

Help protect high-risk travellers to cholera endemic/epidemic areas^{1,2}

Profuse watery diarrhoea associated with cholera can result in severe dehydration^{1,3} and can cause disruption to a holiday or business trip.⁴ Associate Professor Bernard Hudson provides some insight into cholera and what can be done to help prevent it.



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Are there many cases of cholera reported in Australia each year? How are the majority of reported cases acquired?

Annually, on average, there are two to six cases of cholera notified in Australia. The vast majority of these cases are acquired in travellers returning from cholera-endemic areas outside of Australia following ingestion of cholera-contaminated food or water. Exceptions include a case of laboratory-acquired cholera in 1996 and 3 cases associated with the consumption of raw, imported whitebait in 2006.¹

Where in the world is cholera considered endemic?

Cholera is endemic in ~50 countries, primarily located in Africa and South and Southeast Asia.⁵ Most cases of cholera in 2023 have occurred in Afghanistan, Cameroon, Democratic Republic of Congo, Ethiopia and Haiti whilst cases continue to be reported from countries in Africa often visited by tourists: Kenya, Malawi, South Africa, Zambia, Zimbabwe. The Caribbean has had outbreaks in 2023 especially in Haiti and with cases notified from the Dominican Republic and in 2023 Mexico reported its first case of cholera since 2016.⁶

The Australian Immunisation Handbook recommends cholera vaccination for children (aged ≥ 2 years) and adult travellers who have a high risk of exposure to cholera, such as the following:^{1,2}

Travellers to areas where there is a high likelihood of exposure to cholera:

- e.g. humanitarian aid workers in regions where cholera is endemic or there is an outbreak

Travellers to areas where cholera exists and who have a higher risk of acquiring diarrhoeal disease due to a medical condition:

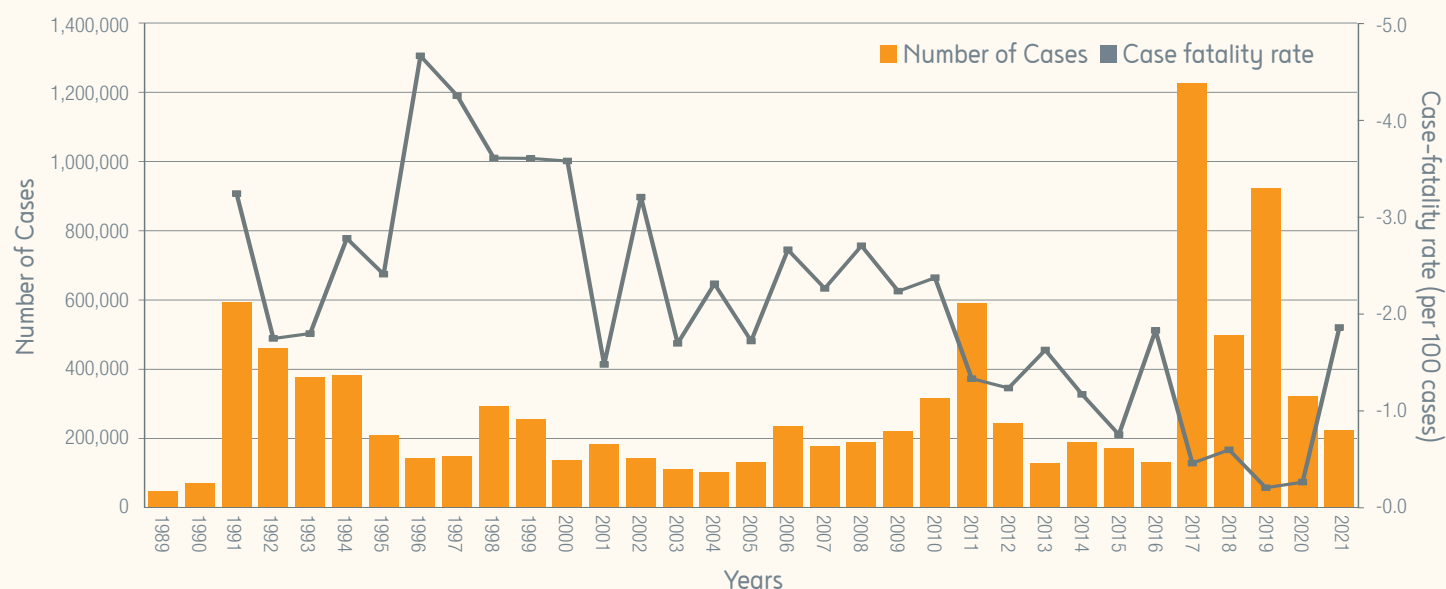
- e.g. achlorhydria

Travellers to areas where cholera exists and who have a higher risk of severe or complicated disease due to a medical condition, such as:

- poorly controlled or complicated diabetes
- inflammatory bowel disease
- HIV or other immunocompromising conditions
- significant cardiovascular disease

Cholera is endemic in Africa, and South and Southeast Asia⁵

Annual cholera cases and mortality reported by year, 1989–2021.⁷



Adapted from WHO WER no.37⁷

What is the risk of cholera to Australian travellers?

As previously noted, cases of cholera in travellers returning to Australia, are rare. The risk of cholera for travellers from western countries to endemic areas has been estimated at 0.2 cases per 100,000, with the risk of severe disease and death being much lower.^{1,4} With relatively low case numbers reported in Australians, many GP's may not consider cholera as a risk for travel, even to endemic areas. However, with a significant rise in cholera outbreaks worldwide, this may put more travellers including those visiting friends and family at an increased risk of infection.⁸⁻¹⁰

Cholera in travellers is also likely to be under-detected and under-reported.¹¹ Milder cases almost certainly go unreported as illness may resolve with simple measures such as fluid replacement and without microbiological screening, mild cholera is often clinically indistinguishable from other causes of acute diarrhoea.^{12,13}

What are the clinical features of cholera and how do they differ from other causes of acute diarrhoea?

Following the ingestion of contaminated food or water the *Vibrio Cholerae* bacterium produces a toxin that causes clinical cholera. The cholera toxin does not cause intestinal inflammation or bleeding, but instead induces the secretion of large volumes of electrolytes and fluid into the small bowel lumen, leading to diarrhoea and dehydration. Sometimes the diarrhoea may be so severe that it leads to rapid dehydration and shock.¹⁴

Cholera is characterised by a sudden onset of painless, profuse, watery diarrhoea.¹ The incubation period can range from hours up to five days.^{3,14} Infection is most often asymptomatic or mild. Among those who develop symptoms, around 20% develop acute watery diarrhoea with severe dehydration, which can lead to death within hours if untreated.⁵ Without treatment, the fatality rate can reach 50%, but with adequate and timely rehydration this usually decreases to $\leq 1\%$.^{3,5}

Unlike other bacterial causes of diarrhoea, persistent gut carriage of *V.cholerae* is rare.¹⁴ Other bacterial causes of diarrhoea, such as *Campylobacter*, *Salmonella* and *Shigella* cause inflammation of the bowel and typically have white and red blood cells in the faeces. They can all cause bloody diarrhoea but they may also just cause watery, non bloody diarrhoea, which may also be profuse.¹⁵ Without laboratory tests, it may not be possible to determine the microbial cause of the diarrhoea.⁵

What can be done to help prevent cholera in travellers?

Cholera is transmitted through the faeco-oral route via consumption of contaminated food and water, especially in areas with poor sanitation. Outbreaks associated with consumption of seafood, especially shellfish, are well-recognised.¹ Safe eating and drinking practices, alongside frequent handwashing are paramount to prevent infection, with the aphorism “**boil it, cook it, peel it, or forget it**” a simple one for travellers to remember.⁵ For certain high-risk travellers, cholera vaccination may be considered in addition to food, water and hygiene precautions.

Dukoral® is an oral cholera vaccine containing inactivated whole-cell *V.cholerae* O1, in combination with a recombinant cholera toxin B subunit. Clinical trials have demonstrated a protective efficacy against cholera of 85% for the first six months in all age categories. The primary vaccination schedule for Dukoral® comprises two doses for adults and children over the age of 6 years and three doses for children 2-6 years of age. Doses should be spaced 1-6 weeks apart. For those at ongoing risk, booster doses may be required.² Dukoral® is not TGA-approved for use in children aged less than 2 years.² Postpone administration if the patient is suffering from acute gastrointestinal or febrile illness.² In clinical trials, gastrointestinal symptoms were the most commonly reported adverse reactions, including abdominal pain, diarrhoea, loose stools, nausea and vomiting.² Overseas, cholera vaccine has been used to help control epidemics, in concert with the primary measures of water and sanitation improvements.¹⁶

When should travellers begin their course of cholera vaccination?

The primary course of Dukoral® should preferably be completed at least two weeks before travel to cholera endemic areas.² This allows time for satisfactory immunity to develop.²

Who would you consider as appropriate candidates for cholera vaccination?

In addition to the types of travellers for whom cholera vaccination is usually recommended (see Australian Immunisation Handbook recommendations on the previous page), vaccination against cholera should be considered for high-risk travellers to cholera endemic areas who may be unable to guarantee access to adequate sanitation facilities, safe food and water, or appropriate treatment, especially those travelling to remote areas.¹ Achlorhydria which can be caused by some medications e.g. the long term use of proton pump inhibitors (PPIs), should be borne in mind when assessing travellers who may be candidates for cholera vaccination.¹⁷⁻¹⁹

DUKORAL®
Oral, Inactivated Cholera vaccine



PBS Information: This product is not listed on the National Immunisation Program (NIP) or the PBS.

Before prescribing, please review Product Information by scanning the QR code or at www.cslseqirus.com.au/products



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