



The war to end cholera

How a lack of clean
water and sanitation are
contributing to the global
spread of the disease



Introduction

The Global Task Force for Cholera Control, along with health ministers and international NGOs such as WaterAid are declaring a new war on cholera – to consign outbreaks to the history books within a generation.

The task force is a platform of technical agencies, including non-governmental organisations, UN agencies and scientific institutions working to support countries to control cholera.

As global cases of cholera soar following recent outbreaks in Yemen, Nigeria, Haiti and the Democratic Republic of Congo, it's more important than ever to eliminate the threat this preventable disease poses with the tools we know work – including clean water, and decent sanitation and hygiene (WASH).

The new global roadmap aims to reduce cholera deaths by 90% by 2030, and significantly reduce the threat cholera poses to public health.

The plan focuses on prioritising water, sanitation and hygiene services in predictable cholera hotspots – the communities where we know cholera outbreaks occur at the same time each year.

A woman collects water in the village of Narai Ka Pura in Madhya Pradesh India.

Photo credit: WaterAid/ James McCauley

What is cholera?

Cholera is an infectious diarrhoeal disease that can kill within hours if left untreated. It is spread by eating food or drinking water contaminated with the bacterium *Vibrio cholerae*.

It causes acute watery diarrhoea and vomiting, which can lead to extreme dehydration, causing the body to go into shock due to a drop in blood pressure.

The disease occurs in countries or areas where people lack access to clean water and decent hygienic toilets, and where hygiene practices are poor. Outbreaks can also often occur after natural disasters or during humanitarian emergencies where water, sanitation and hygiene (WASH) services are inadequate.

The numbers



Cholera still affects more than **40 countries** across the globe¹

There are **2.9 million cholera cases** each year and as many as **95,000 deaths**²

As many as **1.2 billion people globally** or **1 in 6**, are at risk of cholera³



Between **40 and 80 million people** live in cholera hotspots in Africa alone⁴



Globally **844 million** still don't have clean water to drink and **2.4 billion** don't have basic sanitation⁵



A cholera bed in Mozambique

Photo credit: Lorenzo Pezzoli

The history of cholera

Cholera's story dates back to 1817 when it spread along trade routes from the River Ganges, in present-day Bangladesh, to the rest of the world.

But it wasn't until 1854 – long after it had reached Europe in 1826 – that cholera was proven to be a waterborne disease by London physician John Snow.⁶ Snow famously traced the origins of the disease back to a pump in Broad (now Broadwick) Street in London's Soho district.

His findings ultimately led to significant improvements in public health around the world and the invention of the modern day sewage system.

A poster warning residents about precautions against Cholera in 1853.

Photo credit: Westminster City Archives

ST. JAMES, WESTMINSTER.

The **GOVERNORS** and **DIRECTORS** of the **POOR**

HEREBY GIVE NOTICE,

That, with the view of affording prompt and Gratuitous assistance to Poor Persons resident in this Parish, affected with Bowel Complaints and

CHOLERA,

The following Medical Gentlemen are appointed, either of whom may be immediately applied to for Medicine and Attendance, on the occurrence of those Complaints, viz.—

Mr. FRENCH, 41, Gt. Marlborough St.
(Surgery, Brown's Court, Marshall Street)

Mr. HOUSLEY, 28, Broad Street.

Mr. WILSON, 16, Great Ryder St.

Mr. JAMES, 49, Princes Street.

Mr. DAVIES, 25, Brewer Street.

SUGGESTIONS AS TO FOOD, CLOTHING, &c.

Regularity in the Hours of taking Meals, which should consist of any description of wholesome Food, with the moderate use of sound Beer.

Abstinence from Spirituous Liquors.

Warm Clothing and Cleanliness of Person.

The avoidance of unnecessary exposure to Cold and Wet, and the wearing of Damp Clothes, or Wet Shoes.

Regularity in obtaining sufficient Rest and Sleep.

Cleanliness of Rooms, which should be aired by opening the Windows in the middle of each day.

By Order of the Board,

GEORGE BUZZARD,
Clerk.

PAROCHIAL OFFICE, Poland Street,
9th November, 1853.

It is requested that this Paper be taken care of, and placed where it can be easily referred to.

J. SHUDMAN, PRINTER, 4, BREWER STREET, GOLDEN SQUARE.

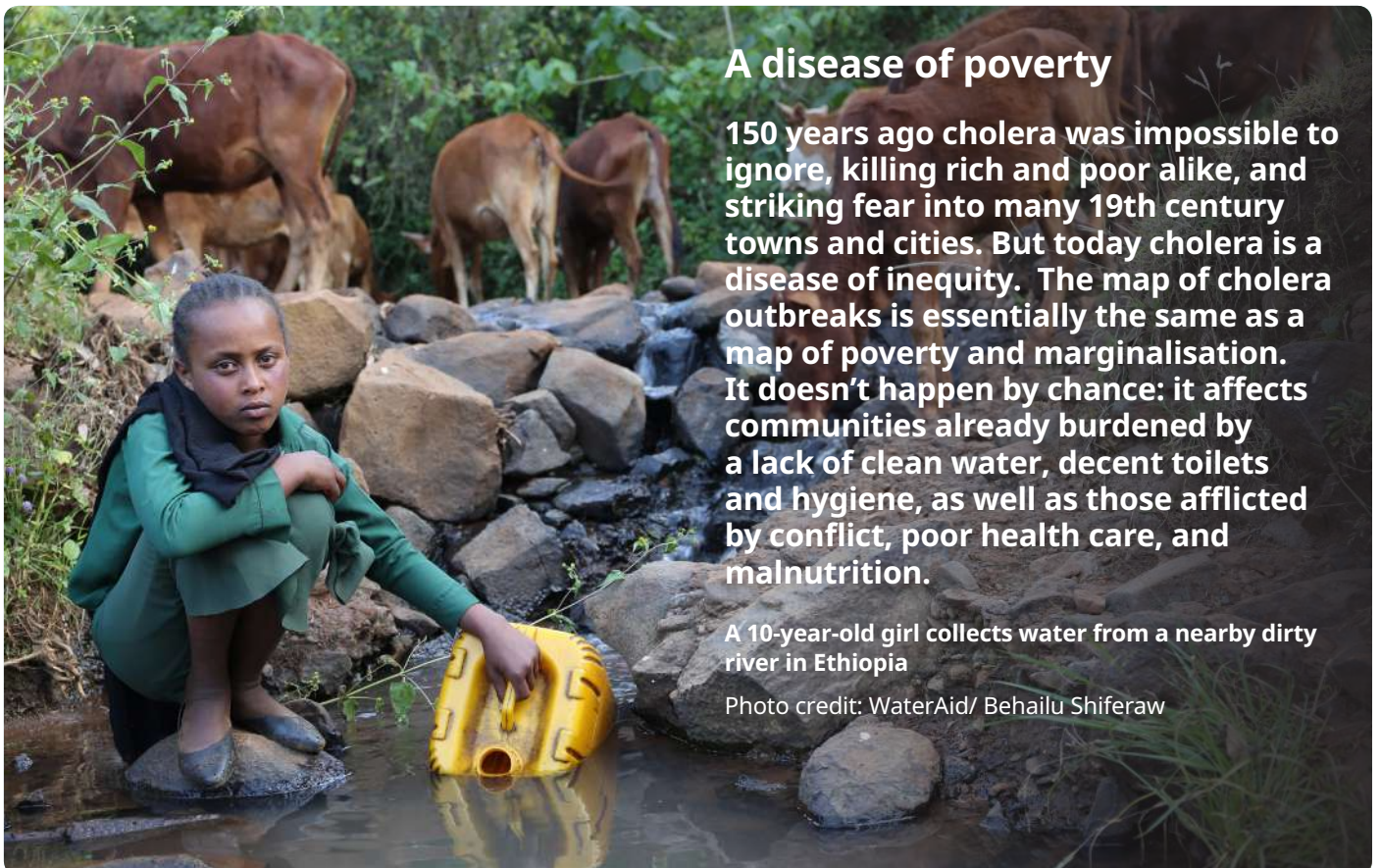
© Westminster

A disease of poverty

150 years ago cholera was impossible to ignore, killing rich and poor alike, and striking fear into many 19th century towns and cities. But today cholera is a disease of inequity. The map of cholera outbreaks is essentially the same as a map of poverty and marginalisation. It doesn't happen by chance: it affects communities already burdened by a lack of clean water, decent toilets and hygiene, as well as those afflicted by conflict, poor health care, and malnutrition.

A 10-year-old girl collects water from a nearby dirty river in Ethiopia

Photo credit: WaterAid/ Behailu Shiferaw



The cost of cholera

Cholera not only has a huge human cost in terms of the number of lives lost, it also inflicts a huge economic burden on countries.

On average cholera costs the world an estimated \$2 billion per year in treatment and hospitalisation as well as the related loss to productivity.⁷

Cholera is persistent, and outbreaks often occur in the same geographical areas demonstrating that current strategies aren't controlling it.

Most efforts to control cholera currently focus on emergency response to outbreaks, including household water treatments and temporary water, sanitation and hygiene services in cholera treatment centres. This costs an estimated \$5 to \$10 US per person.⁸

While this reduces the number of cases and deaths, it doesn't prevent the outbreak of the disease in the first place, often because the worst affected areas don't have long-term access to clean water, decent toilets with hygienic waste disposal, and good hygiene practices including handwashing with soap.

The economic case for investing in long-term sustainable water, sanitation and hygiene programmes, however, is clear to see.

Ensuring communities have long-term, sustainable access to clean water, decent sanitation and hygiene may cost as little as \$40 per person. Aside from helping to tackle the root cause of cholera this also brings with it many other benefits, including better health, leading to more time and opportunity for education, and more productive livelihoods.⁹



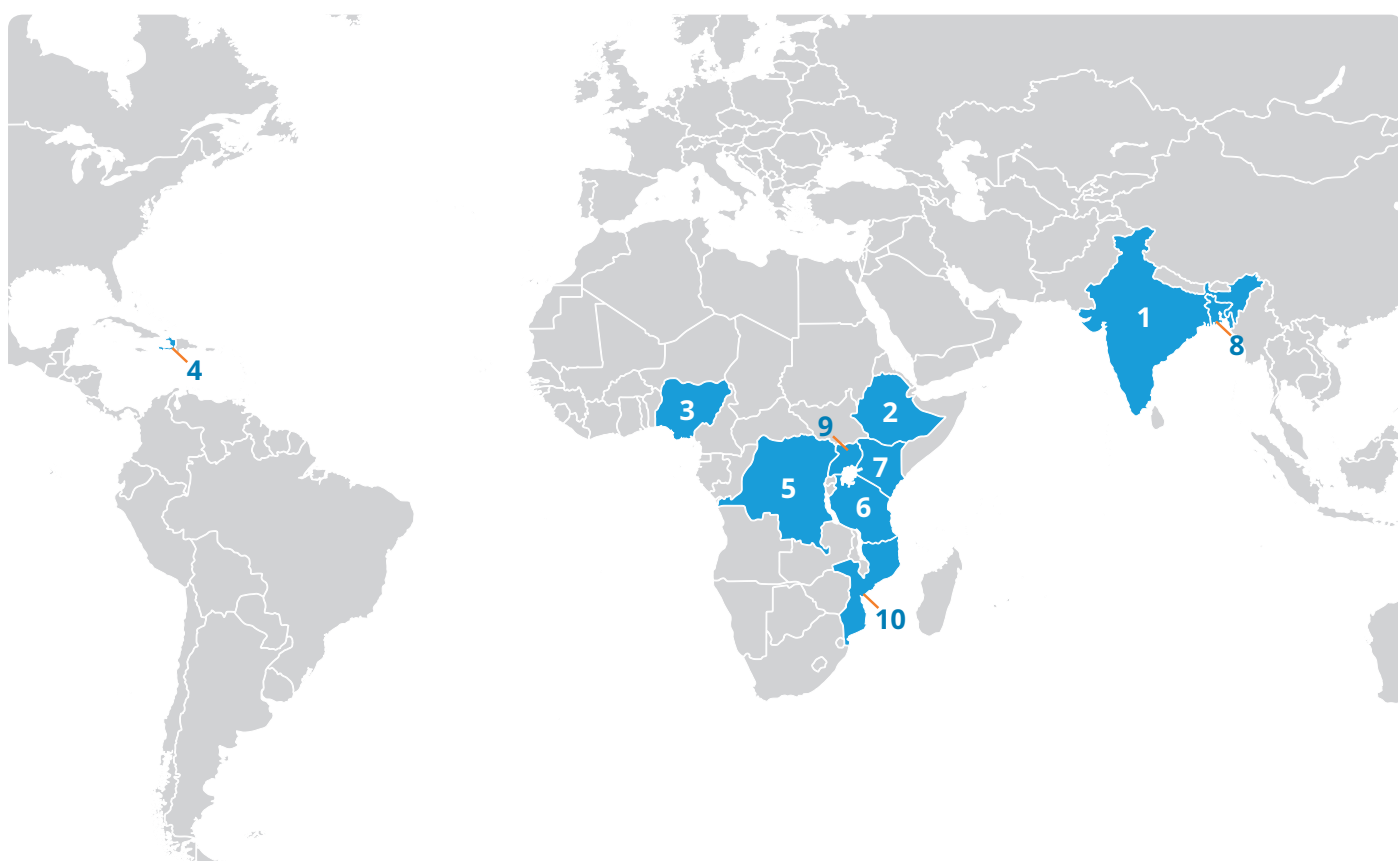
A young girl is given an oral cholera vaccine in Malawi

Photo credit: Lorenzo Pezzoli

According to the World Bank for every \$1 invested in water and sanitation an average of at least \$4 is returned in increased productivity as people are less sick and have more time to work.¹⁰

Cholera prevention strategies also frequently include use of two WHO-approved oral cholera vaccines, which are safe, inexpensive, easy to deliver, and effective. A person can be fully vaccinated for \$6.¹¹ However, use of the vaccine alone is not as effective as addressing the root causes of cholera. As the cholera vaccine is rolled out globally, it is also critical to use this opportunity to improve people's access to clean water, decent sanitation and hygiene, especially in cholera hotspots. Only in this way will there be a lasting approach to ending cholera.

Top 10 countries with highest estimated number of cholera cases



Rank	Country	Estimated annual cholera cases ¹²	Estimated annual cholera deaths ¹³	No. of people without basic sanitation ¹⁴	No. of people without basic water ¹⁵
1	India	675,188	20,256	732,207,000	163,105,959
2	Ethiopia	275,221	10,458	92,354,960	60,504,853
3	Nigeria	220,397	8,375	122,802,379	59,498,110
4	Haiti	210,589	2,584	7,439,501	3,837,313
5	DRC	189,061	7,184	62,034,676	44,939,929
6	Tanzania	161,904	6,152	40,886,656	26,657,528
7	Kenya	111,273	4,228	32,306,737	19,130,780
8	Bangladesh	109,052	3,272	85,449,092	4,303,184
9	Uganda	89,726	3,410	31,557,309	23,840,407
10	Mozambique	78,613	2,987	21,386,074	14,755,876

NB**The estimated annual cholera cases and deaths is taken from research published in PLOS, while data on the number of people without sanitation and water is from the latest Unicef-WHO Joint Monitoring Programme statistics.

Link between cholera cases and lack of water and sanitation

India tops the list for having the highest number of estimated cholera cases in the world. It also has the greatest number of people living without access to clean water, and the most living without a decent toilet.

Ethiopia and Nigeria follow in second and third place respectively for the highest number of estimated cholera cases. Both nations also have the second and third highest number of people globally living without access to clean water, and they rank among the top for having the most people without basic sanitation.

In fact, with the exception of Haiti, the 10 countries with the highest estimated number of cholera cases also rank top of the list for having the greatest number of people living without clean water, or a decent toilet, or both.

Why countries under-report cholera

In 2015 172,454 cases of cholera were reported to the World Health Organization.¹⁶ Globally however the burden of cholera is known to be much higher with an estimated 2.9 million cases occurring every year.

In some cases, countries may report cholera cases as acute watery diarrhoea and therefore the actual number of cases differ from those officially reported.

Reporting cholera outbreaks can lead to dramatic consequences at a global level for a country, including travel restrictions and embargoes on some food imports. An example of this was a cholera outbreak in Peru in 1991 which cost the country \$770 million in trade embargoes and a drop in tourism.¹⁷

Such incidents have led to many countries now underreporting cholera cases, fearing the negative effect it will have on trade and travel. In this briefing, we have used estimates of cholera cases published by the Public Library of Science which form the basis of the global roadmap for cholera control.



A girl holds a jerry can and a scoop on her way to collect dirty water from a river in Nepal.

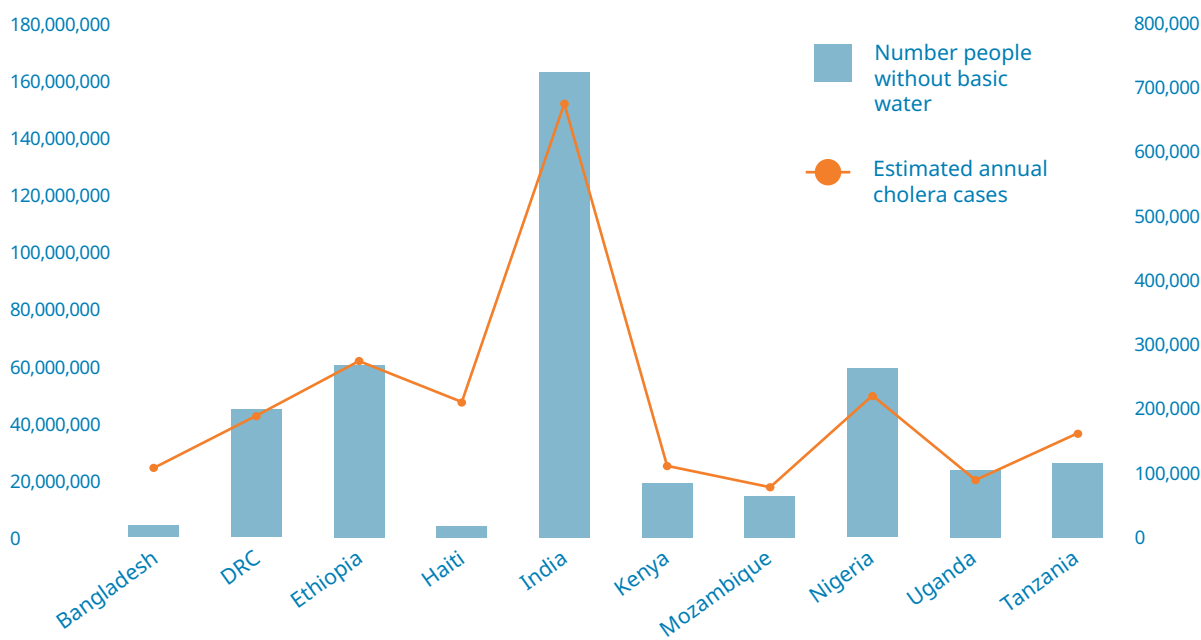
Photo credit: WaterAid/ Mani Karmacharya

Cholera hotspots

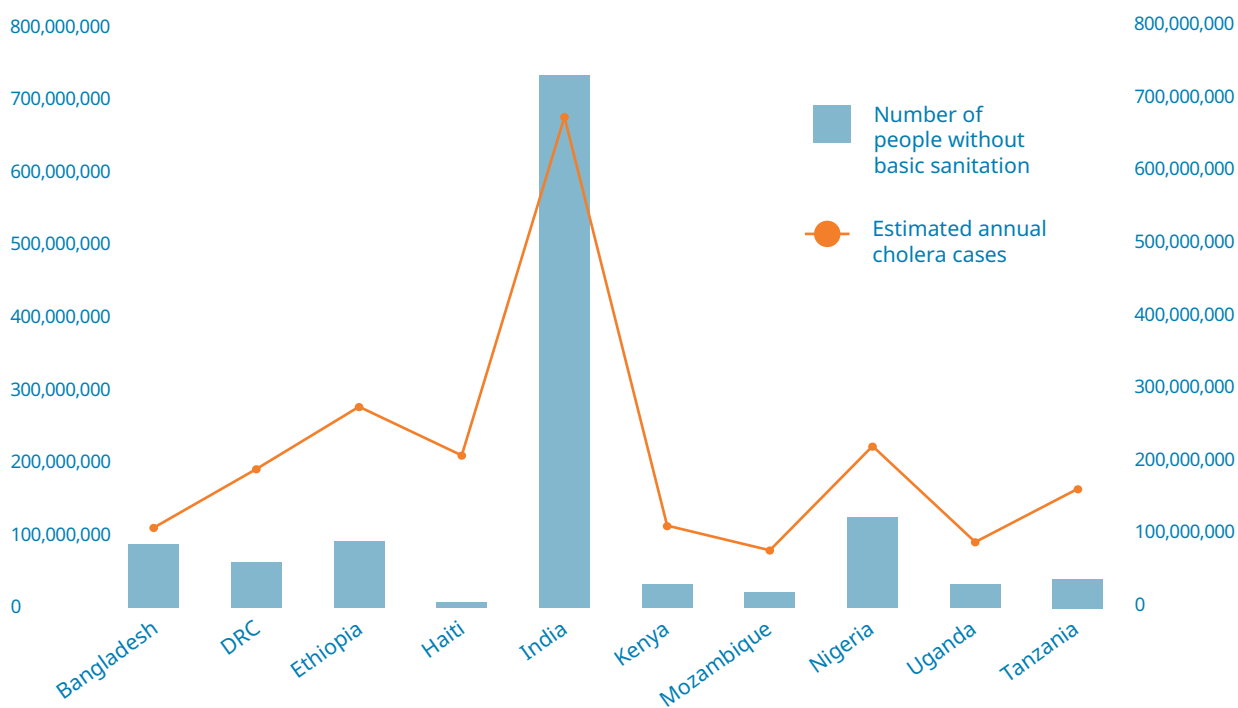
In all of the countries listed, cholera is endemic – occurring regularly – and has been for many years. This table doesn’t account for recent emergency or humanitarian situations such as the current cholera outbreak in Yemen, which is the world’s largest, with more than 600,000 suspected cases since April and over 2,000 deaths.¹⁸

In areas where cholera regularly recurs – for instance, with every monsoon season – it is usually poor communities in the same, relatively small geographic areas who are most affected. Targeting these cholera “hotspots” with water, sanitation and hygiene services will have a huge impact on reducing the global burden of cholera.

Estimated cholera cases and lack of access to water



Estimated cholera cases and lack of access to sanitation



Tanzania

Typically, most outbreaks in Tanzania occur in urban slums during the rainy season, when sewage runs through the streets and faeces contaminate water supplies.

Wahiba Mustafa, 14, lives in a slum in the capital Dar es Salaam. He was one of more than 24,000 people in Tanzania to contract cholera in the last major outbreak, which lasted from autumn 2015 until summer 2016.

Previously his family relied upon a private, shallow well for drinking water, which frequently became contaminated with open sewage in the rainy season.

He said his stomach began hurting after eating porridge at school, which wasn't then connected to the city water utility and relied upon water from contaminated shallow wells or private vendors.

"I had a lot of vomiting and diarrhoea," Wahiba explains. "My stomach was really aching and I had a headache... I've never felt that bad before. I remember my dad took me to the local health clinic."

"They (the doctors) told me to go to the toilet and asked me what my poo looked like. I said it had a lot of water in it. They gave me a drip and an injection and referred me to Temeke hospital. I went in the ambulance, with a siren!"

When asked if he knew what cholera was caused by Wahiba replied "It's caused by being dirty. I heard about it in the streets and in school."

His home now has a clean source of water provided through WaterAid and the Dar es Salaam water utility DAWASCO with subsidised rates for the city's poorest.

Sixth for
highest
number of
estimated
cholera cases

Seventh and
eighth for
number of
people living
without basic
water and
sanitation



14-year-old Wahiba Mustafa contracted cholera in 2016

Photo credit: WaterAid/ Sameer Satchu



A boy drinks clean water from a pump in Malawi

Photo credit: WaterAid/ Alexia Webster

Ending cholera

Virtually every death from cholera can be prevented with the tools we have available today. Europe and the United States ended outbreaks in the 19th century by installing good water and sanitation infrastructure and sewer networks to manage waste, as well as improving hygiene practices, including handwashing with soap.

We now need the same strong political will and prioritisation to invest in the very basics of public health – water, sanitation and hygiene – to bring about an end to this vicious disease.

To achieve this by 2030 we need leadership from the highest level of government supported by partners in the Global Task Force on Cholera Control.

The tools and technologies we need to control cholera are already well known. The challenge now is to ensure that investments in cholera control—particularly in WASH—are prioritised by donors and governments and are focused on communities most at risk of cholera.

References

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A woman collects clean drinking water in Madhya Pradesh, India.

Photo credit: WaterAid/ James McCauley

**Cover image: A young girl collects
dirty water for drinking from a stream
in Madagascar**

Photo credit: WaterAid/ Kate Holt

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October 2017
www.wateraid.org
#EndCholera

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