



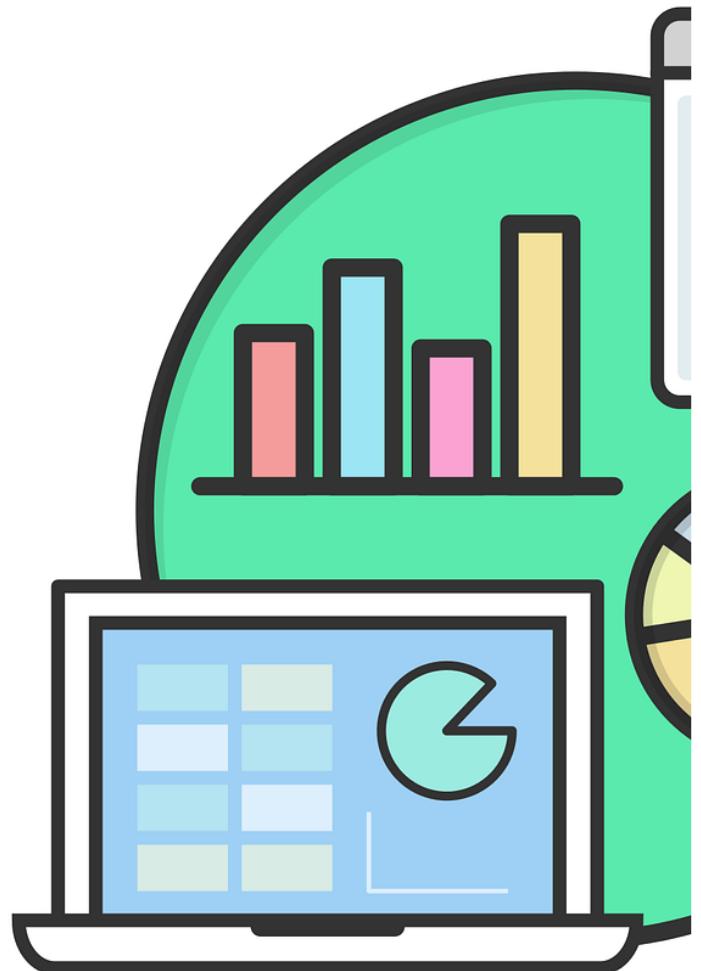
# Leveraging Research and Data in Evidence-based Decision Making – The City of Vaughan COVID-19 Response



# Overview

---

- Background
- Key issues
- Data and Analytics, Research and Lessons Learned Teams
- Data Insights
- Lessons Learned



# Emergency Operations Centre

*A place where  
uncomfortable people  
perform uncomfortable  
roles making difficult  
decisions with little  
and/or unreliable data.*



# Background

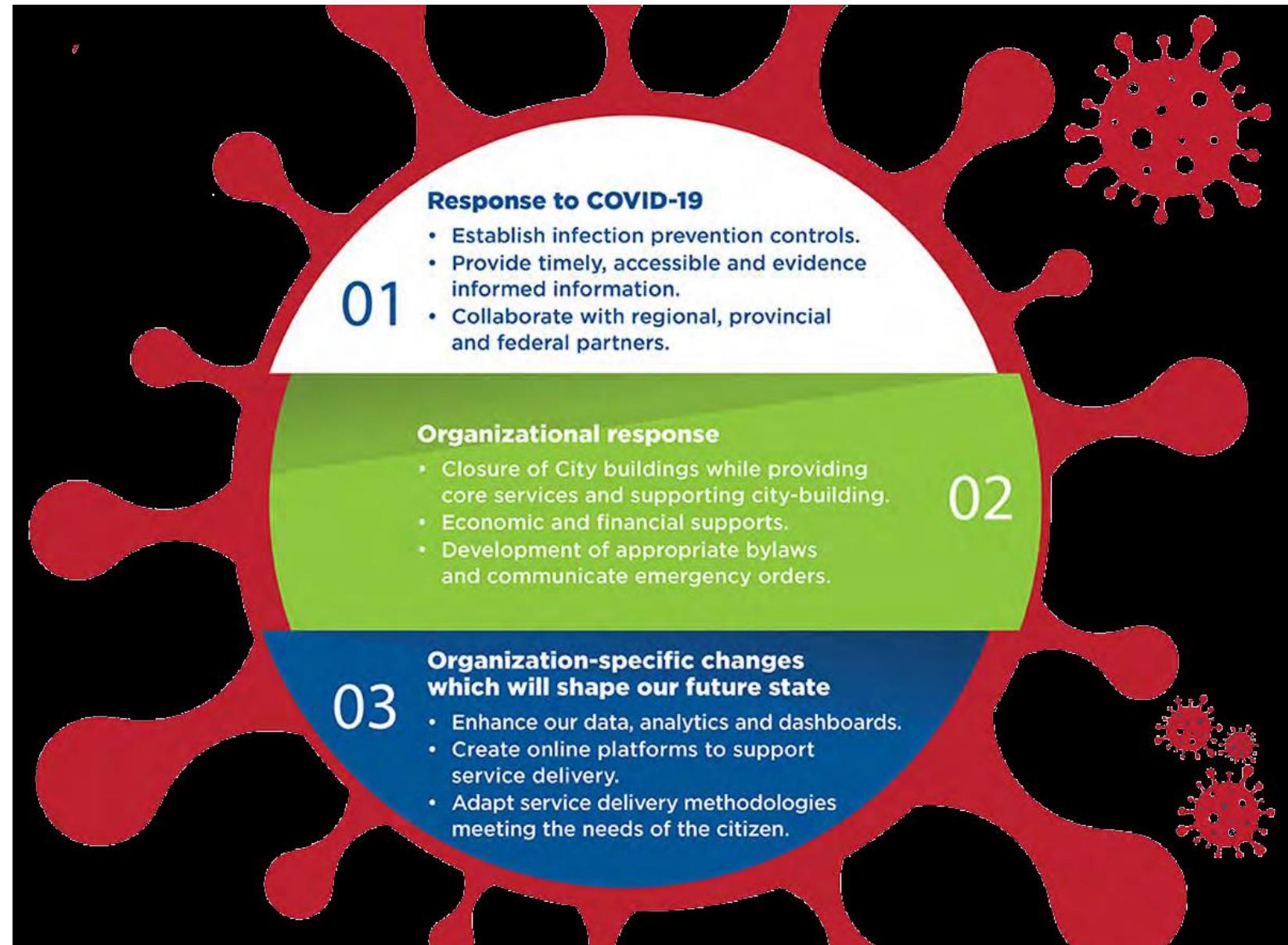
---

- Began monitoring the emergence of the virus in early January 2020
- Regular reports issued to Council and Senior Management pre-declaration
- Vaughan became the hotspot in York Region (and still is!)
- Declared an emergency March 17, 2020
- Pivot from in person services to virtual platforms

Recreation Libraries Council Meetings Development Applications Portal Green bins/blue boxes	Automation of manual finance processes Automation of Employee Records Virtual staff training Land use planning consultations Virtual business consultations
---	---

# Background Response Objectives

- Disciplined.
- Responsible.
- Measured approach



# Key Issues

---

- Pandemic does not have a visible component
- Multiple sources of data being accessed daily
- Speed of new developments
- Data dashboards not showing the analysis we needed/wanted
- How to answer the why are we a hotspot question
- The degree of impact on City
- Collecting lessons learned in a timely manner



# Specialized Teams

---

- Data and Analytics Team
  - Experts from across multiple departments
  - Data Architect, data analysts, GIS experts, strategic planning experts
  - Mandate – Build a dashboard with all COVID related data and analytics to assist in City-wide decision making and locational intelligence.
- Research Team
  - Librarians
  - Gather and summarize information on responses, vaccines, new treatments, emergency issues, etc. from across the globe, Canada, the Provinces using credible sources

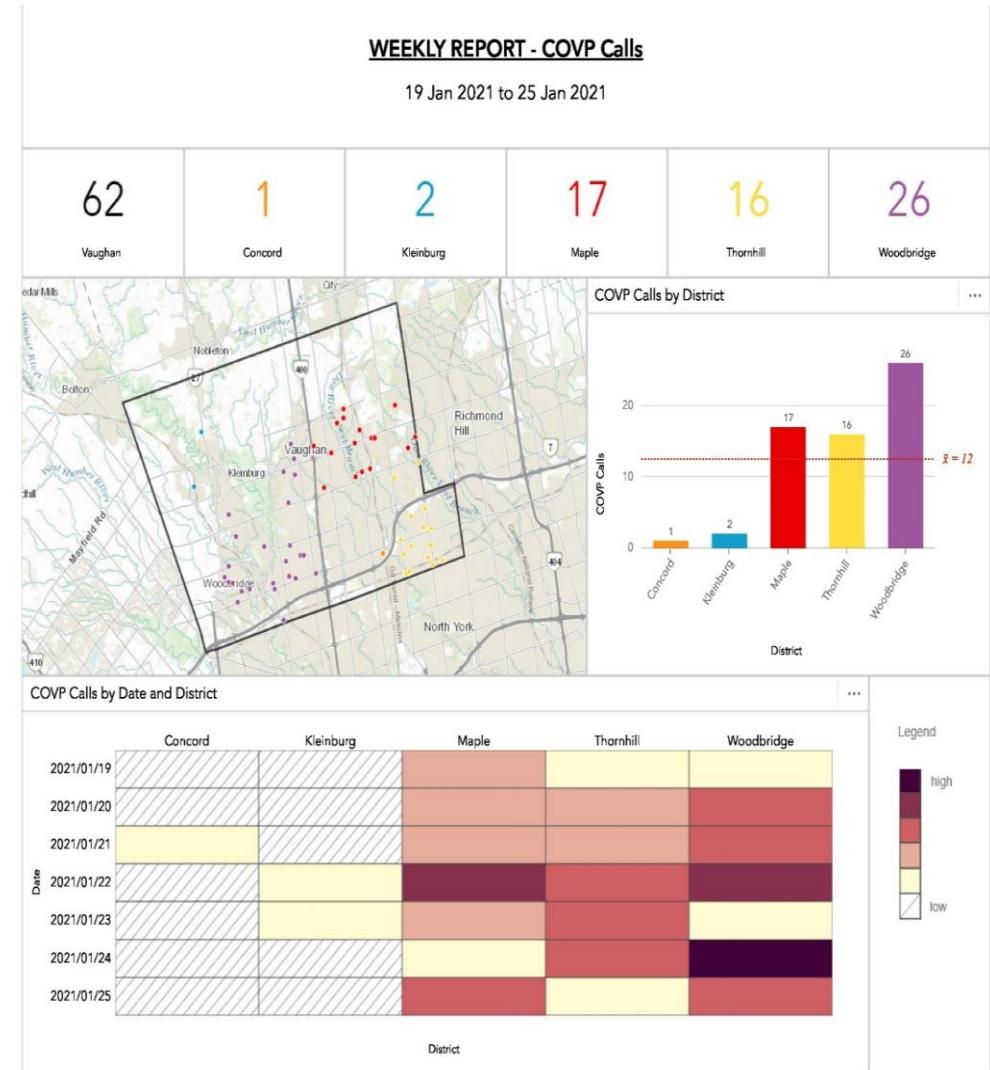
# Specialized Teams

---

- Lessons Learned Team
  - Strategic planning analysts
  - Unbiased, not directly involved in the response
  - Mandate is to conduct debriefings and surveys of the Emergency Management Team, Members of Council and staff at set intervals to gather feedback on
    - What are we doing well
    - What could we do better
    - What changes do we need to make
    - Work from home feedback
    - What supports do staff need
    - Innovations

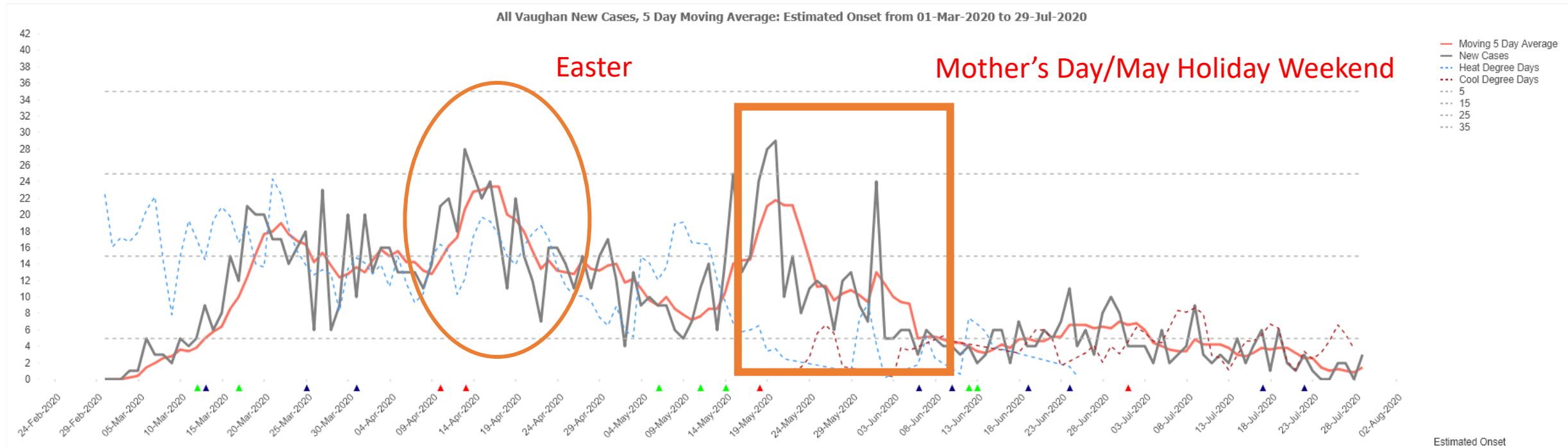
# Data Platforms

- QlikView
- Talend
- nPrinting
- Environics PRIZM
- ICES
- Insights for ArcGIS



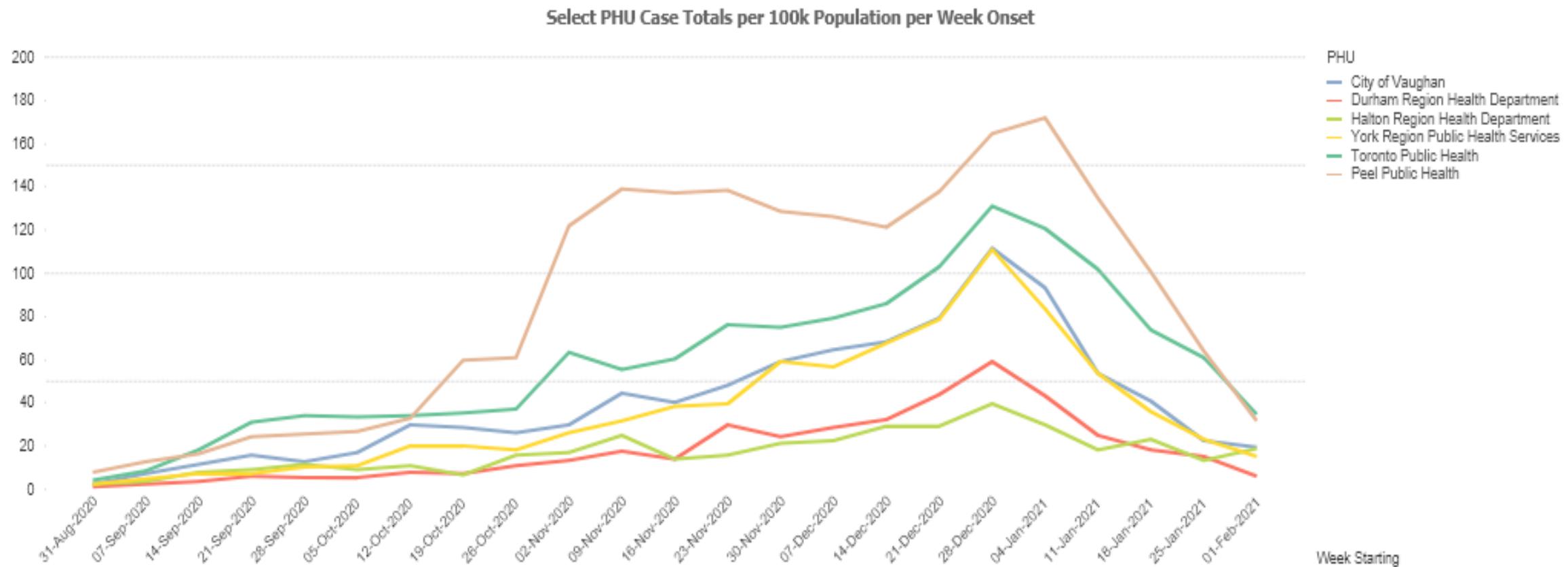
# Data Insights

- Case surges related to specific events and weather conditions

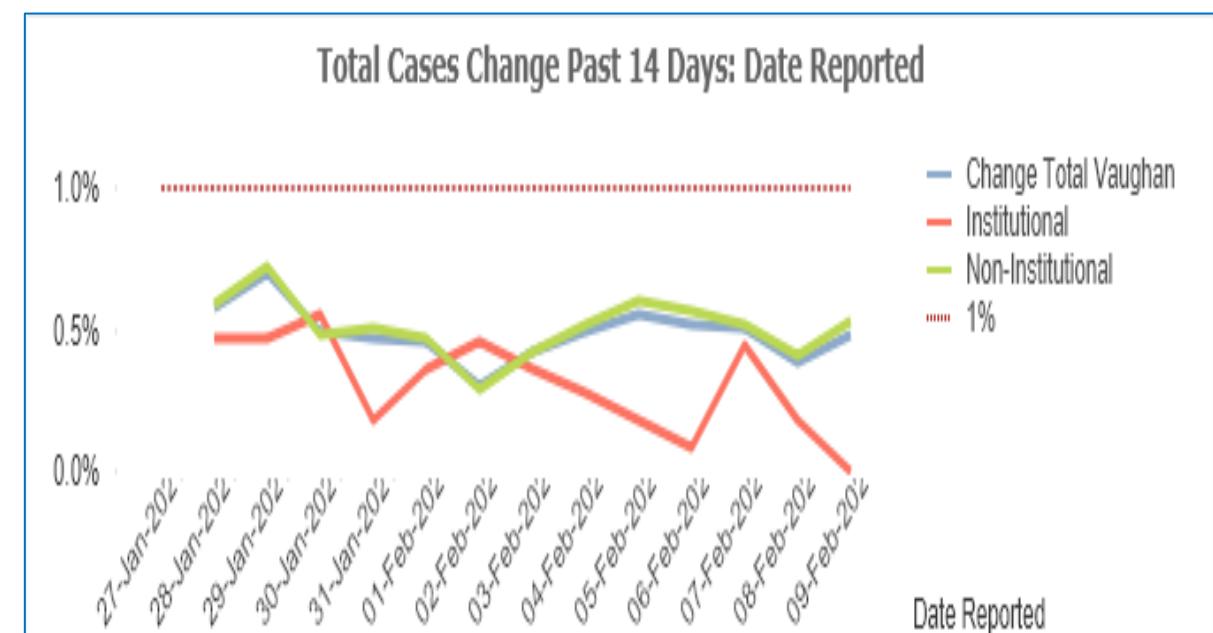
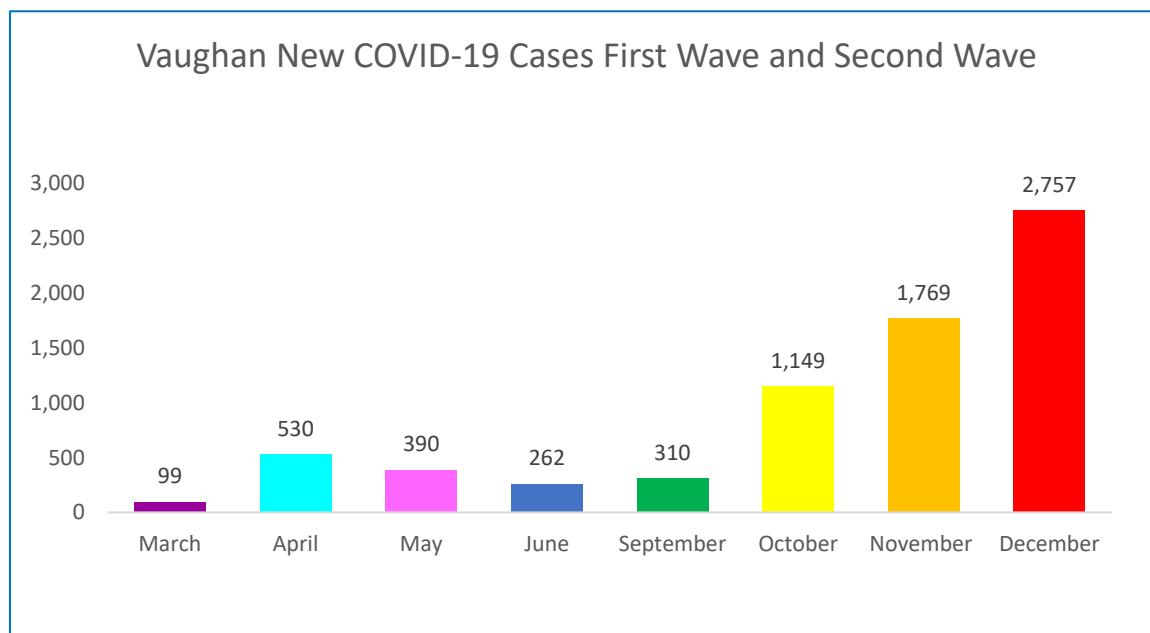
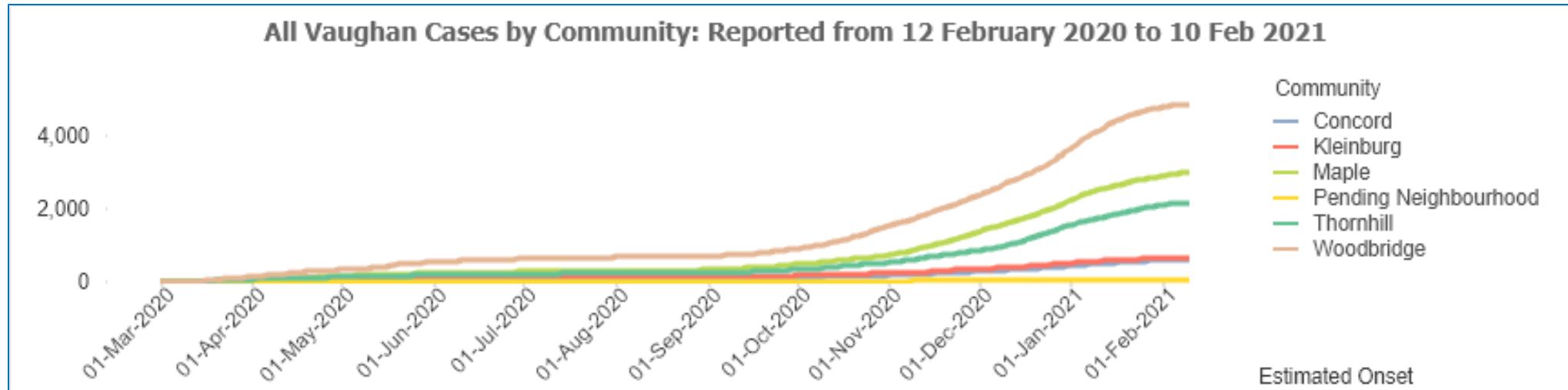


Temperature Correlation – extreme heat and cold drove people indoors an increased cases resulted.

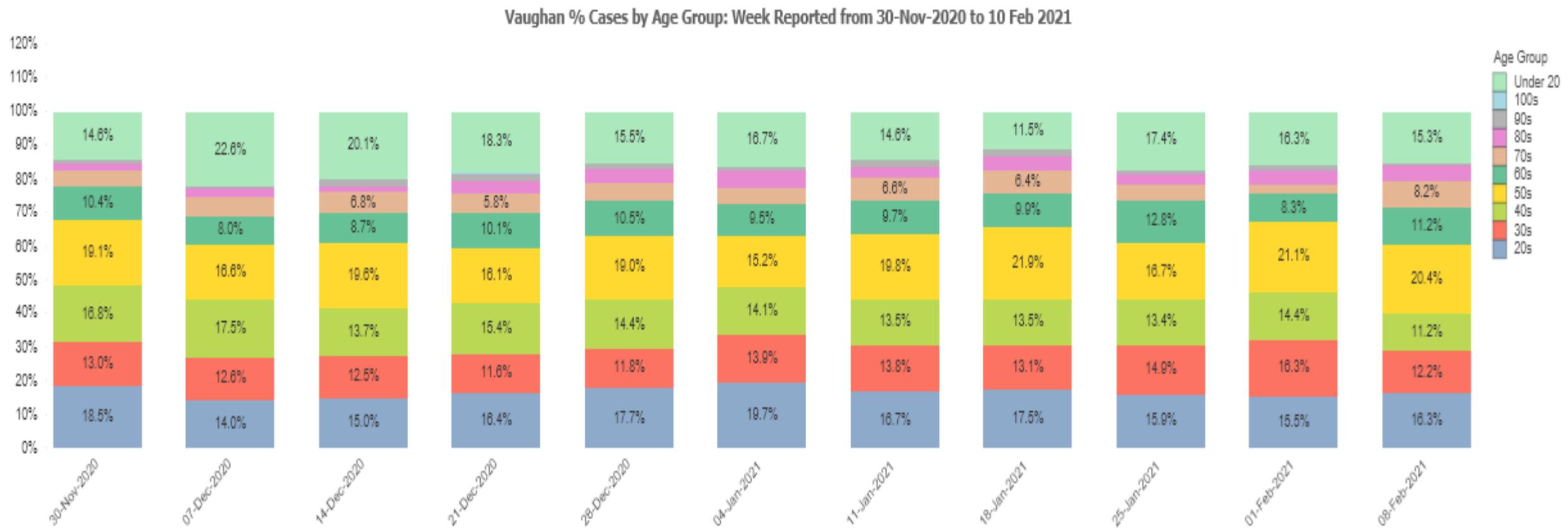
# Data Insights



# Data Insights



# Data Insights



# Data Insights – Sample Daily Stats Slide

	<b>Feb 11, 2021</b>	<b>Feb 10, 2021</b>	<b>Difference</b>	<b>Change %</b>
York Cases	26,927	26,811	116	0.43
York Deaths	495	488	7	1.43
Vaughan Cases	11,344	11,294	50	0.44
Vaughan Deaths	202	199	3	1.51

Note: York Region posts case data at 1700 hrs. Vaughan has 417 active cases, 66 in hospital. There are 10 institutional outbreaks.

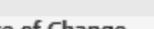
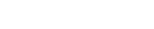
# Data Insights - Trends

NEW

Vaughan Last 28 Days				28 Days Trend	14 Day Rate of Change
From: 22-Jan-2021	From: 15-Jan-2021	From: 08-Jan-2021	From: 01-Jan-2021		
559	729	886	886		-27.31%

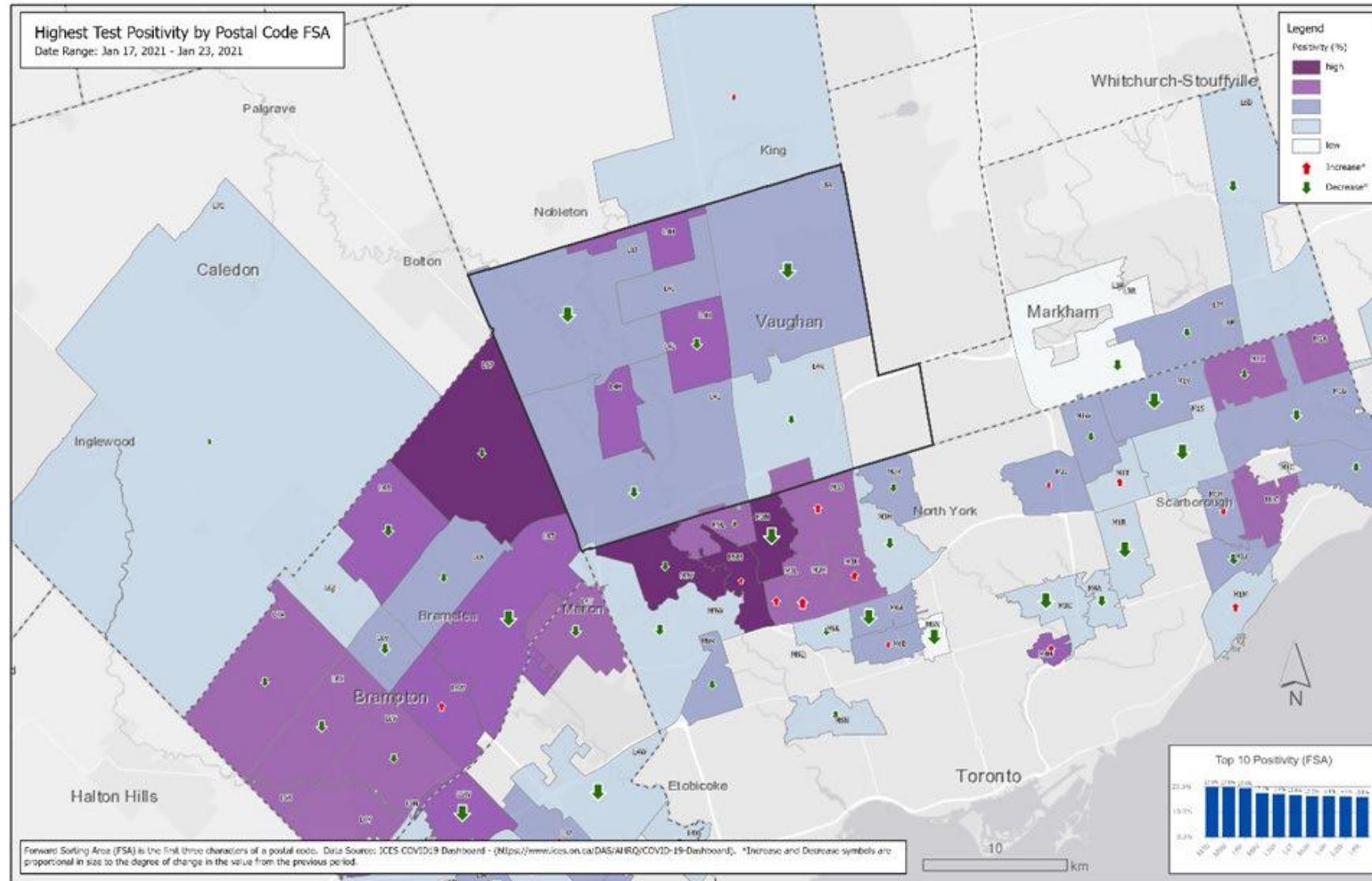
- Weekly Vaughan cases for the last 4 weeks
- **14-day rate of change** for Vaughan (Jan 1 - Jan 14 vs. Jan 15 – Jan 28) is **-27.31%**
- 28 trend bar chart (blue = low, red = high)

NEW

Vaughan Communities Last 28 Days				28 Days Trend	14 Day Rate of Change	
Community	From: 22-Jan-2021	From: 15-Jan-2021	From: 08-Jan-2021	From: 01-Jan-2021		
Concord	559	729	886	886		-27.31%
Kleinburg	36	36	59	33		-21.74%
Maple	26	33	40	53		-36.56%
Pending Neighbo...	147	163	239	252		-36.86%
Thornhill	3	4	7	5		-41.67%
Woodbridge	139	143	151	169		-11.88%
	208	350	390	374		-26.96%

- Weekly cases for the last 4 weeks for each Vaughan community
- 28-day trend graph (blue = low, red = high)
- 14-day rate of change for Vaughan is **-27.31%**
- **Maple & pending neighborhood** has seen the largest 14-day rate of change at **-36% and -41% respectively**

# Locational Intelligence

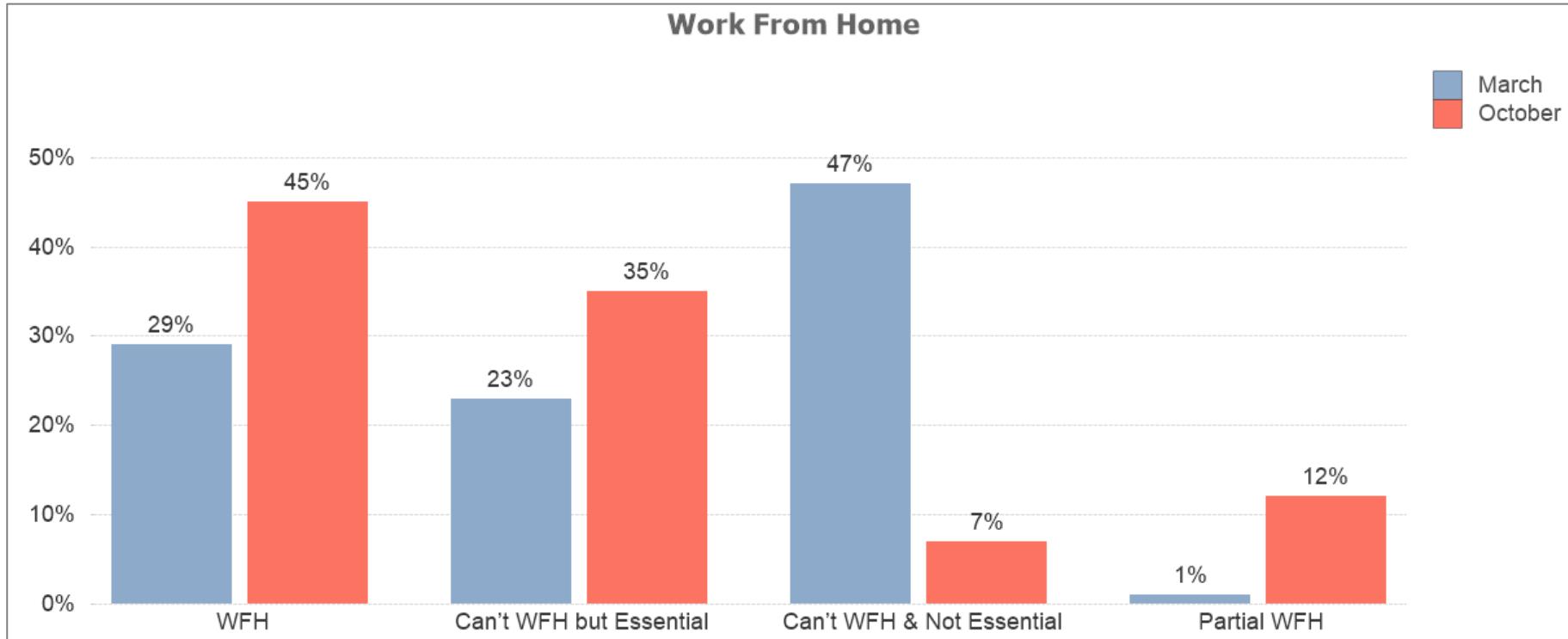


**Notes: Positivity FSA Mapping | January 17 to 23, 2021**

'Highest Test Positivity by Postal Code FSA' mapping displays the recent and trending positivity of local and neighbouring FSAs. Positivity refers to those individuals who are tested positive for COVID-19, given as a value per 100,000 population or percentage.

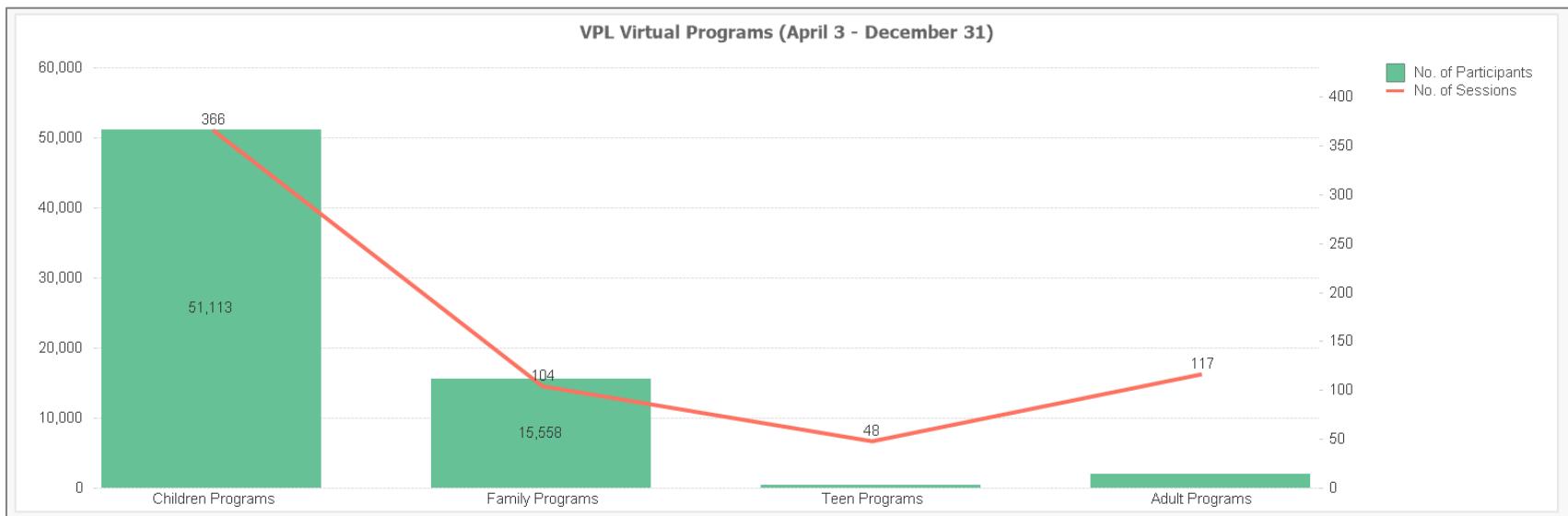
FSA is the *Forward Sorting Area*, which refers to the first three characters of a postal code. Data source: ICES COVID-19 Dashboard

# Data Insights | HR



- Approximately 45% of staff are WFH
- Approximately 35% of staff cannot WFH but are essential and on the front-line
- Approximately 7% of staff cannot work from home and are not essential to the front-line (predominately School Crossing Guards, VPL and Recreation casual/ part-time community centre staff).
- Implementation and improvement of OCIO technology may have increased certain department's ability to WFH between March and October, and have remained consistent through year end

# Data Insights | VPL



- VPL has enhanced their offerings through a variety of means including a greater virtual presence
- Over 600 virtual sessions have been held (predominately Children Programs) resulting in over 69,000 participants

## In the past 300 days

Registered on library platforms that enable digital downloads of e-books etc.

**6,761**

Weekly average of Hoopla and Overdrive items borrowed

**5,907**

Borrowed weekly through curbside pickup

**16,977**

Digital magazines borrowed

**24,236**

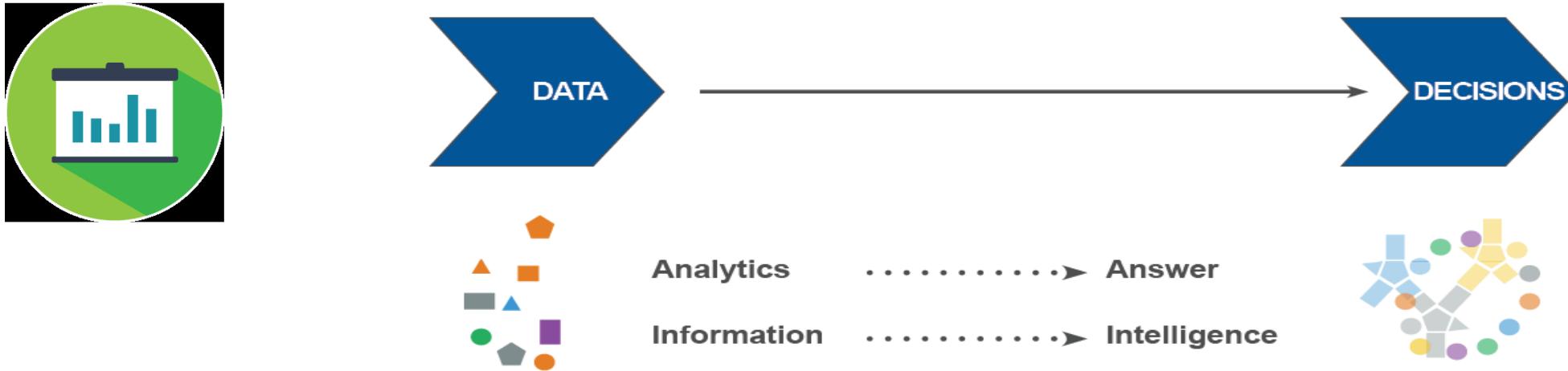
Magazine collection / titles increased due to demand

**3,700**

Pressreader – access to digital versions of newspapers – was consulted

**47,000**

# DATA TO DECISIONS (D2D)



- Park amenities re-openings; Facility re-openings; recreational services/programs
- Provincial reporting – (first interim report has been provided to the Province)
- Coordinating with York Region and the Province for targeted messaging to workplace clusters
- Coordinating with York Region and Province on setting up a mobile testing clinic for COVID-19 and vaccine clinics
- Inform Council – Triple R Committee reports, presentations to Mayor and interim reports (3) were viewed by Council
- Second wave / second restart planning and response

# Research

---

- Research Sources & topics over time:

- Country benchmarking and second wave
- Provincial re-openings
- Vaccine and scientific research
- Protests/demonstrations
- Mental Health and Inequality
- Variants

# Research Team

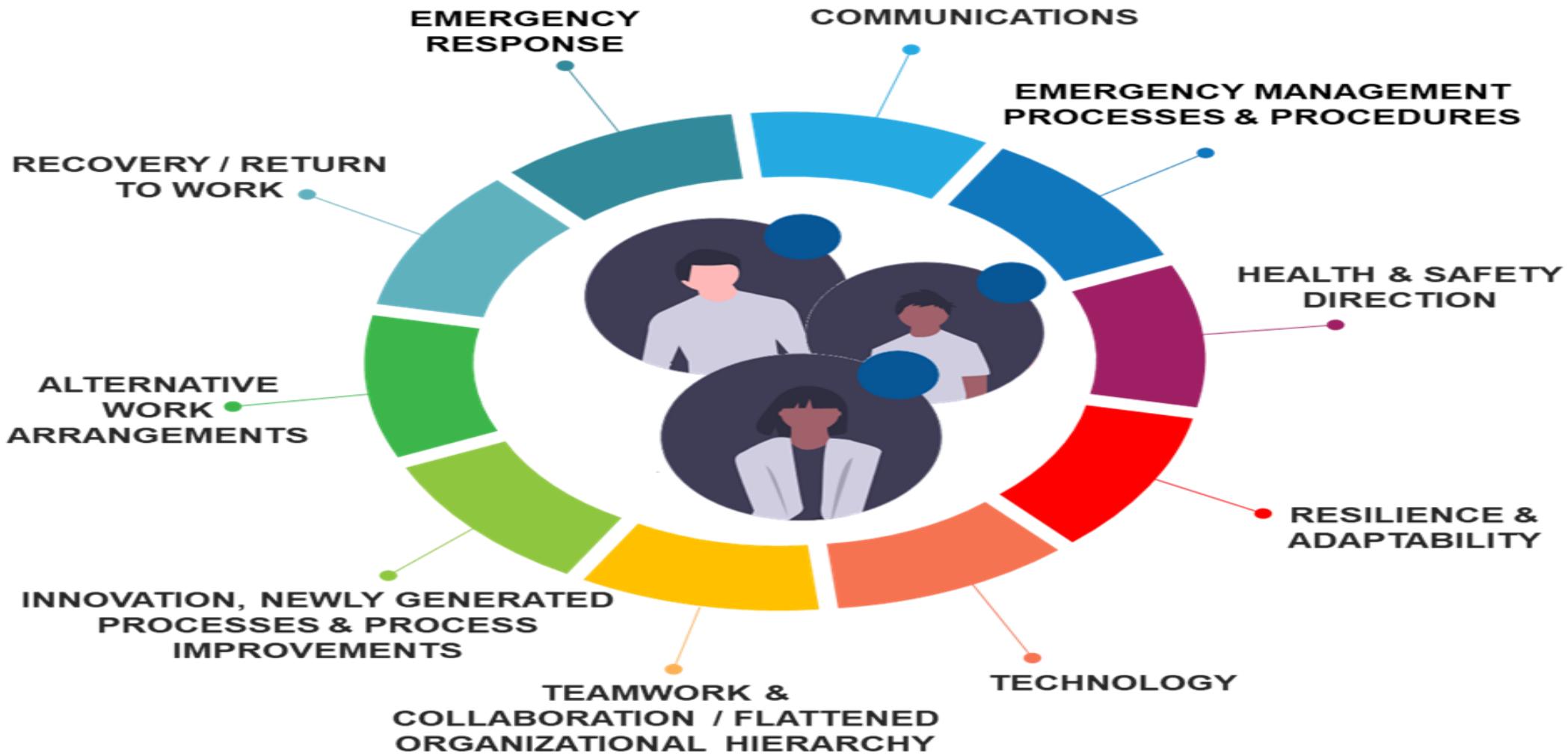
---

Highlighted countries that were **doing particularly** well and those who were **hit hard** with first wave - benchmarking

- Tracked re-openings
- Many countries have seen outbreaks in their **most vulnerable populations**
- **Notable outbreaks** have happened in **church** gatherings, **social** gatherings and **workplaces**
- Countries that have **relaxed many restrictions** at the same time have made it **difficult to determine what have caused the rise in cases**
- The **second wave** in most countries has been **spread by young people**, generally under 40
- Lag time between Europe/ Asia and Canada was 3 to 6 weeks

# Lessons Learned

10 MAIN THEMES



# Lessons Learned

---

- Emergency Management Specific – 35 recommendations to enhance our capacity
  - Business Continuity Planning
  - Emergency Plans and Procedures
  - Training and Exercises
  - Resources
  - Policy
- Daily Operations – 43 recommendations made
  - 28 completed
  - 13 in progress
  - 2 under review

# Lessons Learned

---

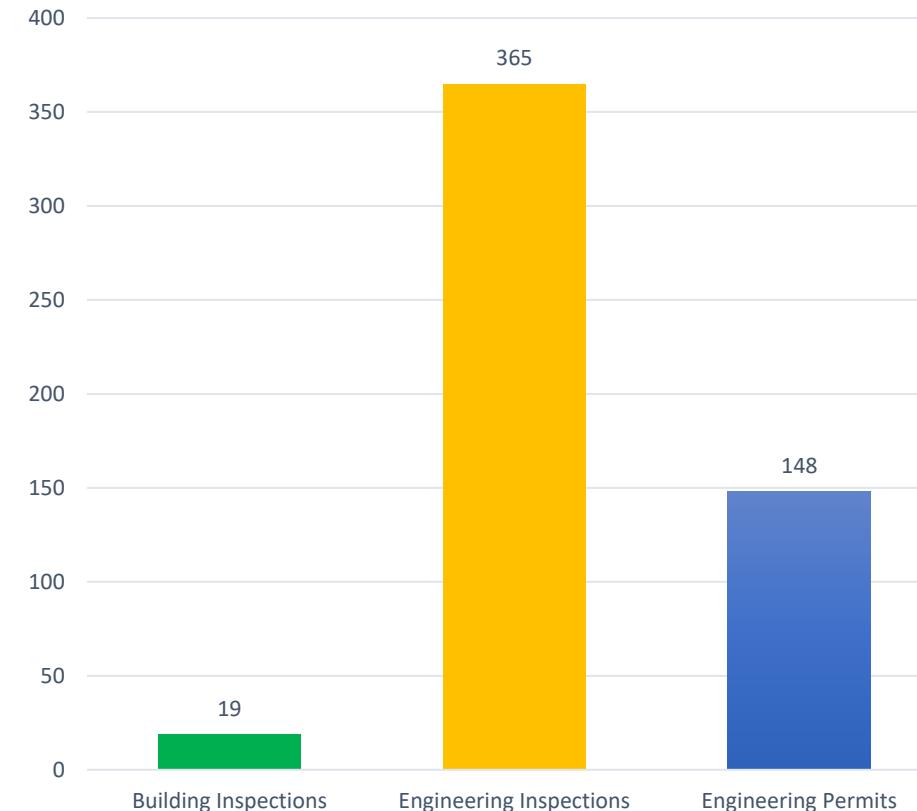
- Staff survey identified need for more mental health and work from homes
  - Resources rapidly implemented that are ongoing
- Past exercises and training helped team respond confidently
- Data and Analytics, Research and Lessons Learned Team will be added to the Emergency Plan
- Implemented 161 innovations and process improvements



# Lessons Learned

- Attitude towards work from home changed
- Support from senior management for data and analytics/research and lessons learned was essential
- Collected key performance metrics on non-emergency operations – “City building despite the pandemic
- Pandemic planning assumptions

Percent Increase in Service Delivery 2019 to 2020



# Challenges

---

## Data Challenges

- Data incorrectly posted
- Side of desk function
- Locating the appropriate data contact
- Not consumable
- Data cleaning
- Delays in receiving the data
- Lack of consistency
- Data is not catalogued

## Research Challenges

- Finding free and credible sources that were in English
- Access to academic level databases or news monitoring databases
- Sheer amount of information available
- Interpreting scientific information

# STAKEHOLDER VIEW

## Public Works

The EOC Data and Analytics team assisted in our parks reopening strategy. With guidance, protocols, and information from Province combined with statistics specific to Vaughan we were able to make an informed, methodical strategy towards re-openings of amenities within parks

## Economic Development

Data collected has been used for frequent reporting, including those to Council and externally in our response efforts

## Development Planning

The EOC reports help to understand the relationships with other Departments in the Portfolio. The data collected will inform the implementation of inter-departmental initiatives

## Corporate Communications

The data collection process has encouraged centralized and consolidated communications tracking efforts. It has provided an overview of communications efforts across the entire department from media products to design products that are delivered to support departmental initiatives, as well as content for Mayor and Members of Council to share with constituents through their social media and eNews platforms

## Human Resources

"helped HR pivot and **centralize our data collection** around the impacts of COVID-19 early on.... helped us **consolidate our information and optimize the use of Teams** to share data and ensure that everyone from OCHRO has easy access to current information... **helped us create initiatives** (i.e. focusing on wellness, HR directives, telework toolkit etc.), prepare for any risks, and helps us understand the impacts of our decisions. In reviewing our data for COVID, it has also initiated many **data clean-ups and process reviews**."



**Sharon Walker**  
**Manager, Emergency Planning**  
**Sharon.Walker@vaughan.ca**

