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2018

# Niger: Meningitis

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### Augustana Digital Commons Citation

Medeiros, Rodrigo. "Niger: Meningitis" (2018). *Global Public Health*.  
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## ABOUT THE NATION

Niger is located in western Africa. The total area is 1.267 million sq km. 1.266.700 sq km of land and 300 sq km of water and 0 km of coastline. The majority of the population lives isolated in the most extreme southern part of the country, along the border with Nigeria and Benin. The capital is Niamey. The climate is mostly hot and dry.

The total population is 19,245,344 (July 2017 est.). 1.09 million people lives in the capital Niamey. Different ethnic groups live in Niger: Hausa, Zarma/Songhai, Tuareg, Fulani(Peul), Kanuri, Gurma, Arab, Tubu and others.

The official language is French. 80% of the population is Muslim. Population is predominantly male and the refugees' population is about 180 thousand people (108,470 from Nigeria and 57,286 from Mali).

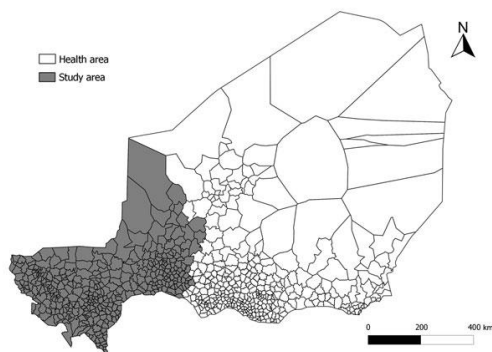
Niger is a semi-presidential republic in which the president is elected by absolute majority of votes in 2 rounds, if needed. The president is Mahamadou Issoufou, since 2011. It is a 5-year term (eligible for second term). Ambassador Hassana Alidou is responsible for the representation in the US. Ambassador Eunice S. Reddick is responsible for the representation from the US.

About 80% of Niger's territory is occupied by the Sahara Desert. The desert has been spreading in recent years, forcing farmers to go away from their lands. Most of Niger's population survives because of their subsistence farms.

Niger has a 1.608 thousand km border with Nigeria, country that has being suffering with a terrible Meningitis A outbreak since 2015. Niger is located in the Meningitis belt. The Meningitis belt of sub-Saharan Africa is the place with the highest burden of the disease, stretching from Senegal in the west to Ethiopia in the east. 30 000 cases are reported in that area every year.

Niger has been suffering with Libya claiming 25,000 sq km of the territory located in the Tommo region (located in the Chad-Niger-Nigeria boundaries).

Refugees are responsible for internal conflict; 11,000 people have been displaced because of the conflict between government forces and the Tuareg militant group.



**Figure1.** Location of the study area, Niger. This area comprises the 379 health areas in 3 regions (Tahoua, Tillabery, and Dosso).

Mainassara, H. B., Paireau, J., Idi, I., Pelat, J. M., Oukem-Boyer, O. M., Fontanet, A., & Mueller, J. E. (2015).

## ABOUT THE PUBLIC HEALTH ISSUE

Meningitis or Meningococcal Disease (MD) is caused by a bacterium called *Neisseria meningitides*. MD is an inflammation of the brain and some of the effects of the condition are: deafness, light sensitivity, severe headache. MD is fatal in 50-80% of untreated cases. In treated cases the fatality rates are 10-15%. Sequelae is present in 12-20% of the survivors. The most common sequelae are the neuropsychological sequelae, like hearing loss. Sequelae are the result of the damage caused by the condition.

In the big outbreak in 2015, 12 thousand cases of meningitis C were registered in Niger and Nigeria, 800 died. The most affected groups were infants, less than 1 year old. There are peaks of incidence seen in adolescents and elderly in some countries. According to CDC some of the risk factors are: age, community settings, travel.

A really important thing to notice when trying to identify meningitis is ask the patient to put the chin in the chest; for people that have MD this is practically impossible. It is really hard to have an early diagnose because the symptoms are similar to other illnesses.

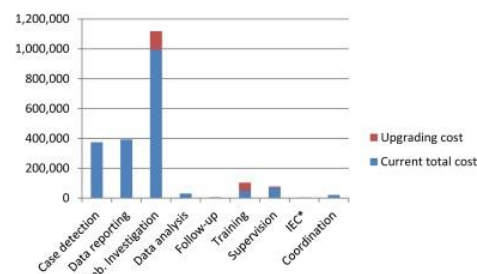
## SOLUTION

The solution that has been used to prevent Meningitis to spread even more after the 2015 outbreak is vaccination. The price is 0.50 US\$. With the recent spread of the Sahara-desert farmers have been leaving their subsistence farms, most of Niger's population live with less than 1 US\$/day (CIA, 2017). Even more people could be vaccinated if those that do not have enough money to pay could be vaccinated without being charged.

Rodrigo Medeiros

## PREVENTION

The prevention attempted was vaccines, and it was really effective, serogroup A was eliminated in 3 regions in Niger. The cost of the whole surveillance system in Niger was US\$ 1,951,562. The cost was expensive because strengthened surveillance was required. The most effective prevention is vaccination. In June of 2015 220 million people have been vaccinated in 16 African countries, including Niger. Price was around US\$ 0.50 per dose. WHO sent 341,000 doses of the vaccine to Niger.



**Fig. 2.** Comparison of Niger's current and upgrading cost of meningitis surveillance, US\$. \*IEC stands for information, education and communication.

Irurzun-Lopez, Maite., A. Erundu, Ngozi, Djibo., Ali..., Colombini, Anaïs (2016).

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