



CAN MASS MEDIA REDUCE CHILD MORTALITY?

CONCEPT NOTE

The basic proposition

Development Media International (DMI) has been working with the London School of Hygiene and Tropical Medicine to model - for the first time - how many children's lives could be saved in Africa by behaviour-change mass media campaigns. The results are striking: the model predicts that under-5 child mortality could be reduced by 10% to 20%, depending on the profile of the country, at the extraordinarily low cost per life-year saved of \$1 – 10. If the model proves correct, such campaigns could play a central role in the efforts to achieve Millennium Development Goals 4 and 5.

Who are DMI?

DMI brings together some of the leading experts on media campaigning in developing countries, with a primary focus on health. All of these experts have led some of the world's largest and most successful health campaigns in recent years, as managers within the BBC and other leading media organisations, and have conducted campaigns in over thirty states. See Annexe for more details.

Don't we already know that mass media campaigns can save lives?

We know that mass media campaigns can change behaviours. Indeed, DMI staff have conducted many of the world's most successful behaviour-change campaigns (see Annexe). But no one has ever measured, or even modelled, the impact on mortality. This is because media campaigns have historically been focused on single ("vertical") issues, e.g. HIV/AIDS or malaria. The impact of these campaigns on all-cause mortality is inevitably modest and very hard to identify statistically.

What is DMI going to do that is different?

DMI has developed a methodology for campaigning on *all* key life-saving behaviours. These behaviours range from simple household behaviours (e.g. breastfeeding, or rehydrating a child with diarrhoea) to seeking medical treatment when necessary (e.g. recognising the symptoms of pneumonia).

To enable such comprehensive campaigns, DMI relies on a key methodology: building the capacity of both Ministries of Health and national radio and television broadcasters. Once staff have been trained, and the infrastructure of relationships established, the marginal costs of conducting additional campaigns are very low. Campaigns can be conducted on malaria in January, diarrhoea in February, nutrition in March, and so on for little more than the cost of a single HIV/AIDS campaign.

Has this methodology been proven to work?

Yes. In 2003 to 2006, the UK government's Department for International Development (DFID) funded an HIV/AIDS campaign in Cambodia. DMI's Director asked for permission to add maternal and child health messages to the HIV messages, at no extra cost. Permission was granted, and impact was achieved across 12 message topics, proving beyond doubt that a wide range of behaviours can be changed over the same period.

DMI has also completed a mother and child health project in Orissa, India, which has shown similarly convincing evidence.

How do you know how many lives can be saved?

To estimate the potential impact of comprehensive campaigns, we have adapted the models used by Jones et al¹ and Darmstadt et al² for the Lancet Child Survival Series in 2003 and 2005. These models predict how many lives could be saved if coverage of key interventions (breastfeeding, bed nets etc), was increased from current coverage levels.

Our own model uses evidence from previous behaviour change campaigns to predict the increase in coverage of these interventions that could be achieved by campaigning on all causes of death using mass media alone. These predictions are then plugged into the Lancet's model to show the reductions in child mortality that could be achieved.

The model has then been adjusted to take into account levels of service provision and media penetration in all countries.

What does the DMI-LSHTM model predict?

The model predicts that after three years, comprehensive campaigns could reduce all-cause child mortality by 10% to 20%, depending on the country's profile. These are a summary of the results for selected countries:

Table 1: Predicted impact of a 3-year comprehensive media campaign

	Total under-5 deaths	Media penetration	Total annual deaths averted (year 3 on)	% reduction in child mortality (year 3 on)	Annual cost of project (USD, years 1-3)	Cost per DALY saved, year 3 (discounted at 3%)	On-going cost of project, years 4-10 (assuming no legislation for free airtime)	Cost per DALY saved (years 4-10, discounted at 3%)
Angola	206,000	80%	33,807	16.4%	\$2,500,000	\$2.78	\$1,500,000	\$1.67
Bangladesh	277,000	67%	36,517	13.2%	\$3,000,000	\$2.88	\$2,000,000	\$1.92
Burkina Faso	131,000	76%	22,496	17.2%	\$3,000,000	\$4.76	\$2,000,000	\$3.17
Ethiopia	389,000	28%	26,787	6.9%	\$2,500,000	\$3.43	\$1,500,000	\$2.06
Ghana	84,000	86%	13,228	15.7%	\$3,000,000	\$8.00	\$2,000,000	\$5.34
Kenya	175,000	85%	31,286	17.9%	\$3,000,000	\$3.50	\$2,000,000	\$2.34
Malawi	68,000	78%	9,591	14.1%	\$2,500,000	\$9.59	\$1,500,000	\$5.75
Mozambique	118,000	64%	17,039	14.4%	\$2,500,000	\$5.92	\$1,500,000	\$3.55
Tanzania	188,000	69%	27,161	14.4%	\$2,500,000	\$3.41	\$1,500,000	\$2.05

Can you explain more about costs?

Yes. Health economists measure costs according to the cost per life-year (DALY) saved. The cost per DALY saved here is in the range of \$2-10 in year three and falls to \$1-6 in years four to ten³.

¹ The Lancet, Vol 362, July 5 2003. Child Survival II Series. "How many child deaths can we prevent this year?" Jones, Steketee, Black, Bhutta, Morris, and the Bellagio Child Survival Study Group.

² "Evidence-based, cost-effective interventions: how many newborn babies can we save?" Gary L Darmstadt, Zulfiqar A Bhutta, Simon Cousens, Taghreed Adam, Neff Walker, Luc de Bernis, for the Lancet Neonatal Survival Steering Team. The Lancet Vol. 365, March 12 2005

³ assuming a discount rate of 3%. For the sake of simplicity the calculation excludes any impact on morbidity.

How do these costs compare to other interventions?

These cost effectiveness estimates are lower than any interventions currently used in public health. The WHO has used a rule of thumb that any intervention that costs below \$100 per DALY is “good”, and below \$25 is “excellent”⁴. The cheapest intervention evaluated in the authoritative literature (DCPII⁵) is childhood immunisations (\$8 per DALY saved in Africa, \$16 in Asia). Other leading interventions include DOTS treatment for TB (\$8-\$263), insecticide-treated bednets for malaria (\$2- \$24), Integrated Management of Childhood Illness (\$9-\$218), increased primary care coverage for maternal and neonatal care (\$82-\$409), and antiretroviral treatment for HIV/AIDS (\$673-\$1494).

These are dramatic claims. Is the model robust?

Yes. The mortality calculations underpinning the model were conducted by Prof. Simon Cousens, Professor of Epidemiology and Medical Statistics at the London School of Hygiene and Tropical Medicine, and we were assisted with the economic calculations by Prof Anne Mills (LSHTM), one of the world’s leading health economists. The model has been very positively reviewed by independent experts as part of our proposal to the Wellcome Trust, and will be published as a paper in The Lancet in 2011.

How would you prove these predictions?

By broadcasting the campaign in one or more countries over a three year campaign period, and measuring the impact on both behaviours and mortality to scientific standards.

We are currently launching a scientific, cluster-randomised trial of these predictions to be located in Burkina Faso, West Africa. That is to say, we will broadcast the intervention in 7-10 geographic “clusters” and use 7-10 additional clusters as controls. This is possible by using FM radio stations (which have approximately 50km broadcast radius) to broadcast the messages – Burkina Faso has a very localised, radio-dominated media environment so this approach will work well. The evaluation – which includes baseline and endline mortality surveys each of 100,000 sample size – will be the most rigorous evaluation ever conducted of a mass media intervention.

If this model is proven to work, what are the policy implications?

They are huge. Most supply-side interventions take years or decades to take to scale. Mass media, by contrast, can be taken to scale within months. If its impact and cost-effectiveness was proven, it should become a high priority for governments across the developing world. If similar campaigns were implemented in 10 countries over 10 years, the model predicts some 2.2 million lives could be saved. This process would also, for the first time, place human knowledge and mass communications within the mainstream of public health interventions, based on robust scientific evidence.

How would the project actually operate?

All DMI projects work on similar principles: we station permanent staff in the country for the duration of the project, working in partnership with the Ministry of Health to build capacity. Production and broadcast of TV and radio spots will be carried out in partnership with local FM radio stations, again building their capacity. The creative outputs will focus on radio spots, TV spots and interactive phone-in programmes. And the scientific research is carried out in partnership with the

⁴ “Investing in health research and development: Report of the Ad Hoc committee on health research relating to future intervention options”. World Health Organization: Geneva, 1996. TDR/Gen/96.1

⁵ Cost comparisons are taken from “Disease Control Priorities in Developing Countries”(2nd Edition), ed Mills et al, <http://www.dcp2.org/pubs/DCP>, chapter 2, and “Advancement of global health: key messages from the Disease Control Priorities Project”, Laxminarayan, Mills et al, The Lancet Vol.367, April 8 2006

London School of Hygiene and Tropical Medicine. In this case, the research component will be huge, with over 100,000 people being interviewed for the mortality surveys before and after the project.

How do you determine which messages to focus on?

The DMI-LSHTM model allows us to predict how many lives can be saved by individual messages for each country. For example, the impact of selected messages in terms of the number of deaths averted per year is given below.

Table 2: Predicted annual impact on lives saved by campaign message

Intervention	Breastfeeding (BF)	Insecticide Treated Material Bednets (ITM)	Measles vaccine	Extra care for Low Birth Weight (LBW) infants	Antiretroviral (ARV) treatment and replacement feeding	Skilled maternal & immediate neonatal (NN) care	Oral Rehydration Therapy (ORT)	Antibiotics: Pneumonia	Antimalarial treatment
Message	Exclusive BF for 6 months, continue for 24	Use bednets for the whole family, particularly mother and baby	Get vaccine.	Feed small babies more often, keep them warm, avoid bathing	See doctor if you are pregnant.	Give birth in a health centre	Continue feeding, appropriate fluids, ideally ORS or equivalent. Take child to health centre at signs of dehydration.	Know danger signs of ARIs; seek treatment.	Seek treatment for malaria
Angola	7778	984	1607	1528	51	375	9706	3302	1411
Burkina Faso	4220	1530	428	753	52	190	5677	2407	2971
Mozambique	2536	1338	360	974	152	210	3809	1265	2255

This is a statistical tool that will be useful in prioritising and selecting messages, and can be easily disseminated to other countries

What do you want from other funders?

DMI's objective is to save as many lives as possible in the developing world. The scientific trial in Burkina Faso is just part of that, demonstrating to policymakers that this investing in human knowledge makes scientific sense. But we already have a robust, peer-reviewed model and strong evidence that it works. So over the next 5 years we aim to launch projects in up to 5 countries. They will be similar (large-scale media campaigns, with a focus on building the capacity of the Ministry of Health) but the emphasis will not be on conducting scientific trials, rather on saving as many lives as possible. Thus there will not be control groups – instead we will broadcast over the entire country for a 3-year period.

The attraction for funders is that we will be able to predict – for the first time - how many lives (to the nearest 1000) will be saved for a given financial investment in a given country.

We have pre-selected a number of countries that would be highly suitable for such a campaign and would be delighted to make a presentation to interested funders.

Annexe: Background on DMI

Mission: DMI (www.developmentmedia.net) is an organisation of leading experts in media campaigning for developing countries, with a primary focus on health. All of these experts have managed some of the world's largest and most successful health campaigns in recent years, with experience in 30 states. DMI was created for one purpose: to distil this accumulated experience into a set of systems that will allow campaigns to be conducted far more comprehensively, cost-effectively and sustainably than has been possible until now.

Leadership: DMI is led by Roy Head, who created and ran the Health Division of the BBC World Service Trust for eight years, running 15 campaigns with 150 staff. On forming DMI, he received the Rowntree Foundation's "Visionaries" Award (www.jrct-visionaries.org.uk) to support best practice in health campaigning. He is supported by senior staff drawn from the BBC and from Brazil, Canada, India, Nepal and the USA.

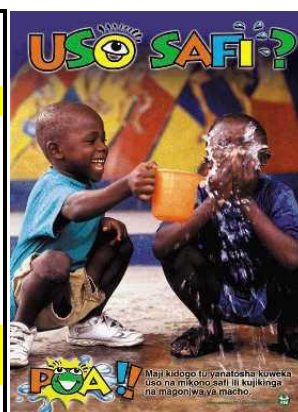
Partners and research: DMI has a formal Memorandum of Understanding with the WHO. On research and evaluation it works in partnership with the London School of Hygiene and Tropical Medicine (LSHTM).

Our Approach: Firstly, DMI's approach to health communications is based on careful analysis of data, evidence-based planning and rigorous evaluation. Secondly, all DMI's campaigns stress the building of the capacity of both Ministries of Health and local media.

Campaign track record: Our staff's experience of managing media campaigns since 1992 indicates that significant changes in behaviour can be achieved when campaigns are well designed and carried out at sufficient scale and intensity. Notable successes include 200,000 people treated for leprosy in India; raising TB testing in Brazil by 26%; and award-winning HIV/AIDS campaigns⁶ in India and Cambodia. During our trachoma/hygiene campaigns in Ethiopia, Tanzania, Niger and Ghana, a particularly rigorous evaluation of impact was conducted by the LSHTM, using direct observations rather than interviews. It showed dramatic reductions in dirty hands in Ethiopia, falling from 73% to 26%; most significantly it showed a 20% reduction in the prevalence of blinding trachoma, achieved through radio messages alone without the use of antibiotics.

Table 3: Evidence from Ethiopia trachoma and hygiene campaign⁷

	Baseline (2002)	Endline (2005)
Observed: % children with dirty hands	73.7	26.0
Observed: % children with dirty scalp or hair	47.3	21.8
Observed: % children with dirty clothes	74.0	32.2
Observed: area around house clean	26.0	37.6
Reported behaviour: wash children's faces daily	89.1	98.8
Observed: flies on the eyes of children	60.5	51.1
Trachoma prevalence (in areas receiving no antibiotics)	72.0	51.6
Ocular discharge (no antibiotics)	50.8	16.0



⁶ UNICEF Commonwealth Broadcasting Award 2003 ("Best Youth Programming"). Indian Television award 2003 ("Best Thriller") and 2004 ("Best Spots"). One World Media Ward Finalist ("Best Campaign"). Commonwealth Broadcasting Association Award 2002 ("Best Social Action Campaign"). Mirchi Khan Bronze Medal 2004 ("Public Service Radio Spots")

⁷ Data published in Edwards et al, "Impact of health education on active trachoma in hyperendemic rural communities in Ethiopia". Ophthalmology. 2006 Apr;113(4):548-55, and Edwards et al, "Risk Factors for active trachoma..." , Tropical Medicine and International Health, Vol.13, no.4 pp556-565. The poster is from our trachoma campaign in Tanzania.