For those outside of CDC, a broadband link is available at:
http://www.cdc.gov/about/grand-rounds (Grand Rounds internet site)
IPTV link also available on Grand Rounds intranet site: http://intranet.cdc.gov/od/odweb/about/directorGrandRounds.htm
Maternal and Child Health - Child Survival

32. Community-based interventions for diarrhoeal diseases and acute respiratory infections in Nepal
   Ghimire M, Pradhan YY, Maskey MK
   [+]Show Abstract

33. The effect of oral rehydration solution and recommended home fluids on diarrhoea mortality
   Munos MK, Walker CL, Black RE.
   [+]Show Abstract

34. The effect of case management on childhood pneumonia mortality in developing countries
   [+]Show Abstract

35. The effect of Haemophilus influenzae type b and pneumococcal conjugate vaccines on childhood pneumonia incidence, severe morbidity and mortality
   [+]Show Abstract

   Lancet. 2010 Jun 5;375(9730):2032-44.
   [+]Show Abstract

http://www.cdc.gov/phlic/sciclips
Continuing Education Credits

As of January 2010
Credit Hours are available for

- Physicians (CME)
- Non-physicians (CME)
- Nurses (CNE)
- Certified Health Education Specialists (CECH)
- Pharmacist (CPE)
- Other professionals (CEU)

Archived presentations are now eligible for CE credit—good for 2 years, available through “web on demand”

ALL Continuing Education credits/contact hours for PHGR are issued online through the CDC/ATSDR Training & Continuing Education Online system, http://www2a.cdc.gov/TCEOnline.
Stay Tuned

August 19  Vitamin D
September 16  H1N1 influenza
October 21  Alcohol
November 18  Malaria
GLOBAL CHILD SURVIVAL: ACCOMPLISHMENTS, CHALLENGES, AND STRATEGIES FOR THE FUTURE

Kevin M. De Cock, MD, FRCP
Director, Center for Global Health
Centers for Disease Control and Prevention
Global Burden of Child Mortality: 8.8 Million Deaths Among Children <5 Years Old

Asia
3.7 million (42%)

Africa
4.5 million (51%)

Rest of the World
0.6 million (7%)

Child Health Epidemiology Reference Group of WHO and UNICEF, 2010
Distribution of Global Deaths, Children <5 Years by Age, 2008 (N=8.8 million)

- **Child 32% (1–<5 Years)**
- **Neonatal 41% (<28 days)**
- **Post neonatal infant 27% (>28 days, <1 year)**

Trends in Child Mortality
Low-income Countries, 1990–2008

Mortality Rates, by Year

WHO, World Health Report, 2010
Causes of Global Child Deaths <5 Years
2008, N = 8.8 million

Neonatal 41%

Other Infections 9%
Malaria 8%
Injuries 3%
Other Non-communicable 4%
Pneumonia 14%
Diarrhea 14%

Total infectious diseases: 68%

United Nations
Millennium Development Goals

Global targets to advance development and reduce global poverty

1. Eradicate extreme poverty and hunger
2. Achieve universal primary education
3. Promote gender equality and empower women
4. Reduce child mortality
5. Improve maternal health
6. Combat HIV/AIDS, malaria, and other diseases
7. Ensure environmental sustainability
8. Develop a global partnership for development
The U.S. Global Health Initiative
A Renewed Agenda for Maternal and Child Survival

“We will not be successful in our efforts to end deaths from AIDS, malaria, and tuberculosis unless we do more to improve health systems around the world, focus our efforts on child and maternal health, and ensure that best practices drive the funding for these programs.”

President Barack Obama
On announcing the Global Health Initiative
May 5, 2009
Achieving Impact through Global Partnerships

- UN agencies
- Donor governments
- Ministries of health
- Philanthropic foundations
- Global alliances
  - Global Alliance for Vaccines and Immunization (GAVI)
- Civil society
Outline

- **Kevin M. De Cock, MD, FRCP**
  - *Global Child Survival: Introduction*

- **Brent Burkholder, MD, MA**
  - *Immunization: Progress, Challenges, and Opportunities for Improving Child Survival*

- **Cynthia Whitney, MD, MPH**
  - *Improving Child Survival by Preventing and Treating Pneumonia*

- **Robert Quick, MD, MPH**
  - *Global Strategies to Combat Diarrheal Disease*

- **Nancy Binkin, MD, MPH**
  - *Child Survival: A UNICEF Perspective*
Brent Burkholder, MD, MA

Director

Global Immunization Division
National Center for Immunization and Respiratory Diseases
Centers for Disease Control and Prevention
Estimated Global Annual Vaccine Preventable Disease (VPD) Deaths Averted and Still Occurring among Children <5 Years, 2004


*vaccine preventable component caused by Streptococcus pneumoniae, Haemophilus influenzae type b, JE^, Japanese Encephalitis
A standard immunization schedule was developed in 1974

6 basic antigens for infants
- Tuberculosis (BCG)
- Polio
- Diphtheria, tetanus, pertussis (DTP)
- Measles

The 3rd DTP dose (DTP3) is a standard immunization measure of EPI performance.
Global and Regional DTP3 Coverage for 1980–2008

DTP3, Diphtheria, Pertussis, Tetanus 3rd dose
106 million of the 130 million children born annually are reached at least 3 times within their 1st year of life with a public health intervention which prevents millions of deaths.

However, 24 million children, particularly in low income countries, fail to receive a complete series of 3 DTP vaccine doses.
Global Alliance for Vaccines and Immunization (GAVI Alliance)

Objectives

- Accelerate access to existing underused vaccines
- Strengthen health and immunization systems in countries
- Introduce innovative new immunization technology, including vaccines

www.vaccinealliance.org
Numbers reflect seats on the GAVI Alliance Board of Directors
Challenges to Sustaining Immunization Impact: Example of Measles in Africa

Number of reported measles cases and estimated MCV1 coverage

Wkly Epid Rec, Sept 2009, 84:397-404 and WHO/AFRO

MCV1, Measles Containing Vaccine 1st dose
Challenges to Sustaining Immunization Impact: Example of Measles in Africa, 2009–2010

No case based surveillance

EMRO

<10 confirmed measles cases

10 – 99 confirmed cases

100 – 999 confirmed cases

1000 + confirmed cases

Wkly Epid Rec, Sept 2009, 84:397-404 and WHO/AFRO
EMR, Eastern Mediterranean Region
Countries with Highest Number of Children Who Failed to Receive at Least 3 DTP doses, 2008

- India
- Nigeria
- Pakistan
- Indonesia
- DR Congo
- Ethiopia
- Uganda
- China
- South Africa
- Iraq

Millions of children
Why Children Are Unvaccinated or Undervaccinated

Unvaccinated

- Family characteristics: 55%
- Communication and information: 27%
- Parental attitudes and knowledge: 12%
- Immunization system: 6%

% based on 33 reasons abstracted from 12 articles on unvaccinated children

Undervaccinated

- Family characteristics: 28%
- Communication and information: 21%
- Parental attitudes and knowledge: 7%
- Immunization system: 44%

% based on 887 reasons abstracted from 209 relevant articles

CDC, unpublished data
Opportunities to Reduce Mortality Due to Vaccine Preventable Diseases (VPD)

- Improve coverage with traditional Expanded Program on Immunization (EPI) vaccines to at least 90% in all countries
  - Innovative measures (e.g., Reach Every District-RED approach) to strengthen communication with parents and service delivery of vaccines

- Widespread use of available, but underutilized vaccines
  - *Haemophilus influenzae* type b (Hib) vaccine
  - Pneumococcal conjugate vaccine (PCV)
  - Rotavirus vaccine
Projected Introduction of Underutilized Vaccines

- GAVI Alliance forecast for vaccine introduction into 72 eligible countries by 2015
  - Hib ("pentavalent"): 72 countries
    - DTP + hepatitis B and Hib
  - Pneumococcal conjugate (PCV): 47 counties
  - Rotavirus: 41 countries
Status of Introduction of Underutilized Vaccines, GAVI and non-GAVI Countries, June 2010

- **Hib vaccine**
  - GAVI Introduced: 61
  - Remaining GAVI: 11
  - Non-GAVI introduced: 103
  - Total: 175

- **Rotavirus vaccine**
  - GAVI Introduced: 38
  - Non-GAVI introduced: 20
  - Total: 58

- **PCV**
  - GAVI Introduced: 45
  - Non-GAVI introduced: 54
  - Total: 99

WHO/New and underutilized vaccine data base as of 21 June 2010

*PCV, Pneumococcal conjugate vaccine*
Estimated total cost for new vaccine introduction to meet GAVI targets is $4.3 billion (2010 gap - $2.6 billion)
Summary Thoughts …

Lancet editorial: Vaccines and the world of child health, October 24, 2009

“It is thrilling that the technology exists to protect people against so many threatening diseases. But sustained and concerted effort will be needed to overcome the many practical barriers to saving children's lives in the developing world.”
IMPROVING CHILD SURVIVAL BY PREVENTING AND TREATING PNEUMONIA

Cynthia Whitney, MD, MPH
Chief, Respiratory Diseases Branch, Division of Bacterial Diseases
National Center for Immunization and Respiratory Diseases
Centers for Disease Control and Prevention
1,575,000 children <5 years die of pneumonia each year
52% of deaths in 5 countries: India, Nigeria, Democratic Republic of Congo, Afghanistan, and Pakistan

### Main Etiologies of Pneumonia Deaths among Children <5 Years

<table>
<thead>
<tr>
<th>Etiology</th>
<th>Number of deaths annually</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Streptococcus pneumoniae</em> (pneumococcus)</td>
<td>741,000 (542,000–805,000)</td>
</tr>
<tr>
<td><em>Haemophilus influenzae</em> type b (Hib)</td>
<td>292,000 (206,000–425,000)</td>
</tr>
<tr>
<td>Respiratory syncytial virus</td>
<td>66,000–99,000</td>
</tr>
</tbody>
</table>

What is Pneumonia?

- **Pneumonia**
  - Abnormal inflammation of lung parenchyma (alveoli)
  - Diagnosis confirmed by chest X-ray

- **Other terms for respiratory disease**
  - **Acute Lower Respiratory Tract Infection (ALRI)**
    - Pneumonia or bronchiolitis
    - “Clinical pneumonia”
  - **Acute Respiratory Infections (ARI)**
    - Upper and lower respiratory tract
  - **Severe Acute Respiratory Infections (SARI)**
    - Respiratory symptoms + hospitalization
With accelerated use of key interventions, 67% of child pneumonia deaths will be averted by 2015.
Strategies for Preventing Pneumonia Deaths:
Exclusive Breastfeeding for 6 Months

- **Exclusive breastfeeding = no formula, food, water**
  - Recommended for 1st 6 months
  - Reduces pneumonia incidence by 15-23%
  - Occurs in <35% of all breastfeeding
  - Rate is affected by
    - Health workers’ policies and behavior (BFHI)
    - Marketing of breast milk substitutes
    - Community support and case management

- **Lack of breastfeeding: >1 million deaths/year**

References:
- www.unicef.org/media/files/GAPP3_web.pdf
- WHO. Global Databank on Infant and Young Child Feeding 2009
Strategies for Preventing Pneumonia Deaths: Immunization

- **Haemophilus influenzae type b (Hib) conjugate vaccine**
  - Recommended by WHO’s Strategic Advisory Group of Experts (SAGE) for all countries in 2006
  - Several formulations including 5-antigen combination vaccines (Hib, DTP, Hepatitis B)

- **Pneumococcal conjugate vaccine**
  - Recommended by WHO in 2007
  - 7-, 10- and 13-valent formulations now licensed
  - Supply increasing between 2010–2012
Hib Vaccine Efficacy and Effectiveness Against X-ray Confirmed Pneumonia in Developing Countries

VE: 21% (5-35%)

VE: 32% (-2-54%)

VE: 22% (-7-43%)

VE: 55% (7-78%)

VE: 31% (-9-57%)

VE: -5% (NS)*

*In the Lombok Indonesia trial, a significant reduction was seen for clinical pneumonia but not for X-ray confirmed pneumonia


Efficacy of Pneumococcal Conjugate Vaccine (PCV) in The Gambia

- 17,437 infants randomized to receive 3 doses of 9-valent PCV or placebo

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Efficacy %</th>
<th>CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical pneumonia</td>
<td>7</td>
<td>1.12</td>
</tr>
<tr>
<td>X-ray-confirmed pneumonia</td>
<td>37</td>
<td>27.45</td>
</tr>
<tr>
<td>Hospitalization for any cause</td>
<td>15</td>
<td>7.21</td>
</tr>
<tr>
<td>Deaths from any cause</td>
<td>16</td>
<td>3.28</td>
</tr>
</tbody>
</table>

CI, Confidence Intervals
Global Initiatives for Accelerating Vaccine Introduction

- Funding from GAVI Alliance
- Target lowest income “GAVI eligible” countries
- Hib Initiative
  - Nearly finished
  - 61/72 GAVI countries using Hib
- Accelerating Vaccine Introduction (AVI) initiative
  - Pneumococcal and rotavirus vaccines
  - WHO, UNICEF, Technical experts (JHU, PATH, CDC)
  - Strategic Demand Forecast: Pneumococcal vaccine in 47 countries by 2015

AVI Strategic Demand Forecast

<table>
<thead>
<tr>
<th>Years</th>
<th>Countries using PCV, cumulative</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>2</td>
</tr>
<tr>
<td>2010</td>
<td>17</td>
</tr>
<tr>
<td>2011</td>
<td>28</td>
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<tr>
<td>2012</td>
<td>38</td>
</tr>
<tr>
<td>2013</td>
<td>42</td>
</tr>
<tr>
<td>2014</td>
<td>46</td>
</tr>
<tr>
<td>2015</td>
<td>47</td>
</tr>
</tbody>
</table>

JHU, Johns Hopkins University
PATH, Program for Applied Technology in Health
# Vaccines for Pneumonia: Current Status

## Successes
- Hib vaccine: Widespread introduction
- Pneumococcal conjugate vaccine
  - Many countries interested in introducing it
  - Funding available through Advanced Market Commitment

## Challenges
- Limitations in GAVI Alliance Funding
- Systemic weaknesses in immunization programs
- Lack of surveillance capacity to support vaccine introduction and to sustain use
- Large-country introductions
Strategies for Preventing Pneumonia Deaths: Treatment

- **Access to care is limited in many countries**
- **Barriers to appropriate care**
  - Only 1 in 5 caregivers know pneumonia signs
  - Only 54% of children with pneumonia are taken to provider who can appropriately treat them
  - Only 19% of children with pneumonia receive an antibiotic
- **Community health workers can improve access**
  - Meta-analysis of 9 studies suggests Community Case Management reduces pneumonia deaths by 36%–42%
Calling for Action to Reduce Pneumonia Deaths

- **World Health Assembly resolution, May 2010**
  - Calls for member states to implement GAPP strategies
  - Directs WHO Director General to strengthen human resources, convene stakeholders to mobilize resources for vaccination, and track progress

- **World Pneumonia Day, November 12, 2010**
  - Coalition established in 2009
  - Purpose: Prevent deaths by focusing on pneumonia

Rise Against Pneumonia Rally
Delta State, Nigeria, 2009

World Pneumonia Day.
http://worldpneumoniaday.org
Accessed July 15, 2010
GLOBAL STRATEGIES TO COMBAT DIARRHEAL DISEASES

Robert Quick, MD, MPH
Medical Epidemiologist
Waterborne Diseases Prevention Branch
Division of Foodborne, Waterborne, and Environmental Diseases
National Center for Emerging and Zoonotic Infectious Diseases
Centers for Disease Control and Prevention
Global Burden of Diarrheal Diseases

- Each year an estimated 2.5 billion cases of diarrhea occur among children <5 years old
- 1.34 million children <5 years old died in 2008 from diarrheal diseases
  - 15% of all child deaths
  - 85% of diarrheal deaths occurred in WHO African and South East Asian regions
  - 51% occurred in 5 countries
    - India
    - Nigeria
    - Democratic Republic of Congo
    - Pakistan
    - Afghanistan

UNICEF/WHO, 2009
Black et al, Lancet 2010
Global Burden of Diarrheal Diseases: Risks and Etiologies

- 88% of diarrheal disease burden attributable to deficiencies in water, sanitation, and hygiene
- Specific etiologies
  - 29% of diarrheal deaths attributable to rotavirus
  - 71% attributable to bacterial, parasitic, other viral agents, or undefined
  - *Escherichia coli, Salmonella, Shigella, Campylobacter, Vibrio*
  - *Amoeba, Cryptosporidium, Giardia*
  - *Norovirus* and other caliciviruses, astroviruses

WHO, 2006
Mortality among children under 5 years decreased from 5 million cases in 1976 to 1.4 million in 2008, but the decline has slowed.
## 7-Point Plan for Diarrheal Disease Control

### Prevention
- **Water:** Improved supply, household treatment, and storage
- **Hygiene:** Handwashing with soap
- **Sanitation**
- **Vaccines:** Rotavirus and measles
- **Exclusive breastfeeding and vitamin A supplementation**

### Treatment
- **Oral rehydration solution**
- **Zinc**
Global Initiatives: Water and Sanitation

- **Millennium Development Goal for Water and Sanitation**
  - 1990–2015: Reduce by half the proportion of the world’s population lacking access to improved water supply and sanitation
  - Multisectoral: Development banks, government ministries, WHO, UNICEF, multilateral and bilateral donors, NGOs

- **WHO/UNICEF Joint Monitoring Program Report: 2010**
  - Water: Goal will be met worldwide
  - Water: Goal will not be met in sub-Saharan Africa
  - Sanitation: Goal will not be met worldwide

NGO, Non-governmental organization
Global Initiatives: Household Water Treatment

- Focus on health and behavior change, not infrastructure
- Safe Water System (SWS)
  - Developed by CDC/PAHO
- Three elements
  - Water treatment with locally available hypochlorite solution
  - Safe storage
  - Behavior change techniques
- Field trials on three continents
  - Diarrhea risk reduced by 25–85%

PAHO, Pan American Health Organization
Clasen, BMJ 2007
Safe Water System (SWS) Implementation

- **Partnership with Population Services International (PSI)**
  - Social marketing program
  - Operating in 22 countries
  - >16 billion liters of water treated in 2009, enough to supply the drinking water needs of 22 million people

- **Challenges for scaling up**
  - Over 1 billion people could benefit from household water treatment
  - National coverage rates 20% or less

- **Integration of Safe Water System with other services**
  - Antenatal care, infant immunizations, HIV care and support services
Household Water Treatment: The Challenges Ahead

- Insufficient resources for scaling up
- Potential for sustainability
- Lack of knowledge about behavior change
- Need for “game-changing” technology
  - Inexpensive, long-lasting filters
  - Microbicidal filter matrix
  - Innovations to lower the economic and behavioral barriers to early adoption and consistent use
Handwashing with Soap: Evidence Base

- **Handwashing efficacy studies**
  - Literature reviews
    - Reduced risk of diarrhea by 32%
    - Reduced risk of acute respiratory infections by 16%
  - Nepal study: Reduced risk of neonatal mortality by 41%

- **Primary school programs in China and Kenya**
  - Reduced student absenteeism by 26% to 54%

Ejemot, Cochrane Review 2010
Rabie, TMIH 2006
Rhee, Arch Ped Adolesc Med 2008
O’Reilly, Epidemiol Infect 2008,
Bowen, AJTMH 2007
Blanton, AJTMH 2010
Handwashing with Soap: Global Initiatives

- **Global Public-Private Partnership for Handwashing**
  - Programs in 13 countries

- **Partners**
  - Governments: Enabling environment
  - Donors: Financial support
  - Private sector: Marketing
  - NGOs: Implement programs
  - Academic institutions: Evaluate outcomes

- **Program impact:** Not yet measured
  - Objective indicators elusive


57
Handwashing with Soap: The Challenges Ahead

- **Large-scale implementation of handwashing**
  - Availability of water
  - Access to soap
  - Changing behavior
  - Few good studies to guide implementation

- **Adequate tools for monitoring handwashing behavior**
  - Self-reporting not reliable
  - Structured observations expensive and may alter people’s behavior
  - Microbiologic indicators are unreliable
  - Technological measures (smart soap – records motion as a proxy for usage) promising, but expensive and not validated
Rotavirus Vaccines: Evidence Base

- Two new safe vaccines licensed since 2006
  - Efficacy in wealthier countries: 85%–98%
  - Efficacy in poorer countries: 50%–75%

Ruiz-Palacios, NEJM 2006
Vesikari, NEJM 2006
Jiang, Hum Vaccine 2010
Countries Conducting Rotavirus Surveillance, by WHO Region

- AFR 41%
- AMR 34%
- EMR 40%
- EUR 40%
- SEAR 45%
- WPR 45%

Reference laboratories

MMWR November 21, 2008
Global Initiatives: Rotavirus Vaccines

- WHO recommended global rotavirus vaccine use in 2009
- GAVI Alliance
  - Forecast for 2015: Rotavirus vaccines introduced in 41 countries
- Partners
  - Gates Foundation/World Bank
  - WHO/UNICEF
  - Ministries of health
  - Vaccine industry
  - Program for Applied Technology in Health (PATH)
Decline in Childhood Diarrhea Deaths in Mexico after Rotavirus Vaccine Introduction

Richardson et al, NEJM 2010
Rotavirus Vaccine: The Challenges Ahead

- Cost
- Decreased donor support
- Added burden on resource-poor health ministries
- Need to demonstrate vaccine safety and efficacy
- Strategies to accelerate vaccine introduction in high-burden, developing countries
- Strategies to improve vaccine performance in developing country settings
Way Forward

- **UNICEF/WHO 7-point plan**
  - Blueprint for addressing the underlying causes of diarrheal disease mortality through targeted prevention and treatment strategies

- **MDG, GAVI, GHI, and other initiatives**
  - Leveraging resources to implement these strategies at scale

- **Program evaluation to improve implementation**
  - Assess factors influencing behavior change
  - Improve measures of utilization and scale
  - Evaluate health impact
Nancy Binkin, MD, MPH
Chief Policy and Evidence
Health Section – Programme Division
UNICEF New York
Overview

- UNICEF: Who we are and what we do
- Approaches and priorities
- Protect – Prevent – Treat framework
- Key challenges
Contrary to public belief, UNICEF is not a greeting card company….

Nor is trick or treating our main way of fundraising….
Who We Are

- 12,000 employees worldwide
- More than health: education, child protection, early childhood development, emergencies
- Supported entirely by voluntary funds: 2/3 from governments, 1/3 from national committees
- Budget of about four billion dollars, of which nearly 60% is spent on health
- 124 country offices serving 150 countries
How We Work

- Influence donors and countries to do the right thing (advocacy)
- Provide them with the “how to” to get it done (technical assistance)
- Help them get the money they need to do it (leveraging)
- Assist them in getting the materiel and supplies they need to make it happen (procurement)
Partnerships—The Good News and the Bad News
Overview

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- Key challenges
UNICEF’s Focus in Health:
Scaling up Proven Interventions

- UNICEF’s emphasis is scale-up: taking interventions shown in field trials to be of proven efficacy to sub-national or national level
- Our main question is not does an intervention work, but how can we help countries make it work in the complex environment of the real world in a sustainable way
  - Which interventions are likely to have the greatest impact, especially for the poorest children?
  - How can the individual interventions be packaged to ensure maximal use of scarce resources, and what are the best delivery strategies for these packages?
  - How do we resolve the bottlenecks that prevent scale-up?
What Types of Interventions Do We Scale Up?
Interventions with the greatest impact in children 1-59 months

- Exclusive breastfeeding
- ORS/zinc for diarrhea
- Insecticide treated bed nets
- Complementary feeding
- Pneumococcal vaccine
- Antibiotics for pneumonia
- Antimalarial treatment
- Hib vaccine
- Zinc prophylaxis
- Water, sanitation, hygiene
- Rotavirus vaccine
- Measles vaccine

In low income countries, coverage for most of these interventions ranges from <1% to 40%

The Protect – Prevent – Treat Approach

- Focused around three points of intervention:
  - Protecting against exposure altogether and/or optimizing host defenses (e.g., breastfeeding, handwashing, bed nets)
  - Preventing illness if exposure does occur (e.g., immunization)
  - Treating (e.g., ORS/zinc, antibiotics, antimalarials)

- Interventions provided through three delivery channels:
  - Family and community
  - Schedulable or outreach services
  - Facility- or community-based care providers
Overview

- UNICEF: Who we are and what we do
- Priorities and approaches
- Protect – Prevent – Treat framework
  - An innovative approach to community mobilization to protect children against diarrhea
  - New vaccine challenges and opportunities for prevention
  - Community case management for treatment of the major killers of children
- Key challenges
PROTECT: An Example of a New Way of Approaching a Very Old Problem

- 38% in rural Africa, 58% in rural South Asia practice open defecation
- Its elimination could reduce childhood diarrhea cases by over 1/3

Community-led total sanitation (CLTS):
- Creation of demand in community to stop open defecation based on shame, disgust, and pride
- Focus on behavioral change
- Latrine construction not subsidized

- Communities develop own solutions and provide support to poorer members to achieve 100% latrine coverage
  - Ownership
  - Greater chance of sustainability
Total Community-led Sanitation in Practice

Defecation area mapping

“Walk of shame”

Food, flies and feces demonstration

Latrine Construction

Certification and celebration

40 countries: pilot or at scale
PREVENT: Challenges and Opportunities for Prevention through the Eyes of an Implementing Agency

- Vaccination coverage is higher than for any other child health intervention
- Opportunities to integrate other life-saving interventions into vaccination programs (e.g., vitamin A, bed nets)
- Concerns, however, that new interventions being added onto systems that are not performing optimally
The Logistic Challenges of Integration

- 20 doses of vaccine
- 20 bed nets
The Promise of Synergy: Other Interventions Delivered through Measles Campaigns, 2005 – 2007

But how many more interventions can be absorbed before the system breaks down?

- Pneumonia, sought care
- Fever, treated with antimalarials
- Diarrhea, treated with ORS and feeding

% coverage

2000 2007
Crisis in human resources in low income countries:
Community case management: task shifting of curative services to community health workers (CHWs) who are residents of the communities they serve
Usually unpaid
Treatment decisions based on simple diagnostic algorithms
Provided with drugs to treat diarrhea, pneumonia, and malaria, including antibiotics for pneumonia
Overview

- UNICEF: Who we are and what we do
- Approach and priorities
- Protect – Prevent – Treat framework
- Key challenges
Key UNICEF Challenges in Child Survival

- **PROMOTE**
  - Develop innovative ways of promoting behavior change

- **PREVENT**
  - Find a balance between short-term versus long-term solutions e.g., child health days versus routine immunization

- **TREAT**
  - Strengthen health systems
Key UNICEF Challenges in Child Survival

- And a few broader issues
  - Ensure equity and financial access (nearly half of expenses out of pocket)
  - Develop methods to collect ongoing data for local decision-making and program adjustments and to evaluate the success of scale up efforts
Beyond health, we need to advocate for
- Development
- Good governance
- Female education
“It always seems impossible until it’s done!”

Nelson Mandela
THANK YOU!

And thanks to Maya Vandenent, Peter Van Maanen, Asha George, Edward Hoekstra, and Dragoslav Popovic, for generously sharing their slides and materials with me.