Hamilton

# PUBLIC HEALTH SERVICES POST-PEAK FRAMEWORK

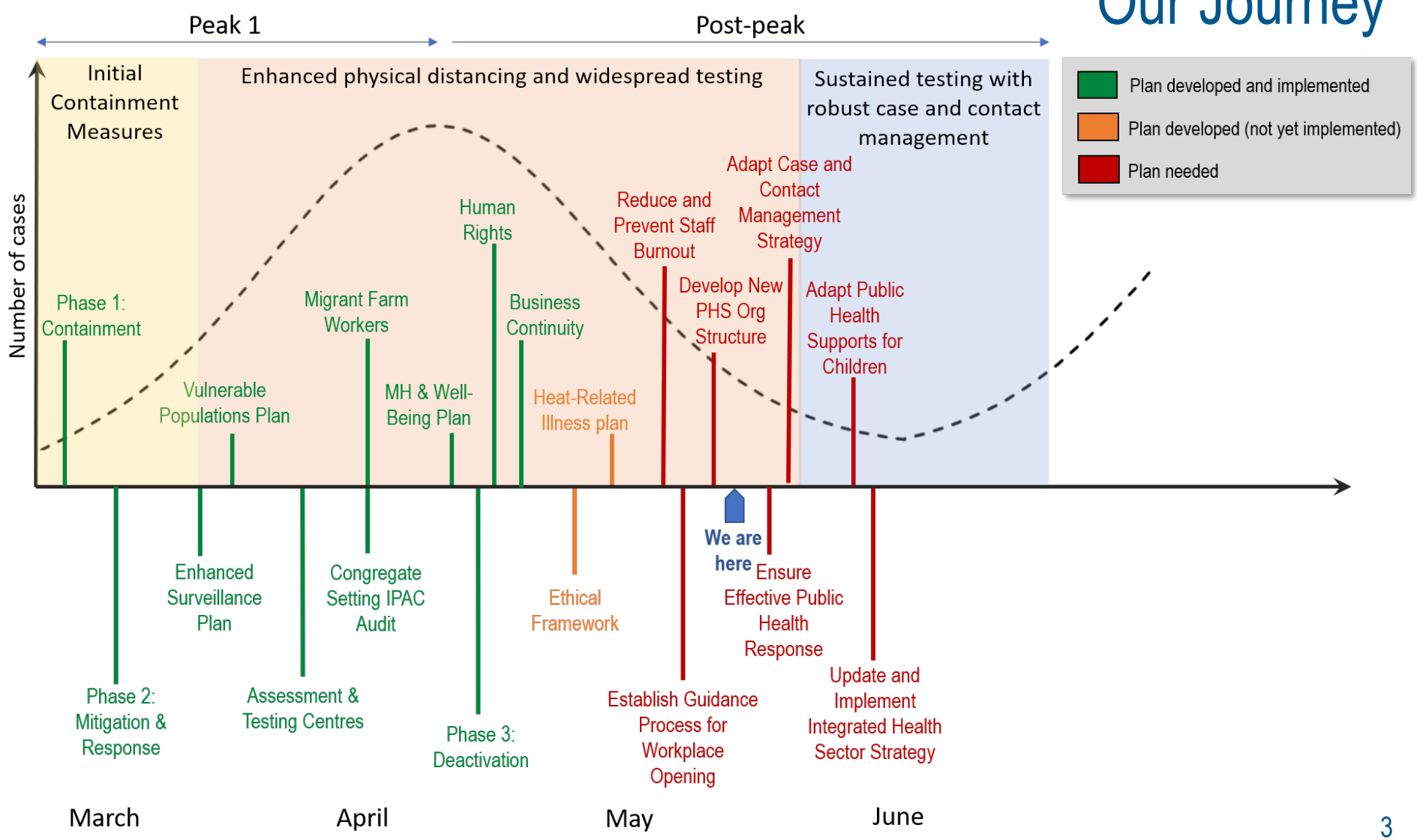
Presentation to City Council

May 27, 2020

# Our Journey

- Jan 25 – First case in Ontario
- Mar 11 – Pandemic declared (WHO)
  – First death in Ontario
  – **First case in Hamilton**
- Mar 12 – Closure of Ontario public schools
- Mar 13 – **First community acquired case in Hamilton**
- Mar 16 – **Assessment centres open in Hamilton**
- Mar 17 – Provincial emergency declared
- Mar 18 – Border closed to non-essential travel
- Mar 21 – **First outbreak declared at LTCH in Hamilton**
- Mar 24 – Closure of non-essential workplaces in Ontario
  – **First death in Hamilton**
- Mar 25 – Mandatory self-quarantine for travelers (Canada)
- Apr 10 – **Testing expanded**
- Apr 17 – **Drive-thru testing centre opens in Hamilton**
- Apr 22 – **Mass testing at LTCHs**
- Apr 27 – Ontario released *Framework for Reopening Our Province*
- May 4 – Certain businesses and workplaces allowed to reopen in Ontario
- May 19 – Schools to remain closed through end of school year

# Our Journey


Peak 1
Post-peak
Initial Containment Measures
Enhanced physical distancing and widespread testing
Sustained testing with robust case and contact management
Plan developed and implemented
Plan developed (not yet implemented)
Plan needed
Number of cases
Phase 1: Containment
Vulnerable Populations Plan
Migrant Farm Workers
MH & Well-Being Plan
Human Rights
Business Continuity
Heat-Related Illness plan
Reduce and Prevent Staff Burnout
Develop New PHS Org Structure
Adapt Case and Contact Management Strategy
Adapt Public Health Supports for Children
Phase 2: Mitigation & Response
Enhanced Surveillance Plan
Assessment & Testing Centres
Congregate Setting IPAC Audit
Phase 3: Deactivation
Ethical Framework
Establish Guidance Process for Workplace Opening
We are here
Ensure Effective Public Health Response
Update and Implement Integrated Health Sector Strategy
March
April
May
June

# Moving Beyond the First Peak

# Multi-Pronged Approach

- Business Closures
- School Closures
- Avoiding Gatherings
- Delaying Elective Healthcare
- Case and Contact Isolation/Quarantine
- Travel Bans
- Strengthening Institutional and Business IPAC
- Hygiene Practices

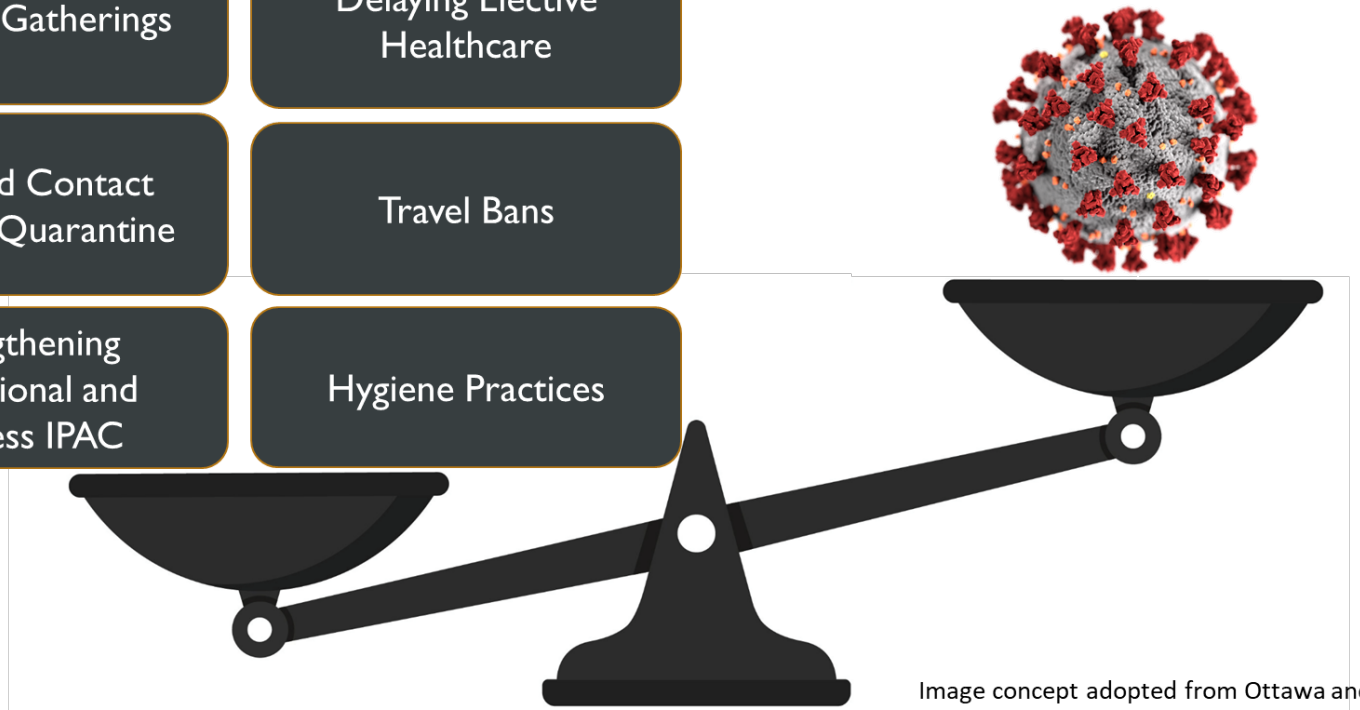
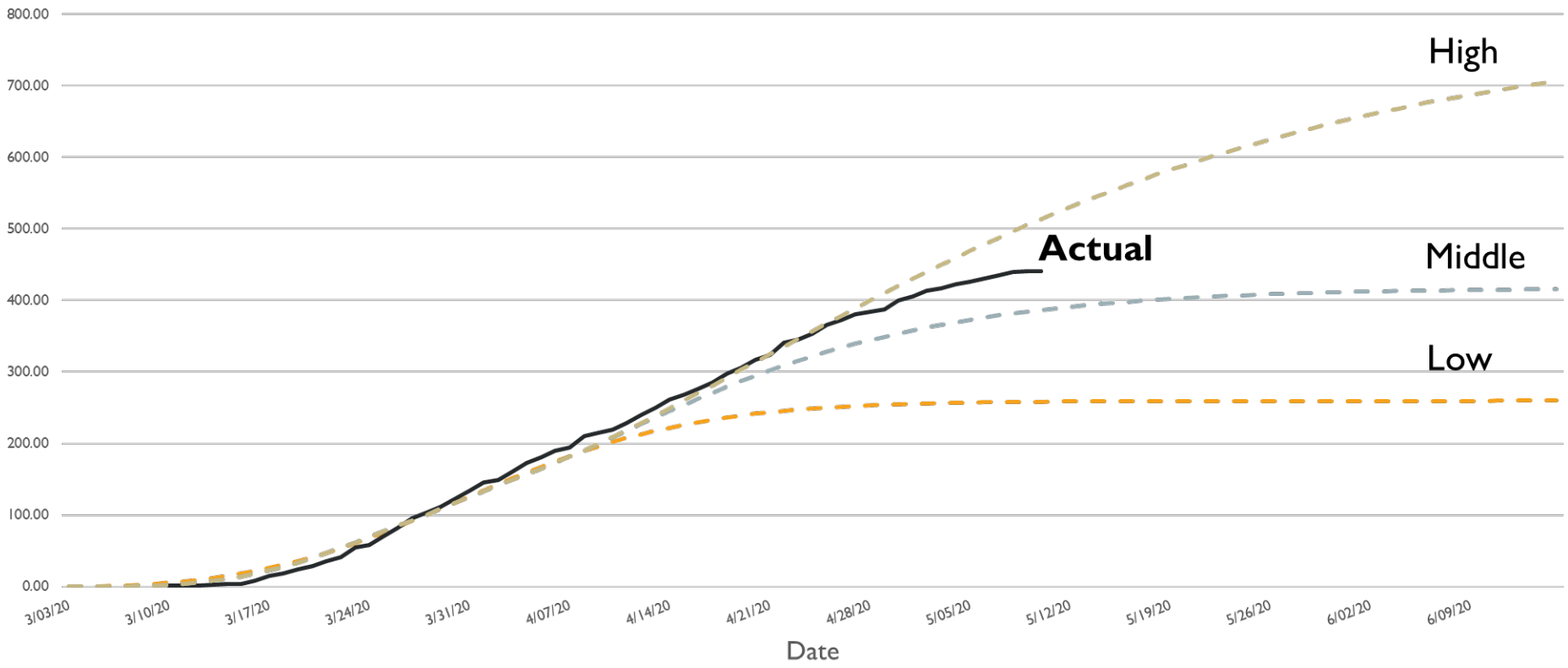


Image concept adopted from Ottawa and Halton Public Health

# Hamilton Observed and Projected Cases



# Extensive Physical Distancing Comes at a Cost

3 million jobs

13% Unemployment Rate

Suicide Risk

Substance Use

Complications of Diabetes and Hypertension

**Most vulnerable disproportionately impacted**

# Multi-Pronged Approach

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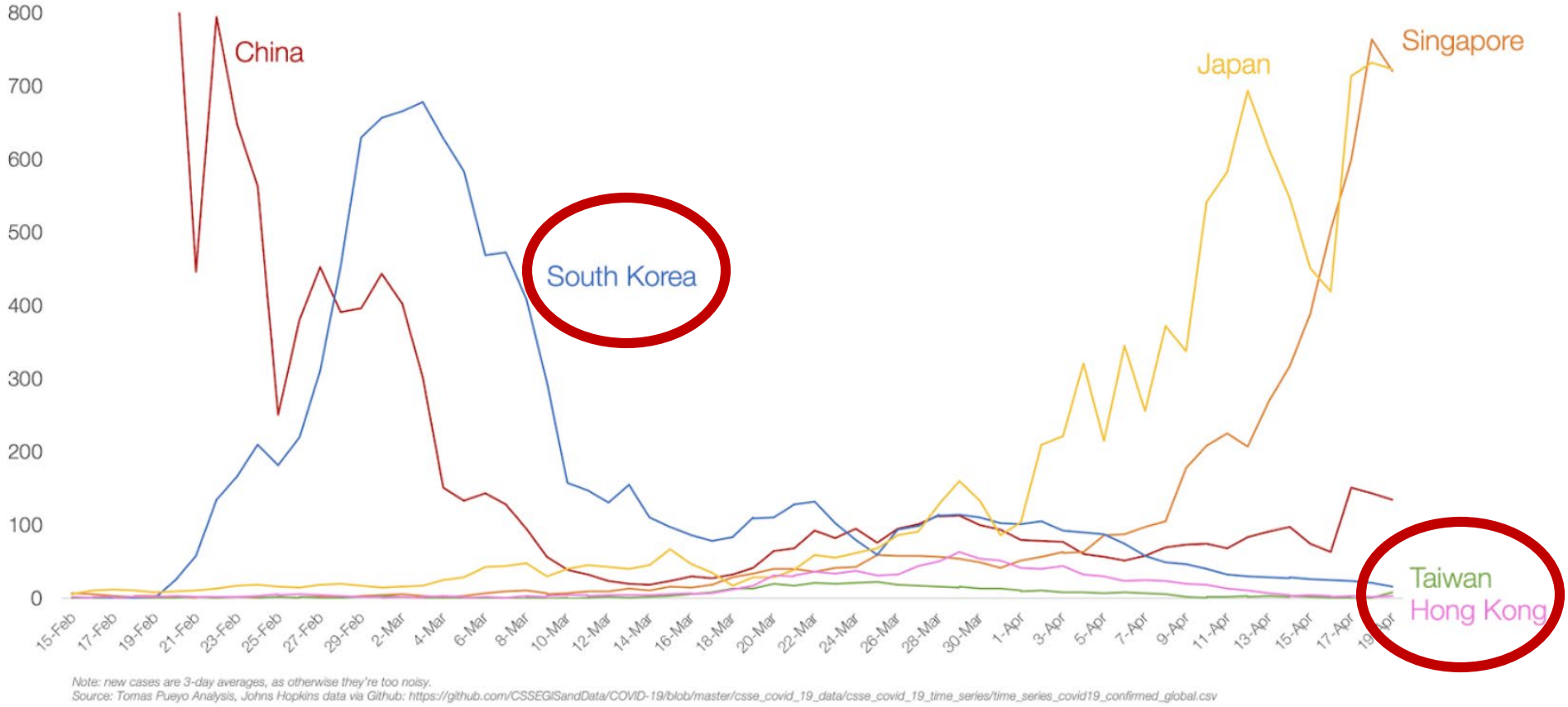
# What We've Seen in Other Countries




*Note: new cases are 3-day averages, as otherwise they're too noisy.*
*Source: Tomas Pueyo Analysis, Johns Hopkins data via Github: https://github.com/CSSEGISandData/COVID-19/blob/master/csse_covid_19_data/csse_covid_19_time_series/time_series_covid19_confirmed_global.csv*

# How Did They Do It?

| | HONG KONG | TAIWAN | SOUTH KOREA |
|---|---|---|---|
| Intensive Testing & Case/Contact Management | ✓ | ✓ | ✓ |
| Centralized Isolation & Treatment | ✓ | ✓ | ✓ |
| Prevalent Community Mask Wearing | ✓ | ✓ | ✓ |
| Widespread Business Closures | ✗ | ✗ | ✗ |

# Multi-Pronged Approach

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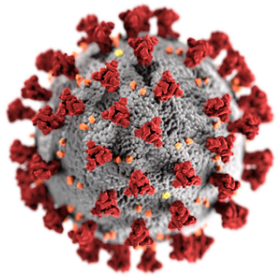


Image concept adopted from Ottawa and Halton Public Health

# Reorienting Public Health Measures

De-escalation

# Reorienting to Post-Peak Framework

| | PEAK 1: What have we been doing? | | POST-PEAK: What could we be doing? |
|---|---|---|---|
| **Testing** | High-priority populations; Congregate settings | → | All symptomatic individuals in community, and close contacts |
| **Contact Tracing** | Building capacity | **Consider:** Was the strategy during the peak ideal, or limited by barriers? What barriers continue to exist? | Quarantine within 1 day of symptoms; Expand capacity |
| **Widespread Physical Distancing Measures** | School and business closures | | Universal masking; Enhanced workplace IPAC |
| **Primary Care** | Community management; Increased virtual care | | Increase community management capacity |
| **Hospitals** | Cohorting within hospitals; Delay elective services | | Designate COVID hospitals; Resume elective services |
| **Congregate Settings** | Manage outbreaks; Enhance IPAC | → | Maintain strengthened IPAC; Manage outbreaks |

# Post-Peak Framework

**Objectives:**

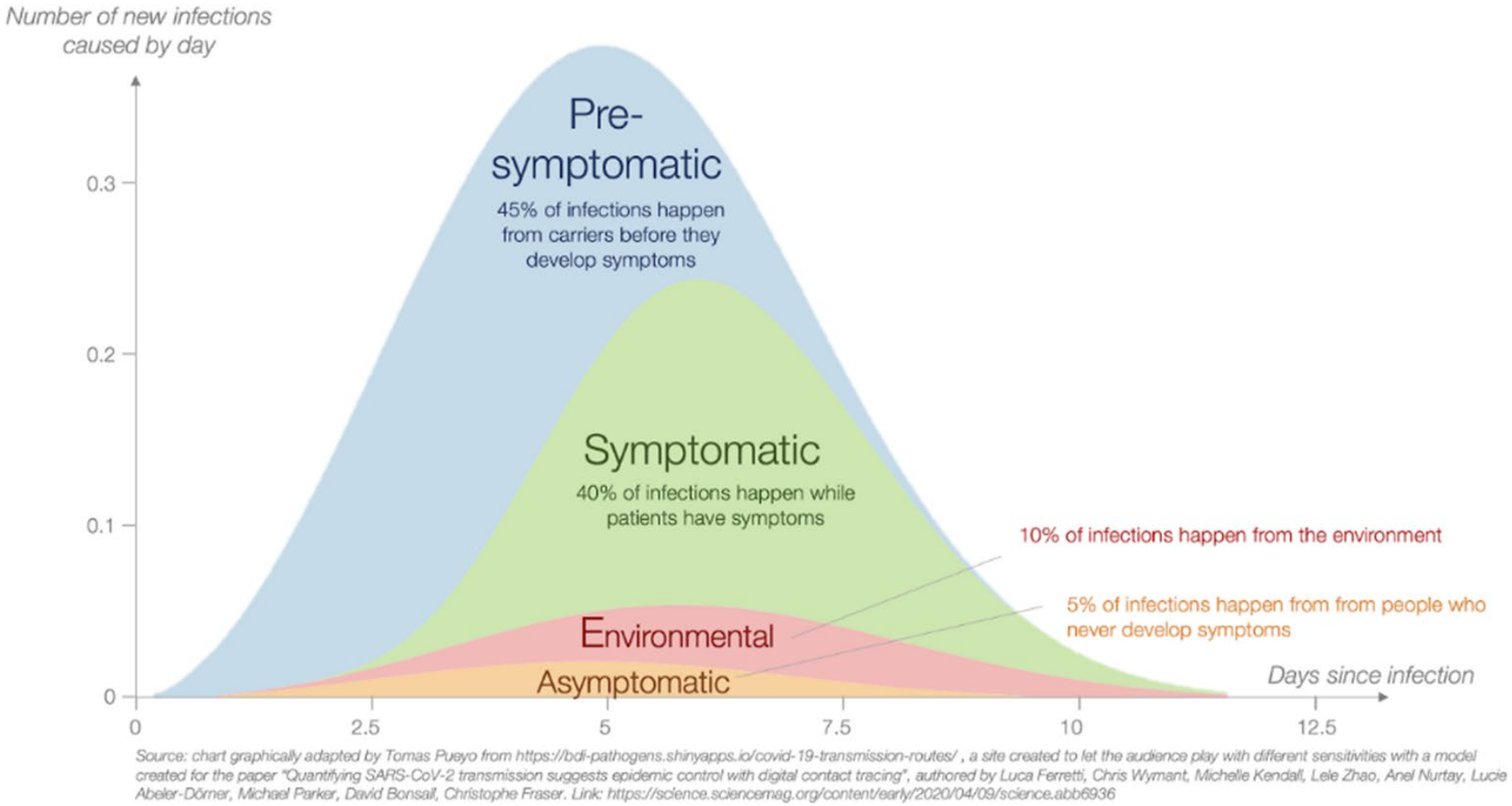
- To prevent or reduce the trajectory of Wave 2 through reorienting public health measures
- To minimize morbidity and mortality from COVID and non-COVID causes
- To minimize the potential negative health impacts of the COVID response
- To support Hamilton in resuming social and economic functioning in a safe manner
- To protect the most vulnerable

# Key Components of Post-Peak Framework

| Communications and Engagement | Safe Reopening of Businesses | Epidemiology and Surveillance | Testing, Case Management / Contact Tracing | Protect individuals who are most at risk |
|---|---|---|---|---|
| • Internal (city) and external outreach<br>• Partner / stakeholder outreach<br>• Seek ideas and input into local activities and response<br>• **Support alignment of public health messaging including neighboring regions (when possible)** | • **Support City and business community in assessing and mitigating risk to re-open**<br>• **Strengthen IPAC to minimize risk (e.g. community mask wearing)**<br>• Provide input to inform provincial guidance | • Monitor & report on range of outcomes<br>• Analyze for clusters & community transmission<br>• Track performance of interventions<br>• **Maintain dashboard to track progress**<br>• **Monitor triggers to relax/increase restrictions** | • **Widespread testing of symptomatic individuals**<br>• **Rapid case and contact management to achieve isolation**<br>• **Explore options for voluntary centralized isolation** | • Support for isolation (HCW, homeless, etc.)<br>• Mental health promotion and supports |

Adapted from Ottawa Public Health

# Intensive Case and Contact Management




Source: chart graphically adapted by Tomas Pueyo from https://bdi-pathogens.shinyapps.io/covid-19-transmission-routes/ , a site created to let the audience play with different sensitivities with a model created for the paper "Quantifying SARS-CoV-2 transmission suggests epidemic control with digital contact tracing", authored by Luca Ferretti, Chris Wymant, Michelle Kendall, Lele Zhao, Anel Nurtay, Lucie Abeler-Dörner, Michael Parker, David Bonsall, Christophe Fraser. Link: https://science.sciencemag.org/content/early/2020/04/09/science.abb6936

**Recommendation #1:**

Encourage individuals with any COVID-19 symptoms to present for testing within 24 hours of symptom onset.

**Recommendation #2:**

Increase capacity for intensive and timely case and contact management.

**Recommendation #3:**

Support cases/contacts and their families during isolation and quarantine.

# Key Metrics for Reopening

| Virus Spread and Containment | Healthcare System Capacity | Public Health System Capacity |
|---|---|---|
| Daily incident cases | Critical care capacity, including ventilators | Aim to detect cases with 1-2 days of symptom onset |
| Cases that cannot be traced to another case | PPE availability | Less than 24 hours from case detection to isolation and contact tracing |
| Incident cases associated with institutions | | Capacity to test all symptomatic individuals |

- Development of performance metrics will also be key in ensuring an effective recovery

# Supporting Case/Contact Management

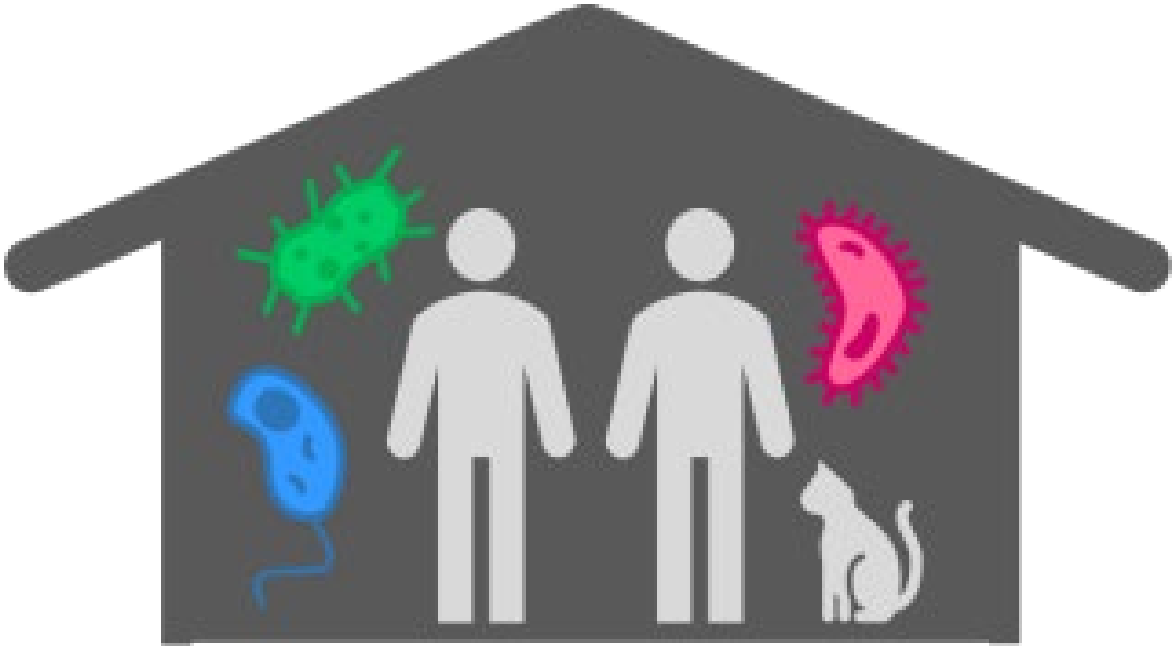
- Timely contact tracing is key to containing COVID-19
- During Hamilton's peak:
  - average **12 daily cases**
  - **80 staff** for case/contact management and monitoring excluding outbreak management
  - **significant redeployment** and service reduction

- Currently:
  - average 4 non-outbreak daily cases, **64 staff members**
  - not sustainable with reopening
- **To detect 5x more cases**, requires at least **133 staff**

- More case/contact management staff will be essential to the ongoing campaign to contain COVID-19

# Providing Out-of-Home Isolation

- Approximately **2 out of 3 cases** related to infection in the home
- Providing out-of-home isolation is a strategy that has been used internationally to reduce or eliminate this source of transmission



**Recommendation #4:**

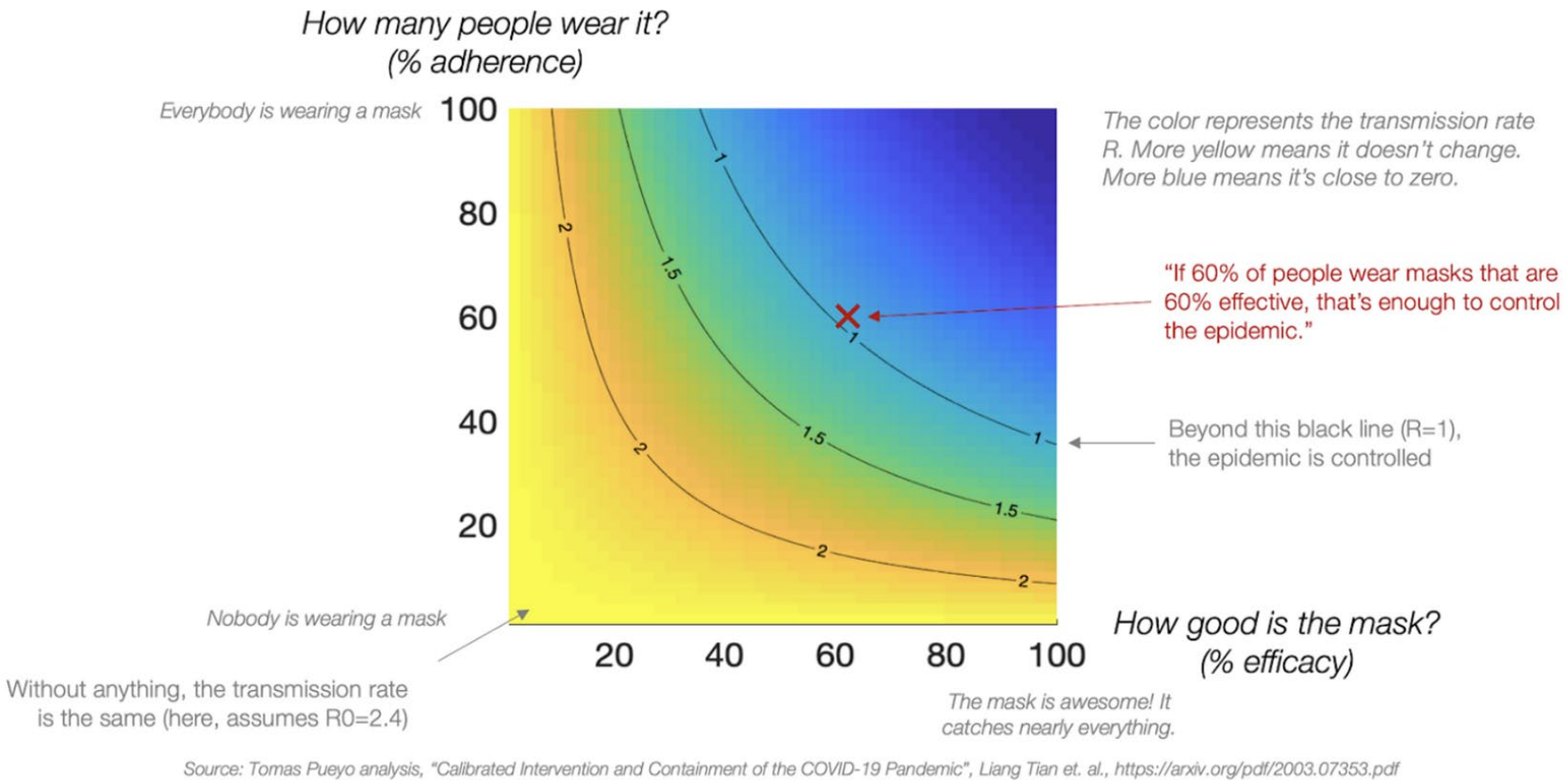
Continue highlighting the importance of physical distancing, hand hygiene and respiratory etiquette.

**Recommendation #5:**

Endorse mask wearing in the community with homemade cloth masks with at least two layers.

# Community Mask-Use

# Community Mask-Use

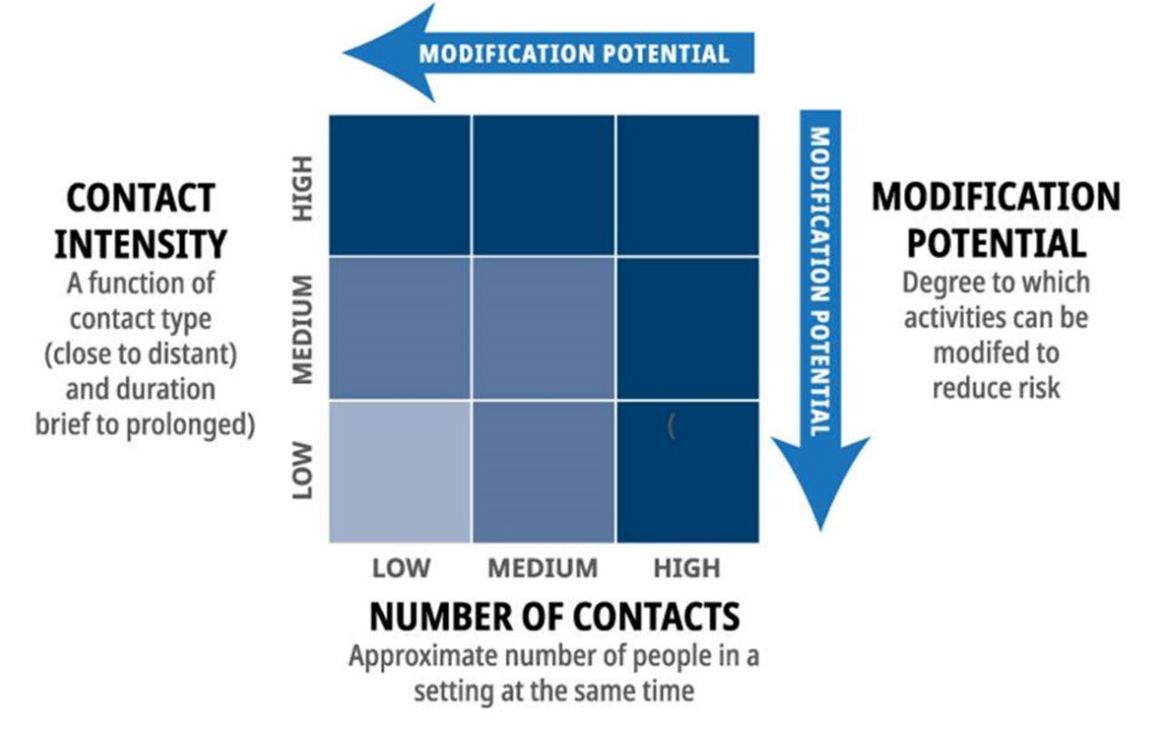



Source: Tomas Pueyo analysis, "Calibrated Intervention and Containment of the COVID-19 Pandemic", Liang Tian et. al., https://arxiv.org/pdf/2003.07353.pdf

# Assessing Risk

**Recommendation #6:**

Utilize a risk-based approach to guide the safe reopening of businesses and workplaces.



# Risk Assessment Factors

**Contact Intensity**

- Enclosed Space
- Size of Room
- Average visit duration
- U/V light Exposure
- Ability to maintain 6 feet separation
- Amount of Talking
- Loudness of talking (e.g. yelling/singing)
- Frequency of touching common surfaces
- Visitors facing each other
- Ventilation

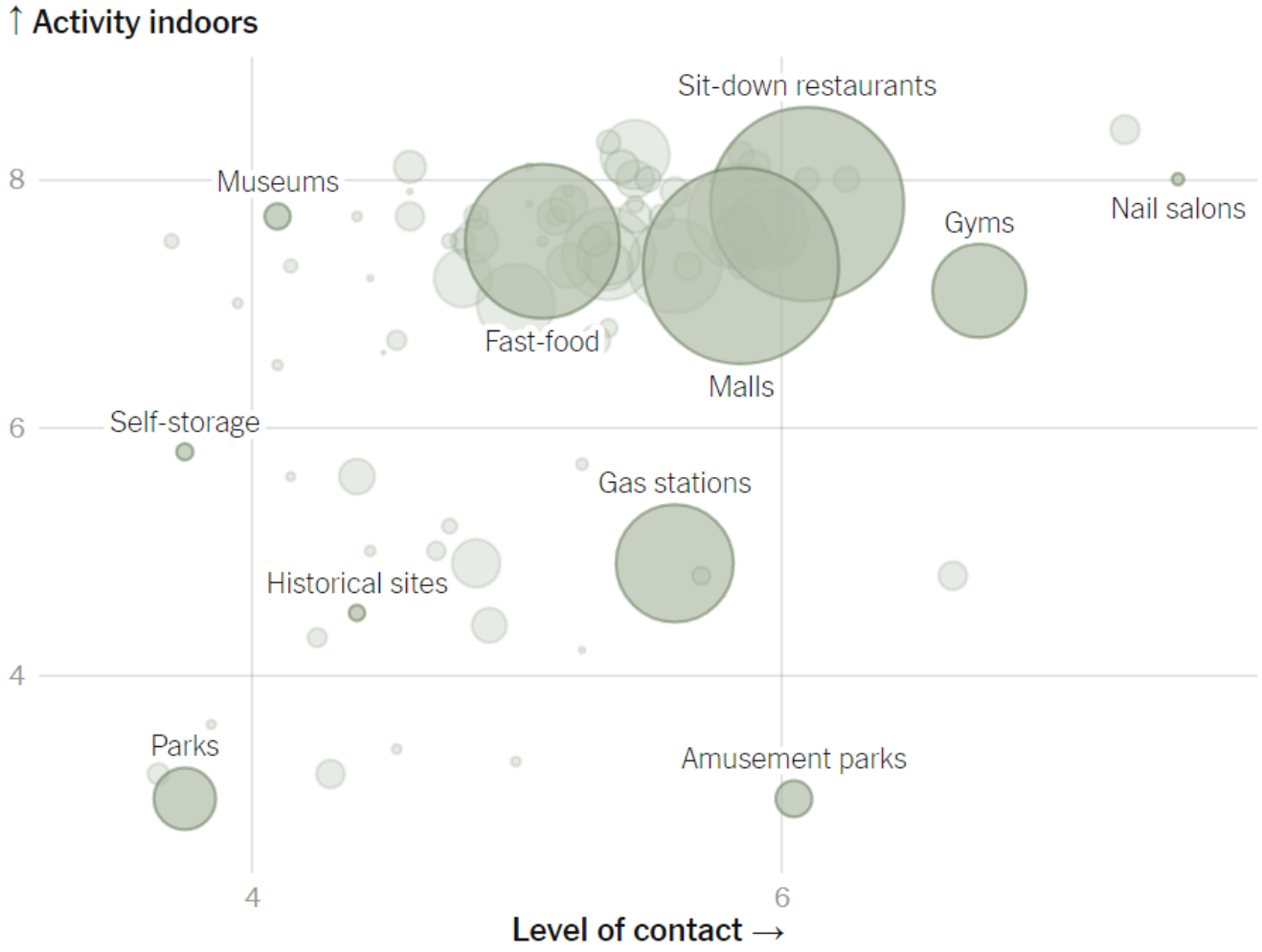
**Number of Contacts**

- Absolute number of visitors
- Average proportion of group infected higher with higher numbers of contacts
- More unique visitors over time entails greater risk (e.g. coffee shops vs. banks)

# Risk Assessment Examples

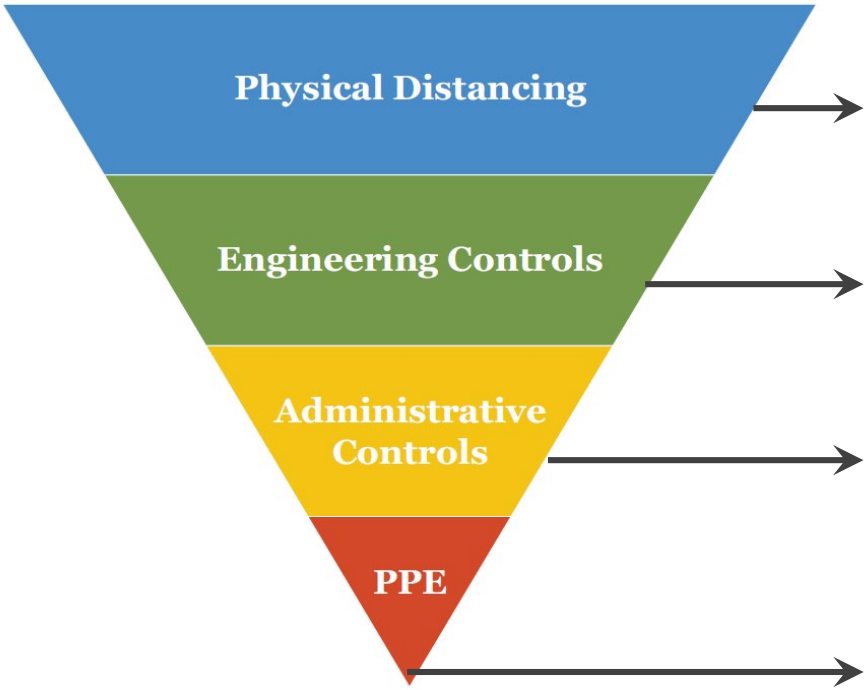
| Venue | Factors Increasing Risk | Factors Decreasing Risk |
|---|---|---|
| **Outdoor Park** | • N/A | • Usually possible to maintain physical distancing<br>• No enclosed airspace<br>• U/V light exposure |
| **Grocery Store** | • Enclosed airspace<br>• Prolonged exposure for staff<br>• Large numbers of customers<br>• Difficult to maintain physical distancing at all times | • Large interior volume<br>• Customers have a limited duration of exposure<br>• Limited yelling/singing |
| **Indoor Restaurant** | • Small enclosed airspace<br>• Difficult to maintain physical distancing<br>• Prolonged periods of exposure for customers and staff<br>• A lot of speaking, yelling, and chewing<br>• Individuals at tables are facing each other | • Depending on restaurant size, may be limited numbers of customers |

# Risk Assessment Examples



# Mitigating Risk

## Hierarchy of Controls




## Example Controls for Fast-Food Restaurants

Remain closed; drive though only; Add floor markings to encourage distancing and manage traffic flow; minimize use of cash and move electronic card reader away from cashier

Install barriers/plexiglass between cashiers and customers, ensure proper and adequate ventilation

Implement a self-screen policy for employees, educate employees on steps they can take to protect themselves at work and at home, restrict number of employees onsite and where they're assigned work

Provide non-medical cloth masks for employees

*Adapted from U.S. Centers for Disease Control and Prevention's National Institution for Occupational Health and Safety for the purposes of COVID-19*

# Recommendations

1. Encourage individuals with any COVID-19 symptoms to present for testing within 24 hours of symptom onset.
2. Increase capacity for intensive and timely case and contact management.
3. Support cases/contacts and their families during isolation and quarantine.
4. Endorse mask wearing in the community with homemade cloth masks with at least two layers.
5. Continue highlighting the importance of physical distancing, hand hygiene and respiratory etiquette.
6. Utilize a risk-based approach to guide the safe reopening of businesses and workplaces.
7. Identify and address barriers to implementation of recommendations.

# Providing Out-of-Home Isolation

- McMaster University has offered **50 – 75 large residence rooms** to be used by the public for out-of-home isolation (with a strong potential to increase the number of rooms after piloting)
- They've already been doing this for resident doctors
- The cost per room is $32/day per person with an additional $20/day for 3 meals
- At peak, we had approximately **240 active cases** and as of Thursday, May 21st we had **201 active cases**
- With 75 rooms we could offer a space to 37% of current active cases
- If these rooms remained full for the next 6 months, it would cost $702 000 or $351 000 if only half of the rooms were in use on average
- A **Survey** will be conducted to assess community acceptability and interest

# Supporting People Who Are Isolating

- As of Thursday, May 21st, there have been **605 COVID-19 cases**

| Support Option | Potential Cost – no 2nd peak (3240) | Potential Cost – 2nd peak (5790) | Potential Cost - 5x detection and no 2nd Peak (16 200) |
|---|---|---|---|
| $50 to Everyone who Isolates or Quarantines | $162 000.00 | $289 500.00 | $1 447 500.00 |
| Weekly Grocery Supplement at $15/week | $72 900.00 | $130 275.00 | $651 375.00 |
| Free access to city services for 1 year (based on $5.3 million overall user fees in 2018) | $29 647.79 | $52 981.70 | $264 908.49 |

# Next Steps

**Debrief/Lessons Learned**

- Facilitate debrief with PHECG, City EOC, and health sector to inform further planning

**Community Masking**

- Form a workgroup to develop key messages (with Communications) and resources for the public, connect with City EOC re: distributing masks to vulnerable populations
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**Surveillance & Performance**

- Integrate metrics agreed upon by GTHA MOHs
- Develop performance metrics and bring forward to PHECG on May 19

**Testing/Case Management**

- Form a workgroup to develop key messages (with communications) re: testing after 24 hours of symptom onset and ways to streamline testing (e.g. eliminating need for referral, prioritizing case/contact testing at HRLMP)
- Work with City EOC to develop options to increase case management capacity

**Isolation**

- Work with Health Sector re: community treatment and designated COVID hospital
- Work with City EOC to develop options for voluntary centralized isolation and supports for individuals isolating

**Safe Reopening**

- Workgroup within Planning has been formed to lead PH component while coordinating with City EOC workgroup

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