

# The Health of Women and Children

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September 14, 2018

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# Learning Objectives

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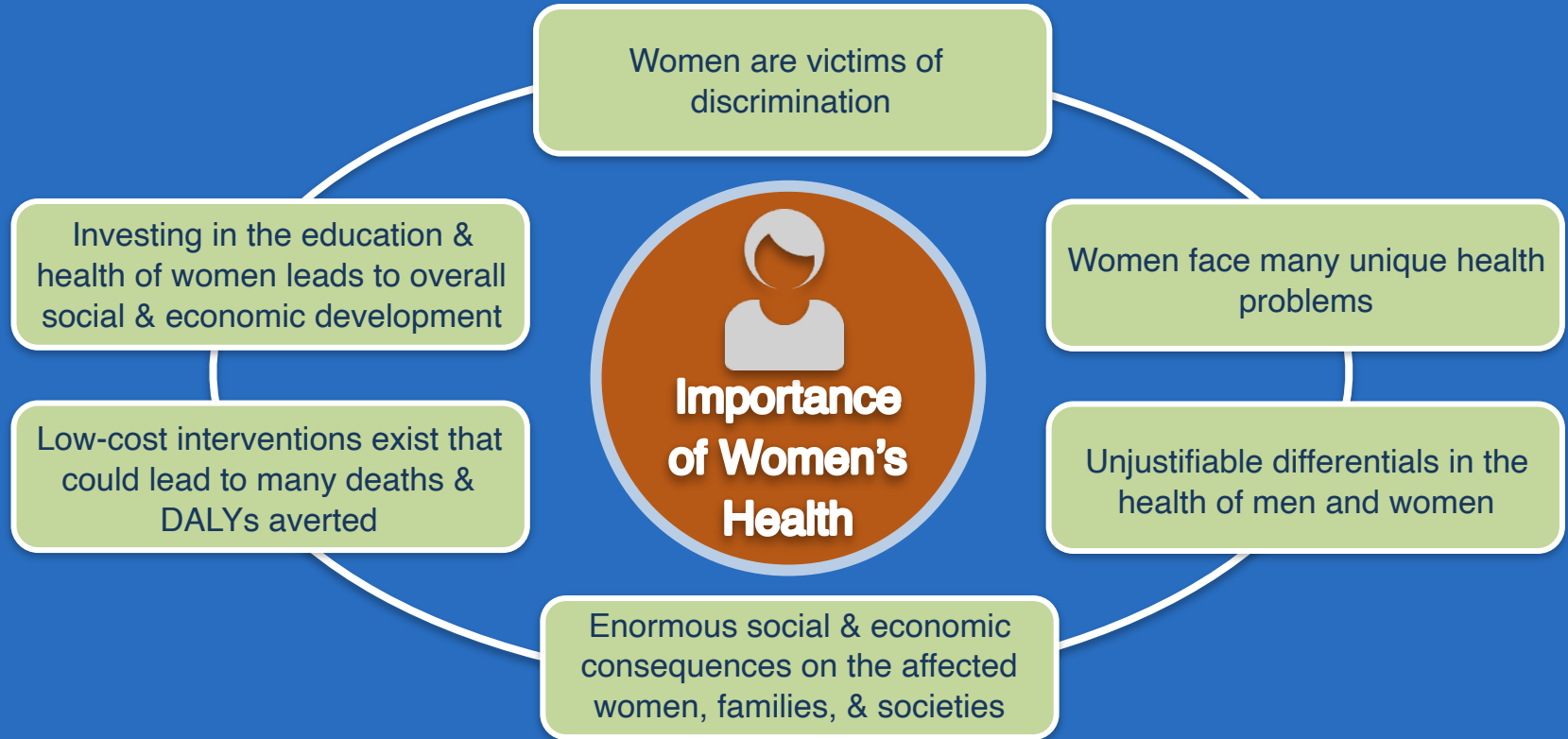
**By the time you finish this session, you should be able to answer (for both women and children) :**

- Why is the health of women and children so important?
- What are their key burdens of disease, disability, and death?
- Which groups of women and children are most affected by them?
- What are the most important risk factors for these burdens?
- What interventions can improve the health of women and young children in doable, sustainable, fair, and cost-effective ways?

# The Health of Women

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# Why Care?



# Leading Causes of Death for Females (age 15-49), Low-Income Countries and High-Income Countries, 2016

Low-Income Countries		High-Income Countries	
Rank	Disease	Rank	Disease
1	HIV/AIDS	1	Self harm
2	Tuberculosis	2	Breast cancer
3	Diarrheal diseases	3	Road injuries
4	Maternal hemorrhage	4	Drug use disorders
5	Indirect maternal deaths	5	Ischemic heart disease
6	Stroke	6	Stroke
7	Lower respiratory infections	7	Lung cancer
8	Ischemic heart disease	8	Colorectal cancer
9	Maternal hypertension	9	Cervical cancer
10	Cervical cancer	10	Interpersonal violence

Source: IHME. Global Burden of Disease Compare. Accessed September 11, 2018. Available at: <http://vizhub.healthdata.org/gbd-compare/>.

# Leading Causes of Death for Females (age 50-69), Low-Income Countries and High-Income Countries, 2016

Low-Income Countries		High-Income Countries	
Rank	Disease	Rank	Disease
1	Ischemic heart disease	1	Ischemic heart disease
2	Stroke	2	Lung cancer
3	Tuberculosis	3	Breast cancer
4	Diarrheal diseases	4	Stroke
5	Lower respiratory infections	5	Colorectal cancer
6	Cervical cancer	6	COPD
7	Diabetes	7	Pancreatic cancer
8	COPD	8	Ovarian cancer
9	Breast cancer	9	Diabetes
10	HIV/AIDS	10	Lower respiratory infections

Source: IHME. Global Burden of Disease Compare. Accessed September 11, 2018. Available at: <http://vizhub.healthdata.org/gbd-compare/>.

# Leading Causes of DALYs for Females (age 15-49), Low-Income Countries and High-Income Countries, 2016

Low-Income Countries		High-Income Countries	
Rank	Disease	Rank	Disease
1	HIV/AIDS	1	Low back and neck pain
2	Tuberculosis	2	Migraine
3	Diarrheal diseases	3	Depressive disorders
4	Low back and neck pain	4	Skin diseases
5	Migraine	5	Anxiety disorders
6	Skin diseases	6	Drug use disorders
7	Depressive disorders	7	Other musculoskeletal disorders
8	Maternal hemorrhage	8	Gynecological diseases
9	Dietary iron deficiency	9	Road injuries
10	Indirect maternal deaths	10	Self harm

Source: IHME. Global Burden of Disease Compare. Accessed September 11, 2018. Available at: <http://vizhub.healthdata.org/gbd-compare/>.

# Leading Causes of DALYs for Females (age 50-69), Low-Income Countries and High-Income Countries, 2016

Low-Income Countries		High-Income Countries	
Rank	Disease	Rank	Disease
1	Ischemic heart disease	1	Low back and neck pain
2	Stroke	2	Ischemic heart disease
3	Tuberculosis	3	Lung cancer
4	Diarrheal diseases	4	Breast cancer
5	Diabetes	5	Diabetes
6	Lower respiratory infections	6	Sense organ diseases
7	Low back and neck pain	7	Stroke
8	Sense organ diseases	8	Depressive disorders
9	Cervical cancer	9	Migraine
10	COPD	10	Other musculoskeletal disorders

Source: IHME. Global Burden of Disease Compare. Accessed September 11, 2018. Available at: <http://vizhub.healthdata.org/gbd-compare/>.



# Leading Risk Factors for Female Deaths (age 15-49), for Low-Income and High-Income Countries, 2016

Low-Income Countries		High-Income Countries	
Rank	Risk Factor	Rank	Risk Factor
1	Unsafe sex	1	Alcohol use
2	Household air pollution	2	Smoking
3	High blood pressure	3	High body-mass index
4	Unsafe water	4	Drug use
5	Alcohol use	5	High blood pressure
6	High body-mass index	6	High fasting plasma glucose
7	Unsafe sanitation	7	High total cholesterol
8	Intimate partner violence	8	Low whole grains
9	Ambient particulate matter	9	Unsafe sex
10	High fasting plasma glucose	10	Low fruit

Source: IHME. Global Burden of Disease Compare. Accessed September 11, 2018. Available at: <http://vizhub.healthdata.org/gbd-compare/>.

# Leading Risk Factors for Female Deaths (age 50-69), for Low-Income and High-Income Countries, 2016

Low-Income Countries		High-Income Countries	
Rank	Risk Factor	Rank	Risk Factor
1	High blood pressure	1	Smoking
2	Household air pollution	2	High body-mass index
3	High fasting plasma glucose	3	High blood pressure
4	High body-mass index	4	High fasting plasma glucose
5	Ambient particulate matter	5	Alcohol use
6	Unsafe sex	6	High total cholesterol
7	Low fruit	7	Low whole grains
8	High total cholesterol	8	Ambient particulate matter
9	Low whole grains	9	Low fruit
10	Smoking	10	Impaired kidney function

Source: IHME. Global Burden of Disease Compare. Accessed September 11, 2018. Available at: <http://vizhub.healthdata.org/gbd-compare/>.

# Leading Risk Factors for Female DALYS (age 15-49), for Low-Income and High-Income Countries, 2016

Low-Income Countries		High-Income Countries	
Rank	Risk Factor	Rank	Risk Factor
1	Unsafe sex	1	Drug use
2	Iron deficiency	2	High body-mass index
3	Household air pollution	3	Alcohol use
4	High blood pressure	4	Smoking
5	Unsafe water	5	High fasting plasma glucose
6	Alcohol use	6	Occupational ergonomic factors
7	High body-mass index	7	High blood pressure
8	Intimate partner violence	8	Low whole grains
9	Unsafe sanitation	9	Unsafe sex
10	High fasting plasma glucose	10	High total cholesterol

Source: IHME. Global Burden of Disease Compare. Accessed September 11, 2018. Available at: <http://vizhub.healthdata.org/gbd-compare/>.

# Leading Risk Factors for Female DALYS (age 50-69), for Low-Income and High-Income Countries, 2016

Low-Income Countries		High-Income Countries	
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2	Household air pollution	2	Smoking
3	High fasting plasma glucose	3	High fasting plasma glucose
4	High body-mass index	4	High blood pressure
5	Ambient particulate matter	5	Alcohol use
6	Unsafe sex	6	High total cholesterol
7	Low fruit	7	Low whole grains
8	Low whole grains	8	Impaired kidney function
9	High total cholesterol	9	Low fruit
10	Smoking	10	Ambient particulate matter

Source: IHME. Global Burden of Disease Compare. Accessed September 11, 2018. Available at: <http://vizhub.healthdata.org/gbd-compare/>.

# Addressing Noncommunicable Diseases

## Cardiovascular and Cerebrovascular Disease

- Control hypertension
- Reduce obesity
- Address diabetes
- Increase physical activity

## Mental Health

- Improve women's status in society and reduce gender disparities
- Offer community-based psychosocial support
- Implement an effective system for referrals
- Increase availability of modern generic drugs

# Addressing Malaria, HIV/AIDS, and Tuberculosis

## Malaria

- Promote use of bed nets
- Promote indoor residual spraying
- Provide intermittent preventative treatment to pregnant women
- Confirm diagnosis and treat with ACT

## HIV/AIDS

- Delay sexual debut & reduce the number of partners
- Promote condom use
- Male medical circumcision
- Test & treat

## Tuberculosis

- Encourage case-finding in women
- Raise cure rates
- Implement Directly Observed Therapy (DOTs)
- Treat drug-resistant TB

# Addressing Sexually Transmitted Infections and Female Genital Mutilation

## Sexually Transmitted Infections

- Delay age of sexual debut
- Empower women to negotiate safe sex
- Promote girls' education
- Promptly diagnose and treat STIs

## Female Genital Mutilation

- Mobilize and educate communities to change social norms
- Take account of local cultural, geographical, ethnic, and socioeconomic factors influencing practices

# Addressing Intimate Partner Violence, Unsafe Abortion, and Obstetric Fistula

## Intimate Partner Violence

- Organize prevention and education campaigns
- Ensure treatment for those who engage in IPV
- Ensure access to couples counseling
- Provide access to crisis centers
- Arrest offenders

## Unsafe Abortion

- Provide universal access to family planning services
- Educate communities on legal abortion services
- Offer safe legal abortions services where it is allowed
- Provide safe post-abortion care if abortion is legally restricted

## Obstetric Fistula

- Delay the age of first pregnancy
- Address FGM and harmful traditional practices
- Prevent the three delays
- Ensure access to emergency obstetric services



# Women's Reproductive Health

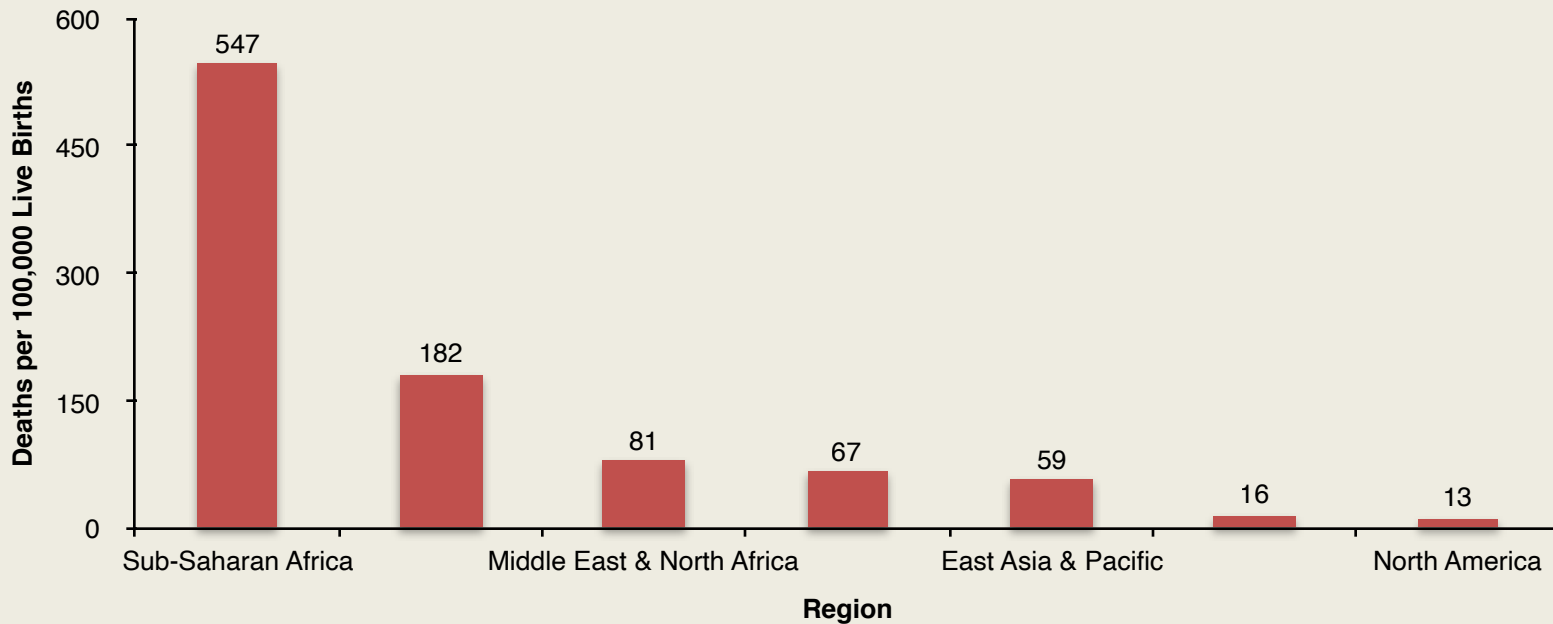
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# The Unfinished Agenda: Key Maternal Health Challenges

- Gender disparities
- Child marriage
- Delaying age of first birth
- Access to contraception
- Maternal morbidity and mortality

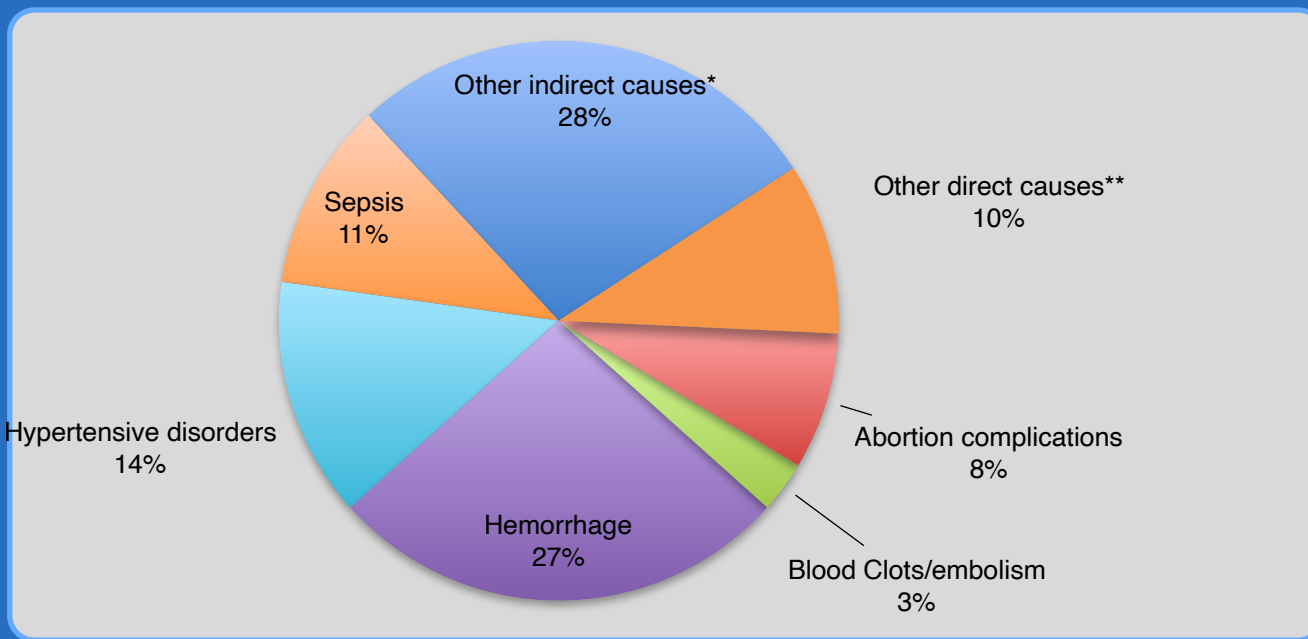
Source: Data from World Bank. World Development Indicators. Accessed December 17, 2015. <http://data.worldbank.org/indicator/SH.STA.MMRT/countries/1W-8S-XD-ZF-XQ-XJ-4E?display=graph>

# Maternal Mortality Ratios for World Bank Regions, High-Income Countries, and Globally, 2015



Source: Data from World Bank. Data: Maternal mortality ratio. Data from the World Bank. <http://data.worldbank.org/indicator/SH.STA.MMRT/countries/1W-8S-Z4-ZJ-XD-Z7-ZG?display=graph>. Accessed September 11, 2018.

# Maternal Death by Cause, for Low- and Middle-Income Countries, Percentage Distribution, 2003-2009



Notes: Estimates may not add up to 100% due to rounding

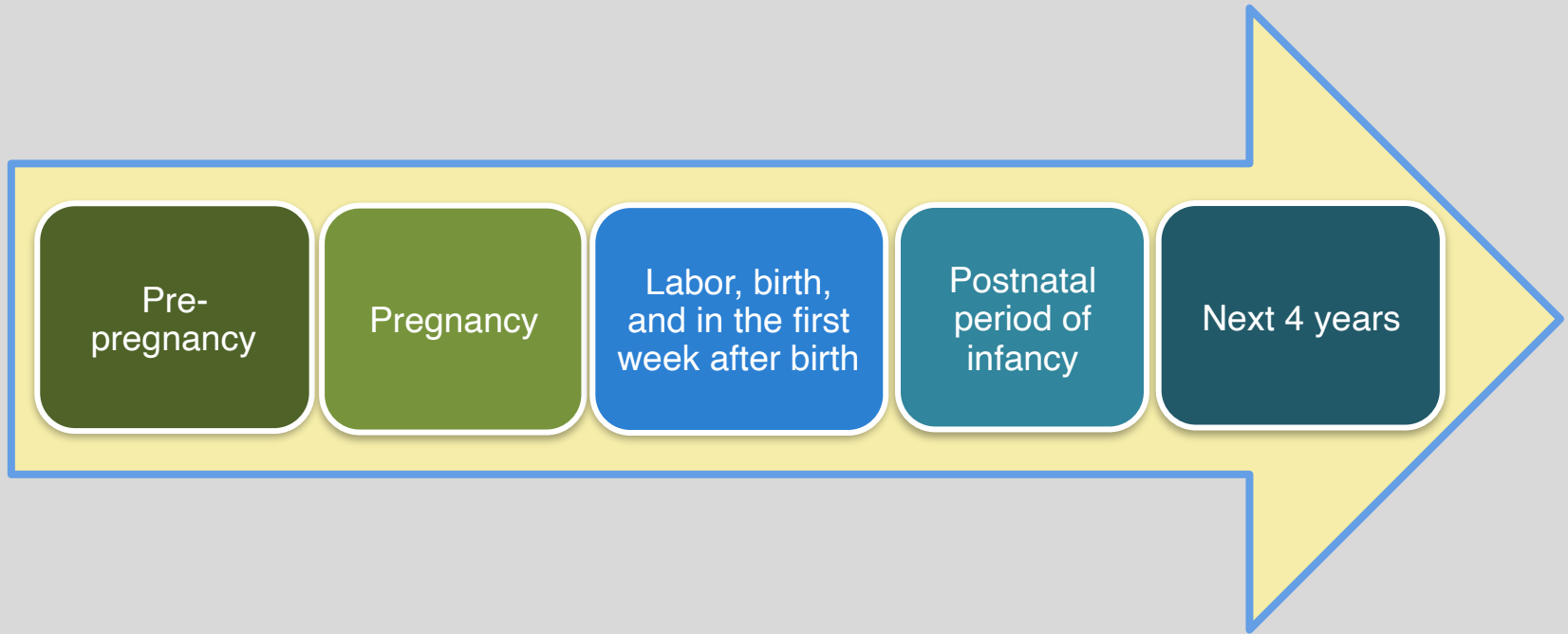
\*Other direct causes include complications of delivery, obstructed labor, and other

\*\* Other indirect causes include HIV-related causes and pre-existing conditions medical conditions that are exacerbated during pregnancy

The source of this data refers to low- and middle-income countries as developing countries.

Data from Say, L., et al. "Global causes of maternal death: a WHO systematic analysis." *The Lancet Global Health* 2(6): e323-e333; WHO. Maternal Mortality Fact Sheet. May 2014. <http://www.who.int/mediacentre/factsheets/fs348/en/> Accessed December 20, 2014.

# The Life Course Perspective



# Addressing Reproductive and Maternal Health

- Improve nutrition of adolescent girls
- Community-based interventions aimed at delaying age at marriage and first birth
- Improve access to culturally appropriate modern contraceptives and education on three-year birth intervals
- Promote skilled attendants at delivery
- Increase access and adherence to prenatal care: including micronutrient supplementation, monitoring of hypertension and diabetes, and tetanus vaccination
- Address the three delays and ensure emergency obstetric care is available
- Improve follow-up post-partum care and counseling

# The Health of Young Children

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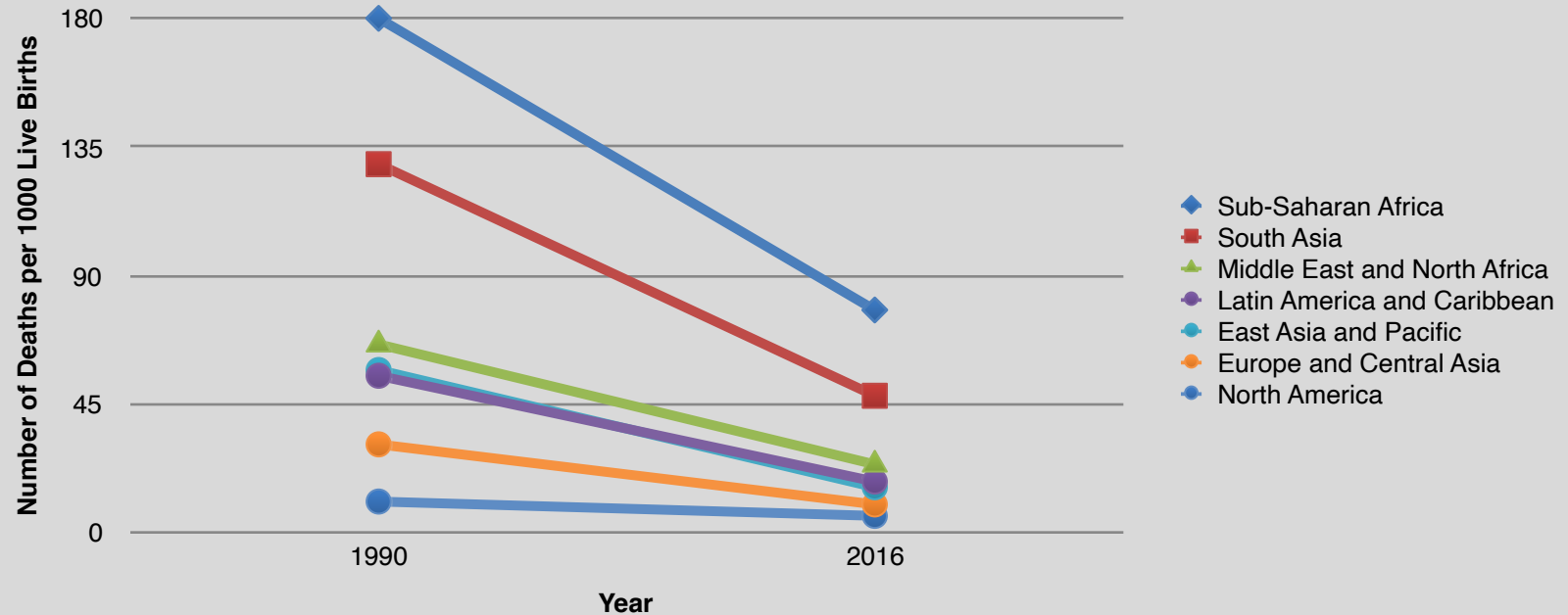
# Why care?

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- 16,500 children under the age of five die every day
- Almost all of these deaths are preventable
- Childhood morbidities are costly to children, their families, and society
- Disease and poor nutrition early in life result in long-term effects, including cognitive deficiencies, physical deficiencies, and losses in productivity

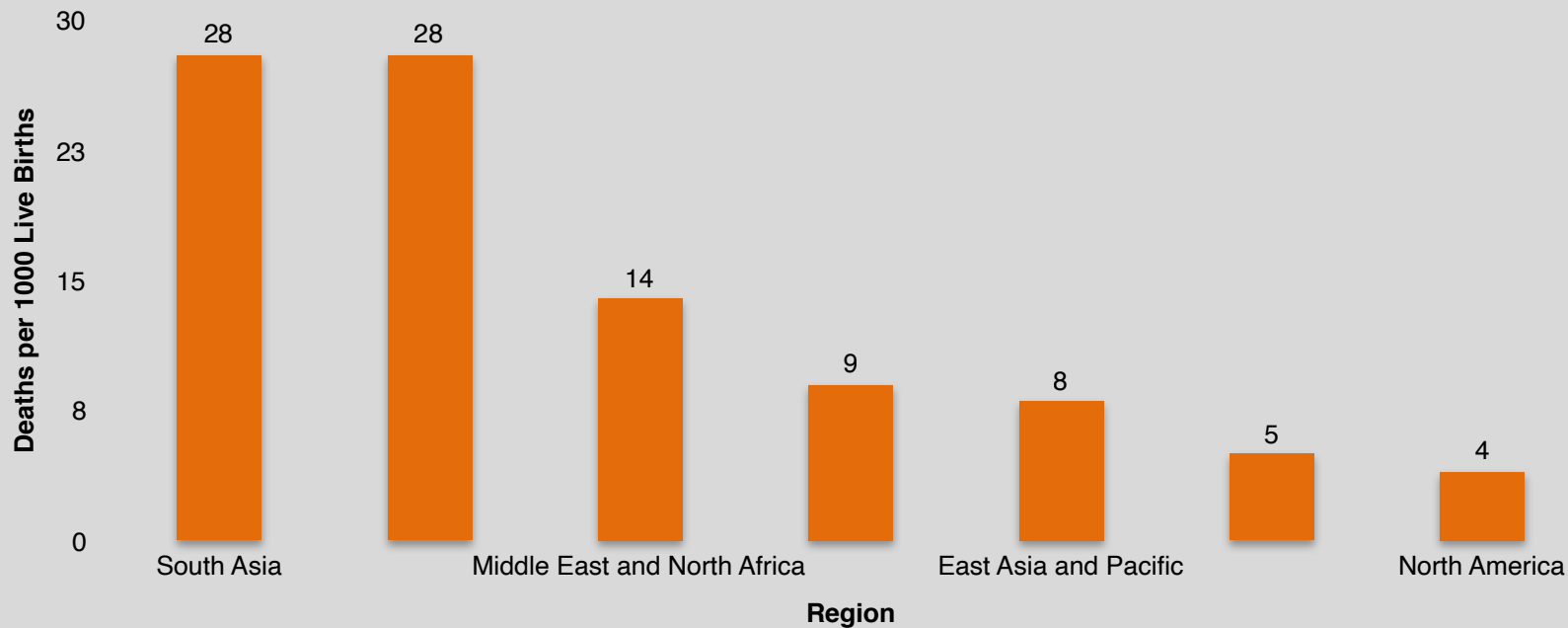


# Declines in Under-Five Child Mortality, by World Bank Region, 1990-2016



Source: World Bank. World Development Indicators. Available at: <http://data.worldbank.org/indicator/> Accessed September 11, 2018.

# Neonatal Mortality Rates for World Bank Regions, 2016



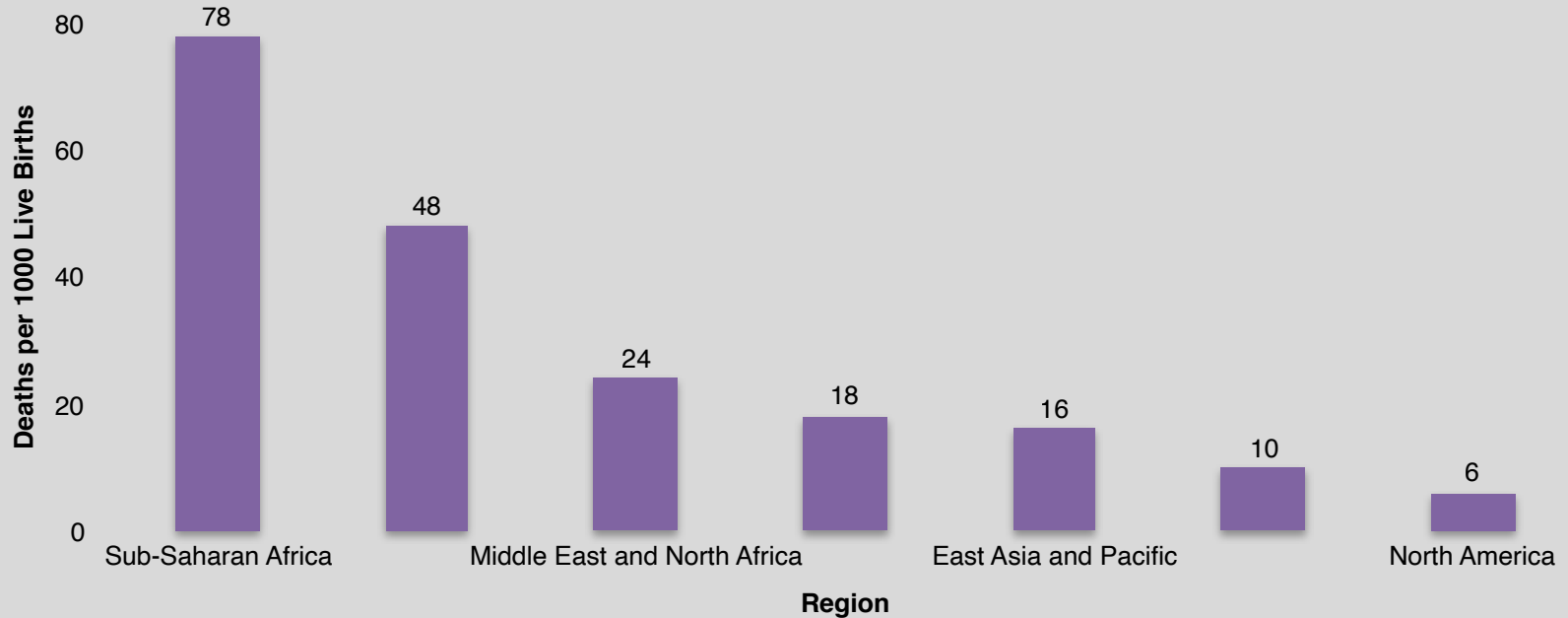
Source: Data from the World Bank. World Development Indicators: Mortality. <http://data.worldbank.org/indicator/SH.DYN.NMRT/countries/Z4-ZJ-8S-ZG-Z7-ZQ-XD?display=graph>. Accessed September 11, 2018.

# Infant Mortality Rates for World Bank Regions, 2016



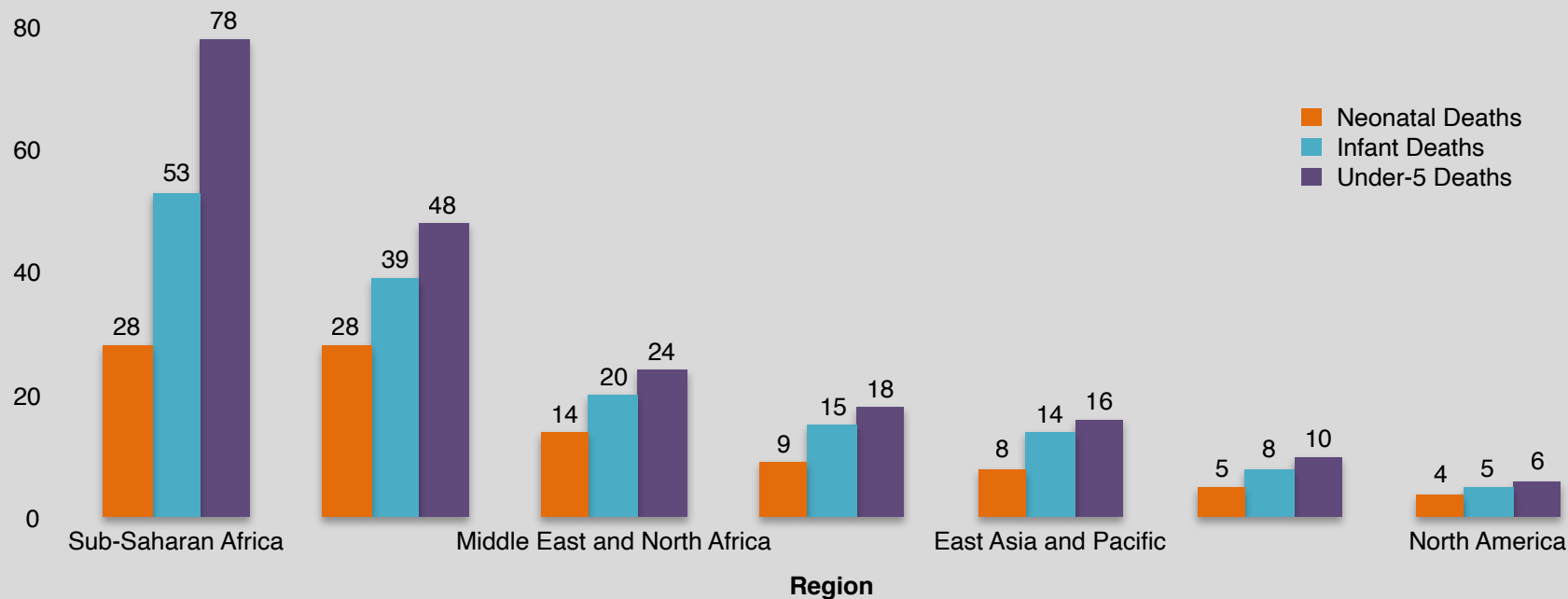
Source: Data from the World Bank. World Development Indicators: Mortality. <http://data.worldbank.org/indicator/SH.DYN.NMRT/countries/Z4-ZJ-8S-ZG-Z7-ZQ-XD?display=graph>. Accessed April 2, 2017

# Under-Five Child Mortality Rates for World Bank Regions, 2016



Source: Data from the World Bank. World Development Indicators: Mortality. <http://data.worldbank.org/indicator/SH.DYN.NMRT/countries/Z4-ZJ-8S-ZG-Z7-ZQ-XD?display=graph>. Accessed April 2, 2017

# Neonatal, Infant, and Under-Five Child Mortality Rates, By World Bank Region, 2016



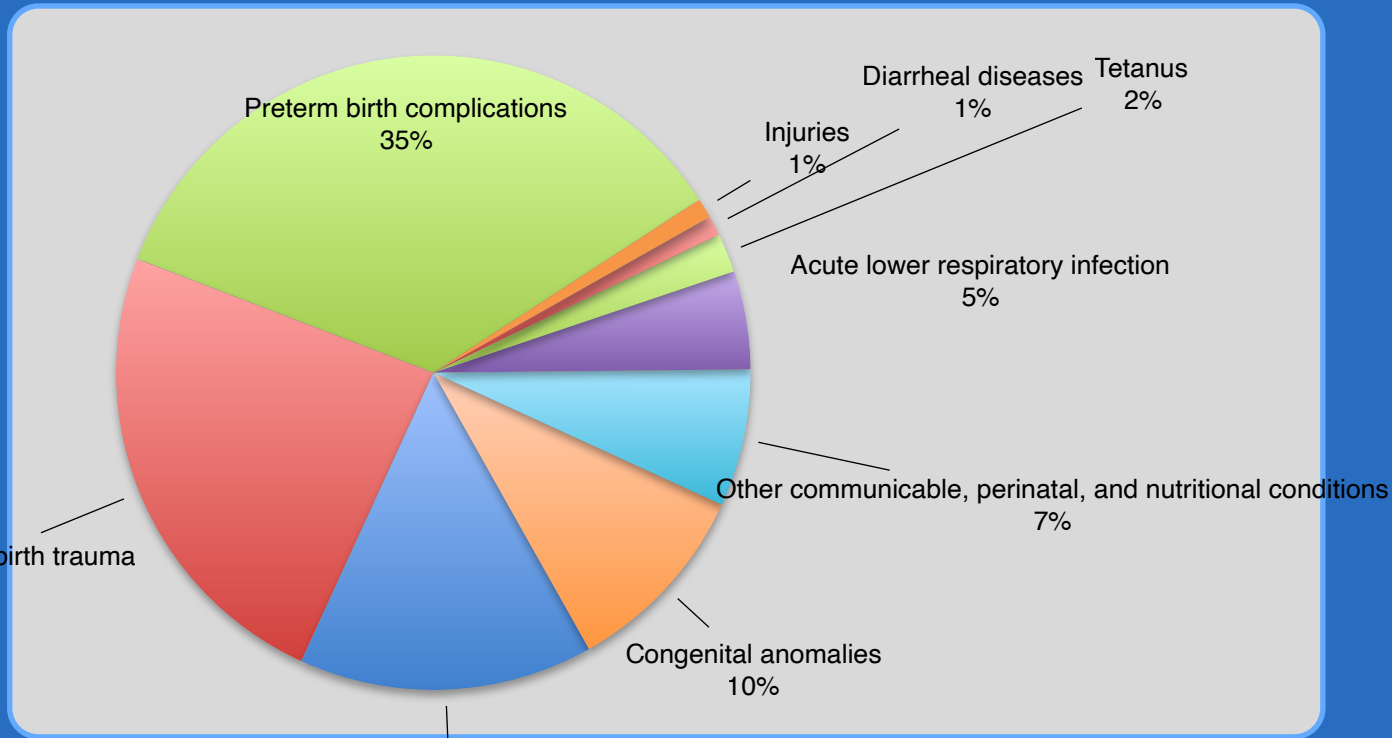
Source: Data from the World Bank. World Development Indicators: Mortality. <http://data.worldbank.org/indicator/SH.DYN.MORT/countries/1W-Z4-ZQ-Z7?display=graph>. Accessed September 12, 2018.

# Leading Causes of Under-Five Deaths, for Low-Income and High-Income Countries, 2016

Low-Income Countries		High-Income Countries	
Rank	Disease	Rank	Disease
1	Malaria	1	Congenital defects
2	Lower respiratory infections	2	Neonatal preterm birth
3	Diarrheal diseases	3	Other neonatal disorders
4	Neonatal encephalopathy	4	Neonatal encephalopathy
5	Neonatal preterm birth	5	Sudden infant death syndrome
6	Protein-energy malnutrition	6	Neonatal sepsis
7	Neonatal sepsis	7	Lower respiratory infections
8	Congenital defects	8	Road injuries
9	Other neonatal disorders	9	Endocrine, metabolic, blood, and immune disorders
10	Meningitis	10	Mechanical forces

Source: IHME. Global Burden of Disease Compare. Accessed September 12, 2018. Available at: <http://vizhub.healthdata.org/gbd-compare/>.

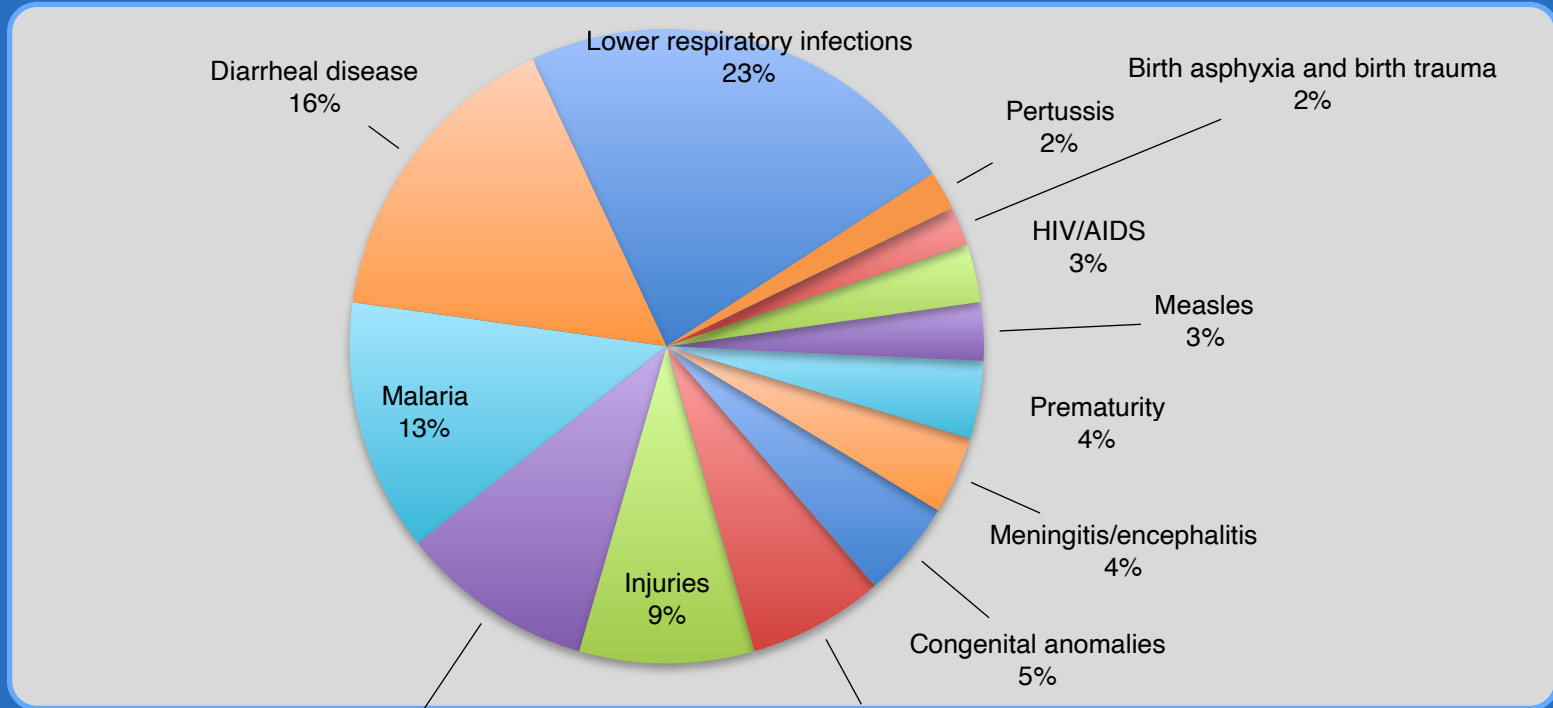
# Causes of Neonatal Death, Globally, by Percentage, 2013



Notes: Estimates may not add up to 100% due to rounding

Source: Adapted from Skolnik, R. L. (2015). Global health 101. Burlington, MA: Jones & Bartlett Learning. P.263; WHO. Global Health Observatory Data Repository: Mortality and global health estimates. <http://apps.who.int/gho/data/view.main.CM300WORLD-CH11?lang=en>. Accessed February 28, 2015.

# Causes of Post-Neonatal Under-Five Child Deaths (1-59 months), by Percentage, 2013



Notes: Estimates may not add up to 100% due to rounding

Source: Adapted from Skolnik, R. L. (2015). Global health 101. Burlington, MA: Jones & Bartlett Learning, 263; WHO. Global Health Observatory Data Repository: Mortality and global health estimates. <http://apps.who.int/gho/data/view.main.CM300WORLD-CH11?lang=en>. Accessed February 28, 2015.

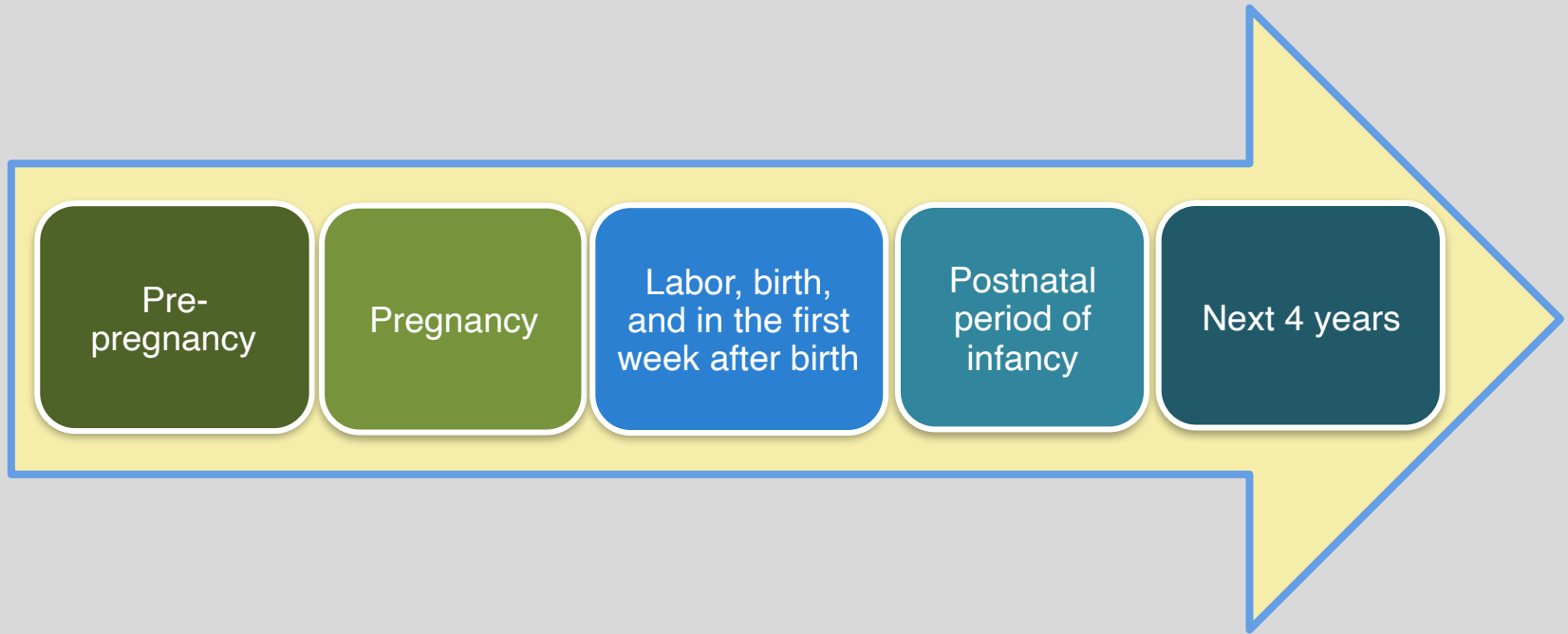


# Leading Risk Factors of Under-Five Deaths, for Low-Income and High-Income Countries, 2016

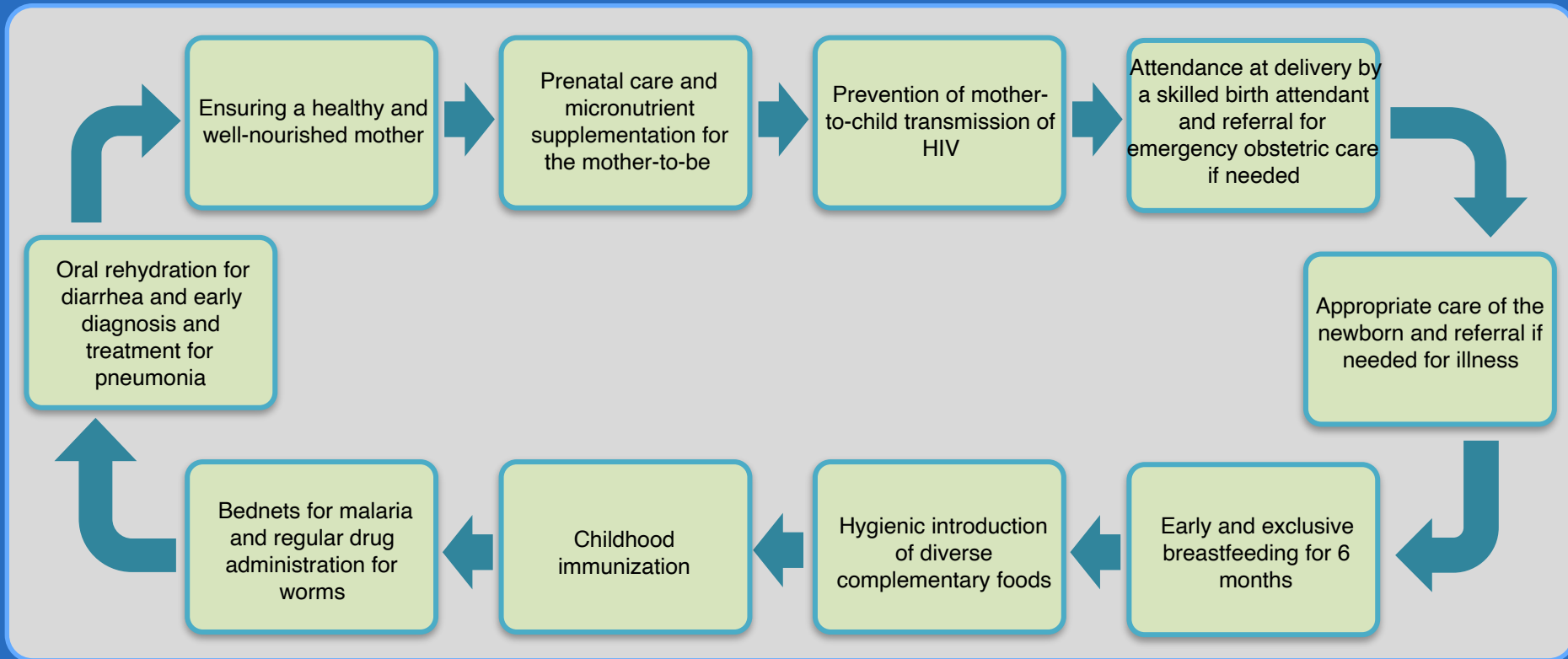
Low-Income Countries		High-Income Countries	
Rank	Risk Factor	Rank	Risk Factor
1	Low birth weight and short gestation	1	Low birth weight and short gestation
2	Child growth failure	2	Child growth failure
3	Unsafe water	3	Suboptimal breastfeeding
4	Household air pollution	4	Ambient particulate matter
5	Unsafe sanitation	5	Secondhand smoke
6	Handwashing	6	Impaired kidney function
7	Ambient particulate matter	7	Unsafe water
8	Suboptimal breastfeeding	8	Unsafe sanitation
9	Vitamin A deficiency	9	Handwashing
10	Secondhand smoke	10	High fasting plasma glucose

Source: IHME. Global Burden of Disease Compare. Accessed September 12, 2018. Available at: <http://vizhub.healthdata.org/gbd-compare/>.

# The Life Course Perspective



# Key Interventions to Improve Young Child Health Along the Life Course



Source: Adapted from Skolnik, R. L. (2015). Global health 101. Burlington, MA: Jones & Bartlett Learning. P.286

# Addressing Neonatal Health Challenges

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- Ensure healthy mothers, who are immunized against tetanus
- Ensure prenatal care and an attended delivery with emergency care available
- Implement community-based diagnosis and treatment of pneumonia
- Train community health workers on referral for emergency care if needed for sepsis and other critical conditions

# Critical Interventions for the Newborn

Essential Newborn Care	Extra Care for Small Babies	Emergency Care
Early and exclusive breastfeeding	Extra attention to warmth, feeding support, infection prevention & skin care	Providing supportive care for severe infections
Warmth provision and avoidance of bathing during the first 24 hours	Early identification & management of complications	Providing supportive care for neonatal encephalopathy (brain disease)
Infection control, including cord care and hygiene	Kangaroo Mother Care	Providing supportive care for severe jaundice or bleeding
Postpartum Vitamin A provided to mothers	Vitamin K injection	Providing supportive care for seizure management
Eye antimicrobial to prevent ophthalmia, inflammation of the eye, or conjunctiva	Monitored safe oxygen use	Providing supportive care for respiratory distress syndrome (RDS)
Information and counseling for home care and emergency preparedness		Providing supportive care for neonatal tetanus
Neonatal resuscitation if not breathing at birth		

Adapted from Skolnik, R. L. (2015). Global health 101. Burlington, MA: Jones & Bartlett Learning. P.282; Data adapted with permission from Lawn, J. E., Zupan, J., Begkoyian, G., & Knippenberg, R. (2006). Newborn survival. In D. T. Jamison, J. G. Breman, A. R. Measham, et al. (Eds.), *Disease control priorities in developing countries* (2nd ed., pp. 531-549). Washington, DC, and New York: The World Bank and Oxford University Press; Additions made from Howson, C. P., Kinney, M. V., McDougall, L., Lawn, J. E., and the Born Too Soon Preterm Birth Action Group. (2012). *Born too soon: The global action report on preterm birth*. Geneva: World Health Organization.

# Addressing Child Health Challenges

- Support maternal health and neonatal health interventions
- Promote exclusive breastfeeding for six months
- Prevention of maternal to child transmission of HIV
- Ensure early confirmed diagnosis and treatment for malaria
- Promote uptake of bednets
- Achieve universal immunization
- Promote hygienic introduction of a diverse complementary diet
- Train mothers on oral rehydration therapy with zinc
- Provide Vitamin A supplementation
- Encourage community-based management of pneumonia

# Immunizations: a “Best Buy” in Global Health

1974

**Expanded Program on Immunizations (EPI)**  
BCG (TB), DTP (Diphtheria, Tetanus, Pertussis), Measles, Oral Polio

**Additional Vaccines:** HepB, Hib, Yellow Fever

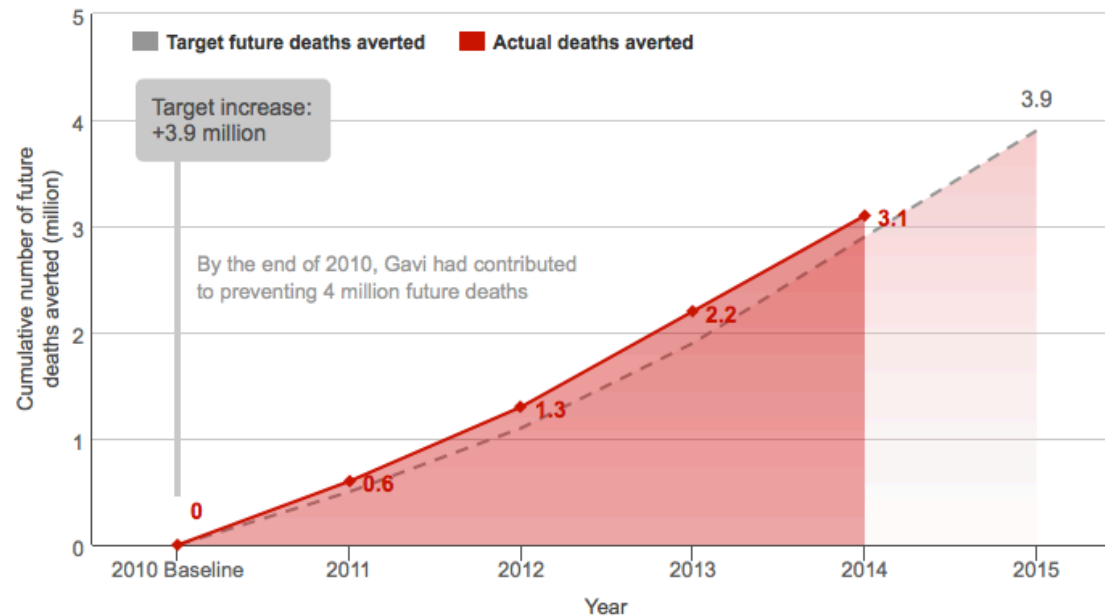
**Additional Vaccines:** Pneumococcal Disease, Rotavirus, HPV

**Pentavalent Vaccine:** 5-in-1 vaccine; delivered over 3 doses. Protects against: diphtheria, pertussis, tetanus, HepB, Hib

*Replaced individual vaccines for these diseases*

# Immunizations have prevented over 3 million deaths since 2010

Number of future deaths averted as a result of pentavalent, pneumococcal, rotavirus, yellow fever, meningitis A, Japanese encephalitis, Human papillomavirus, typhoid and rubella vaccination in 73 Gavi eligible countries (as of 2010).



Source: <http://www.gavi.org/results/goal-level-indicators/mission-indicators/>



# Selected Tools to Address the Health of Women and Children

## Results-based financing

- Cash or in-kind incentives for measurable results
- Emphasis on outcomes rather than inputs
- Can be used on either supply or demand side (e.g., CCTs)

## Conditional\* Cash Transfers

- \*Unconditional are often just as effective
- Should not be used where contraception is a condition
- Ex: *Oportunidades program in Mexico; JSY program in India to promote hospital-based delivery*

## Social Franchising

- NGO forms network of private providers
- Contracted to provide regular visits, services, commodities, etc.
- Ex: *Sun Quality Health Network in Myanmar*

## Contracting In/Out

- Used when private/NGO sector can deliver services more effectively than the government
- Best when based on results-based contracts that can be independently monitored

## Community-based Approaches

- Task-shifting to community health workers expands access to care
- Can be effective for addressing maternal and child health, as well as mental health
- Ex: *Comprehensive Rural Health Project in Maharashtra, India*

# Thanks

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- Lindsey Hiebert
- Rachel Strodel
- Rachel Skolnik Light
- Sarah Walker
- Rachel Wilkinson

Also, special thanks to Coursera for allowing the repurposing of many slides from my course, *Essentials of Global Health*