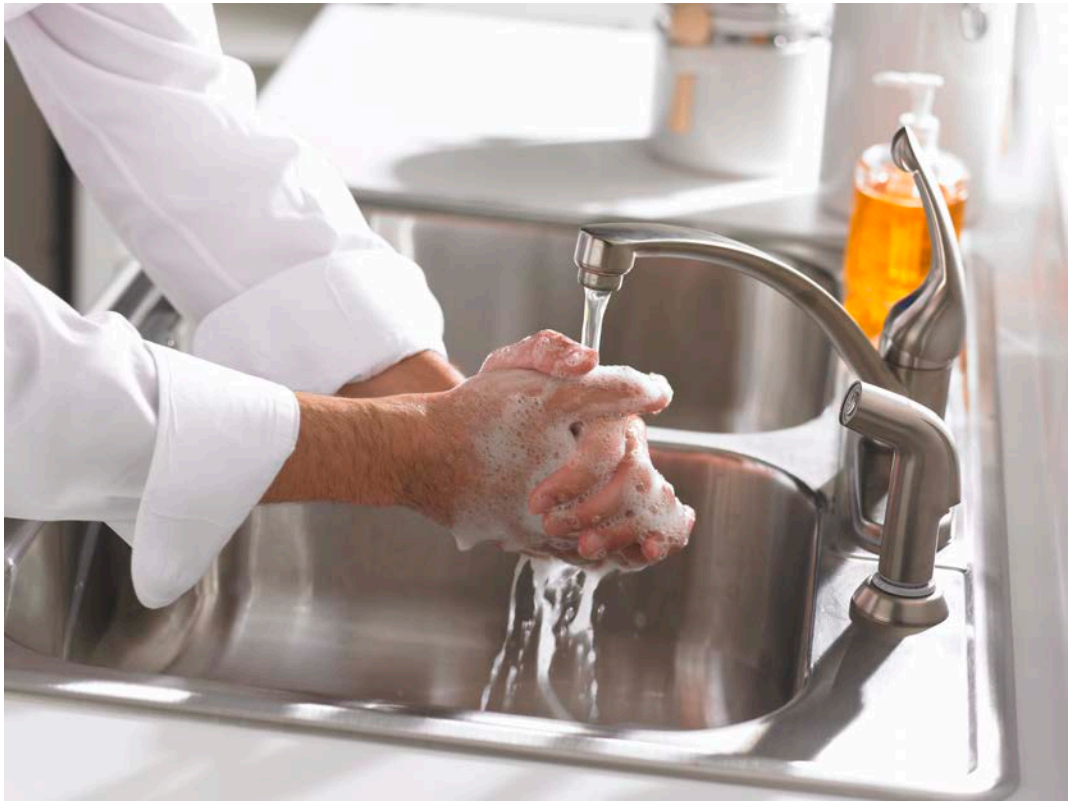
Hygiene and Handwashing



Courtesy of USDA. Image is in the public domain.

Adapted from Susan's Murcott's 2013 Lecture for Water & Sanitation Infrastructure in Developing Countries (1.851/11.479)

Handwashing and the SDGs

TARGET

6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations

INDICATOR

6.2.1 Proportion of population using safely managed sanitation services, **including a hand-washing facility with soap and water**

Handwashing: An Effective "Vaccine"?

- Prevents fecal pathogens fro[illegible] reac[illegible]ng th[illegible] do[illegible]esti[illegible] environment
- Has been proven to reduce:
  - Diarrhea
  - Respiratory Infections
  - Skin Infections
  - Trachoma
- Because it can prevent transmission of such a variety of pathogens, it can be more effective than any single vaccine

The "Do-It-Yourself" Vaccine

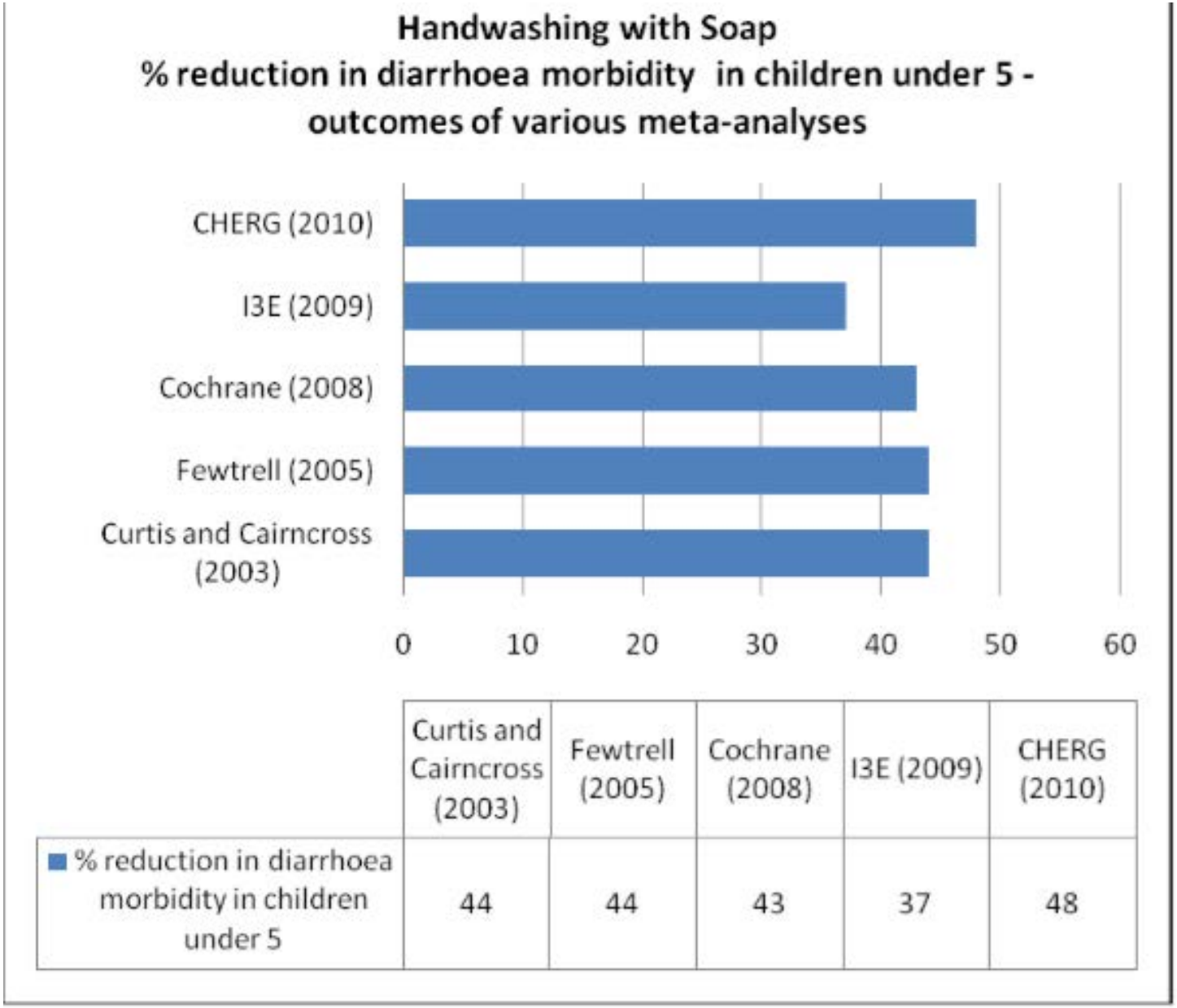


Figure 1 Outcomes of various handwashing meta-analyses on the reduction in diarrhoea morbidity in children under 5

Handwashing Promotion in Schools

- Handwashing promotion in schools can play a role in reducing absenteeism among primary school children.
- In China, promotion and distribution of soap in primary schools resulted in **54% fewer days of absence** among students compared to schools without such an intervention (Bowen et al, 2007)

Cost Effectiveness

Interventions against Diarrhoeal Disease	Cost-effectiveness ratio (US$ per DALY averted)
Cholera immunizations	1,658 to 8,274
Rotavirus immunizations	1,402 to 8,357
Measles immunization	257 to 4,565
Oral rehydration therapy	132 to 2,570
Breastfeeding promotion programs	527 to 2,001
Latrine construction and promotion	≤270.00
House connection water supply	223
Hand pump or stand post	94
Water sector regulation and advocacy	47
Latrine promotion	11.15
Hygiene promotion (including hand washing)	3.35

Table 5: **Cost-effectiveness ratio (US$ per DALY averted). Source: Jamison et al 2006 chapter 2 p.41 ,** Disease Control Priorities in Developing Countries (DCP2)

Handwashing with soap is the most cost-effective intervention against diarrheal diseases

So, handwashing is cheap, effective and simple, so what's the problem?

Table 1: Observed Rates of Handwashing with Soap Around the World

Setting	Handwashing with Soap	Prevalence	Reference
Kerala State, India	After defecation	34 percent	PPPHW
	After cleaning up a child	35 percent	
Ghana	After defecation	3 percent	PPPHW
	After cleaning up a child	3 percent	
Peru	After defecation	6 percent	PPPHW
	After cleaning up a child	30 percent	
Senegal	After defecation	31 percent	PPPHW
	After cleaning up a child	26 percent	
Kolkata, India (slums)	After defecation	16 percent	Sircar et al. 1996
Kyrgyzstan (rural)	After cleaning up a child	0 percent	Biran 1999
	After using a toilet	18 percent	
Nigeria (rural)	After cleaning up a child	10 percent	Omotade et al. 1995
Burkina Faso (urban)	After cleaning up a child	13 percent	Curtis et al. 2001
	After using a toilet	1 percent	
Brazil (childcare centers)	After cleaning up a child	16 percent	Barros et al. 1999
Lima, Peru (shanty town)	After defecation (soap use 'rare')	12 percent	Gilman et al. 1993
Northern England (peri-urban)	After cleaning up a child	47 percent	Curtis et al. 2003

Note: All prevalences are observed, except Sircar et al., which used soap measurements.

It’s not just the developing world

- Gas station in south England: Only 65% of women and 31% of men washed their hands with soap after using the toilet
- Study in north England: 43% of mother’s washed hands with soap after changing diaper
- 28% of commuters in 5 UK cities had bacteria of fecal origin on their hands

Curtis, Val et al (2011)

Challenges with Hygiene Behavior

- It's hard to ***measure***: Questionnaire-based surveys can overestimate rates of handwashing 2-3 times *(Curtis, V. et al, 1993)*

- It's hard to ***change***

Barriers to Handwashing

- Environmental
  - Lack of water
  - Lack of sanitation
  - Lack of drainage
- No soap
- Cultural norms & social structures

Courtesy of USDA. Image is in the public domain.

Curtis, Val et al (2011)

Cholera in Haiti

"As hard as it is to believe, Haiti still needs soap. They have many needs, but soap — and access to clean water — is absolutely essential to fight cholera." - Nigel Fisher, U.N. humanitarian coordinator, in an 2010 interview.

Soap cost 50 cents. Half the population lives on less than $1.25/day

"They buy food instead. " - Gaelle Fohr, coordinator for hygiene programs in Haiti for the U.N. Children's Fund.

http://www.npr.org/blogs/thetwo-way/2010/11/15/131343028/as-death-toll-rises-experts-say-soap-can-help-haiti-s-cholera-outbreak

2009 Hygiene Behavior Review

3 kinds of Hygiene Behavior:

- Habitual
  - Taught at an early age but rarely include soap
- Motivated
  - Disgust
  - Social norms
- Planned
  - Rarely took place
  - Aimed at preventing disease

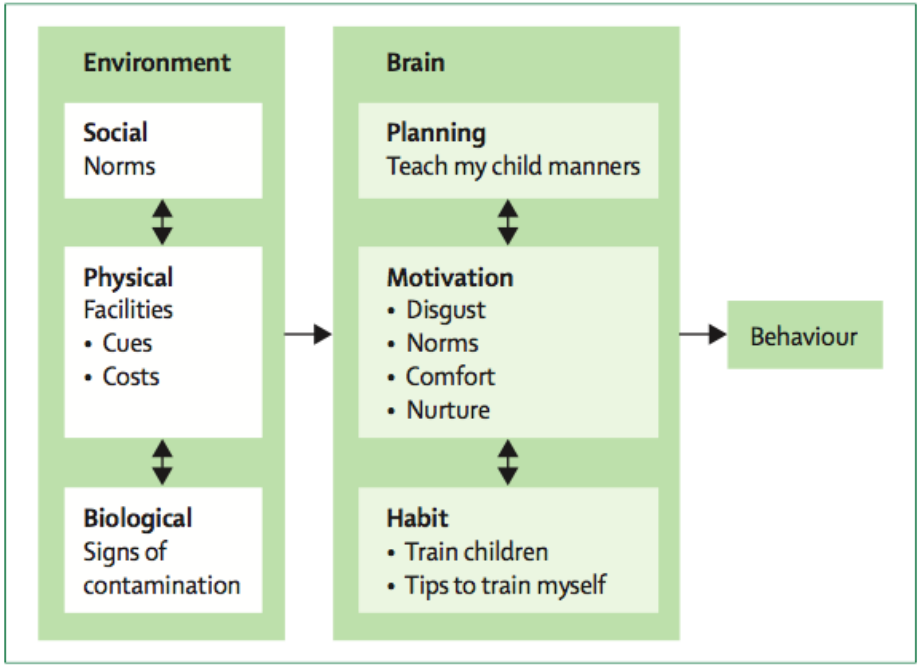


Figure: **Hypotheses about the most effective ways of changing handwashing behaviour**

Curtis, Val et al (2011)

So what do we do?

Step 1: Lay Foundation for a National Handwashing Campaign

- Rapid Situation Analysis
  - Is there a health need?
  - Low rates of handwashing
  - Cholera, typhoid, SARS is recognized as a problem
- Government
  - Committed to MDGs/SDGs
  - WASH is a priority
  - Champions exist
- Industry
  - Soap market w/room for growth
- Donors and Partners
  - Existing WASH programs where handwashing could fit
  - Donors looking to develop new programs
  - Others, like healthcare providers, looking to play a major role in public health
  - Explore public-private partnerships

Step 2: Understanding the Customer

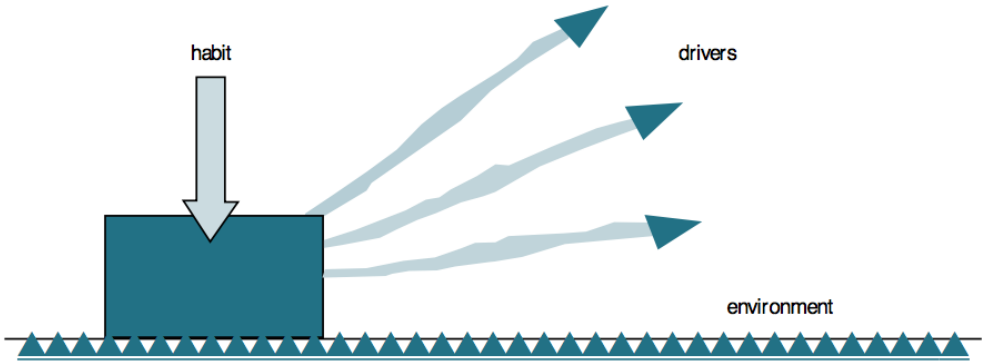


Figure 4: Environment, Habits, and Drivers

3 Forces to Change Behavior

- Environment
  - Access to water and soap
  - "attractive" soap
- Habits
  - Change old to new
  - Focus on life-changing events, like the birth of a baby
- Drivers
  - Create habits
  - Emotions and Feelings when someone does a behavior

Step 3: Program Implementation

- Design the Campaign. Research should tell you:
  - Key practices to target
  - Who the target audience is
  - What are the barriers, habits and environment
  - Appropriate channels of communication
- Apply the “Marketing Mix”: 4 Ps
  - Product (e.g. soap, water, water dispensers, basins)
  - Price (e.g. cost of soap and water, time to wash hands)
  - Place (e.g. distance to water, placement of soap)
  - **Promotion**
- Monitoring & Evaluation

What Helps?

- Longer intervention periods with adequate follow-up
- Frequent visits by the implementer, and the build-up of trust
- Using short communication messages
- The availability of training materials
- Financial assistance and partnerships
- The kindness and respect of the implementer
- The accessibility of the implementer
- The implementer's status and authority, and community membership
- The enthusiasm of community leaders about a project
- The community having a sense of ownership of a project
- The sex of the implementer being suited to the community member
- Income-generating activities for community members
- Developing a culture of cooperation

Case Study: Burkina Faso

- Used social marketing
- Tailored to local customs
- Targeted specific types of behavior
- Built on existing motivations for hygiene (social and aesthetic rather than health-based)
- Used locally appropriate channels of communication
  - Neighborhood committees
  - Street theatre
  - Schools
  - Local radio

Curtis, Val et al (2011)

Case Study: Burkina Faso

Results After for 3 years

- 75% of the mothers targeted had been involved with program activities
- 50% could cite the two main messages of the program correctly
- Handwashing with soap after cleaning a child's bottom rose from 13% to 31%
- The proportion of mothers who washed their hands with soap after using the latrine increased from 1% to 17%.

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