Global Task Force on Cholera Control (GTFCC)
Webinars on Epidemiology Surveillance

Introduction

The End Cholera 2030 Roadmap holds that cholera control is more feasible and more rapidly achievable by focusing on hotspots. Hotspots are communities/sub-populations of countries with (recent) historical epidemiologic and descriptive evidence of risk for cholera as a public health threat. For national cholera control plans, "evidence of a public health threat" is a key metric for identifying priority hotspots among a country's entire population, then ranking them according to urgency and defining the most appropriate types of control measures to employ.

Cholera hotspot identification is not a new concept and there are several methodologies for deriving a map which can guide multisectoral control plans that are likely to be successful, if fully implemented. And because devising national cholera control plans are dependent on first identifying target cholera hotspots, the GTFCC created a tool that is relatively simple to use, employing mean annual incidence and cumulative time reporting cholera (persistence) as indicators to describe cholera burden during the previous five years. The GTFCC formed a small working group to advise on its development. While considering many types of evidence for cholera risk, the group agreed that recent cholera disease burden and persistence could be combined, with a minimum cut-off value for each, to provide a ranked list of hotspots placed in three levels of urgency for action: high, medium, and low. The hotspot tool was not meant to define which control measure are most immediately needed. For instance, the level of cholera risk in some districts might allow proceeding first with adequate WaSH measures that could provide sufficient long-term protection without undue risk of a large interim outbreak or the need for vaccination.

The final version of the hotspot mapping tool was released in September 2019, accompanied by a guidance document. The two indicators (mean annual disease burden and degree of persistence) are easily determined and replicable for most countries and in using a recent historical time frame (preceding five years) most communities at current risk would be included. However, the document itself points out that other epidemiologic indicators could be used (i.e., CFR, frequency of culture confirmation, etc.) for mapping hotspots when deemed appropriate for each individual country. A longer historical time frame from which to sample cholera data could be useful for countries only intermittently affected by outbreaks. Further still, measures of cholera risk and population vulnerability could be reflected by more descriptive indicators such as population movement, on-going conflict, or poor capacity for outbreak detection, to name a few. Whether there are better indicators to use instead of or in addition to those in the current iteration of the tool is an open question and will no doubt be influenced by the individual country's overall goals, previous cholera epidemiology, and the challenges to cholera control plan implementation.

As the COVID-19 pandemic has precluded any real chance of hosting the usually engaging annual Surveillance Working Group meetings in person, we have opted for a series of short (60-90 minute) webinars that will give the working group at least a relatively brief chance to review, debate, and propose next steps for the cholera hotspot mapping methodology/tool. An overview summary of the 3 planned webinars for this topic is as follows:

- **Session 1:** review the tool in its current form, assess its utility, ease of use, lessons learned, and observed fixes needed. The **goal** is to address and recommend solutions to specific issues that will permit the basic hotspot tool serve as an evidence-based point of departure for identifying and prioritizing communities for cholera control action.
- **Session 2:** review and discuss additional cholera epidemiologic indicators (CFR, mortality, lab data, etc); define use cases for additional indicators; decide on best procedure for combining or replacing indicators within the tool that is best adapted for an individual country. The **goal** is to identify one or two indicators that could be used in place of or in addition to mean annual burden and persistence to achieve a workable hotspot identification outcome and to describe the context in which they might be useful.
- **Session 3:** review and discuss how to integrate indicators that are descriptive or not directly related to cholera transmission into hotspot selection and ranking. Population vulnerability to cholera can be direct

(safe water scores, level of open defecation, population density) or indirect (chronic emergency, remoteness, transportation hubs), or a descriptive characteristic of the population (fishermen, nomads, poverty, health care reluctance). The **goal** is to assess the added value of these vulnerability factors to the epidemiologic indicators? Determine how can they be used or added to the basic tool or combined to create a "score."