PUBLIC HEALTH SERVICES

COVID-19 AFTER-ACTION REPORT

Hamilton

> COVID-19 was a significant public health – and societal - crisis both globally and locally that impacted how Hamilton Public Health Services delivers services. It also provided us with an opportunity to assess our performance to leverage our successes and learn how we can continually improve in our response. We've identified several recommendations that will help further our preparedness and resiliency for future emergencies.
>
> ***Dr. Elizabeth Richardson***
> *Medical Officer of Health*

PUBLIC HEALTH SERVICES

COVID-19 **AFTER-ACTION REPORT**

Contents

Hamilton

Introduction

On March 11, 2020, the World Health Organization declared the novel coronavirus (COVID-19) outbreak a global pandemic, which coincided with the first case in Hamilton. Locally, Public Health Services (PHS) had been working with health system partners since late January 2020 to prepare for the emerging virus. The magnitude and complexity of the response required an all hands-on deck approach over the next couple of years. Between March 2020 and December 2022, 72,060 cases of COVID-19 were reported in Hamilton and 658 deaths. At times during that period, PHS had over 500 employees dedicated to the response. Their dedication, combined with the significant actions and sacrifices of the community, helped prevent further tragedy and should be commended. Even with these collective efforts, the COVID-19 pandemic has created lasting mental, emotional, social, and economic impacts locally and across the world.

Emergency management is one of the Foundational Standards outlined in the Ontario Public Health Standards: Requirements for Programs, Services, and Accountability (Standards). Under these Standards, the Board of Health is required to:

> *"effectively prepare for emergencies to ensure 24/7 timely, integrated, safe, and effective response to, and recovery from emergencies with public health impacts, in accordance with ministry policy and guidelines."*

Further, Ontario's Emergency Management Guideline (2018) supports Boards of Health in "developing, implementing, and evaluating emergency management programs according to the requirements of the Standards." The Standards and the Guideline both highlight the importance of focusing on continuous improvement and documenting the emergency response to strengthen practice and support learning. It is critical to review and assess actions taken during an emergency response to document and debrief successes, challenges, learnings, recommendations, and actions for improvement (World Health Organization, 2019). This process is known as an After-Action Review (AAR).

This report shares findings from an AAR conducted to evaluate the structure and functioning of PHS' Incident Management System (IMS). The report is an internal review by staff with a focus on processes that supported the response as opposed to specific outcomes or actions. By focusing on internal functioning and processes, findings will be more applicable and relevant to aid in future emergency responses.

-A-GLANCE

COVID-19 in Hamilton

Between **March 2020** and **December 2022**:

72,060
cases reported

658
deaths reported

1,249
outbreaks declared

537,019
tests completed at Hamilton assessment centres

1,432,325
vaccine doses administered

Hamilton

Response Overview & Timeline

IMS is a documented approach used for managing emergency incidents, guided by the principles of communication, coordination, collaboration, and flexibility (Emergency Management Ontario, 2021). IMS is an industry best practice and is used nationally, provincially and locally when responding to an emergency. IMS provides common structures and roles that can be adapted to any emergency, in order to delineate responsibilities and support effective communication in a response. The core functions of an IMS are Coordination and Command, Operations, Planning, Logistics, Public Information Management (Communication), and Finance and Administration. Each of these functions is governed by a dedicated Section Chief.

This after-action report focuses on PHS' internal IMS structure. There were several IMS structures that guided the City of Hamilton's COVID-19 response. The City of Hamilton Emergency Operations Centre (EOC) governed the municipal response and has completed an After-Action Review using a similar approach. Although PHS was responsible for developing and implementing the COVID-19 vaccine administration plan, many aspects were undertaken and supported by healthcare and community partners through the Vaccine Task Force, a subgroup of the Hamilton COVID-19 Response Table. Feedback from partners specific to the vaccine rollout is included in this report to ensure successes, challenges, and recommendations are captured to support future emergency responses. In addition, lessons learned from community engagement in the COVID-19 vaccine rollout are captured in the "Community Impact on Equitable Vaccine Delivery in Hamilton" report (2022), prepared by the Vaccine Readiness Network.

Structure

The graphic below depicts a truncated version of the IMS structure that PHS operated in throughout the COVID-19 response. The actual structure consisted of many subsections not shown below that expanded and contracted throughout the various COVID-19 waves.

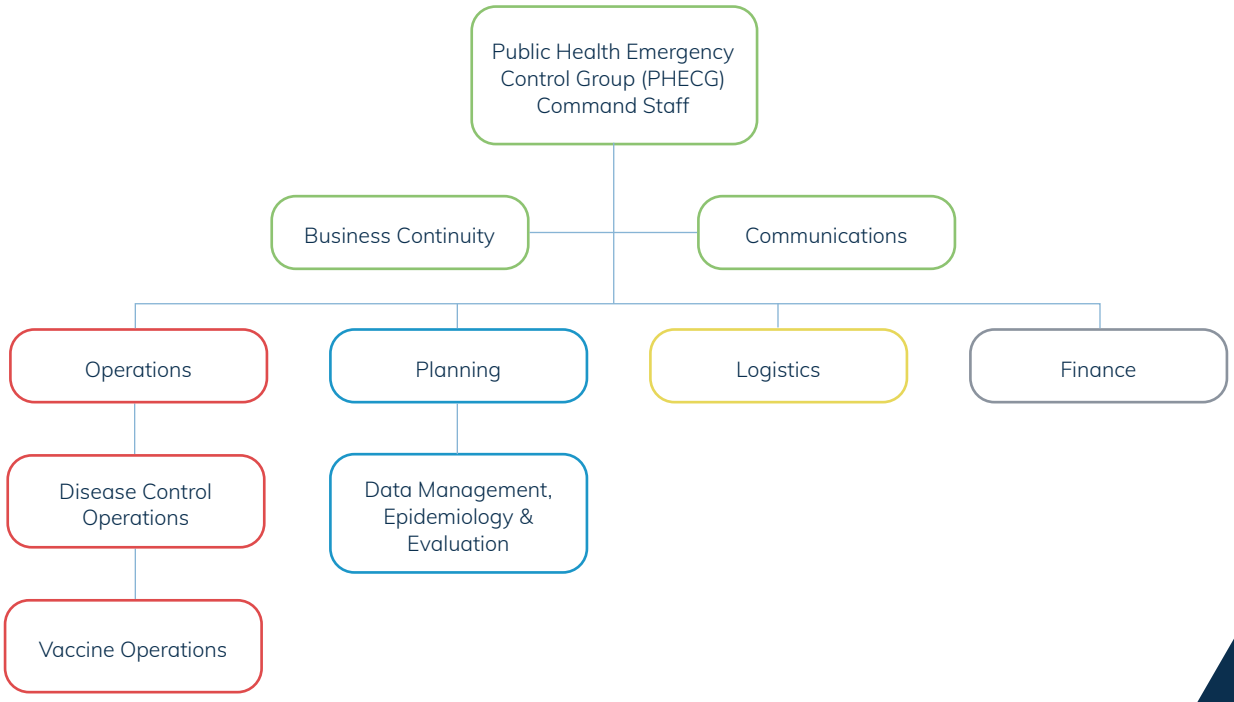

Figure 1: PHS COVID-19 IMS Structure

Timeline

2020

JAN 24 — PHS establishes internal COVID-19 planning group

JAN 28 — First meeting of the Health Sector Emergency Management Committee (HSEMC)

MAR 11 — First COVID-19 case in Hamilton

MAR 12 — City of Hamilton activates the Emergency Operations Centre

MAR 12 — Ontario orders schools to close for two weeks following March Break

MAR 16 — Hospital assessment centres open (COVID-19 polymerase chain reaction (PCR) Testing Site)

MAR 17 — Province declares first State of Emergency

MAR 20 — First COVID-19 outbreak in Hamilton

MAR 23 — Province orders closing of non-essential businesses

APR 12 — Province announces all schools moved to remote learning

APR 17 — Drive-through COVID-19 testing centre opens at Dave Andreychuk Mountain Arena

APR 17 — Declaration of Municipal Emergency

APR 27 — Province releases "A Framework for Reopening our Province"

JUN 19 — Hamilton moves to Provincial Phase 2: Restart as part of "A Framework for Reopening our Province"

JUL 17 — Council approves mandatory masking by-law effective July 20

JUL 22 — Ontario Legislature passes *The Reopening Ontario Act, 2020*

JUL 24 — Hamilton moves to Provincial Phase 3: Recover as part of "A Framework for Reopening our Province"

JUL 24 — Provincial State of Emergency declaration ends

AUG 12 — HSEMC transitions to Hamilton COVID-19 Response Table (H-CRT)

AUG 13 — Council approves physical distancing by-law

SEP 14 — HWDSB and HWCDSB decide that the majority of Hamilton schools will reopen to students

OCT 2 — Province announces restrictions including province-wide masking regulations and pause on social circles/bubbles

NOV 3 — Province releases "Keeping Ontario Safe and Open Framework"

NOV 7 — Hamilton enters Yellow "Protect" Category as part of the "Keeping Ontario Safe and Open" framework

NOV 16 — Hamilton moved to Red "Control" Category as part of the "Keeping Ontario Safe and Open" framework

DEC 13 — COVID-19 vaccine arrives in Canada

DEC 20 — First Vaccine Readiness Network meeting held

DEC 21 — Hamilton enters Grey "Lockdown" category as part of the "Keeping Ontario Safe and Open" framework

DEC 23 — Hamilton Health Sciences Vaccine Clinic opens

DEC 23 — First COVID-19 vaccine administered in Hamilton

DEC 26 — Province-wide shutdown begins

DEC 26 — Ontario confirms first cases of Delta variant

2021

JAN 3 — Province announces all schools moved to remote learning

JAN 12 — Province declares second State of Emergency

JAN 14 — Stay-at-Home Order Begins in Ontario

FEB 8 — Province announces that most schools, including those in Hamilton, can reopen for in-person learning

FEB 9 — Provincial State of Emergency declaration ends

FEB 16 — Hamilton enters Red "Control" Category as part of the "Keeping Ontario Safe and Open" framework

MAR 1 — St. Joseph's Healthcare Hamilton Vaccine Clinic opens

MAR 2 — PHS Mobile Vaccine Clinics open

MAR 22 — PHS opens FirstOntario Centre Vaccine Clinic, with support from EOC, redeployed City of Hamilton staff, and community partners

MAR 29 — Hamilton moves to Grey "Lockdown" Category as part of the "Keeping Ontario Safe and Open" framework

APR 3 — Province initiates "Emergency Brake" for entire province, reinstating a number of public health measures

APR 7 — Province announces two "hot spot" postal codes in Hamilton, opening up vaccine eligibility for people living in these neighbourhoods

APR 7 — Province declares third State of Emergency

APR 8 — Stay-at-Home order issued for Ontario

APR 9 — Hamilton identifies three additional "hot spot" postal codes based on local data, further increasing vaccine eligibility

APR 12 — Province announces all schools moving to remote learning

APR 23 — Black and other racialized community members prioritized for COVID-19 vaccination locally for residents 18+ in "hot spot" postal codes

MAY 6 — David Braley Health Sciences Centre Vaccine Clinic opens (led by primary care partners)

MAY 10 — Local Vaccine Ambassador Program launches

MAY 20 — Province announces "Roadmap to Reopen" plan

JUN 2 — Provincial emergency declaration and the Stay-at-Home Order end

JUN 11 — Step 1 as part of "Roadmap to Reopen" begins

JUN 16 — ArcelorMittal Dofasco Vaccine Clinic opens

JUN 30 — Step 2 as part of "Roadmap to Reopen" begins

JUL 16 — Step 3 as part of "Roadmap to Reopen" begins

JUL 29 — ArcelorMittal Dofasco Vaccine Clinic closes

AUG 2 — Hamilton Health Sciences Vaccine Clinic closes

AUG 17 — Province announces pausing of exit from the "Roadmap to Reopen"

AUG 29 — FirstOntario Centre Vaccine Clinic closes

SEP 3 — St. Joseph's Healthcare Hamilton Vaccine Clinic closes

SEP 8 — Hamilton school boards reopen for in-person learning

SEP 22 — Province's Proof of Vaccination requirements come into effect

OCT 22 — Province announces plan to "Safely Reopen Ontario and Manage COVID-19 for the Long-Term"

NOV 3 — Mountain Vaccine Clinic at Lime Ridge Mall opens

Timeline

NOV 8
Hamilton Health Sciences West End Vaccine Clinic for Healthcare Workers opens

NOV 11
St. Joseph's Healthcare Hamilton Vaccine Clinic reopens

NOV 18
Centre on Barton Vaccine Clinic opens

NOV 28
Ontario confirms first two cases of Omicron variant

DEC 10
Province announces measures to protect against Omicron variant including delaying lifting proof of vaccination requirements

DEC 16
Major redeployment of City of Hamilton staff begins to support vaccination effort in response to Omicron surge

2022

JAN 5
Province moves to a modified Step 2 of the "Roadmap to Reopen"

JAN 16
Hamilton Health Sciences West End Vaccine Clinic for Healthcare Workers closes

JAN 28
St. Joseph's Healthcare Hamilton Vaccine Clinic closes

JAN 31
Step 3 of "Roadmap to Reopen" begins

FEB 13
Centre on Barton Vaccine Clinic closes

FEB 17
Easing of public health measures begins in Ontario including raising capacity limits

MAR 1
Lifting of additional public health measures including remaining capacity limits in indoor settings and proof of vaccination for all settings

MAR 21
Most provincial mask mandates end

MAR 22
Board of Health receives organizational update that focuses on adapting Public Health Services' organizational structure to reach a sustainable state

APRIL
PHS begins transition to interim organizational structure to support continued COVID-19 response and reopening programs and services

PHS staff demobilized from the COVID-19 response to their home programs

APR 29
David Braley Health Sciences Centre Vaccine Clinic closes (led by primary care partners)

MAY
PHS focuses on returning, recruiting, and reorienting staff to programs and services

MAY 10
City of Hamilton's Emergency Declaration terminated

JUN TO AUG
PHS focuses on staff wellness while maintaining programs and services

SEP TO DEC
PHS focuses on fully resuming programs and services, clearing service backlogs, applying continuous quality improvement and lessons learned, and re-engaging with community partners

PHS continues to respond to COVID-19, including vaccine promotion and administration of the bivalent booster vaccine

DEC 21

Mountain Vaccine Clinic at Lime Ridge Mall closes

CURRENT STATE

PHS continues to operate under interim structure that balances programs and services with the COVID-19 response, including operating mobile vaccine clinics that focus on neighbourhoods with lower vaccine coverage and maintaining the Vaccine Ambassador Program

After-Action Review Methodology

The scope of this After-Action Report is PHS' emergency response, specifically focusing on the structure and functioning of PHS' internal Incident Management System in order to capture operational successes, challenges, lessons learned, and recommendations. The objectives of the After-Action Review were to:

- Review PHS' response to the COVID-19 pandemic;
- Identify best practices, successes, challenges, and opportunities for improvement that contributed to the COVID-19 response; and
- Develop recommendations for future emergencies, including pandemics.

To accomplish this, the following methods were used:

- Survey completed by IMS section lead(s) from each COVID-19 response area, including sections that were part of the Vaccine Task Force;
- Facilitated discussions held with sections and/or following an acute period of the response;
- Discussions held with Section Chiefs to review and validate findings from their sections;
- Facilitated debrief held with the Command section of Public Health Emergency Control Group/Public Health Leadership Team.

The After-Action Review was conducted in phases throughout the response, with timelines determined based on guidance from section chiefs and demobilization plans. The timelines for data collection are outlined in Figure 2.

JUNE 2020	• Debrief held with IMS sections following first wave of COVID-19 (known as an in-action review)
JUNE - NOV 2021	• After-Action Review conducted focused on vaccine operations
FEB - JULY 2022	• After-Action Review conducted focused on disease control operations • Additional information gathered to update vaccine operations After-Action Review

Figure 2: AAR Timelines

COVID-19 Response AT-A-GLANCE

DISEASE CONTROL OPERATIONS METRICS

MARCH 10, 2020 TO DECEMBER 31, 2022

120+
media briefings coordinated with City of Hamilton Emergency Operations Centre and PHS spokespeople

1,249
COVID-19 outbreaks with management supported by PHS staff

537,019
COVID-19 tests completed at Hamilton assessment centres

750,000+
calls received by the PHS COVID-19 phone line

VACCINE OPERATIONS METRICS

DECEMBER 23, 2020 TO DECEMBER 31, 2022

1,432,325 doses administered of COVID-19 vaccine

- **179,717** doses administered at the FirstOntario Centre Vaccine Clinic, the largest PHS-led clinic
- **184,749** doses administered at St. Joseph's Healthcare Hamilton vaccine clinics
- **176,918** doses administered at Hamilton Health Sciences vaccine clinics
- **416,417** doses administered by pharmacies
- **106,591** doses administered by primary care
- **17,580** doses administered at the ArcelorMittal Dofasco led vaccine clinic
- **149,186** doses administered at mobile clinics operated by PHS and community partners (excludes hospitals and primary care clinics)
- **65,599** doses administered at the Centre on Barton vaccine clinic
- **83,016** doses administered at the Mountain Vaccine Clinic at Lime Ridge Mall

17
languages spoken by vaccine ambassadors, which enabled PHS to provide vaccine information directly in many residents' first language, in addition to other translation supports

276
City staff redeployed to support vaccination scale-up in response to the Omicron wave in late 2021 and early 2022

Approximately
400
unique vaccine clinic locations (excluding pharmacy and Provincial clinics)

40+
partners representing community organizations and equity-deserving voices involved in the Vaccine Readiness Network

10,358
doses administered on December 21, 2021, the highest number of daily doses administered in Hamilton's vaccine rollout

PUBLIC HEALTH SERVICES' SUCCESSES from the COVID-19 Response

> Staff, community partners and other champions really came together with a shared goal of improving outcomes in our community. The commitment to stay at the table, engage, and bring innovative solutions that were quickly implemented was remarkable, inspiring and led to significant impact in Hamilton.

Jen Vickers-Manzin
Director of the Healthy Families Division, Chief Nursing Officer, and COVID-19 Planning Chief

1

Success #1:

MAKING A DIFFERENCE IN MITIGATING THE SPREAD OF COVID-19

All sections shared the common success of contributing to mitigating the spread of COVID-19 and protecting the community from severe outcomes. For example, the PHS outbreak management team described that providing infection prevention and control education led to congregate settings changing their practices. In turn, this led to a lower risk of infection for residents/patients, staff and visitors and fewer outbreaks. Similarly, the case and contact management team reduced the spread of COVID-19 by contacting positive cases to understand how they acquired COVID-19 and then provided advice on isolation. Other sections described their role in the vaccine rollout and how that helped mitigate the spread of COVID-19. For example, one clinic administered nearly 200,000 COVID-19 vaccines between March and August 2021.

In addition to the impact sections had on mitigating the spread of COVID-19, many teams shared that their section engaged in continuous quality improvement to evolve their approaches, processes, and communication during the response. This also ensured the best use of staff resources to meet the needs of those at most risk of COVID-19.

2

Success #2:

RESPONDING COLLABORATIVELY TO COVID-19

All PHS sections also focused on the collaborative response as one of their successes. Consistently, collaboration, teamwork, relationships, and partnerships were highlighted. This includes collaboration within teams, with other management and staff across the City of Hamilton, and with healthcare and community partners. Given the scope of the COVID-19 response, the number of partners engaged by PHS was vast. These included internal partnerships with the EOC and other City of Hamilton departments, such as Public Works and Recreation, and with hospitals, primary care, community organizations, industry, the Hamilton Chamber of Commerce, Business Improvement Associations, school boards, and post-secondary institutions.

The impact of relationships formed and strengthened with community and healthcare partners was frequently mentioned. For example, the involvement of pharmacies and primary care in the vaccine rollout, as well as establishing primary care-led community clinics, were critical successes. The contributions of the Vaccine Readiness Network (VRN), a group of health, education, social service, and community organizations and representatives that met regularly to share expertise, information and perspectives about vaccine planning and distribution, were also recognized. The VRN's focus on equitable distribution in the vaccine rollout had a lasting impact on the COVID-19 response in Hamilton, including prioritizing Black and racialized community members for COVID-19 vaccination and fostering the development, implementation, and monitoring of a Vaccine Ambassador Program. These impacts are further outlined in the "Community Impact on Equitable Vaccine Delivery in Hamilton" report, as prepared by the VRN.

> I cannot thank our staff enough for their dedication and professionalism throughout the COVID-19 emergency response. Again and again, staff rose to meet the evolving demands of the emergency, including many staff who took on new roles in challenging circumstances both professionally and personally. Undoubtedly, their willingness to step up to support our community – and tenacity doing so – saved lives.
>
> ***Dr. Elizabeth Richardson**, Medical Officer of Health*

3

Success #3:

HAVING A RESILIENT & DEDICATED WORKFORCE

The attributes of staff, leaders, and partners involved in the COVID-19 response were also described when sections were asked to identify successes. Flexibility, adaptability, tenacity, dedication, patience, responsiveness, being comfortable with uncertainty, innovation, creativity, problem solving, and the ability to be nimble were consistently identified. Strong leadership and supportive peer groups were also noted by many sections, and staff spoke highly of leaders who communicated the information they knew while also acknowledging uncertainty.

4

Success #4:

ADVANCING SKILLS, TECHNOLOGY, PRODUCTS & PROCESSES

Lastly, sections shared that the COVID-19 response led to new skills, processes, and products that will extend beyond the pandemic. For example, PHS implemented the PowerBI tool to provide public reporting on COVID-19 metrics, a tool that can be leveraged in the future. PHS programs and services that continued to operate during the emergency response reported using creative strategies and quality improvement initiatives to adapt service delivery, such as providing virtual care. Staff also acknowledged growth in their skillsets, including learning new skills, leadership opportunities, and being cross-trained in multiple program areas.

PUBLIC HEALTH SERVICES' CHALLENGES from the COVID-19 Response

"We had to rapidly stand up mass vaccine clinics with the expectation to operate the clinic seven days a week with very high throughputs. The operation required significant health human resources for both clinical and non-clinical roles. This would have been a significant barrier to overcome without the aid of the EOC and our health sector partners."

Julie Prieto
Acting Director of the Epidemiology and Wellness Division and COVID-19 Vaccine Planning Lead

> From the outset of the COVID-19 emergency response right up to present day, Public Health Services' people leaders recognized the tremendous levels of pressure and strain our entire workforce was being subjected to. The mental health and well-being of our people was a paramount concern and consideration in mounting and sustaining an effective and efficient sustained emergency response. The mental and physical well-being of our people at all levels of the organization had the potential to greatly influence our overall performance in the service of the community.
>
> ***Kevin McDonald,*** *Director of Healthy Environments Division, and COVID-19 Communications Chief*

Challenge #1:

EXPERIENCING SIGNIFICANT WORKLOAD & STAFFING DEMANDS

Across all sections, the most commonly identified challenge related to significant workload demands. Sections reported not having enough staff to do the work and a high level of staff burnout. This level of staff burnout was a result of the intensity, duration, and complexity of responding to COVID-19. In addition, burnout and stress were heightened by staff implementing provincial mandates, which occasionally led to stressful interactions with members of the public. Sections that made wellness a priority during the response expressed that focusing on wellness had a positive impact, while other teams stated a need to focus on wellness and mental health supports earlier in the response.

Several sections identified that there was always an expanding demand for staff. This was particularly apparent during the COVID-19 vaccine rollout, where additional clinical and non-clinical resources were needed to operationalize clinics. Despite creative problem solving with staffing and broad support from redeployed staff and primary care, it was challenging to deploy and/or recruit staff to fill these roles. Further, rapidly scaling up vaccine clinics created additional staffing pressures, as staff were pulled in to oversee and onboard new clinic staff. As a result, non-COVID-19 related programs functioned with depleted staff levels, which made it challenging to meet service demands. Staffing challenges were compounded by a high degree of staff turnover, the temporary nature of many positions, limited time for training for newly hired or redeployed staff, leaders having a higher number of staff reporting to them, changing work schedules, and limited cross training. Some of these challenges were mitigated over the course of the response, however, staffing demands and burnout remained a challenge throughout.

2

Challenge #2:

INTERPRETING & IMPLEMENTING RAPIDLY CHANGING INFORMATION & GUIDANCE

Another challenge was the volume of information, frequency and pace that it changed, and the need to rapidly implement any changes locally. Often, local public health units did not know about provincial changes in advance, and there was limited time to operationalize these changes. Specific to COVID-19 vaccine operations, changes to guidance and available supply resulted in changes to eligibility, dose intervals, storage/handling requirements, and volume of doses that could be administered at clinics. Occasionally, changes led to significant confusion for staff, partners, and the public. This was especially challenging when guidance conflicted between Ontario government Ministries or regions. Organizationally, the pace of change made it difficult to predict COVID-19 vaccine demand, which led to challenges anticipating staffing needs and engaging in advanced planning. At times, rapid changes in direction also led to communications challenges.

3

Challenge #3:

ACTIVATING THE IMS STRUCTURE FOR AN EXTENDED PERIOD

Typical IMS structures are implemented to focus on a time-bound emergency response. Due to the prolonged duration of COVID-19, the IMS structure was in place for an extended period and evolved to meet the changing demands. While the IMS structure is a useful tool, occasionally the structure of this prolonged response led to challenges. At times, staff and leaders had to fulfill their regular roles and emergency response roles simultaneously. Due to these competing demands, roles, structures, and processes were not always clear, did not always align with IMS principles, or varied between teams. Due to the limited staff resources at the senior management level and competing demands from both COVID-19 and regular business, senior leaders were forced to transition their leadership structure. This integrated model helped leaders balance IMS roles and regular day-to-day leadership responsibilities. Further, senior leaders used decision-making and agenda planning tools to identify and prioritize demands with limited resources.

4

Challenge #4:

ONBOARDING NEW TECHNOLOGY

Both the provincial Case and Contact Management system (CCM) and COVID-19 immunization record system (COVaxON) were onboarded during the pandemic, as well as provincial and local vaccine appointment booking systems. Each system required ongoing training and support and had its own strengths and limitations for customization. Further, each system had different reporting capabilities, which required reviewing privacy and data sharing processes. The COVID-19 response also stressed the internal technological infrastructure and capacity limits given the increased pressure on these systems. These pressures, combined with the selection and implementation of new technology, outstripped the internal technological infrastructure and support resources available.

Lessons Learned

The previous sections focused on shared successes and challenges in the COVID-19 response. The following section highlights key learnings, many of which were implemented throughout the response. These lessons learned can be leveraged again by PHS in future emergency responses, and include:

- Focus on mental well-being early in the emergency response, ensuring that staff have a variety of options to address their wellness.
- Have a dedicated team that supports operations and short-term planning for vaccine clinics.
- Upstaff communications team and resources to handle the large volume of work required to keep all stakeholders informed.
- Continuously evaluate minimum staffing needs for essential programs (staffing needs may vary based on timing and duration of emergency).
- Early in the emergency response, establish multi-sectoral tables (e.g., the H-CRT, collaboration with school boards) to share information and guide the local response.
- Early in the vaccine rollout, develop a robust community engagement strategy to support vaccine uptake, in collaboration with community partners and priority populations. Strategies, such as establishing a network like the Vaccine Readiness Network and a Vaccine Ambassador Program, should be prioritized early in the planning process.

> “Information saves lives. In the context of the COVID-19 pandemic there has been an excess of information, false rumours and manufactured disinformation. Delivering evidence-based factual information in a timely and transparent way to multiple audiences via various platforms was and continues to be challenging and critical.”
>
> ***Kevin McDonald,*** *Director of Healthy Environments Division and COVID-19 Communications Chief*

> A whole community approach is required to meaningfully address large persistent issues where inequities exist due to the determinants of health and systemic racism.
>
> **Jen Vickers-Manzin**, *Director of the Healthy Families Division, Chief Nursing Officer, and COVID-19 Planning Chief*

Recommendations

The previous section outlined lessons learned from the COVID-19 response, which are also recommendations for future responses. IMS sections also recommended actions for PHS to take before the next emergency that would address some of the identified challenges and improve a future response. These recommendations are also known as corrective actions. Recommendations to support improving a future response include:

- Develop an infectious disease training program to ensure staff competence in infection prevention and control if required for redeployment. Training to include both a baseline understanding and a just-in-time component.
- Implement an organizational approach to trauma and violence informed care for all programming, and ensure this is continued when undertaking emergency responses.
- Implement an organizational approach for creating a mentally healthy workplace.
- Expand training competency in non-violent crisis intervention for applicable staff in public facing roles.
- Explore a model to rapidly scale-up staff and management during an emergency.
- Accelerate and expand leadership development and succession planning for frontline and middle management staff on an ongoing basis.
- Expand recruitment and retention strategies for the PHS workforce over the long-term to mitigate potential staffing challenges during an emergency.
- Explore opportunities with health system partners to implement collaborative staffing models during an emergency.
- Improve efficiency and program delivery using software/applications that can also be leveraged during an emergency (e.g. document management, asset management, appointment booking, staff movement).
- Review privacy and data sharing processes to identify opportunities to further increase timeliness of reporting in an emergency.

Conclusion

Over the last three years, the Hamilton community and PHS staff came together to help reduce the spread of COVID-19, lessening the pandemic's impact. PHS continues to respond to COVID-19 while re-introducing programs and services, including addressing priority service backlogs and the deficits of care that emerged as a result of the pandemic. Over the next one to three years, PHS will focus on adapting and improving programs and services that address the following four key priorities: mental health and substance use; child and youth healthy growth and development; health equity; and, climate change. Along with these four priority areas, PHS will continue to offer its comprehensive suite of critical public health programs and services Hamiltonians trust and rely on.

In addition, the successes and lessons learned during the COVID-19 response continue to be leveraged. For example, influenza surveillance now uses the PowerBI platform that was onboarded for COVID-19 surveillance during the response. This means that influenza data is now easier to access for healthcare partners and community members. In addition, relationships between PHS and healthcare and community partners were strengthened during the COVID-19 response and continue to support COVID-19 recovery and other public health priorities. Building upon these successes and lessons learned, coupled with the corrective actions and recommendations in this report, will strengthen future emergency responses in Hamilton.

Glossary

HAMILTON COVID-19 RESPONSE TABLE (H-CRT):

A committee comprised of representation from health and social services organizations in Hamilton that was established to support a collaborative response to COVID-19. Leadership is shared between public health, acute care, and community care. The table evolved from the "Health Sector Emergency Management Committee" that was convened to facilitate coordination, interoperability, cooperation, and communication between health sector agencies at the outset of the COVID-19 pandemic.

PUBLIC HEALTH EMERGENCY CONTROL GROUP (PHECG):

The people component of the Incident Management System (IMS) which consisted of the staff responding to the emergency. The Command section of the PHECG was comprised of the PHS leadership team and were responsible for overseeing, coordinating, and directing the COVID-19 public health response.

VACCINE READINESS NETWORK (VRN):

A group of community organizations and health sector representatives that met regularly to inform Hamilton's Vaccine Task Force. The VRN shared information about vaccine planning and distribution, and discussed how to work together to improve vaccine access and confidence, particularly among priority populations.

VACCINE TASK FORCE:

A sub-group of the Hamilton COVID-19 Response Table, the Vaccine Task Force was comprised of representation from Hamilton healthcare partners and was responsible for leading and overseeing the planning, implementation, and operations of the City of Hamilton's Vaccine Distribution Plan in alignment with direction from the Ontario government.

References

Emergency Management Ontario. (2021). Incident Management System (IMS) Guidance: Version 2.0. *Queen's Printer of Ontario.*

Ministry of Health and Long-Term Care. (2018). Emergency Management Guideline. *Queen's Printer of Ontario.*

Ministry of Health. (2021). Ontario public health standards: Requirements for programs, services and accountability. *Queen's Printer of Ontario.*

World Health Organization. (2019). Guidance for after action review (AAR). *Geneva, Switzerland: World Health Organization.*

The COVID-19 pandemic response was an unprecedented sustained emergency event that impacted all levels of society. Locally Public Health Services has been monitoring, interpreting, and operationalizing directives, protocols and regulations flowing down from the global community to the national and provincial levels of government, as well as municipal regulation conceived and installed hyper-locally. The acuity of the emergency response in the province of Ontario was fueled by multiple factors simultaneously colliding which demanded time-sensitive legal and service capacity interpretation and action. An analogy that was often appropriately used during the 2020-2022 period was, "We're attempting to assemble and re-engineer a Boeing 747 in mid-flight."

Kevin McDonald
Director of Healthy Environments Division and COVID-19 Communications Chief