REVERA PANDEMIC REPORT: A PERFECT STORM

CHAPTER THREE

No Winners: The Revera Experience in Wave One

revera®

This report is dedicated to Revera's employees, residents, their families, and all those on the front lines of the senior living sector who are working through the worst pandemic in living history.

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On March 12, one day after the World Health Organization declared COVID-19 to be a global pandemic, Revera recorded its first cases at one of its retirement homes in British Columbia. The novel coronavirus was known to be spreading along the Pacific Coast, and testing confirmed that a 99-year-old resident and a staff member at Hollyburn House in West Vancouver had contracted it. Initially, the resident was thought to have a cold or flu until testing proved otherwise. The staff member's infection was first indicated by screening measures Revera had mandated at all its residences three days earlier.

With quick detection, both people were isolated, the outbreak was contained, and both recovered – the centenarian included. At the time, it appeared that everything was working as it should.

But on March 24, two weeks after the Hollyburn cases, COVID-19 broke out at the McKenzie Towne Continuing Care Centre in southeast Calgary, infecting 44 staff members and 62 residents, including 21 who died. The virus emerged at more sites a week later, and through April, Revera was averaging an outbreak a day.

In all, the pandemic's first wave resulted in 87 outbreaks at Revera sites in Canada, meaning 55 long term care homes and 32 retirement residences experienced at least one case of COVID-19. The impact in long term care was especially grim: The virus infected 874 residents and killed 266, a fatality rate of 30 per cent. In retirement residences, 104 seniors were infected and 20 died. Among staff members, there were no deaths, but 65 employees in retirement residences, and 443 in long term care, contracted the virus.

Through the prism of numbers, the emotional toll of the crisis can be obscured. Death, after all, is no stranger in long term care. The homes are end-of-life destinations for nearly all the frail older Canadians they house. In normal times, however, the passing of residents is marked by compassion, dignity and respect by their families and by the staff who knew them, in many cases, as friends. But in the context of COVID-19, death became all the more tragic for the desperate circumstances that encumbered it, circumstances which also exacerbated the steady loss of life.

As one Revera executive described it: "All of our residents die with us. We celebrate their deaths with honour, love and respect. These people are our friends and in many, many instances we are their family. Death during COVID took a very dark turn and how we needed to manage the dead was without dignity and respect. That broke our hearts."

In the brief lull between pandemic waves, Revera worked to understand how these events unfolded while also implementing measures to mitigate the ongoing threat of COVID-19. The corporation – which is home to roughly 10,000 older adults at its 74 long term care homes across six provinces (the vast majority in Ontario) and an additional 10,000 seniors at its 96 retirement residences – assembled internal and external experts to investigate what worked, what went wrong, and how to prepare for the future.

THE SPRING OF CATASTROPHE

It was in mid-January that Revera began preparing for the pandemic, after one of the first COVID-19 cases outside of China was diagnosed in a tourist visiting Thailand from Wuhan. The case was a reminder to the world that the pathogen – known to be especially dangerous to the elderly – was just a plane ride away. Revera struck an executive leadership team to review and update emergency measures, and redirected resources to support these efforts and secure supplies. It also created new communications tools to quickly share pandemic-related information with employees across the company. In February, for instance, the leadership team directed staff to stay home if they felt unwell; it also advised homes to monitor residents for signs of

infection, to screen visitors for symptoms and travel history, and, on March 9, to receive only essential visitors. But it was not enough to keep a highly contagious virus at bay.

In the first wave of COVID-19, more than two-thirds of Revera homes did not have an outbreak, and of those that did, more than half of all outbreaks involved only one case. However, nine long term care homes – most of them in Ontario and Alberta – had significant outbreaks for weeks and, in some cases, for months. The outbreaks at these nine sites account not only for most of Revera's cases but for the vast majority of deaths: 241 of the 266 seniors who lost their lives to COVID-19 in Revera's long term care homes died at these locations. Common to the nine sites were pre-existing problems related to outdated buildings, and the fact that pre-existing infection control practices which were considered effective pre-COVID proved to be insufficient to combat this novel virus; these factors compounded the difficulty of controlling the virus – in part due to the systemic barriers that kept appropriate testing, medical services, consistent guidance and support out of reach when the pandemic hit.

What the first wave starkly demonstrates is that long term care operators cannot necessarily depend on outside resources to be on hand when they are most needed. Rather, closer connections should be made in advance – with local hospitals, doctors, other authorities and agencies – to secure the necessary staff, training, infection control expertise and medical support, before the immediate moment of need. The COVID crisis has at last drawn national attention to the long term care sector, and it should be a catalyst to securing stronger relationships between long term care homes and the health system.

Similarly, the sector cannot rely on essential medical supplies to be available from governmental authorities in periods of high demand. Instead, home operators, and possibly the sector as a whole, should develop their own supply chains. In the first wave, the large operators in the sector (such as Revera), which had already established global sourcing of personal protective equipment (PPE), united as a collective to help smaller operators who desperately needed this equipment. Through the CAPES initiative (Canadian Alliance to Protect and Equip Seniors Living), the large operators ensured smaller operators could acquire and maintain stores of PPE. Home operators also have to forge closer links with public health units to monitor community spread, and step up all defences – screening, testing, tracing and infection control – if prevalence rises in the community surrounding the home, or in the areas where staff members live.

There is good evidence to suggest that the experience gained in the first wave, as tragic as it was, can make a profound difference in combatting disease spread. In early April, for example, as science learned more about the stealthy asymptomatic transmission of the novel coronavirus, Revera mandated universal masking with contact and droplet precautions, and began actively screening all staff and residents

twice a day. It either closed common dining rooms or introduced physical distancing in the common dining rooms of long term care and retirement homes. In mid-April, staff were restricted to working at a single site to reduce the risk of spreading the virus from one home to another.

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Internal analysis indicates that these interventions not only reduced the number of cases and new outbreaks that emerged after April 13, they also significantly lowered the average duration of outbreaks. (Revera's internal data shows that 97 per cent of long term care infections among residents in the first wave flowed from outbreaks that predated the middle of April.)

Unfortunately, while these measures can be relatively simple to implement quickly, analysis shows that the best defence to fight the spread of the novel coronavirus is no quick fix. The company's stock of outdated buildings – long term care homes built back when two- and four-bed ward-style rooms were standard – was a major predictor of severe COVID-19 outbreaks. Given the inability to completely redevelop these properties in the short term, all other measures to defend against the virus take on even greater significance if the staff and residents of Revera homes are to withstand future waves of the novel coronavirus.

BUILT-IN RISKS

More than 30 of Revera's long term care homes in Ontario have ward-style multi-bed rooms, which (as with 40 per cent of all Ontario nursing homes) do not meet current provincial design standards. Revera has plans in place to redevelop its outdated sites in Ontario. But while construction applications had been submitted years ago for government approval, the plans were still undergoing the lengthy process of reviews when COVID-19 broke out.

Known as category "C" buildings, these homes were constructed in the early 1970s, when residents tended to be younger in age and more able-bodied. The senior citizens accepted into long term care today from communities and hospitals tend to be older and have more complex care needs. Often, they have been waiting months, if not years, to get in. (More than 35,000 seniors are currently on the waiting list for a long term care bed in Ontario.) Those who manage to land a spot arrive with acute and chronic medical conditions, including cognitive and physical disabilities, that older buildings were never designed to accommodate (an issue explored further in

Chapter 5). Many of the communal washrooms in these buildings, for example, are too small for wheelchair access.

Revera's older buildings have generally contended with higher rates of the seasonal flu and other respiratory viruses. The company's internal analysis found that homes where infectious disease outbreaks were historically more common were at higher risk of trouble with COVID-19. Recent external studies have also found that outdated building design is one of the top reasons that privately owned homes had larger COVID-19 outbreaks that lasted longer and resulted in higher mortality rates. In Ontario, most of the homes that require redevelopment are privately owned.

External analysis concluded that the greatest predictor of larger and severe outbreaks of COVID-19 was the two- to four-bed rooms in older long term care homes, given that these homes had little extra space to physically distance residents in common or recreational areas, few extra beds or rooms to keep the sick from exposing the healthy, or few rooms that could be used to quarantine those potentially infected.

Another top predictor of infection was the level of hands-on care that residents required. Homes where seniors needed more frequent attention from personal support workers, nurses, healthcare workers and medical staff resulted in increased visits and closer physical contact, which raised the risk of virus transmission.

The external review also found that long term care homes that had the highest proportion of patients with dementia faced a higher risk of severe outbreaks. Retirement homes that provided "memory care" units also had a higher risk. These "floors" are secured units that accommodate seniors with Alzheimer's Disease and dementia who are prone to wandering, exit-seeking and behavioural problems. About 89 per cent of long term care residents suffer from these neurodegenerative conditions, and managing their care during outbreaks was challenging for staff and residents alike. As one Revera executive described it: "We tried using masks, but not all residents were able to wear them and ongoing removal and touching of the masks posed additional risk. They roam, and for many it is constant, and to keep them isolated is next to impossible."

Meanwhile, in many cases, neither regional health authorities nor hospital support contacts were able to offer strategies or guidance as to how best to cope with these residents to keep them safe and to keep them from potentially infecting others. Over time, Revera supervisors found it was somewhat effective to have a dedicated staff in the secure units to engage the residents around hygiene practices. But this approach was difficult to sustain given the staffing shortages that had emerged early in the first wave, owing in part to the absence of employees who had unknowingly contracted the virus in their communities.

THE INVISIBLE THREAT

Unlike the coronavirus behind the 2003 epidemic of SARS 1 – which was most contagious when infected people were sick with symptoms that made them easy to identify and isolate – COVID-19 can be transmitted before symptoms develop, when there is little to indicate who poses a threat. Moreover, in up to a third of COVID-19 cases, infected people who never go on to develop symptoms are nonetheless capable of spreading it.

Neither of these features related to pre-symptomatic and asymptomatic spread were known at the pandemic's outset. Nor was it clearly understood that symptoms could vary widely between people and include not just signs of respiratory infection, but also symptoms related to smell, taste, and stomach upset. At the same time, the diagnostic tests that might have helped to identify the infected were in tragically short supply across the country.

Retrospective analysis shows that the rise of infections in long term care homes was predicted by the rise in community cases. Canada's first spike in community prevalence, for example, occurred around March 15. That was the week the novel coronavirus shifted from a distant threat to an imminent one, as schools closed and travel restrictions were introduced. Fourteen days later, around March 30, Revera recorded its first spike of infections, with more than 30 new cases per day.

Throughout the first wave, Revera's outbreak patterns in its long term care sites were nearly identical to the course of disease spread in the community, just two weeks behind – a lag that reflects the time it typically takes for COVID-19 to appear after exposure to the virus. When community cases in Canada peaked in mid-April with more than 1,800 new infections per day, Revera homes mirrored a similar peak with a high of roughly 120 new cases per day at the end of April. As community cases declined, two weeks later, the number of infections at Revera sites also decreased.

With long term care homes in B.C., Alberta, Manitoba and Ontario, Revera data shows its outbreak patterns also reflected the geographic clusters of COVID-19 at the provincial level. For example, Alberta and Ontario, home to 68 per cent of Revera's long term care residences, both had higher caseloads and greater spread than the other provinces where the company had homes, and Revera outbreaks in Ontario and Alberta mirrored the locations of higher community prevalence.

Of Revera's 55 outbreaks in long term care, Ontario had 45, Alberta had six, Manitoba had three, B.C. had just one. Ontario, meanwhile, recorded a cumulative caseload of 308 per 100,000 people early in the first wave, and Alberta had a cumulative rate of 362 positive cases per 100,000 people. Cumulative infection rates in other provinces at the time ranged between 106 and 147 cases per 100,000.

Unfortunately, at the time, the entire country lacked proper testing capacity and the extent of community spread went undetected, as did the cases among staff members who contracted the virus in their communities. In turn, employees unwittingly brought it into the long term care homes where they worked, where proper personal protective equipment was scarce, also reflecting a national shortfall. Daily active screening of staff, which began in Revera homes on March 9 – the same day the essential-visitors-only policy came into effect – could not fully capture the stealthy nature of COVID-19, especially when public health units were not yet supporting surveillance testing of staff and residents.

Internal analysis has since shown that the undetected cases among staff and visitors were a major contributor to the crisis. In Revera's retirement residences, there were 26 significant outbreaks (defined as situations in which five people or more contract the virus) during the first wave, and more than half of those situations involved staff members only.

As it became clear that staff had become the inadvertent source of the rising case numbers among residents under lockdown, Revera began introducing measures to restrict employees from working at more than one site on March 23. To reduce the risk of spread between homes, B.C. issued the same mandate on March 26, while Alberta and Ontario implemented a strict one-site order for long term care home and retirement residence workers in mid-April.

When routine surveillance testing of staff began at the end of May in Ontario, Revera data suggests it did help to detect infections among staff members before COVID-19 could be spread to residents. Prior to June 15, the data shows that during an outbreak, infections were more likely to be identified in residents first. The finding offers hope that improvements in point-of-care testing methods will soon be available to detect infection in asymptomatic staff and visitors before it can spread to residents.

LOSSES ON THE FRONTLINE

While the demand for beds in long term care skyrockets, the supply of personal support workers, nurses, other healthcare workers and non-clinical employees has been utterly outpaced by the ever-growing needs of the aging population (an issue further explored in Chapter 4).

Revera, however, can boast a higher than average record of retaining full-time staff, in part due to more competitive wages and benefits, which, from the outset of the pandemic, included quarantine pay for full-time employees, financial and non-monetary

incentives to continue working through outbreaks and, later, support services to cope with the emotional stresses the job suddenly entailed.

As with all congregate living, providing 24-hour care seven days a week often requires the work of part-time employees, and Revera has an even split of full- and part-time staff members. But it was a balance totally upended in homes that suffered large outbreaks, where between 15 and 25 per cent of the company's full-time employees were unable or unwilling to come to work.

Not only were staff members falling ill themselves, but colleagues who had been exposed to them had to be sent home to quarantine, in some cases taking out another two-thirds of staff for several days, and more if they went on to develop COVID-19.

At the same time, by mid-April, many of Revera's regular part-time workers were lost to the strict one-site rule that provinces rightly introduced to keep staff from transmitting the virus in multiple homes. Many long term care home and retirement residence employees traditionally work part-time at a number of sites to accumulate a full-time wage, and the inability to do so forced many to either dedicate their services to a single site or to leave their jobs altogether for another line of work.

In the grip of an outbreak, both scenarios left homes in need of personnel at a time when resident needs were greater than ever. Pandemic training to implement tighter infection control – including the safe donning and doffing of protective gear, and the extra cleaning and disinfecting of surfaces – required extra staff at a time when employee absences were far greater than usual. Caring for rising numbers of sick residents was always the priority, as staff relocated residents within homes to keep up with the ever-changing status of those who had to be isolated or quarantined.

The pandemic's first wave also heralded the advent of other new, time-draining tasks, as staff often had to facilitate virtual medical appointments by holding iPads and other devices for residents to be assessed by long term care doctors, many of whom declined to visit their homes in person. In the latter weeks of the first wave, when testing was at last sporadically provided by public health for homes in crisis, results came back erratically, taking anywhere from half a week to a month, and these arrived in various formats: by email, by fax and by handwritten notes. One Revera home received 21 handwritten pages of results faxed without names attached; the report listed only case identification numbers, followed by a positive or negative sign. Staff had no choice but to spend precious hours sorting through the reports to figure out which results belonged to which resident.

Revera launched aggressive efforts early in the pandemic to recruit additional staff with a digital campaign and outreach to nurses' associations, public health bodies,

colleges, universities and school boards. But these efforts could not bridge the growing gap of employee availability.

As the one-site work restriction came into effect, the company turned to employment agencies to hire temporary workers, and received commitments for full-time staffing. But this proved to be challenging if COVID-19 broke out in a home. As more employees stopped coming to work due to illness, quarantines and fear, Revera had to expand the number of agencies it relied upon, and sometimes staff committed by these companies would refuse shifts or simply not show up when they realized they had been assigned to a long term care home or retirement residence contending with an outbreak.

The temporary workers who did fulfill their commitments had to be trained, to familiarize them not only with the home's regular procedures but also with the infection control practices the outbreak necessitated. Agency staff, for instance, were often not well trained in the use of PPE prior to their arrival at a home, and training them further increased the workload on Revera staff members already extremely stretched for time. This instruction also required an ongoing effort, which not all agency employees were willing to embrace. In some cases, issues of non-compliance resulted in calls to the agency to replace certain workers, which meant the entire training process had to begin once more against a chaotic backdrop of so many other competing priorities.

In the hardest-hit homes, even basic care and accommodations for residents became a struggle to provide. In a few homes, hospitals sent much-needed support, including medical staff and nurses willing to clean and provide food.

But other efforts to shore up staffing failed. During a severe outbreak at a Toronto-area Revera home, for instance, a company executive made a desperate plea to a supervisor of the Local Health Integration Network (LHIN) who explained that she would love to help and had roughly 1,000 home care personal support workers currently not working, as many seniors had suspended their home care during the pandemic. But these workers, she added, could be sent to long term care homes only if they volunteered to go. None did.

Revera sent regional managers and other company executives to help manage homes struggling with severe outbreaks. One company official, for example, spent several months away from his family helping to resolve major outbreaks at Revera sites in the Ottawa area; on his way home, he had to be sent directly to the Forest Heights Long Term Care Home in Kitchener, where he would remain for the next three months.

A 240-bed, older long term care home, Forest Heights was the site of Revera's longest COVID-19 outbreak. The disease emerged there on April 1 and lasted

90 days, infecting 69 staff as well as 175 residents, of whom 51 died. On June 2, Ontario's Ministry of Long-Term Care issued a mandatory management order that put St. Mary's General Hospital in charge of Forest Heights, making it one of 11 hard-hit sites the province took over during the pandemic's first wave.

Communicating with families was strained during the outbreak; some complained in the media that they had been kept in the dark and felt powerless to help their loved ones given the lockdown. Some of these sentiments might be explained by the haphazard testing available to confirm positive cases. Often test results came back in unpredictable batches, adding to perceptions that dozens of cases had either been hidden, or appeared all at once. While many families showed their support for staff who continued to work under the most trying of circumstances, others – in their understandable grief and frustration – blamed staff for the tragic events unfolding.

For the employees who remained on the thin frontlines, the experience of working through the crisis was akin to fighting an unwinnable war. A letter sent to a Revera executive by an employee who has been a personal support worker for many years at one of the company's long term care homes described it this way:

> *"Covid…was a bad nightmare, a hell that I hope to never have to go through again. A war that had no winner. The survivors now walk with deep scars. Many not even realizing what after-effects are coming… [Each day] seemed very much the same. Keep working. Keep going. Comfort the sick and dying. Care for the families. Care for the staff. 'Bag' another body. No time to cry, no time to say goodbye, no time to rest, just no time…*
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> *"…I was blessed to be with [most] of the people who died. I was able to bring their families in to say goodbye if they wished. I held phones to the resident's ear so they could hear their children's voices sharing their most intimate feelings. I prayed with each one. Many times, I confess, I removed my mask so that they could see my smile when I saw the fear in their eyes to give them a sense of peace, knowing the risk, but feeling it the right thing to do for them in the moment.*
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> *"We are broken and we are sad. I do not feel."*

DOES IT TAKE A CRISIS?

Despite early efforts to prepare for the pandemic, COVID-19 had a devastating impact on some of Revera's long term care homes during the first wave. Most of the

company's sites were unaffected, but the burden of illness and death at nine long term care homes and four retirement residences was substantial and tragic, involving more than 1,200 cases among staff and residents in all, and the deaths of 286 residents in Revera's retirement residences and long term care homes.

Most of the sites that experienced the most severe outbreaks are older stock built decades ago, and do not meet current design standards. Revera has been actively advocating for approval to redevelop them. Unfortunately, this comes too late to fully mitigate the ongoing threat posed by COVID-19. Yet both internal and external studies have concluded that these outdated buildings, with their ward-style multi-bed rooms and communal bathrooms, contributed to longer, deadlier outbreaks.

The toll at Revera, and across the sector, has rightly focused national attention on the long-neglected needs of long term care. Commissions and investigations are underway, and there are signs this era of scrutiny could bring change for the better.

Given our inability to instantly redevelop outdated buildings, these types of preventive steps are even more critical in keeping COVID-19 at bay. Revera analyses have already shown in the first wave that proper masking and PPE use, one-site working restrictions for employees, and infection control measures tailored to COVID-19 made a significant difference in quelling the number of outbreaks and cases through the latter half of the pandemic's first wave.

Less within Revera's control are the systemic barriers the company faced in trying to corral the infection. With most health system resources focused on protecting hospital capacity, Revera, along with most long term care homes, was not prioritized for testing early in the pandemic, and received inconsistent guidance and support from the health ministries, public health units and local health authorities. The Revera experience in the first wave suggests that home operators should continue to become as self-sufficient as possible in securing PPE for staff, collaborate with public health to keep track of community prevalence, and forge support networks with local community partners and hospitals before those networks are needed.

Recommendations

The recommendations from the Expert Advisory Panel involve specific steps to improve outcomes for residents, families and staff at the company's long term care homes and retirement residences during the pandemic.

1 Encourage governments to develop policies around expectations of medical presence in long term care homes during outbreaks.

> **Revera Response: Implementation of recommendation is in progress.**
> The company's chief medical officer and several external stakeholders have been working with Ontario Health and the Ministry of Long-Term Care to establish clear policies to guide on-site medical presence in long term care homes during an outbreak.

2 Determine a strategy for supporting medical services in retirement residences during outbreaks.

> **Revera Response: Implementation of recommendation is in progress.**
> The company's chief medical officer and several external stakeholders are working with Ontario Health to develop a strategy for supporting medical services in retirement residences during outbreaks.

3 Establish a consistent approach with respect to infrastructure and technological requirements for virtual care, when appropriate.

> **Revera Response: Recommendation already implemented.**
> Through previous investments in a technology infrastructure and digital layer, Revera was able to quickly roll out video-conferencing tools for virtual consults.

4 Collaborate with Public Health to identify Revera's approach to testing, infection prevention and control (IPAC) education, PPE requirements and cohorting of residents that can be consistently delivered across all sites. Encourage provincial public health authorities to develop consistent advice.

> **Revera Response: Recommendation is directed at the broader system rather than Revera.**
> While this recommendation is not under Revera's control, Revera

continues to collaborate at the regional and provincial levels to discuss and clarify approaches to testing, IPAC and resident cohorting.

5 Establish regular meetings with various unions to engage them with practice changes that are designed to protect staff as well as residents.

Revera Response: Implementation of recommendation is in progress. Revera has established and continues to maintain regular communications with its various union partners to engage them with practice changes that are designed to protect staff as well as residents. Examples include, but are not limited to, staff surveillance testing, recruitment and retention initiatives, joint government advocacy and PPE procurement. Enhancing our relations with our applicable union partners through increased communications and joint initiatives will result in positive outcomes for both residents and employees.

6 Proactively seek feedback from residents and families/substitute decision-makers on the type and frequency of communication they want to receive.

Revera Response: Implementation of recommendation is in progress. As well as using informal ways to seek feedback from our residents and families, we included questions regarding feedback on communication through our formal resident and family annual surveys, and we have their feedback. Action is underway to enhance our communication based on the survey inputs. This was incorporated into our resident and family satisfaction survey this year, and action planning is underway to provide further communication based on feedback. For homes that are experiencing an outbreak, we now hold town hall meetings early in the outbreak.

7 Establish, in advance of outbreaks, alternative strategies for communication between residents and families.

Revera Response: Implementation of recommendation is in progress. We continue to enhance our communications with residents and families based on feedback.

8 Plan individual and small group activities that can be implemented prior to an outbreak to reduce loneliness and boredom.

Revera Response: **Recommendation already implemented.**
Through the Pandemic Playbook, we have provided numerous tools for programming, and continue to share best practices with our sites as well as pilot innovative solutions such as Virtual Reality.

9 Develop a tool that can be administered regularly to assess residents and alert staff to early changes in residents' mood, appetite and cognition.

Revera Response: **Recommendation already implemented.**
A comprehensive screening tool has been in place since the onset of the pandemic, and is adjusted as needed based on Public Health direction. Screening is done twice a day and includes atypical symptoms.

10 Work with external staffing agencies to ensure that their policies on testing, following one-site workplace order, and symptom reporting are aligned with Revera's policies.

Revera Response: **Recommendation already implemented.**
Agency staff are screened and asked to attest to negative testing. Many sites have secured consistent staff from agencies in order to ensure agency staff are working at a single site. We have also included expectations for agencies to report positive test results to us.

Our Expert Advisory Panel

Special thanks to our expert advisory panel for their hard work and insights. Members of the panel contributed their advice and recommendations on a voluntary basis.

Dr. Bob Bell, Chair, Former Ontario Deputy Minister of Health and former President and CEO of University Health Network. Dr. Bell agreed to participate in and chair this advisory committee. Revera agreed that Dr. Bell will have final editorial approval of the committee's report.

Dr. Diana Anderson, Healthcare architect and board-certified internist, Dochitect

Bob Bass, Bass Associates Professional Corporation

Dr. Vivek Goel, Vice President, Research and Innovation at the University of Toronto; Founding President and CEO, Public Health Ontario

Santiago Kunzle, Director and Principal, Montgomery Sisam Architects Inc.

Dr. Mark Loeb, Professor, Departments of Pathology and Molecular Medicine and Health Research Methods, Evidence, and Impact, McMaster University

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