

2017

# Chad : Hepatitis E

Hanna Pegarsch  
*Augustana College, Rock Island Illinois*

Follow this and additional works at: <http://digitalcommons.augustana.edu/pubh100global>



Part of the [Community Health and Preventive Medicine Commons](#), [Environmental Health and Protection Commons](#), [Environmental Public Health Commons](#), [Epidemiology Commons](#), [Health Services Administration Commons](#), [International Public Health Commons](#), [Virus Diseases Commons](#), and the [Water Resource Management Commons](#)

---

## Augustana Digital Commons Citation

Pegarsch, Hanna. "Chad : Hepatitis E" (2017). *Global Public Health*.  
<http://digitalcommons.augustana.edu/pubh100global/5>

This Report is brought to you for free and open access by the Public Health 100: Global Public Health Brief at Augustana Digital Commons. It has been accepted for inclusion in Global Public Health by an authorized administrator of Augustana Digital Commons. For more information, please contact [digitalcommons@augustana.edu](mailto:digitalcommons@augustana.edu).

# Chad: Waterborne illness Hepatitis E outbreak

Hanna Pegarsch  
October, 2017

Chad: Central Africa  
13.6 million people  
Sara, Arab, Toubou  
-French/Arabic  
(+) Islam and Christianity  
Unitary Dominant Party  
(Prime Minister)

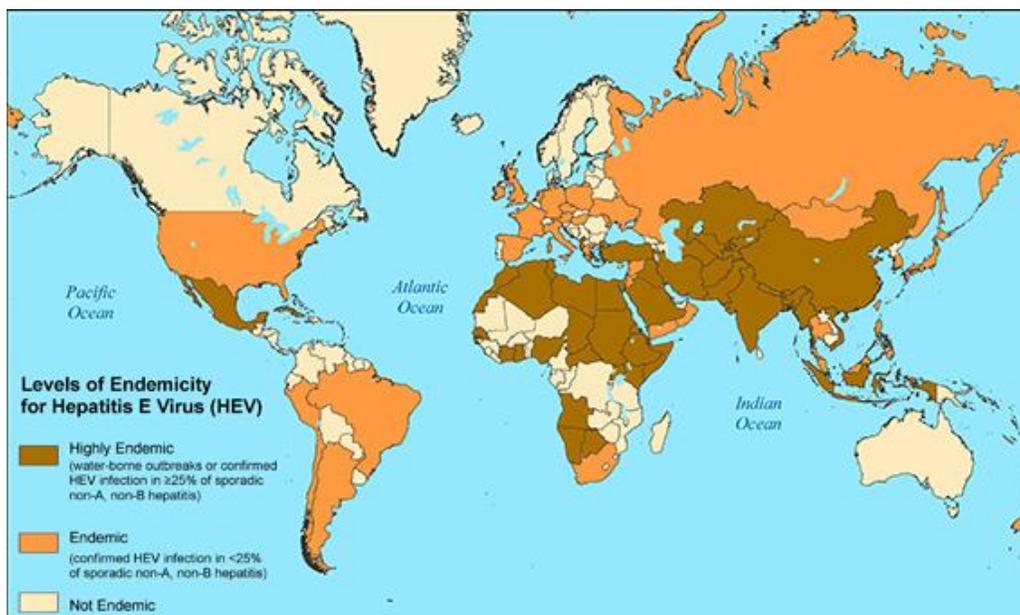
## Introduction

Contaminated drinking water in Chad is the main source for a Hepatitis E outbreak, leading Chad citizens to develop severe illness including jaundice, liver-failure, miscarriage, and death. Located in central Africa, Chad is one of the poorest countries in the world. Chad has few health care clinics around the country, but not nearly enough to treat their population of 13.6 million people. There are 0.4 physicians for every 10,000 people living in Chad needing healthcare. Of the citizens in Chad, only 42% have access to uncontaminated drinking water (Krzysztof 2008). With a dry season lasting eight months, from October to May, the remaining Chadians have no opportunity for safe drinking water. The country is at risk of waterborne illness,

including Hepatitis E. The general population is at a 2% risk, while pregnant women are at a 20-30% risk. This risk is even more elevated in Chad because of their lack of clean water. In 3.5 months, from September 2016 to January 2017, there have been a total of 693 cases of jaundice syndrome, a disease often indicating Hepatitis E. Of those cases, there were 11 deaths. From the hospitalized cases for jaundice in that time, 56.3% of the cases tested positive for Hepatitis E. Since this year, 16 pregnant women have presented jaundice syndrome; 75% of those women have tested positive for Hepatitis E, and four of these women have died (WHO 2017).

## Current Standing

The Medecins Sans Frontieres, a system set up to provide aid in events of tragedy, epidemics, or conflict to those without access to health care, have reacted by monitoring the outbreak and chlorinating water while making the community aware of the risks. Chad is governed on a unitary dominant party with a prime minister. The Ministry of Health of Chad is where the major decisions for public health are



(Figure 1) (Dec. 18, 2015). Viral Hepatitis. *Centers of Disease Control and Prevention*. Retrieved from <https://www.cdc.gov/hepatitis/hev/hevfaq.htm>

developed. The MSF usually does not have to responsibility to act on this large scale of water chlorination, but there are no other services in Chad to assist. The Hepatitis E outbreak has not been declared an epidemic yet, so therefore, there are no other measures responding to the public of Chad. The World Health Organization is advocating for more intervention within the country for water sanitation to start the end of the outbreak. But because it is not considered an epidemic, there has been no action taken, although Chad is an area that has one of the highest Hepatitis E outbreaks in the world. Poor and unable to provide care, the country of Chad needs help from other, more developed countries to be able stop this outbreak.

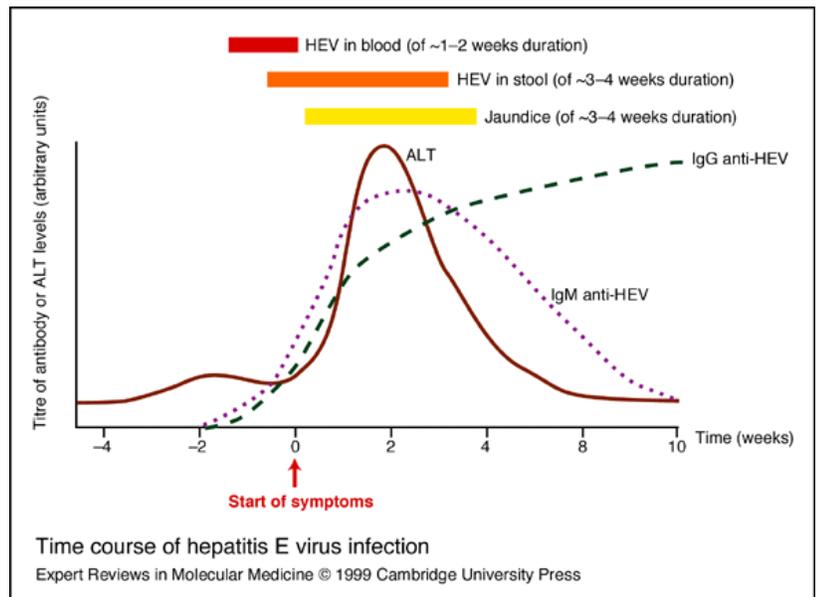
### Epidemiology

Hepatitis E starts out to be asymptomatic, with an incubation period ranging from 2 to 8 weeks. The virus is obtained through contaminated drinking water as well as through person-to-person transmission. The global incidence of Hepatitis E in developing countries from 2005 was around 20 million infections, leading to 3.3 million symptomatic cases of Hepatitis E, causing 70,000 deaths and 3000 still births (Abravanel et al. 2013). These numbers can be reflected to today if there are no measures taken to sanitize the water for Chadians.

With such a long incubation period, the citizens don't know they are spreading the illness to the rest of their community. Even with the symptoms, the citizens don't have the access or the

### References

- Abravanel, F. (2013). Hepatitis E virus. *Medecine et maladies infectieuses Volume 43*, 263-270. <http://dx.doi.org/10.1016/j.medmal.2013.03.005>
- (Feb. 6, 2017). Chad: MSP calls for assistance to curb hepatitis E outbreak in Am Timan, *Medecins Sans Frontieres*. Retrieved from <http://www.msf.org/en/article/chad-msf-calls-assistance-curb-hepatitis-e-outbreak-am-timan>
- Korzeniewski, K. (2008). Health Hazards against the background of the present-day epidemiological situation in Chad. *International Journal of Health Science, Volume 1* (4), 127-131.
- Nelson, K., James W. K. Shih, Jun Zhang, Qinjian Zhao, Ningshao Xia, John R. Ticehurst, Alain B. Lanrique. Hepatitis E Vaccine to Prevent Morbidity and Mortality During Epidemics, 1-3. <http://doi:10.1093/ofid/odu098>
- World Health Organization (Jan. 24, 2017). Hepatitis E- Chad, *Emergencies preparedness, response*. Retrieved from <http://www.who.int/csr/don/24-january-2017-hepatitis-e-chad/en/>



(Figure 2) Jameel, Shahid. (Dec. 6, 1999). Time course of hepatitis E virus infection. *Molecular Medicine*. Retrieved from

capacity for treatment.

### Solution

Along with treatment in Chad for clean and safe water, the country could also consider vaccinating for Hepatitis E.

In China, a Hepatitis E vaccine to prevent morbidity and mortality has been developed, but is strictly controlled in distribution. The Chad government could invest in the purchasing of this vaccine from China for the outbreak that should be considered an epidemic to prevent further spread of the virus while they take measures in improving the water conditions. The vaccine study in China has proved a 95% efficiency rate to prevent hepatitis (Nelson et. al 2014).

### Prevention:

- Accessing chlorinated water
- Hand washing hygiene
- Sanitary defecation
- Prioritize highest risk (pregnant women)