

## Cholera in Mexico: an indicator of poverty, lifestyles and development in Mexico and other countries

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**Abstract:** Cholera is a disease commonly found in poverty. On September 27, 2013 the news announced that cholera had started in Mexico. Regarding this problem, among the determinants of health, lifestyles represent the challenge that is faced with urgent decisions in the State of Hidalgo. **Aim.** To describe the spread of cholera in Mexico **Methods.** Keeping news records from newspapers in Pachuca Hidalgo Mexico, as well as online news on this matter. **Results.** There was a total of one hundred and eighty confirmed cases of cholera in Mexico up to October of year 2013 ; this number of cases has been doubled from one week to the other. **Conclusion.** The tendency is that this health problem continues spreading due to the lack of attention to social development from the government. This means the authorities should focus on improving people's lifestyles.

**Keywords:** Poverty, lifestyle, outbreak, cholera in Mexico, social development.

## Introduction

The World Health Organization, WHO, states on its definition that its great purposes are seeking for people's health and welfare. Everyone has the right to health as part of internationally recognized human rights. We all have heard and read in the media the importance of maintaining a lifestyle that is convenient for being healthy. However, we fail to act when it is "absolutely" necessary. Assuring conditions in which people can be healthy, such as deemphasizing on the determinants of health as individual factors, analyzing health behaviors, physical environment, social milieu, political-legal circumstances and providing access to health services, provide the conditions that promote personal and social security in a community. <sup>[1,2,3,4,5,6]</sup>

Among the most important aspects involving lifestyles, nutrition and the environment are found. Self-questioning is important, not only in Mexico, but everywhere, specially by the countries of the world which strive to achieve development. I wonder if of living, one day will no longer be an indicator of under development and a lag of the manifestation of poverty-related diseases. <sup>[4,5]</sup> as part of the consequences of the power fulstorms Ingrid and Manuel, who have recently hit the country. It could be stated that this disease develops precisely in poor environmental and socio-economic conditions where poverty is an infallible indicator of epidemic diseases. In the case of cholera, it is important to disseminate information about the seriousness of the matter. This is a major epidemiological event towards which health authorities should act immediately. The epidemiological alert must be notified soon. As soon as the first case is detected, however, health authorities were slow to issue this warning; apparently due to the situation that exists in Mexico. <sup>[7, 8]</sup> This epidemic adds up to the impact of hurricanes, which are only some of

the manifestations of global climate change; this situation should make us realize the messages emanating from the planet that we have not respected.

Even, the most vulnerable population from any country is in a position to make positive changes to their socioeconomic status, which leads us to the next inquiries. Is it just a utopian political discourse? Or, Does the level of education of people provide an opportunity to change the way of life?

There are countries today, in which a politician earns more money than a scientist, and will this be reality given by academic merit? Does a politician study more than a scientist? Or is the power that is manifested in salaries high above capacity? Is vulnerable population with marked deficiencies in education able to meet and understand preventive measures to avoid infection by *Vibrio cholerae*? Moreover, will the current level of education and teaching methodology be favorable to avoid becoming infected and join the poor dead? <sup>[7, 9]</sup>

Cholera is an acute intestinal infection contagious disease caused by ingestion of food or water contaminated with the bacterium *Vibrio cholera*. It is characterized by a large volume watery diarrhea that can be fatal within hours if an early rehydration to the patient is not assured. The disease is endemic in more than 50 countries of the Indian subcontinent, Southeast Asia, Latin America and sub-Saharan Africa, and has produced several epidemics. It is estimated that each year among 3 million and 5 million cholera cases occur as well as between 100 000 and 120 000 deaths. <sup>[1, 2, 5, 6, 10, 11]</sup>

On the other hand, it has already been activated the health alert and according to authorities the eight cases correspond to four communities and forty more people could be infected. This is the beginning of an outbreak, perhaps it is minimum but the recommendation is to

remain vigilant with preventive measures, such as, washing one's hands before and after using the bathroom, before eating, drinking boiled water and avoid eating raw shellfish and food of dubious origin and poor quality. <sup>[2, 5, 10, 12]</sup>

Since cholera arises where there are poor sanitary conditions, undoing, war and starvation, the records are rare in industrialized countries. It is worth mentioning that cholera mainly occurs by eating sea food infected with cholera bacteria, especially raw oysters. <sup>[3]</sup> Cholera has recently become a central issue for health authorities in the Americas, since the earthquake in Haiti in January 2010, an epidemic of cholera has been reported in this nation, and still continues in the Republic Dominican. Moreover, in May 2011, the Florida Department of Agriculture in the United States, reported that at least 11 people were reported sick after eating raw oysters contaminated with cholera bacteria in northern California. Today, Cuba remains on alert for reports of people infected this summer, 2013. <sup>[2, 3, 12]</sup>

Unfortunately, those most affected IN Mexico are those most economically vulnerable, those who do not have the necessary services to make their needs excreta disposal, who do not have water disposal and where in addition, deficiencies in education and health are determinants of environmental type, which demonstrates a poor lifestyle and a poor quality of life. <sup>[3, 5, 13, 14]</sup>

Among the key issues outlined in the letter of Ottawa 1986, there are those who turn their attention to the social structure of the environment, which on this occasion has been shown to demonstrate that most Mexicans live in risky environments that permeate stomach infections specially for people living under vulnerable lifestyles. Vulnerability to this infection has also been observable in the State of Hidalgo, specifically in the region known as *La Huasteca Hidalguense*, where the news report nine cases of cholera. Moreover, a

person already died from this cause and there are eight confirmed cases of this disease<sup>[15,16]</sup>

Cholera never left, and official information flowed more slowly, even at its inception.

**Aim.** To describe the spread of cholera in Mexico.

### **Methods**

Keeping cholera outbreak in Hidalgo, Mexico news records from newspapers in Pachuca Hidalgo Mexico, as well as online news on this matter, daily monitoring of the news in the newspaper and online search from September to October, 2013.

### **Results**

The (CONAVE) National Center for Epidemiological Surveillance, on September 20th, issued a warning confirmation of positive cases in the Federal District Cholera, from 1991 to 2001 when there were 45,062 cases, with an incidence of 17.5 per 100 000 inhabitants. On September 27th, the newspaper "Criterion" of Hidalgo, Mexico announced 9 cases of cholera, one who died in Tamaulipas, Mexico and eight more who were under surveillance, to this day 30th of the same month 44 confirmed cases were also announced, from which 10 were hospitalized in intensive care. The Institute of Epidemiological Diagnosis and Reference (INDRE) states that there are 40 suspected cases under observation, although it is likely that these actually represent a tiny count to what may be triggered by not acting with wisdom and intentionality epidemiological procedures. [7]

### **Cholera outbreak in México.**

On October of 2013, 77 cases of cholera in Hidalgo were confirmed, in this place, 71 patients were confirmed to have cholera. The Head of Ministry of health, Mercedes Juan

López also said the other cases occurred in Tula with two patients, two patients in Pachuca, one in San Agustín Tlaxiaca, and one more in Ajacuba. She also said there is a mobile laboratory and sixteen epidemiological brigades who take care of the citizens.<sup>[8], [9]</sup> By October 11<sup>th</sup>, of 2013, according to the Ministry of Health a total of 145 cases of cholera in the State of Hidalgo were confirmed, as well as other 2 cases in Veracruz, one in San Luis Potosí and 9 confirmed cases in the State of Mexico.<sup>[10]</sup> By analyzing this information, it can be inferred that by the start of the cholera outbreak in the State of Hidalgo, practically the behavior of the epidemic condition double in number of cases thorough the weeks of the month. Such situation could be related to the contextual conditions that have hampered the success of interventions by the health sector as many areas of the State seem to be vulnerable. Thus, it is critical to handle this emergency with care. It is also possible that the work of health authorities has been obstructed by the educational level of the inhabitants, which offers a glimpse of the need to work on this crucial point that is linked to development and thus to prevent future manifestation of the other health problems that affect the human population of this area of the State of Hidalgo.

Recently at the National Congress of Public Health and at the National Institute of Public Health (INSP), it was pointed out that health personnel must be highly skilled on the subject of Assessment, Risk Management and Communication. However, it is pitiful to see that decision makers in the field of health promotion or public health of the country were absent.

Therefore, it is important to recognize that knowing, assess, manage and communicate risks involves enough foresight to prevent damage. The current management of epidemic problems expected by the impact of floods, cholera, various gastrointestinal diseases,

affections of the skin, eye ailments, urinary pathologies, etc., leave much to say. Hopefully in the future, both, the government and the people will find a balance called responsibility in public health and will assume responsibility towards this epidemic disease in our country, as soon as possible.

Rightly the news comments in the newspaper “Criterion”, said the culprit is the river, but again the same and wonder is environment to blame? Is it okay to blame natural disasters, the river, and the planet? What about lifestyles? Is the quality of life important towards environmental care? Is the poor urbanization also guilty? Who is responsible? And better yet, who is jointly responsible? It is important to begin to answer by ourselves these questions. Further research must be done on this matter.

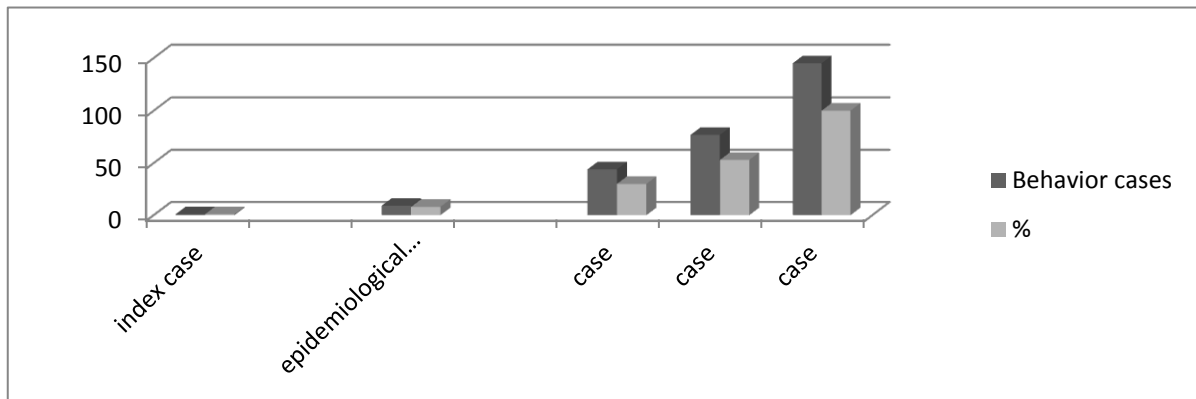
Since the beginning of this outbreak, in September 2013, so far have been reported in the country 180 confirmed cases of cholera *Vibrio cholerae* O1 Ogawa, including one death. Of these 180 cases, 2 were recorded in the Federal District, 159 in the state of Hidalgo, 9 in the state of Mexico, 2 in the state of San Luis Potosi, and 8 in the state of Veracruz; 92 of those affected are female and 88 male, and their ages range from 3 months to 88 years. <sup>[17]</sup> (Table 4).

**Table 1.**Distribution of cholera cases from September 5th day October 7, 2013

<b>Outbreak</b>	<b>Index case</b>	<b>Epidemiological alert</b>	<b>case</b>	<b>case</b>	<b>case</b>
<b>Behavior cases</b>	1	9	44	77	145
<b>%</b>	1	8	30	53	100

Source:Direct , 2013

**Figure 1.** Behavior cases of cholera en Huejutla Hidalgo, Mexico, 2013



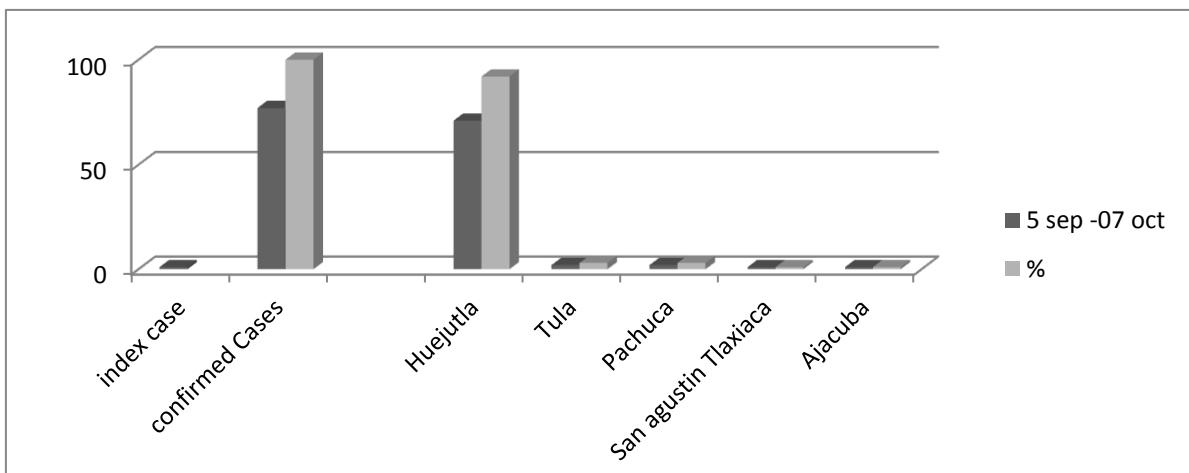
Source: Direct , 2013

**Table 2.** Distribution of cholera cases from September 5th day October 7, 2013 in Hidalgo, Mexico.

Outbreak	Confirmed cases	Huejutla	Tula	Pachuca	San agustin Tlaxiaca	Ajacuba
Frequency	77	71	2	2	1	1
%	100	92	3	3	1	1

Source: direct, 2013

**Figure 2.** Distribution of cholera cases from September 5th day October 7, 2013 in Hidalgo, Mexico.



Source: Direct, 2013

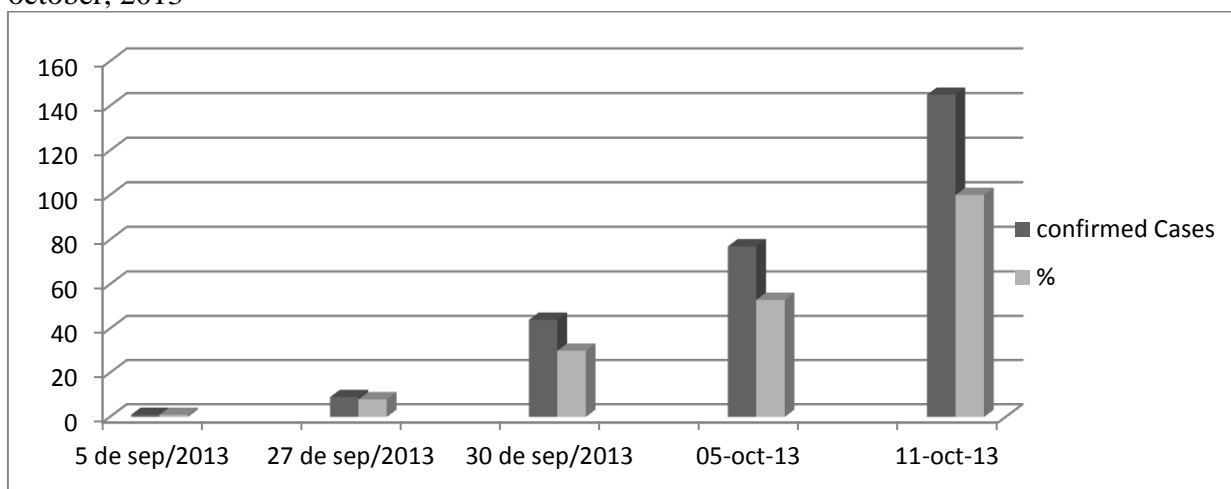


**Table 3.** Current situation of cholera cases in the state of Hidalgo, Mexico.

Outbreak	5 Sep, 2013	27Sep, 2013	30Sep, 2013	5Oct, 2013	11Oct, 2013
Confirmed cases	1	9	44	77	145
%	1	8	30	53	100

Source: direct, 30 of octubre 157 cases, 2013

**Figure 3.** Current situation of cholera cases in the state of Hidalgo, Mexico at 11 of october, 2013



Source: Direct, 2013

**Table 4.** Outbreak cholera in Mexico november of 2013 <sup>17</sup>

Confirmed cases	locality	percentage
2	Federal Distrit	1.1
159	State of Hidalgo	88.3
9	State of Mexico	5
2	San Luis Potosi	1.1
8	State of Veracruz	4.4

N=180 confirmed cases.

100%

Source: Direct, 2013

**Discussion**

The federal government through the National Epidemiological Surveillance System (MOH). Cholera is caused by a toxin produced by *Vibrio cholerae* O1 and O139 serotypes. The last pandemic was caused by serotype O1, it began in Asia in 1961 and spread to Africa, Europe and Oceania in 1970 and 1980, in 1991, the strain of pandemic spread to Peru and subsequently caused the disease in most of the countries of Central and South America and in the United States and Canada.

The average onset of symptoms is 2-3 days after ingestion of contaminated food, with sudden onset of watery diarrhea and vomiting. The feces are shown colorless and odorless, free of protein and are dotted with mucus (feces in "rice water"). The loss of electrolytes can lead to dehydration, painful muscle cramps, metabolic acidosis, hypokalemia and hypovolemic shock, cardiac arrhythmia and renal failure. The mortality rate is 60% in untreated patients but less than 1% in patients receiving treatment.

Cholera is endemic in the Gulf of Mexico, therefore, it is common outbreaks in countries that are in this region and in travelers to countries with an active cholera outbreak. Hence it is important to know in advance what to do in order to prevent spreading.

As preventive measures against cholera, it is essential to improve hygiene to control the outbreak. Proper cooking of seafood, hence the importance of ensuring that these are cooked (avoid at all costs their consumption raw or just cooked with lemon). Infected people are an important source of new infections, avoid that feces are mixed into the drain and properly treated. To achieve effective control of the disease, we recommend proper management of waste water, use of purification systems to eliminate contamination of

water supply, consumption only bottled water and properly chlorinated and implementation of appropriate measures to prevent the food contamination. But mostly, see a doctor at the slightest suspicion of having the disease because if patients do not receive proper treatment, the chances of death are very high.

We know it is emerging to work in evaluation, management, risk communication, and lifestyles improvements and not minimize epidemiological events which woefully affect the poorest and vulnerable people. The use of latrines and the presence of pig and chicken farms are identified by community authorities from Oxtomal I and II as the factors that triggered the cholera cases occurred there. <sup>[10, 12]</sup>

The main treatment is to replace fluid and electrolytes lost through diarrhea before the subsequent massive fluid loss leading to hypovolemic shock. Antibiotic use reduces the number of bacteria that produce cholera toxin and therefore the duration of diarrhea.<sup>[9]</sup>

### **Conclusions**

-It is been 13 years that Mexico was not presented an outbreak of cholera, which is an indicator of the living conditions of the poorest communities in the country.

-'Apparently the delay in issuing an alert could mean that effectively it is necessary to form in evaluation, management, and risk communication as rightly advised the National Public Health Institute, among other aspects emerging, national biosafety aspects of training, preparation and skills to conduct research, are now a social need.

-Finally facing an epidemic of this nature is important to realize that if there is the suspicion of having this disease, people should see a doctor, follow the instructions issued by him and by the health sector; being those: hand washing, eating well cooked foods, consuming brand safe purified water and boil it, as well as keeping care of various vectors like flies, among others.

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