The Hygiene Challenge in Developing Country Contexts

Safefood Knowledge Network

Spencer Hotel, Dublin

4th July 2017

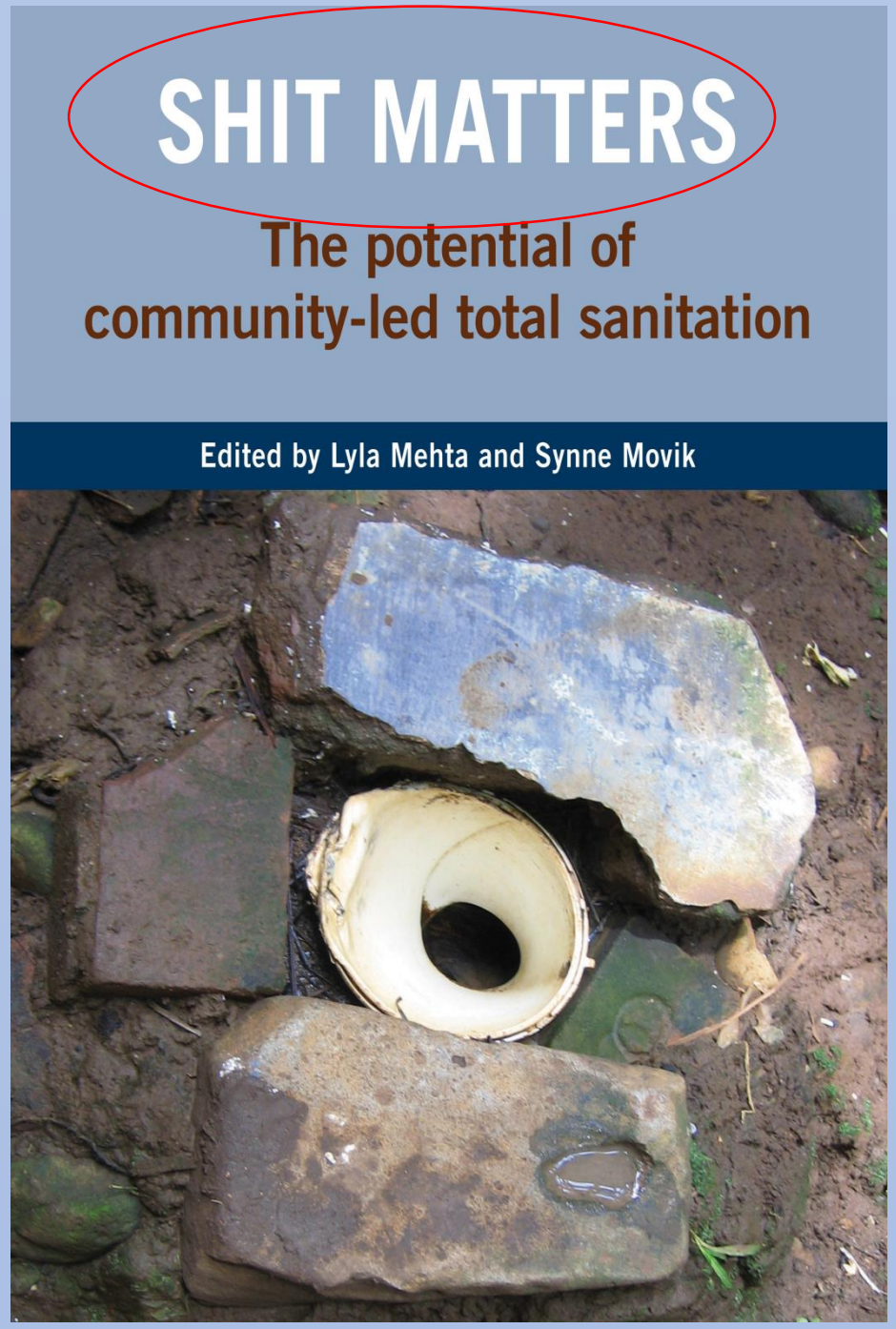
Presentation Outline

- WaSH and Environmental Health in my world!
- The Risks Associated with Poor Hygiene
- The Evidence Base
- The Practicalities of Hygiene Interventions
- The Challenge of Measuring Behaviour Change

WaSH and Env. Health

19 NOVEMBER 2013
IS WORLD TOILET DAY
SIT DOWN AND
GIVE A SHIT!
Irish Forum for Global Health
Student Outreach Group
World toilet day
engineers with
#IGAVE ASHIT
THE IRISH TIMES

Bari
Dinka
Zande
Nuer
Murle
Acholi
Lotuka
Shilluk
Taposa
Mundari
Kha!!Kha!!Kha!!Kha!!



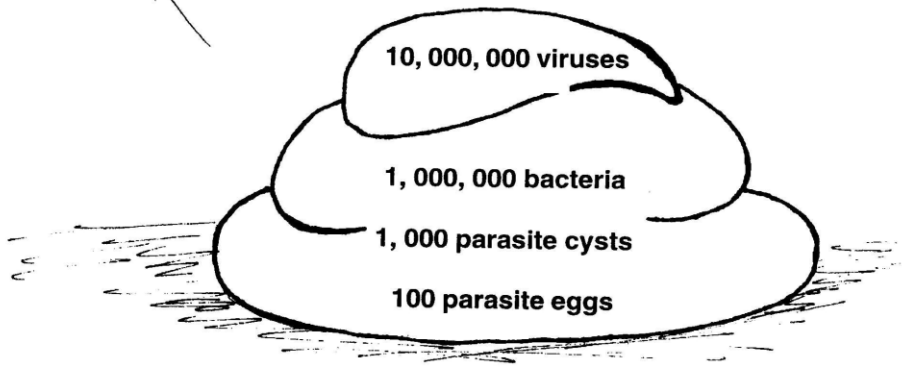
CLTS is the cornerstone of many Govt. policies on Sanitation

Taken from: Towards better programming
A Manual on Hygiene Promotion
Unicef + LSHTM (1999).
Water, Environment and Sanitation Technical Guidelines Series No. 6

Where do intestinal infections come from?

The origin of diarrhoea is: EXCRETA!

One gramme of faeces can contain:



Infectious diarrhoeas (including dysentery, cholera and typhoid) are caused by infectious agents like viruses, bacteria and parasites. These agents get into humans via the mouth and are passed out in faeces.

ENEMY NO 1: FAECES!

Each person produces 175g of SHIT per day

Why talk about SHIT all the time!

- Approx 2.4 billion people lack access to improved sanitation (a decent toilet)
- 1 billion people defecate in the open.
- 660 million people do not receive drinking water from an improved source.
- Source: WHO/UNICEF Joint Monitoring Programme
- All in the context of SDG 6 to have universal access to water and sanitation.

Quote from Lancet Editorial

The shamefully weak presence of the health sector in advocating for improved access to water and sanitation is incomprehensible and completely short-sighted.

Sanitation has languished at the bottom of the international agenda for far too long and the global health community has been complicit in letting it stay there. This unacceptable situation must change now'.

Source: The Lancet Editorial 2008; 371:1045

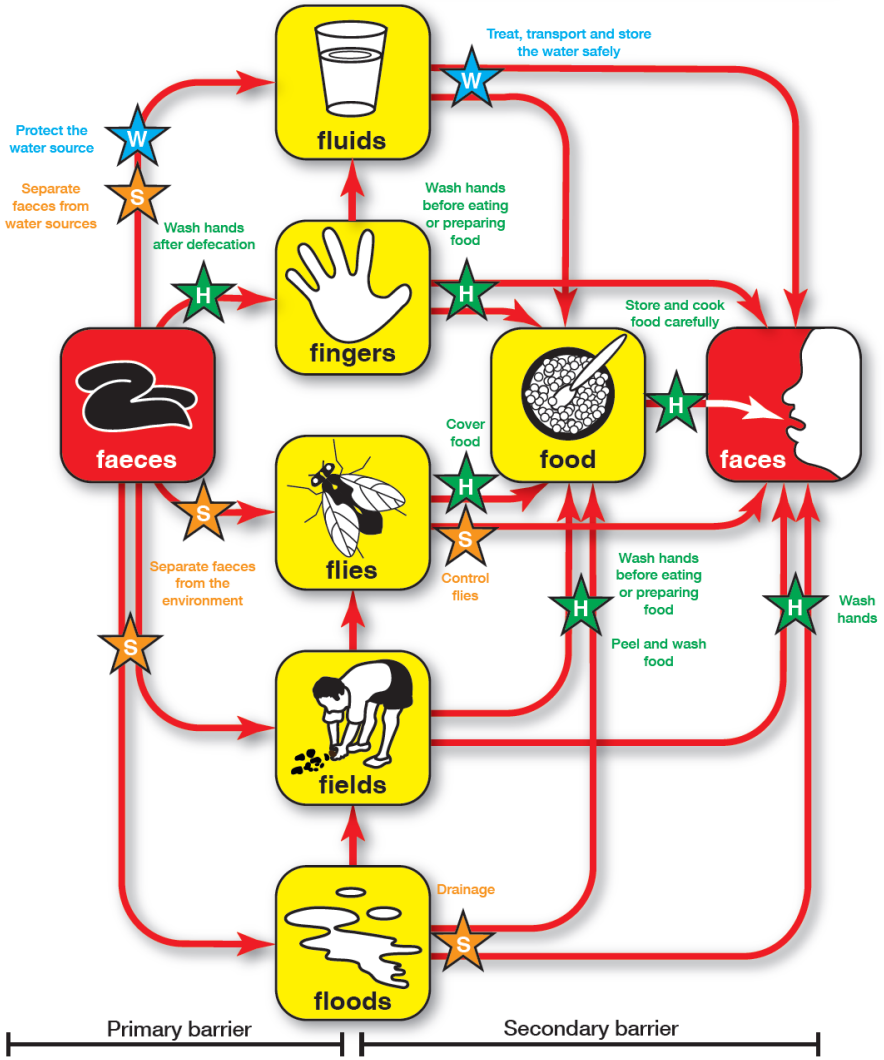
Links to Enabling Environment of Hygiene Improvement Framework.

The ‘f’ diagram

The movement of pathogens from the **faeces** of a sick person to where they are ingested by somebody else can take many pathways, some direct and some indirect. This diagram illustrates the main pathways. They are easily memorized as they all begin with the letter ‘f’: **fluids** (drinking water) **food**, **flies**, **fields** (crops and soil), **floors, fingers** and **floods** (and surface water generally).

W WATER
S SANITATION
H HYGIENE

Barriers can stop the transmission of disease; these can be primary (preventing the initial contact with the faeces) or secondary (preventing it being ingested by a new person). They can be controlled by water, sanitation and hygiene interventions.



Note: The diagram is a summary of pathways: other associated routes may be important. Drinking water may be contaminated by a dirty water container, for example, or food may be infected by dirty cooking utensils.

WEDC

WaSH (Water, Sanitation and Hygiene)

The Sector often with responsibility for hygiene BUT often there is no one department covering WaSH (Ministry for Water and Ministry of Health.

The Broad St. Handpump

Malawi 2015

Tajikistan 2010

Some key aspects of environmental health

WASH

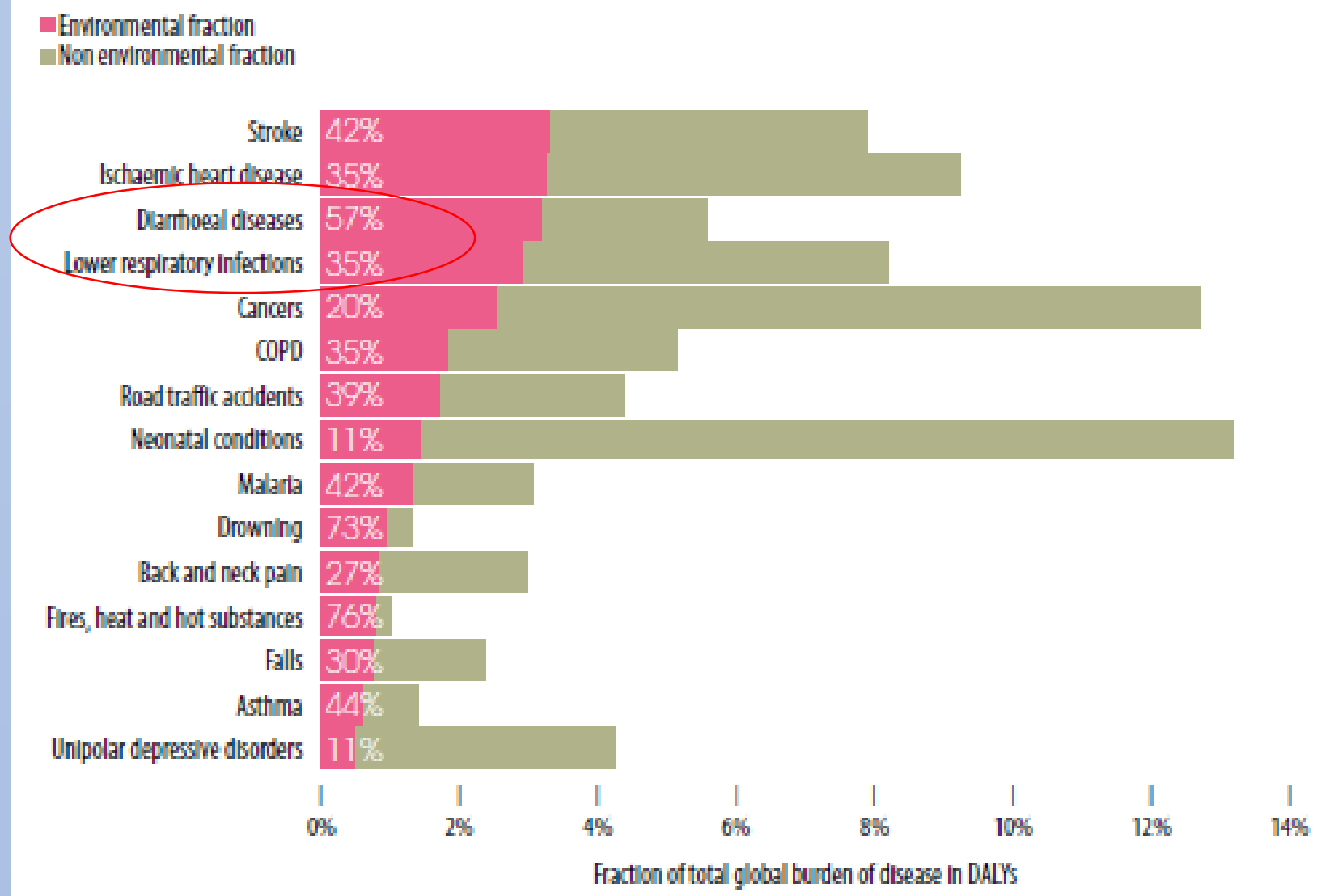
- Water supply
- Excreta Management
- Liquid (grey water mainly) and Solid Waste Management
- **Hygiene Promotion**

- Vector Control
- Shelter and Settlement/Site Planning
- Control of Pollution (focus on Household Air Pollution)
- Tobacco Control

- Note: Frumkin et al describe **climate change** as '**an environmental health hazard of unprecedented scale**' (Frumkin, Howard and McMichael Anthony, Climate Change and Public Health: Thinking, Communicating, Acting, American Journal of Preventive Medicine, 35 (5), p.403-410

The Risks!

Figure ES8. Diseases with the strongest environmental contributions globally, 2012

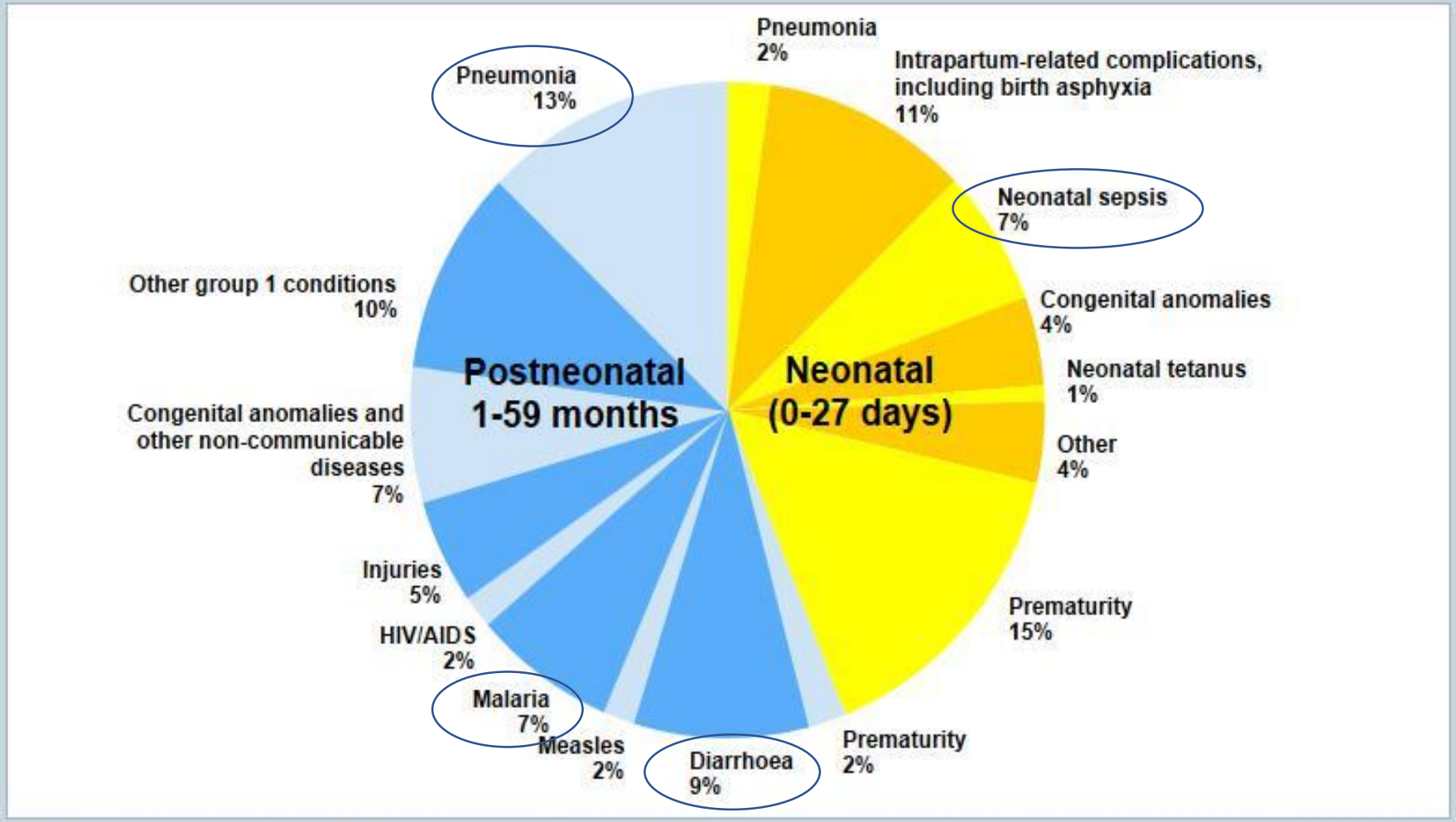


Note: Percentages within bars relate to the environmental share of the respective disease.

Source: Preventing disease through healthy environments, A global assessment of the burden of disease from environmental risks, WHO, 2016

Causes of deaths among children under 5 years, 2013

World Health Organization



Source: CHERG-WHO methods and data sources for child causes of death 2000-2013 (Global Health Estimates Technical Paper WHO/HIS/HSI/GHE/2014.6.2)

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Reported Deaths and Bodies Collected Goma Area, Zaire, July 1994

	Deaths Reported	Bodies Collected	% Dying Outside Facilities
18/7-24/7	1,971	8,661	77.2
25/7-31/7	1,707	29,513	94.2
1/8-7/8	652	7,361	91.2
Total	4,330	45,535	90.5

*Source: UNHCR/CDC Reports via Peter Salama, Unicef, New York

Sudan at Present

- As of June 9th 2017 16,618 suspected cases of AWD with 317 deaths (Case Fatality Rate 1.9%)

- UNICEF seeking standby personnel off the Rapid Response Corps roster for 3 – 6 months working in 8 states affected.

Air Pollution

- In 2012 WHO estimated that air pollution from ambient and indoor sources killed over 7 million people per year. 4.3 million from Household Air Pollution alone
- (more than AIDS, TB and Malaria combined)

- Strongly linked with pneumonia in children, COPD and other respiratory illnesses.

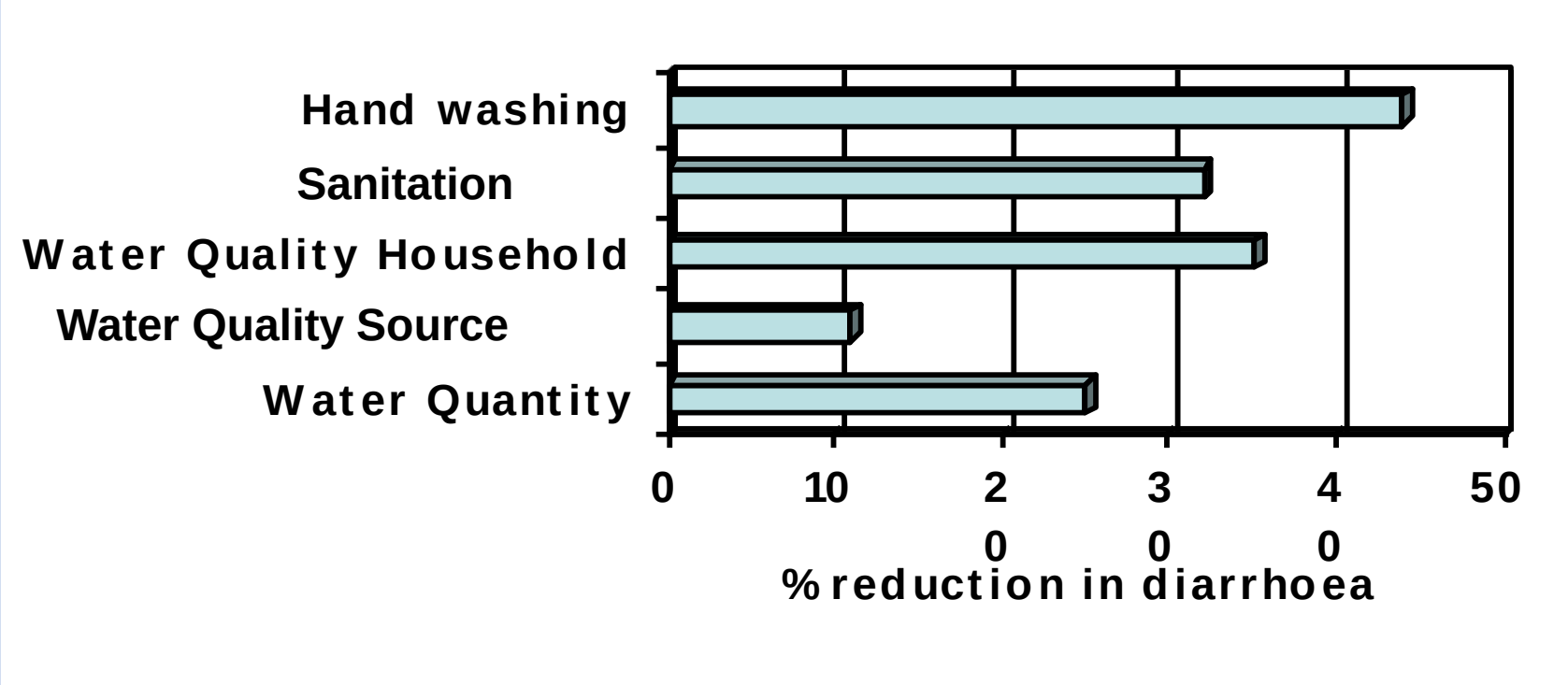
Northern Uganda, 2011

The Current Evidence Base!

Often goes back to John Snow (not the guy in Game of Thrones) in 1854

Evidence Base is I suggest WEAK

Water, sanitation, and hygiene interventions to reduce diarrhoea in less developed countries: a systematic review and meta-analysis, Fewtrell et al (2005)



Taken from Hygiene Promotion Briefing Paper prepared for the WASH cluster meeting in February 2008

Typical Handpumps and Household Storage

Typical consumption or supply levels of approx. 20 litres per person per day

Pader District, Northern Uganda, Dec. 2011 – Photo: Niall Roche

Typical Emergency Latrines and Handwashing

IDP camp, Somali Region, Ethiopia. March 2017
Photo: Niall Roche. Ratios are often 1:100
Standard Ratio 1:20

DFID Evidence Paper May 2013

2. Water, Sanitation and Hygiene, Evidence Paper, May 2013, Department for International Development, Ukaid.

Provides evidence graded as ‘good’, ‘suggestive’ or ‘weak’.

Sindh Province, Pakistan – 2013 Photo: Niall Roche

DFID Evidence Paper May 2013

"There is good evidence that the health impacts of WaSH extend far beyond diarrhoea to include many other important diseases including acute respiratory infections, undernutrition, soil-transmitted intestinal helminth infection (ascaris, trichuris and hookworm), schistomsomiasis, guinea worm, trachoma …."

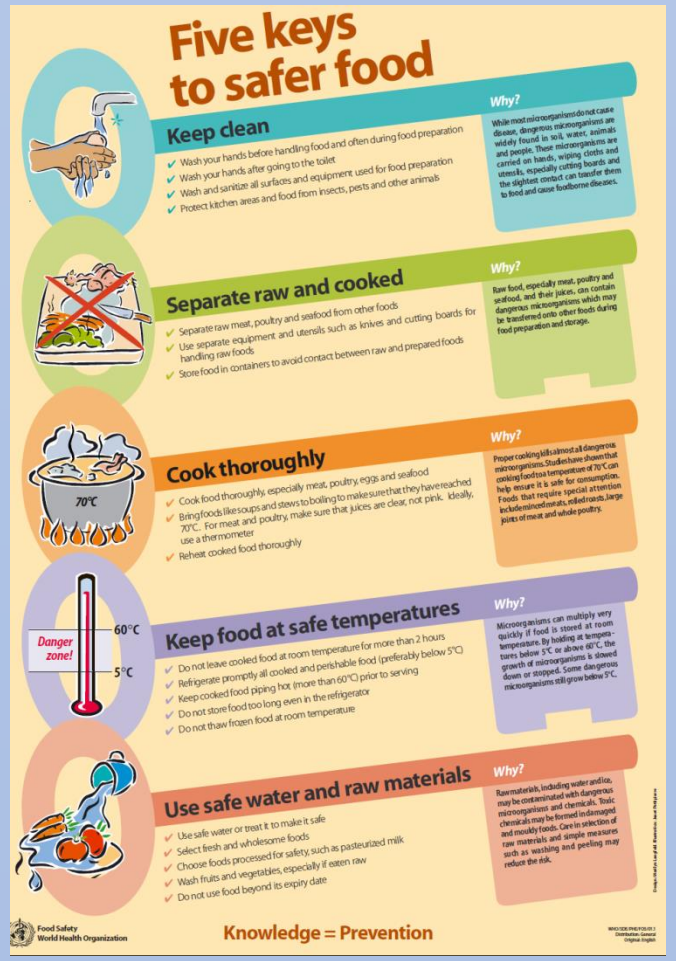
"There is suggestive evidence that diarrhoea (as a consequence of inadequate WaSH) contributes to undernutrition but there is currently weak evidence for casual links to tropical enteropathy. "

Food Hygiene/Safety Links to Nutrition

- LSHTM – share (Sanitation and Hygiene Applied Research for Equity)

- Policy Brief
- Complementary Food Hygiene: An overlooked opportunity in the WaSH, Nutrition and Health Sectors. No Date

"Poor complementary food hygiene may account for a substantial proportion of diarrhoeal diseases among infants and young children in developing countries"



2013 Cochrane Review

1. Interventions to improve water quality and supply, sanitation and hygiene practices, and their effects on the nutritional status of children (Review) , Dangour AD, Watson L, Cumming O, Boisson S, Che Y, Velleman Y, Cavill S, Allen E, Uauy R, The Cochrane Collaboration 2013

Cochrane Database Syst Rev. 2013 Aug 1;8:CD009382. doi: 10.1002/14651858.CD009382.pub2.

Interventions to improve water quality and supply, sanitation and hygiene practices, and their effects on the nutritional status of children.

Dangour AD[1], Watson L, Cumming O, Boisson S, Che Y, Velleman Y, Cavill S, Allen E, Uauy R.

Cochrane Review 2013

- Author's conclusion

- "The available evidence is …… <u>suggestive</u> of a small benefit of WaSH interventions (specifically solar disinfection of water, provision of soap, and improvement of water quality) on length growth in children under 5 years of age"

- "SHIT STUNTS"

Handwashing

- Evidence is strong on impact of handwashing.
- Handwashing with soap can reduce diarrhoea incidence by 47% (Curtis and Cairncross, 2003)
- Handwashing with soap can reduce incidence of respiratory infection by 23% (Rabie and Curtis 2005 updated with Luby and Sandora 2005)

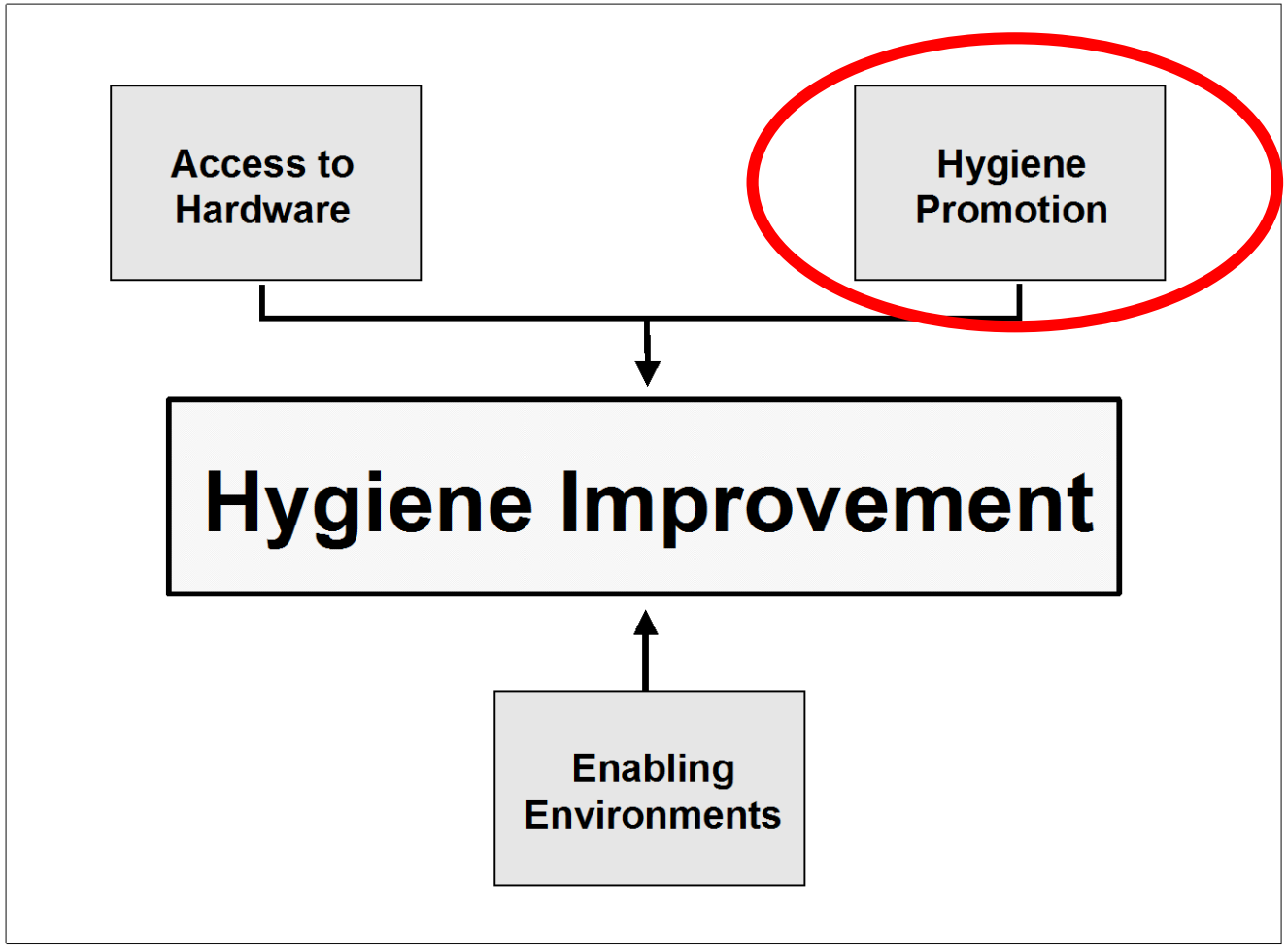
Handwashing Baseline

- It is estimated that only 19% of people wash their hands with soap after going to the toilet. Freeman MC, Stocks ME, Cumming O, Jeandron A, Higgins JP, Wold J, Pruss-Ustun A, Bonjour S, Hunter PR, Fewtrell L, Curtis V. 2014. **Hygiene and health: Systematic review of handwashing practices worldwide and update of health effects**.

- Over 40% of diarrhoea cases could be avoided by handwashing with soap.

The Practicalities of Enabling

Hygiene Improvement Framework



Lack of Planning Laws in Monrovia

Gaye Town, Monrovia, Liberia, Aug 2009 Photo: Niall Roche

Handwashing with Soap

Haiti, 2010/2011 Photo: Fiona Ward

Note: provision of small soap tablets to reduce stealing

Handwashing in Tajikistan

Penjakent district, Tajikistan Nov 2010
Photos: Niall Roche

Tippy Tap In Uganda

Pader district, Northern Uganda, December 2011 Photo: Niall Roche

Muzzafarabad, AJ+K, Pakistan – Dec/Jan 2005/06 Photo: Syed Sulaiman, Concern
Refer to Positive Deviance

Enabled through provision of NFIs (Non Food Items) such as Hygiene Kits and Bednets.

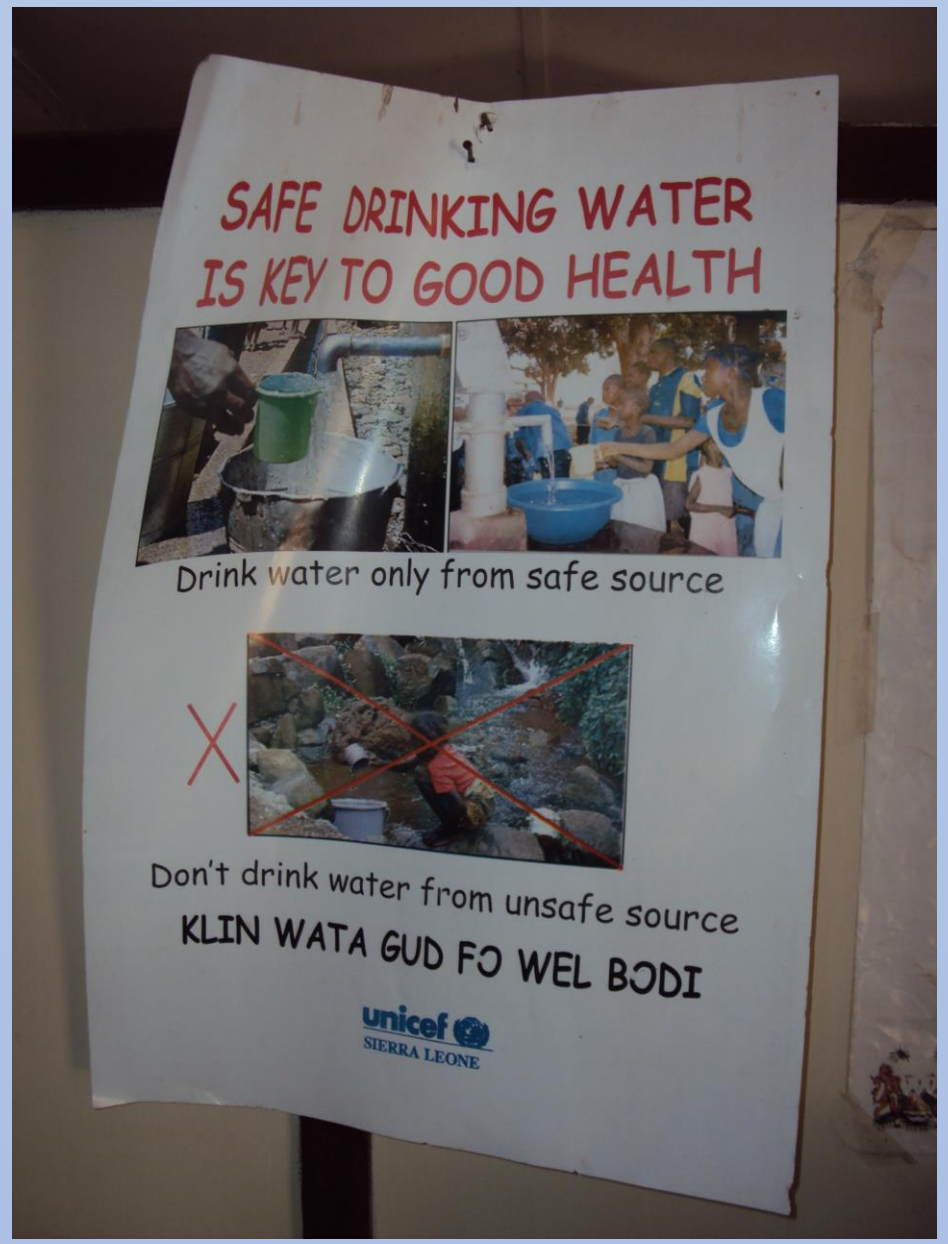
Primary Health Care Workers

1 Health Post for 5,000 people – One Health Centre for 25,000 people covering 5 Health Posts
2 Health Extension Workers (all female) – Hygiene Promotion part of their role in the community – Outreach
Challenges include distance (have to walk), lack of IEC materials to support communication, many competing issues – vaccination, reproductive health etc.

SNNPR, Ethiopia – July 2016 Photo: Niall Roche

Mass Media

South Sudan, Jan 2016
Photo: Niall Roche



Sierra Leone, Feb. 2012 Photo: Niall Roche

Types of Mass Media

- Radio
- Posters & Leaflets
- Campaigns
- Street theatre
- Puppet Shows
- Social Marketing (Latrines and Bednets)

Use of Technology

- The Emergency Env. Health forum held in London (Dec 2012) highlighted the use of SMS or Text Messaging in the delivery of hygiene education/promotion.

- mWASH project in Somalia
- SMS used alongside radio, sound trucks, and mobile cinema by IFRC in Haiti in response to the Cholera outbreak

- Source: Hygiene Promotion in Emergencies Newsletter, No. 3, February 2013

mHealth and iheed

- http://www.iheed.org/

- More focused on health worker training now but some emphasis on health education through modern technology such as mobile phones and even tablets.

- 415 million mobile phones in Africa now. 45% of the population!

Measuring Behaviour Change

- Numerous challenges identified but a key one was:-

- Data on handwashing behaviour is seldom collected and when it is collected it relies on self report through KAP surveys.

Measuring Hygiene Promotion

Through

- **Surveys such as KAP (Knowledge Attitude and Practice) surveys**
- Note “the influence of social desirability bias – the respondent telling the researcher what s/he thinks the researcher wants to hear rather than what actual practices are – is always a risk in studies using interviewer administered questionnaires.

- **Observation**
- “A study in Uganda, for example, found that 84% of women felt they should handwash after going to the bathroom, but only 14% actually did so. (Danquah et al. 2007) Demonstrates the need for behaviour change observation as an evaluation tool and not just surveys. Liberia Evaluation in Aug 2009. 85% reported washing hands at critical times.

Formative Research

- Structured Observation (using a checklist)
- Household Survey
- Behaviour Trials
- In-depth interview
- Focus group discussions

- Note: Methods available to you in Planning and Design plus Monitoring and Evaluation.

Executive Summary “Practical Guidance for Measuring Handwashing Behaviour, WSP 2013

- Self Reports
- Rapid Observation
- Microbiological measures of hand contamination
- Structured Observations
- Sensors

Summary

- WaSH and Environmental Health in my world!
- The Risks Associated with Poor Hygiene and other health related behaviours.
- The Evidence Base
- The Practicalities of Hygiene Interventions
- The Challenge of Measuring Behaviour Change

Questions welcome at lunch or via email.

roche.niall@gmail.com

Climate Change and Health! – Food Safety!

Conference Friday 22nd Sept. 2017 NUI Galway

Featuring the latest research & practice, panel discussions, and guest lectures

Keynote speakers:

Dr. Nicholas Watts
Executive Director, Lancet Countdown: Tracking Progress on Health and Climate Change

Joni Pegram
Senior Policy and Advocacy Advisor, UNICEF UK

John O'Neill
Principal Officer, Dept. of Communications Climate Action & Environment, Govt. of Ireland

Info & RSVP

[Eventbrite link]

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Trócaire

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HSE Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive