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Mass Gathering Surveillance: New ESSENCE Report and Collaboration Win Gold in OR

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Objective

To streamline production of a daily epidemiology report including syndromic surveillance, notifiable disease, and outbreak data during a mass gathering

Introduction

The 2016 U.S. Olympic Track and Field Team Trials were held July 1-10 in Eugene, OR. This mass gathering included over 1,000 athletes, 1,500 volunteers, and 175,000 spectators. The Oregon Public Health Division (PHD) and Lane County Public Health (LCPH) participated in pre-event planning and collaborated to produce a daily epidemiology report for the Incident Management Team (IMT) during the event. The state and county public health agencies had collaborated on surveillance for prior mass gatherings, including the 2012 Trials. However, 2016 was the first opportunity to use complete state and county syndromic surveillance data.

Methods

PHD staff developed an ESSENCE report, highlighting seven priority health outcomes: total emergency department visits; injury, gastrointestinal, respiratory, and fever syndromes; and asthma-like and heat-related illness queries. The report included side-by-side comparisons of county and state time series graphs, a table summarizing reportable diseases, and space to narratively describe outbreaks. PHD staff did a virtual demonstration and in-person tutorial for LCPH staff on how to run the report. ESSENCE access permissions had to be modified so that county users could see and produce state time-series graphs but not data details for non-Lane County visits. Emphasis was placed on interpretation of likely scenarios, i.e., one or two days with a warning that was not indicative of an incident of public health importance.

Results

During the event, LCPH staff were able to run the report successfully, i.e., there were no technical glitches. For the first few days, LCPH staff consulted with PHD staff about epidemiological interpretation. State data were of specific interest since data details were suppressed. Additionally, increases were seen in the injury syndrome in the days preceding the July 4 holiday. Stratification by key demographic factors and looking at subsyndrome breakdowns on warning and alert days provided the needed information without requiring the use of the detail details.

Conclusions

After the event, there were three main recommendations for improving the process.

LCPH suggested that the side-by-side visualization of county and state time series graphs was useful to see trends but the relative scale of the number of visits was unclear due to size and placement (see figure 1). Solutions for future reports include additional explanatory text, limiting the report to only county data, and alternative visualizations that highlight the differences in visit magnitude.

As part of the IMT process, the LCPH lead felt that her efforts to physically go to the Emergency Operations Center to run the report helped facilitate communication with partners. However, it is not clear if this effort directly translated into IMT use of the report, which was posted to the online event management system and not included in the daily situation status reports. While LCPH leadership and staff reported anecdotally that they found the report to be very useful, no formal evaluation of use was done with either public health or IMT staff. In advance of the next event, state and county staff should prepare evaluation metrics.

The report feature in ESSENCE is a bit cumbersome to set up, but it allows for easy production of appealing and customizable reports. This template can be modified for future mass gatherings, including athletic competitions and county fairs. PHD staff will continue to collaborate with LCPH to repurpose and improve the report for use in Lane and other counties. Fostering local user comfort with interpreting ESSENCE data and generating summaries for local use is a priority of the OR ESSENCE team.

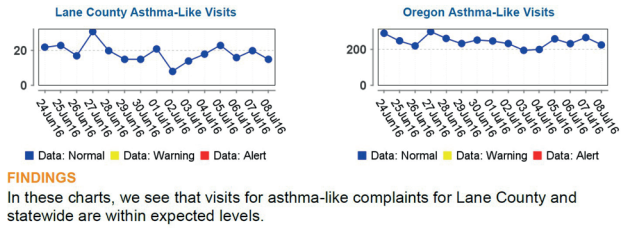

Figure 1: Example of side-by-side time series graphs.

Keywords

Mass Gathering; Surveillance; Collaboration; ESSENCE

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