Institution: London School of Hygiene & Tropical Medicine (LSHTM)

Unit of Assessment: UoA2 – Public Health, Health Services & Primary Care

Title of case study: Preventing disease through promotion of handwashing with soap

1. Summary of the impact

Research by LSHTM has put handwashing with soap (HWWS) at the heart of international efforts towards diarrhoeal disease prevention, changing the way good hygiene practices are communicated globally. The research led to the global Public-Private Partnership for Handwashing with Soap (PPPHW), a coalition of stakeholders interested in child health and handwashing, and a billion people have been reached through initiatives such as Global Handwashing Day (GHD). Millions more have benefited from the research through hygiene programmes set up by industry. The risk of death from diarrhoeal disease for those reached by these campaigns has been substantially reduced.

2. Underpinning research

Globally, there are over 2bn cases of diarrhoeal disease every year, resulting in the deaths of 0.85m children. Diarrhoea is the second leading cause of death in children under 5.

Research by Val Curtis, Reader in Hygiene at LSHTM (joined 1989, then Research Fellow) has shown that HWWS can save up to 1m lives a year, and is one of the most cost effective means of preventing disease globally. Through developing and testing innovative approaches to promote safe hygiene, Curtis' research has shown the benefits of joint public/private sector collaboration, engaging industry and using marketing approaches to implement effective large-scale public health promotion programmes.

In 2003, Curtis and Sandy Cairncross (LSHTM Professor of Environmental Health; joined 1984 then Senior Lecturer) carried out a systematic review of the literature on hand hygiene. They came to the surprising conclusion that HWWS could reduce the risk of diarrhoeal disease by 42–47% and might save a million lives per year.[3.1] Cost-effectiveness studies calculated that hygiene promotion costs around US$3.35 per Disability Adjusted Life Year (DALY) averted,[3.2] putting HWWS at the top of the list for the most cost-effective interventions to prevent disease in developing countries.

Between 2000 and 2007, Curtis and her team (including Aunger, joined 2003) conducted extensive field research into handwashing behaviour in 11 countries, using a combination of focus groups, behaviour trials and structured observations. They identified key drivers of handwashing behaviour: disgust, nurture and the desire to conform to social norms – not simply a desire for better health.[3.3] Using these insights, novel handwashing promotion programmes were rolled out in Africa and India. These proved to be effective in improving HWWS behaviour among those reached.[3.4]

In 2002 at Curtis' instigation a coalition of international stakeholders, including the World Bank, Colgate-Palmolive, USAID, UNICEF and Unilever among others, founded the global PPPHW. Built on their understanding of handwashing behaviour and on the process used by industry to market soap, Curtis worked with the Ghanaian Ministry of Water and the PPPHW to roll out an innovative nationwide handwashing campaign in 2003. Subsequent evaluation found that 71% of Ghanaian mothers knew the TV ad and the reported rates of HWWS increased substantially. Overall the initiative proved that there are many economic and public health benefits to be gained from public-private collaboration. For example, the public sector can employ the marketing skills of the private sector and both can benefit from academia's insights into behaviour change.[3.5]

Realising that the private sector often commissions studies explicitly to generate media attention, Curtis and LSHTM's Hygiene Centre team have carried out a series of studies for release annually on Global Handwashing Day (2009–2012). The findings that 25% of male commuter's hands and 12% of mobile phones in Britain are contaminated with faecal bacteria,[3.6] achieved over 200 media mentions in 2011.

3. References to the research

3.1 Curtis, V and Cairncross, S (2003) Effect of washing hands with soap on diarrhoea risk in the community: a systematic review, *Lancet Infectious Diseases*, 3(5): 275–281, doi:10.1016/S1473-3099(03)00606-6. Citation count: 258.

3.2 Cairncross, S and Valdemanis, V (2006) Water supply, sanitation and hygiene promotion, in DT Jamison, JG Breman, AR Measham, G Alleyne, M Claeson, DB Evans, P Jha, A Mills and P Musgrove (eds) *Disease Control Priorities in Developing Countries*. Washington DC: World Bank (peer reviewed). Citation count: 34

3.3 Curtis, VA, Danquah, LO and Aunger, RV (2009) Planned, motivated and habitual hygiene behaviour: an eleven country review, *Health Education Research*, 24(4): 655–673, doi:10.1093/her/cyp002. Citation count 40

3.4 Scott, BE, Schmidt, WP, Aunger, R, Garbrah-Aidoo, N and Animashaun, R (2008) Marketing hygiene behaviours: the impact of different communication channels on reported handwashing behaviour of women in Ghana, *Health Education Research*, 23(3): 392–401, doi:10.1093/her/cym056. Citation count: 15

3.5 Curtis, VA, Garbrah-Aidoo, N and Scott, B (2007) Ethics in public health research: masters of marketing: bringing private sector skills to public health partnerships, *American Journal of Public Health*, 97(4): 634–641, doi 10.2105/AJPH.2006.090589. Citation count 27.

3.6 Dodrill, L, Schmidt, WP, Cobb, E, Donachie, P, Curtis, V and de Barra, M (2011) Male commuters in north and south England: risk factors for the presence of faecal bacteria on hands, *BMC Public Health*, 11(31), doi:10.1186/1471-2458-11-31. Citation count: 0

4. Details of the impact

As a direct result of Curtis' research, HWWS is now a key strategy in the international fight against diarrhoeal disease, attracting both public and – increasingly – private investment. As a result of the innovative public-private collaborative approach to public health campaigning, designed and evaluated in the course of her work, Curtis has spearheaded an effective alliance of industry with organisations like the World Bank, USAID and UNICEF to promote good hygiene. This means that millions of people around the world have now been exposed to HWWS promotion programmes. In the last decade, diarrhoea deaths in under 5s have steadily fallen from 1.2m to 0.85m per year,[5.1] and while some of the credit must go to economic development and improved clinical treatment, some is undoubtedly due to the promotion of better hand hygiene based on Curtis' research.

Global awareness

Curtis' Ghanaian research demonstrated the potential benefits of private-public collaboration in promoting good hygiene. It was following the dissemination of this research at a series of presentations organised by the PPPHW and WHO (2006–2008) that Curtis' proposal of an annual GHD was adopted, and on 15 October 2008 the first ever GHD was celebrated.[5.2] It has steadily gained momentum since.

In 2012, 200m people participated in GHD in over 100 countries. GHD events included special TV shows, school competitions, nationwide poster campaigns and media outreach – a combination of public and private strategies. As part of GHD 2012, 6 million Nepalese noodle packs carried the GHD logo; 160,000 Haitian schoolchildren saw handwashing demonstrations; 98,000 people participated in community events and rallies in Bangladesh; 16 million Keralans received handwashing messages alongside a mass de-worming programme; and in the UK, LSHTM worked with Radox, a Unilever brand, to put GHD stands in every Sainsbury's supermarket.

In 2012 there were 40,000 visitors to www.globalhandwashingday.org, 48,000 hits on World Wash Up Twitter game, and GHD had 96,000 fans on Facebook. On 15 October, #iwashmyhands trended globally on Twitter. The most recent estimate is that GHD has now reached 1 billion people.[5.3] Google trends in searches for 'handwashing' show a peak in October every year after

GHD.

Secondary reach through media
GHD has grabbed media headlines since it began in 2008, and Curtis has been extensively and regularly interviewed about her research in association with the event ever since. Among her many media appearances have been interviews in the *New York Times* (13/7/2008); Radio 4's *Woman's Hour* (28/2/2012); BBC World Service's *Health Check*, which has tens of millions of listeners, especially in Africa (19/10/2011); *BBC News* and *News Online* (13/10/11 and again on 15/10/12); *Sky News* (6/3/12); and NPR Radio's *Science Friday* (23/10/09).

In 2012 Curtis was nominated and highly commended by The Society of Biology's Science Communication Awards for her work to raise awareness of HWWS.[5.4]

Policy change and private sector campaigns
Curtis' research demonstrated conclusively that HWWS is both an effective and cost-effective way for governments to promote health. As a result, an increasing number of countries have been developing their own national policies since 2008.[5.5]

Curtis' research into behaviour change for handwashing also galvanised industry to invest in its own HWWS public health campaigns. Chief among these is Unilever's 'Lifebuoy Way of Life' (LWL) launched in 2008. LWL targets mothers and schoolchildren across Asia and much of Africa, aiming at getting hands washed at five key times to reduce diarrhoeal illness. LSHTM is now included among Lifebuoy's global partners, and Curtis is listed as one of Lifebuoy's experts. In this capacity she and her research continue to contribute to the evolution of the company's strategy.[5.6] Lifebuoy says its campaign has already reached 48 million people in eight countries in Asia and Africa. The goal is to reach a billion by 2015.[5.7] LWL has given good results for Unilever and as a result other manufacturers have started investing in their own HWWS campaigns. Examples include Procter & Gamble's 2012 launch of the Safeguard 'Doctors on Wheels' programme to promote handwashing in Nigeria,[5.8] and GoJo Industries' sponsorship of Canada's STOP! Clean Your Hands Day in 2012.[5.9]

Partly as a result of Curtis' work over 300 organisations from civil society, government and the private sector espouse handwashing with soap.[5.10]

5. Sources to corroborate the impact

5.1 Liu, L, Johnson, HL, Cousens, C, Perin, J, Scott, S, Lawn, JE, Rudan, I, Campbell, H, Cibulskis, R, Li, M, Mathers, C and Black, RE (2012) Global, regional, and national causes of child mortality: an updated systematic analysis for 2010 with time trends since 2000, *Lancet*, 379(9832): 2151–2161, doi:10.1016/S0140-6736(12)60560-1.

5.2 Global Handwashing Day, Coordinator, Global PPPHW at FHI360.

5.3 Global Public-Private Partnership for Handwashing (PPPHW) (2012), *Global Handwashing Day 2012 Celebrating 5 Years!* (unpublished).

5.4 Society of Biology's Science Communication Awards – Certificate.

5.5 Global Public-Private Partnership for Handwashing (PPPHW) (2011) *Making Global Handwashing Day More Than Just a Day: Governments Take Action*. Washington, DC: PPPHW, http://globalhandwashing.org/sites/default/files/Governments-Handwashing-Report.pdf (accessed 11 September 2013).

5.6 Lifebuoy Social Mission Manager, Unilever.

5.7 Unilever (2013) Reaching 1 billion people, viewed 20 September 2013, http://www.unilever.com/sustainable-living/healthandhygiene/handwashing/reaching1billionpeople/.

5.8 Procter & Gamble (2012) Press release: Safeguard celebrates Global Handwashing Day with launch of Doctors on Wheels program, http://www.pg.com/en_NG/downloads/media/safeguard_celebrates_global_handwashing.pdf (accessed 20 September 2013).

5.9 GOJO Industries (2012) *GOJO CANADA:* Healthcare: Canadian Patient Safety Institute – Stop! Clean your Hands Day!, viewed 20 September 2013, http://www.gojo.com/canada/markets/healthcare/healthcare/resources/healthcare-resources/canadian-patient-safety-hc.aspx.

5.10 List of organisations available upon request.