U.S. Response to a Cholera Outbreak in Cuba

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Outline

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- Situation overview
- Oslo Guidelines
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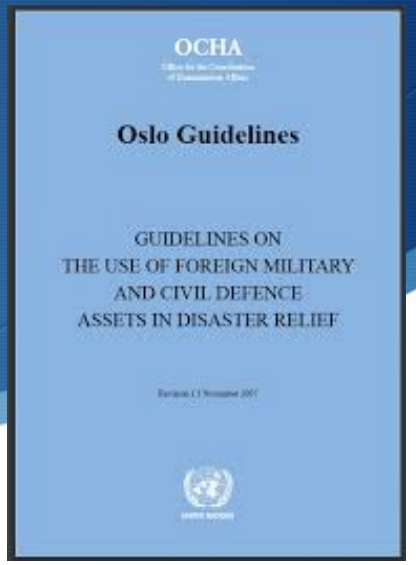
Purpose

- To inform U.S. military humanitarian groups in accordance with Oslo guidelines
- To assist U.S. military humanitarian groups in their missions to save lives and alleviate suffering amongst the Cuban population

Situation Overview

- Earthquake damage to Cuban infrastructure
- Cholera outbreak ravages affected populace
- Temporary housing areas hardest hit
- Political and diplomatic situation complex
- Cuba's trade limitations worsen crisis

Oslo Guidelines



- All military humanitarian assistance groups must abide by Oslo Guidelines
- Humane, impartial and neutral
- No political intentions and full consent is required
- Humanitarian Coordinator (HC) coordinates assistance between Cuban government and military and civil defense assets (MCDA)
- Care provided may be direct, indirect or infrastructure support

(OCHOA, 2007)

Pertinent Populations

- Displaced persons from earthquake
- Cholera already endemic
- Substandard housing, sanitation, water treatment
  - > 330,000 lack potable drinking water + those displaced
  - > 500,000 lack sanitation + those displaced
- Pregnant women/high maternal mortality rate

(CIA, 2014; CDC, 2014)

Health Care Infrastructure

- Community-Oriented Primary Care (COPC)
- 248 hospitals and 470 clinics
- 1 clinic serves on average 150 families
- 77,000 physicians, large workforce, underpaid
- Considered by some to be a 3rd world economy with first world health care

(Evans, 2008; MEDICC, 2007)

Determinants

- Access to care minimized by COPC
  - Current crisis may decrease COPC's ability to function
- **Environmental**: exposure, wind, rain, heat, lack of drinkable water
- **Physical:** toxins, lack of sanitation, lack of housing
- **Special groups**: children, pregnant women, and older adults
- **Behavioral:** diet, smoking, ETOH, and nicotine use

(Alvarez, Artiles, Otero, & Cabrera, 2010)

Disparities

- U.S. embargo since 1960
- Soviets stopped funding in 1991
- Isolation
  - Lack of medications in Cuba
  - Lack of vaccines
  - Malnutrition
  - Lack of soap
  - Lack of chlorine for water purification

(Evans, 2008);(Barry,2000)

Cholera

- Approximately 5% of infected will develop:
  - -severe gastric upset diarrhea and emesis
  - -dehydration and electrolyte imbalance
  - -shock and death can occur if not treated
- Disease spreads from water or food sources that have been contaminated by fecal matter from other infected persons with cholera
- Cholera is most likely harbored in places with poor water treatment, sanitation, and hygiene
- Also found in shellfish from Gulf of Mexico

(CDC, 2014)

Surveillance

- The Ministry of Public Health (MINSAP) partner with the HC and Humanitarian Aid Organizations
  - Provincial and national levels, poised to organize surveillance
  - Stool culture: gold standard, laboratories needed
  - Rapid test: excellent for epidemics, questionable specificity/sensitivity

(Alvarez, 2010; CDC, 2014)

Management

- Surveillance
- Education populace
- Improve sanitation
- Improve water treatment
- Bottled water dispersion
- Increase available nutrition
- Isolate/treat effected individuals

(Brown, Jacquier, Bachy, Bitar, & Legros, 2002)

Treatment

- Early treatment less than 1% mortality
- Isolation and oral rehydration solution (ORS)
- IV rehydration if indicated
- Antibiotics decrease duration and severity of symptoms
- Oral cholera vaccines available

(CDC, 2014)

References

- Alvarez, M., Artiles, L., Otero, J., & Cabrera, N. (2010). Priority setting in health research in Cuba. *MEDICC Review, (12)*4, 15-19.

- Archibold, R. C., & Sengupta, S. (2014, April 19). U.N. struggles to stem haiti cholera epidemic. *The New York Times*. Retrieved from www.nytimes.com

- Barry, M. (2000). Effect of the u.s. embargo and economic decline on health in cuba. *Annals of Internal Medicine, 132*, 151-154.

References continued

- Brown, Y., Jacquier, G., Bachy, C., Bitar, D., & Legros, D. (2002). Management of cholera epidemics in a refugee camp. *Bulletin de la Société de pathologie exotique*, *5*, 351-354.

- Centers for Disease Control (CDC) (2014).Cholera-vibrio cholerae. Retrieved from http://www.cdc.gov/cholera/index.html

- Central Intelligence Agency (CIA) (2014). The world fact book: Cuba. Retrieved from https://www.cia.gov/library/publications/the-world-factbook/geos/cu.html

References continued

- Evans, R. G. (2008). Thomas mckeown, meet fidel castro: physician, population health and the cuban paradox. *Health Policy, 4*, 21-32.
- Medical Education Cooperation with Cuba (MEDICC) (2007). Cuba health profile. Retrieved from http://www.medicc/org/resources/documents/Cuban%20Health%20System%20HEALTH%20PROFILE.Pdf
- United Nations Office for the Coordination of Humanitarian Affairs (OCHOA) (2007). Oslo guidelines: guidelines on the use of foreign military and civil defence assets in disaster relief. Retrieved from https://docs.unocha.org/sites/dms/Documents/Oslo%20Guidelines%20ENGLISH%20(November%202007).pdf