Child Health
• The Progress so far
  – Global, regional and national progress
  – Acceleration in progress
  – Lives saved

• The work that remains

• Priority needs
The world as a whole made substantial progress in reducing child mortality, but has not met the MDG 4 target.
A) Under-five mortality rate

B) Under-five

Source: UN Inter-agency Group for Child Mortality Estimation (UN IGME) 2015
12 low- and 12 lower-middle-income countries achieved MDG4

<table>
<thead>
<tr>
<th>Low income</th>
<th>Lower-middle income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cambodia</td>
<td>Armenia</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>Bangladesh</td>
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<tr>
<td>Eritrea</td>
<td>Bhutan</td>
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<tr>
<td>Liberia</td>
<td>Bolivia (Plurinational State of)</td>
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<tr>
<td>Madagascar</td>
<td>Egypt</td>
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<tr>
<td>Malawi</td>
<td>El Salvador</td>
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<td>Mozambique</td>
<td>Georgia</td>
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<tr>
<td>Nepal</td>
<td>Indonesia</td>
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<td>Niger</td>
<td>Kyrgyzstan</td>
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<tr>
<td>Rwanda</td>
<td>Nicaragua</td>
</tr>
<tr>
<td>Uganda</td>
<td>Timor-Leste</td>
</tr>
<tr>
<td>United Republic of Tanzania</td>
<td>Yemen</td>
</tr>
</tbody>
</table>

Source: UN Inter-agency Group for Child Mortality Estimation (UN IGME) 2015
Only two regions have achieved the MDG 4; 62 countries achieved MDG4

If all countries had reached MDG4, 14 million more lives could have been saved since 2000!!!
Despite the gains achieved, child survival remains urgent concern

The remaining burden of child mortality is not evenly shared among or within countries.
**WHO IS MOST AT RISK**

Children from poor, rural or low-maternal-education households are much more likely die before age five

*Under-five mortality rate by mother's education, wealth and residence, 2005-2010*

- Mothers with no education vs secondary education: **2.8 times**
- Poorest vs richest: **1.9 times** as likely to die before the age of 5 as richest
- Rural vs urban: **1.7 times**

Source: UNICEF analysis based on Demographic and Health Surveys, Multiple Indicator Cluster Surveys and other nationally representative sources
Why and when under-five deaths occur

Most under-five deaths are still caused by diseases that are preventable or treatable

Pneumonia, diarrhoea and malaria are main killers of children under age 5; preterm birth and intrapartum-related complications are responsible for the majority of neonatal deaths

Global distribution of deaths among children under age 5 and among newborns, by cause, 2015

Source: WHO and maternal and Child Epidemiology Estimation Group (MCEE) provisional estimates 2015
WHAT IS WORKING

Antenatal visits and skilled attendance: Higher coverage of antenatal care visits and skilled attendance at birth are associated with lower neonatal mortality

Association between antenatal care (four or more visits), skilled attendance at birth and neonatal mortality rate
IMMUNIZATION:
Reducing vaccine-preventable illnesses and deaths relies on immunization programmes that reach every mother and baby.

Coverage of tetanus protection increased from 73% to 83% between 2000 and 2014

Source: WHO and UNICEF estimates of national immunization coverage (WUENIC), 2014 revision (completed July 2014)
Early and exclusive breastfeeding: Infants who begin breastfeeding soon after delivery & those who are exclusively breastfed have substantially better health outcomes

Too few infants benefit from exclusive breastfeeding

Percentage of infants aged 0–5 months that are exclusively breastfed, 2008 – 2014*

Source: UNICEF global databases 2015 based of MICS, DHS and other nationally representative sources
**Postnatal Check-ups for Mothers and Babies:** Check-ups are essential to address potentially dangerous postnatal complications and to provide nutrition counselling.

Only a quarter of newborns in least developed countries benefit from a postnatal health check up within two days of birth.

*Percentage of mothers and newborns with a postnatal health check within two days of delivery, 2010-2015*

Source: UNICEF global databases 2015, based on MICS and DHS
Early initiation of antiretroviral treatment for pregnant women living with HIV is important in reducing mother-to-child transmission of HIV.

Overall mother-to-child transmission of HIV has fallen by more than half in sub-Saharan Africa.

Estimated percentage of infants born to pregnant women living with HIV who become vertically infected with HIV (mother-to-child transmission rate), sub-Saharan Africa, 2000–2014.

Source: UNICEF analysis of UNAIDS 2015 HIV and AIDS estimates
INTERVENTIONS FOR PNEUMONIA:
Substantial progress has been achieved in introducing and increasing coverage of two key pneumonia-related vaccines

Percentage of surviving infants who received the third dose of PCV and surviving infants who received the third dose of Hib B, 2010 and 2014

Source: WHO and UNICEF estimates of national routine immunization coverage, 2014 revision (completed July 2015); WHO Vaccine in national immunization program, Update July 2015
INTERVENTIONS FOR PNEUMONIA:
Three in five children with symptoms of acute respiratory infection are taken for health care, but progress has been slow

Percentage of children under five with symptoms of acute respiratory infection (ARI) taken for care, around 2000 and around 2014 by region and urban and rural areas

* Exclude China
Source: UNICEF global databases 2015 based on MICS, DHS and other nationally representative surveys
INTERVENTIONS FOR DIARRHEA:

Improvements in drinking water, sanitation and hygiene are important in reducing diarrhoeal infections – today, more than 90 per cent of the world’s population use improved drinking water sources and two thirds use improved sanitation facilities.

But … when children do fall ill with diarrhoea, only two in five children receive appropriate treatment, including oral rehydration salts (ORS).
INTERVENTIONS FOR MALARIA:
Prevention, treatment and elimination efforts have averted an estimated 6.1 million deaths from malaria in children under 5 since 2001. Insecticide-treated bednets (ITNs) are a simple, inexpensive method for preventing malaria transmission— but between 2012 and 2015, only 45% of children in sub-Saharan Africa slept under one.

The regions in sub-Saharan Africa with the highest burden of under-five deaths from malaria also have the lowest rates of insecticide-treated bednet use

Percentage of deaths in children age 1-59 months attributable to malaria in 2015 and percentage of children under 5 sleeping under ITNs, 2012-2015

Source: UNICEF analysis based on cause of death data from WHO/MCEE (provisional estimates) and UNICEF global databases 2015 based on MICS, DHS and other nationally representative surveys.
**NUTRITION INTERVENTION:**

Nutrition interventions (e.g., the management of acute malnutrition; protection, promotion and support of optimal breastfeeding and complementary feeding practices) can help prevent stunting and/or reduce child mortality— but, undernutrition remains a factor in nearly half of all under-five deaths

*Declines in stunting have been slowest in West and Central Africa*

*Percentage of children under age 5 moderately or severely stunted and percentage decline, by region, 1990 to 2013*

Current progress must be accelerated to reach the SDG target, particularly in sub-Saharan Africa

Achievement of the under-five mortality SDG target on child mortality by year, by country, if current trends continue in all countries

Source: UNICEF analysis based on UN Inter-agency Group for Child Mortality Estimation (UN IGME) 2015
Unprecedented Commitment for Maternal and Child Health
Lessons learned from the Global Strategy since 2010

**What worked well**
- Political leadership and commitment
- Multi-stakeholder partnerships
- Focus on accountability
- Innovation pipeline

**What could have worked better**
- Country plans and priorities to lead global collective action
- Coordination and reducing fragmentation with existing and new initiatives, including funding (FP2020, APR, ENAP, CoLSC, CoIA)
- Coordinated efforts with other sectors
- Sufficient and effective financing for women’s and children’s health
New Global Strategy for Women’s, Children’s and Adolescents’ Health

New vision to end all preventable maternal, newborn, and child deaths within a generation


Global Strategy for Women’s, Children’s and Adolescents’ Health 2016-2030

5-Year Operational Framework

http://globalstrategy.everywomaneverychild.org/pdf/EWEC_globalstrategyreport_200915_FINAL_WEB.pdf
What’s new in the updated *Global Strategy*?

Newborn deaths and stillbirths

Humanitarian crisis and fragile settings

Non-health interventions

Cross-sectoral areas

Adolescent health
## Goals and Targets of the GS 2.0

### SURVIVE:
*End preventable deaths*
- Reduce global maternal mortality to less than 70 per 100,000 live births
- Reduce newborn mortality to at least as low as 12 per 1000 live births in every country
- Reduce under-5 mortality to at least as low as 25 per 1000 live births in every country
- End epidemics of HIV, tuberculosis, malaria and neglected tropical diseases
- Reduce by one third premature mortality from noncommunicable diseases and promote mental health and well-being (e.g. reduce adolescent suicides by at least one third)

### THRIVE:
*Ensure health and well-being*
- End all forms of malnutrition, and address the nutritional needs of adolescent girls, pregnant and lactating women and children
- Ensure universal access to sexual and reproductive health-care services (including for family planning) and rights as agreed in accordance with the Programme of Action of the International Conference on Population and Development and the Beijing Platform for Action
- Ensure that all girls and boys have access to good quality early childhood development
- Substantially reduce pollution-related illnesses
- Achieve universal health coverage

### TRANSFORM:
*Expand enabling environments*
- Eradicate extreme poverty
- Ensure that all girls and boys complete free, equitable and good quality secondary education
- Eliminate all harmful practices and all discrimination and violence against women and girls
- Achieve universal and equitable access to safe and affordable drinking water and to adequate sanitation and hygiene
- Enhance scientific research, upgrade technological capabilities and encourage innovation
- Provide legal identity for all, including birth registration
- Enhance the global partnership for sustainable development
Financing model established in support of Every Woman Every Child to help close the funding gap for reproductive, maternal, newborn, child, and adolescent health.

How:
1. Investment Cases for RMNCAH- Country driven
2. Mobilization of financing for Investment Cases: Government investment, leverage IDA and IBRD, innovative engagement of global and local private sector resources
3. Health financing strategies
4. Global public goods

http://globalfinancingfacility.org/
**GFF Trust Fund**

- Eligibility: 62 low and lower-middle income countries
  - Must be willing to commit to increasing domestic resource mobilization and interested in using IDA/IBRD for RMNCAH
- Resource allocation on three criteria: need, population, income
- Roll-out: $875 million pledged to date (Canada, Norway, Gates Foundation)
- Four front-runner countries (DRC, Ethiopia, Kenya, Tanzania).
  Second wave: Bangladesh, Cameroon, India, Liberia, Mozambique, Nigeria, Senegal, and Uganda

http://globalfinancingfacility.org/
Newborn Health

No woman should die while giving life

No newborn is born to die

No baby stillborn

No child stunted or dying

~ 280,000 die

3 million die

2.6 million die

2.9 million die

10 million deaths

3.5 million within a few days of birth
For women, stillbirths, newborns, the time of highest risk is the same.

Birth is the time of greatest risk of death and disability.
Triple return on investment – quadruple if count development outcomes.

Source: Lancet Every Newborn series Lawn et al.
The three main causes of newborn deaths all have effective and feasible interventions = 3 by 2

1. Preterm birth
   - Antenatal corticosteroids*, preterm labor management
   - Care including essential newborn care + Kangaroo mother care

2. Birth complications (and intrapartum stillbirths)
   - Prevention by skilled attendance and obstetrics*
   - Care including essential newborn care + resuscitation*

3. Neonatal infections
   - Prevention, essential newborn care especially breastfeeding, Chlorhexidine where appropriate*
   - Case management of neonatal sepsis with antibiotics *

71% of newborn deaths preventable actionable now without intensive care

(*) link of essential interventions with UNCoLSC Essential commodities
New guidance on management of newborns provide basis for expansion of options for care

Recent WHO guidelines in 2015:

WHO recommendations on interventions to improve preterm birth outcomes, WHO, Nov 2015


Postnatal Care for Mothers and Newborns: Highlights from the World Health Organization 2013 Guidelines, WHO, Apr 2015
Launched in 2014, the Every Newborn Action Plan (ENAP) puts strategic focus on improving coverage of newborn specific interventions:

- Essential Newborn care (weighing scale, thermometer, pulse oximetry)
- Resuscitation (bag and mask; resuscitation table)
- Prevention and management of neonatal sepsis (injectable gentamicin, oral antibiotics)
- Care of pre-term and low birth weight newborns (dexamethasone/betamethasone, KMC garments, tube for feeding)
- Supportive care for small and sick newborns (baby warmers, incubators, CPAP devices, milk storage/milk banks)
- Training aids: Neonatalie, Preemie Natalie, bag and mask, breast models, tube feeding, KMC slings
- Training manuals and audio-visual aids
Expansion of Guidelines for Severe Bacterial Infection in Newborns and young infants

- **Hospital Guideline:**
  - Gentamicin+penicillin or ampicillin inj in hospital settings.
  - Ceftriaxone inj recommended as 2\textsuperscript{nd} line

- **New Guideline when hospitalization not possible (by trained health worker):**
  - Oral amoxicillin+gentamicin

- **Medicines in WHO EML for children**
  - Priority in UN Commission of Live Saving Commodities

- **Progress in increasing access, but gaps exist**

  - Increased demand
  - Support for program scale up
  - Expanding market
## Medicines needed for severe bacterial infection

<table>
<thead>
<tr>
<th>Medicine</th>
<th>Formulation and Availability</th>
<th>Price (UNICEF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gentamicin</td>
<td>- Gentamicin Injection available mainly in adult strength (40mg/mL)</td>
<td>- 2ml amp: $0.15/amp</td>
</tr>
<tr>
<td></td>
<td>- lower strength (10mg/mL): fewer sources, low availability, higher cost</td>
<td>- 2ml amp: $0.30-$2.37/amp</td>
</tr>
<tr>
<td>Ceftriaxone (second line)</td>
<td>- Ceftriaxone pdr/inj</td>
<td>- 1g vial: $0.54/vial</td>
</tr>
<tr>
<td></td>
<td>- Ceftriaxone pdr/inj</td>
<td>- 250mg vial: $0.30/vial</td>
</tr>
</tbody>
</table>

Ceftriaxone. Expansion opportunities for pediatric market. Gentamicin- adult strength can be appropriate
## Medicines needed for severe bacterial infection

<table>
<thead>
<tr>
<th>Medicine</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ampicillin</td>
<td>Generally available</td>
</tr>
<tr>
<td>Procaine Benzyl Penicillin</td>
<td>Current global shortage</td>
</tr>
<tr>
<td>Benzyl Penicillin</td>
<td>Generally available</td>
</tr>
</tbody>
</table>

→ Expansion opportunities.
New Guidelines for Cord Care

- WHO recommendation of chlorhexidine gluconate 7.1% gel and liquid
  - Umbilical cord care in newborns who are born at home in settings with high neonatal mortality.
  - Use might be considered in other settings only to replace application of a harmful traditional substance

- Chlorhexidine gluconate 7.1% gel and liquid added to the 2013 WHO EML for children and priority for the UNCLSC

- Delivery through primary health care facilities, community health workers and work to expand distribution in private sector

- Increased demand
- Support for program scale up
- Expanding market
New Guidelines for Cord Care

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  - Umbilical cord care in newborns who are born at home in settings with high neonatal mortality.
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Chlorhexidine utilization expanding

Chlorhexidine Across Sub-Saharan Africa, South Asia, and Latin America

- Over 28 countries in various stages of engagement in Africa and Asia
- Focus on promotion of introduction in practice and support scale up (formative research, regulation, demand, local manufacturing)

Map Credit: Chlorhexidine Working Group 2015
Challenges in access of chlorhexidine

- Solution and gel available
  - Markets for each formulation is evolving

- Limited sources
  - **But** manufacturing base increasing (Nepal, India, Bangladesh, Nigeria, Ethiopia, Kenya...)

- New products under development (sachets)

- Require appropriate messaging to mothers and other caregivers to ensure proper product use through:
  - Appropriate product labeling,
  - Context appropriate product presentation
  - Proper messaging to mothers and other caregivers to ensure proper product use.

Credit: Chlorhexidine Working Group 2015 (please confirm)
Chlorhexidine Working Group

An international collaboration of organizations committed to advancing the use of 7.1% chlorhexidine digluconate for umbilical cord care

- Advocacy
- Technical assistance

Supports activities in over 25 countries and coordinates global efforts including development of evidence and guidance to programmes and industry

Active participation of industry

For more info please visit:
www.healthynewbornnetwork.org/topic/chlorhexidine-umbilical-cord-care
Currently, ~3 in 4 childhood pneumonia cases around the world do not receive treatment……and ~80% of this need occurs in just 10 country markets

55M untreated pneumonia cases in children under five occur…

... in these 10 countries (in order of untreated cases)

1. India
2. Nigeria
3. Pakistan
4. Bangladesh
5. DRC
6. Ethiopia
7. Tanzania
8. Afghanistan
9. Uganda, and
10. Kenya

Use of amoxicillin DT for pneumonia is growing

Annual orders for Amoxicillin DT through UNICEF have grown 13x since 2011

Need for scale-up supply of quality assured amoxicillin DT to meet demand arising from new guidance for managing pneumonia

UNICEF started procuring amoxicillin DT in 2011.

- Activities under the work UNCLSC encouraged engagement of new manufactures and increase in availability.
- An ERP was established in 2013: 11 Manufacturers engaged in the ERP

Need more suppliers
Potential global demand is expected to continue to grow, with up to ~4.1B amox DT needed over the next 5 years.

Global annual amox DT demand could grow from ~300M tablets in 2015 to ~1.2B in 2020.

Note: R4D analysis based on 50 country childhood pneumonia antibiotic forecast prepared by John Snow, Inc; includes public and private sectors.
Country-level product registration is important as regulatory conditions in key growth markets are increasingly enabling amox DT scale-up

<table>
<thead>
<tr>
<th>10 key growth markets</th>
<th>Amox rec'd as 1st line Tx in Natl. Guidelines?</th>
<th>Amox DT 250mg in EML and National Proc List?</th>
</tr>
</thead>
<tbody>
<tr>
<td>India</td>
<td>In progress</td>
<td>✔</td>
</tr>
<tr>
<td>Nigeria</td>
<td>In progress</td>
<td>In progress</td>
</tr>
<tr>
<td>Pakistan</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>DRC</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>✔</td>
<td>In progress</td>
</tr>
<tr>
<td>Tanzania</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Uganda</td>
<td>In progress</td>
<td>In progress</td>
</tr>
<tr>
<td>Kenya</td>
<td>In progress</td>
<td>✗</td>
</tr>
<tr>
<td>Niger</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>

As policies are updated, countries will likely start national procurement of amox DT registered in their markets

SCALE-UP IS LINKED TO APPROPRIATE DIAGNOSIS

ARIDA (Acute Respiratory Infection Diagnostic Aid) Project:

• Launched by UNICEF, multi-stakeholder project to develop a respiratory rate measuring device for diagnosis of pneumonia by health workers. www.unicef.org/innovation

Pneumonia Diagnostics Project

• Malaria Consortium. Multi-country field trial of several new diagnostic tools
... AND APPROPRIATE USE

- PATH and UNICEF piloting use of dispensing aids
- Aimed at dispensing by community health workers (CHW) and primary health settings.
Stakeholders are collaborating closely to ensure amox DT scale-up continues, with key recent updates

- Continues to play key role as major procurer of high-quality amox DT
- Working closely with other stakeholders to identify complementary amox DT funding for key geographies that have secured Global Fund resources for community level care

- With a recently approved Gates Foundation grant, R4D is administering ~$2M in catalytic dedicated amox DT funding for Ethiopia
- This is complemented by key programmatic resources to ensure gains are sustained

For more information, contact: Kanika Bahl, Results for Development – kbahl@r4d.org; Cammie Lee, Results for Development – clee@r4d.org; David Milestone, USAID – dmilestone@usaid.gov; David Muhia, UNICEF Supply Division – dmuhia@unicef.org

References: http://www.unicef.org/supply/; http://everywomaneverychild.org/component/content/article/1-about/305-amoxicillin-product-profile-
Clear guidelines (ORS and Zinc)
- Underutilization of available treatments
- Activities to expand coverage target the generation of demand through public and private sectors
  - Creates a need for market specific products
    - Labeling and specific presentation
  - Innovation is needed to overcome the current barriers for acceptance
    - Flavor
    - Duration of course of treatment
    - Access to clean water
  - Change perception that this is NOT a cure
Continuous growth of ORS and Zinc

- UNICEF demand is increasing
- Same trends by other procurers
- Opportunity for manufacturers to participate in market growth
UNICEF supply base expanding in countries with large programs

**2012**
- Co-Pack: 0
- ORS Flavored: 1
- ORS Unflavored: 3
- Zinc: 4

**2015**
- Co-Pack: 4
  - India, Bangladesh, Kenya, Nigeria
- ORS Flavored: 5
  - India, Bangladesh, Kenya, Nigeria, Germany
- ORS Unflavored: 4
  - India, Bangladesh, Kenya, Germany
- Zinc: 7
  - India (3), Bangladesh, France, Kenya, Nigeria

**2020**
- + ??????
- 2 Products PQ’d
- 2 Being assessed
Changes in target stimulating growth for albendazole and mebendazole

WHO: Donation programme with GSK and J&J for LF and deworming in school age children
UNICEF and INGO: Procurement for deworming in pre-school age children

- Coverage for school age children to increase from 250M (40%) in 2013 to 550M (75%) in 2020
- Coverage for pre-school age children (PSAC) expected to increase from 130M children (49%) in 2013 to 270M children (75%) in 2020
Preventive chemoprophylaxis of soil-transmitted helminthiasis: Challenges

- Many products in the market and varied standards of quality
- Included in the WHO prequalification programme under the EOI for Neglected Tropical Diseases
  - Single ingredient medicines to treat lymphatic filariasis, soil-transmitted helminthiasis (STH), and schistosomiasis
    - Diethylcarbamazine citrate 100mg tablet (scored)
    - Mebendazole 500mg tablet (chewable*)
    - Albendazole 400mg tablet (chewable*, preferably scored)
    - Praziquantel 600mg tablet (scored)
    - Ivermectin 3mg tablet (unscored)
- Limited number of dossiers submitted for PQ
  - Expert Review Process established to provide interim assessment of quality.

* can be chewed or swallowed whole
Preventive chemoprophylaxis of soil-transmitted helminthiasis: Progress

- In 2015, WHO and UNICEF reaffirmed commitment to procure quality products and called on manufacturers to submit dossiers for ERP and international buyers to use results for qualification:
  - Albendazole: 11 manufacturers engaged
  - Mebendazole: 2 manufacturers engaged

- Significant efforts from manufacturers to complete requirements for dossier evaluation

- Concurrent review of Pharmacopoeia Monographs
  - Albendazole: revised monograph in IP 5th Edition (2015) to include dissolution criteria and labelling
  - Mebendazole: under review
Summary

- Tremendous needs to be met for children
- New guidelines are being developed and implemented
- Concerted efforts to create an attractive market place to address these needs
  - Both demand and supply
    - At national and international level
- Several important changes
  - Increased transparency on demand
  - Incremental participation of industry
Thank you