

## Developing an AI algorithm that predicts the asthma exacerbations.

- Asthma is the third most common chronic disease in Canada; more than 3.8 million affected people and has a profound impact on society. With more than 2 million people who are also living with COPD, these respiratory conditions are the leading cause of hospitalization in Canada (PHAC, 2018).
- For many, asthma (and COPD) is not controlled. As of 2018, only 17% of the asthma patients believe that their asthma is well-controlled (Asthma Society of Canada, 2014)
- 21.9% of patients experience asthma symptoms more than four days per week, and 47% of them more than one night per week on average.
- We do not have accurate and high-frequency real-time surveillance data on symptomatic people. The figure below shows three stages of propagation in respiratory conditions and related data spaces.



### What we need:

#### *Necessary information*

- Hourly, number of calls on respiratory symptoms (shortness of breath etc.).
- Caller's location (postal code).

#### *Beneficial Information*

- If we can get any person specific additional information (age, gender, short medical history, etc.)
- A metric that ranks the severity of the symptoms. For example, if the caller is directed to 911 or ER etc.

#### *Sufficient information*

One year data. And we need to know the number of daily calls to see if we can have enough volume for data analysis.