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Collection of multi-source spatial
Tracking the

Influenza epidemics costs both lives and a tremendous amount of resources for any country. Citizens that become sick are less productive and the overall quality of life is drastically reduced for the amount of the individuals period of illness as well as the community during a flu season. The ability to reduce the spread of infectious diseases saves both lives and resources as well as an improvement of the quality of life.

This project aims to explore the possibilities to detect influenza outbreaks as soon as they are happening with the use of relevant datasets available. Information about different aspects of a citizens life on a grand scale reveals patterns and trends that could be linked to an epidemic outbreak, and thus prove useful for active measurements against further spread on a early debut.

The collected sources for this thesis is Norwegian Public Health Institution, Norwegian Public Roads Administration, Twitter, Kolumbus and Ruter.

information for emergency management influenza

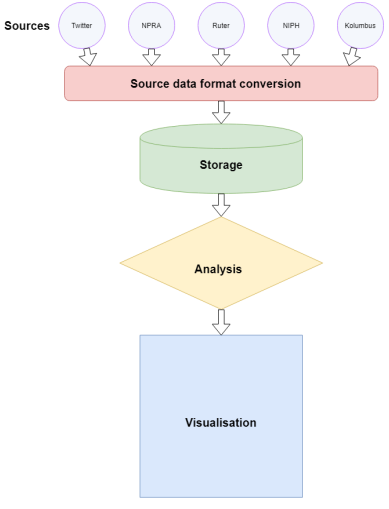

Figure 1: Conceptual oversight.

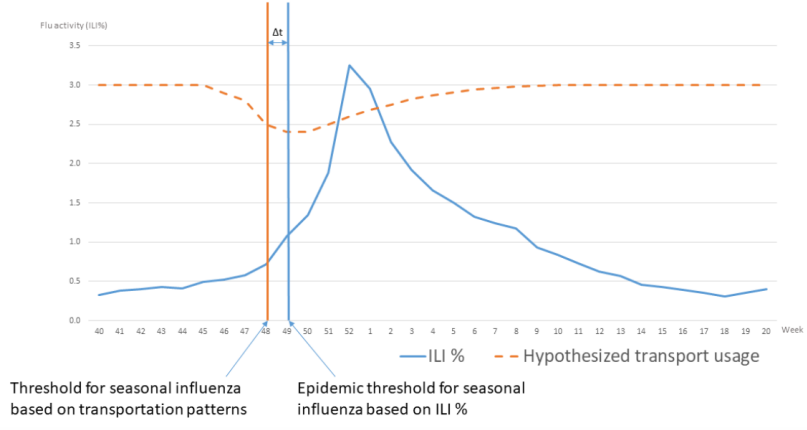

Figure 2: Theoretical correlation between weekly public transportation utilisation and flu activity (ILI %) in an urban population.

Figure 2: Figure from Grottenberg et al.

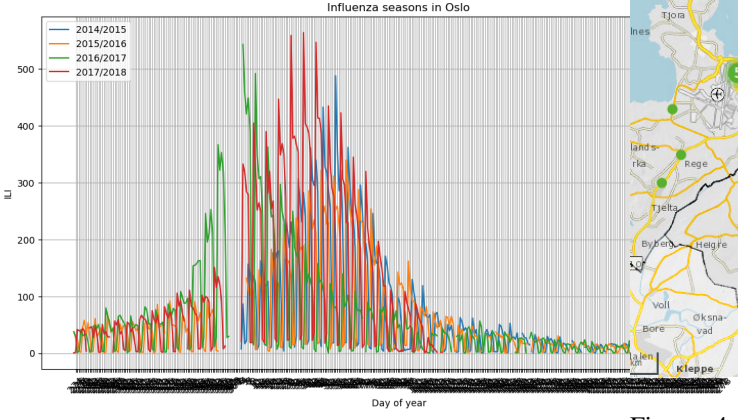

Figure 3: Influenza-like illnesses season 2014-2018 in Oslo.

Figure 4: Geospatial hourly bounds of Stavanger, used for hourly data. The green dots show the location of traffic registration stations chosen.

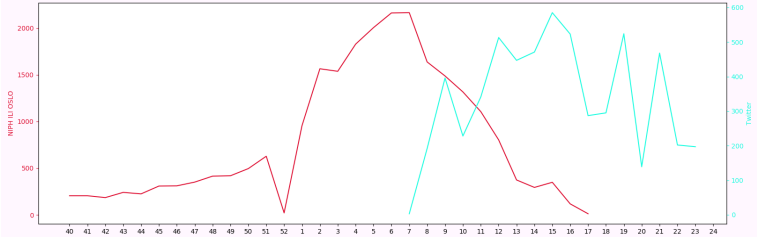

Figure 5: Twitter data compared with the NIPH ILI data of the city of Oslo forthe influenza season of 2017/2018

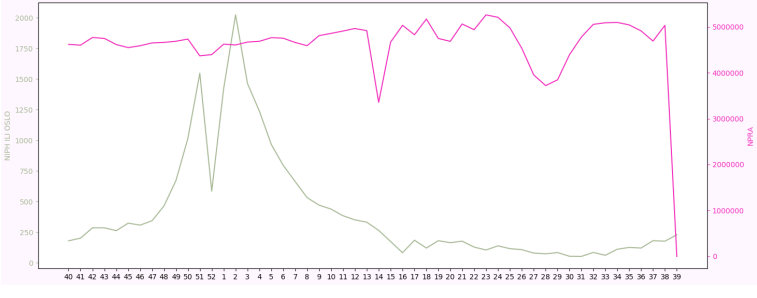

Figure 6: NPRA data compared with the NIPH ILI data of the city of Oslo for the ifluenza season of 2016/2017.