Improving access to diarrhea and pneumonia treatment in Nigeria

March 2012

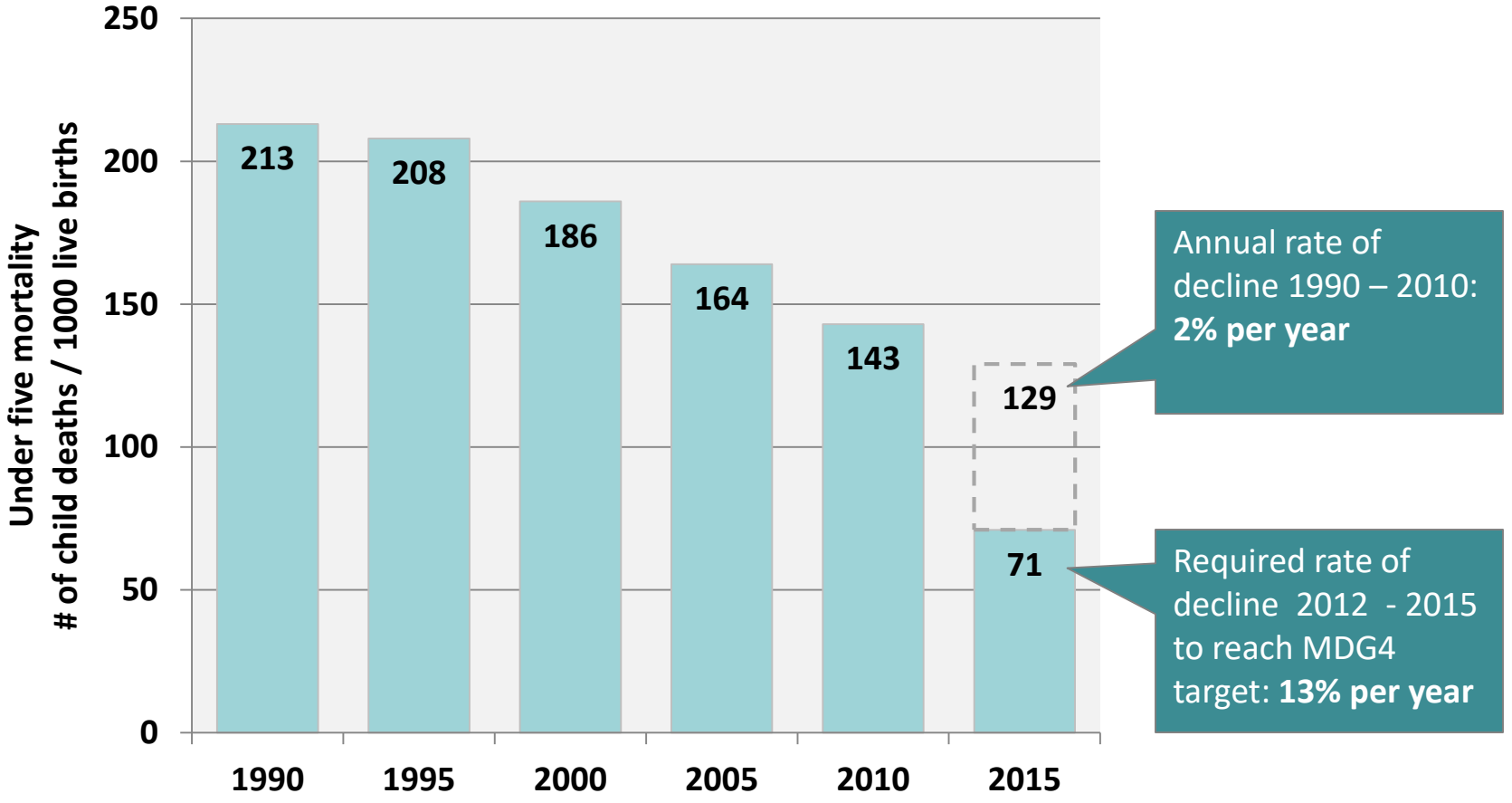
Executive summary

- Each year, almost **380,000 children are dying from diarrhea and pneumonia** in Nigeria
- **Simple, effective and cheap treatments exist:** zinc and ORS for diarrhea and amoxicillin for pneumonia. Yet these treatments are currently **unavailable and unaffordable** for most Nigerians.
- **Increasing access** to diarrhea and pneumonia treatment is an exceptional opportunity to decrease child mortality in Nigeria and significantly **accelerate progress towards MDG4**
- To date, little attention has been paid to this area. Yet this is changing now: a new **National Scale-Up Plan** has been endorsed by the government and a broad range of stakeholders. This Plan aims to improve access to treatment by transforming caregiver preferences, improving public sector availability, and transforming private-sector service provision.
- At approximately USD 86 million to prevent an estimated total of **522,000 child deaths**, this effort represents one of the most cost-effective approaches for rapidly reducing child mortality by actively leveraging public- and private-sector investments to catalyze impact.

Nigeria must significantly accelerate reductions in child mortality in order to reach the MDG target of 71/1000 by 2015

In order to reach MDG4 in 2015, Nigeria must rapidly accelerate reductions in child mortality

Historical projected trend in U5 mortality and (dotted line) trend required to reach MDG in 2015

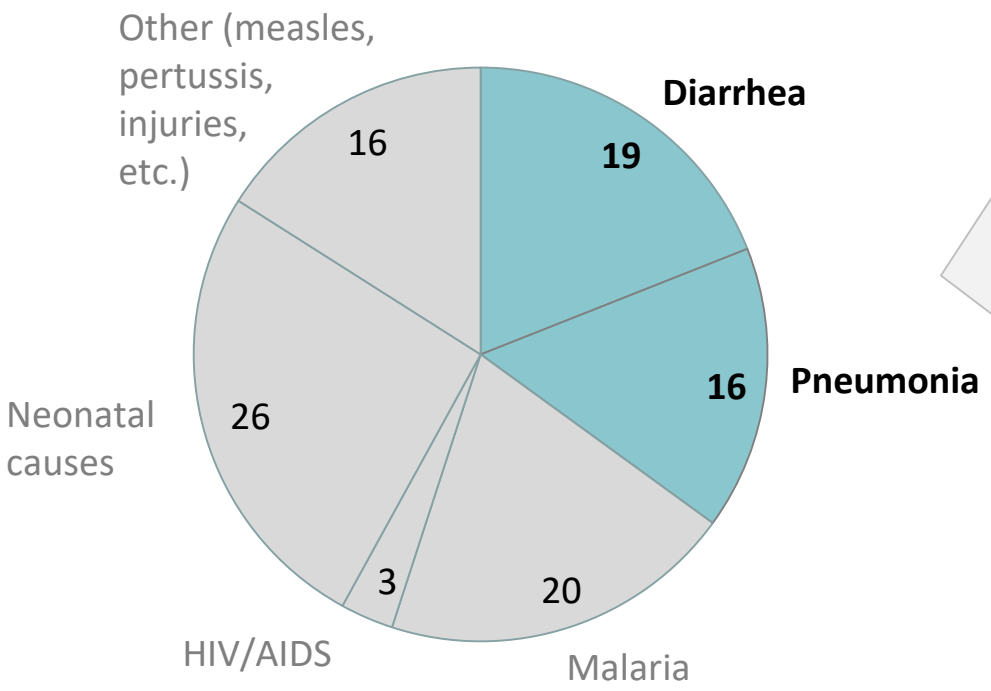


Source: WHO Global Health Observatory Interagency Estimates, 2010

Diarrhea and pneumonia are two of the major causes of continued high child mortality

Nearly one-fifth of all child deaths in Nigeria are caused by diarrhea—representing almost 380,000 children every year.

Proportional distribution of cause-specific deaths among children under five years of age, 2011 [1]



- **Vaccines** will only address a portion of these childhood deaths:
  - Around **40%** of pneumonia deaths and roughly **a third** of diarrheal deaths are caused by vaccine-preventable factors.
- Compared to interventions in other disease areas, improving **access to diarrhea and pneumonia treatment** can be impactful within a **short timeframe** and at relatively **low costs**

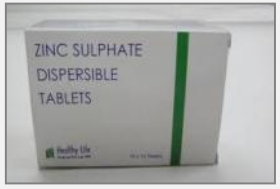
Source: WHO/CHERG, 2010; Bill Gates Annual Letter 2010,

Relatively simple and cost-effective solutions exist

DIARRHEA

ORS

Zinc



Efficacy: **ORS** can avert **93%** of deaths
Zinc reduces **40%** of treatment failure/death

Cost: **<US$ 0.50** /course (10 tablets of zinc & 2 sachets of ORS)

PNEUMONIA

Amoxicillin (dispersible)

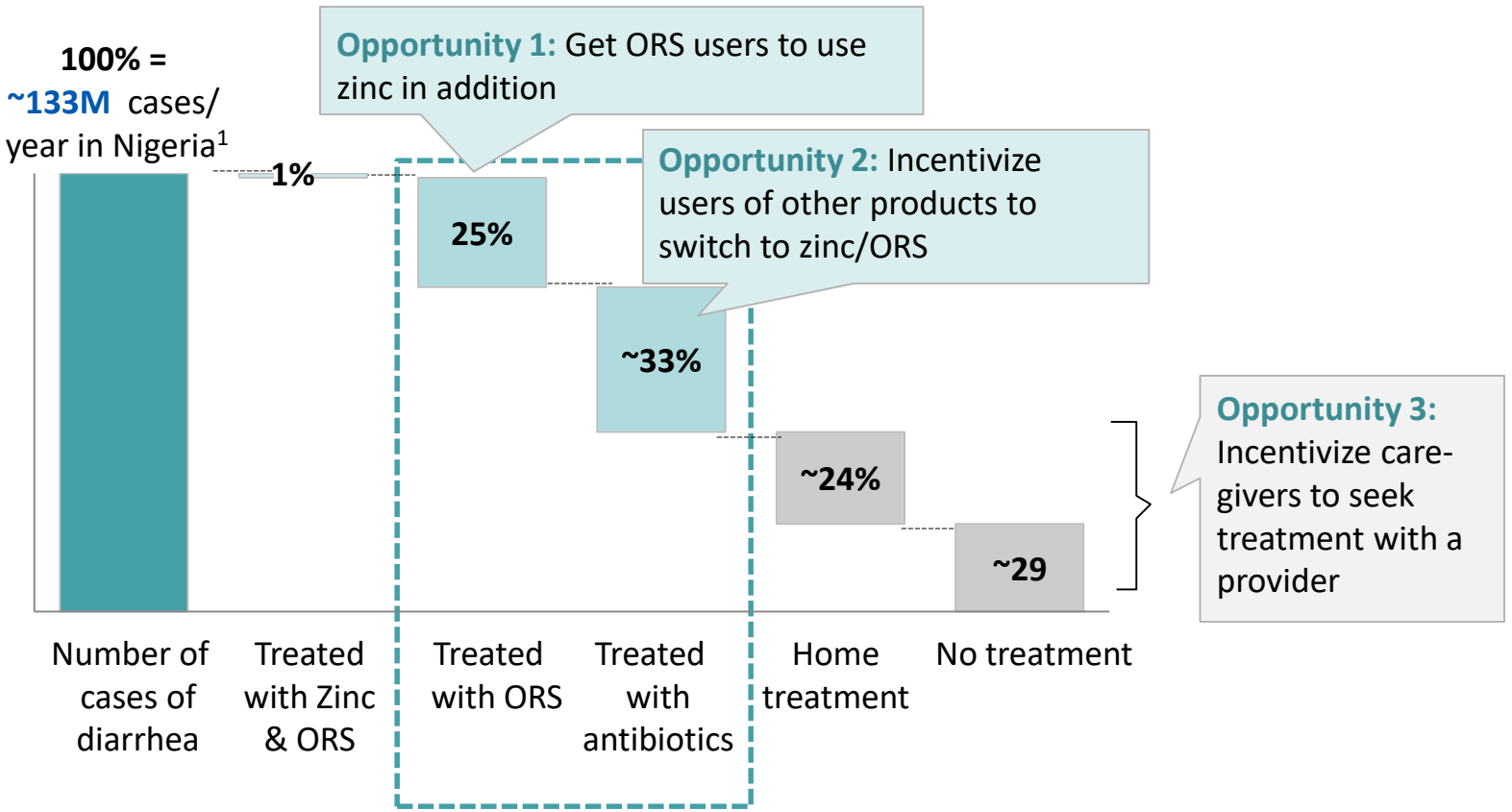
Efficacy: **Pneumonia case management**[1] can reduce mortality by **36-42%**

Cost : **US$ 0.11-0.23** /course

Source: Thwing, J. et al., Protective efficacy of malaria case management for preventing malaria mortality in children: a systematic review for the Lives Saved Tool, BMC 2011, April 13; HAI Price Tracking Survey 2011; : Sazawal, S., and Black, R.E. 2003. Effect of pneumonia case management on mortality in neonates, infants, and preschool children: a meta-analysis of community-based trials. Lancet Infect. Dis. 3:547–556. Marsh D.R., Gilroy K.E, Van de Weerdt R.; Wansi E., and Qazie S. Community case management of pneumonia: a tipping point? Bull World Health Organ. 2008 May; 86(5): 381-389; www.zinctaskforce.org

For diarrhea, the existing market presents an opportunity for impact, and underscores need for a strategy to incentivize product switching

There are several groups of care-seekers that need to be reached in order to improve use of zinc and ORS: getting consumers to switch treatments represents the largest opportunity

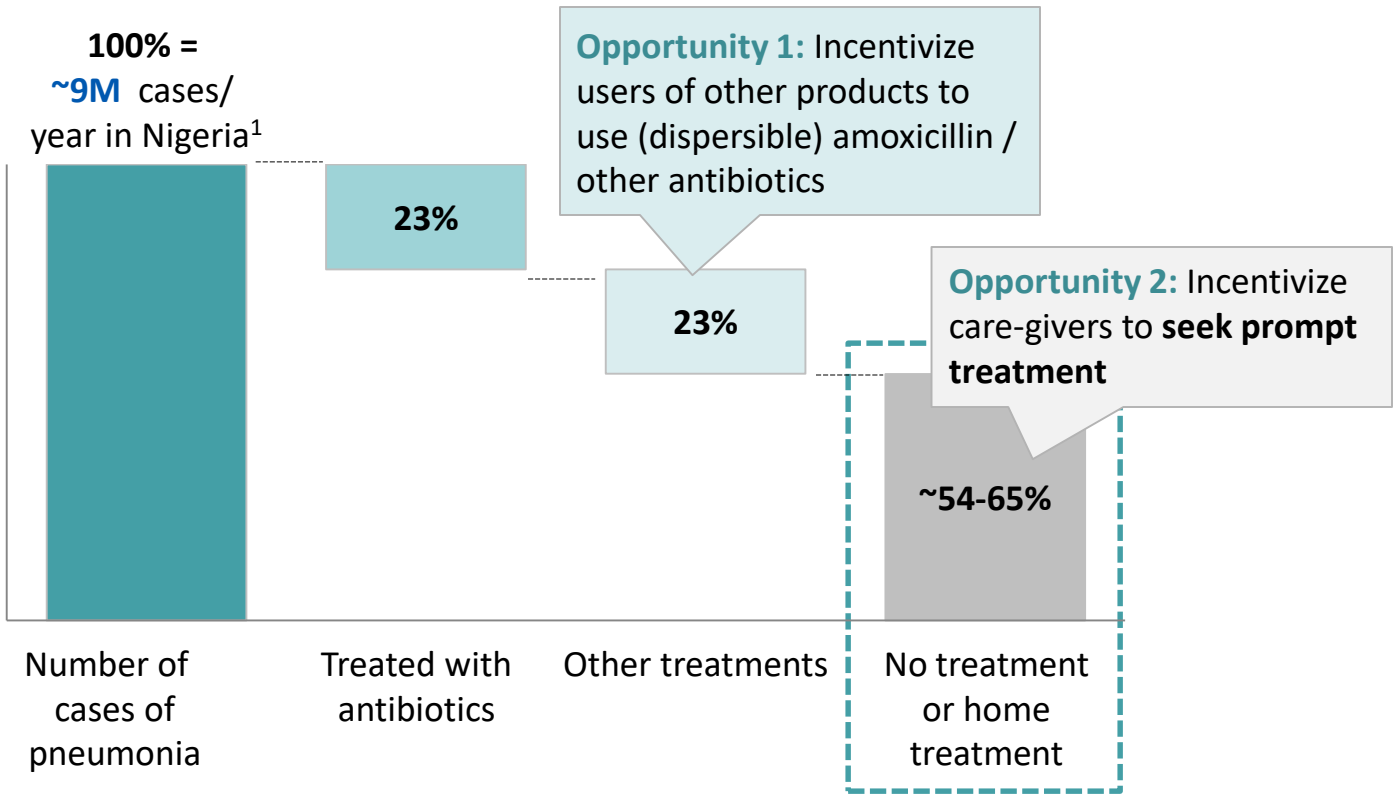


1 Number of diarrhea cases derived from Population figures (UN Population Division, 2010), multiplied by incidence rates from Boschi-Pinto, C. et al., The Global Burden of Childhood Diarrhea. Maternal and Child Health: Global Challenges, Programs, and Policies. Ed. John Ehiri. New York: Springer. 2010.

Source: Nigeria DHS 2008;

For pneumonia, there is a need to increase symptom recognition and prompt treatment seeking

With the largest share of children not receiving any treatment at all, the largest opportunity is to incentivize care-givers to seek immediate treatment for acute respiratory infections



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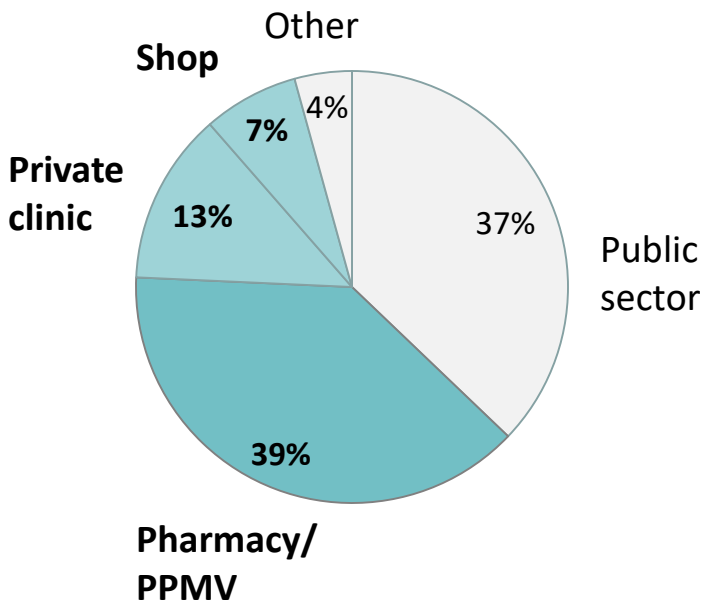
Source: Nigeria DHS 2008; MICS 2007

The private sector is critical in reaching care-seekers…

Diarrhea Treatment Seeking by Sector

Proportional distribution of sources of care for childhood illnesses involving fever in Nigeria, percentage, 2011



Private sector delivery channels

Density of healthcare providers and retailers in Nigeria

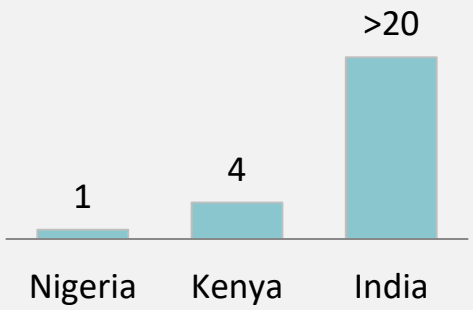
Practitioner	Total	Per 10,000 people
Physicians	55,376	3.66
Nurses	224,943	14.9
Pharmacists	13,199	0.87
Patent Medicine Vendors	43,000 – 150,000	2.9 - 10

Source: USAID secondary analysis of Nigeria DHS 2008 data

… yet current dynamics in the private sector impede greater access to zinc and ORS

Supply of zinc & ORS is limited …

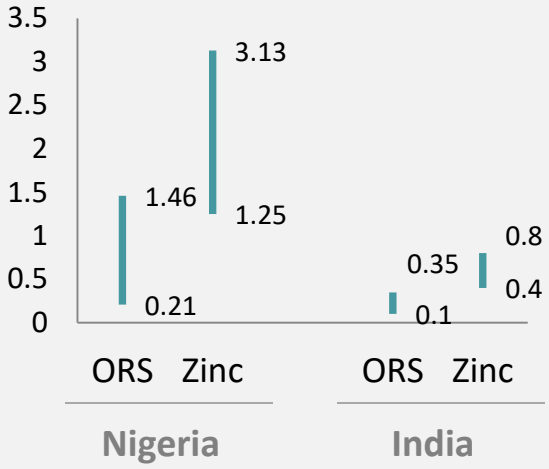
Number of zinc suppliers (both manufacturers + importers)



- A perception of **limited consumer demand** has led to a lack of supplier interest and investments in production scale-up

… prices of these products are high

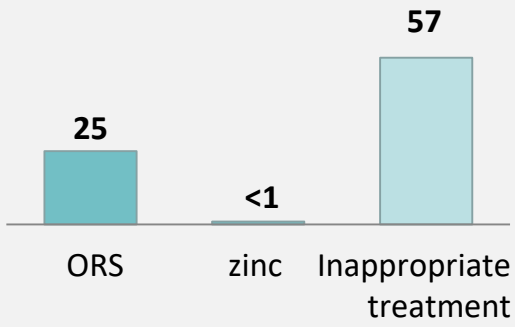
Min/max price of ORS (1 sachet) and zinc (10/14 tablets); US$



- These high prices are driven by **import duties and taxes**, as well as **margins** along the supply chain

… and pervasive alternatives exist

Percentage of children with diarrhea given a specific treatment



- Between **33-54%** of childhood diarrhea cases are treated with **antibiotics**
- Around **24%** of children receive **home remedies**

Source: Nigeria DHS 2008; Oni, G.A., et al., Diarrhoeal disease morbidity, risk factors and treatments in a low socioeconomic area of Ilorin, Kwara State, Nigeria. J Diarrhoeal Dis Res 1991;9:250-7; CHAI/SFH retail assessments

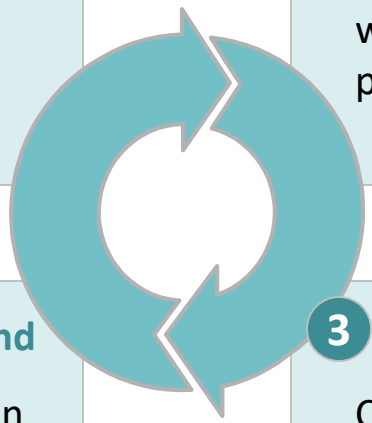
These challenges can be overcome through an active market shaping effort that makes scale-up a win-win for patients & private businesses

1 Growing Demand…

Government & NGOs drive a large-scale campaign to increase awareness & demand for zinc & ORS, using proven marketing techniques

2 …will motivate suppliers

Businesses at each step of the supply chain see a profitable market for the products and are willing to invest resources to produce & distribute them



3 … to meet consumer needs

CHAI/partners engage with suppliers to agree to prices & investment in activities that will maximize both patient access & supplier returns

4 …and further increase demand

Supplier widespread distribution and promotion of products increases demand among health providers and patients, complementing public sector interventions

Zinc & ORS market shaping presents a uniquely low-risk, high-impact opportunity to work with the private sector to improve health in Nigeria

Other Product Priorities (HIV, malaria, pneumonia, etc.)		Zinc and ORS
 • Major challenges reaching international quality standards – no WHO-eligible suppliers so mostly international purchasing.	**Local production**	• Minimal quality challenges: Nigerian suppliers could be drivers of scale-up. 
 • Inappropriate diagnosis leads to overtreatment & wasted funds. Very difficult to improve diagnosis in private sector.	**Efficiency**	• Minimal diagnosis challenges and therefore wastage with diarrhea treatment. 
 • Overuse leads to devastating drug resistance and can adversely impact health outcomes.	**Risk of irrational treatment**	• No challenge for zinc/ORS, and switching consumers from antibiotics to zinc/ORS will decrease risk of antibiotic resistance. 
 • Relatively high product cost and regulatory constraints are a barrier for retailers to stock the product at large scale.	**Market potential**	• Low product cost combined with potentially high volumes constitutes an attractive product for retailers. 

New leadership in Nigeria has initiated a historic effort to rapidly reduce mortality, with private sector engagement a central pillar of the strategy

Initiative to Save One Million Nigerian lives by 2014

Purpose: Outcome-oriented effort to launch & manage intensified, high-impact health interventions

"Nigeria's 'bold public health vision' to save one million lives […] includes 'expanded provision of primary health-care services; […] and, finally, reviving the health sector through increased private and public investment'"

-*US Global Health Policy*, "Nigeria's Minister of Health Presents Public Health Vision to Save One Million Lives, Improve Quality of Care"

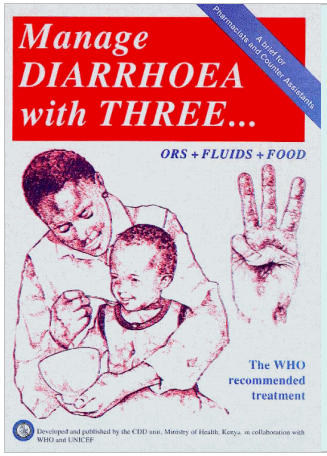
Strategy: Four-pronged approach to reducing mortality in short- and medium-term

- **Expansion & integration** of health services provision
- **Prevention** of disease
- Reinvigoration of the health sector by unlocking **private-sector potential**
- Improvement of clinical quality through **better clinical governance**

Over the past 6 months, MoH and partners have developed a national scale-up Plan to improve access to diarrhea, pneumonia and malaria treatment

The new national scale-up plan calls for four core interventions that have been part of successful small programs

Generate awareness & demand



- Launch a national action campaign for child health
- Use partnerships with mobile operators
- Health diplomacy through national & community leaders

Awareness and demand interventions motivate supply

Increased supply further drives demand and builds awareness

Ensure availability & affordability of zinc & ORS

- Engage manufacturers to ensure availability of an affordable product
- Optimize packaging & branding
- Incentivize expanded distribution
- Leverage existing supply chains

Increase provider awareness

- Initiate continuous education of private retailers
- Facilitate supplier promotional reach of rural areas through facilitated detailing

Secure a conducive policy environment

- Build broad support and mobilize additional resources from local & international donors
- Ensure adjustment & wide dissemination of treatment guidelines
- Ensure OTC and EML status

Source: Diarrhea poster: WHO Archives, http://archives.who.int/prduc2004/rducd/Session_Guides/framework_for_learning_about_a_d.htm

Momentum is building behind this effort, and several steps toward a winning coalition have already been made

Private-Sector Engagement

- ✓ Private sector input in scale-up plan
- ✓ Private-sector forum for Zn/ORS initiated
- ✓ Product registration
- Large-scale production
- Independent product promotion to private-sector retailers and caregivers

Government Leadership

- ✓ Endorsement of Scale-Up priorities
- ✓ Policy commitments and revisions
- ✓ Inclusion in ongoing primary health interventions
- Regular procurement and supply to public facilities
- National communications campaign to increase uptake

Partner Support

- ✓ Technical assistance for planning
- ✓ Technical assistance for implementation
- Integration with existing programs
- Commitments of support to fill gaps for full implementation

Multi-Stakeholder Coalition

- Public-sector scale-up drives initial demand and "primes" Zn/ORS market
- Supplier investments increase production—driving improvements in availability and affordability—and increase private-sector promotion
- Partner support helps drive uptake by promoting use and facilitating supplier promotion

Source: Millions saved – Preventing diarrheal deaths in Egypt

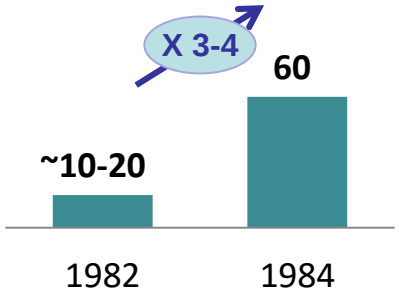
Past experience with Egypt's successful ORS campaign shows that preferences can be changed rapidly…

Egypt launched a massive ORS promotion…

- **Mass media/social marketing campaign**
  - ORS positioned as a ("the") **solution for dehydration**
  - Single **logo** to enhance recognition
- **Ensure and incentivize abundant supply**
  - **Uninterrupted supply** of ORS
  - **Financial incentives** for private retailers (competitive 30% margin)
  - **Training** of health workers
- **Low cost**
  - Total program cost were **US$ 43 M**
  - Cost per death averted between **US$ 100-200**

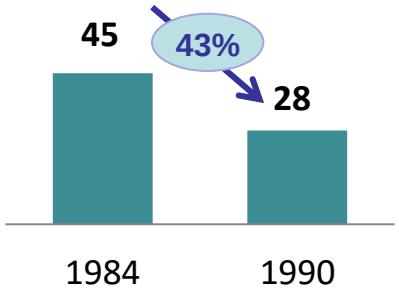
… which had tremendous impact on child health…

ORS use by mothers, percentage



- Following the 1st media campaign (1984), **ORS use** rose quickly to **60%**
- **Awareness** of ORS reached **>90%** in 1984 and **99%** by 1986

Diarrheal death as percentage of total U5 deaths, %



- Child mortality fell by **43%**
- Saved an estimated **300,000** lives

Source: Millions saved – Preventing diarrheal deaths in Egypt

The AMFm program is demonstrating similar success in Nigeria

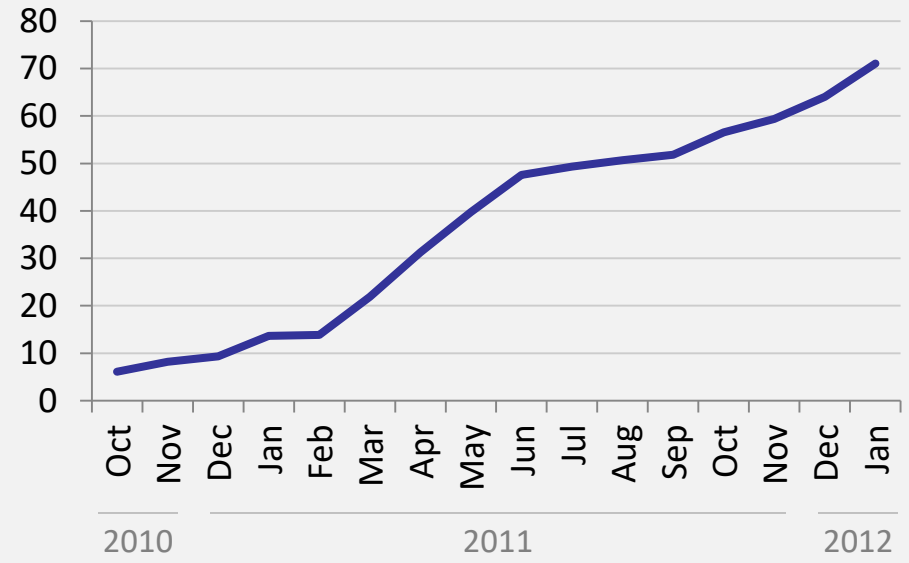
The AMFm has **engaged both suppliers and retailers to overcome market barriers** unique low-profit potential health commodities.

Leading businesses to significantly **increase distribution…**

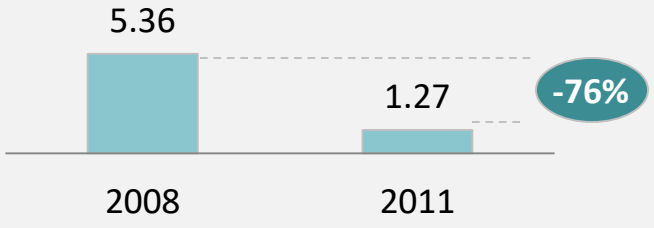
… and **reduce retail prices**

Quantity of AMFm ACT treatments ordered by Nigerian private-for-profit sector

Millions



Median price of a full adult course ACT treatment in the private sector (drug shops) US Dollars

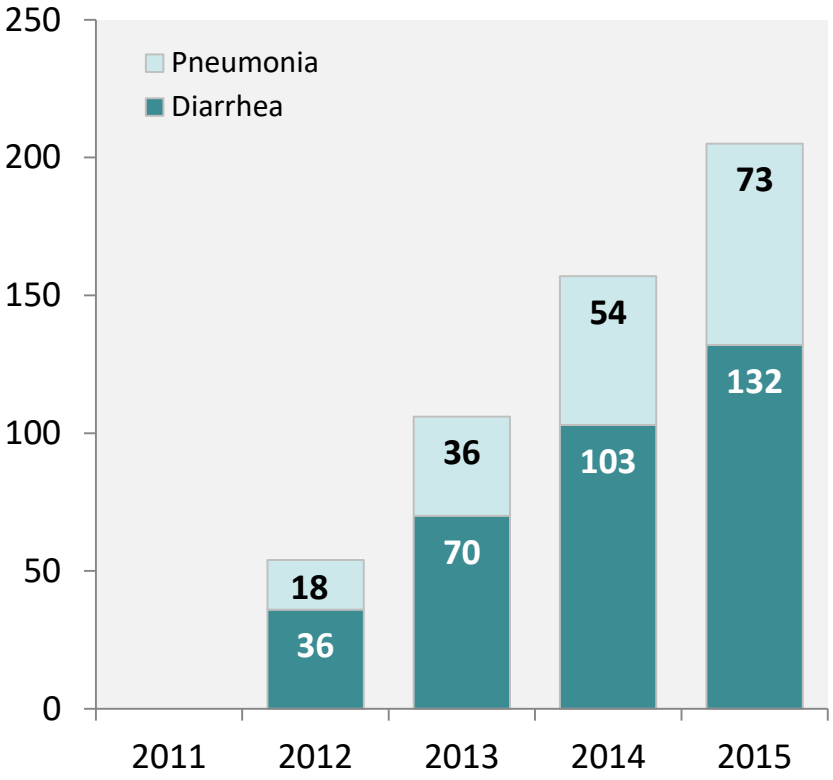


Source: Global Fund, AMFm Summary Report on Co-paid ACTs, http://portfolioreports.cloudapp.net/AMFm_Summary.aspx; ACT Watch, Nigeria Outlet Survey 2008; HAI Price Tracking Survey, November 2011

At a total budget of ~US$ 86 for 4 years, this effort represents one of the most cost-effective opportunities to accelerate progress towards MDG4

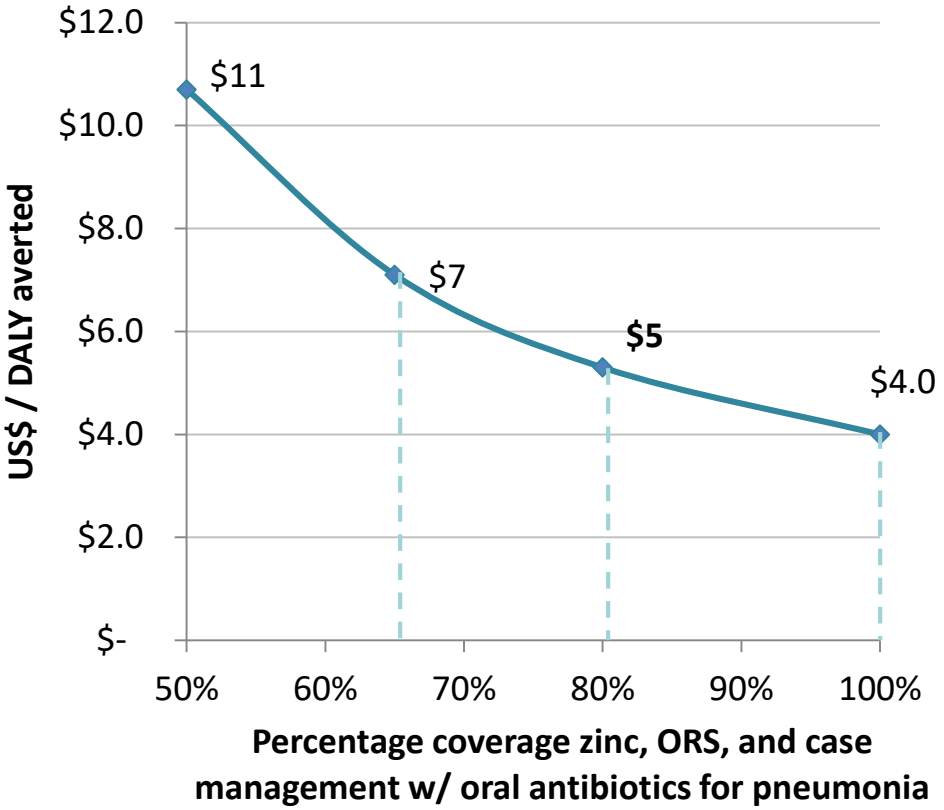
Reaching target coverage rates of 80% could avert an estimated 522,000 childhood deaths due to diarrhea an pneumonia over the next four years in Nigeria…

Estimated number of lives saved in Nigeria, 2012-2015



… at a high level of cost-effectiveness* under a total 4-year implementation budget of ~US$86 million

Estimated implementation cost, US$ / disability-adjusted life year saved



*Cost effectiveness is estimated based on the total cost of the National Essential Medicines Scale-Up Plan.