

UNIVERSITY OF WASHINGTON GLOBAL HEALTH START PROGRAM  
REQUEST FROM BILL & MELINDA GATES FOUNDATION

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NOVEMBER 2012

## GUYANA ORS CASE STUDY

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## **Acknowledgements**

We greatly appreciate the input on these case studies from several key informants, thought partners and reviewers from multiple organizations involved in the promotion of ORS and zinc.

The Bill & Melinda Gates Foundation and UW START would like to thank the following individuals for their contribution to this case study:

Shamdeo Persaud, Chief Medical Officer

Norma Howard, Retired Director of Food Policy, Guyana Ministry of Health

Cornelly McAlmont, Child Survival and Development Consultant - UNICEF Guyana

Evan Simpson, PATH

Dan Carucci, McCann Health

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Any opinions, findings, and conclusions or recommendations expressed in this material are those of the authors and Skye Gilbert, Saul Morris, and Shelby Wilson of the Bill & Melinda Gates Foundation and do not necessarily reflect the views of the key informants, thought partners or reviewers.



## OVERVIEW

<b>Status:</b>	Sustained Success
<b>Major players:</b>	Guyana Ministry of Health
<b>Financing:</b>	Government-funded
<b>Price:</b>	Free in public sector; Private sector price unknown
<b>Regulatory change:</b>	Inclusion in national health policy

FIGURE 1: KEY FEATURES OF GUYANA ORS SCALE-UP

Guyana has been classified as a country whose Oral Rehydration Salt (ORS) program has achieved sustained success. Rather than conducting an intensive scale-up program for ORS, Guyana smoothly integrated ORS into its national treatment protocols. Since the late 1970s, the public sector has subscribed to the WHO primary health care principles, and healthcare providers have been taught how to prepare oral rehydration solution (ORS) (Persaud 2012). These norms were codified after a cholera outbreak in 1992, when the country adopted an official policy on the use of oral rehydration salts or pre-mixed solutions to treat diarrhea. Regular natural disasters such as flooding occur in Guyana, which have highlighted the importance of ORS use (Persaud 2012). The implementation of the Integrated Management of Childhood Illness (IMCI) program, which prescribes/indicates/recommends ORS use for diarrhea, in 2001 further engrained ORS use into national guidelines for treatment of diarrhea. ORS use increased from 34% in 2000 to nearly 50% in 2009 (MICS 2000, DHS 2009). Guyana has a particularly strong and far-reaching public sector, which has been the main driving force behind policies surrounding ORS and adherence to them. The private sector, commonly accessed in the urban areas, is less adherent to the diarrhea treatment policies (Persaud 2012).

## CONTEXT

TABLE 1: KEY CONTEXTUAL INFORMATION ABOUT GUYANA

Statistic	Estimate	Source
<b>Total population</b>	742 K	(GHO 2010, CIA 2012)
<b>Under 5 population</b>	65 K	(UNICEF 2010)
<b>Under 5 mortality rate</b>	30 per 1000	(GHO 2010)
<b>Human Development Index (HDI) ranking</b>	117 of 187 countries	(UNDP 2011)
<b>Gross National Income (GNI) per capita</b>	\$3450	(GHO 2010)
<b>Life expectancy</b>	64/70 years (M/F)	(GHO 2010)

### DEMOGRAPHICS

Guyana is the third smallest state on the mainland of South America, and is located in the northeast part of the continent. It is bordered to the east by Suriname, to the south and southwest by Brazil, to the west by Venezuela, and to the north by the Atlantic Ocean. It was previously a British colony, and as a current member of the Commonwealth of Nations, is the only country on the continent where English is the official language. Guyana gained independence from the United Kingdom in 1966 and became a republic in 1970 (CIA 2012).

The population of Guyana is approximately 742,000, of which 90% live on the narrow coastal strip comprising only 10% of the country's land area. The population is ethnically diverse, composed mainly of descendants of immigrants from India and Africa who came to the area as slaves or indentured



laborers. The largest ethnic group is East Indian (43.5%), followed by African (30.2%), mixed (16.7%), and Amerindian or Aboriginal (9.1%) (Guyana 2002). The median age is 23.9. The capital city is Georgetown, with a population of 132,000, and 29% of the population lives in urban areas. The life expectancy is 63.5 years for males compared to 71.4 years for females. The literacy level is 91.8% with no significant gender disparities (Guyana 2002).

### **HEALTHCARE SYSTEM**

Guyana's health care system is highly decentralized. The Ministry of Local Government and Regional Development is responsible for managing, financing, and providing health services at the regional level through the Regional Democratic Councils (RDC) and the Regional Health Authorities (RHA). The RDCs and RHAs receive technical and professional guidance from the Ministry of Health (MOH). There are five tiers of medical facilities within the public health sector: main hospitals with high level services, regional hospitals, district hospitals, health centers serving between 5,000-10,000 people, and health posts, which serve between 50-200 people (Persaud 2012). Although health posts are strategically located throughout the rural regions of the country, there remain some indigenous people living in the sparsely populated, remote regions that have limited access to health care. Guyana has a medical extension program called Medex, which trains community health workers to provide primary care services in these rural regions (Ministry of Health 2008). Somewhat hindering the healthcare system is the lack of an organized, coherent system of analyzing and sharing data to support decision-making (PAHO 2010). According to the 2009 DHS, the public sector is more commonly accessed for treatment of diarrhea than the private sector: among mothers who sought care for their child's diarrhea, 87.5% did so at a government facility. The private sector is regulated by the Health Facilities Licensing Regulation which mandates standards of care and practices. However, adherence to these standards is not very strong due to lack of enforcement (Howard 2012).

Financing for public health services accounted for 10% of the national government's total budget, and the country's health expenditures accounted for 6.1% of the GDP in 2010 (PAHO 2010). Per capita spending on health care was US\$67 in 2007. There are 0.48 physicians and 1.9 hospital beds per 1000 people (PAHO 2010).

Guyana's status as an Enhanced-Highly Indebted Poor Country (HIPC) has facilitated the flow of significant resources into the country from many bilateral, multilateral, and international partners. Multilaterals supporting Guyana's health sector include the Inter-American Development Bank (IDB), World Bank (WB), the Global Fund to Fight AIDS, TB, and Malaria (GFATM), and the Global Alliance for Vaccines and Immunization (GAVI). The involvement of NGOs in service delivery, however, is largely focused on HIV/AIDS rather than other health conditions (PAHO 2010).

Guyana is experiencing an epidemiological transition similar to most countries in the Caribbean region, which are now seeing more chronic diseases than communicable diseases. HIV has been a major issue in the country but the epidemic has stabilized. HIV cases reached a peak in 2006 with 1,258 newly reported cases; new cases dropped to 959 by 2008. The incidence of TB in 2007 was 91.7 per 100,000 with 701 new cases. Malaria is mostly prevalent in the interior of the country, but the number of cases decreased by over 50% between 2000 and 2007 (PAHO 2010).



## HEALTH SYSTEM SUCCESSES AND FAILURES

Guyana has already achieved Millennium Development Goal number 4 of reducing their childhood mortality rate by two thirds. In 1991, there were 120 deaths in children under 5 per 1,000 live births, and only 17 such deaths per 1,000 live births in 2008. The drop in mortality has been attributed to programs for comprehensive child immunization, an integrated approach to child health and development and the Prevention of Mother-To-Child Transmission (PMTCT) program. Although the MoH does not provide data on the number of child deaths due to diarrheal disease, according to a United Nations Development Programme (UNDP) report, 1.1 deaths per thousand children were due to infectious intestinal disease (UNDP 2011).

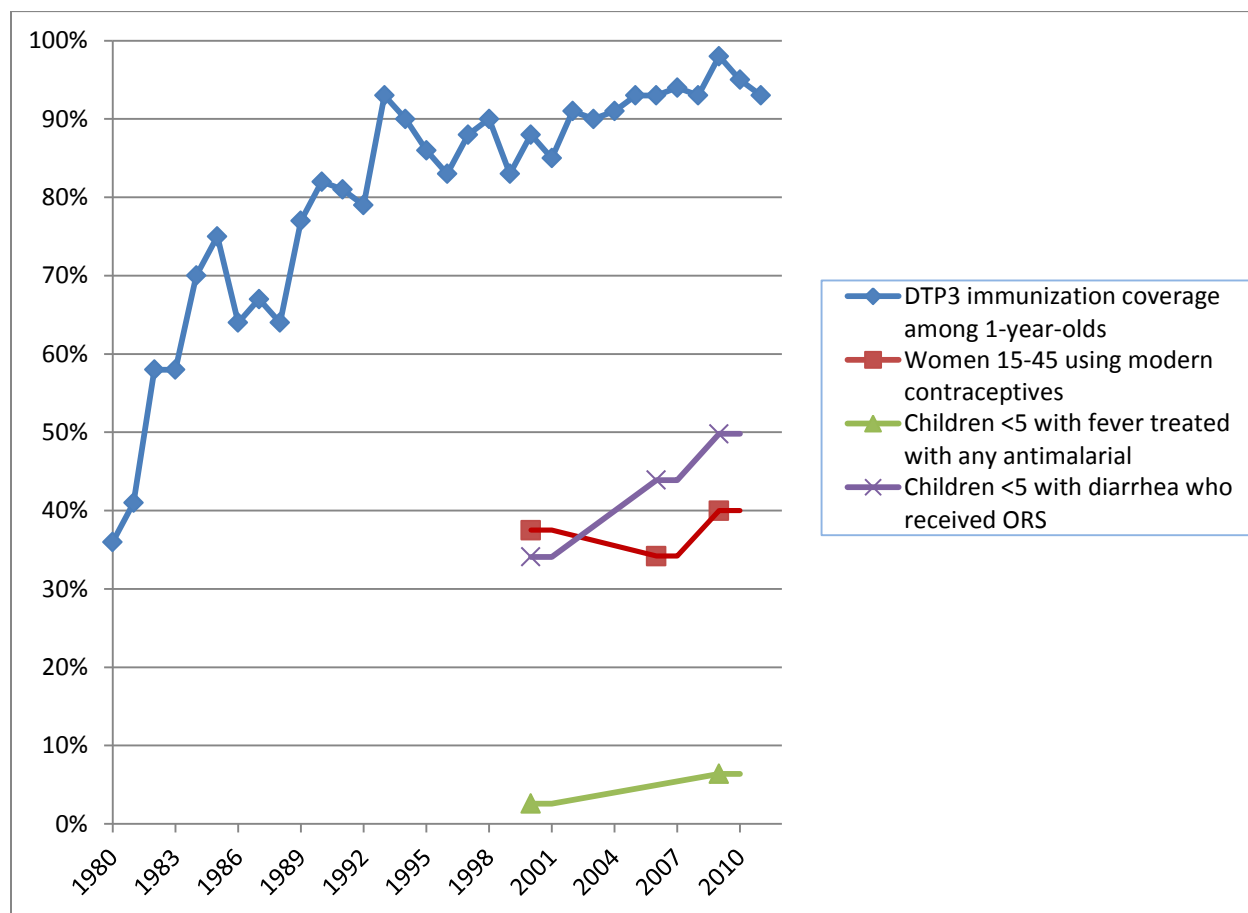


FIGURE 2: KEY HEALTH INDICATORS OF CHILD SURVIVAL IN GUYANA

The Guyana IMCI program, a main driver of child health improvements, began in 2001 in two remote regions with a focus on access-to-care issues (UNF and PAHO 2007). Guyana participates in a regional partnership with 11 Pan American Health Organization (PAHO) countries that are implementing community based (CB) IMCI. The intention of the partnership is to promote the WHO/UNICEF Key Family Practices for the prevention of common childhood illnesses. The program focuses on changing behavior at the family level (UNF and PAHO 2007). The IMCI program in Guyana began with three day orientations to the framework of IMCI for all healthcare staff, followed by integration of the IMCI principles and training into the medical education system for new healthcare workers. Through this integration, IMCI is now included in the medical school curriculum, community health worker training,



and Medex program of the Health Ministry (Guyana Chronicle 2009). By 2009, the implementation of IMCI was extended to all 10 administrative regions in the country.

UNICEF and the Red Cross are also actively involved in promoting IMCI in Guyana. UNICEF focuses on preventative practices such as providing containers to store clean water following emergencies and safe cooking practices. The Red Cross partners with the ministry of health to provide IMCI training. They also set up outposts in remote regions of the country to provide the most basic level of healthcare (McAlmont 2012).

## STATE OF ORS PRIOR TO SCALE-UP EFFORTS

As part of the Commonwealth Caribbean, Guyana adopted the primary health care principles that were developed through a series of Caribbean Health Ministers' Conferences in the late 1970's. This emphasis on primary health care was concurrent with the WHO's adoption of the Declaration of Alma-Ata in 1978, which underlined the importance of primary health care. Although there was no formal policy on ORS prior to 1992, ORS was available through the public sector. The use and preparation of oral rehydration solutions was also taught in medical schools during this time (Persaud 2012). However, there had been little effort to promote the use of ORS. Usage rates for ORS were not documented prior to the 2000 MICS survey.

## APPROACH TO SCALE-UP

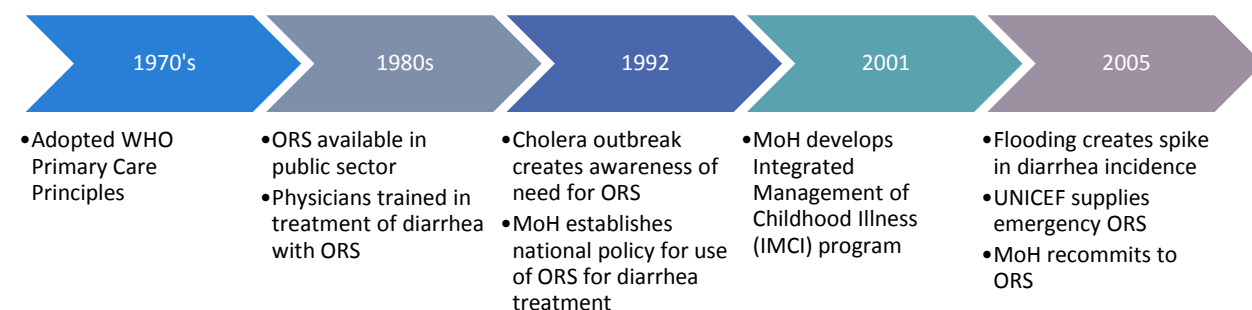


FIGURE 2: TIMELINE OF ORS SCALE-UP

### SCALE UP

Although Guyana did not conduct a single, concerted scale-up program for ORS, an important factor in the increase in use was the large cholera outbreak in 1992 (Figure 2). There were 622 reported cases of cholera (74 per 100,000 population) and 10 deaths in the country (PAHO 1996). Incidence rates in some other South American countries were much higher, which stimulated an elevated level of concern and attention from the government of Guyana. The MoH responded by creating a national policy for the treatment of diarrhea, which included the use of ORS. ORS was offered for free at all government health centers, which serve about half of the urban population and almost all of the rural population (Persaud 2012).

In 2001, the country introduced its first program for IMCI, which created more stringent procedures for the use of ORS. The community component of the IMCI, which emphasizes self-care, helps in the



promotion and use of ORS, and placed more importance on the availability of ORS for persons in flood prone areas(Howard 2012). The treatment of diarrhea has remained a free service through the public sector throughout this time (Persaud 2012).

The Guyana Ministry of Health (MoH) procures only UNICEF-approved ORS to ensure that quality and reliability are up to international standards. The MoH procures both packaged oral rehydration salts as well as prepared solutions in one-liter bottles. The prepared solutions are used in areas safe and reliable drinking water to mix with the salts is not available (Persaud 2012). The MoH also partners with the International Dispensary Association (IDA), which is a non-profit organization located in Amsterdam that aims to supply low- and medium-income countries with affordable healthcare products from the WHO's Essential Medicines List (EML).

In January of 2005, there was a massive flood that affected 350,000 of the roughly 742,000 people in the country. The flood increased the threat of diarrheal disease and UNICEF responded by providing the Guyana MoH with 15,000 packets of ORS, 40 large water containers and more than 3,000 blankets to equip shelters (UNICEF\_Newsline 2005). This disaster prompted the government to put even greater emphasis on making ORS available in case of disaster. Currently, about 50,000 packets or bottles are purchased annually which treat about 30,000-40,000 incidents. Since this flood, an average buffer stock of 10,000 ORS packets/bottles is kept at any particular time to be prepared for a spike in demand caused by another cholera outbreak, natural disaster, or other unforeseen event (Persaud 2012).

#### **MARKETING CAMPAIGN**

Guyana's MoH conducts yearly, seasonal marketing for ORS. The incidence of diarrheal disease in Guyana follows a seasonal pattern, with the highest incidence occurring during the two rainy seasons from April to July and November to January. The government focuses their marketing efforts during these times of high incidence. The marketing efforts include newspaper, television and radio commercials, and focus on three key messages: (1) Making water safe; (2) Avoiding diarrhea by using safe water, using clean utensils to prepare and serve food, avoiding use of feeding bottles which are difficult to clean, and keeping food and safe water in clean, covered containers; and (3) How to manage diarrhea using the IMCI protocol of assessing, classifying, treating, and follow-up (Howard 2012, Persaud 2012).

Although commercially prepared ORS packets and pre-packaged oral rehydration liquids are available throughout Guyana, health facilities are difficult to access in rural and interior areas (GHO 2010). Often in these remote rural areas, mothers are shown how to prepare at-home ORS at the child health clinics.

#### **IMPROVING PROVIDER KNOWLEDGE**

Public health workers at all levels are trained in IMCI practices. There are currently 287 community health workers (CHWs) who provide the first level of primary care. They go through a six month training period prior to working, and are placed under supervision for another six months (Persaud 2012). ORS is a major point of emphasis during this training period. The CHWs are taught how to mix and administer ORS to treat dehydration and how to teach mothers and caregivers to mix and administer ORS (Howard 2012).

The private sector is regulated by the Health Facilities Licensing Regulation which mandates standard of care; however private sector providers do not typically follow the recommended protocols. They instead focus on other treatments, specifically using IV fluids, antibiotics, and antiemetics (Howard 2012). The



2009 DHS survey found some disparities in treatment received for diarrheal disease episodes between urban and rural areas, which may be attributed to different treatment practices at public vs. private facilities (DHS 2009). In rural areas, which are almost exclusively served by the public sector, 63% of children with diarrhea sought advice or treatment from a health facility or provider, and 56% received ORS packets or pre-packaged liquid. Fifteen percent received oral rehydration therapy (ORT), which is usually a homemade sugar-salt-water solution. In contrast, in the urban areas, which have both public and private providers, 32% of children with diarrhea sought advice or treatment and only 12% received ORS packets or pre-packaged liquid. However, 25% received ORT; nearly double the proportion in the rural areas. The reason for this discrepancy is still uncertain, but Dr. Persaud attributed the discrepancy to lower adherence to recommended standards of treatment in the private sector. It should also be noted that the sample size of the survey was only 25 children for the urban population and 155 children for the rural population. Results from the 2006 DHS survey show much less disparity between the urban and rural regions, indicating that the 2009 survey may be unreliable due to the small sample size.

### **FINANCING**

Aside from the relief funding from WHO and UNICEF following the 2005 flood, the financing for the purchasing and marketing of ORS has all been from the Guyana government (Persaud 2012).

### **IMPACT**

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In a 2009 DHS survey of 179 children under 5 with diarrhea, 59% were taken to a health facility or provider. 50% of children received ORS packets or pre-packaged liquid, and an additional 9% received some alternative form of ORT (DHS 2009). Of the 1,425 mothers that had given birth in the last five years surveyed in the 2009 DHS, 67% knew about ORS as a treatment for diarrhea.

### **CONCLUSIONS**

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As opposed to many countries that scale-up ORS, the impetus in Guyana was not from an external entity such as USAID or UNICEF. Natural disasters and cholera outbreaks created the demand for diarrheal treatment, and Guyana's MoH recognized their responsibility to meet this need. Their scale-up is unique from many other developing countries in that it was funded, promoted, and implemented internally. This national commitment to the use of ORS has allowed for sustained success because Guyana is not reliant on external funding, which may diminish or be re-distributed to other causes. There is a sense of ownership that appears to permeate from the upper levels of the government all the way down to the community health workers who receive extensive training prior to beginning their work.

Use of ORS has been driven by the public sector; the Guyana MoH made a serious commitment to providing ORS for free and training health care workers in the proper use of ORS. Despite the increasing coverage of ORS, there are still some rural communities that have limited access to healthcare facilities and therefore ORS. Nevertheless, in general this approach has been successful in Guyana because of the high proportion of mothers who choose to and are able to access government facilities. Early adoption of WHO's primary health care principles created the initial awareness of ORS in the public sector. The cholera outbreak in 1992, the incorporation of IMCI programs, and the recent floods have all led to sustained interest in treating diarrhea and attention to ORS.





## APPENDIX 1

### EVALUATION OF ORS SCALE-UP EFFORTS ACROSS SIX KEY COMPONENTS

Component	Degree of success (H/M/L)	Drivers of success/failure
<b>Development of improved product (including pricing)</b>	H	<ul style="list-style-type: none"> <li>• Procures both ORS packets and pre-mixed solutions for areas without access to clean drinking water</li> <li>• International Dispensary Association supplies low cost and reliable products.</li> <li>• ORS provided for free through health clinics</li> <li>• No data available on pricing in the private sector</li> </ul>
<b>Marketing campaign</b>	H	<ul style="list-style-type: none"> <li>• Marketing efforts targeted toward primary caregivers follow the seasonal pattern since diarrhea incidence is highest in the wet seasons</li> <li>• Several media outlets are used including TV, radio, newspaper</li> </ul>
<b>Regulatory change</b>	M	<ul style="list-style-type: none"> <li>• Policy regarding ORS has been responsive rather than proactive</li> <li>• ORS is available free of charge in public sector</li> </ul>
<b>Improving private provider knowledge</b>	?	<ul style="list-style-type: none"> <li>• Private providers are regulated by the Health Facilities Licensing Regulation</li> <li>• It appears there may be less adherence to recommended treatment of diarrhea in the private sector – this still needs to be confirmed</li> </ul>
<b>Improving public provider knowledge</b>	H	<ul style="list-style-type: none"> <li>• Public health workers at all levels receive six months of training and another six months of oversight</li> </ul>
<b>Increasing availability of supply in the public and private sector</b>	M	<ul style="list-style-type: none"> <li>• Relied on UNICEF for supplying ORS in 2005 flood. Since then, they have maintained excess supply in case of emergency</li> <li>• Rural supply is almost exclusively through public health clinics</li> <li>• A smaller amount of ORS is purchased through retail outlets, but very little detail about private suppliers is available.</li> </ul>
<b>Financing of scale-up</b>	M	<ul style="list-style-type: none"> <li>• Financing for ORS supply in the public sector is exclusively from the government of Guyana</li> <li>• Since ORS is free, it is not a self-sustaining business</li> </ul>



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