

MDG 4: Reducing Child Mortality

UNIT OBJECTIVE

This unit will cover child health, with a focus on reducing child mortality in both the local and the global context. Students will learn about the different factors that affect the health of a child with emphasis on the major causes of child mortality. Students will understand the importance of reducing child mortality and the possible solutions for it. Students will explore issues connected to child health through various subject matters: math, science, civics and language arts. Students will be involved in hands on activities, games, and discussions in which they exercise critical thinking skills.

RELEVANT SKILLS

Mathematics: Collect data; organize data into charts; represent data as simple graphs; construct pie chart

Science: Build vocabulary; connect diseases, symptoms and prevention mechanisms; Make oral re-hydration solution; demonstrate how oral rehydration solutions work

Civics: build vocabulary; conduct online research; sort research into tables; identify causes and effects

Language Arts: Build vocabulary; Develop critical thinking, comprehension and writing skills; Create a children's book

ESSENTIAL QUESTIONS

- What are the major causes of child mortality?
- Why is ensuring a child's health and reducing child mortality important? How does it affect a country's social and economic development?
- What steps can be taken to accelerating progress towards reducing child mortality?
- Which interventions have reached the largest number of children and have been most successful?

LIST OF KEY TERMS	Bar graph	Insecticide	micronutrient
	Child mortality	Insecticide nets	deficiencies
	Clean drinking water	live births	Neonatal
	Data	Malaria	Oral rehydration solution
	Diarrhea	Malnutrition	Pie chart
	HIV/AIDS	maternal education	Pneumonia
	Immunization	measles	Under five mortality

UNIT 5 CONTENT

Overview

Every minute, 21 children under the age of five die around the world. Most child deaths are preventable or treatable.¹ More than half of the under five deaths are caused by diarrhea, malaria and pneumonia.² Malnutrition is an underlying cause of at least a third of all under-five deaths. Malnutrition is caused by illness, insufficient breastfeeding, shortfalls of food and lack of micronutrients in diets. Even for those children who don't die from malnutrition, they can still be left mentally and physically impaired.

Understanding the problem: Causes of Child Mortality

Cause of death	Description ³
Diarrhea	Diarrhea, caused by germs that are swallowed, causes severe dehydration and kills an estimated 1.9 million children under-five years of age each year.
Pneumonia	Pneumonia, a severe respiratory infection, kills more than 2 million children each year— more than AIDS, malaria and measles combined.
Malaria	Malaria kills over 1 million people and sickens between 350 million and 500 million people each year.
Measles	Measles, a highly contagious disease, spreads through airborne droplets that circulate in infected coughs and sneezes.

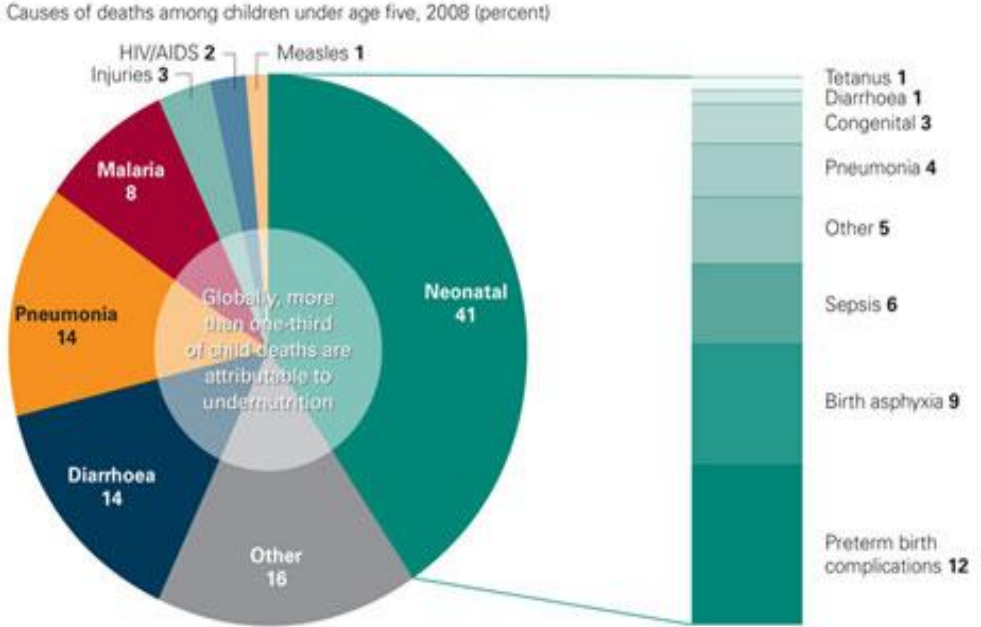
¹ <http://www.unicef.org/mdg/childmortality.html>

² http://www.un.org/millenniumgoals/pdf/MDG_FS_4_EN.pdf

³ Descriptions from <http://www.unicef.org/mdg/mortalitymultimedia/index.html>

HIV/AIDS	In 2005, an estimated 2.3 million children under 15 were living with HIV. The provision of anti retrovirals to pregnant women living with HIV can reduce the transmission during pregnancy, childbirth and breastfeeding to levels below 2 per cent, yet coverage is still below 10 per cent.
Neonatal	Every year 4 million babies die in the first month of life—the neonatal period—because of severe infections, poor delivery practices, premature births and low birth weight.
Under nutrition	Under-nutrition is an underlying cause of more than half (53 per cent) of the 10.5 million child deaths each year.

Revitalizing efforts against pneumonia and diarrhoea, while bolstering nutrition, could save millions of children



Source: Black R, Cousens S, Johnson H, Lawn J, Rudan I, Bassani D, Jha P, Campbell H, Walker C, Cibulskis R, Eisele T, Liu L, and Mathers C, for the Child Health Epidemiology Reference Group of WHO and UNICEF, 2010, "Global, Regional, and National Causes of Child Mortality in 2008: A Systematic Analysis," *Lancet* 375(9730): 1969–87.

Sanitation

Risk of diarrheal diseases and complications, particularly for children, is partially caused by lack of access to safe drinking water and poor hygiene and sanitation. An estimated 2.6 billion people do not use improved sanitation facilities.

Lack of Information:

Underlying the lack of access to technologies and services to prevent such conditions is the lack of information and education. If families are unaware of the symptoms, the importance of immunizations or preventative measures they are less likely to seek help. Maternal education has a positive effect on children's chances of survival because mothers will be more aware of public health issues such as treating malnutrition and diarrhea, the importance of breastfeeding and family planning. In addition to children dying directly from HIV/AIDS, they are indirectly affected if their parents or caretakers die from it because those children are least likely to receive immunizations, be properly nourished or receive an education.

Emergency contexts

Conflict, natural disasters and other emergencies directly and indirectly increase child mortality. "Population displacement - often resulting in living conditions with poor hygiene, disruption of health services and interruption in food supply, are all factors contributing to disease epidemics and diarrhea."⁴

How does MDG 4 address the problem?

Millennium Development Goal 4 is to reduce child mortality by $\frac{2}{3}$ between 1990 and 2015. Substantial progress has been made towards reducing under-five mortality rates, especially in Northern Africa and Eastern Asia. Some of the world's poorest countries have made the most progress, against the odds: Bangladesh, Bolivia, Eritrea, Ethiopia, Lao People's Democratic Republic, Liberia, Madagascar, Nepal, Timor-Leste and Turkmenistan have all reduced their under-five mortality rates by 50 per cent or more (mdgs.un.org)⁵. However, despite this success, of the 67 countries with the highest child mortality rates, only 10 are on track to meet MDG 4. There is increasing evidence that MDG 4 can be reached if the biggest killers of children are targeted, especially in sub-Saharan Africa, Southern Asia and Oceania.⁶

Why is reducing child mortality important?

Ensuring children and their mothers are healthy is not only imperative from a human rights perspective but is also a "sound economic decision and one of the surest ways for a country to set its course towards a better future."⁷ Low child and maternal mortality rates and access to health care are indicators of a country's level of development and value of its citizens.

⁴ <http://volunteers.unicefusa.org/assets/pdf/child-survival-vcb-edited-tb-6-4.pdf>

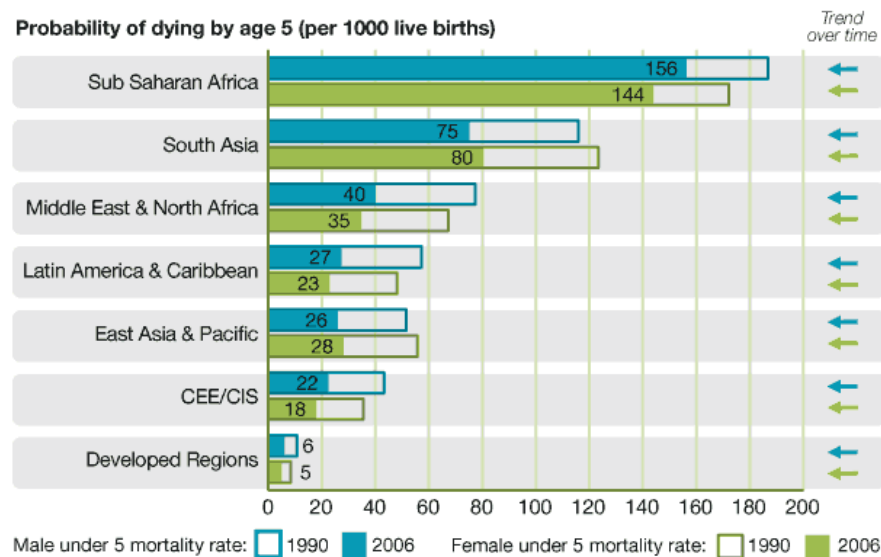
⁵ http://mdgs.un.org/unsd/mdg/Resources/Static/Products/Progress2010/2010_Addendum_Goal4.pdf

⁶ http://www.un.org/millenniumgoals/pdf/MDG_FS_4_EN.pdf

⁷ <http://volunteers.unicefusa.org/assets/pdf/child-survival-vcb-edited-tb-6-4.pdf>

Current Context:

- Sub-Saharan Africa accounted for nearly half of the 8.1 million deaths in children under five worldwide in 2009.
- Globally, the total number of under-five deaths declined from 12.4 million in 1990 to 8.1 million in 2009. This means that, in 2009, 12,000 fewer children died each day than in 1990.
- Almost 2 million children under five die from pneumonia each year—around 1 in 5 deaths globally.
- Two thirds of both neonatal and young child deaths are preventable
- Almost 40 percent of all under-five deaths occur during the neonatal period, the first month of life, from a variety of complications



What efforts are being made to achieve MDG 4?⁸

- A common feature of countries that have made the most substantial progress, especially in sub-Saharan Africa, has been rapid expansion of basic public health and nutrition interventions, such as immunization, breastfeeding, vitamin A supplementation and safe drinking water
- Programmes to address micronutrient deficiencies (such as universal iodization of salt and vitamin A supplementation) have been shown to deliver spectacular results. Promoting exclusive breastfeeding during the first six months of life is one of the most powerful tools available to ensure good nutrition in early childhood and beyond.

⁸ http://www.unicef.org/mdg/index_childmortality.htm

- Combatting child and maternal mortality and under-nutrition with low-cost, low-technology and high impact interventions:
 - Vaccines
 - Antibiotics
 - Micronutrient supplementation
 - Insecticide-treated bed-nets
 - Improved breastfeeding practices
 - Adoption of safe hygiene practices⁹
- Improving family care practices such as proper infant care and breastfeeding, hygiene, safe feces disposal, treatment for diarrhea and acute respiratory infections such as pneumonia
- Increasing access to improved water and sanitation through support for policies and budgets that increase programs for hygiene promotion, sanitation and cost-effective water supply and quality.
- By responding rapidly to emergencies, UNICEF provides monitoring systems, vaccinations, and vitamin A supplementations after the onset of a crisis. They provide supplies, personnel and sanitation, as well as support children going back to school so they are accounted for, receive supervision and supports such as health care, food and sanitation.

How does this relate to other issues?

Child mortality is inextricably linked to poverty and hunger (MDG 1), the education and health of their mothers (MDG 3 and MDG 5) as well as the prevention of common diseases such as HIV/AIDs and malaria, which children are vulnerable to.

“Accomplishing this will require accelerated action on multiple fronts: reducing poverty and hunger (MDG 1), improving maternal health (MDG 5), combating HIV and AIDS, malaria and other major diseases (MDG 6), increasing the usage of improved water and sanitation (MDG 7) and providing affordable essential drugs on a sustainable basis (MDG 8).”¹⁰

⁹ <http://volunteers.unicefusa.org/assets/pdf/child-survival-vcb-edited-tb-6-4.pdf>

¹⁰ <http://volunteers.unicefusa.org/assets/pdf/child-survival-vcb-edited-tb-6-4.pdf>

VIDEO CONFERENCE

Date:	
Dial-In Time:	
Duration	
Moderator(s)	
Theme	(Suggested theme: Resource Allocation to Improve Children’s Health)
Pre-Conference Activities/Preparation	<p>Teachers of partner schools should get in touch before the videoconference to discuss the structure of the videoconference; how and who will facilitate; how students will share their ideas (will there be designated student speakers/representatives? or each student raises his or her hand?)</p> <p>Teachers should make copies of <i>Worksheet: Resource Allocation to Improve Children’s Health</i> for students to have BEFORE the class period of video conference.</p> <p>Students should read the Worksheet and answer the Pre-VC questions on the Worksheet prior to beginning the VC.</p> <p>As a class, the students should come up with a consensus in their answer to the questions on the Worksheet to share with partner schools during the VC.</p> <p>PRE-VC Questions (also on the Worksheet):</p> <ul style="list-style-type: none"> - With the money available, how would you allocate it to prevent illnesses that particularly affect children? (public health education, increasing facilities, water treatment, training health workers, providing medicines etc.) - How did you go about setting these priorities? - Which interventions would reach the most people? Which would have the most impact? Are these different?

<p>VC Outline</p>	<p>Introduction: Moderator will introduce the theme of the conversation and the instructions for participation in the debate.</p> <p>Warm-up: Have students share with their partner school the answers to Pre-VC questions pre-determined as class consensus.</p> <p>Discussion content: PRE-VC Questions:</p> <ul style="list-style-type: none"> -With the money available, how would you allocate it to prevent illnesses that particularly affect children? -How many children were you able to target with your investments? -How did you go about setting these priorities? -Which interventions would reach the most people? Which would have the most impact? Are these different? -Does your investment address the short and long term? -What were the main difficulties experienced while making your decisions? -What lessons can we take on the challenges when creating a solution for health problems? <p>Now, ask students to discuss the following questions (the moderator should read it for all students to hear or both teachers should write these on the board). The students should feel free to present their ideas as they come up with answers individually.</p> <p>Questions DURING VC:</p> <ul style="list-style-type: none"> - Do you think it's more effective to reach more people with minimal services for a lower cost, or provide better services at a higher cost to fewer people? - If the grant runs out, do you think the intervention you/your class chose can continue? -Which intervention would you invest in to ensure that the benefits from the program would last even after the grant runs out? -Does this change your ideas about which intervention should be prioritized and how much to allocate from the grant?
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Student Roles	<p>Different students can be assigned roles during the video conference - introduction/greeting</p> <ul style="list-style-type: none"> - asking discussion questions - taking notes on key discussion points or interesting topics (a few students can do this and discuss as a class afterwards) - saying goodbye and thank you - leading follow up activities (if any) - ex. posting on a blog, sharing pictures or videos, finding information about an additional topic, sharing community outreach experiences etc.
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(See worksheet attached below)

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http://www.globalhealth.org/child_health/child_mortality/causes_death/#malnutritionb

The UN has just awarded your community with a 1 million dollar grant to help improve local health problems relating to child mortality. Your community is located in a rural setting and has approximately 100,000 children at risk. Your task is to allocate these funds to different intervention programs. Please note, that some interventions are short term solutions while others are long term. Also some interventions target specific diseases while others target all diseases. Your goal is to be able to create a sustainable solution that is able to target the greatest amount of people. You can invest in the same intervention more than once.

Community Information
100,000 children at risk
20,000 from Diarrhea
40,000 from Neonatal
10,000 from Pneumonia
30,000 from Malnutrition

Intervention	Description	Results Experienced	Cost	How many people does it target?	Investment
Antenatal care	Provides women with iron supplements, deworming, malaria prevention treatment, mosquito nets and HIV control and counseling.	Long Term	\$200,000	20,000	
Skilled Care at Birth	Basic care that includes initial treatment, infection prevention and newborn care.	Short Term	\$40,000	5,000	
Treatment of diarrhea	1 year worth of oral rehydration therapy to local families	Short Term	\$75,000	10,000	

Prevention of diarrhea	Provide better access to clean water	Long Term	\$800,000	20,000	
Intervention	Description	Results Experienced	Cost	How many people does it target?	Investment
Treatment of pneumonia	Community based treatment of pneumonia which includes diagnosis and the provision of antibiotics.	Short Term	\$200,000	10,000	
Infant feeding	Community based management of malnutrition. Diagnosis and feeding program for the first 3 months from birth.	Short Term	\$200,000	15,000	
Creation of roads	Provides access for rural families to clinics in the urban center. Requires a transportation system.	Long Term	\$600,000	100,000	
Public Transportation	1 year cost of a bus system connecting your community to an urban center.	Short Term	\$100,000	100,000	
Creation of health clinic	Construction of a basic health clinic in rural community. Equipment and staff not included.	Long Term	\$800,000	50,000	
Travelling health clinic	Yearly cost of having health professional visit the rural community twice a month.	Short Term	\$400,000	50,000	

Health Professional	1 year salary for a full time health professional in the community	Short Term	\$40,000	5,000	
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Debrief Questions:

1. With the money available, how would you allocate it to prevent illnesses that particularly affect children?
2. How many children were you able to target with your investments?
3. How did you go about setting these priorities?
4. Which interventions would reach the most people? Which would have the most impact? Are these different?
5. Does your investment address the short and long term?
6. What were the main difficulties experienced while making your decisions?
7. What lessons can we take on the challenges when creating a solution for health problems?