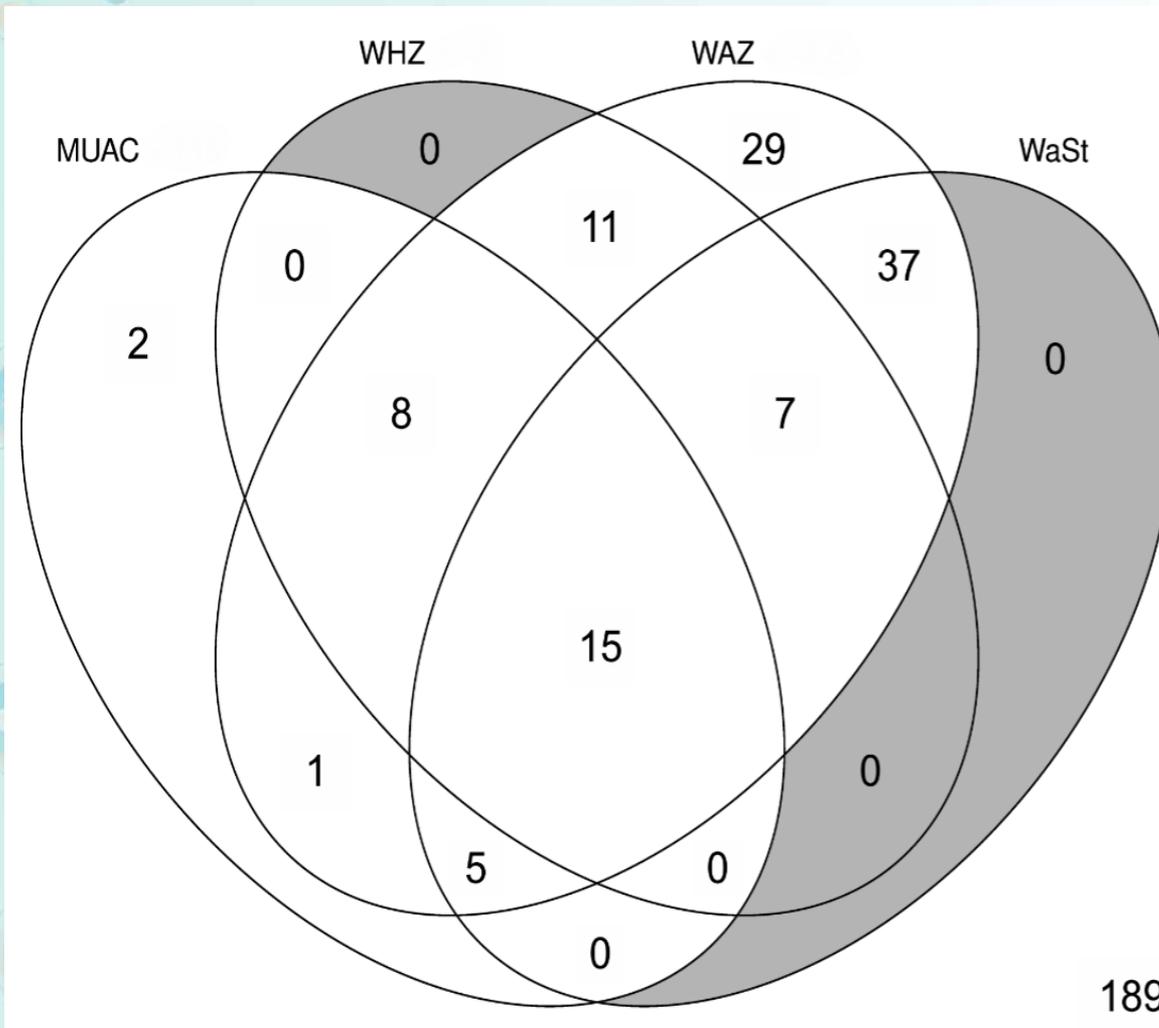
Mark Myatt^{1*}, Tanya Khara², Simon Schoenbuchner³, Silke Pletzsch⁴, Carmel Dolan², Natasha Lelijveld^{5,6} and André Briand^{2,8}

SMART (1992-2015)

All children who are wasted and stunted are underweight

Multiple anthropometric deficit category is the same as WaSt.

How do we best identify concurrent children?



Niakhar (Senegal) 1980

- 5,751 children
- $WAZ < -2.8$ identifies all deaths associated with WHZ and WaSt
- $MUAC < 115$ adds 2 deaths. WHZ did not add value
- Retain MUAC replace WHZ with WAZ

What do we know so far?

- Prevalence of concurrence wasting and stunting varies but can reach alarming levels of >5% (*Khara et al; 2017*)
- Children who are wasted and stunted are also underweight and at a high risk of mortality (*McDonald et al; 2013*)
- WAZ < -2.8 detects all deaths associated with WaSt. MUAC < 115cm adds to this value while WHZ does not (*Myatt et al; 2018*)

Recommendations

Research to adopt including concurrence as a category of analysis (prevalence, risk factors, mortality)

Explore anthropometry and other methods to understand the relationship between stunting and wasting and the functional implications.

Mortality targeted programme to consider using combined WAZ and MUAC improve identification of high risk children including WaSt

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THANK YOU!

