How has Niger reduced deaths among children by 40% in a decade?

Agbessi Amouzou
Presentation Outline

1. Background
2. Case study methods
3. Results
4. Implications for Niger and the region
5. Questions
Section 1:

BACKGROUND
Niger: A land of challenges

- Landlocked; 80% Sahara desert
- Population 16.2 million, 75% in five southern most regions
- Poor: In 2011, ranked 186 of 187 countries on the Human Development Index
### Niger:
A land of challenges

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
<th>Source (date)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Fertility Rate</td>
<td>7.6</td>
<td>DHS 2012</td>
</tr>
<tr>
<td>Percent of households living at or below poverty level</td>
<td>60</td>
<td>OECD 2012</td>
</tr>
<tr>
<td>GDP per capita</td>
<td>278</td>
<td>WHO 2010</td>
</tr>
<tr>
<td>Government expenditure on health per capita</td>
<td>9.1</td>
<td>Niger MOH (for 2009)</td>
</tr>
<tr>
<td>Percent of births to women with secondary school +</td>
<td>4.8</td>
<td>National Survey (for period 2008-2010)</td>
</tr>
</tbody>
</table>
But substantial progress was made in the past decade in child survival

- Recent 2010 Mortality survey suggested a decline in U5MR from 226 in 1998 to 127 in 2009
- Report of rapid increases in coverage of key child survival indicators
- Annual surveys on child health and nutrition are conducted since 2005 and provide a wealth of data for trends analysis
Objectives of the case study

Investigate factors of the rapid improvement in child survival in such challenging conditions focusing on:

- Policies and programs actually implemented and contextual factors
- Reanalysis of trends in coverage of child survival indicators
- Reanalysis of mortality trends

Study commissioned by Countdown to 2015
Section 2:

CASE STUDY METHODS
### Four subcomponents

<table>
<thead>
<tr>
<th>Mortality</th>
<th>Coverage</th>
<th>Program documentation</th>
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<tbody>
<tr>
<td>- National mortality survey 2010, with full birth history</td>
<td>- 8 nationally-representative household surveys, 1998-2010</td>
<td>- Independent review of documents &amp; databases</td>
</tr>
<tr>
<td></td>
<td>- Careful data quality assessment</td>
<td>- 40 key informant interviews</td>
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<td></td>
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<td>- Tracking of contextual factors</td>
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</tbody>
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**Lives Saved Tool (LiST)**

- Determination of consistency between *LiST* estimates and measured estimates for 2009
- Analysis of contribution of specific interventions and reductions in risk factors

**Analysis and writing workshop to bring components together.**
Section 3:

RESULTS
Steep declines in under-five mortality; No significant decline in neonatal mortality

Under-five and neonatal (NN) (U5MR) mortality rates from 1998 to 2009, Niger, ESM 2010

Percent annual rate of decline in U5M: 5.1%
Wasting is down sharply; only small decline in stunting.
Dramatic increases in coverage across the continuum of care, 1998 to 2009
Proportion of child lives saved in 2009, by intervention or risk factor reduction

Total lives saved in 2009: 58,795

- ITN ownership: 25%
- Careseeking for malaria: 9%
- Reduction in wasting: 9%
- Reduction in stunting: 10%
- Others (<2% each): 11%
- ORS + Zinc: 5%
- Measles vaccine: 5%
- Hib vaccine: 4%
- Changes in BF practices: 3%
- TT in preg: 2%
- Vit A supp.: 9%
- Careseeking for pneumonia: 8%

19% lives saved

Proportion of child lives saved in 2009, by intervention or risk factor reduction
How did Niger achieve these results?
Three major child survival strategies since 2000

1. *Increase access to primary health care* for major child killers (malaria, pneumonia, diarrhea, measles)

2. *Mass campaigns for rapid scale-up* of insecticide-treated nets (ITNs), measles vaccination and vitamin A supplementation

3. *Intensified efforts to address child undernutrition*
Three major child survival strategies since 2000

- Increased access to primary health care
- Mass campaigns
- Intensified nutrition programs
New policies were effectively implemented

<table>
<thead>
<tr>
<th>Health service indicator</th>
<th>1998</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of functioning health posts</td>
<td>0</td>
<td>1938</td>
</tr>
<tr>
<td>% population living within 5km of health post or health center</td>
<td>48%</td>
<td>80%</td>
</tr>
<tr>
<td>CHWs trained in management of childhood illness</td>
<td>0</td>
<td>2308</td>
</tr>
<tr>
<td>% of children with fever/cough for whom care was sought outside the home</td>
<td>23%</td>
<td>54%</td>
</tr>
</tbody>
</table>
Child survival strategies are reflected in coverage trends

**Strategy 1:**
Increased access to child health services

**Strategy 2:**
Mass campaigns
Contextual factors

- **Large increases in financing**
  
  Between 1998 and 2009/2010:
  - Total Official Development Assistance (ODA) increased 77% (US$421.3 million to $744.5 million)
  - ODA to maternal, newborn and child health increased 209% per livebirth and 474% per child
  - Government expenditure on health per head rose from US$5.3 to $9.1

- **No other changes that can explain declines in child mortality**
  - Small increase in % of births to women with secondary education or higher
  - No significant changes in other biodemographic indicators, e.g., fertility
  - No change in gross domestic product (GDP)

**Conclusion**: Niger’s success in reducing child deaths is the result of effective program actions, leading to rapid and large increases in coverage for effective interventions.
Niger reduced its under-five mortality rate by 43% between 1998 and 2005 – a rate of decline higher than needed to achieve MDG4.

The evidence indicates that this success was due to three scale-up strategies:

- Increased geographic and financial access to primary health care
- Mass campaigns for ITNs, measles vaccination and vitamin A supplementation
- Targeting child undernutrition through a network of services and emergency programs

There were no changes in more distal determinants of child survival that can explain the mortality results.
Section 3:

IMPLICATIONS FOR NIGER AND THE REGION
Lesson 1:
Access to quality services matters!

- **Abolishing user fees** for pregnant women and children was key to Niger’s success.

- Moving **services closer to the communities** where children live (and fall ill) was an essential, complementary part of this strategy.

- **Mass campaigns** offered a way to reach large numbers of children quickly, with selected interventions, but could not be used without strengthening the health delivery system more broadly.

- **Nutrition** is a key part of child survival and must be more fully integrated into programming.
Lesson 2: Niger must stay the course!

- Supportive policies take time to translate into effective programs at scale
- Programs at scale produce mortality reductions only after several years
- The focus of program efforts must evolve over time, expanding to incorporate new delivery strategies and interventions (low-osmolarity ORS, Hib vaccine, CCM)
- Child survival work is not done! The next focus must be on saving more lives in the first month of life.
Lesson 3:
Good data + local use = effective programs

- Niger had regular, high-quality survey data on intervention coverage to guide its activities
- Local capacity to analyze and use data have expanded recently, permitting this and similar analyses
- Program monitoring is an essential part of program management, and is time- and resource-intensive
WAYS ONE OF THE WORLD’S POOREST COUNTRIES CUT CHILD MORTALITY IN HALF

IN NIGER, DEATH HAS LONG BEEN A WAY OF LIFE.

The people of this West African nation endure pervasive poverty, persistent food shortages and a punishing climate. Especially vulnerable are the young; many children in Niger perished before their fifth birthday.

"Sometimes when you ask people how many children they have, they’ll say, 1, 2, 3, 4; children—three living and two dead," says Sarah Dalghi, MA, an international health (IH) doctoral student.

A new study, however, suggests things have changed. Researchers found a direct connection between the country’s child survival policies from 1990 to 2009 and a 49 percent drop in under-five deaths. The mortality rate plummeted from 226 deaths per 1,000 births to 123. In 2009, the measure saved the lives of nearly 60,000 children.

IH assistant scientist Aghwusi Amuneke, PhD, MPH, the study’s lead author, partnered with UNICEF-Niger and Countdown to 2015 on the research. Jennifer Bryant EdD, a study co-author and IH senior scientist, led the School-based group that analyzed the research data. The findings were published in The Lancet in September 2012.

"Niger… has produced remarkable results for child survival that can set the bar for other countries in the region and worldwide," says Amuneke.

WINTER 2013

POSTING HEALTH IN COMMUNITIES

Central to Niger’s dramatic child survival gains in the country’s 2008 presidential declaration to deliver more and better health care to women and children—especially in the most remote and rural communities—is by ramping up network of health posts to provide basic prevention and curative care.

Between 2000 and 2007, nearly 2,000 posts were established and staffed by community health workers trained in treat diseases that are frequently fatal in children. Issues are referred to centrally located health centers with professional staff.

During the study period, community workers continued to receive training and, when possible, the posts offered additional services, including nutrition screenings, educating parents on appropriate health care for sick children and distribution of contraceptives.

"If you look at the coverage data from many countries, that a few children were taken for care for diarrhea, pneumonia and malaria, these are large increases that other countries have not been able to achieve," says Bryan, who notes that change takes time.

"Looking for success in cases to show years is really not enough time," she says. "In Niger, it took three, five, seven years for snow polio to translate into snow programs and to save lives.

NO CHANGE FOR MOTHERS & CHILDREN

A critical piece of Niger’s child survival initiative is a program launched in 2006, to provide free health care to pregnant women and children. Earlier, expansion of the country’s rural health posts improved geographic access to care and led to regular increases in the use of health services among women and children. But visits to the posts peaked after the no-charge policy took effect, according to the study.

Removal of the cost barrier means that mothers received antenatal care and children were treated earlier, leading to significant outcomes, including reductions in childhood diabetes and diarrhea.

"This isn’t separate from care all the other services—it underlies everything else," Dalghi says. "It gets people to the door to treat their children, get vaccinated and diagnosed.

With Niger’s widespread poverty and a fierce rate of seven children per woman, the country’s health officials recognized free care was an important step towards vaccination.

"Even very small fees are going to be too expensive for people," Dalghi says. "It’s particularly true in Niger, for people might not be able to afford them even if they are.

In Niger, only three, five, seven years. People have very little to trade on.

"R" POWERFUL SUPPLEMENT

Niger’s impressive reductions in child mortality reflect an old public health maxim that a country must increase in wealth before it improves in health, says Alfred Sommer, MD, MPH, 73, Bloomberg School dean emeritus.

"Since this School was founded, we’ve taken the position that there are ways to improve health, largely through methods that don’t require waiting until a country is wealthy," says Sommer. "They (countries) can leapfrog ahead by effectively deploying inexpensive, proven interventions, which is critical, since many won’t be getting wealthy anytime soon.

"There’s no better example of a ‘leapfrog ahead’ intervention than vitamin A. Sommer’s discovery of vitamin A supplements dramatically cut childhood mortality has saved millions of children worldwide.

Integral to Niger’s child survival program are twice-yearly mass campaigns to provide vitamin A supplements, along with rotavirus and measles vaccinations. Of the strategic analysis in the study, vitamin A supplementation and led-nut supplementation showed the largest increase in uptake.

"The question is, will this be a lasting change?" Sommer says. "Whole magic bullets are those getting them to the people who need them is not cheap.

NET GAINS AGAINST MALARIA

The use of long-lasting, insecticide-treated bed nets is a powerful malaria control weapon, even with a community coverage level as low as 50 percent, says William Bossin, DHSc ’70, MD, MPH.

"What’s important is the insecticide-treated nets are a community provision; they don’t just protect individuals," says Bossin, IH professor and senior malaria specialist in Fiji. "If you get enough treated nets being used in a village, you can see the effect even though not everybody is using them.

In Niger, researchers found that the rapid scale-up of treated but distribution is responsible for saving tens to hundreds.

In 2010, Bossin surveyed the most demographic and health information about the community and the community’s treatment of malaria. The data revealed a high rate of malaria in households, that few nets, the most vulnerable groups, don’t use them enough.

And there are frequent reports of people using nets for bedding, covering stairs and even as window coverings.

Although challenge remains the depth of the long-lasting, insecticide-treated nets’ roll out. After an international push for universal bed net coverage had been seen to coverage between 2009 and 2010, Bossin says the millions of nets needed, the net supply was estimated at 3 million.

"We’re now looking in 2013, and there needs to be a lot of replacements," he says.

DEATH AND LEARNING 32
Questions for discussion

- How does the approach used in the case study relate to what you have learned so far in terms of study design?
- Can you think of other alternative ways of assessing factors of mortality reduction in Niger?
- Are there any other factors that you would have also looked at?
Thank you from the Niger Countdown Case Study Team

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Thank you!