

Background:

Part of the Kingston, Frontenac and Lennox & Addington (KFL&A) Public Health's mandate is to conduct public health surveillance to guide the local development of public health programs and assist with timely response to public health events. The Acute Care Enhanced Surveillance (ACES) system is one of the many projects that the KFL&A Public Health Informatics team works on. The ACES system collects real-time syndromic data from hospital partners. This data can be used and displayed by other applications to assist public health professionals to predict and prepare for potential disease outbreaks. One of the tools using ACES data is the Influenza-Like Illness Activity Level Indicator (ILI Mapper), which is based at KFL&A Public Health and supported by the Ministry of Health and Long-Term Care.

Purpose:

The ILI Mapper is a web-based tool that uses syndromic and laboratory surveillance data to inform health professionals and the public of influenza activity. The tool consists of informative epidemic curves and map visualization of influenza-like illness (ILI) data in Health Units across Ontario. The ILI Mapper enables improved situational awareness about ILI activity in the community, therefore assisting public health professionals to better predict annual epidemics and respond to the health needs of the population. The information provided through this tool also aims to inform the Acute Care sector weeks in advance of the annual influenza epidemic, allowing them to prepare for potential surge in emergency department and admission activity. The ILI Mapper is useful for assessing provincial progression through annual influenza seasons, describing influenza activity, and supporting decision-making by health organizations. The tool can be accessed through the following link: <http://www.kflaphi.ca/ILI-Mapper/>.

Methods:

The ILI Mapper tool analyzes data provided in real-time to the ACES system from hospital partners. Data is collected from over 100 hospitals across Ontario, spanning twenty-six Health Units. The data available from the previous week (ending Saturday) is analyzed each Monday, with the map available for viewing later that day. The ILI Mapper shows all Health Units across Ontario that have local hospitals sending data to the ACES system. The tool currently displays the ILI activity data according to a green, yellow, orange, and red colour classification system:

- Green indicates that there are no significant increases in influenza-related activity expected in the upcoming week.
- Yellow indicates that influenza-related activity is at elevated seasonal levels.
- Orange indicates that influenza-related activity is at elevated seasonal levels and may be reaching peak levels in the upcoming week – there will likely be impacts on the health system associated with influenza.
- Red indicates that influenza-related activity is at greatly elevated levels – it is expected that there will be impacts on the health system associated with influenza.

The map displaying this information enables users to zoom in or out to various locations across Ontario. The tool also has the option to view a time lapse of the most recent annual influenza season, showing the weekly progression of the severity of ILI activity in each Health Unit.

In addition, the epidemic curves provided on the ILI Mapper webpage also offer an informative provincial summary of pneumonia and ILI data. For example, the graphs demonstrate information related to historical percentages of respiratory-related emergency department visits during recent influenza seasons, the percent of pneumonia/ILI emergent admissions to hospitals, comparisons of syndromic cases and lab-confirmed cases, and the percent of all actual respiratory visits to hospitals since 2009 compared to the seasonal baseline and epidemic threshold. These graphs allow users to visualize ILI hospital visits over time, to help analyze yearly and monthly trends and potentially assist with predictions for future influenza seasons.

Future Considerations:

As more hospitals and Health Units join onto provincial syndromic surveillance systems, the ILI Mapper will be able to display ILI activity over a greater geographic area, to better inform health professionals of trends in upcoming and on-going influenza epidemics. In addition, the current colour-coded classification system being used will be validated over the 2014/2015 influenza season for future improvements.

For more information, please contact:

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