

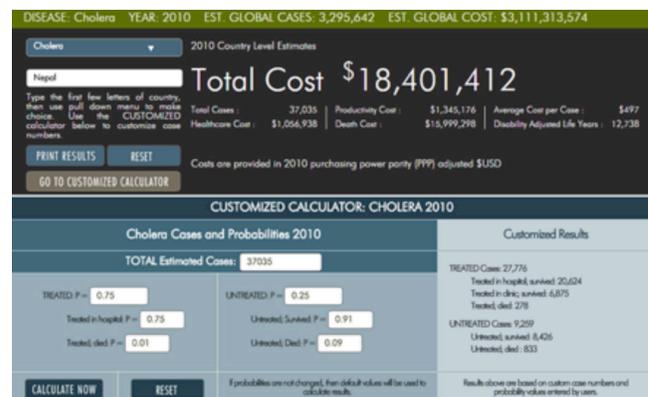
## Why should a country's economists pay attention to cholera?

When considering the impact of a disease, such as cholera, one must look at what the disease costs the country. When people become sick with cholera, they incur "direct" healthcare costs, including the cost of medicines, intravenous fluids, transportation to the hospital, and hospital stays. There are also indirect costs in addition to direct costs. Indirect costs include losses in productivity from patients and caregivers missing work. More importantly, some patients will die. The loss of their contribution to the economy is known as the "death cost." Thus, it is important that both the direct costs of health care and the indirect costs in lost productivity and contribution to the economy from illness or death associated with cholera, are understood not only by officials in the Ministries of Health, but also by economic and finance officials. Economic and finance officials should care about this cost because cholera is a preventable disease; these economic losses are unnecessary and avoidable.

## The Infectious Disease Cost Calculator

One strategy to prevent cholera is administration of the oral cholera vaccine. Frequently, when the use of this vaccine is being considered in a cholera-affected country, the Health Ministry will conclude that they do not have the financial or logistic resources to carry out the vaccine program. However, they may not consider the cost of not conducting the program. When cholera control programs are not implemented, this allows the disease to continue and spread unabated, with the country continuing to incur needless cholera-related costs.

Identifying and calculating these costs is not easily understood. Therefore, an Infectious Disease Cost Calculator was developed by the University of Pittsburgh's Center for Health Security to provide country-specific estimates of these costs. The calculator is based on a mathematical model that uses country-specific estimates of cholera incidence. Currently, the calculator can be used for cholera and dengue, and plans are underway to include other infectious diseases as well. The calculator can be found at <http://www.idcostcalc.org/index.html>.



## The estimated costs of cholera

Based on estimates from the calculator, the global cost for cholera in 2010 was USD \$3.11 billion. These costs include USD \$221 million for health care, USD \$211 million in lost productivity from missed work by the patient and/or caregivers, and USD \$2.68 billion in "death costs." As seen in the table below, the disease costs Bangladesh USD \$122 million a year, India over USD \$1 billion, and Nigeria USD \$271 million. For each country, the death cost constitutes the largest

Estimated cost of cholera in 2010 in three countries (USD)

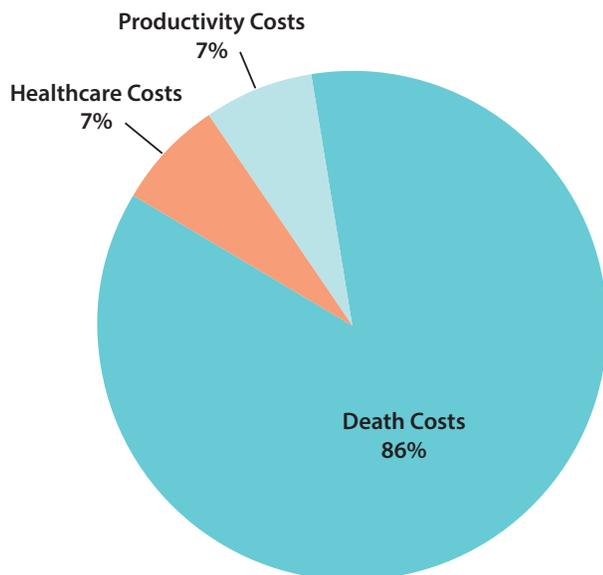
	India	Bangladesh	Nigeria
Total cases	894,931	345,393	218,472
Health care costs	91,289,157	13,599,177	17,713,121
Productivity costs (lost wages during illness)	85,358,959	15,811,149	14,973,723
Death costs (lost in economic productivity of deceased)	1,014,806,803	92,481,805	238,268,740
<b>Total annual costs</b>	<b>\$1,191,463,920</b>	<b>\$121,892,131</b>	<b>\$270,955,634</b>

component, but health care and productivity costs are also major contributors.

## Costs not considered in the calculator

The Infectious Disease Cost Calculator provides an estimate of the costs directly related to the disease, but there are additional economic implications of cholera that are not considered by the calculator. Thus, the cost estimates provided above should be considered conservative. Some examples of unaccounted for additional costs are summarized below.

### Cholera 2010 Total Global Cost US \$3.1 billion • 1.2 billion DALYs



### Impact on other health system activities

During a cholera outbreak, the health system needs to devote additional resources to the care of cholera patients to stop its spread. This often leads to a temporary breakdown in routine maternal and child health services such as immunization programs and antenatal care. In extreme cases, entire hospitals will be totally devoted to taking care of cholera patients.

## The poverty trap

Globally, it is the poorest households that are most vulnerable to cholera infection and its economic repercussions. When a person is ill with cholera, the family's financial resources go toward the medical care of the patient, diverting resources from other needs. When a cholera patient dies, especially if he or she is a parent, the economic impact on the family can be devastating. Children often drop out of school to help support the remaining family members. This downward spiral is referred to as the "poverty trap" from which people are not able to escape, sometimes for multiple generations. Thus, controlling cholera through an integrated cholera control program can help forestall the poverty trap by decreasing the burden of disease.

## Cholera's impact on other economic sectors

The cost of cholera may extend to other sectors of the economy. For example, countries hoping to develop a tourism industry may suffer if the area is known to have cholera. Unfortunately, some countries do not report cholera because they fear that doing so will have a negative impact on tourism or on their food exporting industry. On the other hand, it would seem that honestly reporting cholera, while investing in controlling the disease would, in fact, provide reassurance to potential tourists. Even in areas with cholera, most tourists are usually at low risk of contracting the disease and can avoid it with simple precautions.

## Cholera prevention saves money

This brief fact sheet describes the multiple economic tolls of cholera infection. The [Infectious Disease Cost Calculator](#), a simple online tool, can be used to quantify some of these costs, most of which could be avoided by preventing the disease. Clearly, cholera is an expensive disease for many countries, and there are many economic advantages to investing in its control.