File No. CI 20-01-29284

THE QUEEN'S BENCH
Winnipeg Centre

APPLICATION UNDER: *The Constitutional Questions Act*, C.C.S.M., c. 180

AND UNDER: The Court of Queen's Bench Rules, M.R. 553/88

IN THE MATTER OF: *The Public Health Act*, C.C.S.M. c. P210

B E T W E E N:

GATEWAY BIBLE BAPTIST CHURCH, PEMBINA VALLEY BAPTIST CHURCH, REDEEMING GRACE BIBLE CHURCH, THOMAS REMPEL, GRACE COVENANT CHURCH, SLAVIC BAPTIST CHURCH, CHRISTIAN CHURCH OF MORDEN, BIBLE BAPTIST CHURCH, TOBIAS TISSEN, ROSS MACKAY

Applicants.

- and -

HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF MANITOBA, DR. BRENT ROUSSIN in his capacity as CHIEF PUBLIC HEALTH OFFICER OF MANITOBA, and DR. JAZZ ATWAL in his capacity as ACTING DEPUTY CHIEF OFFICER OF HEALTH OF MANITOBA

Respondents.

AFFIDAVIT OF CARLA LOEPPKY
AFFIRMED: March 4th, 2021

DEPARTMENT OF JUSTICE
Constitutional Law Branch
[redacted]
Per: Heather Leonoff
Telephone No. [redacted]
Facsimile No.

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AFFIDAVIT OF CARLA LOEPPKY

I, CARLA LOEPPKY, of the City of Winnipeg, in the Province of Manitoba, **AFFIRM AS FOLLOWS:**

1. I have personal knowledge of the facts and matters hereinafter deposed to by me, except where same are stated to be based upon information and belief, and those I believe to be true.

2. I have a PhD. from the University of Manitoba in Community Health Sciences, obtained in 2009. I am currently employed as the Director and Lead Epidemiologist in the Epidemiology and Surveillance Unit in the Department of Health, Seniors and Active Living, Government of Manitoba. I have held this position since 2013. Prior to that I was a senior epidemiologist with Manitoba Health from 2011-2013. I am also an Assistant Professor in the Department of Community Health Sciences, Max Rady College of Medicine, University of Manitoba and have held that position since 2009. My curriculum vitae is attached as Exhibit A.

3. Epidemiology is a branch of medical science that deals with the incidence, distribution and control of diseases within a population. It looks at how many people have a disease or disorder and how those numbers are changing. It is a cornerstone of public health and provides data and analysis to help shape policy decisions regarding healthcare. While historically epidemiology dealt with epidemic diseases, it now covers all health matters including diseases such as cancer, as well as health-related issues such as hypertension and obesity.

4. The Epidemiology and Surveillance Unit generally has a staff of approximately 30 individuals consisting of epidemiologists, statistical analysts, student trainees, and surveillance personnel. On the epidemiology side, we have five PhD. trained senior epidemiologists and two masters-level epidemiologists. We also have three epidemiologists on our team from the Public Health Agency of Canada. Our numbers have been increased in response to the COVID-19 pandemic. We now have approximately surveillance thirty clerks completing data entry. Dr. Luiz Guidolin is our senior epidemiologist with a speciality in mathematical modelling and computer simulations of infectious diseases.

5. Part of my responsibilities is to represent the Province of Manitoba on a number of national committees. Both I and my senior epidemiologists are in regular contact with our counterparts across the country in regard to our experiences with COVID-19 so that we can share our experiences and learn from each other. I am aware that Manitoba is following a similar and consistent approach as the other provinces in an attempt to control the COVID-19 pandemic. This includes testing to identify people that have been exposed to the virus, rigorous contact tracing to identify potentially infected individuals, isolation of those at risk of spreading the disease, and public health measures to limit certain activities, particularly those involving gatherings for extended time periods.

6. In order for the Epidemiology and Surveillance Unit to assist in the provincial response to the pandemic, the Unit is alerted when a person has a positive lab test for the SARS-CoV-2 virus which causes COVID-19. The information of the positive test is entered by surveillance clerks into the provincial Public Health Information Management System (PHIMS). The relevant lab details are then sent to the appropriate regional health authority or responsible organization to contact the individual (a COVID-19 positive case) and begin the process of contact tracing. Contact tracing is foundational to public health and is critical to reduce the burden and spread of disease. Without contact tracing, infectious diseases are more prone to rapid spread. To date, Manitoba has been able to run an effective contact tracing program for COVID-19, meaning the staff is able to keep up with the volume, because the system has directed adequate resources into this vital public health process. Under provincial guidelines, a person who tests positive is contacted within 24 hours of the test result and 80% of contacts within one day.

7. As people are contacted for the public health investigation, the information they provide is entered into PHIMS. The provincial epidemiologists then analyse the data. This is a fluid and iterative process. All of the data relates to unique individuals and unique circumstances. Some of the information provided relates to demographic data, symptomology, possible locations where disease was contracted and co-morbidity risks. It is the role of the epidemiologist to assess and analyse the data so as to produce useful reports for a range of users.

8. As the COVID-19 pandemic has unfolded, the epidemiologists have developed a number of extracts and reports in order to provide evidence for decision makers. First, they will generate a list of new cases from the data entry of the previous day. This case list will then be transformed into a number of different epidemiological products. For example, each week day, a situational report is produced and distributed to approximately 75 internal users both in government and in the regional health authorities. Attached hereto and marked as Exhibit B is a copy of the situational report for January 14, 2021. A summary of this report is placed on the government's COVID-19 website each day and is distributed to the media.

9. In addition, the Unit also prepares a severe outcomes report bi-weekly. A severe outcome is defined as a death or hospitalization due to COVID-19. Attached hereto and marked as Exhibit C is a copy of the severe outcomes report for January 11, 2021. As of January 11th, Manitoba had 741 deaths from COVID-19; 1841 people had been hospitalized and 350 of those

hospitalized patients had been admitted to the intensive care unit. The data also shows that 7.0% of people diagnosed with COVID-19 require hospitalization and 1.3% will require ICU care. These figures are very important in assessing hospital resources and needs.

10. In addition to the province-wide reports, the Epidemiology and Surveillance Unit tailors reports for various stakeholder groups. For example, we provide each health region with a regular situational report and epidemiologists attend operational meetings to contribute additional epidemiological intelligence. There are also regular reports focused on First Nations data which are sent to First Nations' leadership for decision making. There are also specific reports with a focus on Correctional Facilities, healthcare workers and schools which are provided to the relevant and associated sector stakeholders.

11. By reviewing the data on COVID-19 cases and contacts, the epidemiologists are able to identify trends and clusters of activity. This allows for a targeted approach to controlling specific cluster outbreaks or more general approaches for outbreak management. For example, the team has identified clusters in a meat packing plant, on Hutterite colonies, in personal care homes and on certain First Nations. We have also identified a cluster in people employed in the trucking industry. Regardless of whether the individual who tested positive is himself or herself symptomatic or infectious, all of the data collected is used by the epidemiologists to understand important matters such as the timing of infections, where people are possibly getting infected and the spread of infections from pre-symptomatic and asymptomatic individuals as well as the likely extent of community transmission.

12. The Epidemiology and Surveillance Unit is also monitoring the impacts of the COVID-19 pandemic on various Manitoba health indictors. This will continue to be an area of study for a significant period of time post-pandemic. Our initial report based on data from January 1, 2019-August 31, 2020 is attached as Exhibit D. We are also interested in the impacts of COVID-19 as they relate to certain risk factors and characteristics. For example, our data helps us explore whether COVID-19 impacts children differently than adults, or if people with chronic conditions have different outcomes. Similarly, I am currently involved in a national study looking at the effects of COVID-19 on pregnant women.

13. All reports are distributed to the Office of the Chief Public Health Officer for consideration towards the public health measures.

14. Based on the accumulated data, the Unit has identified ten clusters associated with attendance at faith-based events, including services, choir practices and funerals. A summary of these events is as follows:

- Winnipeg Regional Health Authority – September 2020 – Church choir practice
  Four cases were identified. The choir consisted of five or six members and an organist. Social distancing was being practiced.

- Winnipeg Regional Health Authority – November 1-15, 2020 – Church services, volunteer activities and a church meeting
  Nineteen primary cases and at least seven secondary cases were identified. The church service on November 8th was attended by between 45-67 people.

- Winnipeg Regional Health Authority – Late October to early November 2020- Services, band practice and a meeting
  Fourteen confirmed cases and one case from another region identified as the possible index case. Three individuals were admitted to hospital from this cluster and two died (ages 60 and 32).

- Winnipeg Regional Health Authority – November 2020 – Choir practice
  Six cases and twenty-one secondary cases were identified.

- Winnipeg Regional Health Authority and others – November 2020 – Funeral
  Four primary cases and two secondary cases were identified across several health regions as people came to the funeral from several areas.

- Prairie Mountain Health – August 2020 – Church service
  Twelve cases were confirmed out of approximately fifteen attendees. Four individuals attended the service while infectious.

- Southern Health – Late October through November, 2020 – Church activities
  A cluster of nineteen individuals was linked to a church in the Steinbach area. Several church members, including the pastor, continued to carry-on their church activities while symptomatic.

- Northern Health Region – First Nation Reserve – February 2021- Funeral and wake
  A large gathering of over one hundred people attended a funeral and wake, as well as a birthday party on the following day. Fifty-four infections were identified in people who attended one of these events. Subsequently the case count on the reserve was over 300 cases with over 100 households impacted.

- Northern Health Region – First Nation Reserve – November 2020 – Funeral and wake
  Twenty-five confirmed cases of people who attended the funeral and wake. This resulted in further community spread. One child, age four, required hospitalization in Winnipeg.

- Interlake Eastern Regional Health Authority – October 2020 – Church service
  There were fourteen confirmed cases related to a church service held in mid-October. Three people from this cohort were hospitalized and one of them died (age 81).

15. The Unit also prepares modelling projections. The model that we use has been specifically designed by Dr. Luiz Guidolin for Manitoba. The model uses an agent-based approach and models the behaviours of the 1.4 million Manitoba residents. The data for the model is regularly updated. It predicts the outcomes of four scenarios that range from a best case to a worst case scenario. In the best case scenario there are highly restrictive public health measures and the public complies. In the worst case scenario there are inadequate public health measures and individuals do not adjust their behaviours in the face of the pandemic. The quality and accuracy of the model has been proven by comparing the predictions to the actual outcomes that have occurred over time.

16. Manitoba's COVID-19 case numbers stayed quite small through the spring and summer of 2020. The numbers began to steadily rise through September and October. By October, the contact tracing data showed that COVID-19 was spreading within the community and that the number of cases was doubling every two weeks. The modelling data estimated that for the week of October 19-24 the number of new cases of COVID-19 could range between 217-1299. Manitoba's actual new case count for that week was 1,038, at the higher end of the projected range. The modelling data also indicated that cases were expected to continue rising. The data suggested that without interventions the rise in infections could soon overwhelm the acute care system. The epidemiological analysis also provided information on potential acquisition settings, the most commonly identified being retail establishments and food service establishments, followed by congregate settings and learning institutions. The Unit report for October 15, 2020 which was sent to Dr. Roussin and other government officials is attached as Exhibit E.

17. On November 10, 2020, Dr. Guidolin and I presented an epidemiology and modelling report to Dr. Brent Roussin and other health and government officials. The report is attached as Exhibit

F to this affidavit. At the time of this report, Manitoba's COVID-19 case numbers were dramatically increasing and the health care system was in danger of reaching its limit of intensive care hospital beds within two weeks. On the date of the presentation there were only 8 ICU beds available in Manitoba. The evidence was clearly identifying significant community transmission of the SARS-CoV-2 virus. Manitoba's COVID-19 cases were doubling every two weeks which was putting the effectiveness of the contact tracing program in jeopardy. The number of deaths and hospitalizations was rising. The impact on the older population and on First Nations was very concerning.

18. Our presentation contained a summary of our modelling data. The modelling data showed that Manitoba was tracking along the worst case scenario and that case numbers were expected to rise to between 400-1000 new cases each day by December, 2020 (graph, p. 32). The modelling data also showed that COVID-19 patients could require 100% of Manitoba's clinical hospital beds by December 14, 2020 (graph, p.39) leaving no hospital beds for any other patients. The model also predicted that COVID-19 patients could require 100% of the province's intensive care beds as soon as November 23rd (graph p.44). The number of deaths was also expected to increase rapidly, with an estimated range of 219-597 deaths by December 10th (p. 46). Ultimately, as of December 10th, Manitoba had experienced 478 deaths, at the higher end of the projected range.

19. The report also modelled the effects of various public health measures as a means to change the trajectory of the number of diagnosed cases. The modelling data predicted that strict public health interventions would have the effect of changing the trajectory of diagnosed cases.

20. The report regarding Manitoba's COVID-19 cases to January 21, 2021 is attached as Exhibit G. The data shows that Manitoba's weekly COVID-19 case numbers have been decreasing since November 12, 2020. This date coincides with the date that the entire province was put under Level Red (critical) restrictions and is ten days following the imposition of Level Red (critical) restrictions in the Winnipeg area. The declining numbers is consistent with what was predicted in the model in Exhibit F, pages 50 and 51 and by the revised model in Exhibit G. The modelling predicts that if Manitoba continues to maintain the restrictions in effect on November 12th and there is good public compliance the numbers will continue to decline (graph p. 17). On the other hand, removing restrictions and permitting the public wide latitude would

potentially result in the numbers rising again (graph p. 17). The range of effects of different levels of restrictions and associated public compliance levels are presented (graph p. 15).

21. A summary of the province's most recent COVID-19 statistics is attached as Exhibit H.

22. An important conclusion that can be drawn from the data is that the current public health measures and the public's compliance with those measures has changed the trajectory of the diagnosed cases and has eased the pressure on acute care resources.

23. I make this affidavit bona fide.

AFFIRMED before me in the City of Winnipeg, in the Province of Manitoba, this 4th day of March, 2021.

A Barrister-at-law entitled to practice in and for the Province of Manitoba

CARLA LOEPPKY

This is Exhibit " A" referred to
in the Affidavit of Carla Loeppky
Affirmed before me this 4
day of March A.D. 2021

A Barrister-at-Law entitled to practice
in and for the Province of Manitoba

Education

Certificate in Public Sector Management, Government of Manitoba / University of Manitoba, 2014

I was selected to participate in this management trainee program which is provided to a small cohort of civil servants who show potential as leaders. Over the course of 1.5 years, I completed the following courses at University of Manitoba: Organizational Behaviour for Public Sector Management; Politics and Public Policy; Public Finance and Budgeting; Current Issues in Public Sector Management; Case Studies in Public Sector Management. I also completed a number of internal courses towards the completion of the certificate: Assertive Communication Skills; Creative Thinking for Problem Solving; Facilitation Strategies; Managing Projects for Results; Managing Under the Collective Agreement; Media Training; Respectful Workplace: Managers' Toolbox.

Post-Doctoral Training, Manitoba Centre for Health Policy (MCHP), Faculty of Medicine, University of Manitoba, 2009

MCHP is world-renown for the way it conducts quantitative research with linked administrative data sets. I was provided a scholarship to study here and focused my research on early childhood education; literacy programs for young children; and developmental disorders. MCHP also offered me the opportunity to engage and network with decision-makers within the provincial government and really was the start of my career as a civil servant.

Advisors: Drs. Marni Brownell and Noralou Roos

Doctor of Philosophy, Community Health Sciences, Faculty of Medicine, University of Manitoba, 2009

Community Health Sciences (CHS) was an excellent fit for my doctoral work. I was able to blend my interests in end-of-life care, adult education, and international health in a unique program of study. I completed two years of coursework and one year of exams and research preparation in Winnipeg. The final year of my program was spent in South Africa which created an amazing experience for myself academically but also my young (at that time) family. Throughout the course of my studies, I was well supported by scholarships.

Dissertation: *Hospice and palliative care in South Africa: The confluence of context and education*

Advisor: Dr. Harvey Max Chochinov

Field work completed at the University of Cape Town, South Africa, 2007

Masters of Science, Family Social Sciences, Faculty of Human Ecology, University of Manitoba, 2003

During a maternity leave from teaching, I began my Masters program at University of Manitoba. It was intended to be for personal interest but instead sparked significant long term study goals which culminated in completing a PhD.

Thesis: *Death anxiety in adolescents: The function of religiosity and bereavement*

Advisor: Dr. John Bond

Bachelors of Education and Human Ecology, University of Manitoba, 1998

These undergraduate degrees provided an excellent foundation with focused training in the fields of human development across the lifespan and human nutritional sciences.

Work Experience

Director and Lead Epidemiologist, Manitoba Health, Seniors and Active Living, 2013- Present

Several key aspects of this position include:

- *Leading a staff of approximately 30 individuals including epidemiologists, statistical analysts, student trainees (including from Red River College, University of Manitoba, and University of Winnipeg), and surveillance personnel.* I manage the staffing and operations of the unit with a budget of approximately $1.5 million consisting of both external and internal funds. I also maintain learning plans for each staff member, ensuring appropriate professional development opportunities are in place and aligned with the learning plans.
- *Knowledge translation and communicating evidence for intended public health action.* Communication in this role requires professionalism, diplomacy and the ability to translate scientific ideas to a lay audience. I am adept at preparing presentations for a range of audiences, preparing a host of written materials, and providing and receiving feedback. Working in the field of communicable diseases is incredibly demanding and requires quick and accurate responses. I use evidence generated by my team to support decision-making within the department, respond to media requests, and improve health outcomes of Manitobans.
- *Project management of large and small scale initiatives*. I am currently the Team Lead on a project which will transform the Surveillance Unit into a paperless environment; we will achieve a full return on investment within three years. We are on budget ($675,000) to complete the work by the end of the fiscal year 2020. Over the last five years I have upgraded my skillset in the field of project management through internal courses offered by the government and during the Certificate for Public Sector Management which has provided me both the confidence and competence to lead initiatives within the civil service.
- *Exploring new and innovative ways to conduct surveillance and epidemiological analyses with fewer resources and heightened expectations*. Change management is a significant part of my work as when we bring on new technologies there is a critical period of training, stakeholder engagement and communication. With change also comes the role of maintaining and improving quality of our products whether it relates to data entry, reporting, or analytical tools.
- *Championing innovation in a resource constrained environment*. This takes creativity and skills to "think outside the box" in order to achieve high and ever-changing standards. Innovation also relies on the strength of my internal and external networks which I work to nurture and expand regularly. I have excellent working relationships with academic centres, researchers, and experts in areas of population and public health epidemiology
- *Applying metrics to the epidemiological cycle to plan, design / develop, implement and evaluate our surveillance systems and the outputs used by internal and external stakeholders.*
- *Engaging stakeholders in strategic visioning processes to guide provincial public health broadly and surveillance of communicable diseases more specifically.* There are significant transformations occurring in the department and civil service which require thoughtful attention to both the strategic planning as well as the accompanying operational planning. This work relies on strong interpersonal skills, collaboration, and the ability to work effectively on a team.
- *Mentoring students and trainees in collaboration with the community medicine program or other relevant graduate programs.* In 2017, I developed a student training program for the summer students hired in Public Health to ensure students have an excellent learning experience as well

as develop opportunities to network. In 2018, I expanded the curriculum to include learning about the Truth and Reconciliation Commission.

- *Conducting applied public health research to enhance understanding of population-level issues in Manitoba both with a range of stakeholders and from an equity perspective.*
- *Representing Manitoba on provincial and national committees in areas such as HIV, communicable disease surveillance, poison control and health equity.*

Interim Executive Director, Cadham Provincial Laboratory, Manitoba Health, Seniors and Active Living, October-December, 2016

Cadham Provincial Laboratory (CPL) had been without an Executive Director (ED) for a lengthy period of time; I provided bridge services while CPL was conducting a search for a new ED. During my time at CPL, I explored potential mechanisms to streamline public health services between the lab and the provincial public health team; co-produced (with Dr. Paul VanCaeseele) a Value for Money document relating to the need for a new laboratory; and reviewed HR processes and competitions. I have translated one of CPL's daily check in processes to my surveillance team with great result.

Director, Curriculum Renewal (CuRe) Clerkship for Community Health Sciences, Faculty of Medicine, University of Manitoba, 2012-2014

In 2012 the Faculty of Medicine overhauled the undergraduate curriculum for medical students. All departments hired a Clerkship Director to lead the curriculum renewal process and to represent the needs of their departments. In this role I evaluated how Community Health Sciences (CHS) contributed to the "old" medical curriculum and then identified what the department ultimately wanted to have embedded. In the new curriculum, I was successful in negotiating a three-fold increase in the number of contact hours; a new approach to teaching CHS curriculum; and a stronger focus on public and population health. During this time I was also highly involved in the Faculty of Medicine's Inter-professional Education programming.

Senior Epidemiologist, Manitoba Health, 2011-2013

In this role I conducted provincial-level analyses of communicable diseases, prepared reports for internal or public dissemination, and provided leadership in the field of knowledge translation.

Assistant Professor (part-time) Community Health Sciences, University of Manitoba, 2009-Present

I have had the opportunity to be a part-time Assistant Professor (nil-salaried) with CHS for the last decade. This has given me the ability to apply for grants as a lead investigator or support other grant applications in a co-investigator role. As an Assistant Professor, I am also a part of CHS' Departmental Council and as such am involved in the decision-making and priority setting for the department. In 2019 I took on a new role as the Director of Research for the Public Health Residents. I also supervise students in their Masters programs and participate as a committee member for those students who are working on their PhDs. As a faculty member, I am familiar with the wide range of University regulations and policies and endeavour to apply them consistently in my professional role. Being in this role concurrently as the Director of Epidemiology and Surveillance has created meaningful partnerships which have benefitted both organizations.

Research Associate, Manitoba FASD Centre, University of Manitoba, 2009-2011

I was the first Research Associate hired by the Manitoba Fetal Alcohol Spectrum Disorder (FASD) Centre. My primary goal was to conduct research using the clinical data collected by the Centre.

My secondary objective was to support and nurture research being conducted by the other clinicians involved in the Centre. During my time I completed a research study in The Pas relating to telehealth and Fetal Alcohol Spectrum Disorder assessment. I also worked with four of the clinicians to complete their analysis and support their research priorities.

Program Evaluator, Healthy Child Manitoba, Healthy Living, Youth and Seniors, 2010-2011

I was hired on contract by Healthy Child Manitoba to complete a program evaluation of CHOICES an intervention designed to either change drinking or contraceptive behaviours to ultimately reduce babies born with FASD.

Student Supervision and Teaching Experience

Post-graduate student supervision through CHS

- Committee member for PhD student Leigh McClarty- expected date of completion September 2020. Dissertation focuses on HIV trajectory of Care in Manitoba.
- Committee member for MSc student Alexandrea Andersen—expected date of completion September 2020.
- Lead advisor for MSc student Dr. Davinder Singh- completed October 2017. Thesis focused on Influenza outbreaks in Manitoba institutions.
- Lead advisor for MPH student Aimee Bowcott- graduated October 2016. Project focused on knowledge translation of surveillance analyses.
- Committee member for MSc Student Maria Fernanda Medina- graduated October 2015. Thesis focused on Life Story Board and healing post-trauma.

CHS Faculty Involvement (2009-present)

As both a doctoral student and part-time faculty member, I have been highly engaged in the Faculty of CHS. Some of the activities I have been involved in are:

- Providing support to the Public Health Residents as their Research Advisor
- Providing lectures on knowledge translation, equity, and health literacy
- Training tutors to deliver new Scholarship in Medicine Curriculum
- Teaching the graduate course *Research Methods in Health Care*
- Leading tutorial sessions for small groups (different topics covered)
- Providing leadership as an Inter-Professional Education Faculty Trainer

Extended Education Faculty Involvement 2010

- I developed the curriculum for and taught *Human Development in the Family* in the Aboriginal Focus Program. This course was delivered in The Pas to a group of about 30 adult learners completing their Aboriginal Child and Family Services Diploma.

Family Social Sciences Faculty Involvement (2005 to 2011)

I both developed the curriculum for and taught the following sessional courses while involved in the Faculty of Human Ecology throughout my graduate student years:

- *Integration of Health Determinants for Canada and World*, 2008
- *Developmental Health*, 2007 & 2008
- *Death and the Family*, 2004 & 2005
- *Families in the Later Years*, 2004 & 2005

School of Medical Rehabilitation Faculty Involvement (2002-2004)

- Sessional lecturer in the areas of human development, death and dying.

Junior and Senior High Teacher, 1996-2004

- I spent a number of years as a teacher both in McCreary and Winnipeg, Manitoba, teaching courses such as Foods and Nutrition, Family Studies, English, Physical Education, and History to junior and senior high students.

Committee Memberships (current)

Multi-sectoral/National

- Health Information Management Advisory Committee—*Red River College*
- Steering Committee Member of the *Living with HIV Research Team*
- Provincial Representative on the *Multi-Lateral Information Sharing Agreement (MLISA)* Network
- Member of the *Canadian Surveillance System for Poison Information (CSSPI)*
- Member of *Manitoba HIV Collective Impact Network Stewardship Committee*

Manitoba Health, Seniors and Active Living

- Member *Department Renewal Committee*
- Member of *Public Health Management Committee*
- Member of the *Department Council Community Health Sciences*
- Advisory Committee Member for *Manitoba Centre for Health Policy Deliverable relating to Tuberculosis in Manitoba*
- *Advisory Committee Member* for Manitoba Centre for Health Policy Deliverable relating to Diabetes in Manitoba
- Member of the *Community Health Assessment Network*

Volunteer Experience

- 2015 to present: member of the Tavern Crew (Winnipeg Folk Festival)
- 2018 to present: Board of Directors for Candace House
- 2008 to present: volunteer for many school and sporting activities
- 2012 to present: volunteer for Boston Terrier and Pug Rescue of Southern Manitoba

Scholarships & Awards

PhD Fellowship- Social Sciences and Humanities Research Council
Doctoral Research Award- International Development Research Council
Duff Roblin Scholarship- University of Manitoba

David G. Fish Memorial Scholarship- University of Manitoba
Dissertation Award- Manitoba Health Research Council
Studentship- Western Regional Training Centre
UMSU Scholarship
Mary E. Lamont Scholarship
U of M Graduate Fellowship
Silver Jubilee Scholarship
Ruth Binnie Scholarship
Anthony J. Besarabowicz Award

Scholarly Activities-- Highlights[1]

Refereed Publications and Book Chapters

Bullard, J.; Funk, D; Dust, K., Garnett, L., Tran, K, Bellow, A., Strong, J., Lee, S., Waruk, J., Hedley, A, Alexander, J, Van Caeseele, P., **Loeppky, C.,** & Poliquin, G. (under review). Evaluation of Infectious Severe Acute Respiratory Syndrome Coronavirus 2 in Children with Coronavirus Disease 2019 from Diagnostic Samples. JAMA Peds.

McClarty, L., Kasper, K., Ireland, L, **Loeppky, C**., Blanchard, J. & Becker, M. (2021) The HIV care cascade in Manitoba, Canada: Methods, measures and estimates to meet local needs. Journal of Clinical Epidemiology (132; 26-33).

Singh, D., VanCaeseele, P., Depeeng, J. & **Loeppky,** C. (2019) T*he effect of timing of oseltamivir chemoprophylaxis in control influenza B outbreaks in long term care facilities in Manitoba, Canada, 2017-2018: A retrospective cohort study*. The Canadian Journal of Infection Control.

Thompson, L., Nugent, Z, Wylie, J., **Loeppky, C.,** VanCaeseele, P., Blanchard, J. & Yu, N. (2019). Laboratory Detection of First and Repeat Chlamydia Cases Influenced by Testing Patterns. Microbiology Insights. https://doi.org/10.1177/1178636119827975

Rosella, L.C., Bornbaum, C, Kornas, K, Lebenbaum, M, Peirson, L., Fransoo, R., **Loeppky, C**, Gardner, C. & Mowat, D. (2018). Evaluating the Process and Outcomes of a Knowledge Translation Approach to Supporting Use of the Diabetes Population Risk Tool (DPoRT) in Public Health Practice 2018 *Canadian Journal of Program Evaluation,* 33.1 (Spring / printemps), 21–48 doi: 10.3138/cjpe.31160

Singh, D., VanCaeseele, P., Depeeng, J. & **Loeppky,** C. (2018). The effect of timing of oseltamivir chemoprophylaxis in controlling influenza A H3N2 outbreaks in long term care facilities in Manitoba, Canada, 2014-2015: A retrospective cohort study. Infection Control & Hospital Epidemiology. 0, 1–6, doi:10.1017/ice.2018.115

Plourde, P., Bertram-Farough, A., Wang, R., **Ens, C.,** Yu, BN. (2016). LTBI treatment completion and risk factors for non-completion in an urban city of western Canada: a population-based study. International Journal of Tuberculosis and Lung Disease (IJTLD). S2399 EP-233-29.

Shaw, S., Ireland, L, McClarty, L., **Loeppky, C.,** Yu, N., Wylie, J., Bullard, J., Van Caeseele, P., Keynan, Y., Kasper, K., Blanchard, J., & Becker, M. (2016) Prior history of testing for syphilis, hepatitis B and hepatitis C among a population-based cohort of HIV-positive individuals and their HIV-negative controls, AIDS Care.

Yu, BN, Klassen, P, Wang, R., **Ens, C**. (2016). Increasing trends of COPD in persons living with diabetes: A population-based matched cohort study, 1984-2013. International Journal of Tuberculosis and Lung Disease (IJTLD). S266, OA-414-28.

Thompson, L., Nugent, Z., Blanchard, J., **Ens, C.,** & Yu, B.N. (2016). Increasing incidence of anogenital warts with an urban–rural divide among males in Manitoba, Canada, 1990–2011. BMC Public Health.

Christianson, S., Sharma, M., Yu, N., **Ens, C.** and Wolfe, J. (2015). Molecular Epidemiology of *Mycobacterium tuberculosis* in Manitoba (2003-2013): A Population-based Study

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Invited Lectures, Presentations, and Media

06/2011: *"It can be complicated at times":* Perspectives on Providing Perinatal Palliative Care. Saskatoon General Hospital.

04/2010: Telehealth and FASD. Presentation to the Standing Committee. Manitoba Metis Federation.

03/2010: Published two articles (*Manitoba FASD Centre Conducts Exciting New Research* & *Telehealth for FASD Assessment and Follow-up in Manitoba*) in the Coalition for Alcohol and Pregnancy (C.A.P.) March 2010 Newsletter.

11/2009: "FASD Research Initiatives at the MB FASD Centre" for the Coalition for Alcohol and Pregnancy (co-presented with Dr. Ana Hanlon-Dearman) (Rehab Centre for Children).

05/2008: "South Africa" Quality of Life (QOL) Meeting (Winnipeg).

11/2007: "South African Hospices and Research. Do the two belong together?" Hospice Association of the Western Cape (Paarl Hospice, South Africa).

10/2006: "European Association of Palliative Care Conference" A lecture for the WRTC Program.

05/2006: "Aging, dying and death" A lecture in Family Social Sciences.

04/2006: "Canadian Virtual Hospice: WRTC Field Placement" Community Health Sciences Symposium.

03/2006: "Canadian Virtual Hospice: Playground or Minefield" Family Social Science Symposium.

12/2003: "Death Anxiety in Adolescents: The Function of Religiosity and Bereavement" Dafoe Library Lecture Series at University of Manitoba.

04/2002: "Education and preparation" panel presentation the Family Studies Symposium.

11/2002: "Grief and bereavement" lecture for Med Rehab, University of Manitoba.

04/2001: "Health Care Expenditures and the Elderly" for the Family Studies Symposium.

01/2010: Podcast entitled "Hospice Care In South Africa: Improving Access For Patients Through Education And Standardisation" for the International Program of Psycho-Social Health Research (CQ University in Australia) http://www.ipp-shr.cqu.edu.au/podcasts/.

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This is Exhibit " B " referred to
in the Affidavit of Carla Loeppky
Affirmed before me this 4
day of March A.D. 2021

A Barrister-at-Law entitled to practice
in and for the Province of Manitoba

AB1389

*****FOR INTERNAL USE ONLY*****

COVID-19: MHSAL EPIDEMIOLOGICAL SITUATION REPORT

Key Points

- As of 14JAN21, there are a total of **26954 cases of COVID-19** reported in Manitoba.
- There are **261 new cases and 259 net new cases** today. (see table 1 below).
- There are **2886 active cases** today.
- There have been **755** deaths related to COVID-19.
- There have been **226** cases with unknown acquisition in the last 7 days.
- There have been 13475 cases reported in females and 13462 in males.
- Among female cases, 281 women reported being pregnant at time of diagnosis.
- Person-person spread in Manitoba began around March 24th and in-community spread appears to have begun around March 27th.
- Data collected from 26954 case reports shows that 23029 individuals reported any symptoms and 3925 reported asymptomatic infection.
- Our current data is showing that approximately 17% of named contacts become infected with COVID-19.
- Since July 1, 2020 there have been 15784 cases in Winnipeg and 820 are active
- Since July 1, 2020 there have been 1746 cases in PMH and 218 are active

POSITIVE AND ACTIVE CASES IN MANITOBA BY REGION

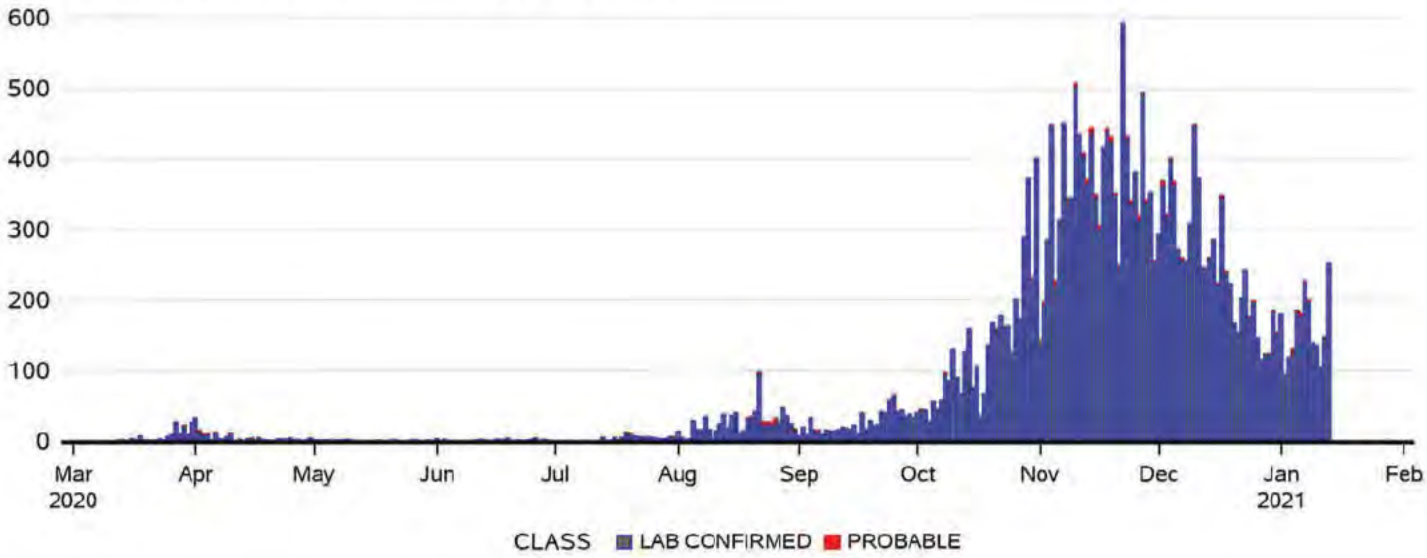
Figure 1. Map of Positive and Active Cases in Manitoba by RHA

Region	# of Positive Cases	# of Positive FNIHB Cases	# of Active Cases	# of Active FNIHB Cases	# of New Cases	# of New FNIHB Cases
Prairie Mountain Health	1772	127	218	74	23	1
Interlake-Eastern Health	1979	816	337	272	11	8
Northern Health	2687	1528	1297	1070	139	71
Southern Health - Sante Sud	4496	155	214	125	13	5
Winnipeg Health	16020	186	820	96	75	2

EPIDEMIC CURVE OF COVID-19 IN MANITOBA

The Epidemic curve below shows the case counts for cases on the dates that they were reported to the Manitoba Health Surveillance Unit (MHSU).

Figure 2. Epidemic curve of COVID-19 in Manitoba



^See the case definitions in the Appendix

EPIDEMIC CURVE OF COVID-19 IN MANITOBA

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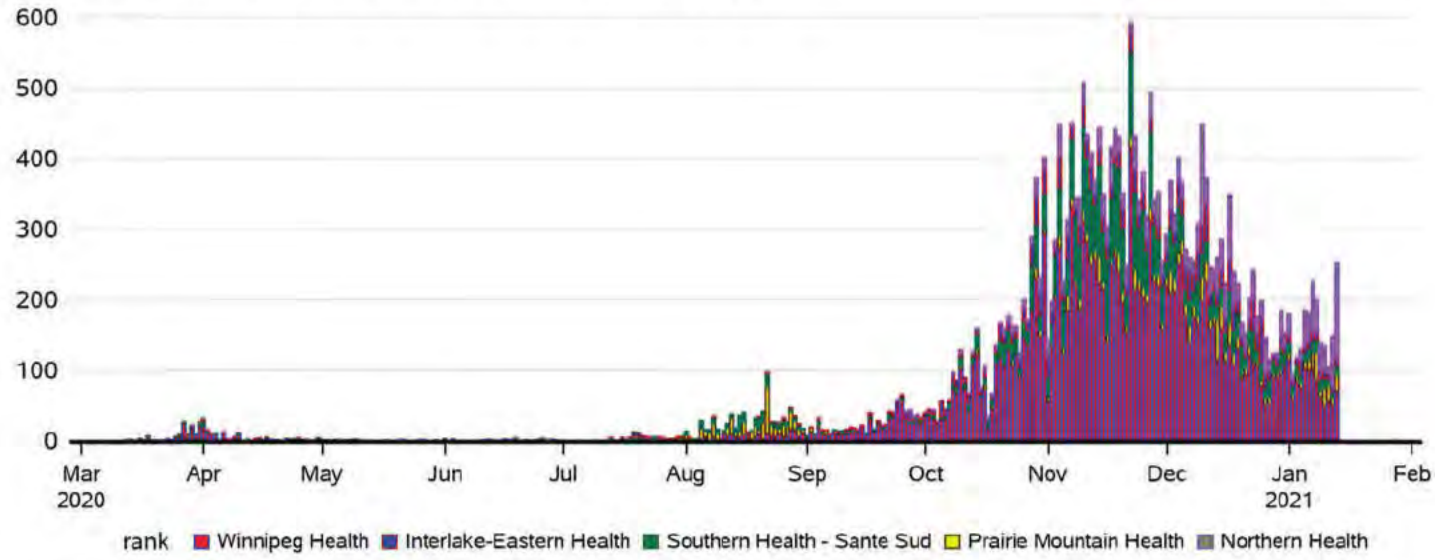
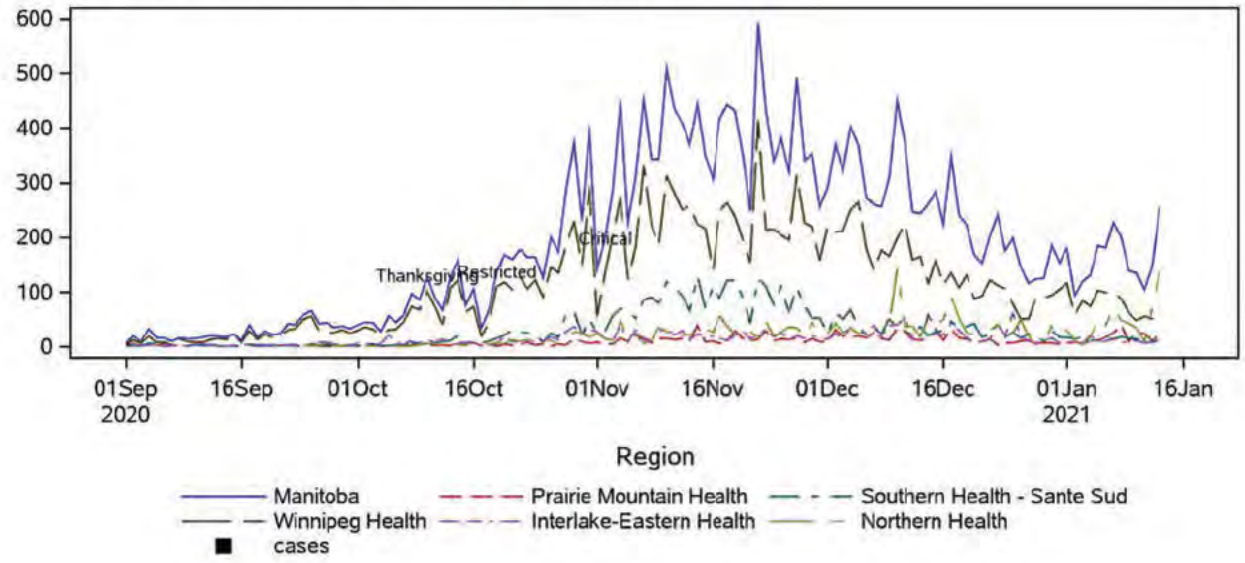
The Epidemic curve below shows the case counts for cases on the dates that they were reported to the Surveillance Unit (MHSU).

Figure 3. Epidemic curve of COVID-19 in Manitoba by RHA



^See the case definitions in the Appendix

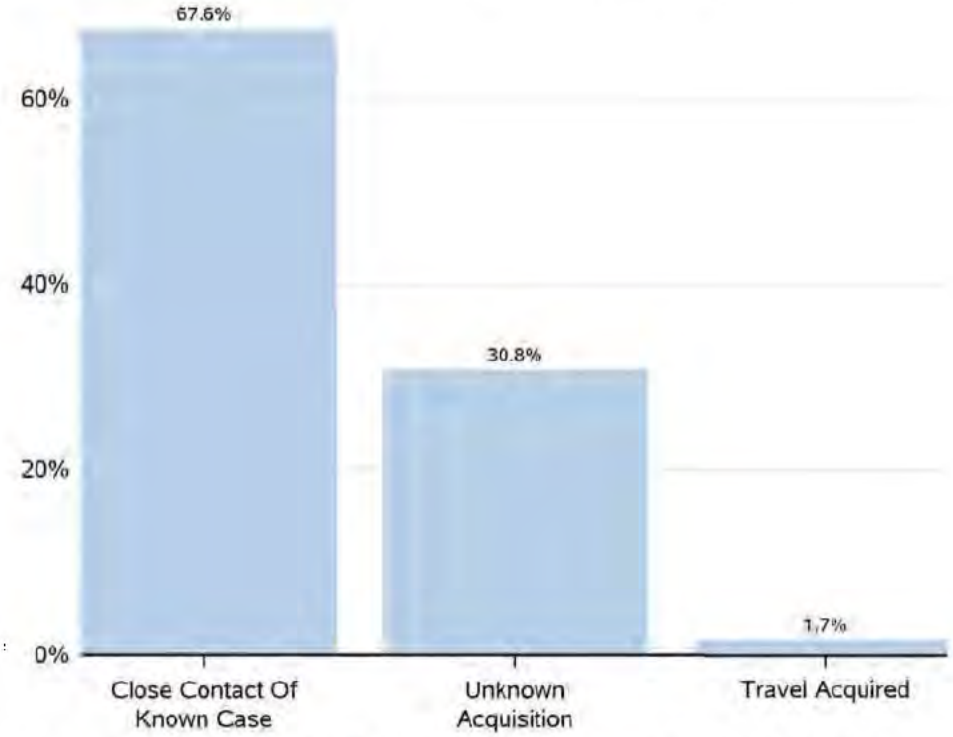
Figure 4. Regional COVID-19 cases in Manitoba



MOST LIKELY SOURCE OF INFECTION OF COVID-19 IN MANITOBA

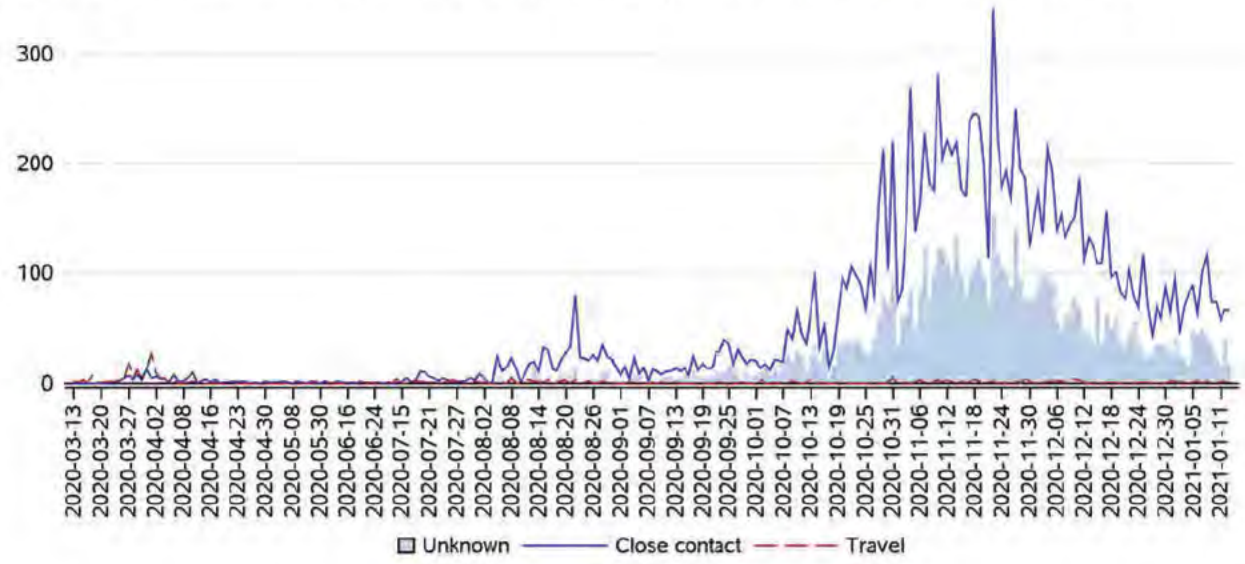
The chart below the curve shows the proportions of infections attributed to close contact of a case, travel, unknown source of infection, and pending further investigation.

Figure 5. Acquisition type for COVID-19 cases in Manitoba



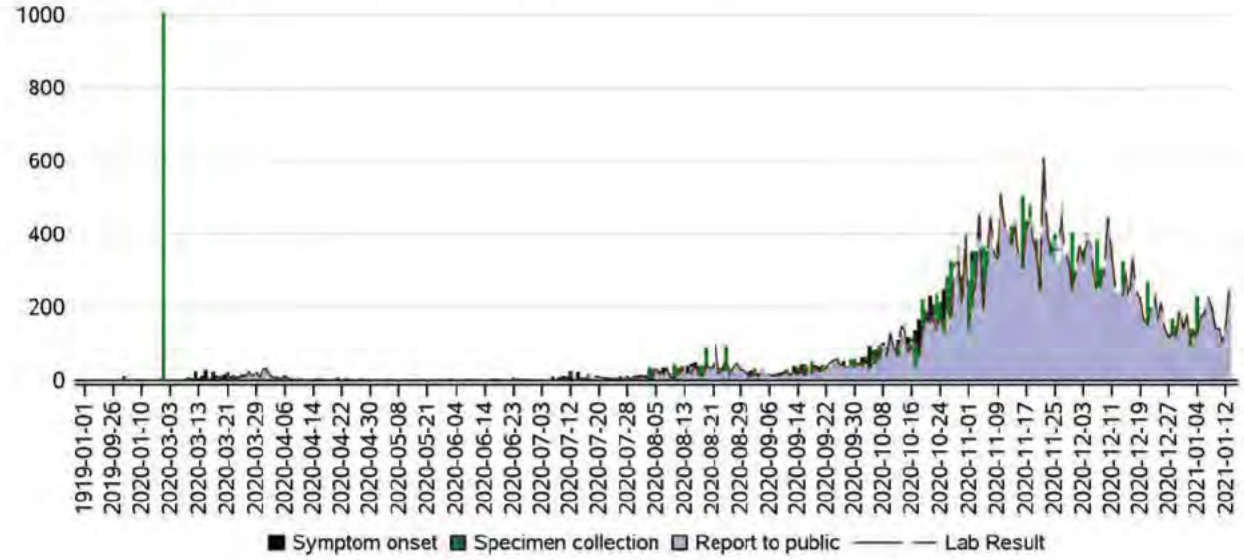
The timeline below indicates that known person-person spread in Manitoba began around March 24th and in-community spread may have begun around March 27th.

Figure 6. Timeline of infection acquisition type for COVID-19 cases in Manitoba



When looking at the timeline of cases from symptom onset date,through specimen collection, lab test result, and reported date,we can see the reflection of reported cases backward. The same surge we saw with case counts after March 27 are apparent also in the specimen collection and symptom onset date.

Figure 7. Timeline of COVID-19 in Manitoba

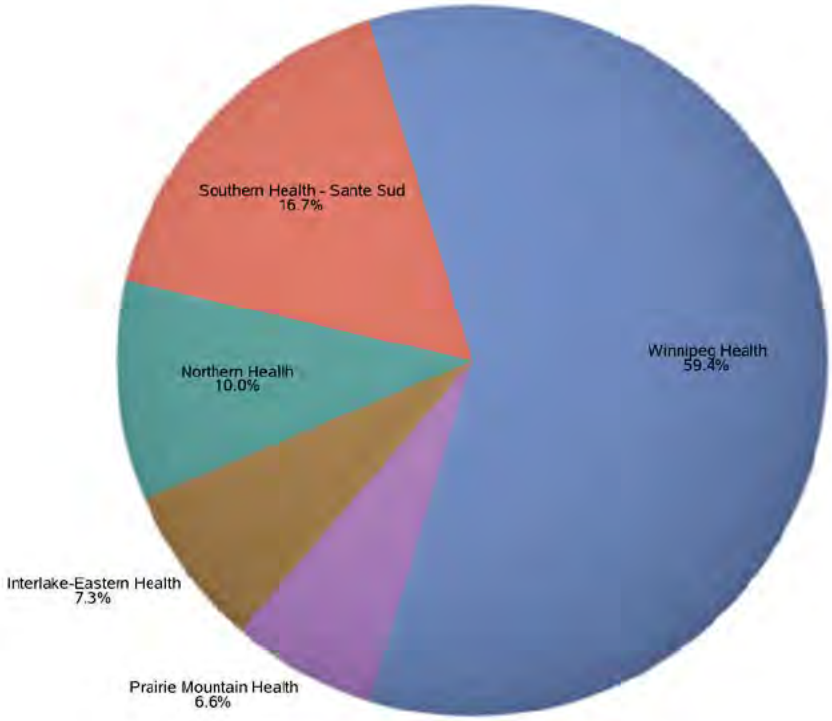


COVID-19 CASE COUNTS BY REGION (RESPONSIBLE ORGANIZATION)

Table 4. COVID-19 case counts by region

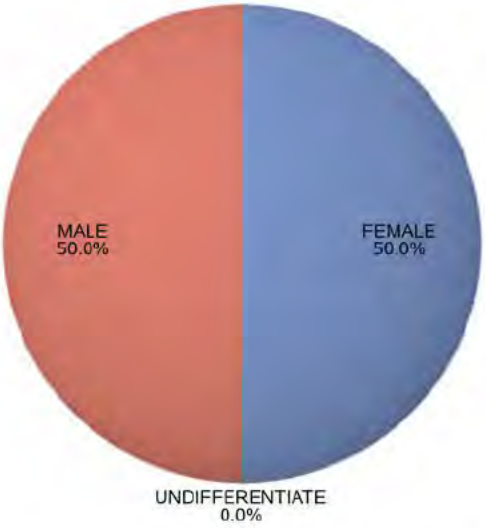
	Interlake-Eastern Health	Northern Health	Prairie Mountain Health	Southern Health - Sante Sud	Winnipeg Health
Lab Confirmed	1962	2664	1747	4415	15997
Probable	17	23	25	81	23
Total	1979	2687	1772	4496	16020

Figure 8. COVID-19 cases by Region



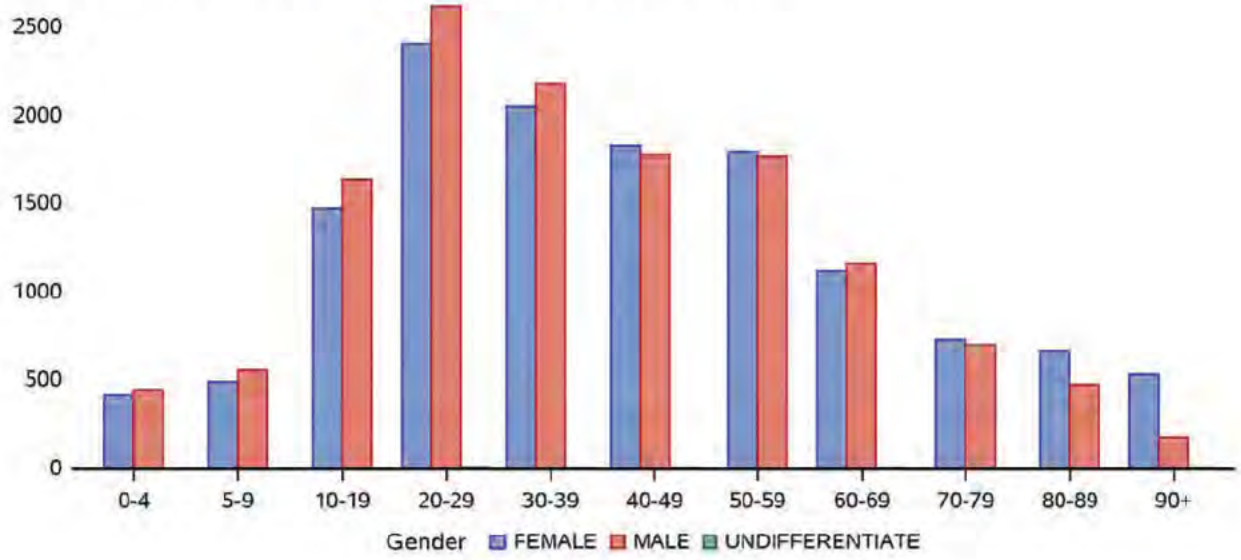
COVID-19 CASE DEMOGRAPHICS N=26954

Figure 9. Case counts in females versus males



Among female cases, 281 women reported being pregnant at time of diagnosis.

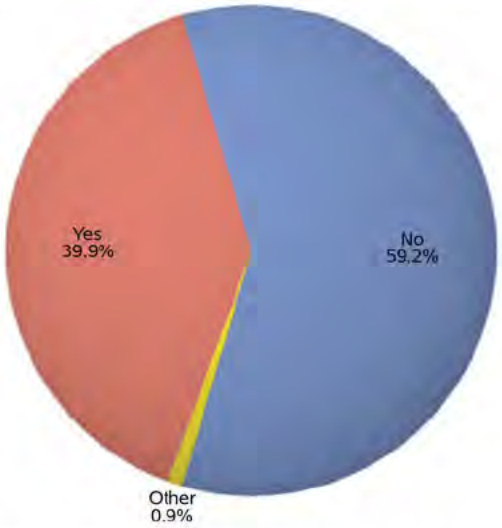
Figure 10. Case counts separated by both sex and age



UNDERLYING ILLNESS N=7469

18726 reports were received of which, 7469 reports indicated an underlying illness. These included comorbidities such as cardiac, pulmonary, kidney, and liver disease, diabetes, hypertension, asthma,and any immunocompromised status.

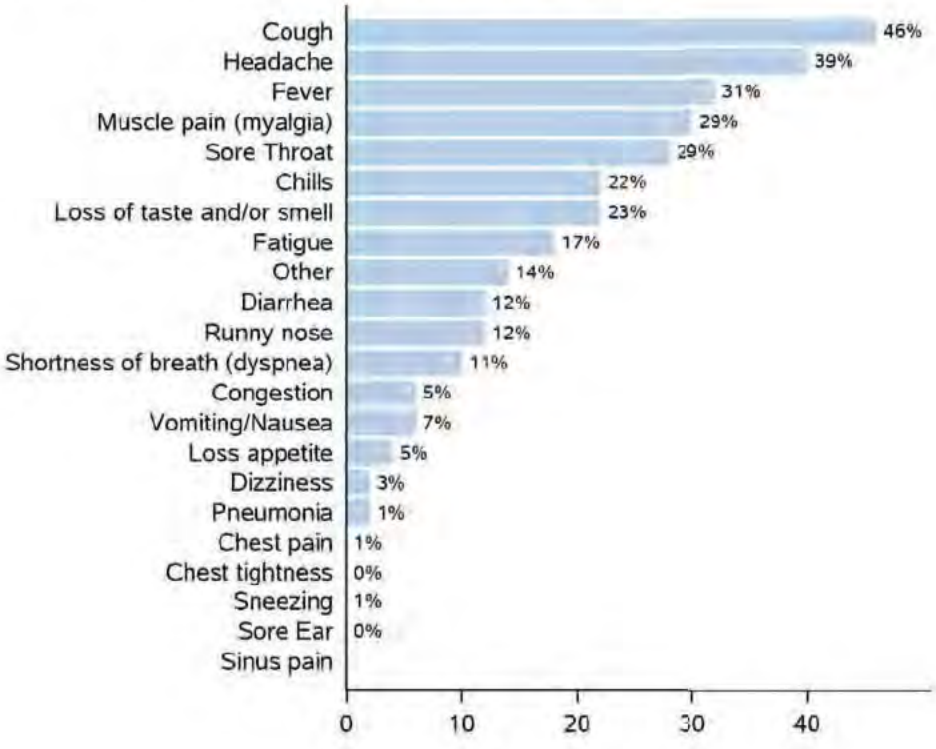
Figure 11. Presence of an underlying illness in COVID-19 cases in Manitoba



COVID-19 CASE SYMPTOMS N=23029

We have received 26954 reports, of which 23029 reported any symptoms and 3925 reported asymptomatic infection.

Figure 12. Symptoms in Manitoban COVID-19 cases



COVID-19 CONTACTS SUMMARY

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Region	Active Cases	Median # of Contacts	Minimum # of Contacts	Maximum # of Contacts
Interlake-Eastern Health	337	0	0	13
Northern Health	1,297	0	0	20
Prairie Mountain Health	218	1	0	30
Southern Health - Sante Sud	214	0	0	9
Winnipeg Health	820	1	0	28

AB1399

COVID-19 CONTACTS SUMMARY -LAST 2 WEEKS

Region	Active Cases	Total Contacts	Median # of Contacts	Minimum # of Contacts	Maximum # of
Interlake-Eastern Health	98	88	0	0	13
Northern Health	493	999	0	0	20
Prairie Mountain Health	147	470	2	0	30
Southern Health - Sante Sud	114	162	0	0	9
Winnipeg Health	650	1,666	2	0	28

Includes all unique contacts, including contacts that have turned into a case

APPENDIX: SURVEILLANCE CASE DEFINITIONS

Surveillance case definitions are provided for the purpose of standardized case classification and reporting. They are based on the current level of epidemiological evidence and uncertainty, and public health responsegoals, and are subject to change as new information becomes available.

These surveillance case definitions are not intended to replace clinician or public health practitioner judgment inindividual patient management or testing, or for the purpose of infection control triage. For current screeningand testing advice, please refer to https://manitoba.ca/asset_library/en/coronavirus/screening_tool.pdf

Probable case â€“ A person who:

- has a fever (> 38Â°C), **AND/OR**
- has new onset of (or exacerbation of chronic) cough or difficulty breathing, **AND**
- meets exposure criteria, **AND**
- for whom laboratory diagnosis of COVID-19 is:
- inconclusive (inconclusive is defined as a positive test on a single real-time PCRtarget or a positive test with an assay that has limited performance data available),
- NAATs must be validated for detection of the virus that causes COVID-19.
- An indeterminate result on a real-time PCR assay is defined as a lateamplification signal in a real-time PCR reaction at a predetermined high cycle threshold value. This may be due to low viral target quantity in theclinical specimen approaching the limit of detection (LOC) of the assay, or may represent nonspecific reactivity (false signal) in the specimen. When clinically relevant, indeterminate samples should be investigated further in the laboratory (e.g. by testing for an alternate gene target using a validated real-time PCR or nucleic acid sequencing that is equally or more sensitive than the initial assay or method used) or by collection and testing of anothersample from the patient with initial indeterminate result.
- A (un-tested) person with:
- Fever (over 38 degrees Celsius), **AND/OR**
- Cough (new or exacerbated chronic), **AND**
- Close contact1 with a confirmed case of COVID-19, **OR**
- Lived in or worked in a closed facility known to be experiencing an outbreak of COVID-19 (e.g., long-term care facility, correctional facility)

Confirmed case â€“ A person with a laboratory confirmation of infection with the virus that causes COVID-19 performed at a community, hospital or reference laboratory (NML or a provincial public health laboratory) running a validated assay. This consists of detection of at least one specific genetarget by a NAAT assay (e.g. real-time PCR or nucleic acid sequencing).

Note:

- NUCLEIC ACID AMPLIFICATION TESTS MUST BE VALIDATED FOR DETECTION OF THE VIRUS THAT CAUSES COVID-19 POSITIVE LABORATORY TESTS DURING EARLY STAGES OF TESTING (E.G. FIRST 10POSITIVE TESTS) AT A NON-REFERENCE LABORATORY REQUIRE ADDITIONAL TESTING AT A REFERENCELABORATORY FOR CONFIRMATION.
- LABORATORY TESTS ARE EVOLVING FOR THIS EMERGING PATHOGEN, AND LABORATORY TESTING RECOMMENDATIONS WILL CHANGE ACCORDINGLY AS NEW ASSAYS ARE DEVELOPED AND VALIDATED.

Table 1. Summary of new cases of COVID-19 in Manitoba

AB1401

Region	Age group	Gender	Cases
Interlake-Eastern Health	10-19	Female	1
Interlake-Eastern Health	10-19	Male	1
Interlake-Eastern Health	30-39	Female	3
Interlake-Eastern Health	40-49	Female	2
Interlake-Eastern Health	40-49	Male	2
Interlake-Eastern Health	50-59	Male	2
Northern Health	0-4	Female	13
Northern Health	0-4	Male	6
Northern Health	10-19	Female	10
Northern Health	10-19	Male	12
Northern Health	20-29	Female	17
Northern Health	20-29	Male	19
Northern Health	30-39	Female	14
Northern Health	30-39	Male	8
Northern Health	40-49	Female	4
Northern Health	40-49	Male	5
Northern Health	5-9	Female	5
Northern Health	5-9	Male	8
Northern Health	50-59	Female	3
Northern Health	50-59	Male	3
Northern Health	60-69	Female	3
Northern Health	60-69	Male	3
Northern Health	70-79	Female	4
Northern Health	70-79	Male	1
Northern Health	80-89	Female	1
Prairie Mountain Health	10-19	Female	3
Prairie Mountain Health	10-19	Male	2
Prairie Mountain Health	20-29	Female	3
Prairie Mountain Health	20-29	Male	1
Prairie Mountain Health	30-39	Male	3
Prairie Mountain Health	40-49	Female	1
Prairie Mountain Health	5-9	Female	1
Prairie Mountain Health	50-59	Female	1
Prairie Mountain Health	50-59	Male	2
Prairie Mountain Health	60-69	Male	2
Prairie Mountain Health	70-79	Female	2
Prairie Mountain Health	70-79	Male	1
Prairie Mountain Health	80-89	Male	1
Southern Health - Sante Sud	10-19	Male	2
Southern Health - Sante Sud	20-29	Female	1
Southern Health - Sante Sud	30-39	Female	4
Southern Health - Sante Sud	30-39	Male	1
Southern Health - Sante Sud	40-49	Male	1
Southern Health - Sante Sud	60-69	Female	1

Southern Health - Sante Sud	70-79	Female	1
Southern Health - Sante Sud	70-79	Male	1
Southern Health - Sante Sud	90+	Female	1
Winnipeg Health	0-4	Female	1
Winnipeg Health	0-4	Male	1
Winnipeg Health	10-19	Female	3
Winnipeg Health	10-19	Male	4
Winnipeg Health	20-29	Female	6
Winnipeg Health	20-29	Male	12
Winnipeg Health	30-39	Female	7
Winnipeg Health	30-39	Male	4
Winnipeg Health	40-49	Female	2
Winnipeg Health	40-49	Male	5
Winnipeg Health	5-9	Female	4
Winnipeg Health	50-59	Female	5
Winnipeg Health	50-59	Male	3
Winnipeg Health	60-69	Female	7
Winnipeg Health	60-69	Male	2
Winnipeg Health	70-79	Female	4
Winnipeg Health	70-79	Male	2
Winnipeg Health	80-89	Female	2
Winnipeg Health	90+	Male	1

DEATHS DUE TO COVID-19 IN MANITOBA

AB1404

The table below shows the demographics for deaths related to COVID-19

Table 2. Deaths due to COVID-19 in Manitoba

Date of death	Gender	Age	Region
.	Male	84	Winnipeg Health
.	Male	69	Winnipeg Health
.	Female	71	Winnipeg Health
March 26, 2020	Female	66	Winnipeg Health
April 2, 2020	Male	54	Winnipeg Health
April 6, 2020	Male	66	Winnipeg Health
April 9, 2020	Male	73	Winnipeg Health
April 13, 2020	Female	69	Prairie Mountain Health
April 20, 2020	Female	85	Winnipeg Health
May 4, 2020	Male	74	Southern Health - Sante Sud
July 22, 2020	Male	76	Southern Health - Sante Sud
August 14, 2020	Male	88	Southern Health - Sante Sud
August 15, 2020	Male	84	Southern Health - Sante Sud
August 16, 2020	Male	92	Southern Health - Sante Sud
August 17, 2020	Male	65	Southern Health - Sante Sud
August 23, 2020	Female	99	Southern Health - Sante Sud
August 26, 2020	Female	94	Southern Health - Sante Sud
September 1, 2020	Female	85	Southern Health - Sante Sud
September 2, 2020	Female	90	Southern Health - Sante Sud
September 20, 2020	Female	80	Prairie Mountain Health
September 20, 2020	Male	85	Southern Health - Sante Sud
September 21, 2020	Female	98	Winnipeg Health
September 26, 2020	Male	73	Prairie Mountain Health
September 29, 2020	Male	70	Winnipeg Health
October 1, 2020	Female	86	Winnipeg Health
October 3, 2020	Male	50	Winnipeg Health
October 4, 2020	Female	78	Prairie Mountain Health
October 5, 2020	Male	74	Winnipeg Health
October 6, 2020	Male	69	Interlake-Eastern Health
October 6, 2020	Female	99	Winnipeg Health
October 7, 2020	Female	80	Winnipeg Health
October 8, 2020	Female	88	Winnipeg Health
October 8, 2020	Female	97	Winnipeg Health
October 8, 2020	Female	74	Winnipeg Health
October 9, 2020	Female	87	Winnipeg Health
October 10, 2020	Female	101	Winnipeg Health
October 11, 2020	Male	71	Southern Health - Sante Sud
October 11, 2020	Male	42	Winnipeg Health
October 12, 2020	Male	83	Winnipeg Health
October 13, 2020	Male	49	Southern Health - Sante Sud
October 13, 2020	Female	70	Winnipeg Health
October 14, 2020	Female	76	Winnipeg Health
October 16, 2020	Male	74	Winnipeg Health
October 17, 2020	Female	89	Winnipeg Health

October 17, 2020	Male	73	Winnipeg Health
October 18, 2020	Male	89	Winnipeg Health
October 20, 2020	Male	88	Interlake-Eastern Health
October 20, 2020	Male	88	Winnipeg Health
October 20, 2020	Male	85	Winnipeg Health
October 21, 2020	Male	78	Winnipeg Health
October 21, 2020	Male	89	Winnipeg Health
October 21, 2020	Male	74	Winnipeg Health
October 22, 2020	Female	77	Winnipeg Health
October 23, 2020	Female	95	Winnipeg Health
October 23, 2020	Female	79	Winnipeg Health
October 24, 2020	Female	81	Winnipeg Health
October 24, 2020	Male	54	Winnipeg Health
October 25, 2020	Male	49	Interlake-Eastern Health
October 25, 2020	Female	89	Interlake-Eastern Health
October 25, 2020	Female	84	Winnipeg Health
October 25, 2020	Female	68	Winnipeg Health
October 25, 2020	Male	85	Winnipeg Health
October 26, 2020	Female	86	Winnipeg Health
October 27, 2020	Male	89	Winnipeg Health
October 27, 2020	Male	86	Winnipeg Health
October 27, 2020	Female	90	Winnipeg Health
October 28, 2020	Male	82	Southern Health - Sante Sud
October 28, 2020	Female	93	Winnipeg Health
October 29, 2020	Female	89	Winnipeg Health
October 30, 2020	Female	69	Interlake-Eastern Health
October 30, 2020	Female	83	Winnipeg Health
October 30, 2020	Female	89	Winnipeg Health
October 30, 2020	Female	94	Winnipeg Health
October 30, 2020	Female	53	Winnipeg Health
October 30, 2020	Male	82	Winnipeg Health
October 30, 2020	Male	66	Winnipeg Health
October 31, 2020	Male	53	Southern Health - Sante Sud
October 31, 2020	Female	86	Winnipeg Health
October 31, 2020	Male	75	Winnipeg Health
October 31, 2020	Female	87	Winnipeg Health
October 31, 2020	Female	74	Winnipeg Health
October 31, 2020	Male	82	Winnipeg Health
October 31, 2020	Female	65	Winnipeg Health
October 31, 2020	Male	86	Winnipeg Health
November 1, 2020	Female	59	Winnipeg Health
November 1, 2020	Female	64	Winnipeg Health
November 1, 2020	Female	90	Winnipeg Health
November 2, 2020	Female	83	Winnipeg Health
November 2, 2020	Male	82	Winnipeg Health

November 2, 2020	Male	80	Winnipeg Health
November 2, 2020	Male	90	Winnipeg Health
November 2, 2020	Female	94	Winnipeg Health
November 2, 2020	Male	83	Winnipeg Health
November 2, 2020	Female	99	Winnipeg Health
November 3, 2020	Female	55	Southern Health - Sante Sud
November 3, 2020	Male	93	Winnipeg Health
November 3, 2020	Female	73	Winnipeg Health
November 3, 2020	Female	71	Winnipeg Health
November 4, 2020	Female	79	Winnipeg Health
November 4, 2020	Female	80	Winnipeg Health
November 4, 2020	Female	88	Winnipeg Health
November 4, 2020	Female	69	Winnipeg Health
November 4, 2020	Male	79	Winnipeg Health
November 5, 2020	Female	46	Northern Health
November 5, 2020	Male	91	Winnipeg Health
November 5, 2020	Male	82	Winnipeg Health
November 5, 2020	Female	98	Winnipeg Health
November 5, 2020	Male	92	Winnipeg Health
November 5, 2020	Male	88	Winnipeg Health
November 5, 2020	Female	89	Winnipeg Health
November 5, 2020	Female	92	Winnipeg Health
November 5, 2020	Male	85	Winnipeg Health
November 6, 2020	Male	74	Southern Health - Sante Sud
November 6, 2020	Male	58	Winnipeg Health
November 6, 2020	Male	73	Winnipeg Health
November 6, 2020	Male	89	Winnipeg Health
November 6, 2020	Male	60	Winnipeg Health
November 6, 2020	Male	90	Winnipeg Health
November 6, 2020	Female	80	Winnipeg Health
November 6, 2020	Female	97	Winnipeg Health
November 6, 2020	Female	82	Winnipeg Health
November 6, 2020	Female	69	Winnipeg Health
November 7, 2020	Female	93	Winnipeg Health
November 7, 2020	Female	85	Winnipeg Health
November 8, 2020	Male	76	Southern Health - Sante Sud
November 8, 2020	Male	90	Southern Health - Sante Sud
November 8, 2020	Male	74	Southern Health - Sante Sud
November 8, 2020	Female	82	Winnipeg Health
November 8, 2020	Female	91	Winnipeg Health
November 8, 2020	Female	97	Winnipeg Health
November 8, 2020	Male	84	Winnipeg Health
November 8, 2020	Male	74	Winnipeg Health
November 8, 2020	Female	88	Winnipeg Health
November 9, 2020	Male	66	Winnipeg Health

November 9, 2020	Female	80	Winnipeg Health
November 9, 2020	Male	85	Winnipeg Health
November 9, 2020	Female	93	Winnipeg Health
November 9, 2020	Female	83	Winnipeg Health
November 10, 2020	Female	74	Interlake-Eastern Health
November 10, 2020	Female	66	Northern Health
November 10, 2020	Male	72	Winnipeg Health
November 10, 2020	Male	72	Winnipeg Health
November 10, 2020	Male	68	Winnipeg Health
November 10, 2020	Female	88	Winnipeg Health
November 10, 2020	Male	79	Winnipeg Health
November 10, 2020	Female	89	Winnipeg Health
November 10, 2020	Male	83	Winnipeg Health
November 11, 2020	Male	75	Northern Health
November 11, 2020	Male	82	Southern Health - Sante Sud
November 11, 2020	Male	80	Winnipeg Health
November 11, 2020	Male	91	Winnipeg Health
November 11, 2020	Male	88	Winnipeg Health
November 11, 2020	Female	75	Winnipeg Health
November 11, 2020	Female	58	Winnipeg Health
November 11, 2020	Male	88	Winnipeg Health
November 11, 2020	Male	87	Winnipeg Health
November 11, 2020	Female	86	Winnipeg Health
November 12, 2020	Female	61	Interlake-Eastern Health
November 12, 2020	Male	87	Winnipeg Health
November 12, 2020	Female	46	Winnipeg Health
November 12, 2020	Male	68	Winnipeg Health
November 12, 2020	Female	89	Winnipeg Health
November 13, 2020	Male	84	Southern Health - Sante Sud
November 13, 2020	Male	76	Southern Health - Sante Sud
November 13, 2020	Female	78	Southern Health - Sante Sud
November 13, 2020	Male	72	Southern Health - Sante Sud
November 13, 2020	Male	88	Winnipeg Health
November 13, 2020	Female	92	Winnipeg Health
November 13, 2020	Female	92	Winnipeg Health
November 14, 2020	Male	93	Southern Health - Sante Sud
November 14, 2020	Male	85	Southern Health - Sante Sud
November 14, 2020	Male	74	Southern Health - Sante Sud
November 14, 2020	Female	86	Winnipeg Health
November 14, 2020	Female	91	Winnipeg Health
November 14, 2020	Male	89	Winnipeg Health
November 14, 2020	Male	105	Winnipeg Health
November 15, 2020	Male	80	Southern Health - Sante Sud
November 15, 2020	Male	81	Southern Health - Sante Sud
November 15, 2020	Male	93	Southern Health - Sante Sud

November 15, 2020	Male	95	Winnipeg Health
November 15, 2020	Female	92	Winnipeg Health
November 15, 2020	Male	74	Winnipeg Health
November 15, 2020	Female	96	Winnipeg Health
November 15, 2020	Male	86	Winnipeg Health
November 16, 2020	Female	38	Interlake-Eastern Health
November 16, 2020	Male	81	Southern Health - Sante Sud
November 16, 2020	Male	86	Southern Health - Sante Sud
November 16, 2020	Male	89	Southern Health - Sante Sud
November 16, 2020	Female	70	Winnipeg Health
November 16, 2020	Male	77	Winnipeg Health
November 16, 2020	Male	93	Winnipeg Health
November 16, 2020	Male	81	Winnipeg Health
November 17, 2020	Male	72	Interlake-Eastern Health
November 17, 2020	Male	71	Interlake-Eastern Health
November 17, 2020	Female	81	Prairie Mountain Health
November 17, 2020	Male	79	Southern Health - Sante Sud
November 17, 2020	Female	50	Southern Health - Sante Sud
November 17, 2020	Male	85	Southern Health - Sante Sud
November 17, 2020	Male	60	Winnipeg Health
November 17, 2020	Female	99	Winnipeg Health
November 18, 2020	Female	51	Northern Health
November 18, 2020	Female	93	Prairie Mountain Health
November 18, 2020	Male	64	Southern Health - Sante Sud
November 18, 2020	Female	72	Winnipeg Health
November 18, 2020	Female	88	Winnipeg Health
November 18, 2020	Female	83	Winnipeg Health
November 18, 2020	Male	100	Winnipeg Health
November 18, 2020	Male	65	Winnipeg Health
November 18, 2020	Male	72	Winnipeg Health
November 18, 2020	Male	90	Winnipeg Health
November 19, 2020	Female	64	Interlake-Eastern Health
November 19, 2020	Male	84	Prairie Mountain Health
November 19, 2020	Male	68	Southern Health - Sante Sud
November 19, 2020	Male	85	Southern Health - Sante Sud
November 19, 2020	Female	72	Winnipeg Health
November 19, 2020	Female	62	Winnipeg Health
November 19, 2020	Male	73	Winnipeg Health
November 19, 2020	Female	89	Winnipeg Health
November 20, 2020	Male	65	Northern Health
November 20, 2020	Female	100	Prairie Mountain Health
November 20, 2020	Male	84	Southern Health - Sante Sud
November 20, 2020	Female	85	Southern Health - Sante Sud
November 20, 2020	Male	39	Winnipeg Health
November 20, 2020	Male	90	Winnipeg Health

November 20, 2020	Male	75	Winnipeg Health
November 20, 2020	Female	84	Winnipeg Health
November 20, 2020	Male	85	Winnipeg Health
November 20, 2020	Female	91	Winnipeg Health
November 20, 2020	Male	72	Winnipeg Health
November 20, 2020	Female	87	Winnipeg Health
November 21, 2020	Male	66	Winnipeg Health
November 21, 2020	Male	83	Winnipeg Health
November 21, 2020	Female	91	Winnipeg Health
November 21, 2020	Female	79	Winnipeg Health
November 21, 2020	Male	70	Winnipeg Health
November 21, 2020	Male	41	Winnipeg Health
November 21, 2020	Female	88	Winnipeg Health
November 21, 2020	Male	57	Winnipeg Health
November 21, 2020	Male	93	Winnipeg Health
November 21, 2020	Female	95	Winnipeg Health
November 22, 2020	Female	94	Southern Health - Sante Sud
November 22, 2020	Male	73	Southern Health - Sante Sud
November 22, 2020	Female	85	Winnipeg Health
November 22, 2020	Female	62	Winnipeg Health
November 22, 2020	Female	94	Winnipeg Health
November 22, 2020	Female	83	Winnipeg Health
November 22, 2020	Male	66	Winnipeg Health
November 23, 2020	Female	78	Northern Health
November 23, 2020	Female	81	Northern Health
November 23, 2020	Male	93	Prairie Mountain Health
November 23, 2020	Male	72	Southern Health - Sante Sud
November 23, 2020	Male	75	Southern Health - Sante Sud
November 23, 2020	Female	69	Southern Health - Sante Sud
November 23, 2020	Male	94	Southern Health - Sante Sud
November 23, 2020	Female	99	Southern Health - Sante Sud
November 23, 2020	Female	76	Winnipeg Health
November 23, 2020	Male	88	Winnipeg Health
November 23, 2020	Male	60	Winnipeg Health
November 23, 2020	Male	97	Winnipeg Health
November 23, 2020	Male	67	Winnipeg Health
November 24, 2020	Male	74	Interlake-Eastern Health
November 24, 2020	Female	89	Southern Health - Sante Sud
November 24, 2020	Female	93	Southern Health - Sante Sud
November 24, 2020	Female	57	Southern Health - Sante Sud
November 24, 2020	Male	85	Southern Health - Sante Sud
November 24, 2020	Female	91	Southern Health - Sante Sud
November 24, 2020	Male	81	Southern Health - Sante Sud
November 24, 2020	Female	76	Winnipeg Health
November 24, 2020	Female	100	Winnipeg Health

November 24, 2020	Male	46	Winnipeg Health
November 24, 2020	Male	63	Winnipeg Health
November 24, 2020	Female	89	Winnipeg Health
November 24, 2020	Female	83	Winnipeg Health
November 24, 2020	Male	90	Winnipeg Health
November 24, 2020	Female	97	Winnipeg Health
November 24, 2020	Male	87	Winnipeg Health
November 25, 2020	Female	79	Interlake-Eastern Health
November 25, 2020	Female	85	Southern Health - Sante Sud
November 25, 2020	Male	59	Southern Health - Sante Sud
November 25, 2020	Female	82	Winnipeg Health
November 25, 2020	Male	65	Winnipeg Health
November 25, 2020	Male	90	Winnipeg Health
November 25, 2020	Male	90	Winnipeg Health
November 25, 2020	Male	91	Winnipeg Health
November 25, 2020	Male	81	Winnipeg Health
November 25, 2020	Male	94	Winnipeg Health
November 26, 2020	Female	93	Prairie Mountain Health
November 26, 2020	Male	76	Southern Health - Sante Sud
November 26, 2020	Female	83	Southern Health - Sante Sud
November 26, 2020	Male	92	Southern Health - Sante Sud
November 26, 2020	Male	84	Winnipeg Health
November 26, 2020	Male	49	Winnipeg Health
November 26, 2020	Female	93	Winnipeg Health
November 26, 2020	Female	82	Winnipeg Health
November 26, 2020	Male	70	Winnipeg Health
November 26, 2020	Female	92	Winnipeg Health
November 26, 2020	Male	55	Winnipeg Health
November 26, 2020	Male	59	Winnipeg Health
November 27, 2020	Male	69	Interlake-Eastern Health
November 27, 2020	Male	86	Prairie Mountain Health
November 27, 2020	Female	92	Prairie Mountain Health
November 27, 2020	Male	74	Prairie Mountain Health
November 27, 2020	Female	96	Southern Health - Sante Sud
November 27, 2020	Female	85	Southern Health - Sante Sud
November 27, 2020	Female	82	Winnipeg Health
November 27, 2020	Male	89	Winnipeg Health
November 27, 2020	Male	86	Winnipeg Health
November 27, 2020	Male	94	Winnipeg Health
November 27, 2020	Male	79	Winnipeg Health
November 27, 2020	Male	8	Winnipeg Health
November 28, 2020	Female	88	Prairie Mountain Health
November 28, 2020	Male	89	Southern Health - Sante Sud
November 28, 2020	Female	88	Winnipeg Health
November 28, 2020	Male	89	Winnipeg Health

November 28, 2020	Female	82	Winnipeg Health
November 28, 2020	Female	90	Winnipeg Health
November 28, 2020	Male	63	Winnipeg Health
November 28, 2020	Female	71	Winnipeg Health
November 29, 2020	Male	86	Prairie Mountain Health
November 29, 2020	Male	94	Southern Health - Sante Sud
November 29, 2020	Female	90	Southern Health - Sante Sud
November 29, 2020	Female	89	Winnipeg Health
November 29, 2020	Female	90	Winnipeg Health
November 29, 2020	Female	87	Winnipeg Health
November 29, 2020	Male	32	Winnipeg Health
November 29, 2020	Male	84	Winnipeg Health
November 29, 2020	Female	97	Winnipeg Health
November 29, 2020	Male	90	Winnipeg Health
November 29, 2020	Male	93	Winnipeg Health
November 29, 2020	Female	47	Winnipeg Health
November 30, 2020	Female	101	Prairie Mountain Health
November 30, 2020	Male	84	Prairie Mountain Health
November 30, 2020	Male	73	Southern Health - Sante Sud
November 30, 2020	Female	83	Southern Health - Sante Sud
November 30, 2020	Male	83	Southern Health - Sante Sud
November 30, 2020	Female	70	Southern Health - Sante Sud
November 30, 2020	Male	72	Southern Health - Sante Sud
November 30, 2020	Female	85	Southern Health - Sante Sud
November 30, 2020	Male	56	Southern Health - Sante Sud
November 30, 2020	Female	28	Winnipeg Health
November 30, 2020	Female	70	Winnipeg Health
November 30, 2020	Female	80	Winnipeg Health
November 30, 2020	Female	84	Winnipeg Health
November 30, 2020	Female	87	Winnipeg Health
November 30, 2020	Male	66	Winnipeg Health
November 30, 2020	Female	75	Winnipeg Health
November 30, 2020	Female	101	Winnipeg Health
November 30, 2020	Male	74	Winnipeg Health
November 30, 2020	Female	93	Winnipeg Health
December 1, 2020	Male	79	Southern Health - Sante Sud
December 1, 2020	Female	93	Winnipeg Health
December 1, 2020	Male	79	Winnipeg Health
December 1, 2020	Female	87	Winnipeg Health
December 1, 2020	Female	85	Winnipeg Health
December 1, 2020	Female	91	Winnipeg Health
December 1, 2020	Male	79	Winnipeg Health
December 1, 2020	Male	95	Winnipeg Health
December 1, 2020	Female	89	Winnipeg Health
December 1, 2020	Female	95	Winnipeg Health

December 1, 2020	Female	44	Winnipeg Health
December 1, 2020	Male	67	Winnipeg Health
December 1, 2020	Female	93	Winnipeg Health
December 2, 2020	Male	38	Interlake-Eastern Health
December 2, 2020	Male	54	Northern Health
December 2, 2020	Female	99	Prairie Mountain Health
December 2, 2020	Female	93	Prairie Mountain Health
December 2, 2020	Female	78	Southern Health - Sante Sud
December 2, 2020	Female	78	Southern Health - Sante Sud
December 2, 2020	Male	90	Southern Health - Sante Sud
December 2, 2020	Male	99	Winnipeg Health
December 2, 2020	Female	90	Winnipeg Health
December 2, 2020	Male	90	Winnipeg Health
December 3, 2020	Female	54	Interlake-Eastern Health
December 3, 2020	Female	105	Southern Health - Sante Sud
December 3, 2020	Female	86	Southern Health - Sante Sud
December 3, 2020	Male	74	Southern Health - Sante Sud
December 3, 2020	Male	86	Winnipeg Health
December 3, 2020	Male	75	Winnipeg Health
December 3, 2020	Female	70	Winnipeg Health
December 3, 2020	Female	84	Winnipeg Health
December 3, 2020	Female	86	Winnipeg Health
December 3, 2020	Female	86	Winnipeg Health
December 3, 2020	Female	93	Winnipeg Health
December 3, 2020	Female	92	Winnipeg Health
December 4, 2020	Female	65	Northern Health
December 4, 2020	Male	94	Northern Health
December 4, 2020	Female	94	Southern Health - Sante Sud
December 4, 2020	Female	93	Southern Health - Sante Sud
December 4, 2020	Male	91	Winnipeg Health
December 4, 2020	Male	76	Winnipeg Health
December 4, 2020	Female	103	Winnipeg Health
December 4, 2020	Male	96	Winnipeg Health
December 4, 2020	Female	70	Winnipeg Health
December 4, 2020	Female	93	Winnipeg Health
December 4, 2020	Male	81	Winnipeg Health
December 4, 2020	Male	84	Winnipeg Health
December 4, 2020	Male	78	Winnipeg Health
December 4, 2020	Female	74	Winnipeg Health
December 4, 2020	Male	70	Winnipeg Health
December 5, 2020	Male	75	Interlake-Eastern Health
December 5, 2020	Male	90	Prairie Mountain Health
December 5, 2020	Male	73	Southern Health - Sante Sud
December 5, 2020	Female	83	Southern Health - Sante Sud
December 5, 2020	Male	82	Winnipeg Health

December 5, 2020	Female	98	Winnipeg Health
December 5, 2020	Male	90	Winnipeg Health
December 5, 2020	Female	75	Winnipeg Health
December 5, 2020	Female	84	Winnipeg Health
December 5, 2020	Male	24	Winnipeg Health
December 5, 2020	Female	80	Winnipeg Health
December 5, 2020	Male	84	Winnipeg Health
December 5, 2020	Male	66	Winnipeg Health
December 5, 2020	Female	96	Winnipeg Health
December 5, 2020	Female	62	Winnipeg Health
December 5, 2020	Male	74	Winnipeg Health
December 5, 2020	Male	87	Winnipeg Health
December 5, 2020	Male	75	Winnipeg Health
December 5, 2020	Male	86	Winnipeg Health
December 6, 2020	Female	71	Interlake-Eastern Health
December 6, 2020	Female	85	Northern Health
December 6, 2020	Male	76	Prairie Mountain Health
December 6, 2020	Female	65	Southern Health - Sante Sud
December 6, 2020	Female	71	Southern Health - Sante Sud
December 6, 2020	Female	84	Winnipeg Health
December 6, 2020	Female	96	Winnipeg Health
December 6, 2020	Female	88	Winnipeg Health
December 6, 2020	Male	79	Winnipeg Health
December 6, 2020	Female	76	Winnipeg Health
December 6, 2020	Female	81	Winnipeg Health
December 7, 2020	Male	86	Southern Health - Sante Sud
December 7, 2020	Female	93	Winnipeg Health
December 7, 2020	Female	89	Winnipeg Health
December 7, 2020	Female	96	Winnipeg Health
December 7, 2020	Female	91	Winnipeg Health
December 7, 2020	Male	82	Winnipeg Health
December 7, 2020	Female	78	Winnipeg Health
December 7, 2020	Male	94	Winnipeg Health
December 7, 2020	Female	50	Winnipeg Health
December 8, 2020	Female	54	Northern Health
December 8, 2020	Female	83	Prairie Mountain Health
December 8, 2020	Female	100	Prairie Mountain Health
December 8, 2020	Male	88	Southern Health - Sante Sud
December 8, 2020	Male	64	Southern Health - Sante Sud
December 8, 2020	Female	53	Winnipeg Health
December 8, 2020	Male	85	Winnipeg Health
December 8, 2020	Female	78	Winnipeg Health
December 8, 2020	Female	89	Winnipeg Health
December 8, 2020	Male	89	Winnipeg Health
December 8, 2020	Female	84	Winnipeg Health

December 8, 2020	Female	69	Winnipeg Health
December 8, 2020	Female	86	Winnipeg Health
December 8, 2020	Male	92	Winnipeg Health
December 8, 2020	Female	90	Winnipeg Health
December 8, 2020	Female	90	Winnipeg Health
December 8, 2020	Male	72	Winnipeg Health
December 8, 2020	Female	77	Winnipeg Health
December 8, 2020	Male	43	Winnipeg Health
December 9, 2020	Female	72	Southern Health - Sante Sud
December 9, 2020	Male	70	Southern Health - Sante Sud
December 9, 2020	Male	90	Southern Health - Sante Sud
December 9, 2020	Male	83	Winnipeg Health
December 9, 2020	Female	87	Winnipeg Health
December 9, 2020	Female	98	Winnipeg Health
December 9, 2020	Female	87	Winnipeg Health
December 9, 2020	Female	89	Winnipeg Health
December 9, 2020	Male	58	Winnipeg Health
December 9, 2020	Female	85	Winnipeg Health
December 9, 2020	Male	99	Winnipeg Health
December 9, 2020	Male	74	Winnipeg Health
December 9, 2020	Female	82	Winnipeg Health
December 10, 2020	Male	76	Interlake-Eastern Health
December 10, 2020	Male	88	Southern Health - Sante Sud
December 10, 2020	Female	90	Winnipeg Health
December 10, 2020	Female	92	Winnipeg Health
December 10, 2020	Male	96	Winnipeg Health
December 10, 2020	Male	79	Winnipeg Health
December 10, 2020	Male	80	Winnipeg Health
December 10, 2020	Female	85	Winnipeg Health
December 10, 2020	Male	82	Winnipeg Health
December 10, 2020	Male	55	Winnipeg Health
December 11, 2020	Female	77	Interlake-Eastern Health
December 11, 2020	Male	83	Southern Health - Sante Sud
December 11, 2020	Male	62	Winnipeg Health
December 11, 2020	Male	63	Winnipeg Health
December 11, 2020	Male	49	Winnipeg Health
December 11, 2020	Female	69	Winnipeg Health
December 11, 2020	Female	95	Winnipeg Health
December 11, 2020	Male	89	Winnipeg Health
December 11, 2020	Female	76	Winnipeg Health
December 11, 2020	Male	86	Winnipeg Health
December 11, 2020	Female	97	Winnipeg Health
December 11, 2020	Male	84	Winnipeg Health
December 11, 2020	Female	96	Winnipeg Health
December 11, 2020	Female	65	Winnipeg Health

December 11, 2020	Female	86	Winnipeg Health
December 11, 2020	Female	72	Winnipeg Health
December 12, 2020	Female	69	Northern Health
December 12, 2020	Male	71	Prairie Mountain Health
December 12, 2020	Male	43	Winnipeg Health
December 12, 2020	Male	80	Winnipeg Health
December 12, 2020	Male	41	Winnipeg Health
December 12, 2020	Female	88	Winnipeg Health
December 12, 2020	Female	94	Winnipeg Health
December 12, 2020	Female	74	Winnipeg Health
December 12, 2020	Male	80	Winnipeg Health
December 12, 2020	Male	79	Winnipeg Health
December 12, 2020	Male	84	Winnipeg Health
December 12, 2020	Male	65	Winnipeg Health
December 13, 2020	Female	97	Prairie Mountain Health
December 13, 2020	Female	85	Winnipeg Health
December 13, 2020	Male	79	Winnipeg Health
December 13, 2020	Male	42	Winnipeg Health
December 13, 2020	Female	91	Winnipeg Health
December 13, 2020	Male	56	Winnipeg Health
December 13, 2020	Female	94	Winnipeg Health
December 13, 2020	Female	95	Winnipeg Health
December 13, 2020	Female	84	Winnipeg Health
December 13, 2020	Female	82	Winnipeg Health
December 14, 2020	Female	47	Interlake-Eastern Health
December 14, 2020	Female	91	Interlake-Eastern Health
December 14, 2020	Male	80	Prairie Mountain Health
December 14, 2020	Male	81	Southern Health - Sante Sud
December 14, 2020	Female	84	Winnipeg Health
December 14, 2020	Female	104	Winnipeg Health
December 14, 2020	Male	96	Winnipeg Health
December 14, 2020	Male	84	Winnipeg Health
December 14, 2020	Female	84	Winnipeg Health
December 14, 2020	Female	77	Winnipeg Health
December 14, 2020	Female	87	Winnipeg Health
December 14, 2020	Male	95	Winnipeg Health
December 14, 2020	Male	75	Winnipeg Health
December 14, 2020	Male	84	Winnipeg Health
December 15, 2020	Male	58	Interlake-Eastern Health
December 15, 2020	Male	81	Southern Health - Sante Sud
December 15, 2020	Female	91	Winnipeg Health
December 15, 2020	Male	63	Winnipeg Health
December 15, 2020	Female	79	Winnipeg Health
December 15, 2020	Male	79	Winnipeg Health
December 15, 2020	Male	93	Winnipeg Health

December 15, 2020	Female	84	Winnipeg Health
December 15, 2020	Male	90	Winnipeg Health
December 15, 2020	Female	57	Winnipeg Health
December 15, 2020	Female	91	Winnipeg Health
December 15, 2020	Female	97	Winnipeg Health
December 15, 2020	Female	93	Winnipeg Health
December 15, 2020	Female	56	Winnipeg Health
December 16, 2020	Male	84	Interlake-Eastern Health
December 16, 2020	Female	57	Interlake-Eastern Health
December 16, 2020	Female	38	Southern Health - Sante Sud
December 16, 2020	Male	43	Southern Health - Sante Sud
December 16, 2020	Female	100	Winnipeg Health
December 16, 2020	Female	57	Winnipeg Health
December 16, 2020	Male	70	Winnipeg Health
December 16, 2020	Male	60	Winnipeg Health
December 16, 2020	Male	48	Winnipeg Health
December 16, 2020	Female	94	Winnipeg Health
December 16, 2020	Male	82	Winnipeg Health
December 16, 2020	Female	91	Winnipeg Health
December 16, 2020	Female	96	Winnipeg Health
December 17, 2020	Female	89	Interlake-Eastern Health
December 17, 2020	Female	69	Northern Health
December 17, 2020	Male	86	Prairie Mountain Health
December 17, 2020	Male	56	Southern Health - Sante Sud
December 17, 2020	Male	94	Southern Health - Sante Sud
December 17, 2020	Female	77	Southern Health - Sante Sud
December 17, 2020	Male	66	Southern Health - Sante Sud
December 17, 2020	Male	90	Southern Health - Sante Sud
December 17, 2020	Female	72	Southern Health - Sante Sud
December 17, 2020	Female	94	Winnipeg Health
December 17, 2020	Female	74	Winnipeg Health
December 17, 2020	Female	89	Winnipeg Health
December 17, 2020	Female	67	Winnipeg Health
December 18, 2020	Male	97	Prairie Mountain Health
December 18, 2020	Male	89	Winnipeg Health
December 18, 2020	Female	89	Winnipeg Health
December 18, 2020	Male	95	Winnipeg Health
December 19, 2020	Female	85	Prairie Mountain Health
December 19, 2020	Female	85	Prairie Mountain Health
December 19, 2020	Male	89	Southern Health - Sante Sud
December 19, 2020	Female	79	Winnipeg Health
December 19, 2020	Female	48	Winnipeg Health
December 19, 2020	Female	85	Winnipeg Health
December 19, 2020	Male	83	Winnipeg Health
December 19, 2020	Male	73	Winnipeg Health

December 19, 2020	Male	79	Winnipeg Health
December 19, 2020	Male	36	Winnipeg Health
December 19, 2020	Female	92	Winnipeg Health
December 20, 2020	Female	69	Southern Health - Sante Sud
December 20, 2020	Female	92	Winnipeg Health
December 20, 2020	Female	94	Winnipeg Health
December 20, 2020	Male	93	Winnipeg Health
December 20, 2020	Male	80	Winnipeg Health
December 21, 2020	Male	83	Interlake-Eastern Health
December 21, 2020	Female	83	Interlake-Eastern Health
December 21, 2020	Female	90	Prairie Mountain Health
December 21, 2020	Female	74	Southern Health - Sante Sud
December 21, 2020	Female	101	Southern Health - Sante Sud
December 21, 2020	Male	78	Southern Health - Sante Sud
December 21, 2020	Female	81	Winnipeg Health
December 21, 2020	Female	91	Winnipeg Health
December 21, 2020	Female	90	Winnipeg Health
December 21, 2020	Male	74	Winnipeg Health
December 21, 2020	Female	66	Winnipeg Health
December 21, 2020	Female	94	Winnipeg Health
December 21, 2020	Female	89	Winnipeg Health
December 21, 2020	Female	97	Winnipeg Health
December 21, 2020	Male	88	Winnipeg Health
December 22, 2020	Male	79	Interlake-Eastern Health
December 22, 2020	Female	79	Northern Health
December 22, 2020	Male	81	Southern Health - Sante Sud
December 22, 2020	Male	42	Winnipeg Health
December 22, 2020	Male	66	Winnipeg Health
December 22, 2020	Female	60	Winnipeg Health
December 22, 2020	Female	68	Winnipeg Health
December 22, 2020	Female	81	Winnipeg Health
December 22, 2020	Male	89	Winnipeg Health
December 22, 2020	Male	77	Winnipeg Health
December 22, 2020	Male	99	Winnipeg Health
December 23, 2020	Male	53	Northern Health
December 23, 2020	Male	88	Northern Health
December 23, 2020	Male	61	Northern Health
December 23, 2020	Female	82	Southern Health - Sante Sud
December 23, 2020	Female	35	Southern Health - Sante Sud
December 23, 2020	Female	82	Winnipeg Health
December 23, 2020	Male	82	Winnipeg Health
December 23, 2020	Male	77	Winnipeg Health
December 23, 2020	Male	69	Winnipeg Health
December 23, 2020	Female	95	Winnipeg Health
December 23, 2020	Female	53	Winnipeg Health

December 23, 2020	Female	95	Winnipeg Health
December 23, 2020	Female	68	Winnipeg Health
December 23, 2020	Female	76	Winnipeg Health
December 24, 2020	Male	88	Interlake-Eastern Health
December 24, 2020	Female	97	Southern Health - Sante Sud
December 24, 2020	Male	68	Winnipeg Health
December 24, 2020	Female	66	Winnipeg Health
December 24, 2020	Male	66	Winnipeg Health
December 24, 2020	Female	102	Winnipeg Health
December 24, 2020	Male	82	Winnipeg Health
December 24, 2020	Female	100	Winnipeg Health
December 24, 2020	Male	82	Winnipeg Health
December 24, 2020	Female	30	Winnipeg Health
December 24, 2020	Male	79	Winnipeg Health
December 24, 2020	Female	96	Winnipeg Health
December 25, 2020	Male	71	Northern Health
December 25, 2020	Male	95	Southern Health - Sante Sud
December 25, 2020	Female	83	Southern Health - Sante Sud
December 25, 2020	Female	90	Winnipeg Health
December 26, 2020	Female	90	Northern Health
December 26, 2020	Female	86	Winnipeg Health
December 26, 2020	Female	90	Winnipeg Health
December 26, 2020	Female	87	Winnipeg Health
December 26, 2020	Male	86	Winnipeg Health
December 26, 2020	Male	88	Winnipeg Health
December 26, 2020	Female	76	Winnipeg Health
December 26, 2020	Male	83	Winnipeg Health
December 26, 2020	Male	84	Winnipeg Health
December 26, 2020	Female	86	Winnipeg Health
December 26, 2020	Female	73	Winnipeg Health
December 27, 2020	Female	91	Interlake-Eastern Health
December 27, 2020	Male	90	Prairie Mountain Health
December 27, 2020	Female	97	Winnipeg Health
December 27, 2020	Female	96	Winnipeg Health
December 27, 2020	Female	79	Winnipeg Health
December 27, 2020	Male	68	Winnipeg Health
December 28, 2020	Male	56	Northern Health
December 28, 2020	Female	88	Prairie Mountain Health
December 28, 2020	Female	96	Southern Health - Sante Sud
December 28, 2020	Male	87	Winnipeg Health
December 28, 2020	Female	83	Winnipeg Health
December 28, 2020	Female	71	Winnipeg Health
December 29, 2020	Female	79	Northern Health
December 29, 2020	Female	77	Prairie Mountain Health
December 29, 2020	Female	63	Southern Health - Sante Sud

December 29, 2020	Female	87	Winnipeg Health
December 30, 2020	Male	88	Winnipeg Health
December 30, 2020	Female	86	Winnipeg Health
December 30, 2020	Female	70	Winnipeg Health
December 30, 2020	Female	98	Winnipeg Health
December 31, 2020	Male	87	Winnipeg Health
December 31, 2020	Male	73	Winnipeg Health
December 31, 2020	Male	85	Winnipeg Health
January 1, 2021	Male	65	Interlake-Eastern Health
January 1, 2021	Male	55	Northern Health
January 1, 2021	Male	75	Southern Health - Sante Sud
January 1, 2021	Female	81	Southern Health - Sante Sud
January 1, 2021	Female	85	Winnipeg Health
January 1, 2021	Male	90	Winnipeg Health
January 1, 2021	Female	88	Winnipeg Health
January 1, 2021	Male	74	Winnipeg Health
January 1, 2021	Female	98	Winnipeg Health
January 1, 2021	Female	93	Winnipeg Health
January 2, 2021	Female	36	Winnipeg Health
January 2, 2021	Male	32	Winnipeg Health
January 3, 2021	Female	44	Northern Health
January 3, 2021	Female	92	Prairie Mountain Health
January 3, 2021	Female	92	Winnipeg Health
January 3, 2021	Female	90	Winnipeg Health
January 3, 2021	Female	93	Winnipeg Health
January 3, 2021	Female	69	Winnipeg Health
January 4, 2021	Female	79	Southern Health - Sante Sud
January 4, 2021	Female	73	Winnipeg Health
January 4, 2021	Female	69	Winnipeg Health
January 4, 2021	Male	93	Winnipeg Health
January 4, 2021	Male	89	Winnipeg Health
January 4, 2021	Male	77	Winnipeg Health
January 4, 2021	Female	94	Winnipeg Health
January 4, 2021	Male	77	Winnipeg Health
January 4, 2021	Male	93	Winnipeg Health
January 5, 2021	Male	71	Interlake-Eastern Health
January 5, 2021	Male	35	Northern Health
January 5, 2021	Female	93	Prairie Mountain Health
January 5, 2021	Male	69	Prairie Mountain Health
January 5, 2021	Female	59	Winnipeg Health
January 5, 2021	Female	97	Winnipeg Health
January 5, 2021	Female	85	Winnipeg Health
January 5, 2021	Female	90	Winnipeg Health
January 5, 2021	Male	87	Winnipeg Health
January 5, 2021	Female	90	Winnipeg Health

January 6, 2021	Female	75	Prairie Mountain Health
January 6, 2021	Female	95	Prairie Mountain Health
January 6, 2021	Female	61	Southern Health - Sante Sud
January 6, 2021	Female	80	Winnipeg Health
January 6, 2021	Female	87	Winnipeg Health
January 6, 2021	Female	87	Winnipeg Health
January 6, 2021	Female	78	Winnipeg Health
January 6, 2021	Female	91	Winnipeg Health
January 6, 2021	Female	67	Winnipeg Health
January 7, 2021	Female	85	Winnipeg Health
January 7, 2021	Female	93	Winnipeg Health
January 7, 2021	Female	102	Winnipeg Health
January 7, 2021	Female	53	Winnipeg Health
January 7, 2021	Male	53	Winnipeg Health
January 7, 2021	Male	58	Winnipeg Health
January 8, 2021	Male	57	Southern Health - Sante Sud
January 8, 2021	Female	92	Winnipeg Health
January 8, 2021	Male	49	Winnipeg Health
January 8, 2021	Female	88	Winnipeg Health
January 8, 2021	Female	84	Winnipeg Health
January 8, 2021	Male	63	Winnipeg Health
January 9, 2021	Male	80	Prairie Mountain Health
January 9, 2021	Male	93	Winnipeg Health
January 9, 2021	Female	88	Winnipeg Health
January 9, 2021	Female	80	Winnipeg Health
January 10, 2021	Male	60	Northern Health
January 10, 2021	Male	74	Winnipeg Health
January 10, 2021	Female	91	Winnipeg Health
January 11, 2021	Female	88	Interlake-Eastern Health
January 11, 2021	Female	75	Prairie Mountain Health
January 11, 2021	Male	76	Winnipeg Health
January 11, 2021	Male	84	Winnipeg Health
January 11, 2021	Female	93	Winnipeg Health
January 12, 2021	Male	95	Prairie Mountain Health
January 12, 2021	Male	87	Prairie Mountain Health
January 12, 2021	Male	74	Winnipeg Health

This is Exhibit " C " referred to
in the Affidavit of Carla Loeppky
Affirmed before me this 4
day of March A.D. 2021

A Barrister-at-Law entitled to practice
in and for the Province of Manitoba

DEMOGRAPHIC AND CLINICAL CHARACTERISTICS OF COVID-19 CASES WITH A SEVERE OUTCOME IN MANITOBA:

March 12 – January 11, 2021

CONFIDENTIAL

For internal use only

January 11, 2021

Epidemiology & Surveillance
Information Management & Analytics Branch
Resources and Performance Division
Manitoba Health, Seniors and Active Living
Government of Manitoba

Summary

- Of the 26,450 COVID-19 cases during March 12 – January 11, 2021 reporting period, 2,215 (8.4%) cases experienced a severe outcome (death/hospitalization) - 741 deaths with a case fatality rate of 2.8% deaths, 1,841 hospitalizations with a case hospitalization rate of 7.0%, and 350 ICU admissions with a case ICU rate of 1.3% (Table 1). *Note: Among fatal cases, there were 367 (49.5%) hospitalizations and 140 (18.9%) ICU admissions. Similarly, among hospitalized cases, there were 367 deaths (19.9%) and 350 (19.0%) ICU admissions.*
- Case fatality rate was higher in 60+ age group (12.1%), in Winnipeg Health (3.3%), and in those with an underlying condition (5.9%) – Table 1 & 2
- Case hospitalization rate was higher in 60+ age group (21.0%), in Southern Health (7.5%), in the lowest area level income quintile, i.e., Q1, (8.9%), and in those with an underlying condition (13.2%). - (Table 1 & 2)
- Case ICU rate was higher in in 60+ age group (3.7%), Interlake-Eastern Health region (1.8%), in the lowest area level income quintile, i.e., Q1, (2.0%), and in those with an underlying condition (2.6%). - Table 1&2
- Among all underlying conditions, those with chronic kidney disorder had the highest case fatality rate (21.0%), case hospitalization rate (39.2%), and case ICU rate (13.1%). – Table 2
- For the fatality outcome, average length of total hospital stay was 12 days, while the average length of ICU stay was 4 days. - Table 3
- Crude rate (per 100,000) of fatality in COVID-19 cases sharply increased to 7.3 per 100,000 in week 49-2020 (Nov 29-Dec 5, 2020) but steadily declined to 1.6 in week 53-2020 (Dec 27, 2020, Jan 02, 2021). In week 01-2021 (Jan 03-09, 2021), there was an increase noted (3.8 per 100,000) – Figure 1
- Crude rate (per 100,000) of hospitalization in COVID-19 cases sharply increased to 15.9 in week 48-2020 (Nov 22-28, 2020) but steadily declined to 4.9 in week 53-2020 (Dec 27, 2020, Jan 02, 2021). In week 01-2021 (Jan 03-09, 2021), there was an increase noted (7.3 per 100,000) – Figure 2

Figures/Tables

Table 1: Distribution of deaths, hospitalizations, ICU admissions, and severe (death/hospitalization) outcomes among COVID-19 cases in Manitoba by socio-demographic characteristics, March 12 – January 11, 2021 (N=26,450)

Characteristics	Deaths		Hospitalizations		ICU admissions		Severe outcomes*		Total
	Count	Case fatality rate (%)	Count	Case hospitalization rate (%)	Count	Case ICU rate (%)	Count	Case severity rate (%)	Count
Total	***741***	2.8	***1,841***	7.0	***350***	1.3	***2,215***	8.4	***26,450***
Age group (years)									
18 or younger	1	0.0	41	0.9	2	0.0	41	0.9	4388
19-59	73	0.4	647	3.9	147	0.9	664	4.0	16562
60+	667	12.1	1153	21.0	201	3.7	1510	27.5	5500
Median age (IQR)	83	(73-90)	67	(49-80)	62	(51-71)	71	(53-84)	38 (23-56)
Mean age (SD)	80	(14)	63	(21)	60	(15)	67	(21)	41 (23)
Sex									
Female	392	3.0	930	7.0	145	1.1	1147	8.7	13201
Male	349	2.6	911	6.9	205	1.5	1068	8.1	13232
Unknown	0	0.0	0	0.0	0	0.0	0	0.0	17
Health region of residence									
IERHA	34	1.7	118	6.0	35	1.8	133	6.8	1952
NRHA	24	1.0	168	6.8	27	1.1	173	7.0	2474
PMH	40	2.3	86	5.0	15	0.9	119	6.9	1716
SH-SS	121	2.7	335	7.5	48	1.1	376	8.4	4467
WRHA	522	3.3	1134	7.2	225	1.4	1414	8.9	15841
Area level income quintiles									
Q1 (lowest)	134	2.1	579	8.9	128	2.0	607	9.3	6525
Q2	93	1.9	333	7.0	59	1.2	368	7.7	4790
Q3	74	1.9	252	6.3	49	1.2	282	7.1	3985
Q4	110	2.4	295	6.5	58	1.3	342	7.5	4536
Q5 (highest)	57	1.7	170	5.0	28	0.8	192	5.6	3403
Unknown	273	8.5	212	6.6	28	0.9	424	13.2	3211

*Severe outcomes include death or hospitalizations

Table 2: Distribution of deaths, hospitalizations, ICU admissions and severe (death/hospitalization) outcomes among COVID-19 cases in Manitoba by underlying medical conditions, March 12 – January 10, 2021 (N=26,450)

Characteristics	Deaths		Hospitalizations		ICU admissions		Severe outcomes*		Total
Underlying conditions	Count	Case fatality rate (%)	Count	Case hospitalization rate (%)	Count	Case ICU rate (%)	Count	Case severity rate (%)	Count
Cancer	49	16.5	89	30.0	16	5.4	106	35.7	297
Chronic circulatory disorders (exc: Hypertension)	447	15.0	728	24.4	134	4.5	970	32.6	2978
Chronic kidney disorder	74	21.0	138	39.2	46	13.1	168	47.7	352
Chronic liver disorder	17	10.4	40	24.4	17	10.4	43	26.2	164
Chronic neurological disorders	317	20.2	285	18.1	32	2.0	522	33.2	1573
Chronic respiratory disorders	333	6.2	647	12.0	116	2.2	822	15.3	5390
Chronic thyroid disorders	52	12.6	51	12.3	9	2.2	85	20.5	414
Diabetes	330	8.9	794	21.5	195	5.3	936	25.3	3698
Hypertension	623	9.4	1206	18.2	244	3.7	1528	23.0	6631
Mental health disorders	90	16.7	65	12.1	11	2.0	132	24.5	538
Musculoskeltal	486	11.2	882	20.3	164	3.8	1155	26.6	4342
Other chronic conditions*	63	9.4	125	18.6	26	3.9	159	23.7	671
Has a chronic condition									
No	21	0.1	247	1.7	34	0.2	253	1.8	14345
Yes	720	5.9	1594	13.2	316	2.6	1962	16.2	12105

*Severe outcomes include death or hospitalizations

Table 3: Distribution of length of total hospital stay and ICU stay among hospitalized COVID-19 cases in MB, March 12 – January 11, 2021

Characteristics	Deaths		Hospitalizations		ICU admissions	
Length of total hospital stay						
Mean (SD)	12	(9)	16	(16)	21	(16)
Median (IQR)	9	(5-17)	10	(5-21)	18	(10-25)
Length of ICU stay						
Mean (SD)	4	(7)	2	(7)	12	(13)
Median (IQR)	0	(0-6)	0	(0-0)	8	(4-15)

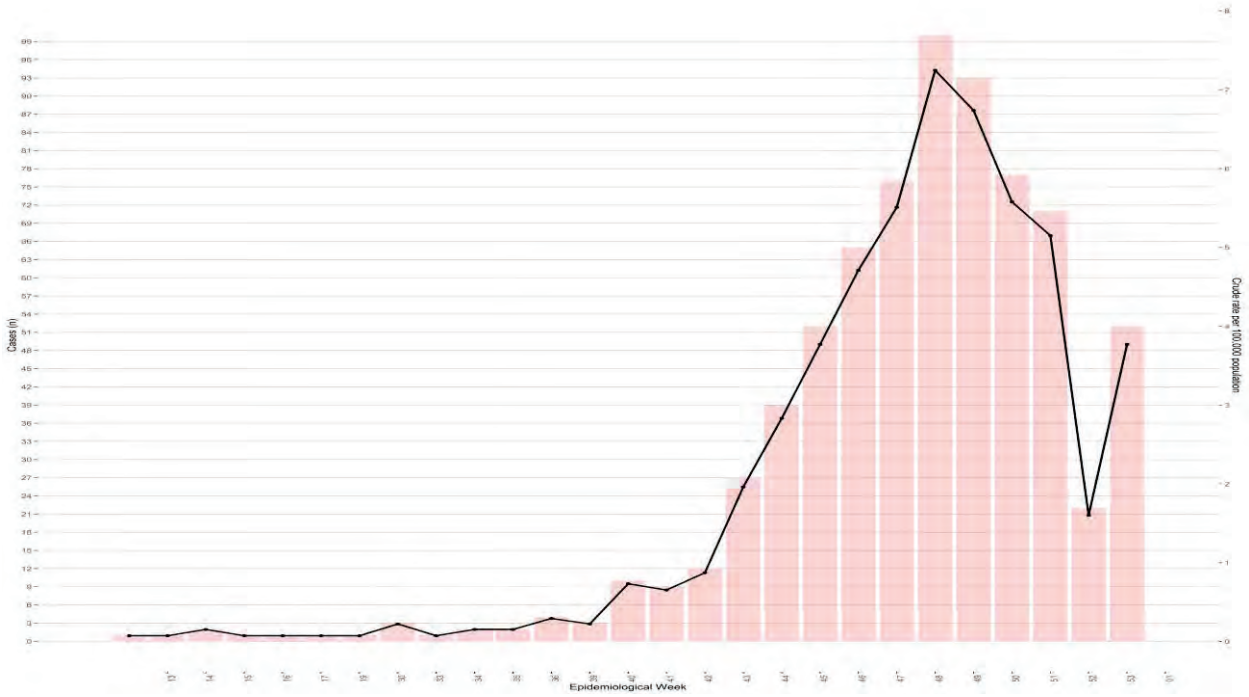

Figure 1: Weekly count and crude rate (per 100,000 population) of fatal COVID-19 cases in MB, March 12 – January 09, 2021

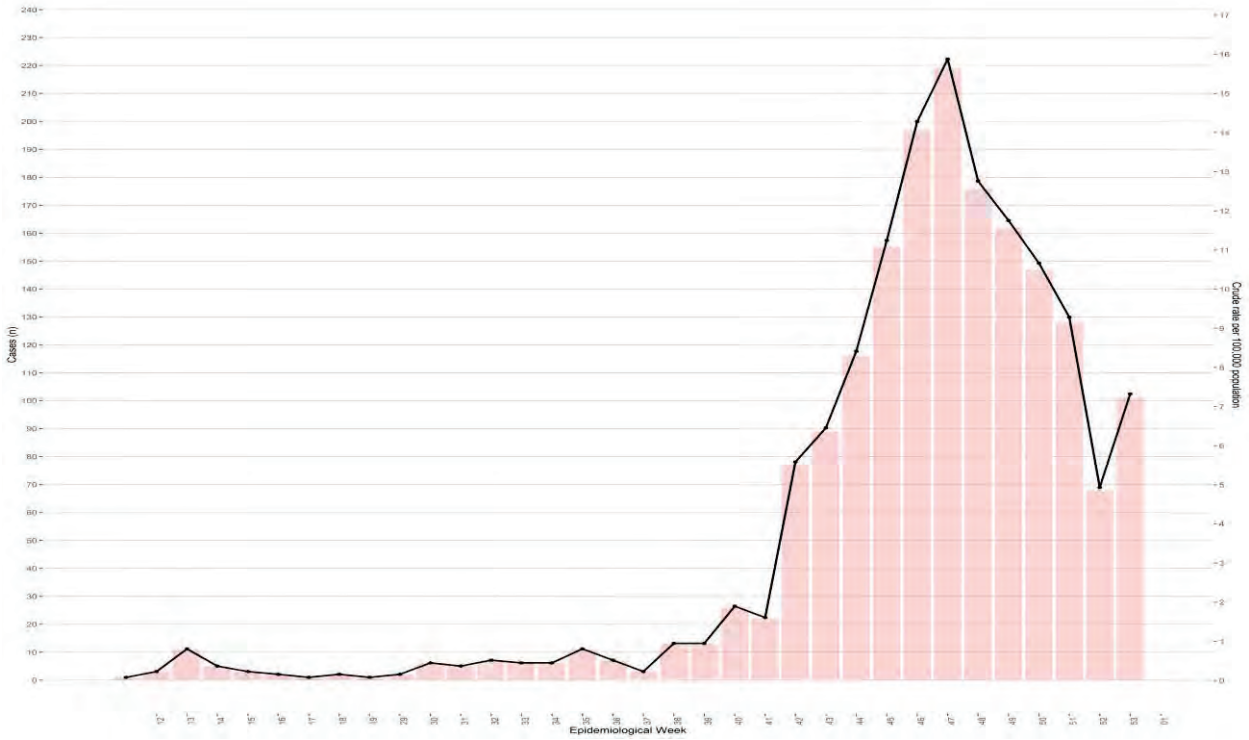

Figure 2: Weekly count and crude rate (per 100,000 population) of hospitalized COVID-19 cases in MB, March 12 – January 09, 2021

APPENDIX

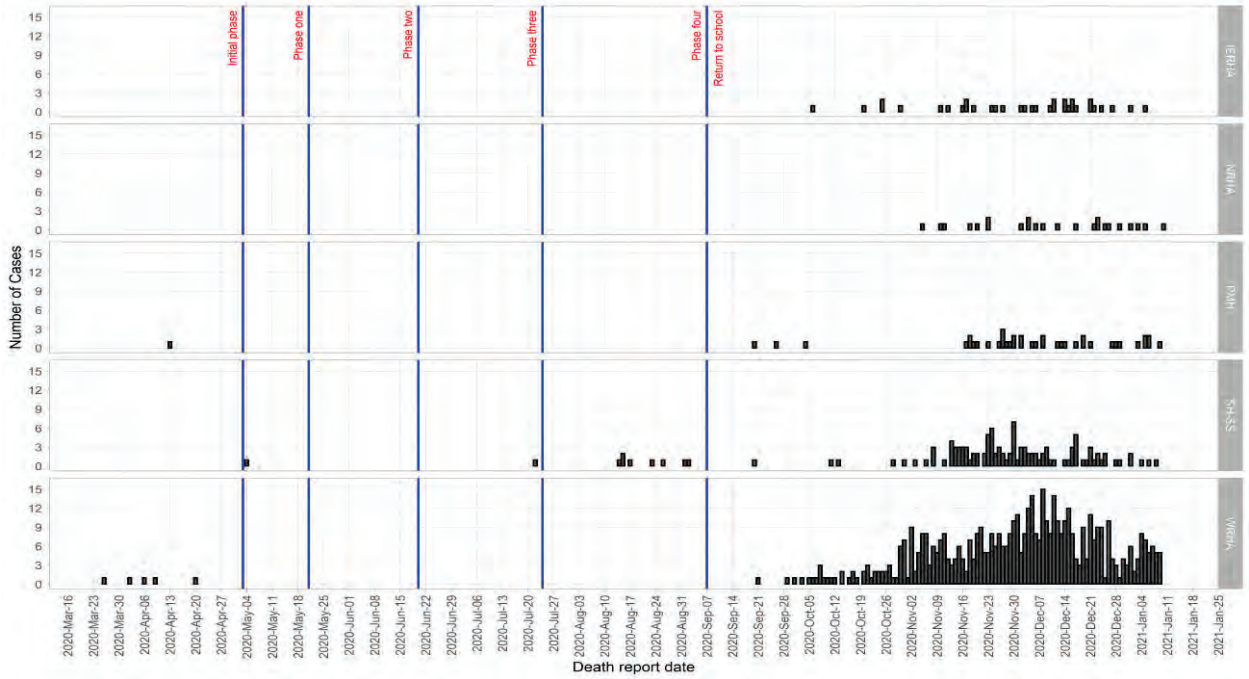

Figure 3: Epidemiological curve of deaths among COVID-19 cases in Manitoba by health region, March 12- January 10, 2021 (N=741)

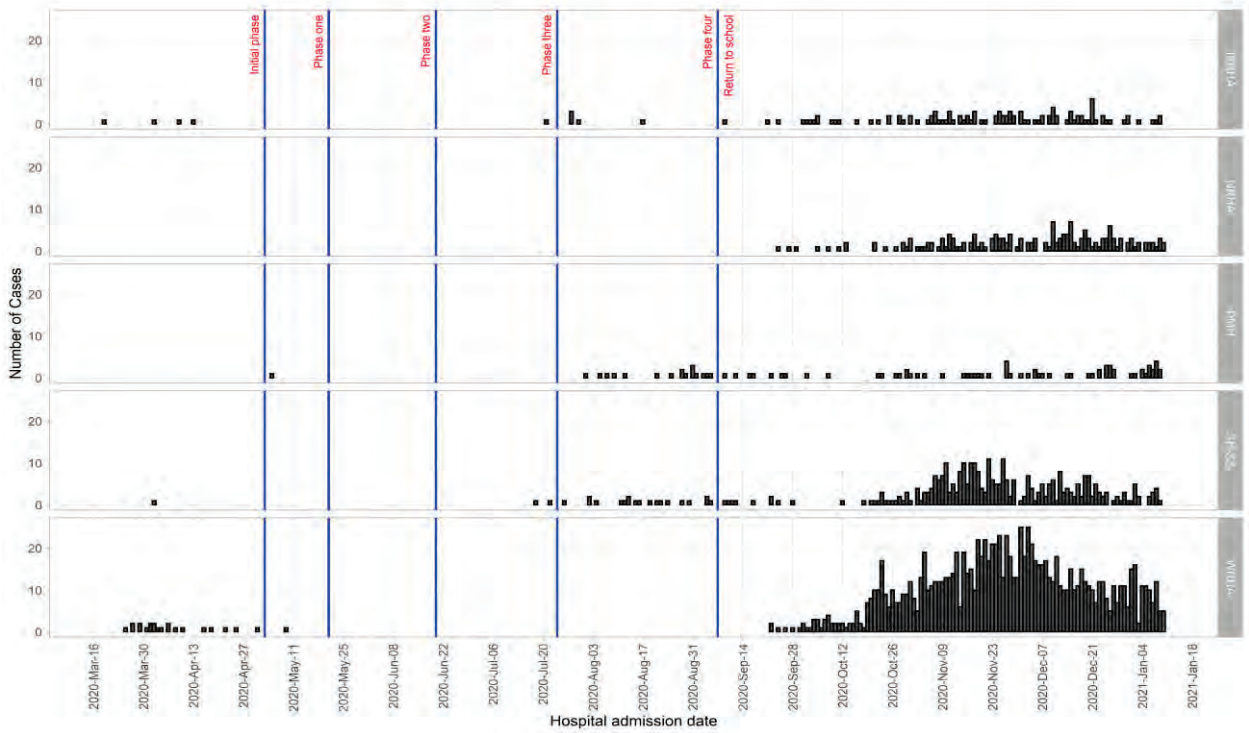

Figure 4: Epidemiological curve of hospital admissions among COVID-19 cases in Manitoba by health region, March 12- January 10, 2021 (N=1,841)

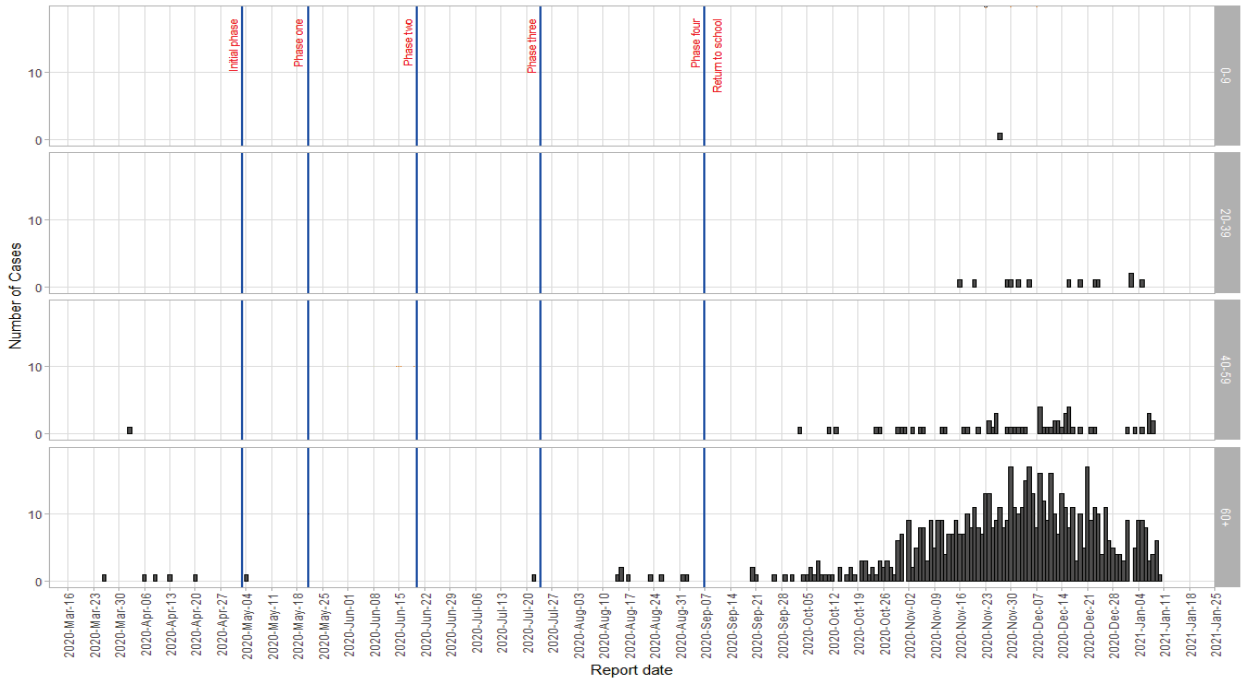

Figure 5: Daily number of fatal cases among COVID-19 cases in Manitoba by age group, March 12 - January 10, 2021 (N=741)

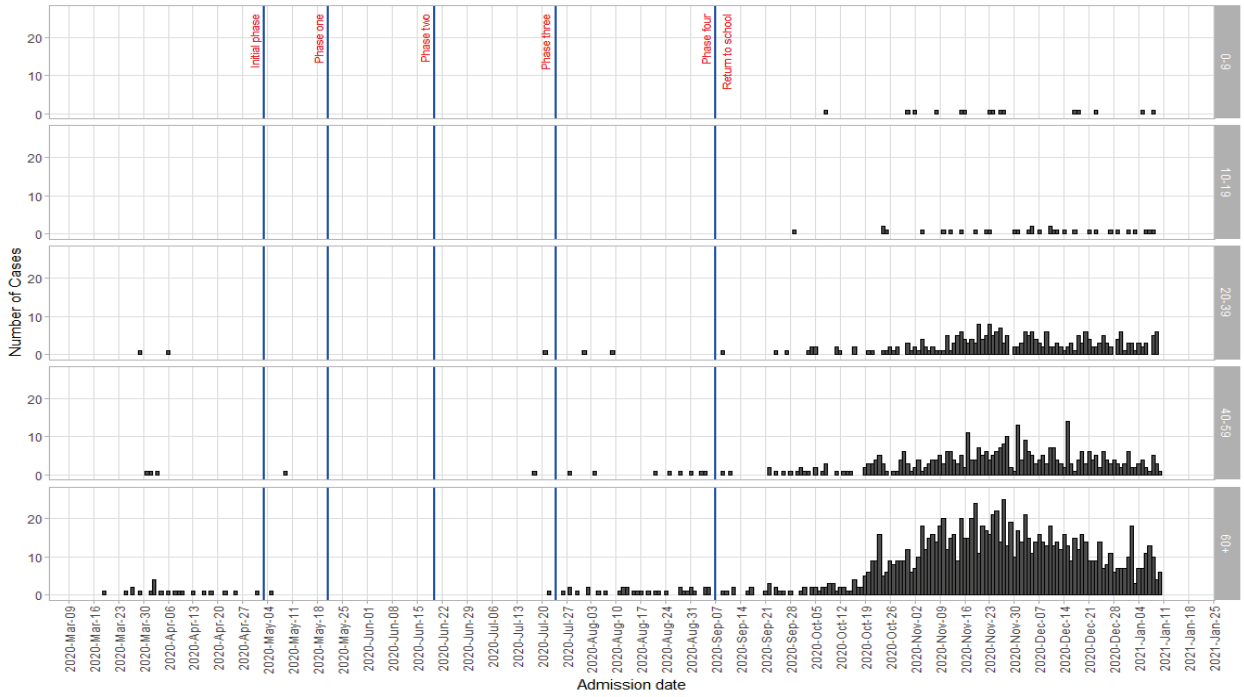

Figure 6: Daily number of hospitalizations among COVID-19 cases in Manitoba by age group, March 12 - January 10, 2021 (N=1,841)

Methods

Data sources

We used the Public Health Information Management System (PHIMS) to identify COVID-19 cases. Hospitalization related information obtained using MHSAL's population-based hospital admission, discharge, and transfer (ADT) database.

Case definitions

COVID-19 cases.

***Probable case* – A person who**

- has a fever (> 38°C), **AND/OR**
- has new onset of (or exacerbation of chronic) cough or difficulty breathing, AND
- meets exposure criteria, AND
- for whom laboratory diagnosis of COVID-19 is:
  - inconclusive (inconclusive is defined as a positive test on a single real-time PCR target or a positive test with an assay that has limited performance data available),
  - negative (if specimen quality or timing is suspect), or
  - positive but COVID-19 not confirmed by the National Microbiology Laboratory (NML) or a provincial public health laboratory by a validated nucleic acid amplification test (NAAT).

OR

- (un-tested)person with:
  - Fever (over 38 degrees Celsius), **AND/OR**
  - Cough (new or exacerbated chronic); **AND**
  - Close contact[1] with a confirmed case of COVID-19, **OR**
  - Lived in or worked in a closed facility known to be experiencing an outbreak of COVID-19 (e.g., long-term care facility, correctional facility)

***Confirmed case* - A person with**

- laboratory confirmation of infection with the virus that causes COVID-19 performed at a reference laboratory (NML or a provincial public health laboratory), and consists of positive nucleic acid amplification tests (NAAT) on at least two specific genome targets or a single positive target with nucleic acid sequencing.

[1] A close contact is defined as a person who provided care for the patient, including healthcare workers, family members or other caregivers, or who had other similar close physical contact or who lived with or otherwise had close prolonged contact with a probable or confirmed case while the case was ill.

Note:

- *nucleic acid amplification tests must be validated for detection of the virus that causes COVID-19*
- *laboratory tests are evolving for this emerging pathogen, and laboratory testing recommendations will change accordingly as new assays are developed and validated.*

Severe outcome.

Severe outcomes include hospitalization or death among infectious COVID-19 cases. It does not includes severe outcomes among recovered cases.

Chronic conditions.

We used validated algorithms developed by the Canadian Chronic Disease Surveillance System (shortly known as CCDSS) and PHIMS COVID-19 surveillance database to define the common chronic conditions of COVID-19 cases. Table 4 in Appendix describes the CCDSS algorithm used for each chronic condition included in our analysis.

Diagnosis date.

We used laboratory report date as the COVID-19 diagnosis date.

Table 4: Case definitions* of chronic conditions used in the analysis

Disease	Algorithm	Diagnostic codes	
	(Exclusion, if any)	ICD-9	ICD-10
Diabetes	1+ hospitalizations OR 2+ physician claims within 2 years (Excluded gestational diabetes)	250	E10-E14
Hypertension	1+ hospitalizations ever OR 2+ physician claims within 2 years (Excluded pregnancy-induced hypertension)	401; 402; 403; 404; 405	I10; I11; I12: I13; I15
Other CVDs			
Ischemic heart disease (IHD)	1+ hospitalizations or procedure code OR 2+ physician claims within 1 year.	410; 411; 412; 413; 414	I20; I21; I22; I23; I24; I25
Acute myocardial infarction (AMI)	1+ hospital inpatient admission	410	I21; I22 (Diagnostic fields – Most responsible dx, W, X, Y, 1, 2)
Heart failure	1+ hospitalizations OR 2+ physician claims within 1 year.	428	I50
Stroke	1+ hospitalizations OR 2+ physician claims within 1 year.	Hospital: 325, 362.3x, 430, 431, 432.9, 433.x1, 434 (or 434.x1), 435.x, 436, 437.6 Physician: 325, 430, 431, 432.9, 434, 435, 436, 437.6	G08, G45.x (exclude G45.4), H34.0, H34.1, I60.x, I61.x, I62.9, I63.x, I64, I67.6
Chronic respiratory conditions (COPD/Asthma)			

Disease	Algorithm	Diagnostic codes	
Asthma	1+ hospitalizations ever OR 2+ physician claims within 2 years	493	J45; J46
Chronic obstructive pulmonary disease (COPD)	1+ hospitalizations OR 1+ physician claims ever	491; 492; 496	J41; J42; J43; J44
Musculoskeletal (Osteoporosis, OA, GCA, JIA)			
Osteoporosis	1+ hospitalizations or 1+ physician claim ever	Hospital: 733.0 Physician: 733	M80; M81
Osteoarthritis	1+ hospitalizations or 2+ physician claims (separated by at least 1 day) within 5 years	715	M15-M19
Gout and crystal arthropathies	1+ hospitalizations or 2+ physician claims (separated by at least 1 day) within 5 years	274, 712	M10, M11
Juvenile idiopathic arthritis (JIA)	1+ hospitalizations or 2+ physician claims (> 8 weeks apart) within 2 years	714; 720	M05; M06; M07.0; M07.1; M07.2; M07.3; M08; M45

*Canadian Chronic Disease Surveillance System (CCDSS) case definition

CVD: Cardiovascular Disease; COPD: Chronic Obstructive Pulmonary Disease; IHD: Ischemic Heart Disease; AMI: Acute Myocardial Infarction; GCA: Gout and Crystal Arthropathies; OA: Osteoarthritis;JIA: Juvenile Idiopathic Arthritis

This is Exhibit " D " referred to
in the Affidavit of Carla Loeppky
Affirmed before me this 4
day of March A.D. 2021

A Barrister-at-Law entitled to practice
in and for the Province of Manitoba

IMPACTS OF COVID-19 PUBLIC HEALTH MEASURES ON VARIOUS HEALTH INDICATORS IN MANITOBA

CONFIDENTIAL

For internal use only

November 1, 2020

Epidemiology & Surveillance
Provincial Information Management & Analytics Branch
Resources and Performance Division
Manitoba Health, Seniors and Active Living
Government of Manitoba

TO MEET THE HEALTH NEEDS OF INDIVIDUALS, FAMILIES AND THEIR COMMUNITIES BY LEADING A SUSTAINABLE, PUBLICLY ADMINISTERED HEALTH SYSTEM THAT PROMOTES WELL-BEING AND PROVIDES THE RIGHT CARE, IN THE RIGHT PLACE, AT THE RIGHT TIME.
— MANITOBA HEALTH, SENIORS AND ACTIVE LIVING

EPIDEMIOLOGY & SURVEILLANCE
PROVINCIAL INFORMATION MANAGEMENT & ANALYTICS BRANCH
RESOURCES AND PERFORMANCE DIVISION
MANITOBA HEALTH, SENIORS AND ACTIVE LIVING

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Abbreviations

ADT	Admission, Discharge, and Transfer
COVID-19	Coronavirus disease of 2019
CCDSS	Canadian Chronic Disease Surveillance System
CTAS	Canadian Triage and Acuity Scale
DTaP-IPV-Hib	Diphtheria, Tetanus, Pertussis, Polio, Haemophilus influenzae type b
DRD	Drug-related death
ED	Emergency Department
EDIS	Emergency Department Information System
FY	Fiscal Year
ICD	International Classification of Diseases
ICU	Intensive Care Unit
MHSAL	Manitoba Health, Seniors and Active Living
MMRV	Measles, Mumps, Rubella, Varicella
PHIMs	Public Health Information Management System
PHAC	Public Health Agency of Canada
RHA	Regional Health Authority
UCC	Urgent Care Centre
WFPS	Winnipeg Fire and Paramedic Service
WPS	Winnipeg Police Service

Acknowledgements

In the spirit of honour, respect, and reconciliation, Manitoba Health, Seniors and Active Living (MHSAL) would like to acknowledge these provincial lands. We are in Treaty territories One through Five on the homelands of the Anishinaabeg Oji-Cree and Ojibwe, the Cree, Dakota, and Dené peoples, and on the homeland of the Métis Nation.

We kindly acknowledge the collaboration of the following organizations for providing the data for this report:

- Manitoba Poison Centre
- Winnipeg Fire and Paramedic Service, City of Winnipeg
- Winnipeg Police Service, City of Winnipeg

In addition, MHSAL would like to acknowledge the important efforts of public health professionals and health care providers across the province involved in COVID-19 response and reporting surveillance information to the provincial surveillance system. Without these continued efforts, this report would not be possible.

Highlights

Any medical conditions

- From April to August 2020, the monthly number of unique Manitobans who had a hospitalization or an emergency department/urgent care centre (ED/UCC) visit *due to any medical conditions* increased by 28% and 49%, respectively (Figure 1&2).

Mental and behavioural disorders

- A similar increasing trend during the same period was noted for hospitalizations, ED/UCC visits, and calls to Winnipeg Fire Paramedic Service (WFPS) due to *mental and behavioural disorders,* a 10%, 27%, and 16% increase, respectively.

Substance use disorders

- Monthly number of *substance use* related hospitalizations (Figure 7) and *naloxone administered* by WFPS (Figure 9) from April to August 2020 increased by 62% and 125%, respectively.
- In 2020, after a decline noted in March and April, the monthly number of *drug-related deaths* increased by 50% in May and by 14% in June from April (Figure 10).
- From April to August 2020, *alcohol-related* hospitalizations (Figure 11) and *opioid-related* ED/UCC visits (Figure 12) increased by 112% and 240%, respectively.

Intentional injuries

- Monthly number of unique Manitobans hospitalized or had ED/UCC visits due to *an intentional injury* sharply increased from April to August 2020 by 109% and 62% (Figure 13&14).

Accidental poisoning

- Number of unique Manitobans with an ED/UCC visit due to *accidental poisoning* increased from April to August 2020, a 55% increase (Figure 17)

Sexually transmitted and blood-borne infections

- From April to August 2020, the monthly number of cases diagnosed with *chlamydia, gonorrhea, HBV, and HCV* in Manitoba increased by 43%, 80%, 167%, and 81%, respectively (Figure 20&21); a 40% decrease was noted for *syphilis* during the same period.

Severe outcomes

- Among those with a chronic condition, *ICU admission and ED/UCC visits* from April to August 2020 increased by 22% and 41%, respectively (Figure 24 &25).

Prescription dispensation among Manitobans with a chronic condition

- In general, the monthly number of unique Manitobans with a chronic condition who dispensed a prescription for their condition increased in March and May 2020 followed with a decrease in June and July 2020 (Figure 26).

Immunization coverage

- During COVID-19 period, the monthly number of *MMRV immunization* doses administered in Manitoba increased from April to August by 103% (Figure 27).

Crimes reported by Winnipeg Police Service (WPS)

- Overall, a 28% increase from April to August 2020 was noted in the number of *service calls to WPS* (Figure 32), especially in following areas: traffic (an 85% increase), intoxicated persons (a 59% increase), and violence (a 55% increase) (Figure 30).

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Background

On March 11, 2020 with 118,000 cases of coronavirus disease of 2019 (COVID-19) in 114 countries, including Canada, the World Health Organization (2020) declared a Pandemic. The next day, three presumptive cases were announced in Manitoba (all travel related). As of October 28th, 2020, Manitoba had 4,701 confirmed and probable COVID-19 cases (2,335 active + 2,305 recoveries + 61 deaths). As a response to COVID-19 public health management, Manitoba's chief provincial public health officer, with the approval of the Minister of Health, Seniors and Active Living, has ordered a number of public health measures such as declaring a province-wide state of emergency, practicing social distancing, suspending classes in Manitoba schools (Kindergarten to grade 12), etc.[1]

Manitoba's public health response to the pandemic, such as the shift of resources, physical distancing and isolation measures, and closing or adaptation of services has the potential for negative impact on health and social outcomes. While public health measures to contain the virus are critical and necessary, policy and decision makers must also be aware of the impacts of COVID-19 public health measures on people in Manitoba, and specific groups within the population.

Objective

The objective of this report is to describe the impacts of COVID-19 and responses on various health indicators in Manitoba, such as mental health, substance use disorders, etc.

Methods

Case Definitions

Health-related indicators.

Health services use.

We described the monthly number of unique Manitobans who had a virtual physician visit, hospital admission, and emergency department/urgent care centres (ED/UCC) visits due to any medical conditions, or due to certain conditions (i.e., mental health, substance use disorders, intentional injuries, and accidental poisoning) from January 01, 2019 to August 31, 2020. These indicators were measured using Admission, Discharge, and Transfer (ADT), Emergency Department Information System (EDIS), and Claims Processing Solution (CPS) virtual physician visit databases. Health services use made in the same month counted as one in the analysis.

In addition, we measured certain sexually transmitted blood-borne infections (STBBIs) reported in Public Health Information Management System (PHIMS) database. We described the monthly number of gonorrhea, chlamydia, hepatitis B (HBV), hepatitis C (HCV), HIV, and syphilis from January 01, 2019 to August 31, 2020.

In EDIS database, the following attributes were used to identify mental health conditions, substance use disorders, intentional injuries, and accidental poisoning related ED/UCC visits:

- *EDDischargeDxCode1* – using ICD-10 codes in Table 1

[1] Details of Manitoba's COVID-19 public health orders can be seen here: https://www.gov.mb.ca/bg/2020/04/covid19.html

- *EDDischargeDxCode2*– using ICD-10 codes in Table 1
- *EDChiefComplaint* – contains the presenting complaint(s) of the patient at time of triage
- *EDDischargeDxDescription1* – contains a text description of the ICD code in *EDDischargeDxCode1* field
- *EDVisitReason* – contains the reason(s) of the patient for ED visit

Table 1: ICD codes used in the analysis to identify health services use due to certain conditions

Medical condition	**ICD-9 codes**	**ICD-10 codes**
Accidental poisoning	E850-E869	X40-X49
Intentional injury	E950-E959, E960-E969	X60-Y09, Y87.0, Y87.1
Substance use disorders	291; 292; 303; 304; 305	F10-F19; F55; Z50.2; Z50.3
Mental and behavioural disorders	290-319	F00-F99

We focus the analysis on individuals with a Manitoba PHIN and those ED/UCC visit records with the Canadian Triage and Acuity Scale (CTAS) scores 1 - 5. Furthermore, following 15 ED/UCC sites in Manitoba were included in our analysis to measure the ED/UCC visits due to certain conditions because these ED/UCC sites are the only ones that submit discharge diagnosis and chief complaint information to EDIS.:

- Selkirk Regional Health Centre
- St. Anthony's General Hospital
- Flin Flon General Hospital
- Thompson General Hospital
- Brandon Regional Health Centre
- Bethesda Regional Health Centre
- Portage District General Hospital
- Dauphin Regional Health Centre
- Boundary Trails Health Centre
- Seven Oaks General Hospital
- St Boniface General Hospital
- Victoria General Hospital
- Grace Hospital
- Concordia Hospital
- Health Sciences Centre

In ADT database, we used the *IPVisitReason* attribute which contains health workers' reason for admitting the patient to identify mental health conditions, substance use disorders, intentional injuries, and accidental poisoning related in-patient hospital admissions.

In addition to describing the health services use for virtual physician visits, hospitalizations, and ED/UCC visits, we investigated the number of calls to Winnipeg Fire and Paramedic Service (WFPS) for opioid overdose, described by naloxone administration, mental health, and accidental poisoning during COVID-19 period (between March and August 2020).

Finally, health services use in those Manitobans with a chronic condition is also investigated. For this analysis, a study cohort with a chronic condition in 2018/19 FY was built using the validated algorithms developed by the Canadian Chronic Disease Surveillance System (shortly known as CCDSS). These can be found on the CCDSS website here.

Severe outcomes.

We described the in-hospital deaths due to any conditions in Manitoba from January 1, 2019 to August 31, 2020 using ADT database. Furthermore, using the same database, we measured the following indicators among the cohort with a chronic condition (as of 2018/19 FY): in-hospital deaths, ICU admissions, and ED/UCC visits (severity described by CTAS score).

Prescription dispensations for chronic conditions.

Prescription dispensation for chronic conditions listed in CCDSS was measured among the aforementioned cohort with a chronic condition. Table 2 presents ATC codes used to measure the drug dispensations for the treatment of each chronic condition.

Table 2: ATC codes used to measure the drug dispensation specific to each chronic condition included in the analysis

Chronic condition category	**ATC code**	**Medication class**
Cardiovascular diseases (i.e., heart failure, hypertension, ischemic heart disease, acute myocardial infarction, stroke	B01AA, B01AC, C	Cardiac agents (excl. ACE inhibitors) Cardiovascular system
Musculoskeletal (i.e., gout and crystal arthropathies, rheumatoid arthritis, juvenile idiopathic arthritis, osteoporosis related fractures)	M	Musculoskeletal system
Mental illnesses (i.e., mood and anxiety disorders, schizophrenia)	N05 N06	Psycholeptics Psychoanaleptics
Asthma/COPD	R	Respiratory system
Diabetes mellitus	A10	Drugs used in diabetes
Neurological conditions (i.e., dementia, epilepsy, multiple sclerosis, Parkinson's disease)	N06D N03 N04 L03A L04AA	Anti-dementia drugs Antiepileptics Anti-parkinson drugs immunostimulants Selective immunosuppressants

Immunization coverage.

We used Public Health Information Management System (PHIMS) database to describe the monthly number of Diphtheria, Tetanus, Pertussis, Polio, Haemophilus influenzae type b (DTaP-IPV-Hib) and Measles, Mumps, Rubella, Varicella (MMRV) immunization doses

administered in Manitoba from January 01, 2019 to August 31, 2020. In Manitoba, DTaP-IPV-Hib vaccine is typically given to children aged 2, 4, 6, and 18 months; MMRV vaccine is typically given to children aged 12 months and 4-6 years.

Crimes reported by Winnipeg Police Service.
In addition to health indicators, we measured various crime indicators reported by Winnipeg Police Service.

Data sources
Epidemiology and Surveillance Unit of MHSAL has collaborated with a range of stakeholders to collect data to describe the short-term impact of COVID-19 in Manitoba. The following data sources were used to generate this report:

Emergency Department Information System (EDIS) data.
The EDIS database contains information on services received by a patient as (s)he progresses through an ED/UCC from the first point of entry at the triage desk through to discharge. The ED/UCC visits are triaged using CTAS scores 1 –Resuscitation, 2 –Emergent, 3 – Urgent, 4 – Less Urgent and 5 – Non Urgent. The ED/UCC visits can lead to an in-patient admission based on the state of the patient.

Admission, Discharge, and Transfer (ADT) data.
ADT is a patient-based records to provide information to monitor hospitalization in Manitoba. The ADT dataset does not include ICD-10 codes for the in-patient information. The in-patient visit reason attribute is based on the reason for the visit of the patient.

Claims Processing Solution (CPS) virtual physician visits data.
CPS virtual physician visits data includes a summary of the volume of claims for virtual visits that are provided in place of in-clinic visit services effective March 14, 2020. These services included virtual visits to patients by physicians in a number of areas of practice, as well as virtual psychotherapy, and consultations effective April 1st and 24th, 2020. Virtual tariffs included both fee-for-service and shadow-billing providers. Our analysis included the virtual visit claims received and processed by MHSAL between March 16th and August 30th, 2019. As there is a lag between when a service is provided, and when the physician submits a claim to the CPS which can be up to six months, this dataset may be incomplete for these service dates. We expect that these volumes will rise as more claims are submitted and paid through future pay runs.

Public Health Information Management System (PHIMS) data.
PHIMS is a confidential, integrated electronic public health records and developed to assist health practitioners in Manitoba to manage clients' public health surveillance records (such as immunization and communicable diseases). COVID-19 surveillance is included in PHIMS database.

Drug Program Information Network (DPIN) data.
DPIN is Manitoba's electronic, on-line, point-of-sale drug system. It links all community pharmacies (but not pharmacies in hospitals or nursing homes/personal care homes) and captures information about all Manitoba residents' drug dispensations. DPIN contains information such as date of drug dispensation, total day supply and dosage, unique pharmacy identification number, etc.

Manitoba Poison Centre data.

The Manitoba Poison Centre is a telephone toxicology consultation service that provides expert poison advice 24 hours a day to the public and healthcare professionals throughout Manitoba. We used the Manitoba Poison Centre data to describe the monthly number of calls due to improper use of cleaning and disinfecting products in Manitoba during January 01, 2019 to August 31, 2020.

Winnipeg Fire and Paramedic Service (WFPS) data.

Emergency response calls to WFPS where a patient was treated and/or transported for opioid overdose, mental health and accidental poisoning from January 2019 to August 2020 are included in the analysis. WFPS will administer naloxone when it is suspected (by objective clinical assessment of patient vital signs and presentation) that an opioid overdose has occurred. Monthly number of calls where a patient administered naloxone was extracted from electronic patient records. Specific information was located by filtering based on date and intervention text (i.e., naloxone). Similarly, for mental health related analysis, WFPS data was extracted from electronic patient records, and specific information was located by filtering based on date and primary impressions (mental health).

Accidental poisoning related emergency response calls to WFPS data was extracted from computer aided dispatch system records. Specific information was located by filtering based on date, incident type, and short description. The data set is limited to response to poisoning identified by the caller as 'accidental.' Due to the fact that data was extracted from the computer aided dispatch system instead of the patient records, it must be noted that validity of the data is limited.

Office of the Chief Medical Examiner's data.

Office of the Chief Medical Examiner's (OCME) mortality data is used to describe the drug-related deaths in Manitoba. Deaths that occurred in 2020 are still under review. The OCME data included in this report is based on available data at the time of report preparation. These data are preliminary numbers and are subject to change as toxicology results become available, and additional assessments are conducted.

Winnipeg Police calls for service data.

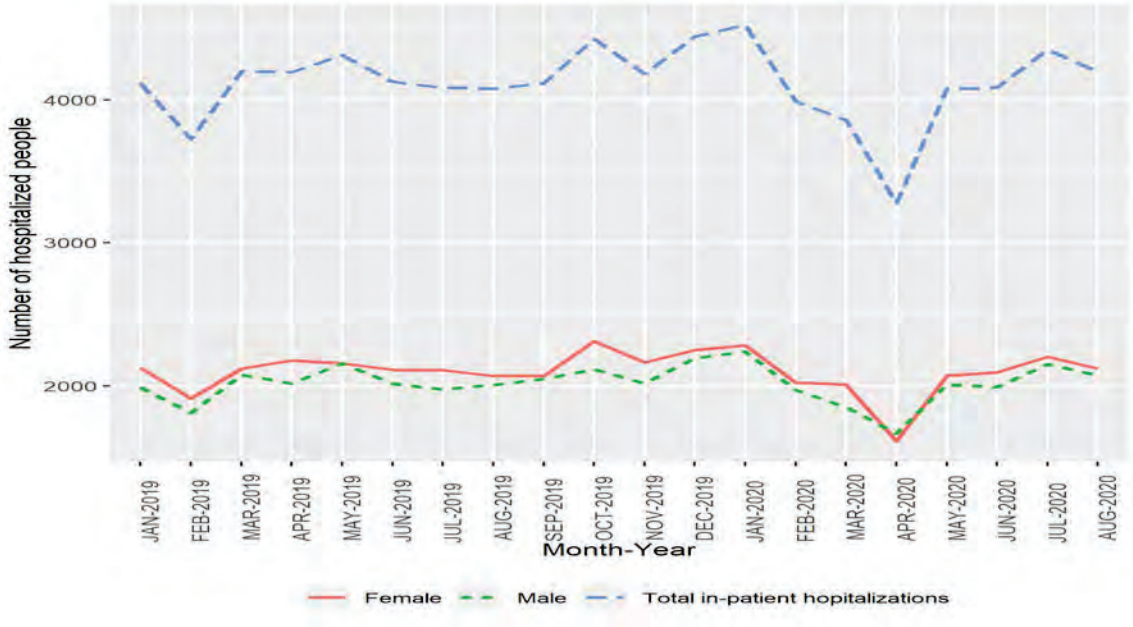
Winnipeg Police calls for service data consist of safety and unverified crime events reported by people in Winnipeg and by proactive events of officers. Data presented are based on call type categories established by the Winnipeg Police. The data include both safety and criminal events. The data are presented in generic categories for privacy reasons; including, but not limited to, calls respecting domestic violence, sexual offences and personal health. Call type categories displayed may not be the same as the categorization of the event after final investigation. All information is based on information provided from the public, as well as proactive policing, and therefore are preliminary and subject to change. Due to the complex nature of police investigations, the data may change over time.

Results

Any medical conditions

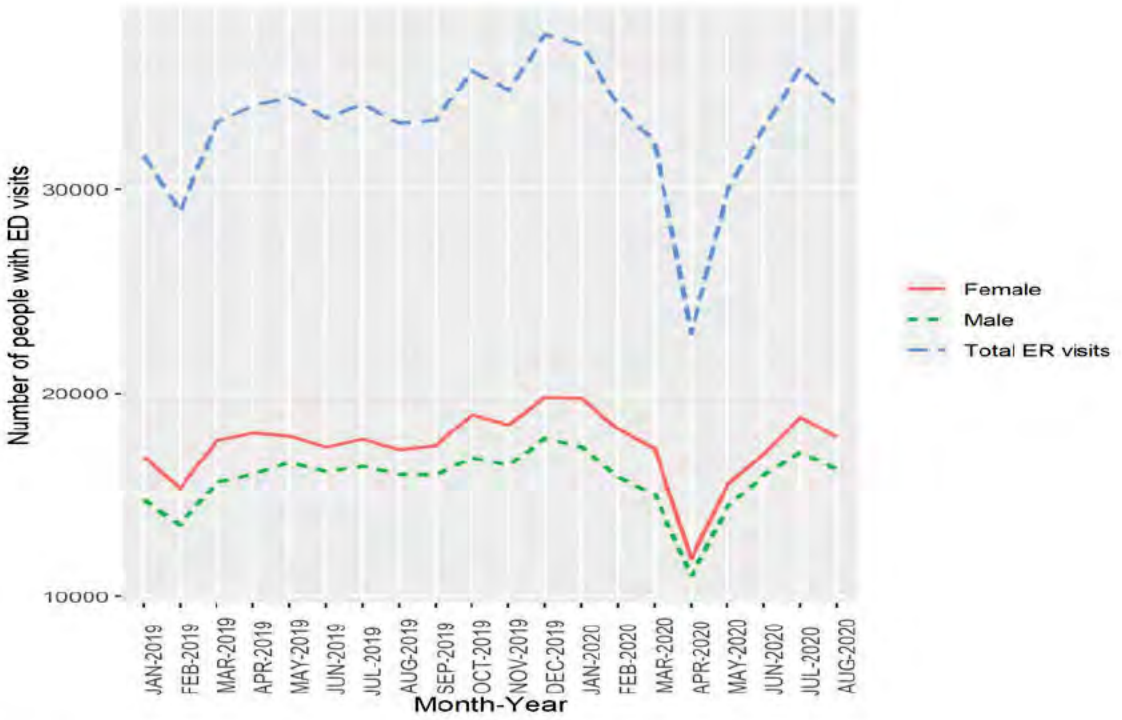
- The monthly number of unique Manitobans who had a hospitalization due to any medical conditions started to increase as of May 2020 after a decline noted in March and April 2020. For example, there were 3,279 people hospitalized in April 2020 compared with 4,197 people hospitalized in August 2020, a 28% increase (Figure 1).
- A similar trend was noted for ED/UCC visits; the monthly number of unique Manitobans who had an ED/UCC visit due to any medical conditions increased from 22,887 people in April 2020 to 34,138 people in August 2020, a 49% increase (Figure 2).
- Weekly number of virtual physician visit claims received and processed by MHSAL ranged from 7,954 virtual visits in week 12 to 83,276 virtual visits in week 19 (Figure 3). Average weekly number of virtual visits during March 16 (week 12) – August 30 (week 35), 2020 was 50,283, with a standard deviation of 18,946. *Note: As there is a lag between when a service is provided, and when the physician submits a claim to the CPS which can be up to six months, this dataset may be incomplete for these service dates. We expect that these volumes will rise as more claims are submitted and paid through future pay runs.*

Note: Further details on ED/UCC visits by age group (Figure 31), health region (Figure 32), in-patient admission status (Figure 33), and CTAS scores (Figure 34) are presented in the Appendix.



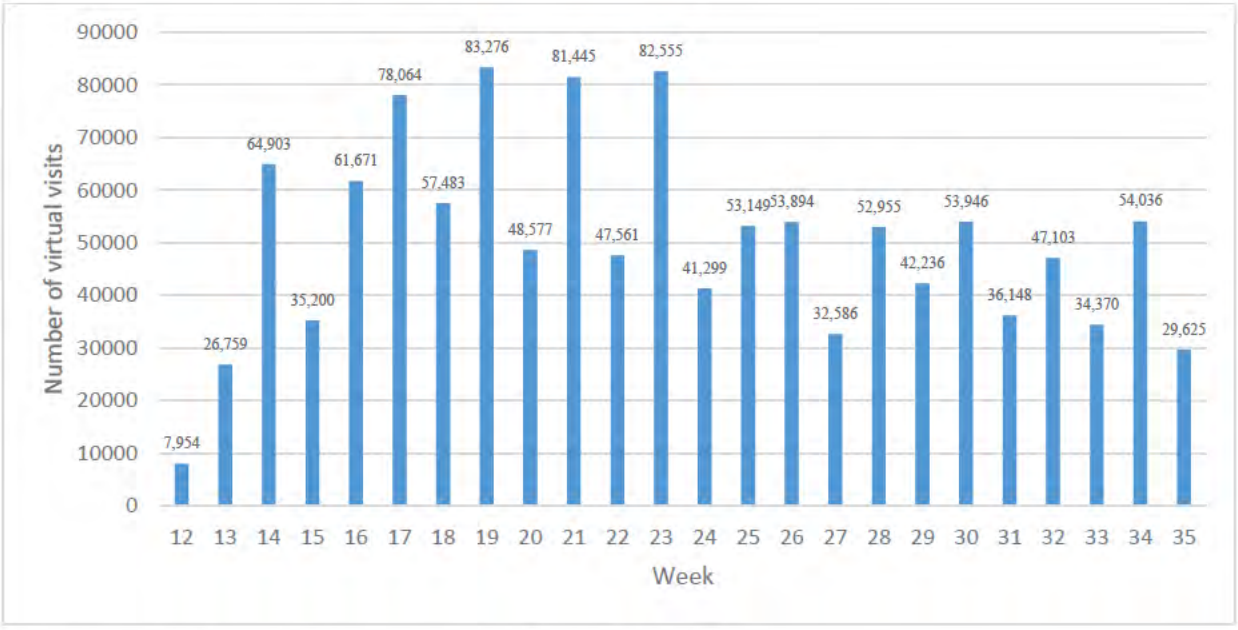
Data source: Admissions, Discharge & Transfer (ADT)

Figure 1: Monthly number of unique Manitobans who had a hospitalization due to any medical conditions, January 01, 2019 – August 31, 2020



Data source: Emergency Department Information System (EDIS)

Figure 2: Monthly number of unique Manitobans who had an ED/UCC visit due to any medical conditions, January 01, 2019 – August 31, 2020



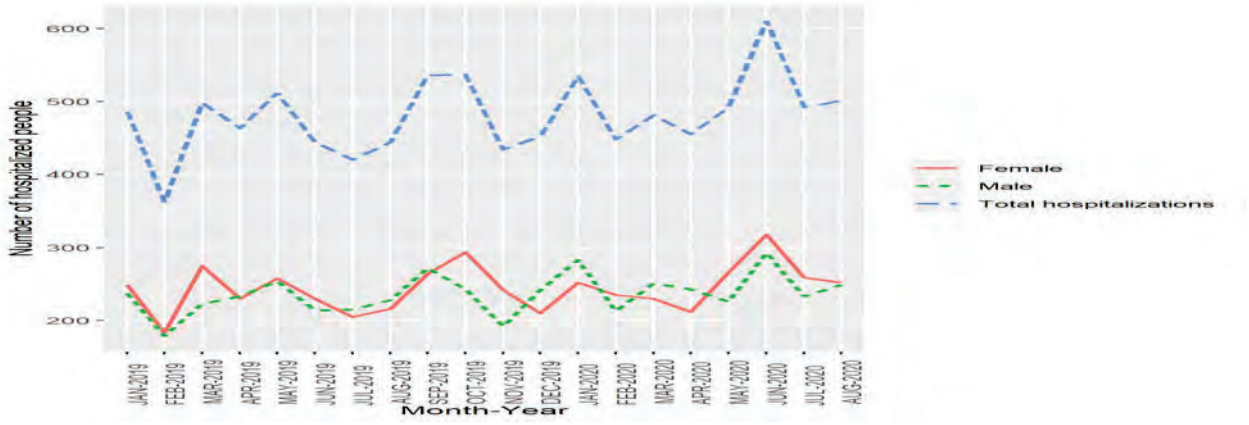
Data source: Claims Processing Solution (CPS) virtual physician visits data

Figure 3: Weekly number of virtual physician visits due to any medical conditions received and processed by MHSAL, March 16 (week 12) – August 30 (week 35), 2020

Mental and behavioural disorders

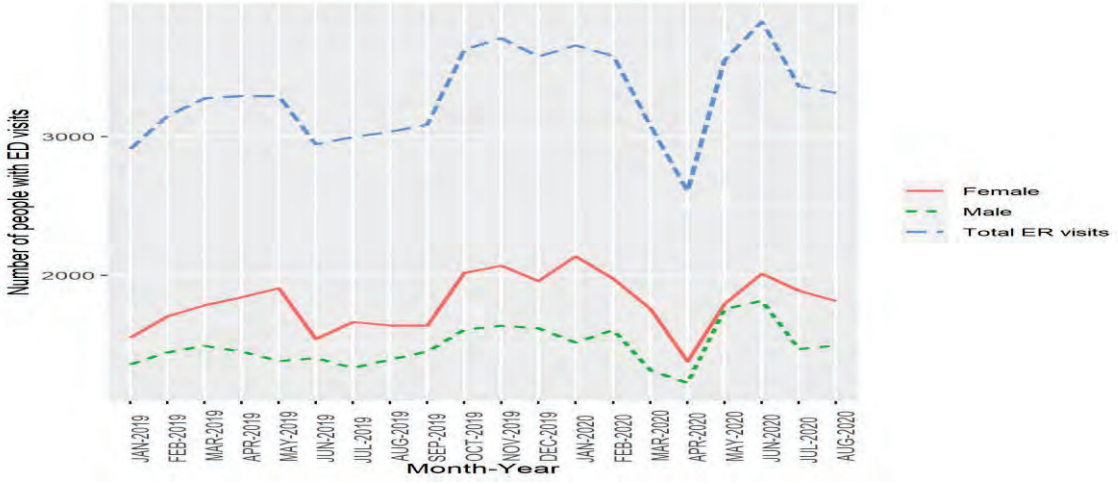
- After a decline noted from February to April 2020, the monthly number of unique Manitobans who had a hospitalization (Figure 4) or an ED/UCC visit (Figure 5) due to mental and behavioural disorders increased by 10% and 27% from April to August 2020, respectively. During COVID-19 pandemic, the highest number of hospitalization and ED/UCC visits for mental health disorders is noted in June 2020.
- A similar pattern was noted for the monthly number of calls to WFPS where a patient was treated and/or transported due to a mental health condition, 16% increase from April (n= 262) to August (n=305) 2020, with the highest increase in May 2020 (n=348) (Figure 6).

Note: Further details on hospitalization (Figure 35) and ED/UCC visits (Figure 36) for mental and behavioral disorders by age group are presented in the Appendix.



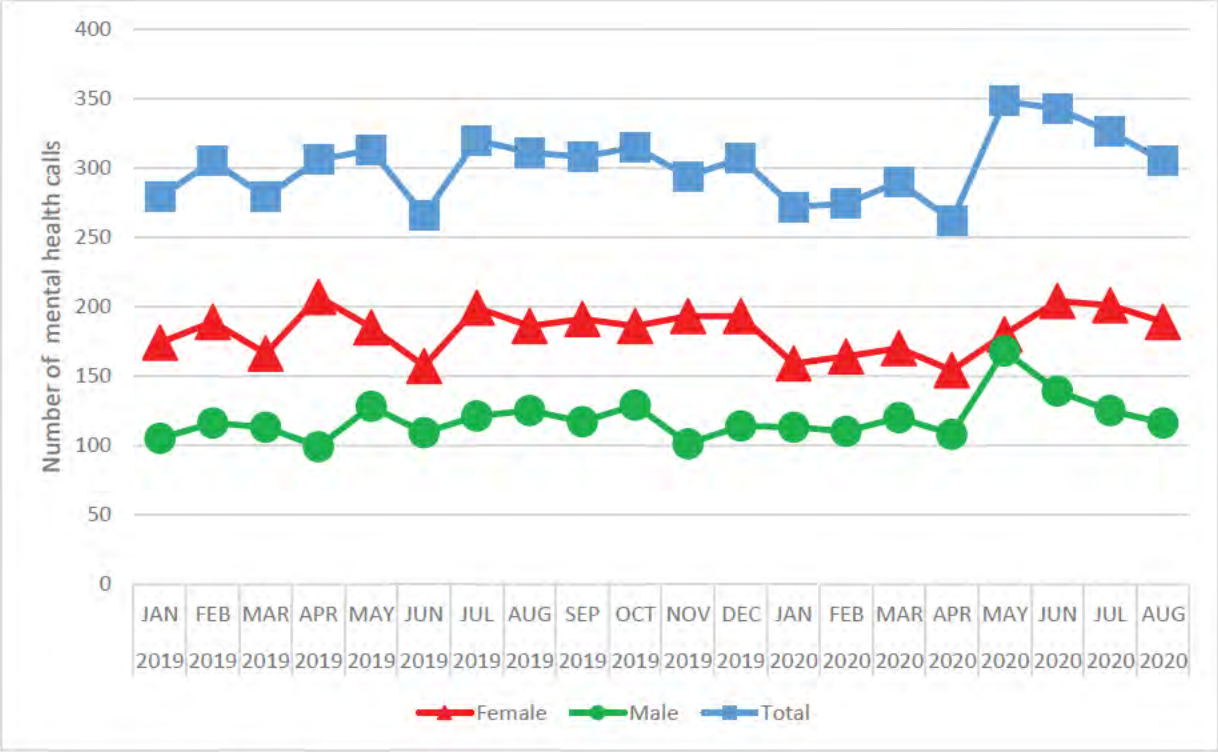
Data source: Admissions, Discharge & Transfer (ADT)

Figure 4: Monthly number of unique Manitobans hospitalized due to a reason related to mental and behavioural disorders by sex, January 01, 2019 – August 31, 2020



Data source: Emergency Department Information System (EDIS)

Figure 5: Monthly number of unique Manitobans who had an ED/UCC visit due to mental and behavioural disorders by sex, January 01, 2019 – August 31, 2020



Data source: Winnipeg Fire and Paramedic Service, City of Winnipeg

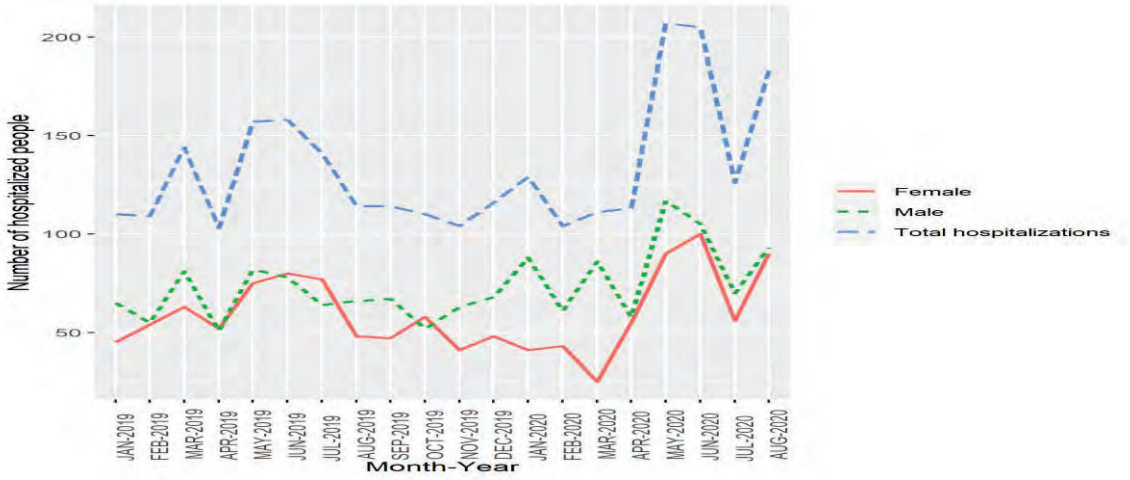
Figure 6: Monthly number of calls to Winnipeg Fire and Paramedic service where a patient was treated and/or transported for a mental health condition in Winnipeg by sex, January 01, 2019 – August 31, 2020

Substance use disorders

- Overall, the monthly number of substance use related hospitalizations (Figure 7), ED/UCC visits (Figure 8), and naloxone administered by WFPS (Figure 9) increased by 62%, 7%, and 125%, respectively, from April to August 2020.
- During COVID-19 pandemic, the highest number of substance use related events occurred in May and June 2020 for hospitalizations (n= 207 and 205, respectively) and in July 2020 for ED visits (n = 3,150) and for naloxone administered by WFPS (n= 225).
- There were 138 drug-related deaths in Manitoba from January to June 2020 (Figure 10). During this time period, there were 83 drug related deaths with at least one opioid present, 16 with fentanyl noted as a contributor, 10 with methamphetamine present, and 7 with cocaine present. *Note: These are preliminary numbers and are subject to change as toxicology results become available, and additional assessments are conducted.*
- After a decline noted in March (n=21) and April 2020 (n=22), the monthly number of drug-related deaths increased to 33 in May 2020 and 25 in June 2020, a 50% and 14% increase from April 2020, respectively (Figure 10)
- The number of fentanyl-related deaths has risen steadily over the years with 14 deaths in 2017, 24 deaths in 2018, 41 deaths in 2019, and 54 deaths in the first six months of 2020 (Figurer 10).

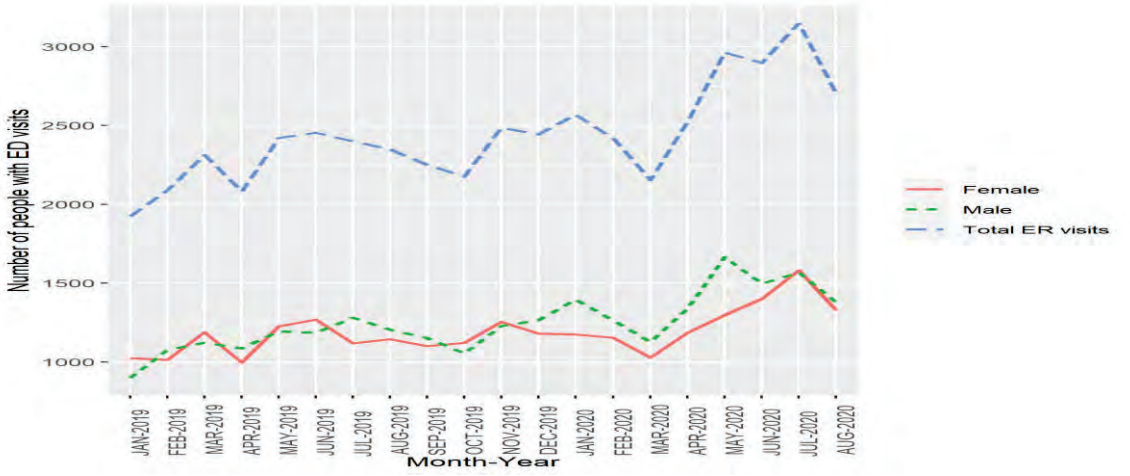
- In 2020, alcohol-related hospitalizations sharply increased from 67 people in April to 142 people in May, a 112% increase (Figure 11). After a decline noted in June (n=133) and July (n=98) 2020, an increasing trend was noted again in August 2020 (n=127), a 90% increase from April to August 2020. This increasing trend was especially noted in 25-44 years age group (Figure 40 in Appendix).
- Opioid associated ED/UCC visits increased by 240% from April (n=68) to August (n=231) 2020 (Figure 12).

Note: Figures presenting the monthly number of unique Manitobans hospitalized (Figure 37) or had an ED/UCC visit (Figure 38) due to substance use by age group, alcohol-related hospitalization by sex (Figure 39) and age groups (Figure 40) are presented in the Appendix.



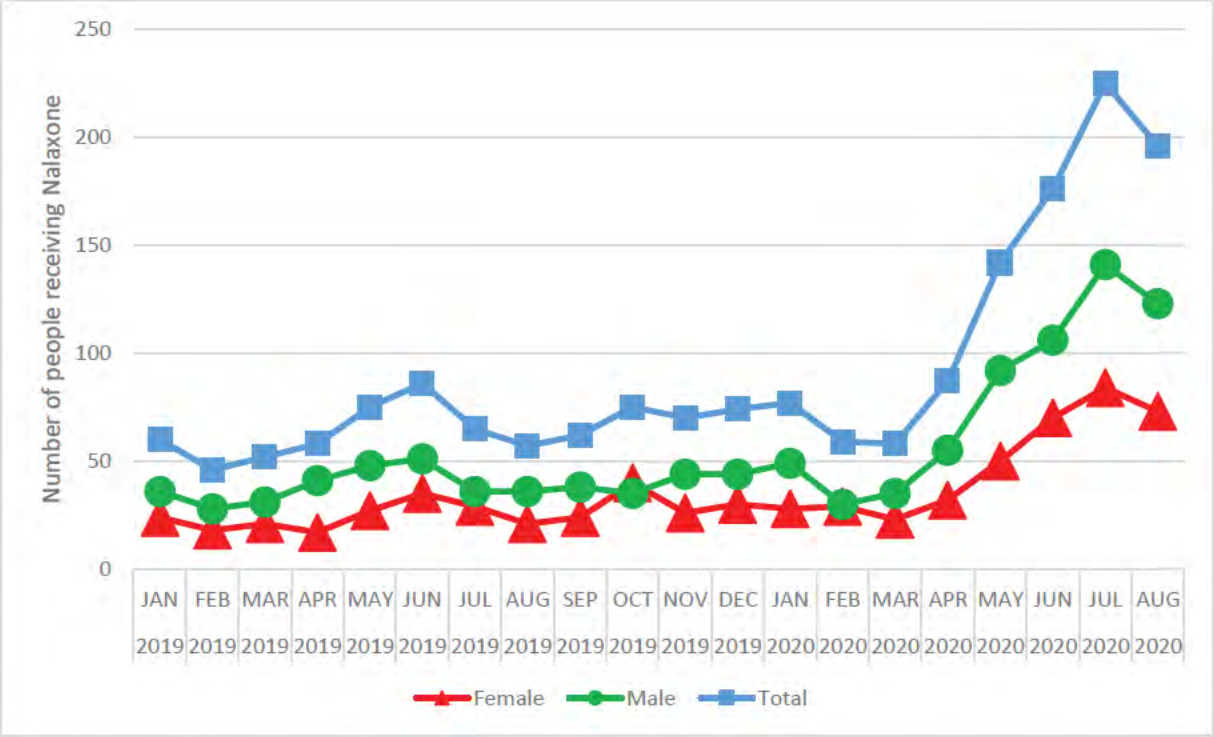
Data source: Admissions, Discharge & Transfer (ADT)

Figure 7: Monthly number of unique Manitobans hospitalized due to a reason related to substance use/misuse by sex, January 01, 2019 – August 31, 2020



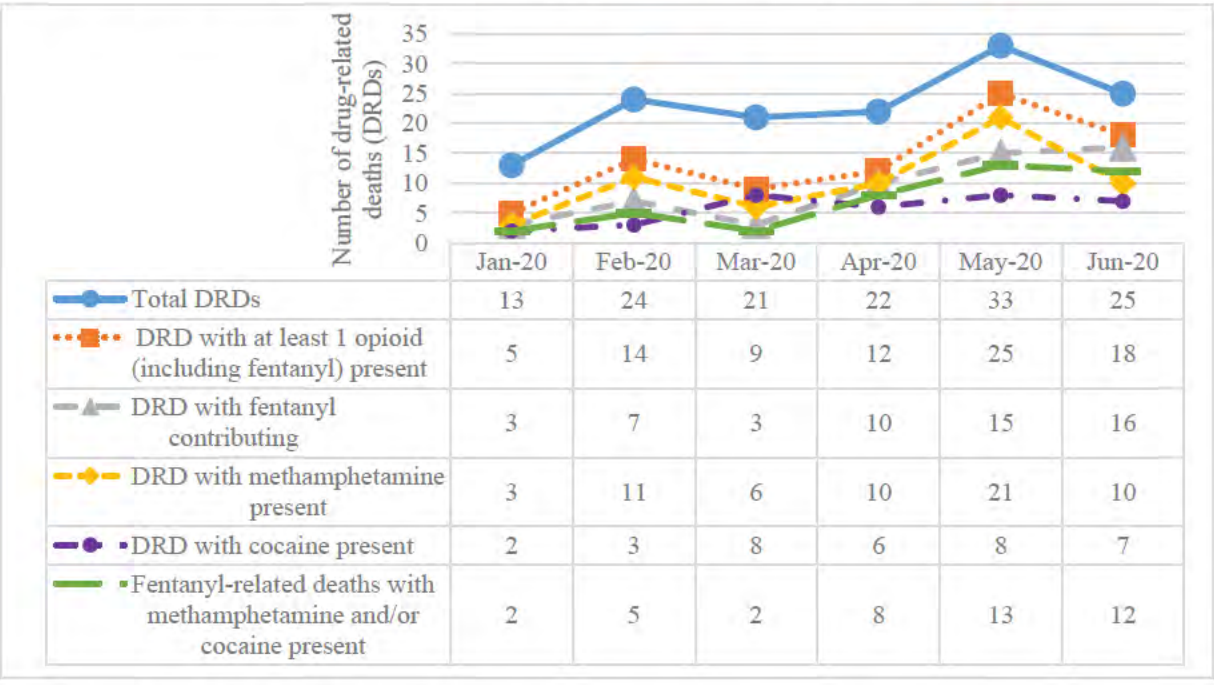
Data source: Emergency Department Information System (EDIS)

Figure 8: Monthly number of unique Manitobans who had an ED/UCC visit due to substance use disorders by sex, January 01, 2019 – August 31, 2020



Data source: Winnipeg Fire and Paramedic Service (WFPS), City of Winnipeg

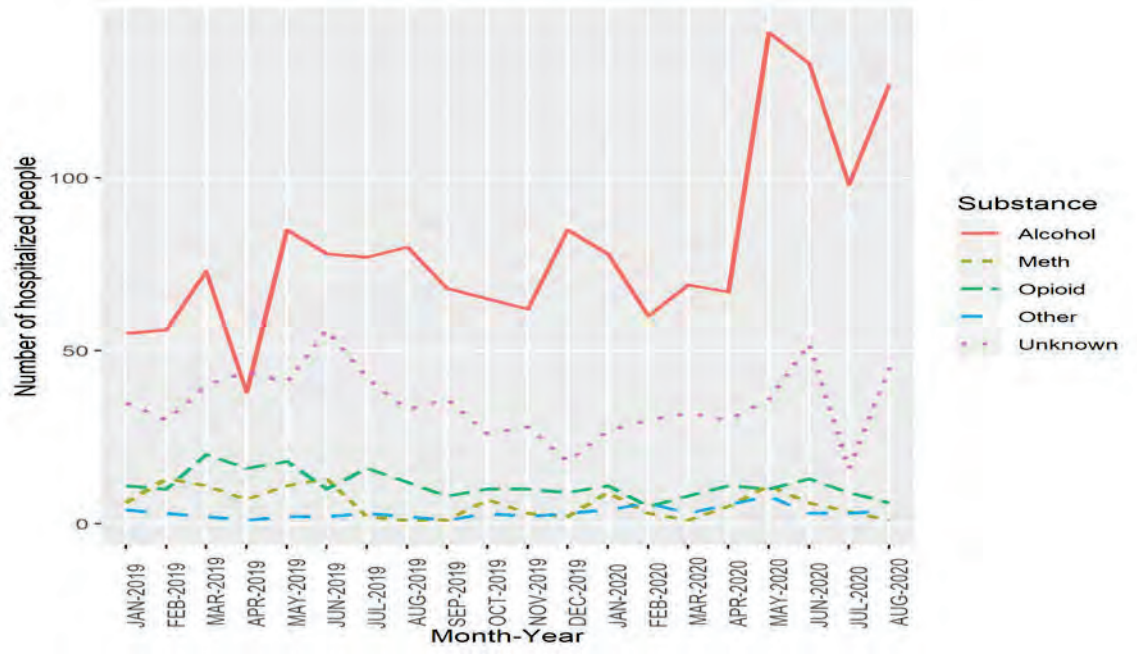
Figure 9: Monthly number of calls to WFPS where a patient received naloxone for suspected opioid overdose in Winnipeg by sex, January 01, 2019 – August 31, 2020



	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20
Total DRDs	13	24	21	22	33	25
DRD with at least 1 opioid (including fentanyl) present	5	14	9	12	25	18
DRD with fentanyl contributing	3	7	3	10	15	16
DRD with methamphetamine present	3	11	6	10	21	10
DRD with cocaine present	2	3	8	6	8	7
Fentanyl-related deaths with methamphetamine and/or cocaine present	2	5	2	8	13	12

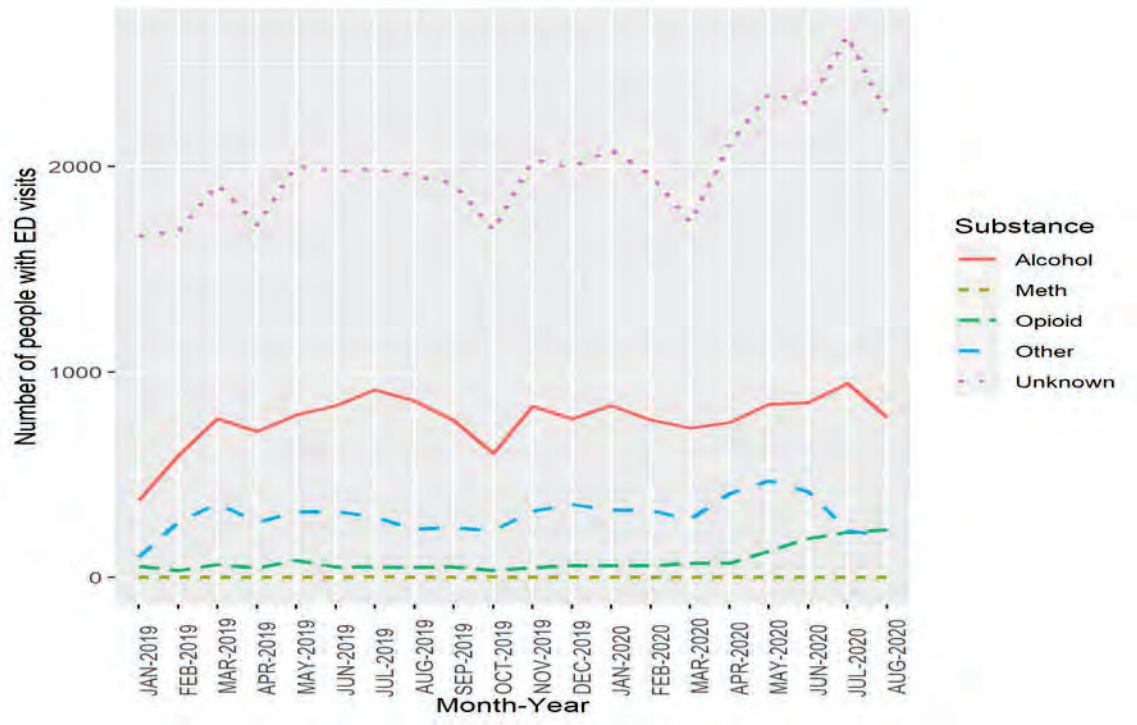
Data source: Manitoba Office of Medical Examiners

Figure 10: Number of drug-related deaths (DRDs) in Manitoba, January 01 – June 30, 2020



Data source: Admissions, Discharge & Transfer (ADT)

Figure 11: Monthly number of unique Manitobans hospitalized due to a reason related to substance use/misuse by substance type, January 01, 2019 – August 31, 2020



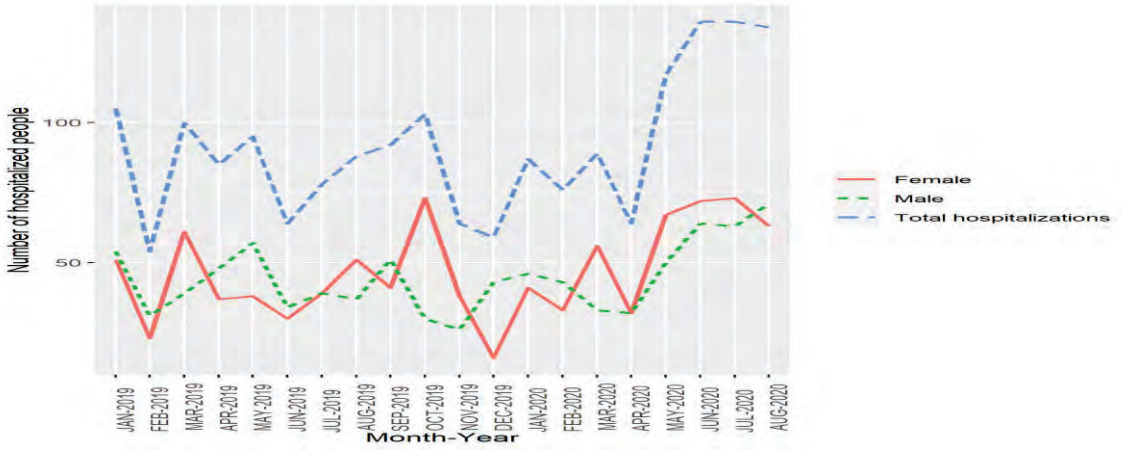
Data source: Emergency Department Information System (EDIS)

Figure 12: Monthly number of unique Manitobans who had an ED/UCC due to substance use disorders by substance type, January 01, 2019 – August 31, 2020

Intentional injuries

- Monthly number of unique Manitobans hospitalized due to an intentional injury sharply increased from 64 in April 2020 to 134 in August 2020, a 109% increase (Figure 13).
- A similar increasing trend from April to August 2020 was noted for related ED/UCC visits – a 62% increase (Figure 14).
- During COVID-19 period, for both hospitalizations and ED/UCC visits, the highest numbers of people with an intentional injury was noted in June 2020(Figure 13 & 14).
- An increasing trend was especially noted for self-harm related hospitalizations and ED/UCC visits, for stabbing related hospitalizations, and for assault related ED/UCC visits (Figure 15 & 16).

Note: Further details on hospitalization (Figure 41) and ED/UCC visits (Figure 42) for intentional injuries by age group are presented in the Appendix.

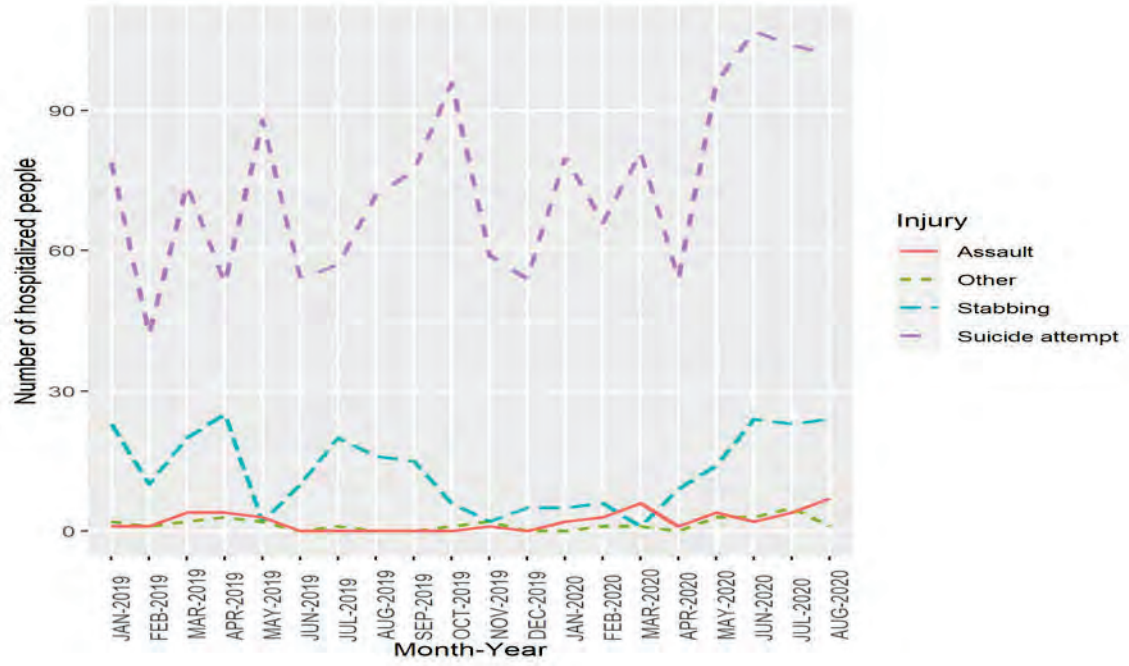


Data source: Admissions, Discharge & Transfer (ADT)

Figure 13: Monthly number of unique Manitobans hospitalized due to a reason related to intentional injury by sex, January 01, 2019 – August 31, 2020

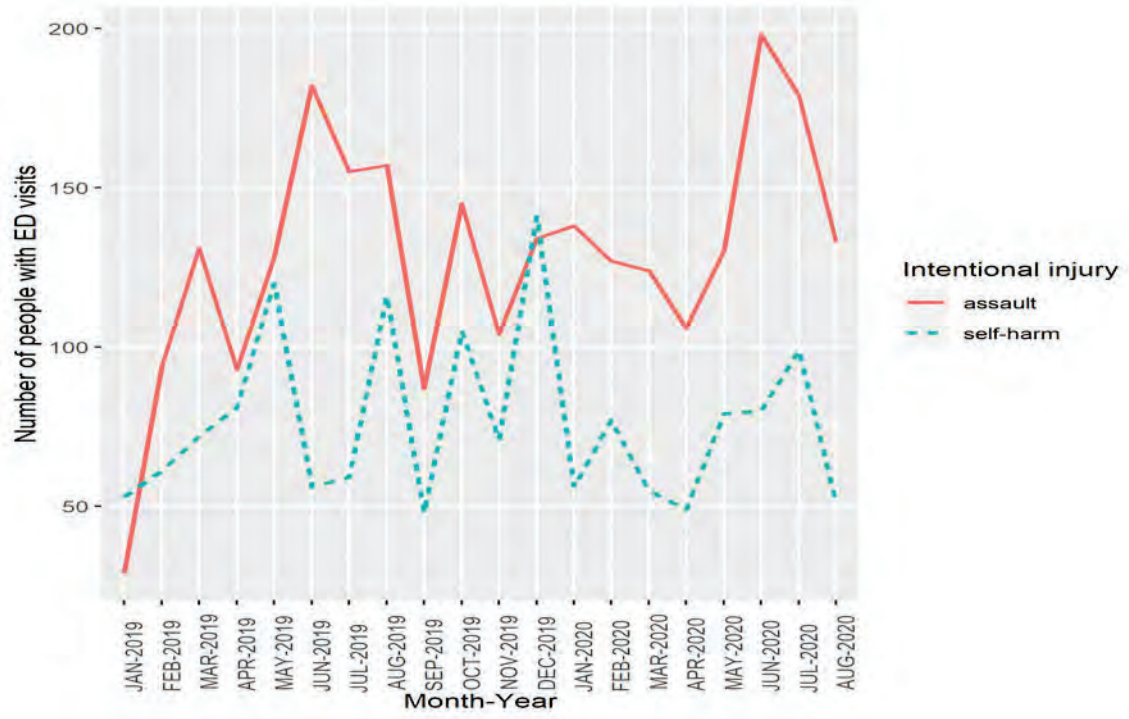
Data source: Emergency Department Information System (EDIS)

Figure 14: Monthly number of unique Manitobans with an ED/UCC visit due to a reason related to intentional injury, January 01, 2019 – August 31, 2020



Data source: Admissions, Discharge & Transfer (ADT)

Figure 15: Monthly number of unique Manitobans hospitalized due to a reason related to intentional injury by injury type, January 01, 2019 – August 31, 2020



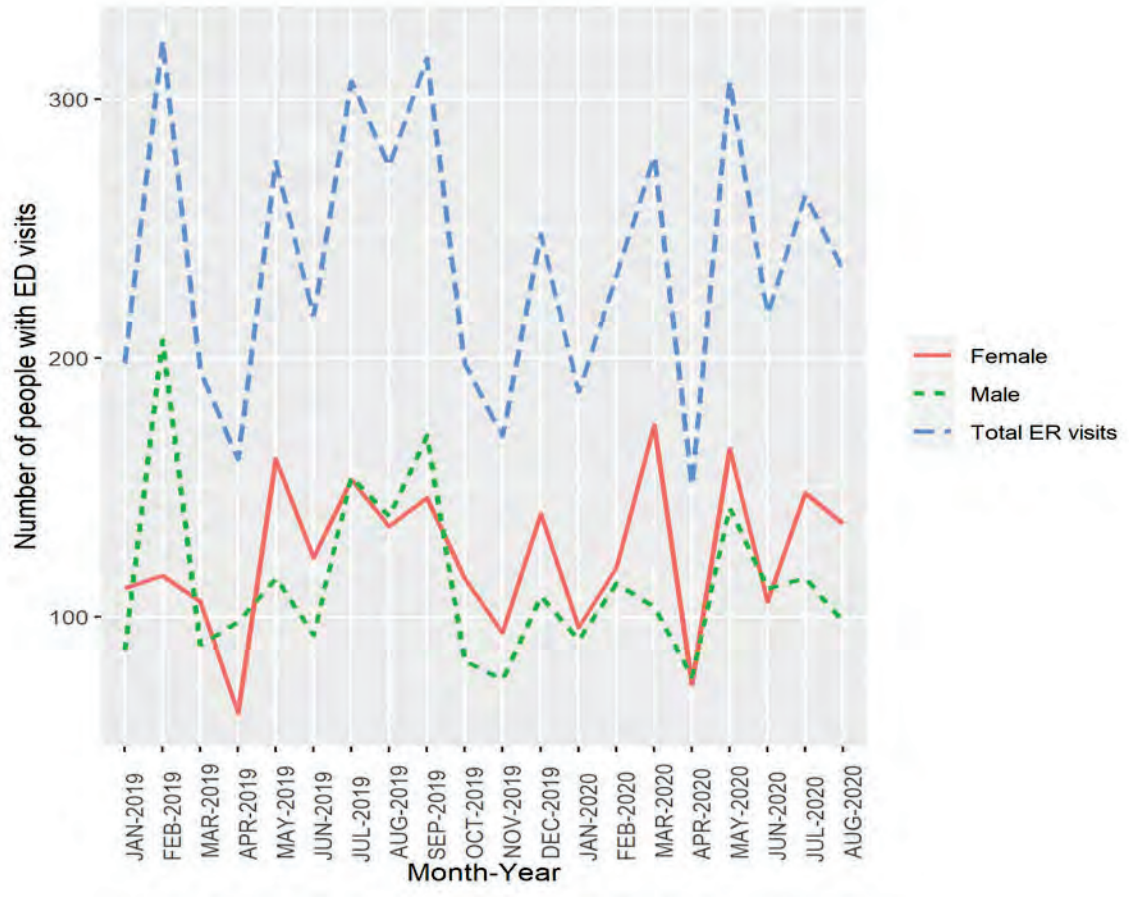
Data source: Emergency Department Information System (EDIS)

Figure 16: Monthly number of unique Manitobans with an ED/UCC visit due to intentional injuries by injury type, January 01, 2019 – August 31, 2020

Accidental poisoning

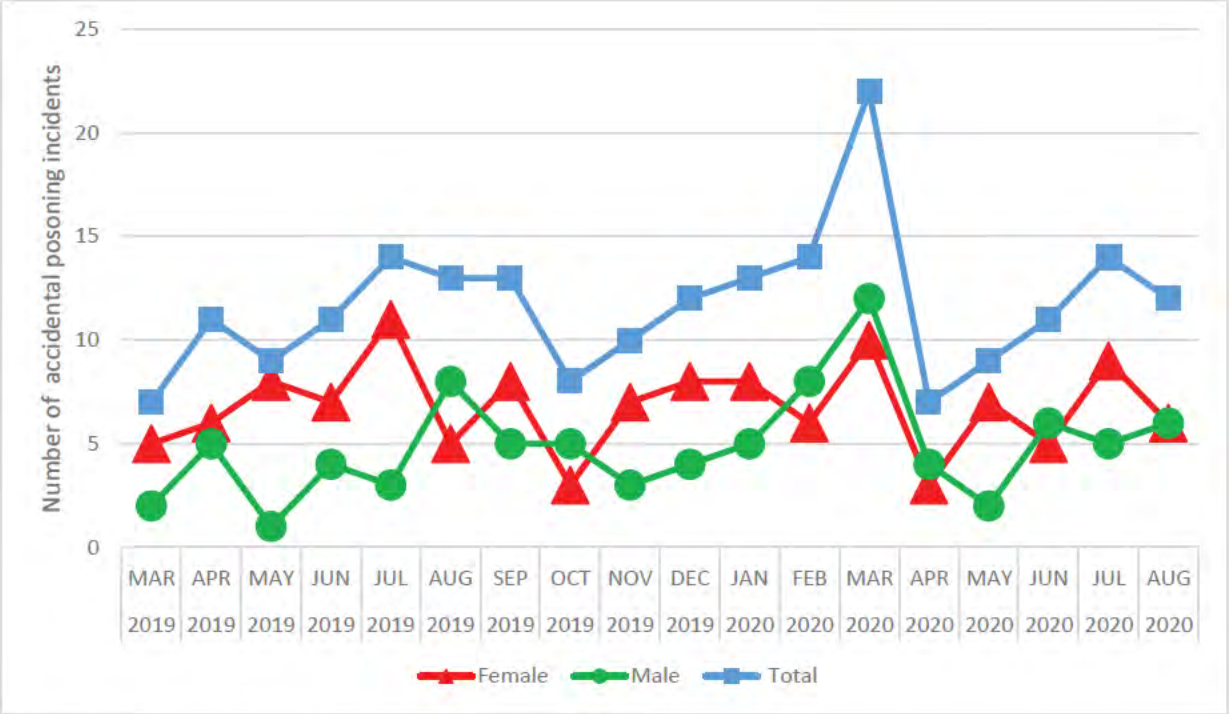
- During COVID-19 period, after a two times increase from April (n=151) to May (n=307), the number of unique Manitobans with an ED/UCC visit due to accidental poisoning decreased to 217 in June, 263 in July, and 234 in August 2020 (Figure 17)
- The corresponding data for accidental poisoning calls to WFPS fluctuated from 22 calls in March to 7 calls in April, 14 calls in July and 12 calls in August 2020 (Figure 18).
- During COVID-19 period, the number of poisoning calls to Manitoba Poison Centre due to improper use of cleaning and disinfecting products was at the highest in March 2020 (n=42) but it declined to 28 in July 2020 (Figure 19). In August 2020, the number of poisoning calls increased back to 39, especially due to hand sanitizer related accidental poisoning calls.

Note: Further details on ED/UCC visits for accidental poisoning by age group is presented in the Appendix (Figure 43).



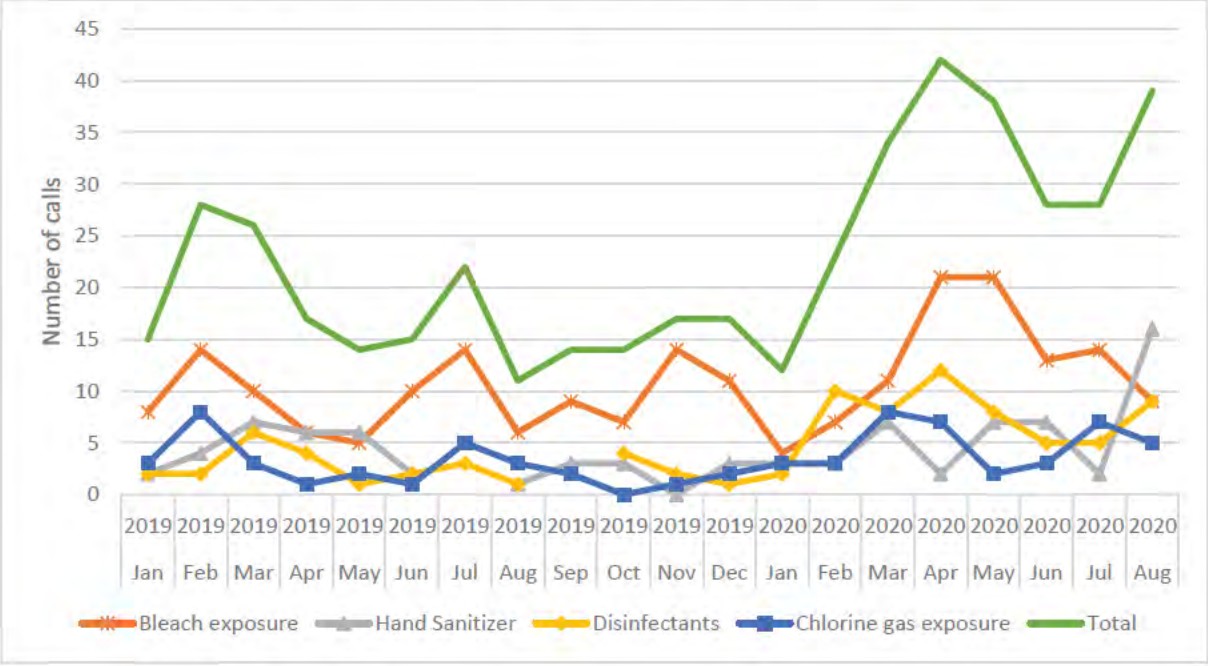
Data source: Emergency Department Information System (EDIS)

Figure 17: Monthly number of unique Manitobans who had an ED/UCC visit due to accidental poisoning, January 01, 2019 – August 31, 2020



Data source: Winnipeg Fire and Paramedic Service (WFPS), City of Winnipeg

Figure 18: Monthly number of accidental poisoning related calls to Winnipeg Fire and Paramedic Service by sex, January 01, 2019 – August 31, 2020

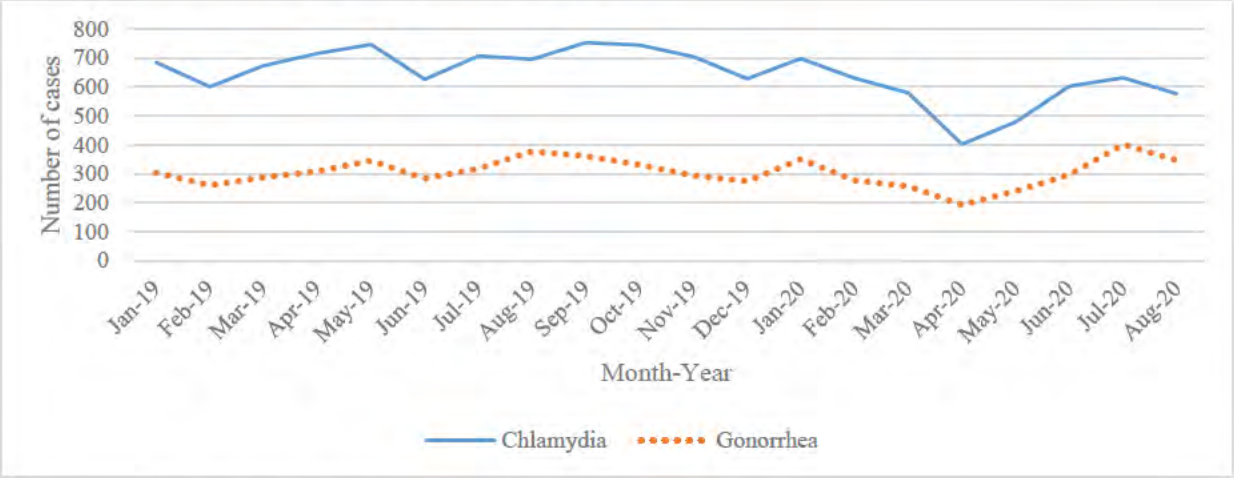


Data source: Manitoba Poison Centre

Figure 19: Monthly number of calls to Manitoba Poison Centre for improper use of bleach, chlorine gas, select disinfectants, and hand sanitizers, January 01, 2019 – August 31, 2020

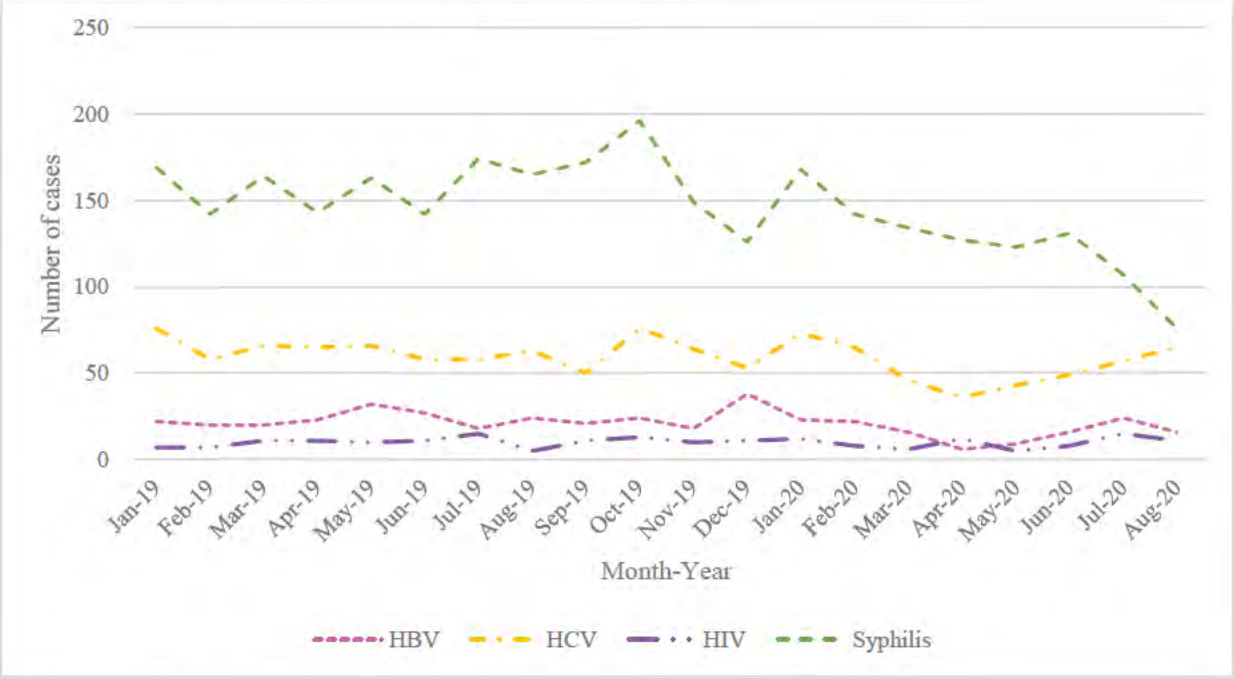
Sexually transmitted and blood-borne infections

- The monthly number of chlamydia and gonorrhea in Manitoba increased by 43% and 80% from April to August 2020, respectively (Figure 20).
- A similar increasing trend from April to July 2020 was noted for HBV (a 167% increase) and HCV (an 81% increase). Conversely, a 40% decrease was noted for syphilis during the same period (Figure 21).



Data source: Public Health Information Management System (PHIMS)

Figure 20: Monthly number of unique Manitobans diagnosed with chlamydia and/or gonorrhea, January 01, 2019 – August 31, 2020



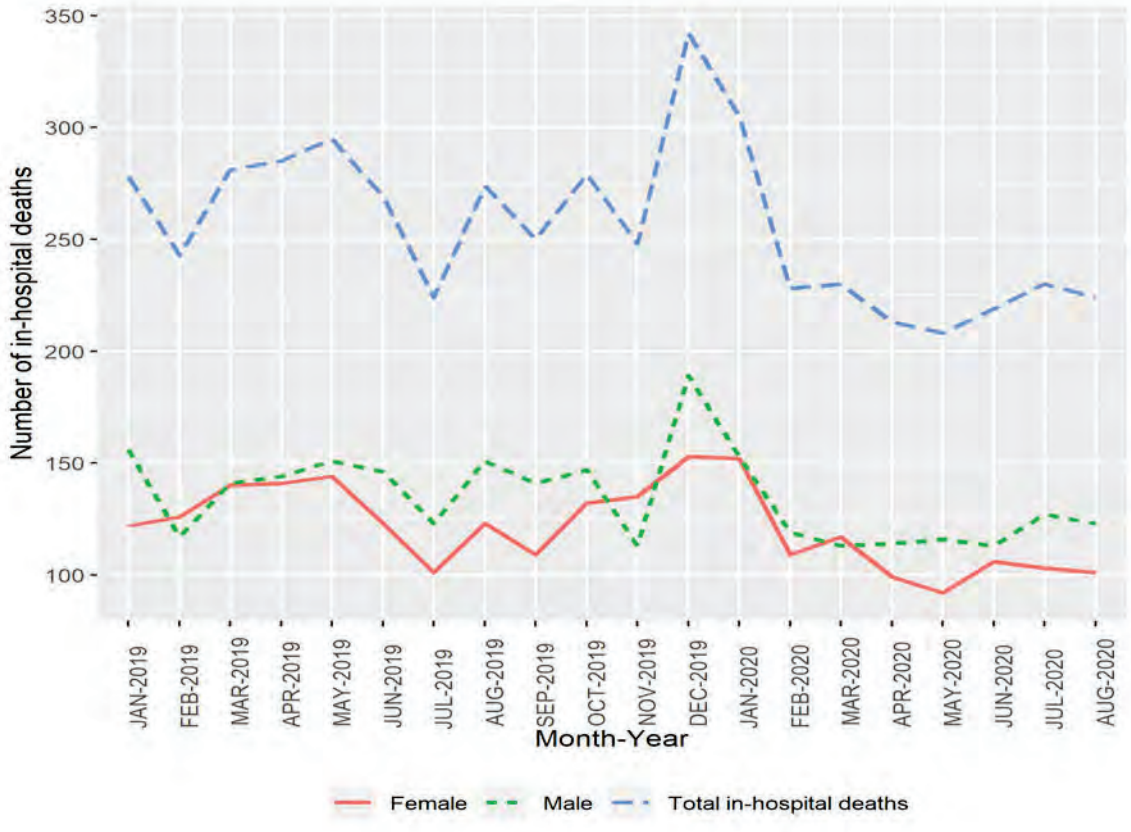
Data source: Public Health Information Management System (PHIMS)

Figure 21: Monthly number of unique Manitobans diagnosed with HBV, HCV, HIV, or syphilis, January 01, 2019 – August 31, 2020

Severe outcomes

- In 2020, after the monthly number of in-hospital deaths (due to any cause) decreased slightly in April (n=213) and May 2020 (n=208), it increased to 230 in July and 224 in August, a 5% increase from April to August (Figure 22).
- A similar trend for in-hospital deaths was noted in those with a chronic condition (as of 2018/19 FY) with a decline in April and May and a 6% increase from April to August (Figure 23).
- In 2020, the monthly number of unique Manitobans with chronic condition who had an ICU admission increased from 85 events in April to 111 events in July and 104 events in August, a 22% increase in August vs April, especially in males (Figure 24).
- Similar increasing trend from April to August 2020 visits in the chronic condition population was noted for ED/UCCs, a 41% increase (Figure 25).

Note: Monthly number of in-hospital deaths (due to any cause) in Manitoba's general population by age group is presented in the Appendix (Figure 44). In addition, in-hospital deaths in Manitoba's chronic condition population by age group (Figure 45) and ED/UCC visits in the chronic condition population by CTAS score (Figure 46) are presented in Appendix.

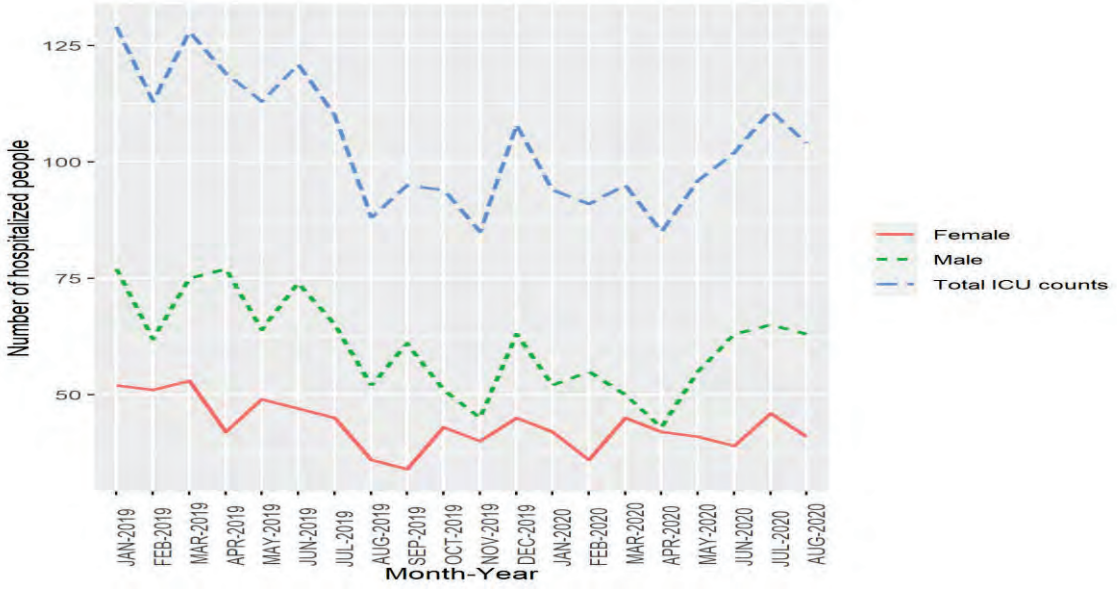


Data source: Admissions, Discharge & Transfer (ADT)

Figure 22: Monthly number of in-hospital deaths (due to any cause) in Manitoba by sex, January 01, 2019 - August 31, 2020

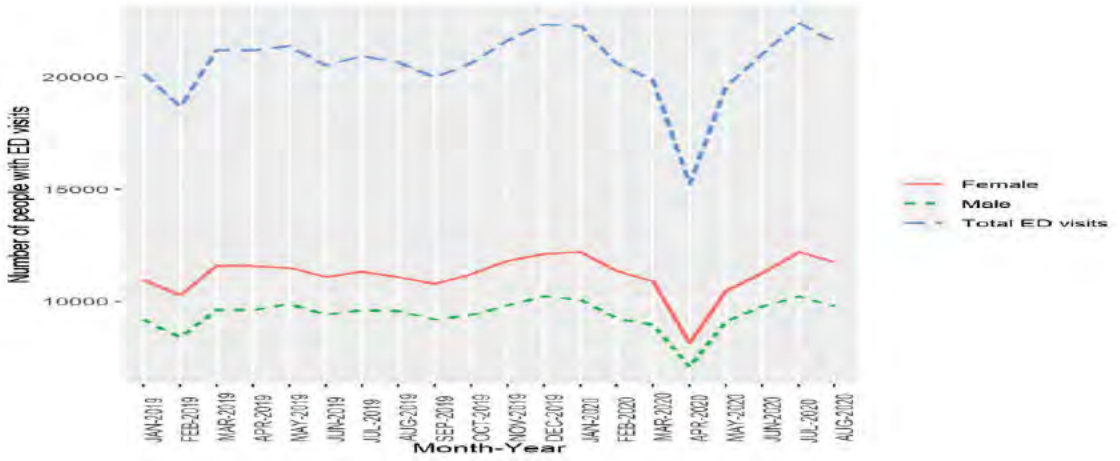
Data source: Admissions, Discharge & Transfer (ADT)

Figure 23: Monthly number of unique Manitobans with a chronic condition (as of 2018/19 FY) who died (due to any cause) in hospital by sex, January 01, 2019 – August 31, 2020



Data source: Admissions, Discharge & Transfer (ADT)

Figure 24: Monthly number of unique Manitobans with a chronic condition (as of 2018/19 FY) who had an ICU hospitalization by sex, January 01, 2019 – August 31, 2020

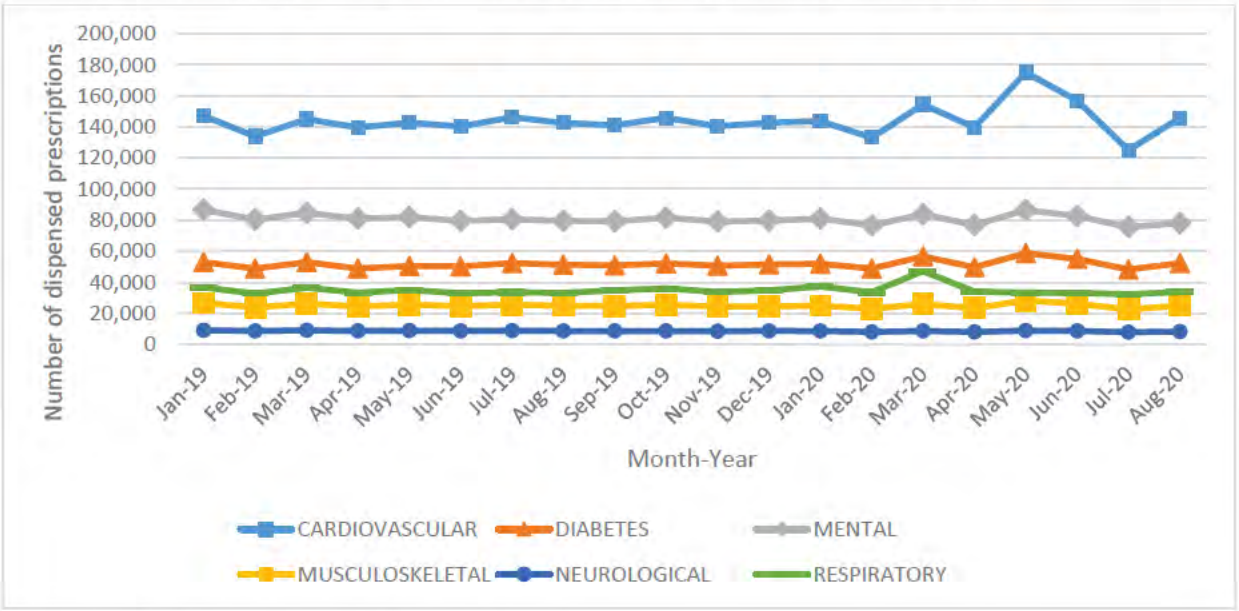


Data source: Emergency Department Information System (EDIS)

Figure 25: Monthly number of unique Manitobans with a chronic condition (as of 2018/19 FY) who had an ED/UCC visit (due to any medical conditions) by sex, January 01, 2019 – August 31, 2020

Prescription dispensation among Manitobans with a chronic condition

- In general, the monthly number of unique Manitobans with a chronic condition who dispensed a prescription for their condition increased in March and May 2020 followed with a decrease in June and July 2020 (Figure 26). *Note: This trend corresponds with the drug dispensation policy during COVID-19 where in March 2020, the province placed a one-month limit on prescription drugs; in May 2020, those restrictions have been lifted to get three months worth of prescriptions — as long as the drugs aren't in short supply.*

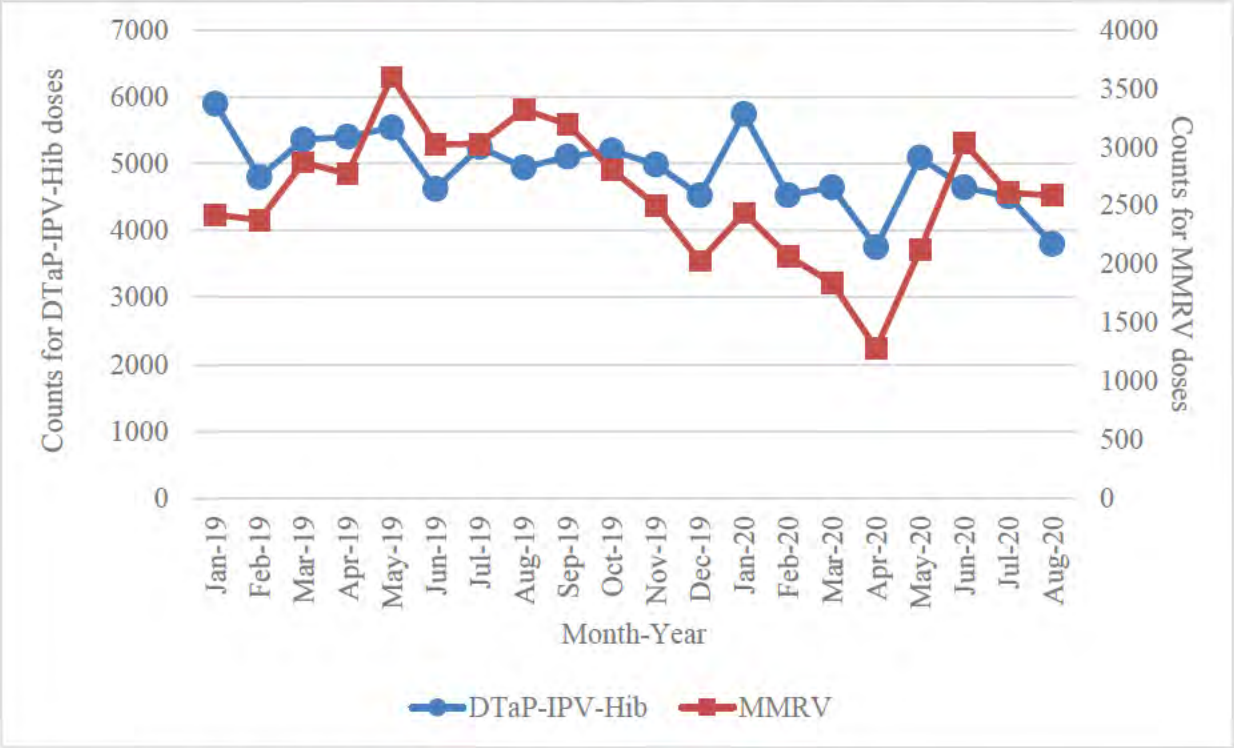


Data source: Drug Program Information Network (DPIN)

Figure 26: Monthly number of unique Manitobans with a chronic condition who dispensed a prescription for their condition, January 01, 2019 – August 31, 2020

Immunization coverage

- During COVID-19 period, monthly number of MMRV immunization doses administered in Manitoba increased from 1,278 doses in April to 2,588 doses in August, a 103% increase. The corresponding data was at the highest in June 2020 with 3,038 MMRV doses (Figure 27).
- For DTaP-IPV-Hib immunization doses, there was an increase from 3,754 doses in April to 5,091 doses in May 2020 but it gradually decreased to 3,802 in August 2020.



Data source: Public Health Information Management System (PHIMS)

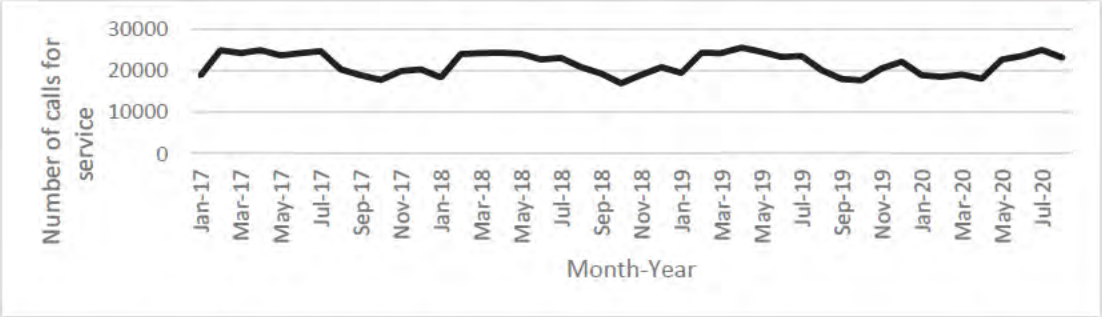
DTaP - IPV – Hib: Diphtheria, Tetanus, acellular Pertussis, Polio and Haemophilus influenzae type b; MMRV: Measles, Mumps, Rubella, and Varicella

Figure 27: Monthly number of DTaP-IPV-Hib and MMRV immunization doses administered in Manitoba, January 01, 2019 - August 31, 2020

Crimes reported by Winnipeg Police Service

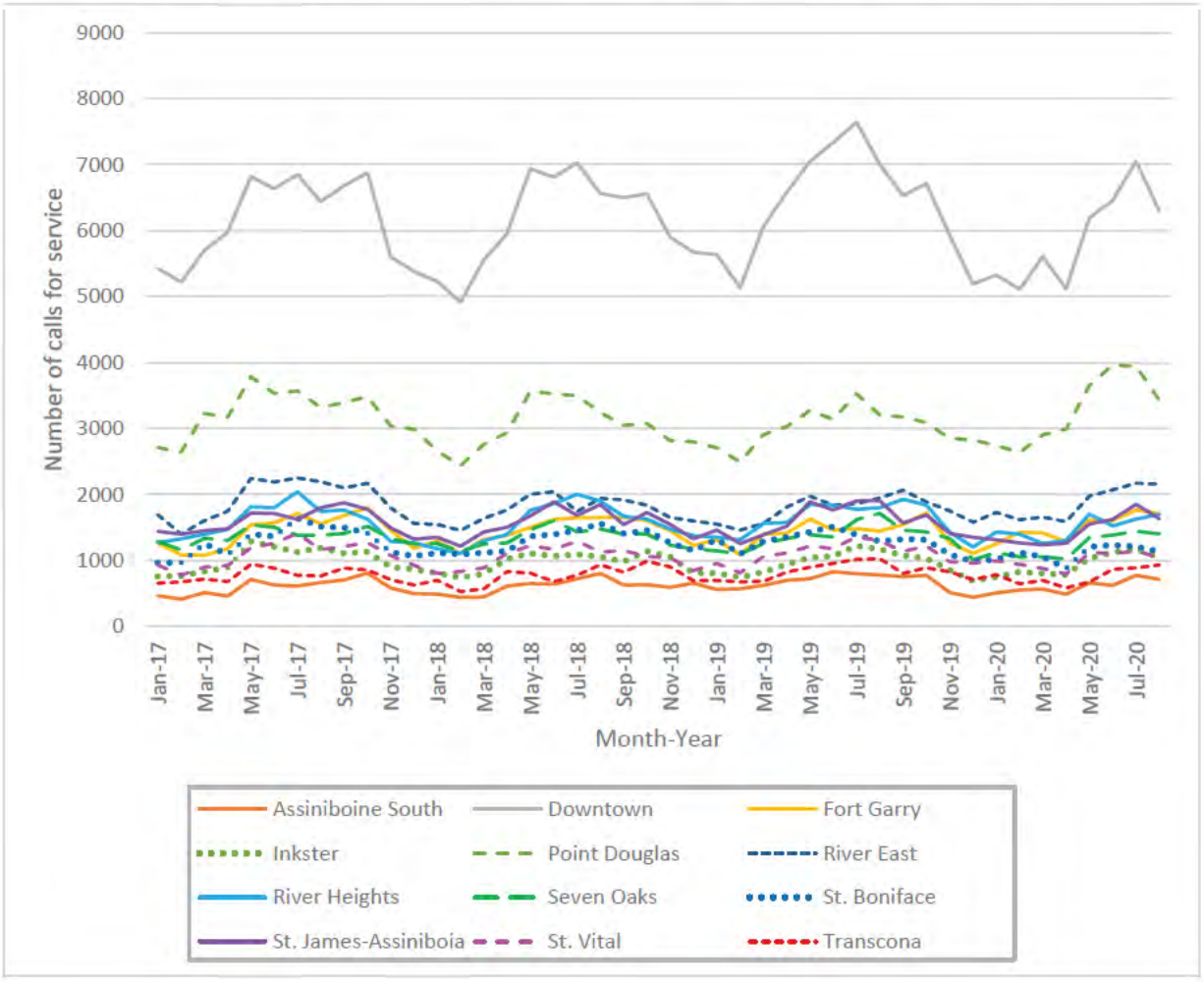
- Overall, the number of crime calls for WPS stayed stable in March 2020 (n=19,109) and April 2020 (n=18,078) but increased to 23,172 in August 2020, a 28% increase from April to August 2020 (Figure 32).
- This increase was noted in all Winnipeg community areas but especially in Downtown and Point Douglas community areas (Figure 29).
- From April to August 2020, the top three crime categories saw the highest increase were traffic (an 85% increase), intoxicated persons (a 59% increase), and violence (a 55% increase) (Figure 30).

Note: Monthly number of service calls to Winnipeg Police by event type in each service category is presented in Appendix (Figure 46 – Figure 52).



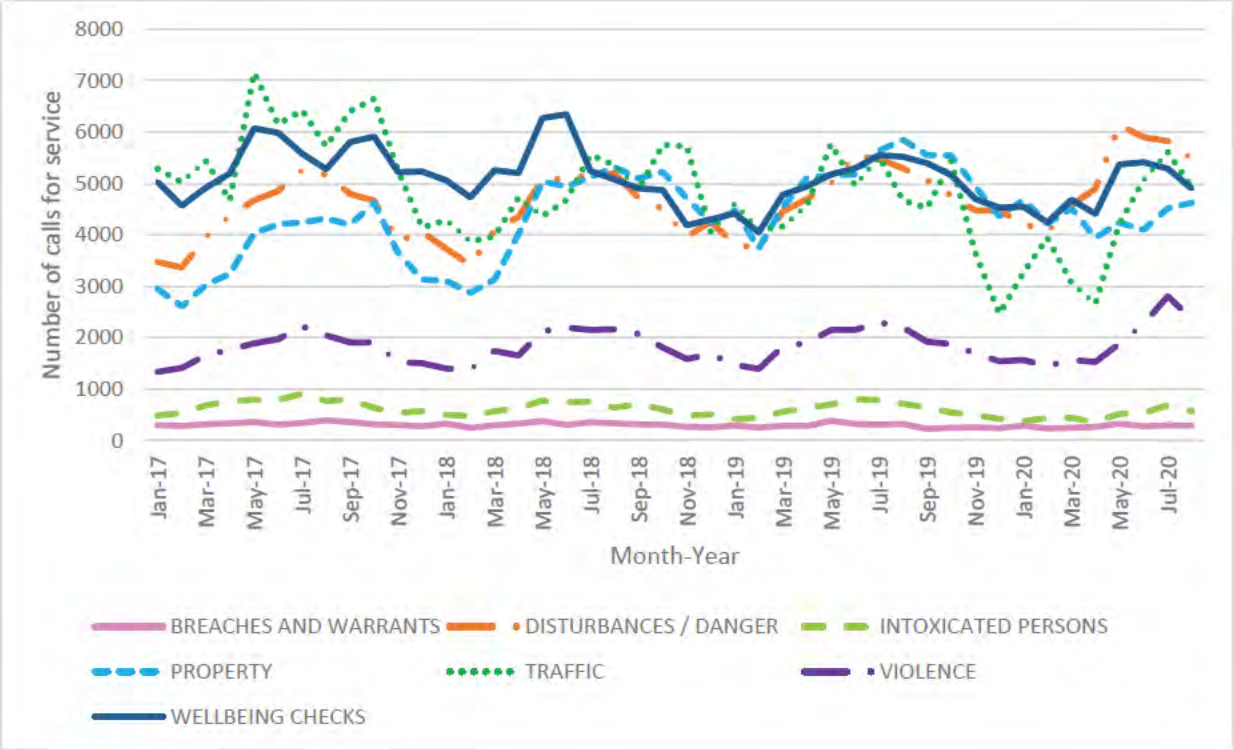
Data source: Winnipeg Police calls for service data.

Figure 28: Monthly number of calls for service to Winnipeg Police, January 01, 2017 – August 31, 2020



Data source: Winnipeg Police calls for service data.

Figure 29: Monthly number of calls for service to Winnipeg Police by community area, January 01, 2017 – August 31, 2020



Data source: Winnipeg Police calls for service data.

Figure 30: Monthly number of calls for service to Winnipeg Police by service type, January 01, 2017 – August 31, 2020

Conclusion

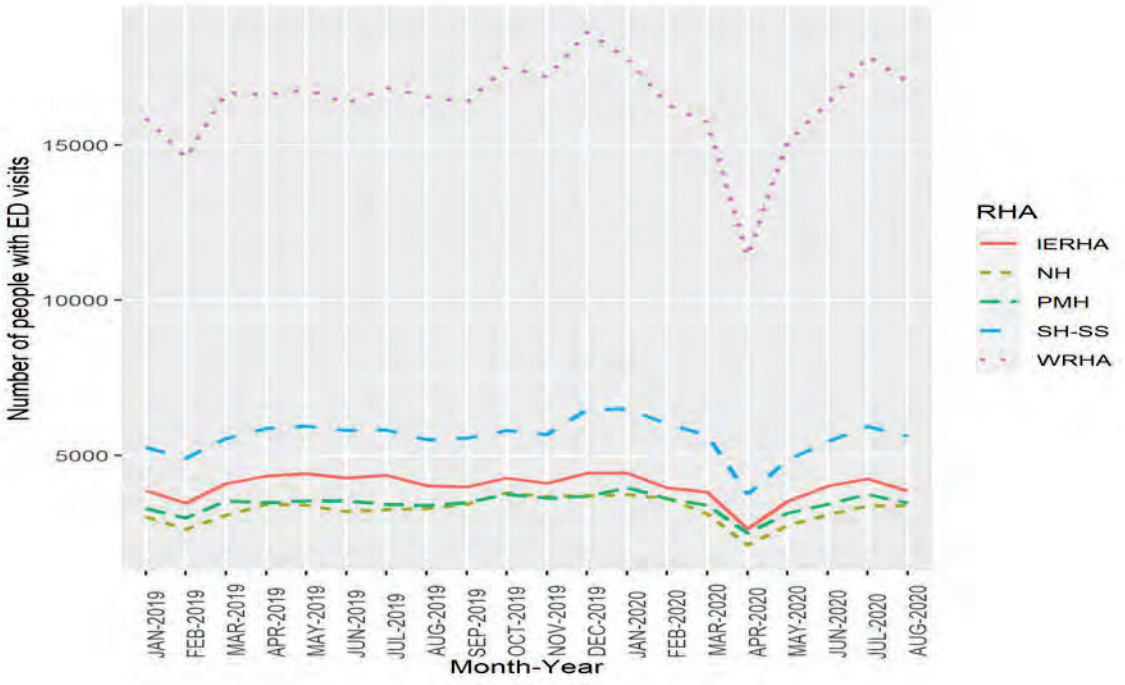
This report describes the impacts of COVID-19 public health measures on various health and crime indicators in Manitoba from the beginning of the pandemic (March 2020) to August 2020. Our analysis indicated that *overall*, in Manitoba, health services use due to any medical conditions, mental and behavioral disorders, substance use disorders, intentional injuries, accidental poisoning, or MMRV immunization increased from April to August 2020. A similar increasing trend during the same period was noted for ICU admissions and ED/UCC visits in those with a chronic condition, for diagnosis with chlamydia, gonorrhea, HBV, and/or HCV, and service calls to WPS. Conversely, a decreasing trend was noted for lab-confirmed diagnosis of syphilis.

Ongoing monitoring of impacts of COVID-19 public health measure on various health indicators is important and, therefore, future analyses are suggested to determine if these trends hold over time.

Appendix

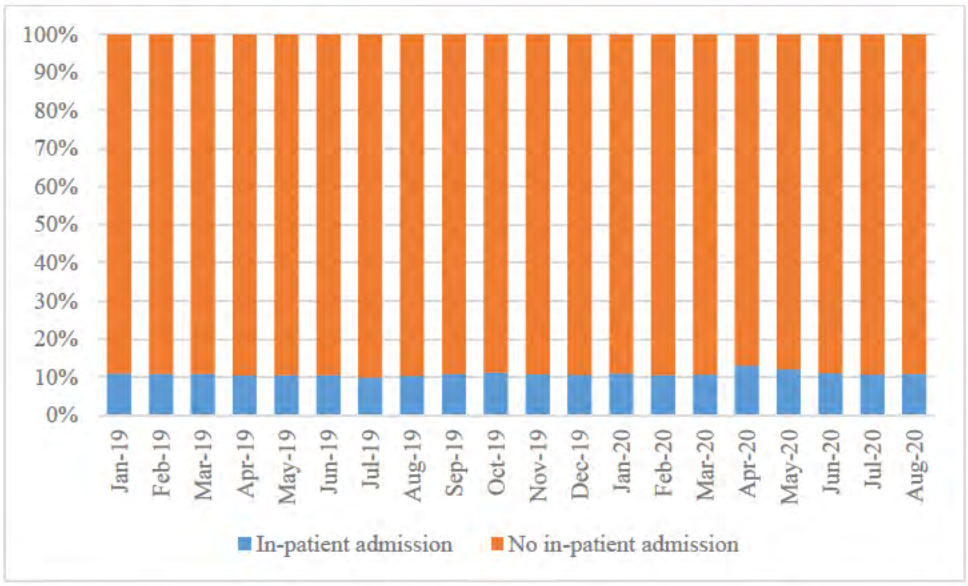
Data source: Emergency Department Information System (EDIS)

Figure 31: Monthly number of unique Manitobans with an ED/UCC visit due to any medical health conditions by age group, January 01, 2019 - August 31, 2020



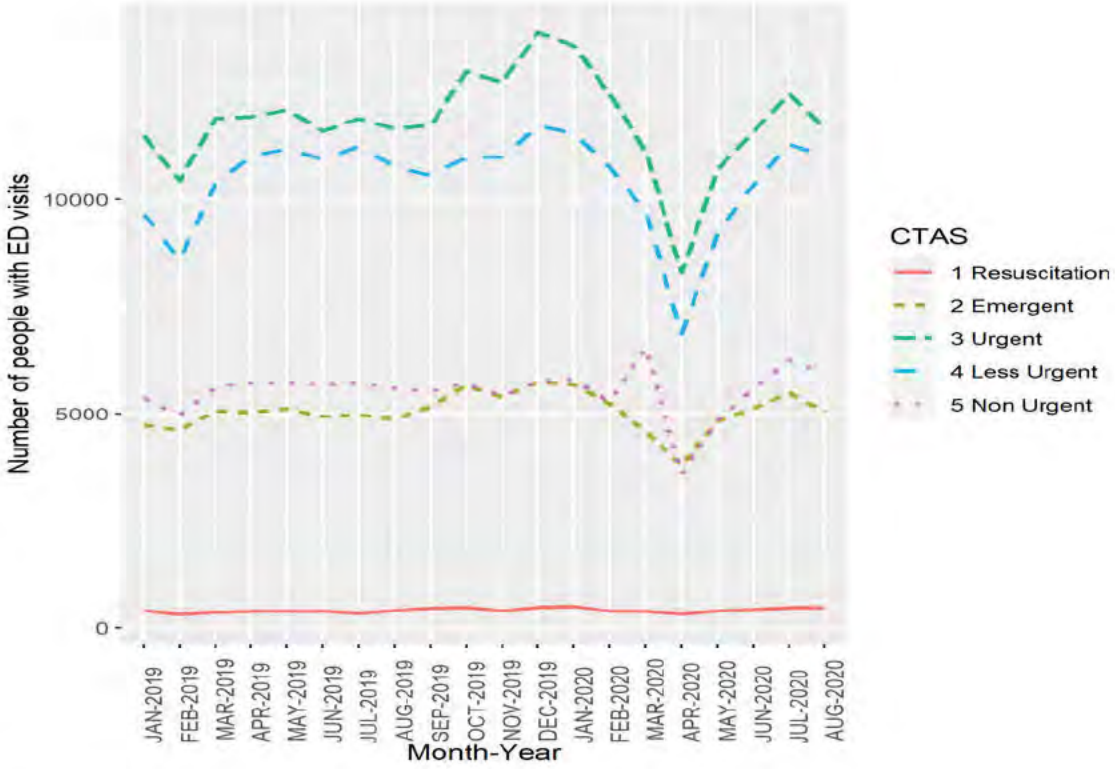
Data source: Emergency Department Information System (EDIS)

Figure 32: Monthly number of unique Manitobans with an ED/UCC visit due to any medical health conditions by health region of residence, January 01, 2019 - August 31, 2020



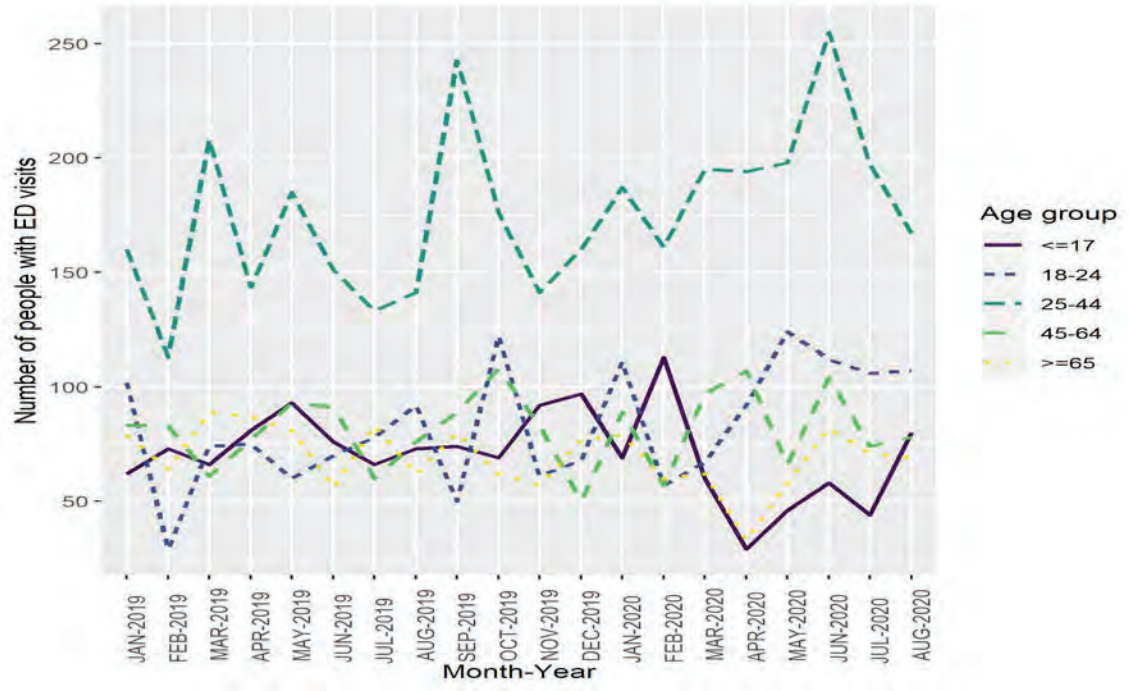
Data source: Emergency Department Information System (EDIS)

Figure 33: Proportion of unique Manitobans with an ED/UCC visit due to any medical health conditions by in-patient hospitalization status, January 01, 2019 - August 31, 2020



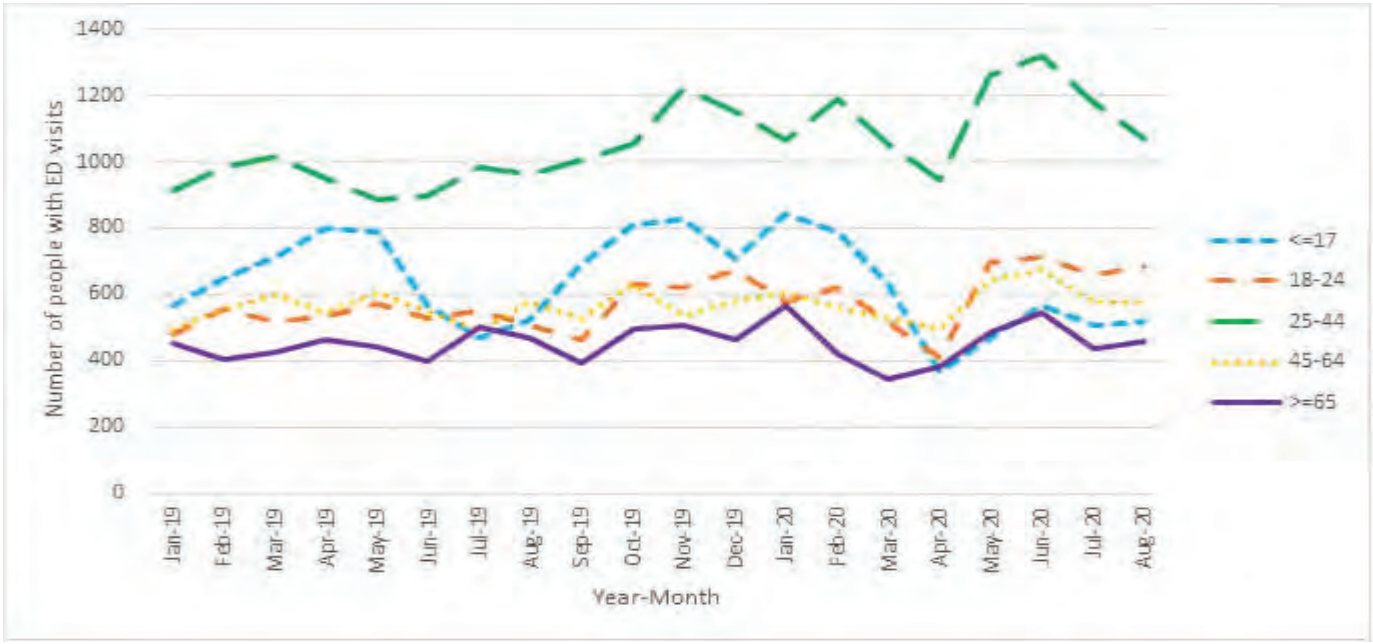
Data source: Emergency Department Information System (EDIS)

Figure 34: Monthly number of ED/UCC visits due to any medical conditions in Manitoba by Canadian Triage & Acuity Scale (CTAS), January 01, 2019 to August 31, 2020



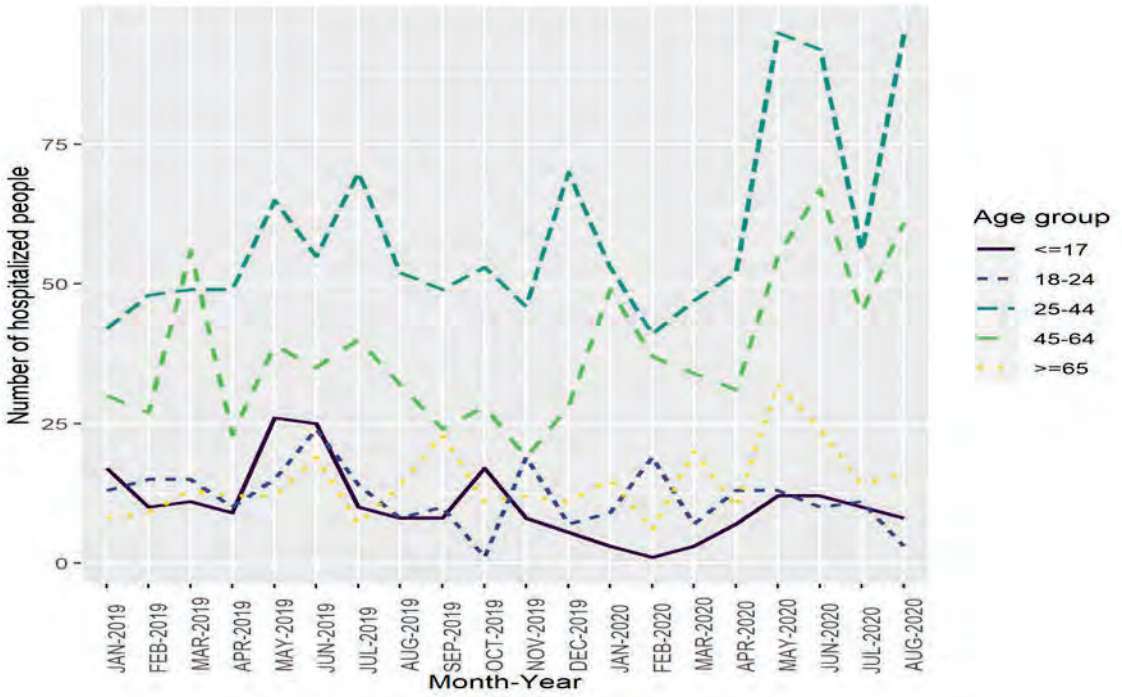
Data source: Admissions, Discharge & Transfer (ADT)

Figure 35: Monthly number of unique Manitobans hospitalized due to a reason related to mental and behavioural disorders by age groups, January 01, 2019 – August 31, 2020



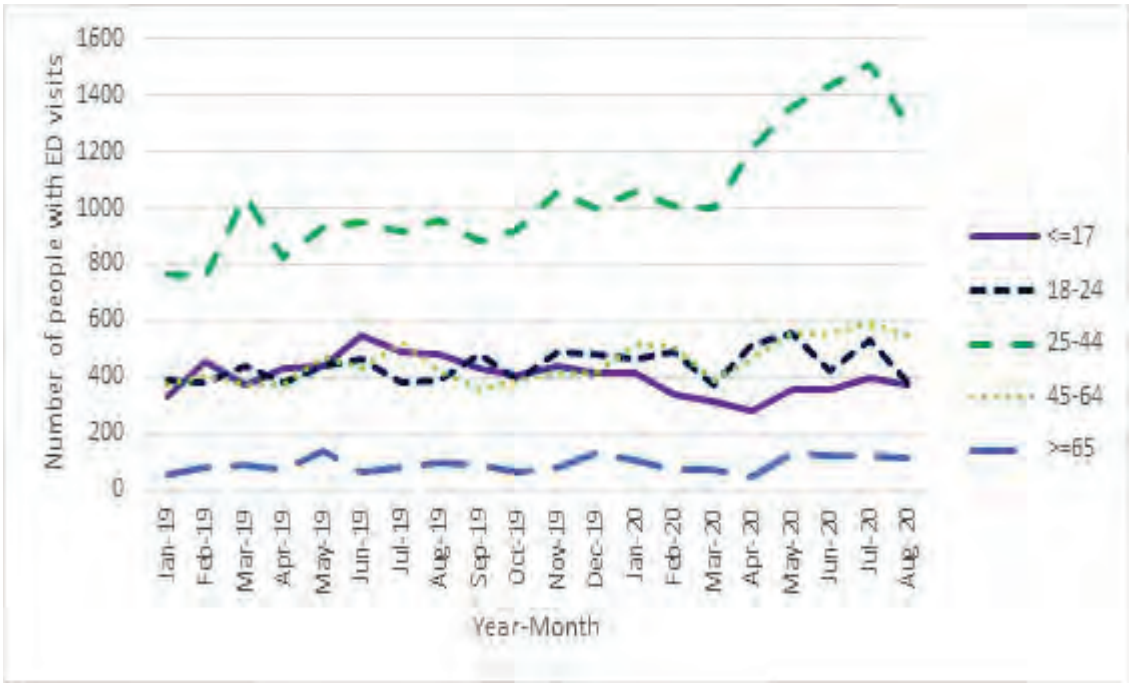
Data source: Emergency Department Information System (EDIS)

Figure 36: Monthly number of unique Manitobans who had an ED/UCC visit due to mental and behavioural disorders by age groups, January 01, 2019 – August 31, 2020



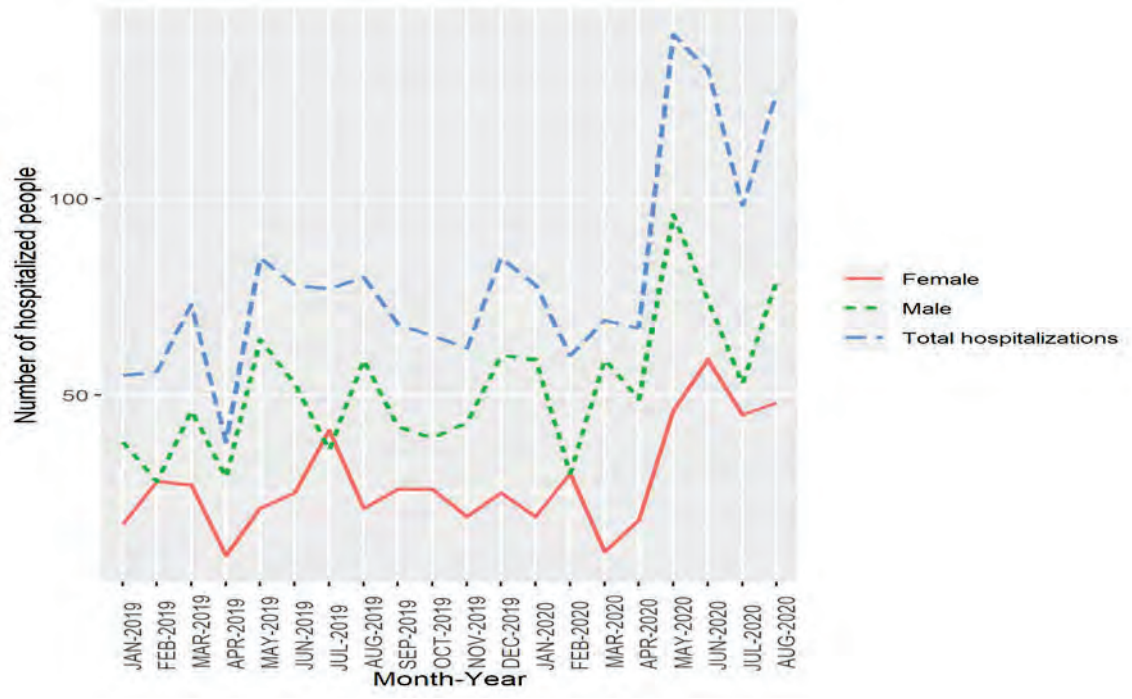
Data source: Admissions, Discharge & Transfer (ADT)

Figure 37: Monthly numbers of Manitobans hospitalized due to a reason related to substance use/misuse by age group, January 01, 2019 – August 31, 2020



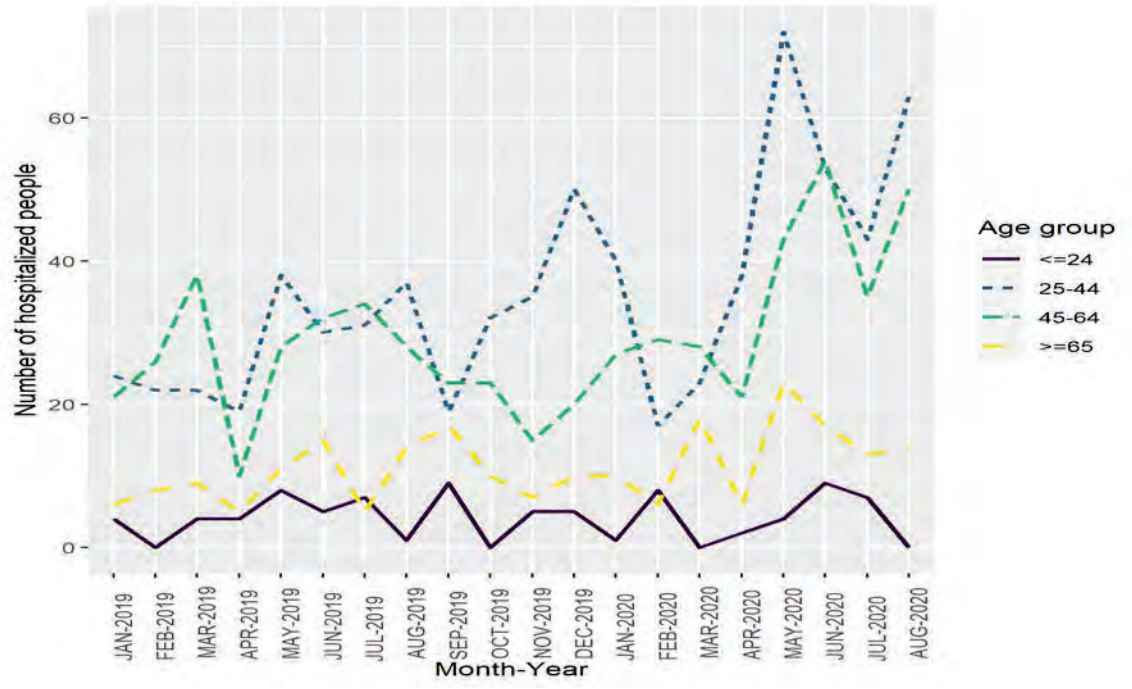
Data source: Emergency Department Information System (EDIS)

Figure 38: Monthly number of unique Manitobans who had an ED/UCC visit due to substance use disorders by age group, January 01, 2019 – August 31, 2020



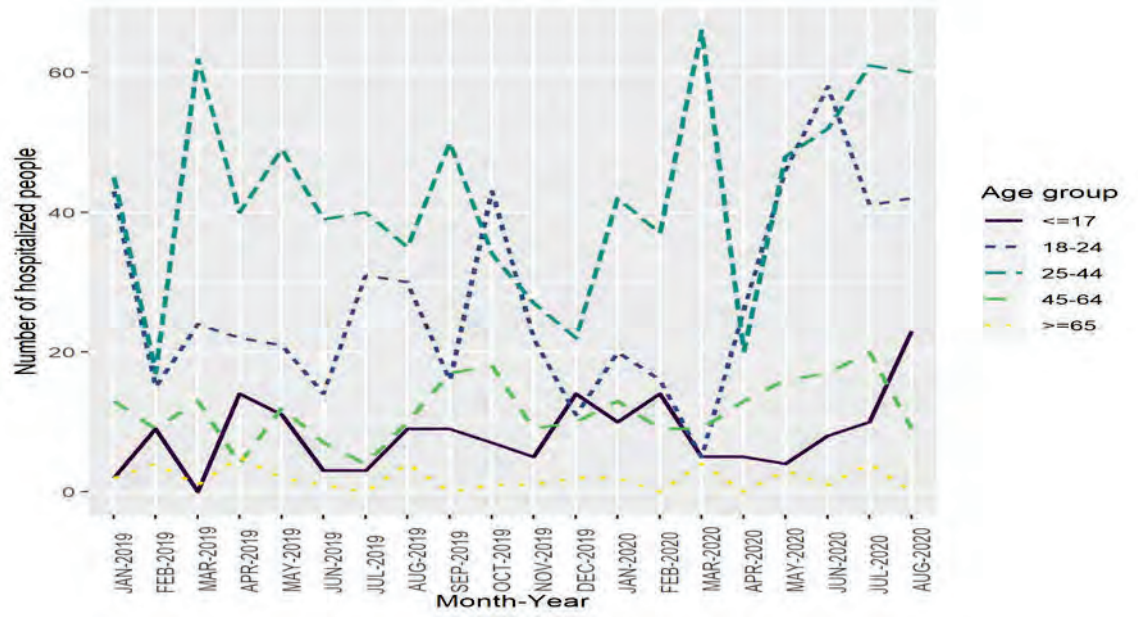
Data source: Admissions, Discharge & Transfer (ADT)

Figure 39: Monthly number of unique Manitobans hospitalized due to a reason related to alcohol use by sex, January 01, 2019 – August 31, 2020



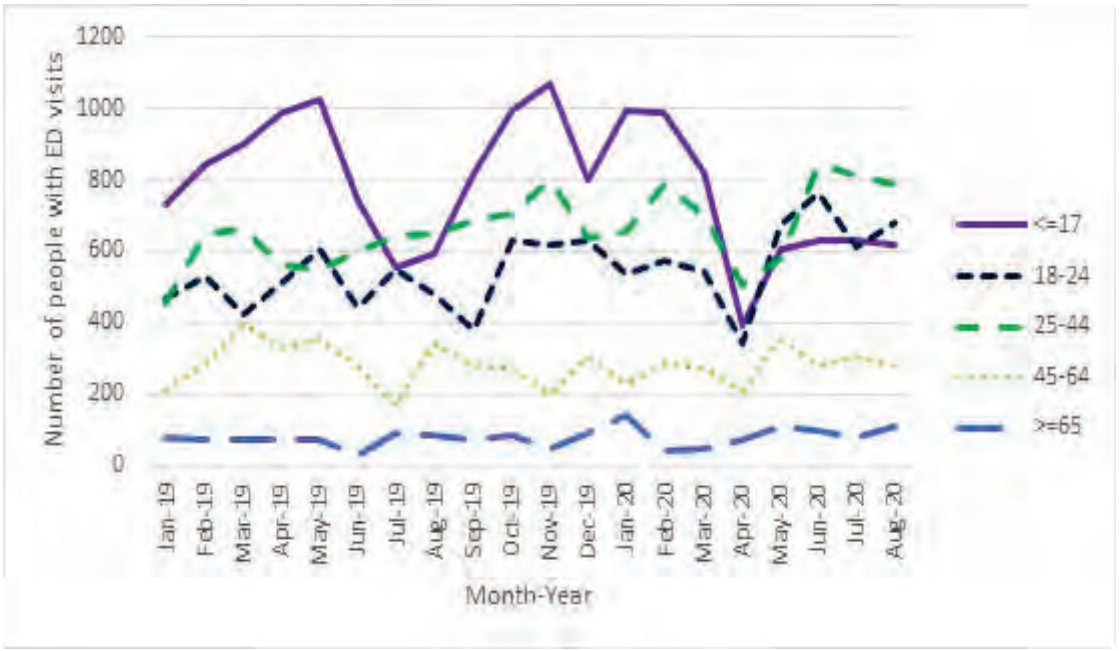
Data source: Admissions, Discharge & Transfer (ADT)

Figure 40: Monthly numbers of Manitobans hospitalized due to a reason related to alcohol use by age group, January 01, 2019 – August 31, 2020



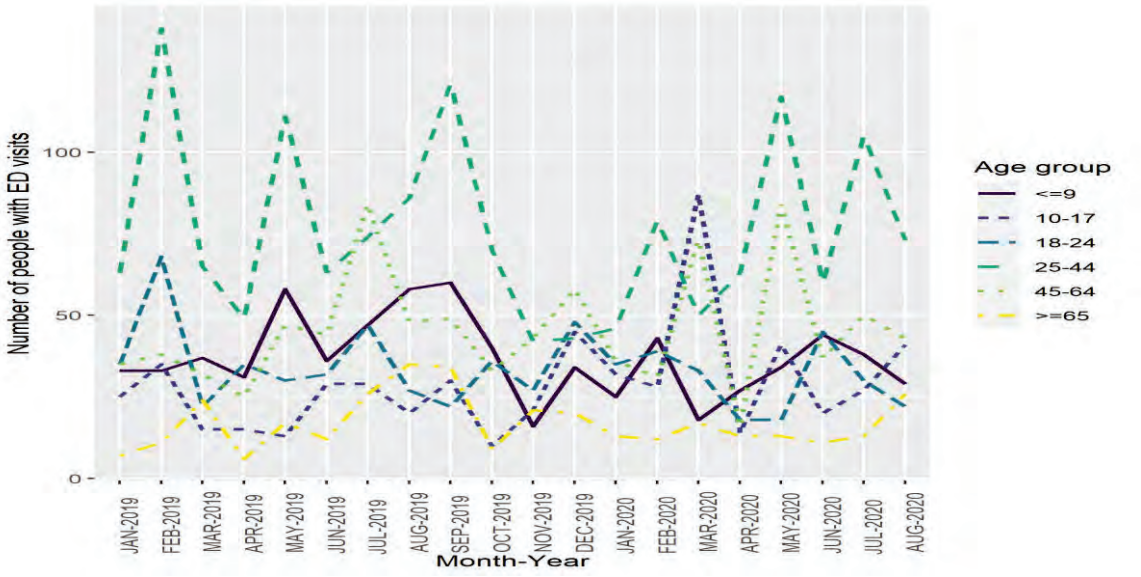
Data source: Admissions, Discharge & Transfer (ADT)

Figure 41: Monthly number of unique Manitobans hospitalized due to a reason related to intentional injury by age groups, January 01, 2019 – August 31, 2020



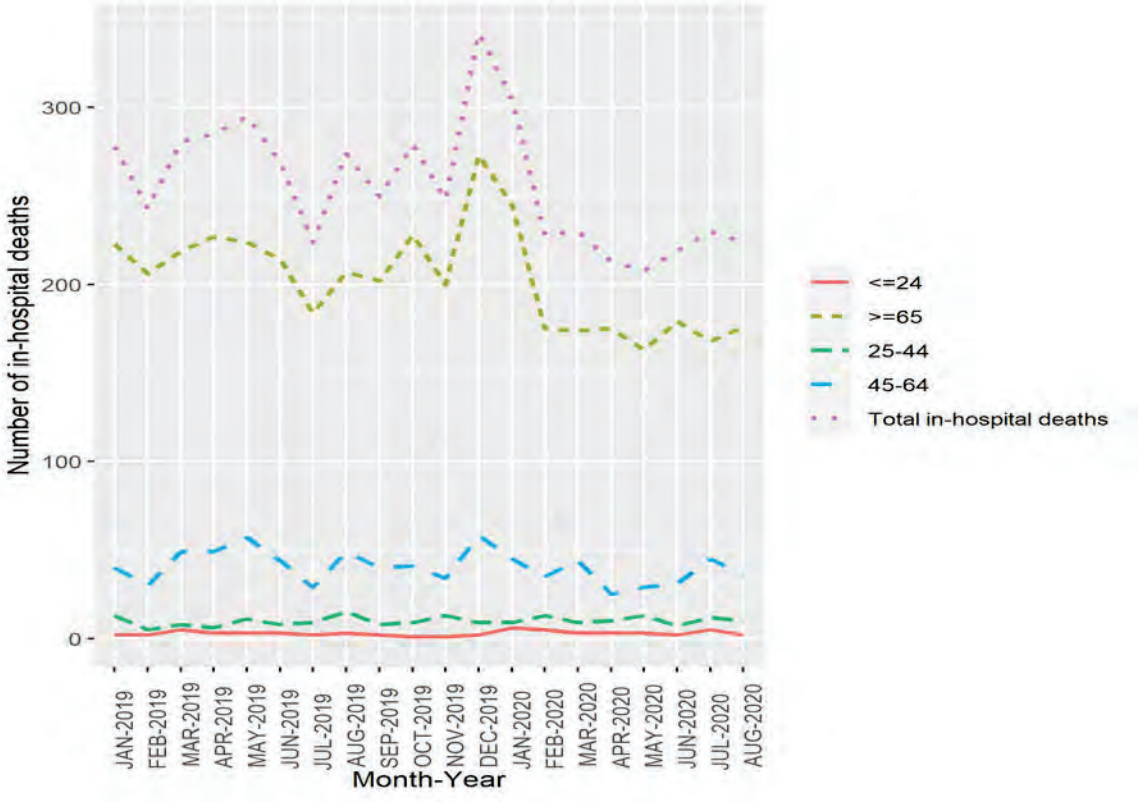
Data source: Emergency Department Information System (EDIS)

Figure 42: Monthly number of unique Manitobans with an ED/UCC visit due to intentional injury by age groups, January 01, 2019 - August 31, 2020



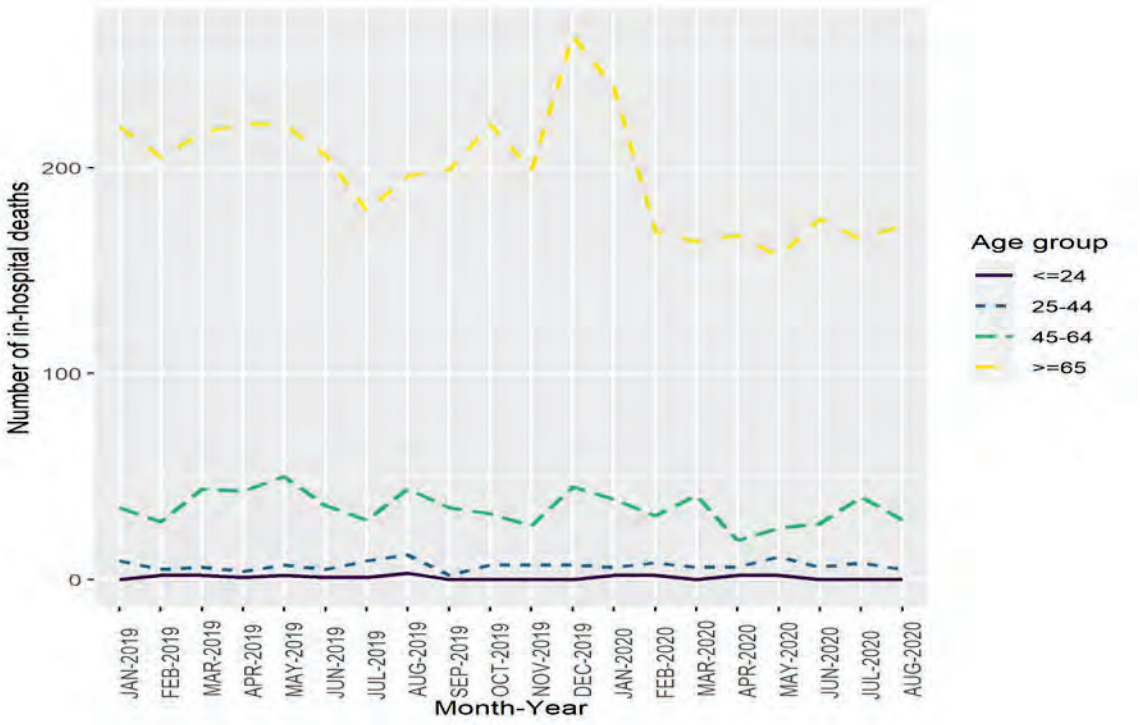
Data source: Emergency Department Information System (EDIS)

Figure 43: Monthly number of unique Manitobans who had an ED/UCC visit due to accidental poisoning by age group, January 01, 2019 – August 31, 2020



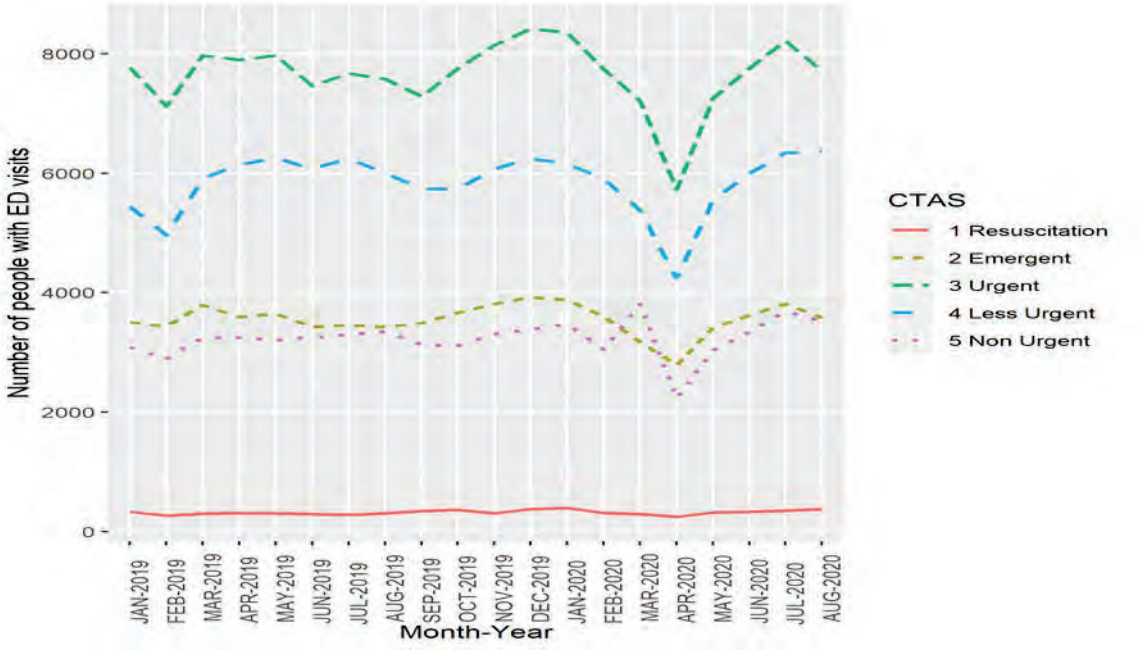
Data source: Admissions, Discharge & Transfer (ADT)

Figure 44: Monthly number of in-hospital deaths (due to any cause) in Manitoba by age group, January 01, 2019 - August 31, 2020



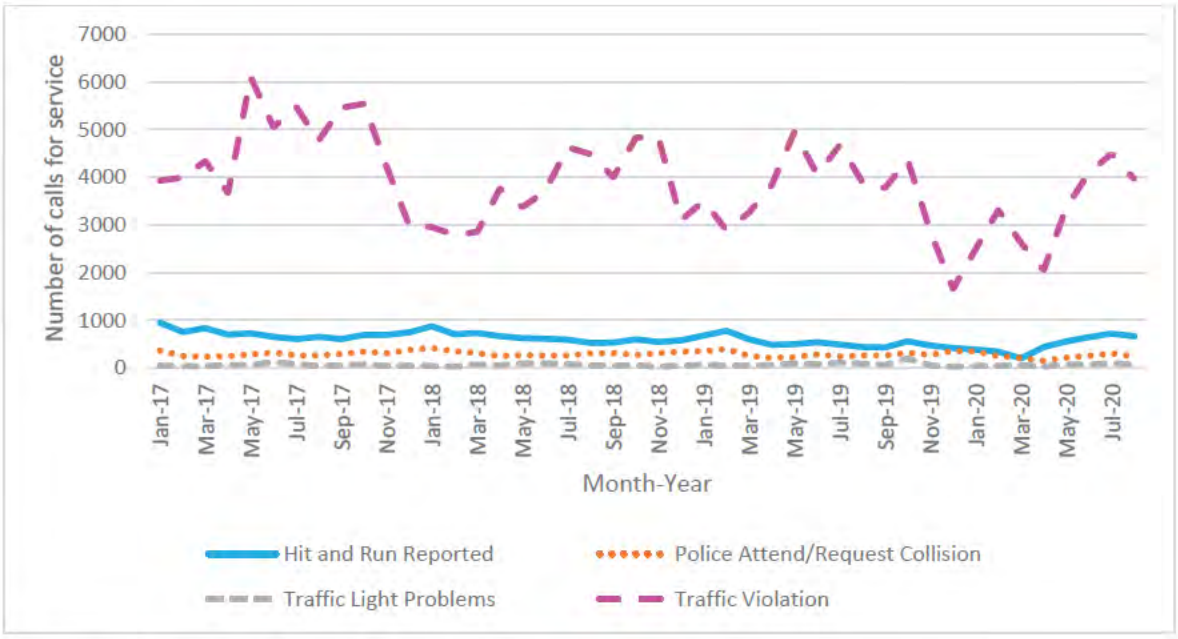
Data source: Admissions, Discharge & Transfer (ADT)

Figure 45: Monthly number of unique Manitobans with a chronic condition (as of 2018/19 FY) who died in hospital by age group, January 01, 2019 – August 31, 2020



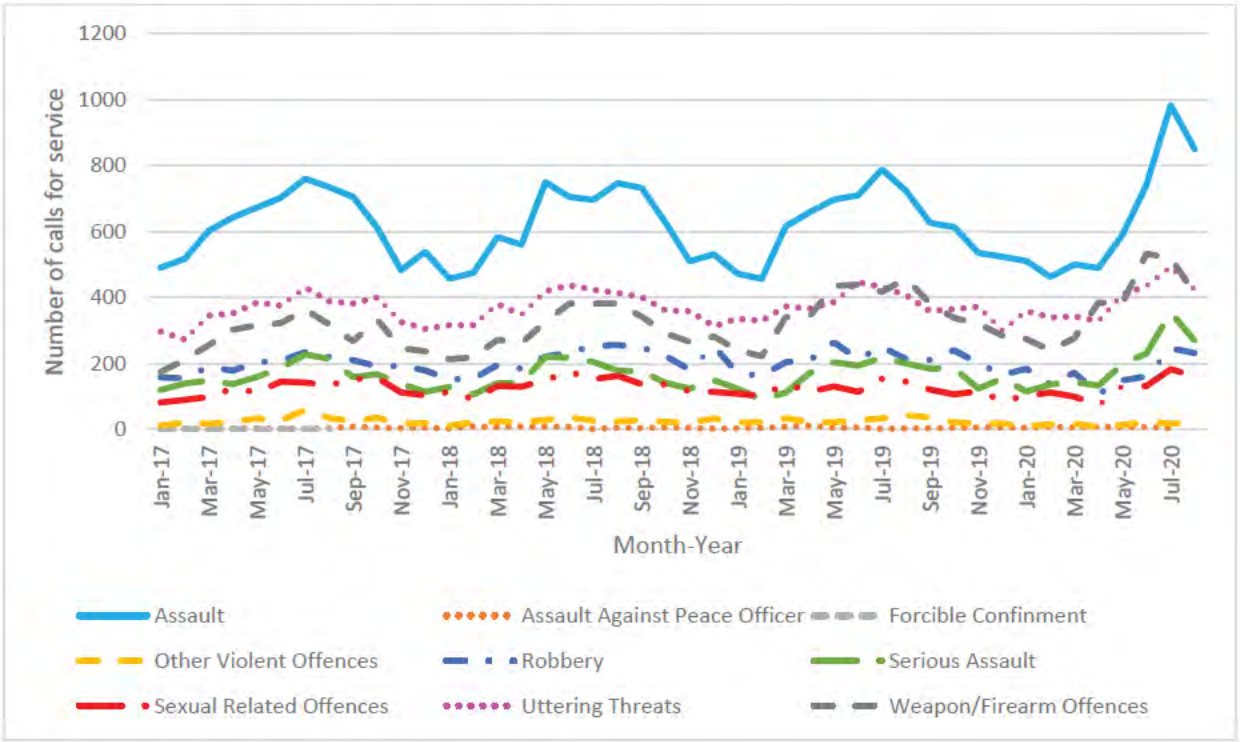
Data source: Emergency Department Information System (EDIS)

Figure 46: Monthly number of unique Manitobans with a chronic condition (as of 2018/19 FY) who had an ED/UCC visit by CTAS score, January 01, 2019 – August 31, 2020



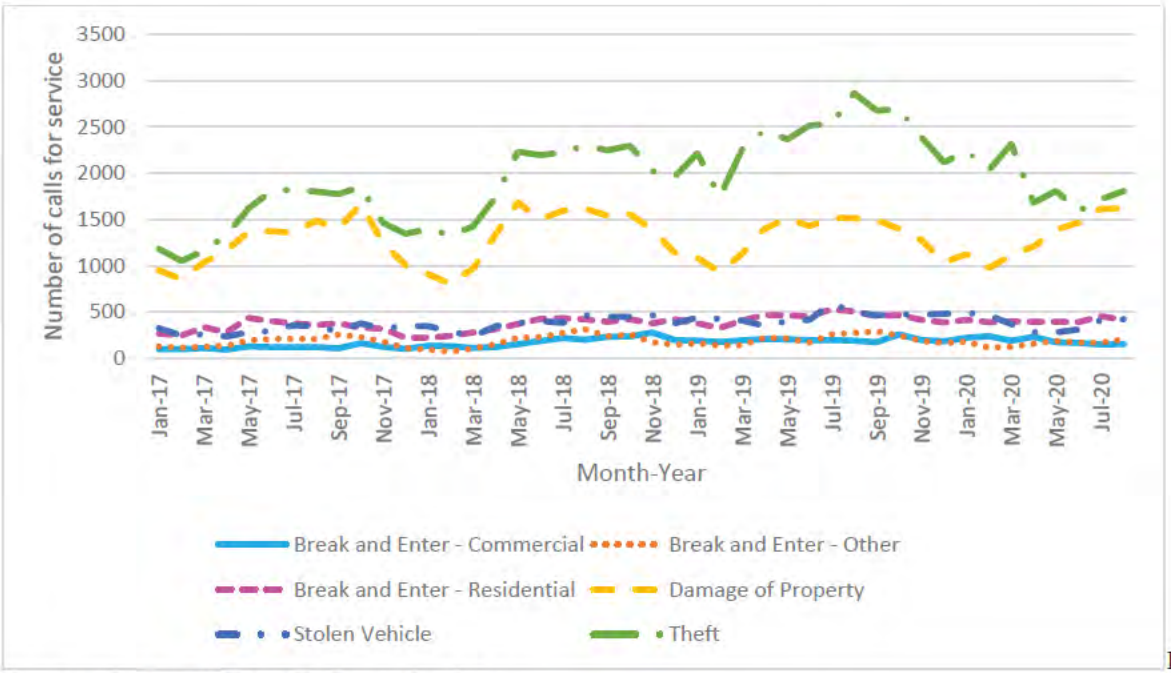
Data source: Winnipeg Police calls for service data

Figure 47: Monthly number of traffic related calls for service to Winnipeg Police by event type, January 01, 2017 – August 31, 2020



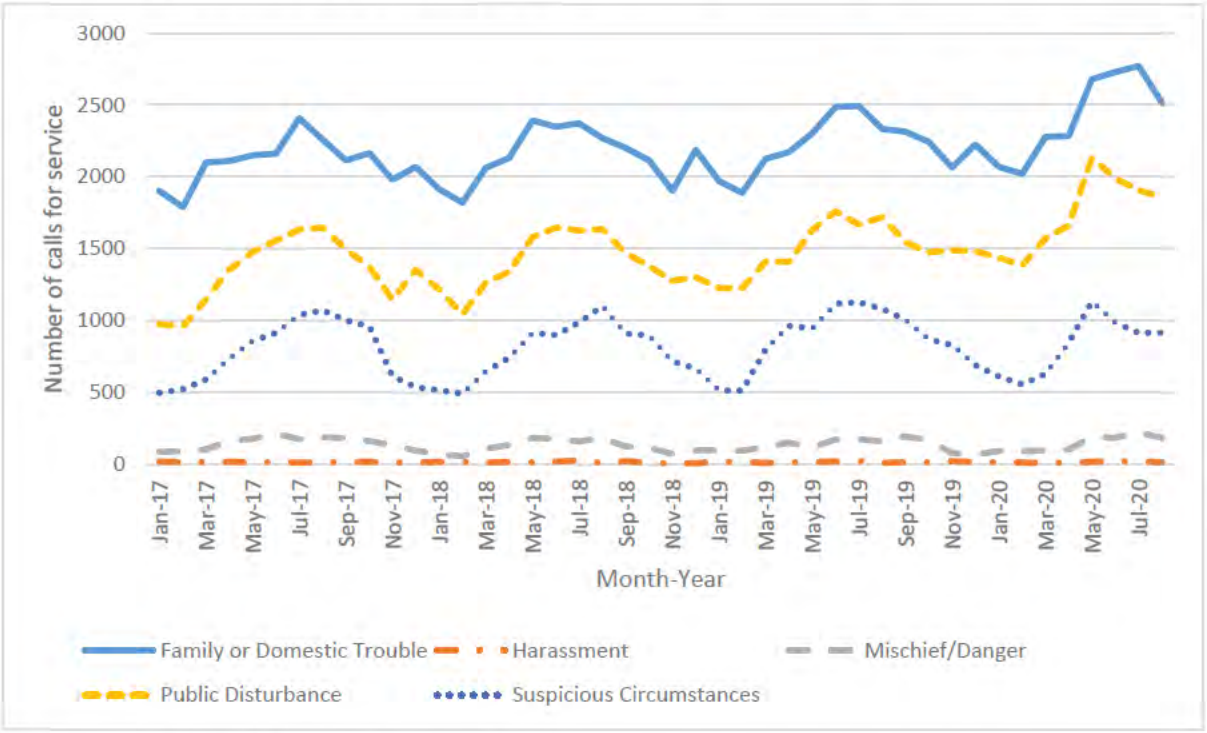
Data source: Winnipeg Police calls for service data

Figure 48: Monthly number of violence related calls for service to Winnipeg Police by event type, January 01, 2017 – August 31, 2020



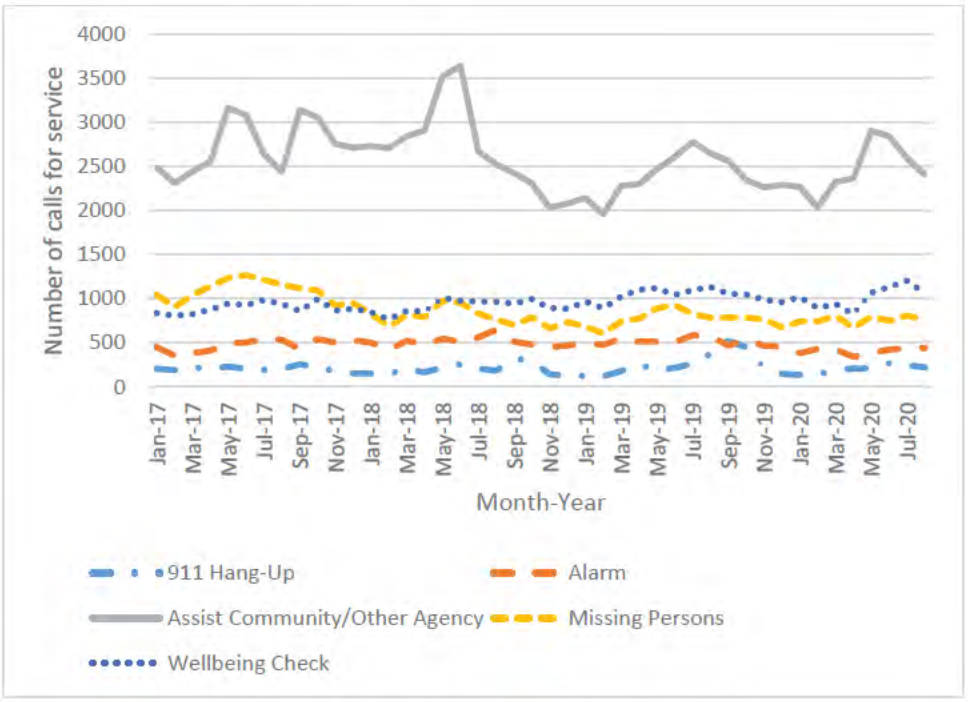
Data source: Winnipeg Police calls for service data

Figure 49: Monthly number of property related calls for service to Winnipeg Police by event type, January 01, 2017 – August 31, 2020



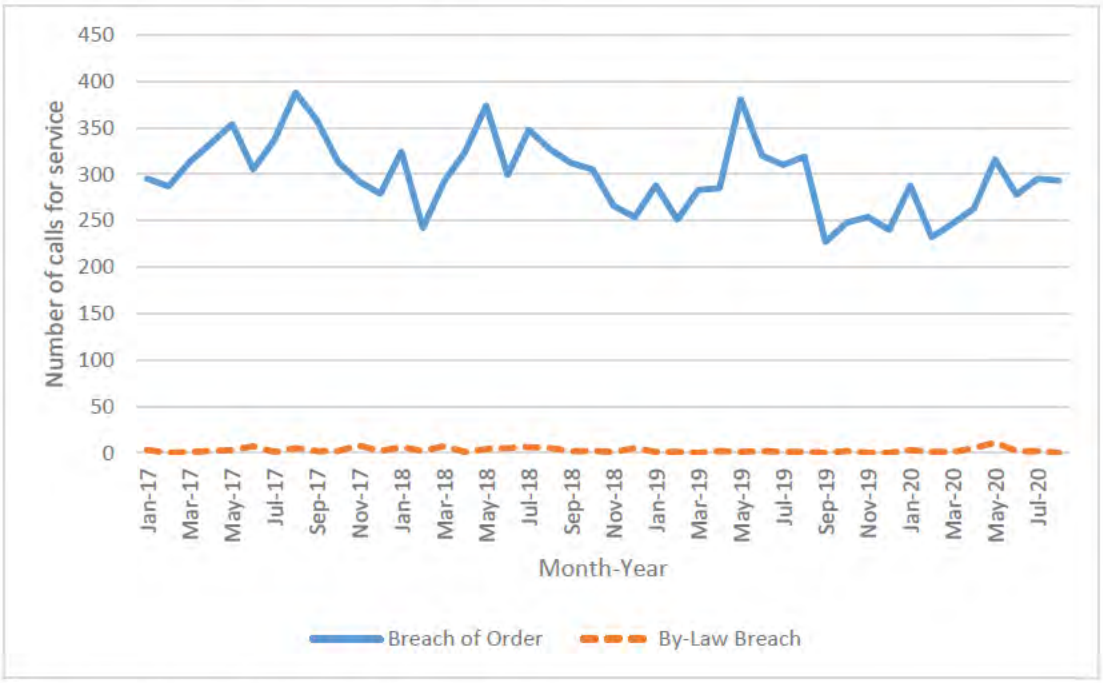
Data source: Winnipeg Police calls for service data.

Figure 50: Monthly number of disturbances / danger related calls for service to Winnipeg Police by event type, January 01, 2017 – August 31, 2020



Data source: Winnipeg Police calls for service data

Figure 51: Monthly number of wellbeing check related calls for service to Winnipeg Police by event type, January 01, 2017 - August 31, 2020



Data source: Winnipeg Police calls for service data

Figure 52: Monthly number of breaches and warrants related calls for service to Winnipeg Police by event type, January 01, 2017 – August 31, 2020

This is Exhibit " E " referred to
in the Affidavit of Carla Loeppky
Affirmed before me this 4
day of March A.D. 2021

A Barrister-at-Law entitled to practice
in and for the Province of Manitoba

COVID-19
NOVEL CORONAVIRUS
COVID Response Update

Manitoba

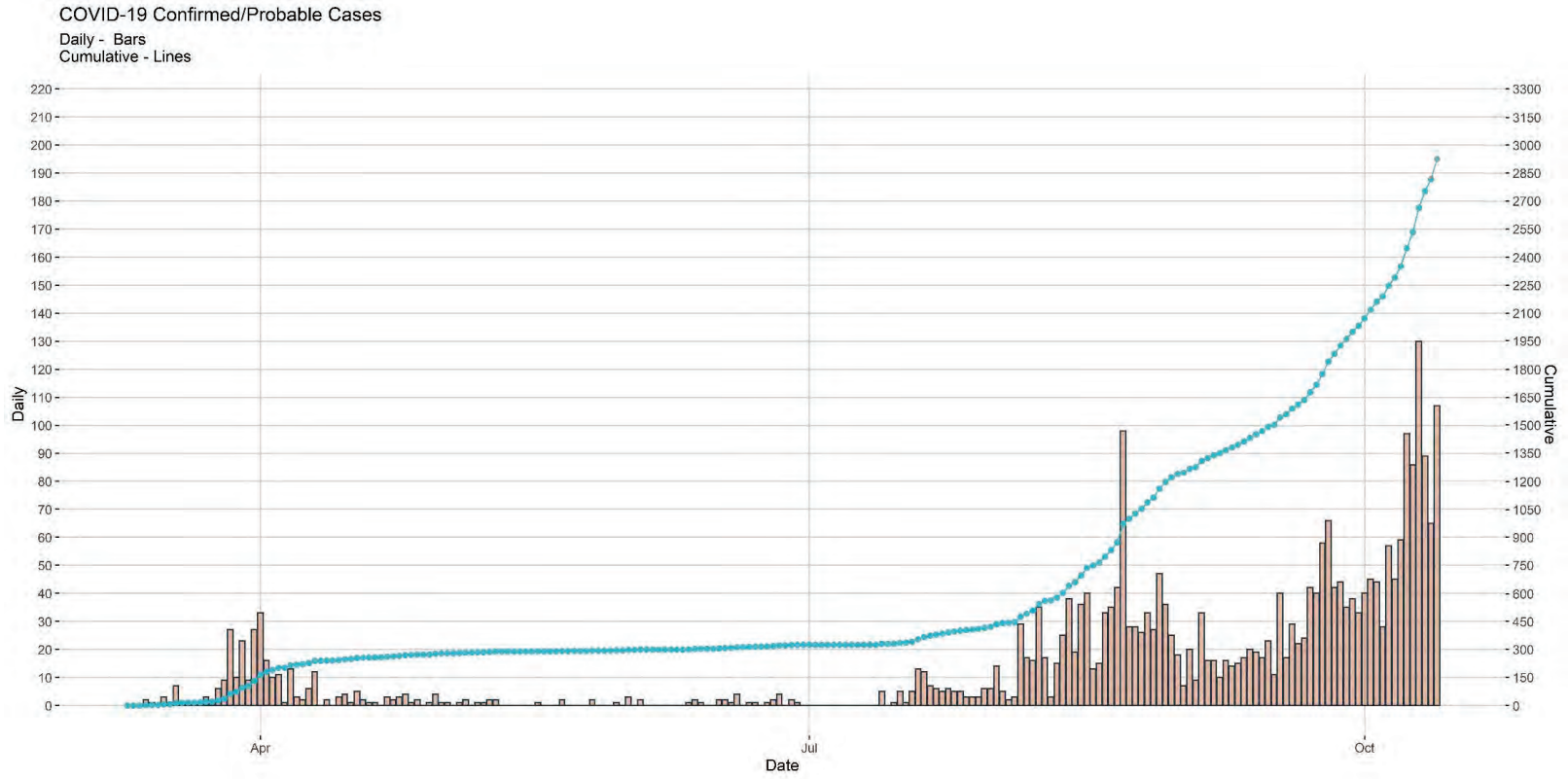
COVID-19 NOVEL CORONAVIRUS

Manitoba

CURRENT STATE

AB1481

Case Numbers in Manitoba

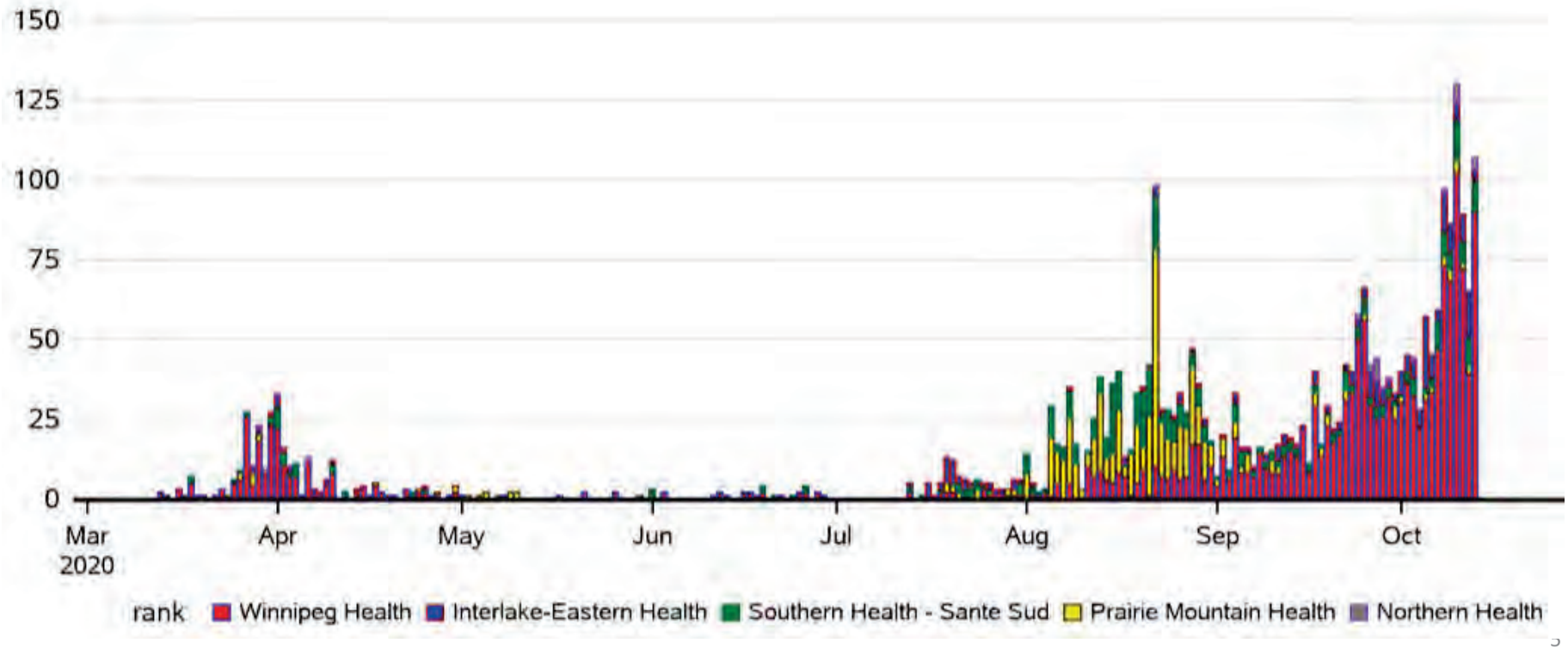


AB1482

Highlights

- 67 colonies have reported cases (380 cases)
  - 49 cases have been hospitalized with 9 fatalities
- Hospitalization data shows that:
  - Over 50% of individuals currently hospitalized are First Nations.
  - On average (using median), hospitalized FN individuals have been younger compared to non FN; 50 vs 69 overall and 52 vs 67.5 currently.
- Three correctional institutions have reported cases in inmates and / or staff

Current Situation in Manitoba: Regional Variation



COVID-19 NOVEL CORONAVIRUS

Manitoba

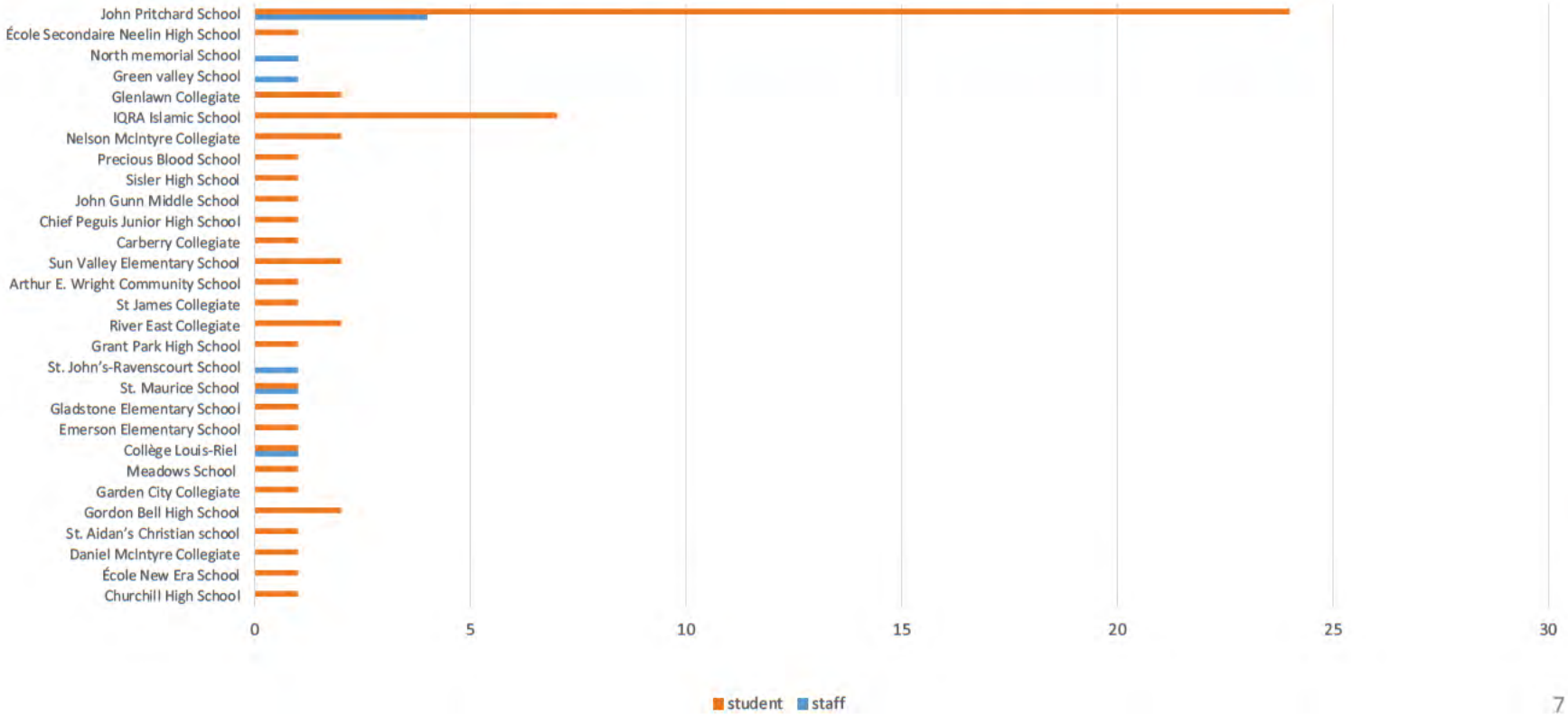
COVID Cases in PCH Staff or Residents

(N=133)

Cases in Residents: 90
Cases in Staff: 43
Fatalities: 15

AB1485

Cases in Schools (staff and students)

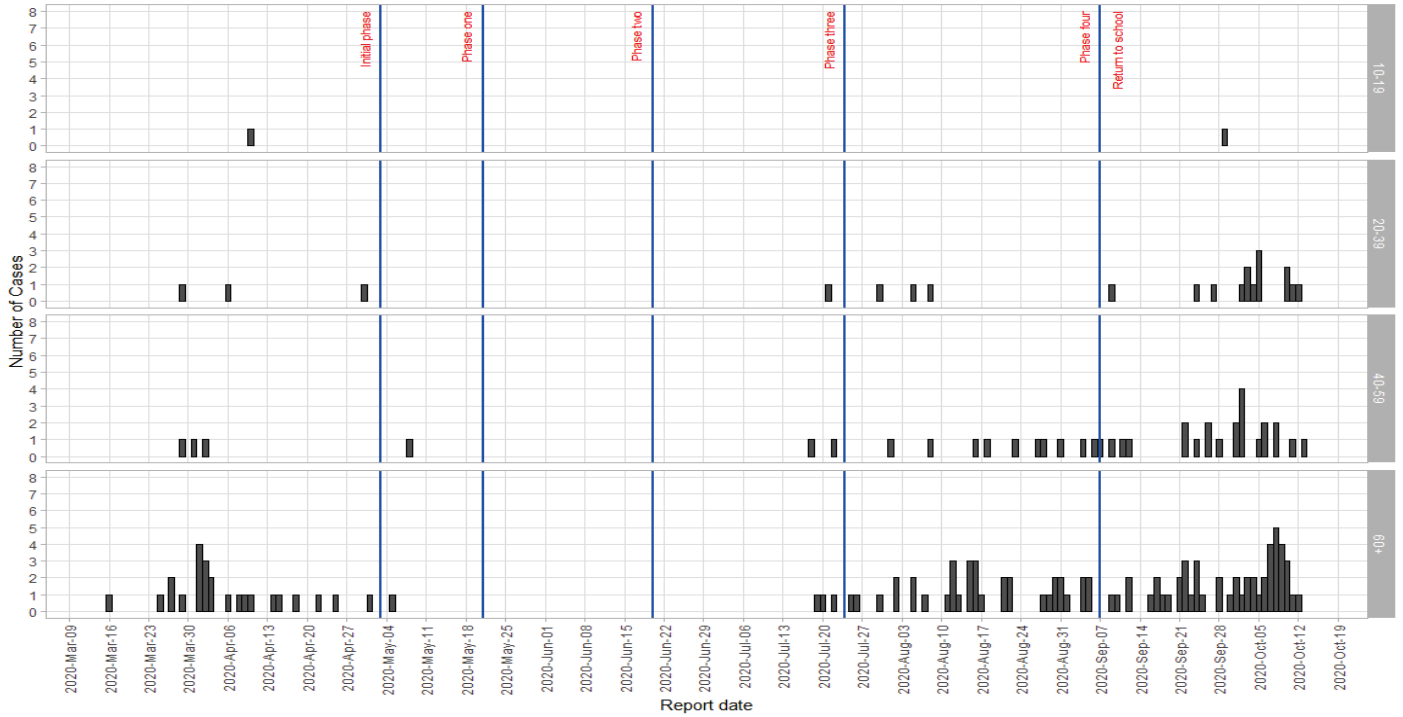


COVID-19 NOVEL CORONAVIRUS

Manitoba

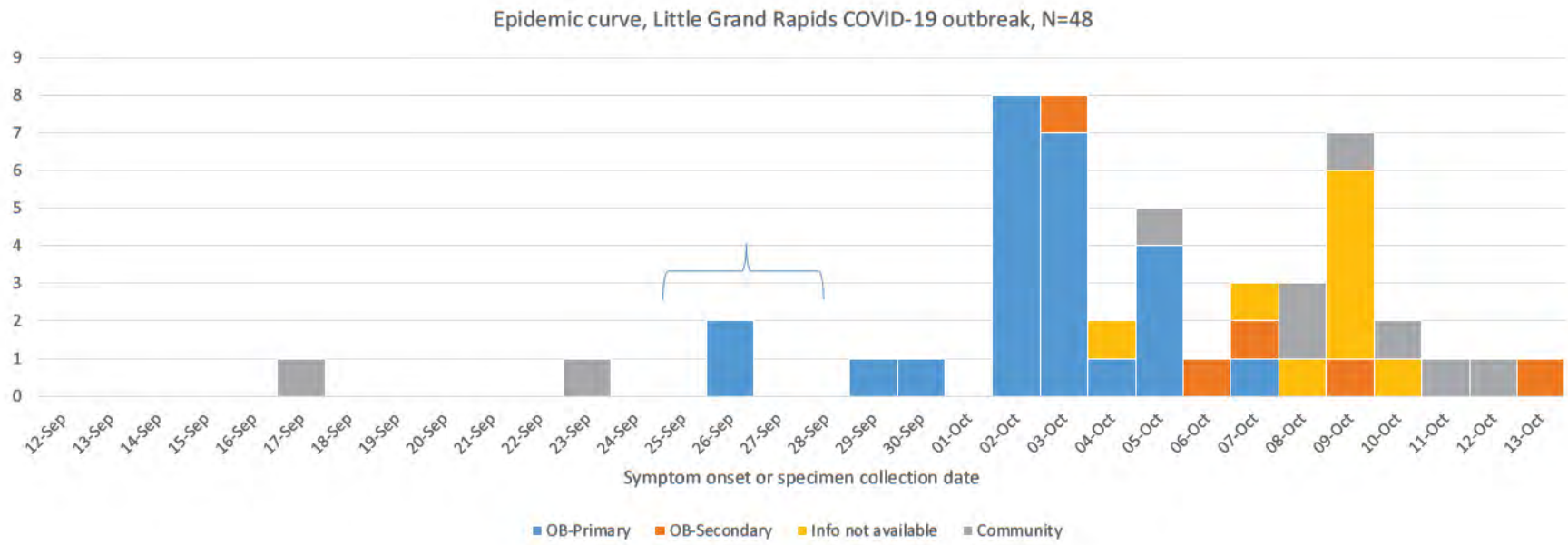
Characteristics	Deaths		ICU hospitalization ever		Non-ICU hospitalization only		No severe outcome		Total	
	n	%	n	%	n	%	n	%	N	%
Total	37		33		105		2750		2925	
Age group (years)										
18 or younger	0	0.0	0	0.0	2	1.9	447	16.3	449	15.4
19-59	3	8.1	15	45.5	42	40.0	1913	69.6	1973	67.5
60+	34	91.9	18	54.5	61	58.1	390	14.2	503	17.2
Median age (IQR)	80	(70-88)	61	(45-69)	64	(50-78)	34	(22-50)	35	(23-53)
Mean age (SD)	79	(14)	57	(17)	62	(20)	37	(19)	38	(21)
Sex										
Female	19	51.4	6	18.2	66	62.9	1404	51.1	1495	51.1
Male	18	48.6	27	81.8	39	37.1	1346	48.9	1430	48.9
Area level income quintiles										
Q1 (lowest)	7	18.9	8	24.2	21	20.0	653	23.7	689	23.6
Q2	9	24.3	6	18.2	28	26.7	475	17.3	518	17.7
Q3	3	8.1	4	12.1	15	14.3	394	14.3	416	14.2
Q4	5	13.5	11	33.3	26	24.8	578	21.0	620	21.2
Q5 (highest)	3	8.1	4	12.1	9	8.6	488	17.7	504	17.2
Unknown	10	27.0	0	0.0	6	5.7	162	5.9	178	6.1

Severe Outcomes



AB1488

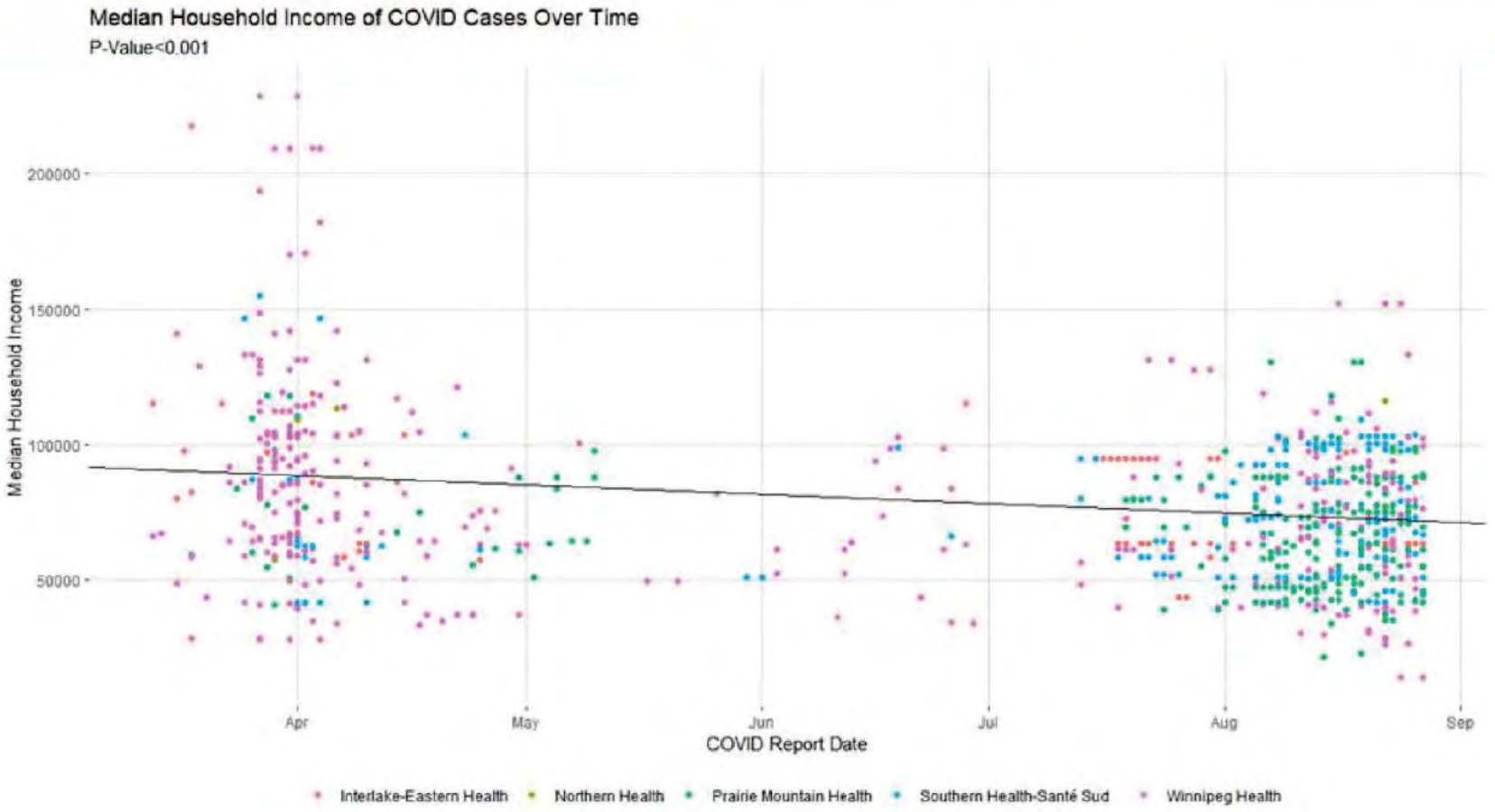
An Example of an Outbreak: Little Grand Rapids



AB1489

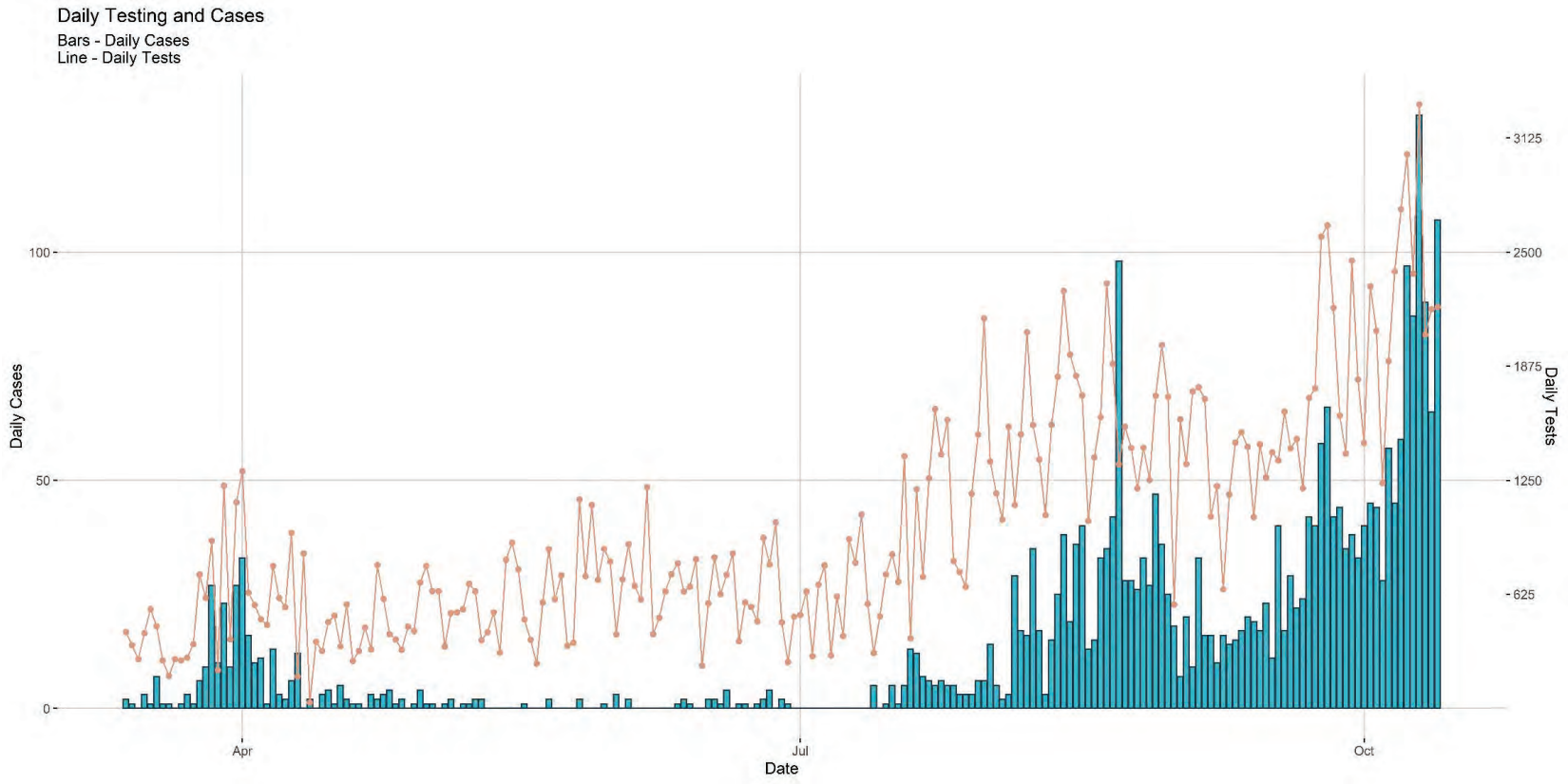
COVID-19 NOVEL CORONAVIRUS

Manitoba



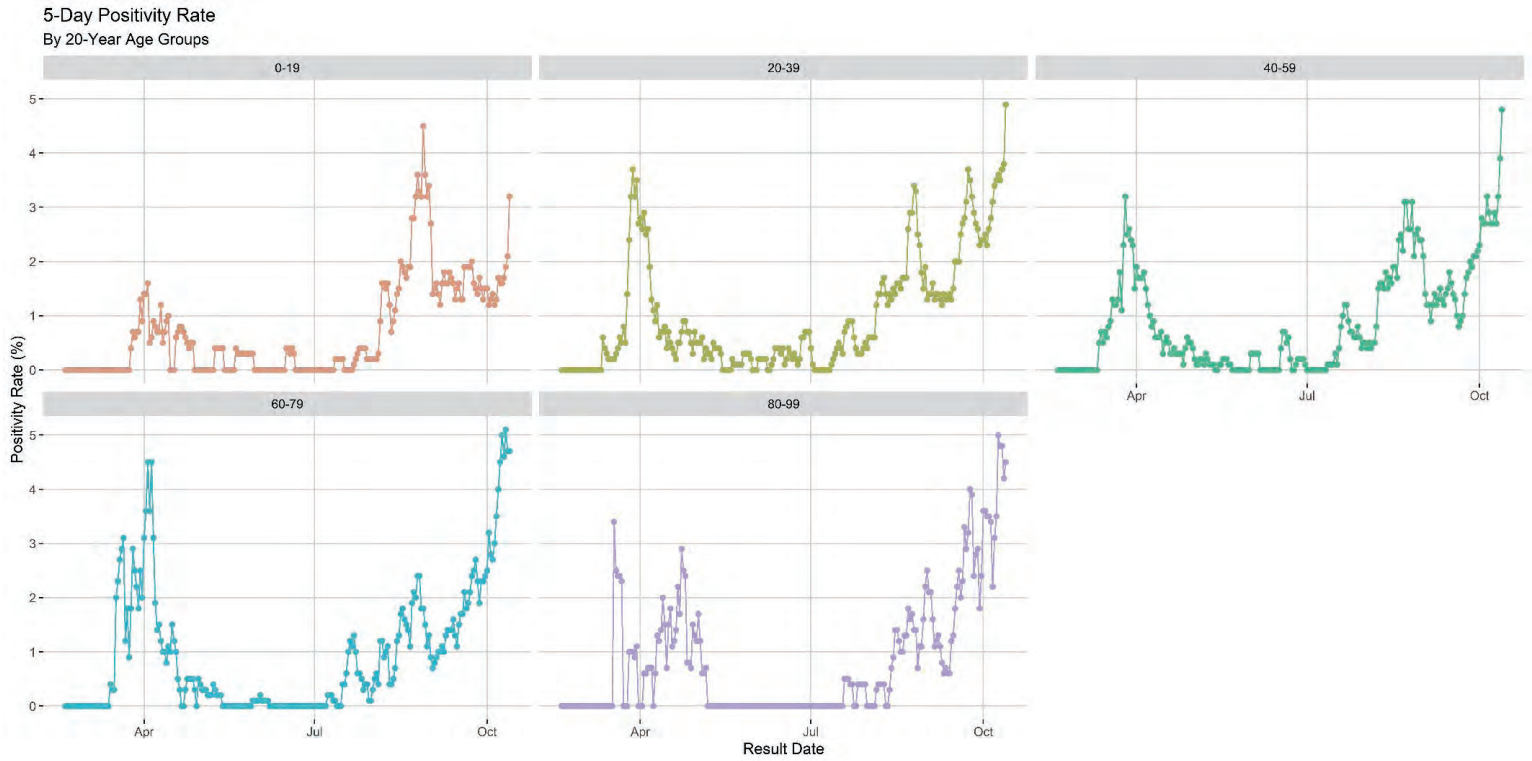
AB1490

Testing



AB1491

Test Positivity



AB1492

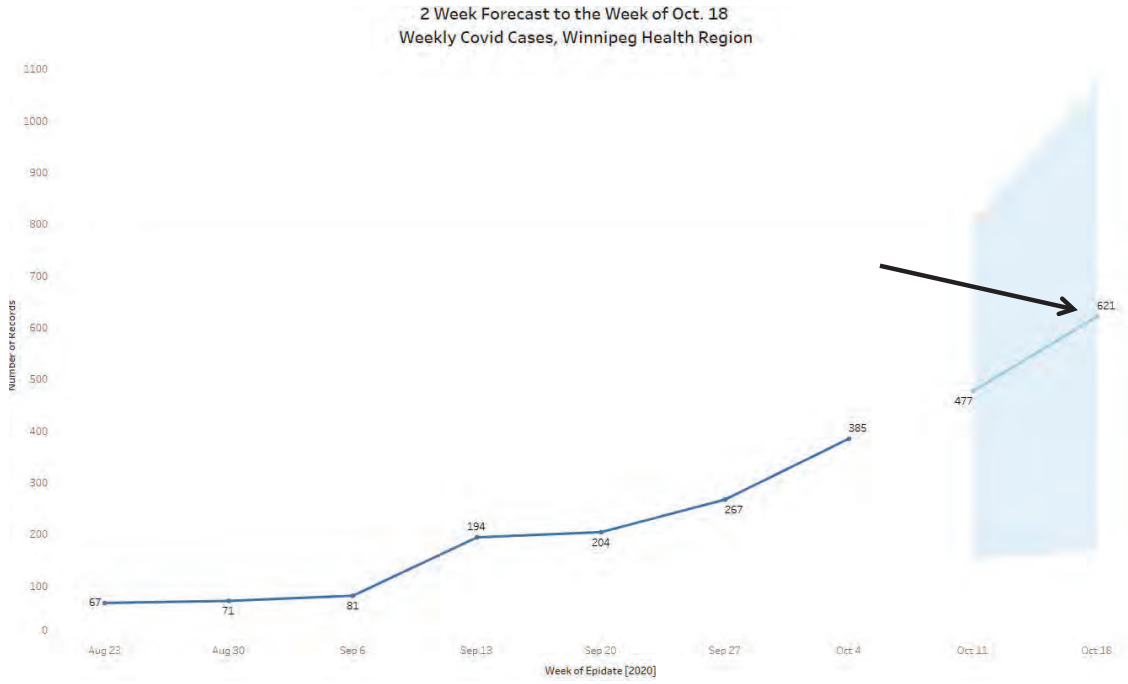
COVID-19 NOVEL CORONAVIRUS

Manitoba

WINNIPEG UPDATE

AB1493

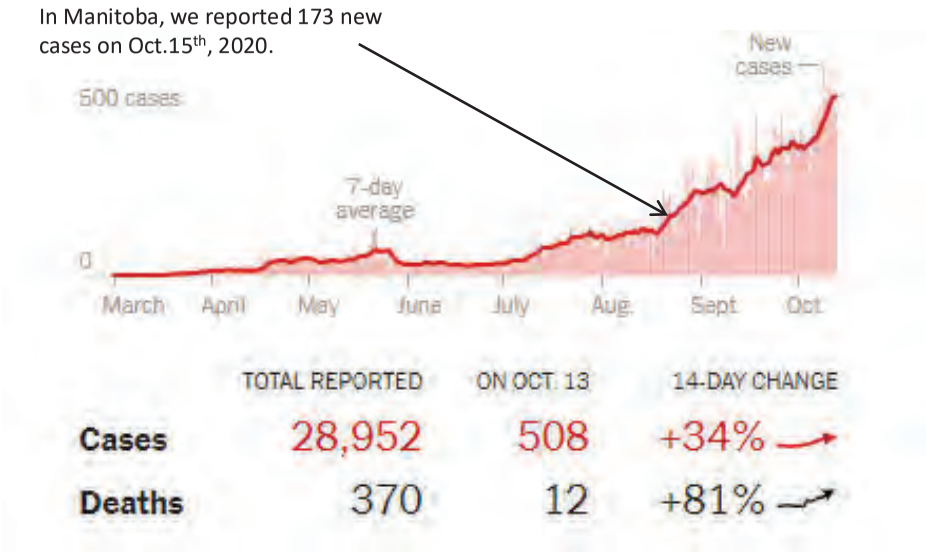
Cases are Doubling Every 2 Weeks



Case and contact tracing resources are now becoming overwhelmed, risking the ability to identify cases and quickly isolate their contacts

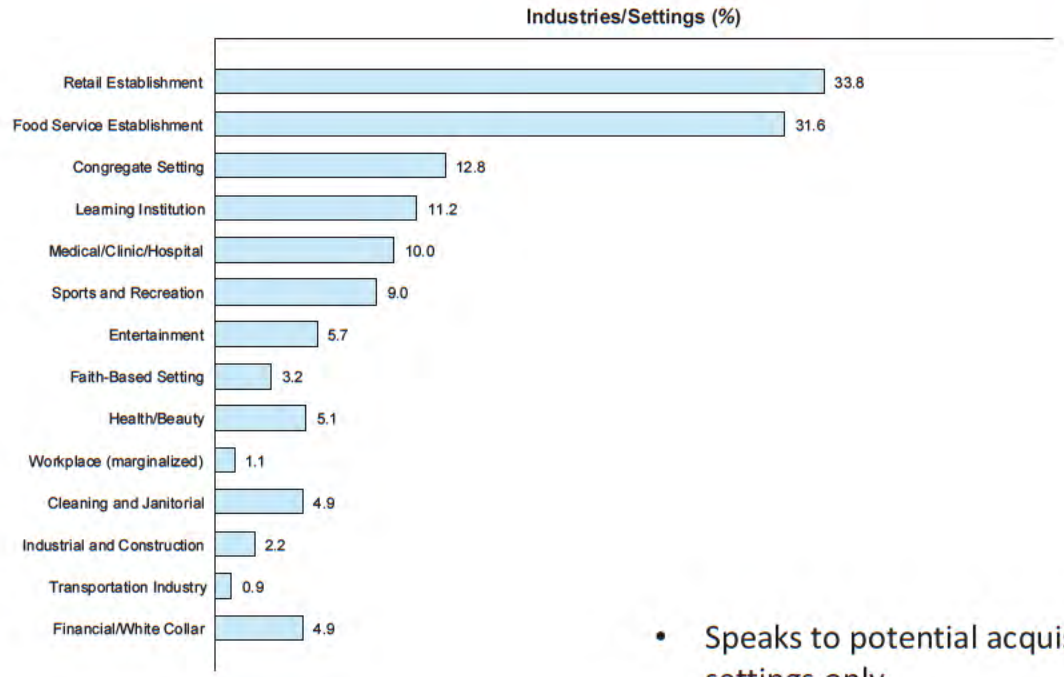
AB1494

Impact of Cases Doubling Evident South of the Border



North Dakota (pop: 800,000 has reported 28,952 cases as of Oct. 13th, 2020.
As of Oct 13th, 2020, Manitoba (pop: 1.4 million) had 2,779 cases.

Potential Acquisition Settings are Diverse



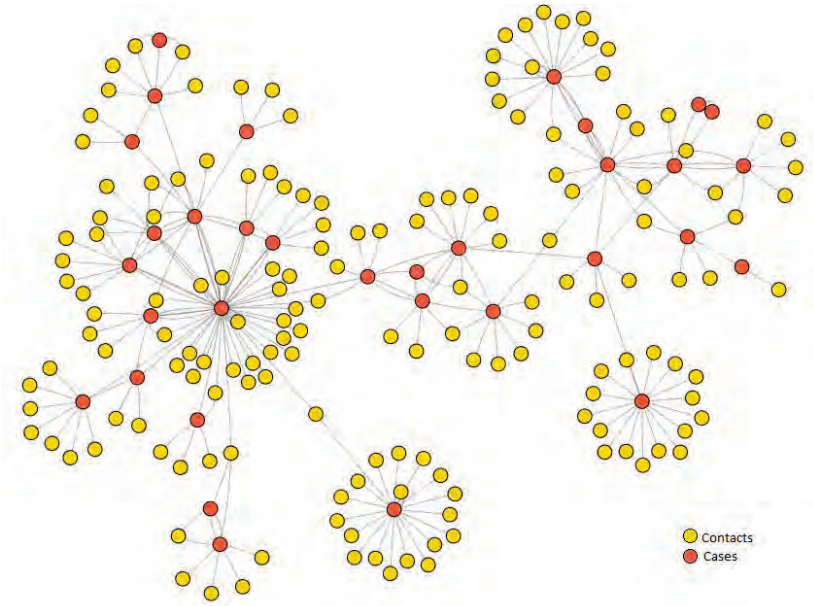
- Speaks to potential acquisition settings only.

- Confirmed outbreaks/clusters (with evidence of ongoing transmission by setting are listed below.

Confirmed Outbreaks/Clusters	
Food Service Establishment***	7
Congregate Setting**	12
Learning Institute*	2
Cleaning and Janitorial	1
Workplace/Industry	9
Sports and Recreation	1

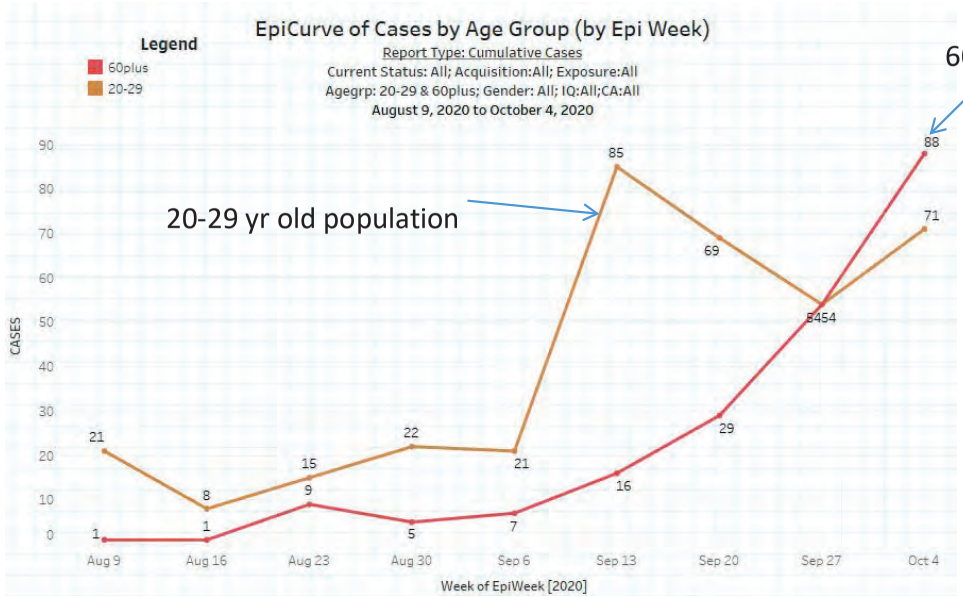
AB1496

New Infections Build Quickly from Small Number Cases



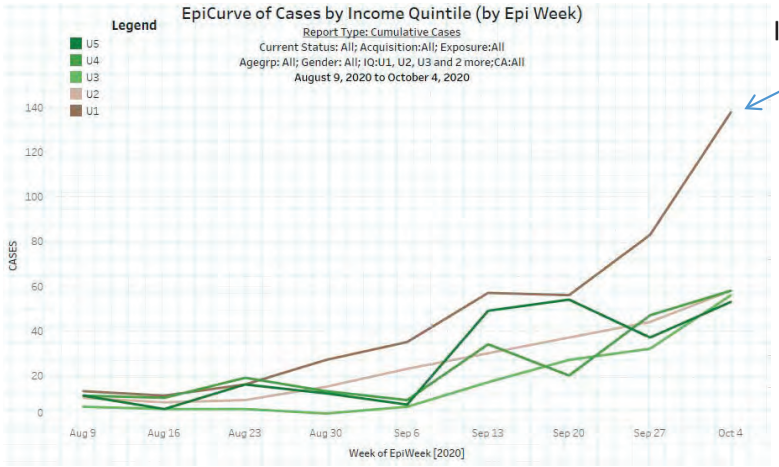
AB1497

Infections in Young Adults Preceded the Rapid Rise in 60+ Population



AB1498

Infections in Structurally Disadvantaged Populations are Increasing the Fastest

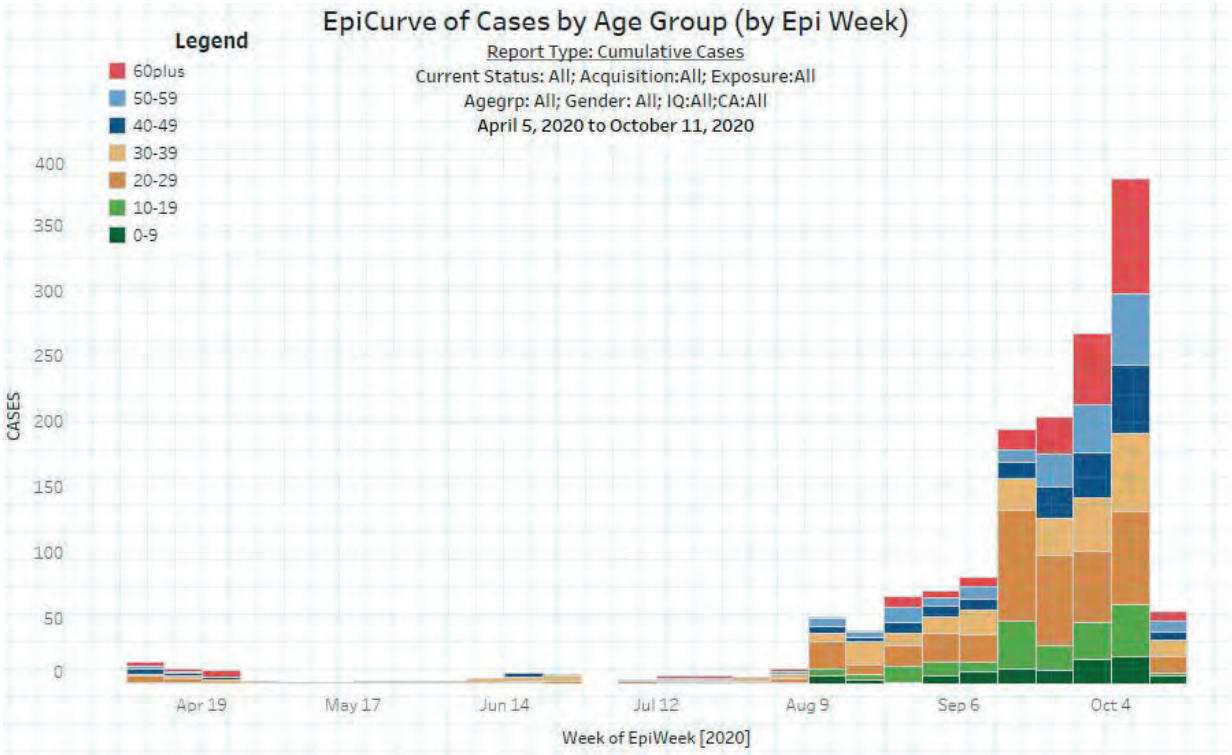


Income Quintile 1 cases

Iq2016	8/9/20	8/16/20	8/23/20	8/30/20	9/6/20	9/13/20	9/20/20	9/27/20	10/4/20	Grand Total
U1	25.49%	28.21%	24.62%	38.57%	43.75%	30.48%	28.87%	34.16%	38.02%	33.75%

AB1499

Children are a Small Proportion of Cases



AB1500

COVID-19 NOVEL CORONAVIRUS

Manitoba

COVID-19 MODELLING

AB1501

Notes on Modelling

Notes on Modelling

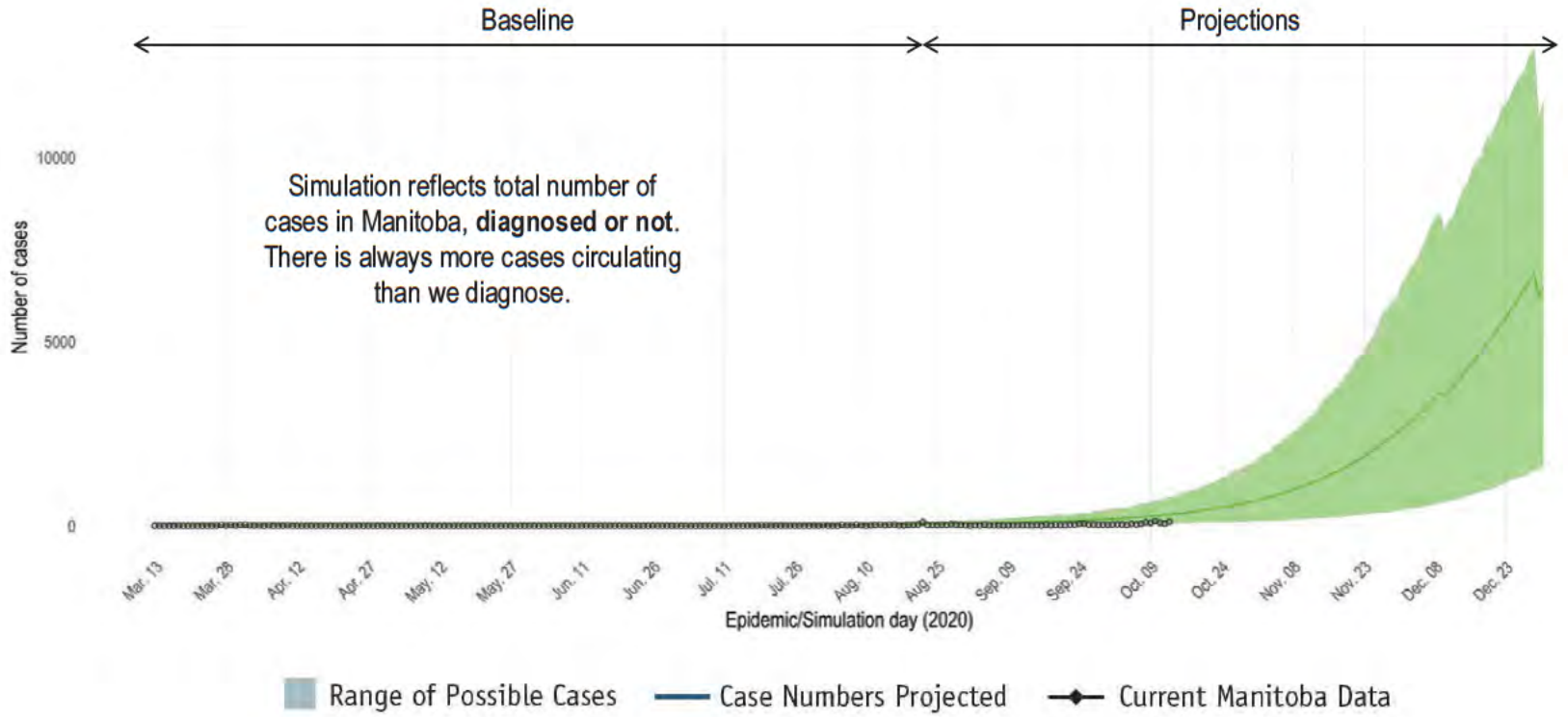
1. **Successful measures with compliant behaviour**.
   - Measures and the timing they are put in place are adequate and individuals behave accordingly.
2. **Successful measures with less compliant behaviour.**
   - Measures and the timing they are put in place are adequate but individuals behaviours are not well aligned with recommendations.
3. **Less successful measures with less compliant behaviour.**
   - Measures and the timing they are put in place are not ideal and individuals behave as if the situation is not as serious as it really is.
4. **Unsuccessful measures with poor compliant behaviour.**
   - Measures and the timing they are put in place are not ideal and individuals behave as if there was no problem.

Notes on Modelling

COVID-19 NOVEL CORONAVIRUS

Manitoba

Projected Number of Infectious Cases (diagnosed or not)



Less successful measures with less compliant behaviour

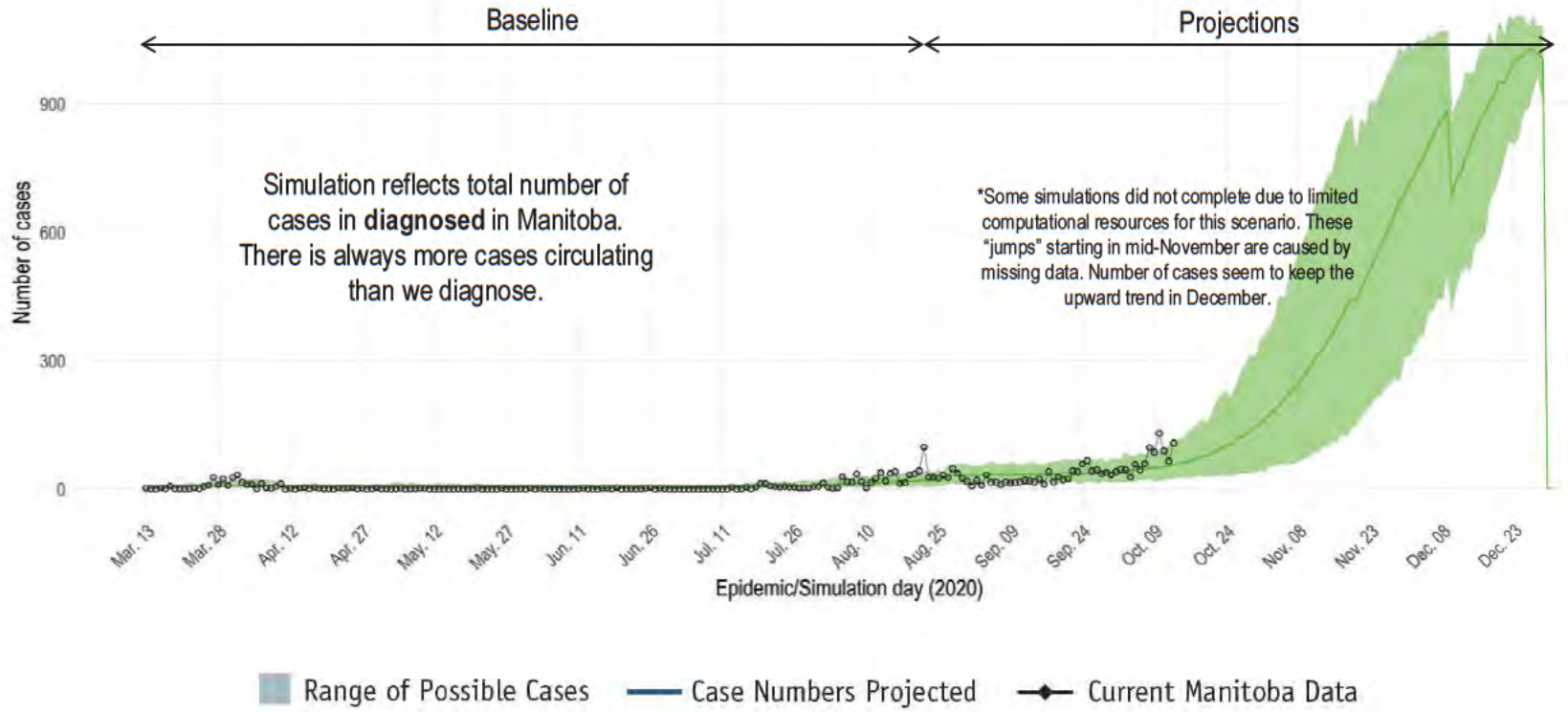
AB1505

COVID-19 NOVEL CORONAVIRUS

Manitoba

Projected Number of Diagnosed

Observed number of cases in now aligned with the second worst case scenario projected. Worst case scenario has not been simulated.



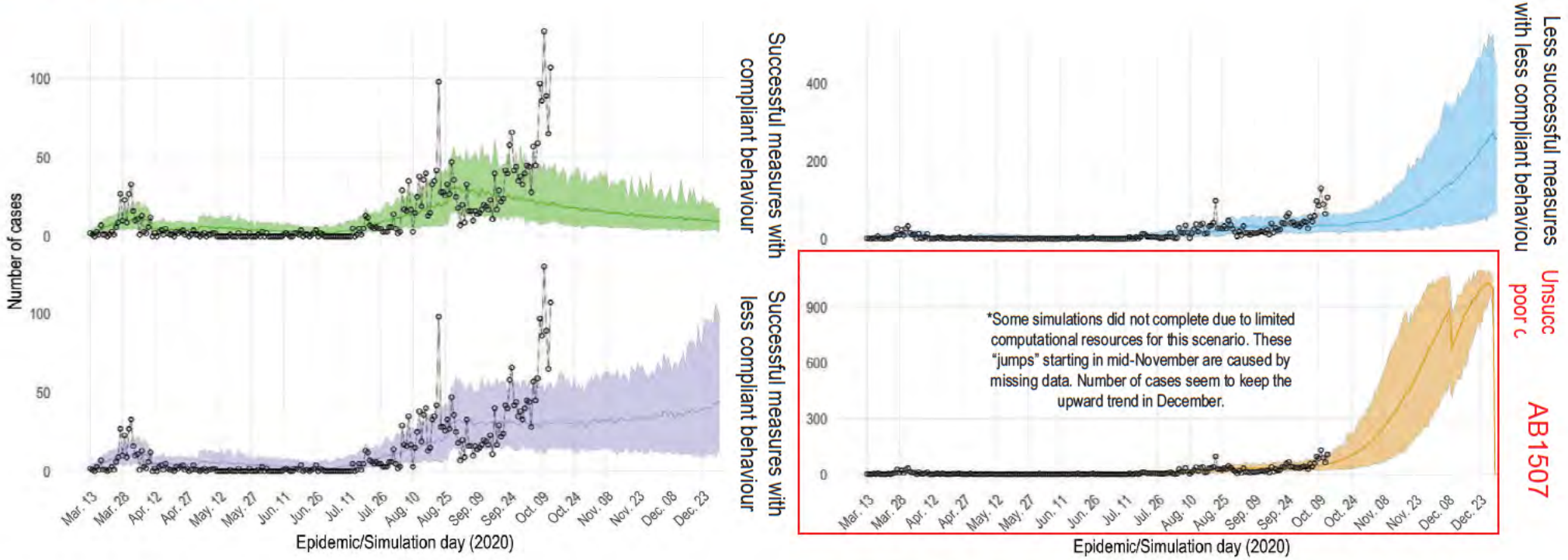
Unsuccessful measures with poor compliant behaviour.

AB1506

COVID-19 NOVEL CORONAVIRUS

Manitoba

Projected Number of Diagnosed Cases at Different Levels of Public Health Measures and Public Behaviour

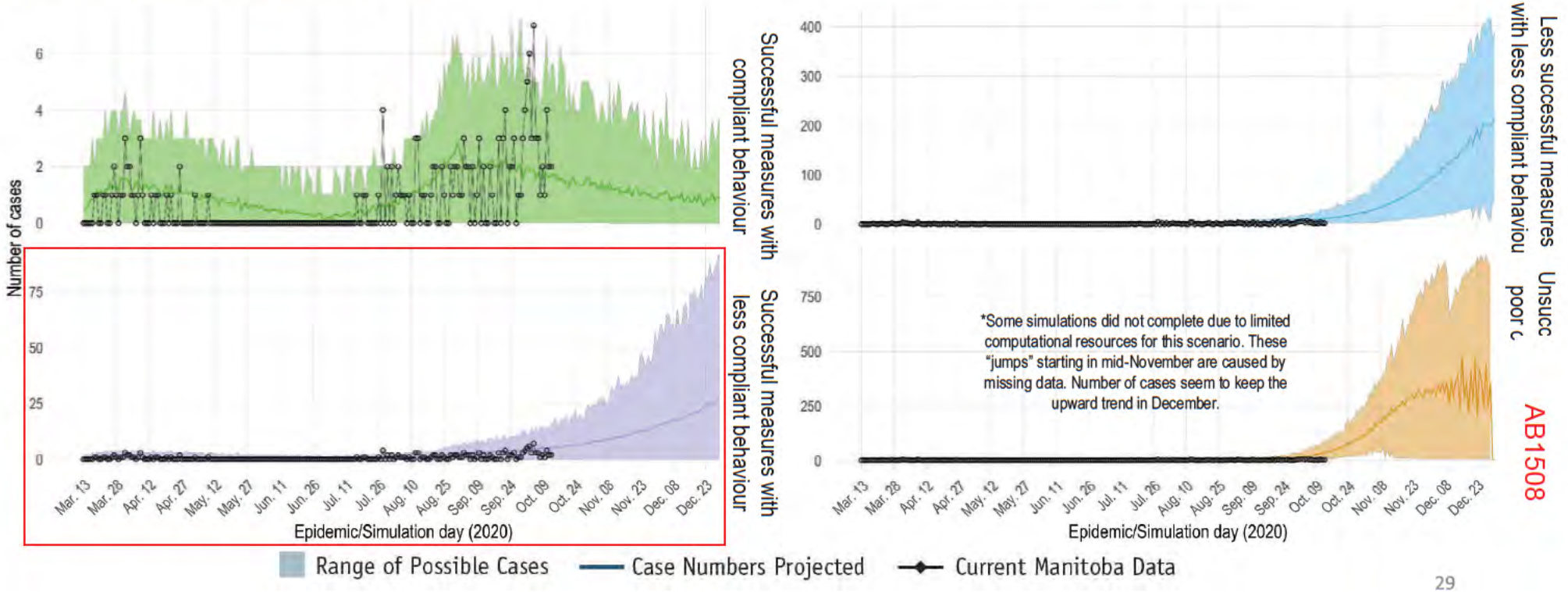


COVID-19 NOVEL CORONAVIRUS

Manitoba

Information from March 13 to December 31, 2020

Number of hospitalizations is better aligned with the scenario highlighted below in red (see next slide).

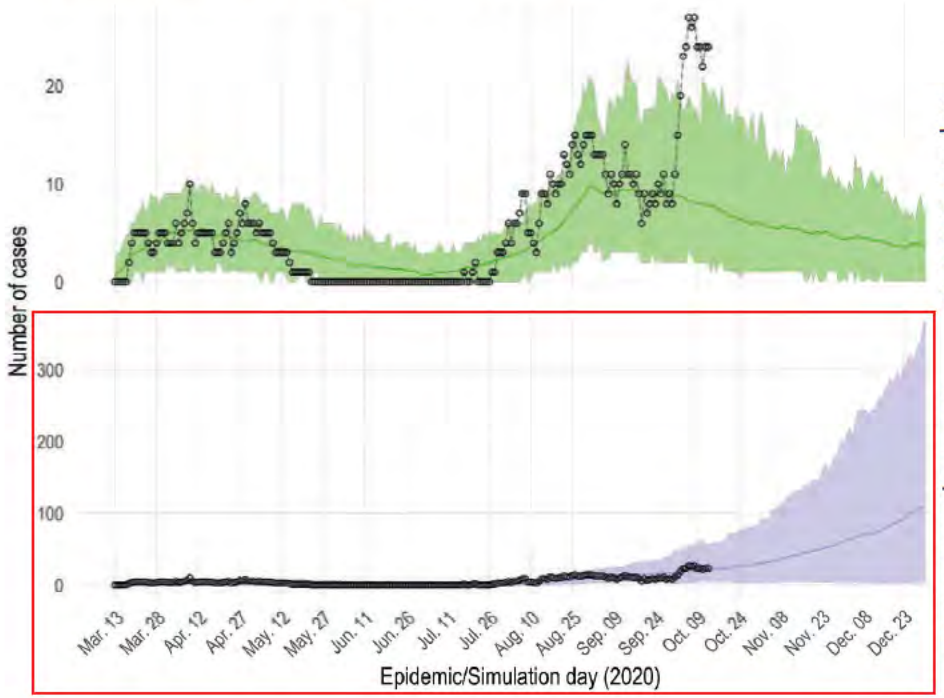


AB1508

COVID-19 NOVEL CORONAVIRUS

Manitoba

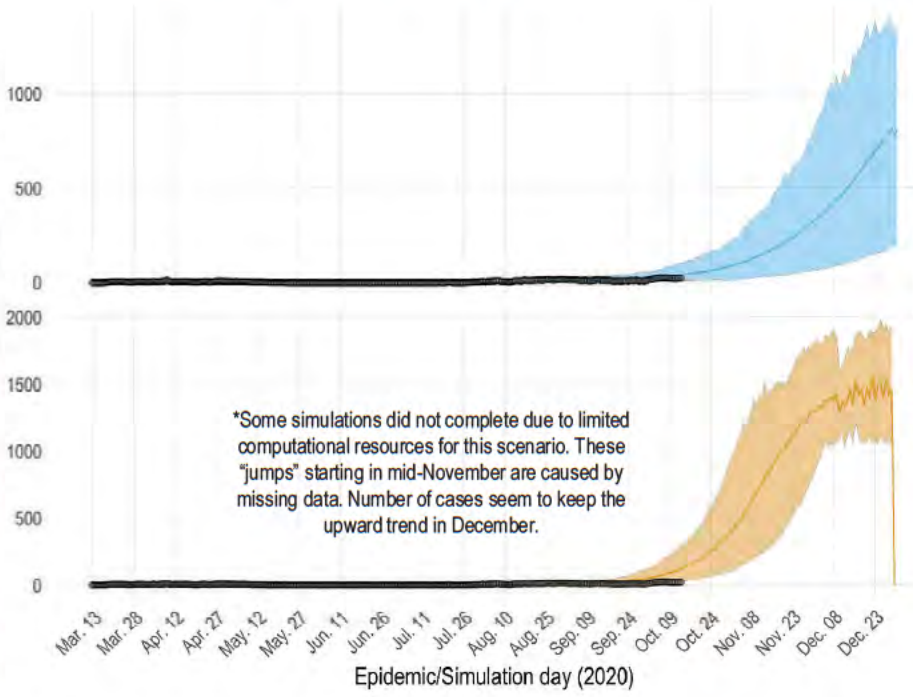
Information from March 13 to December 31, 2020



Successful measures with compliant behaviour

Successful measures with less compliant behaviour

Number of hospitalizations is now aligned with the scenario highlighted below in red.



Less successful measures with less compliant behaviou

Unsucc
poor c

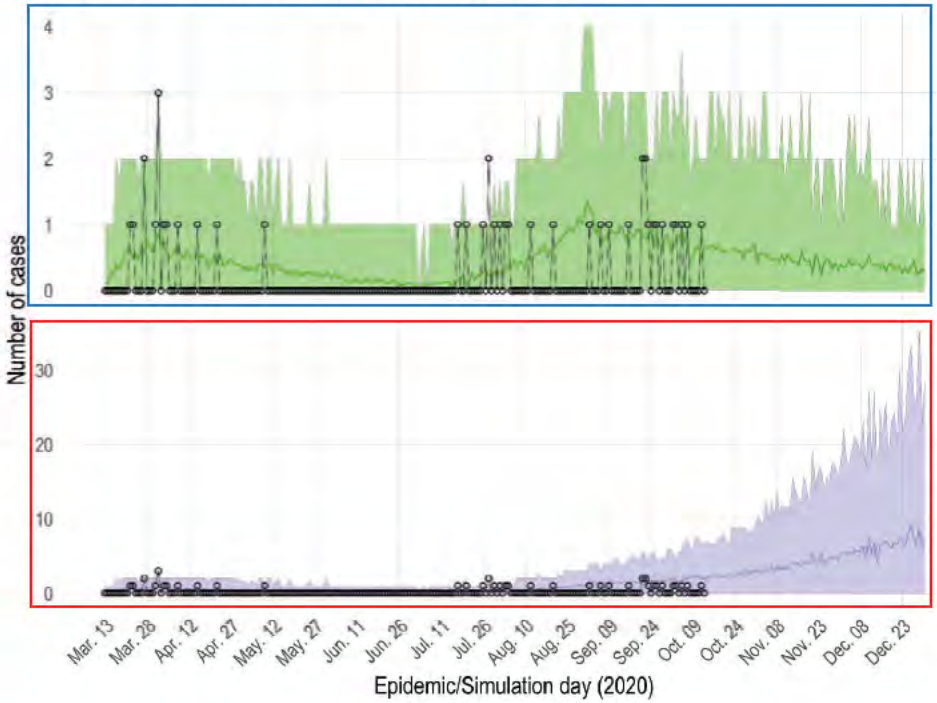
AB1509

Range of Possible Cases — Case Numbers Projected — Current Manitoba Data

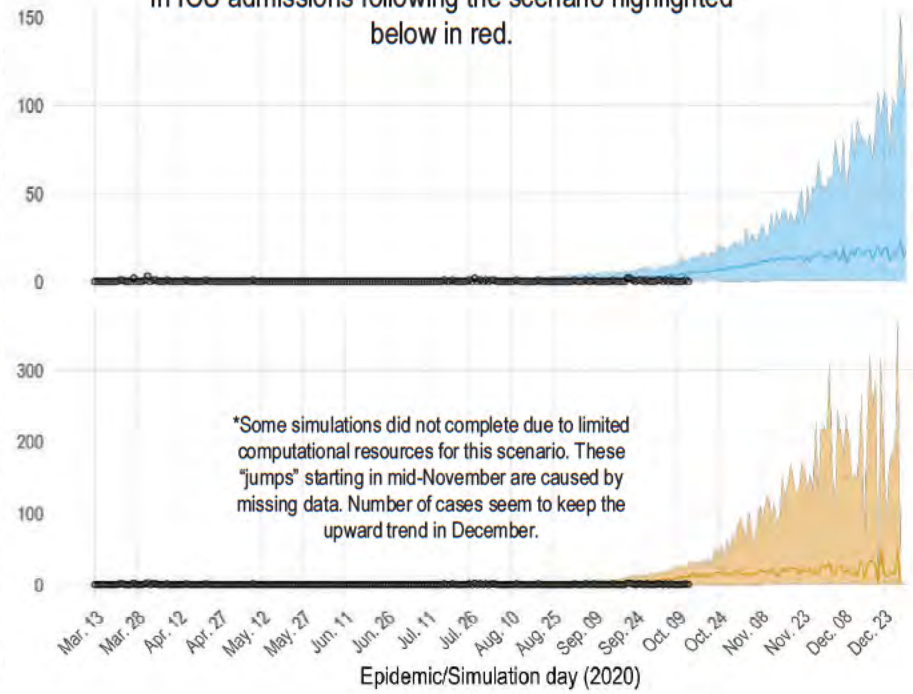
COVID-19 NOVEL CORONAVIRUS

Manitoba

Information from March 13 to December 31, 2020



ICU admissions seem to be aligned with the scenario highlighted below in blue. However, with the increase in number of cases, it is prudent to anticipate an increase in ICU admissions following the scenario highlighted below in red.

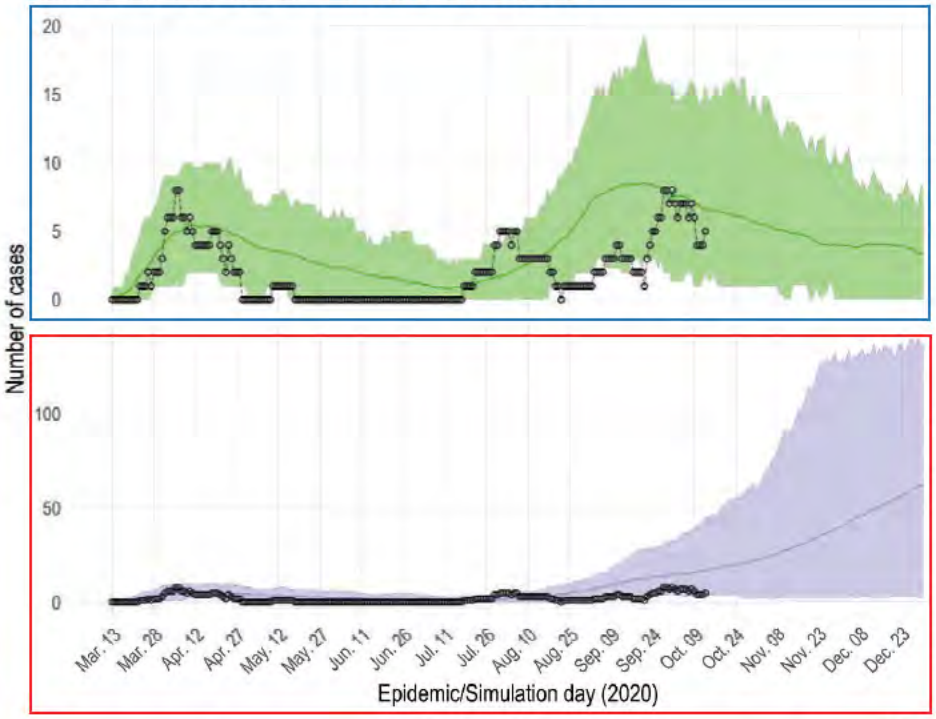


AB1510

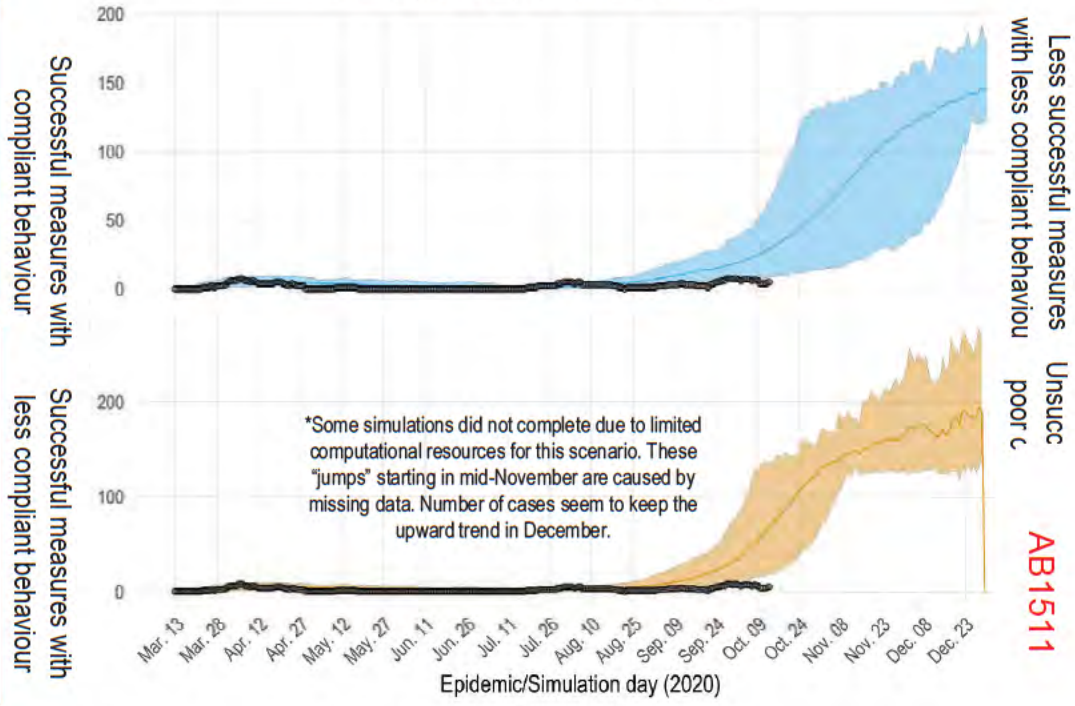
COVID-19 NOVEL CORONAVIRUS

Manitoba

Information from March 13 to December 31, 2020



Prevalence in ICU admissions seem to be aligned with the scenario highlighted below in red, which accounts for an increase in number of cases.



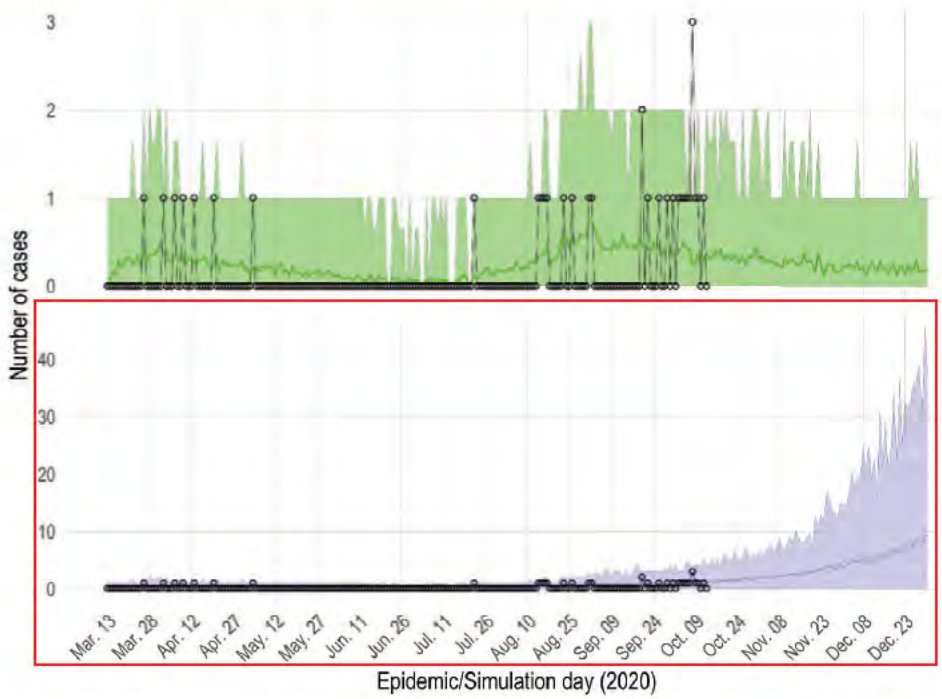
AB1511

Range of Possible Cases — Case Numbers Projected — Current Manitoba Data

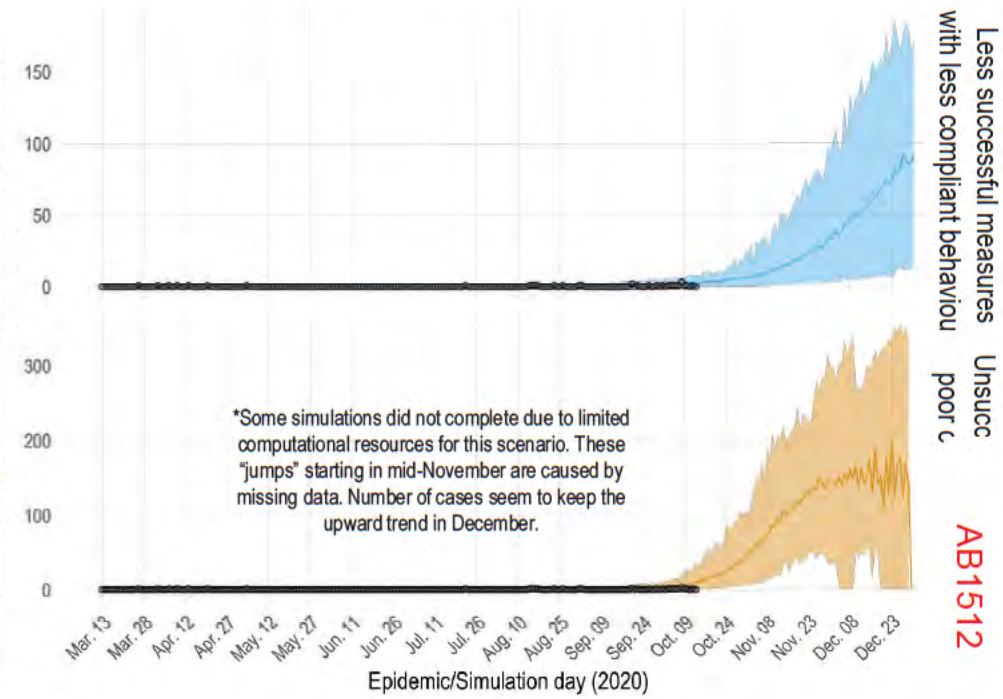
COVID-19 NOVEL CORONAVIRUS

Manitoba

Information from March 13 to December 31, 2020



Number of deaths is now aligned with the scenario highlighted below in red.



Range of Possible Cases — Case Numbers Projected — Current Manitoba Data

AB1512

COVID-19 NOVEL CORONAVIRUS

Manitoba

NEXT STEPS

AB1513

COVID-19 NOVEL CORONAVIRUS

Manitoba

- **Close non-essential businesses** for 2 weeks, and encourage minimal "out of home" activity (curfew?)
- **Engage young adults** through a comprehensive social media campaign about their behaviors and responsibilities relating to COVID19 spread
- Systematically identify and **address barriers faced by structurally disadvantaged populations** to adhere to public health recommendations and stay safe
- **Scale up PHN case and contact investigation resources**
- **Shore up acute care system** to prepare for increased COVID19 demands
- **Ramp up public education** around proper social distancing protocols, social bubbles, proper mask-use, and COVID19 app
- **Improve testing** options, convenience and speed for all populations
  - Use rapid tests in appropriate settings (e.g., high risk settings including processing plants; outbreak settings, and correctional facilities)

COVID-19 NOVEL CORONAVIRUS

Manitoba

- **Aggressive population based (non-targeted) interventions are required immediately since**:
  - COVID19 infection is now widespread in Winnipeg and is occurring through broad- based community spread in many diverse settings
  - Current upward trajectory of cases may lead to a surge in hospitalizations and deaths that may overwhelm the acute care system
  - Public health capacity for case and contact tracing is becoming overwhelmed and may no longer be an effective disease control intervention
- **Upstream targeted interventions (young adults, structurally disadvantaged populations) are required to ensure**:
  - all population groups are able and willing to comply with population based public health recommendations and can stay safe and not become a risk to others

This is Exhibit " F " referred to
in the Affidavit of Carla Loeppky
Affirmed before me this 4
day of March A.D. 2021

A Barrister-at-Law entitled to practice
in and for the Province of Manitoba

COVID-19
NOVEL CORONAVIRUS
COVID Response Update

Manitoba

AB1517

Confidential – Not for distribution

Key Messages

COVID-19 NOVEL CORONAVIRUS

Manitoba

CURRENT STATE

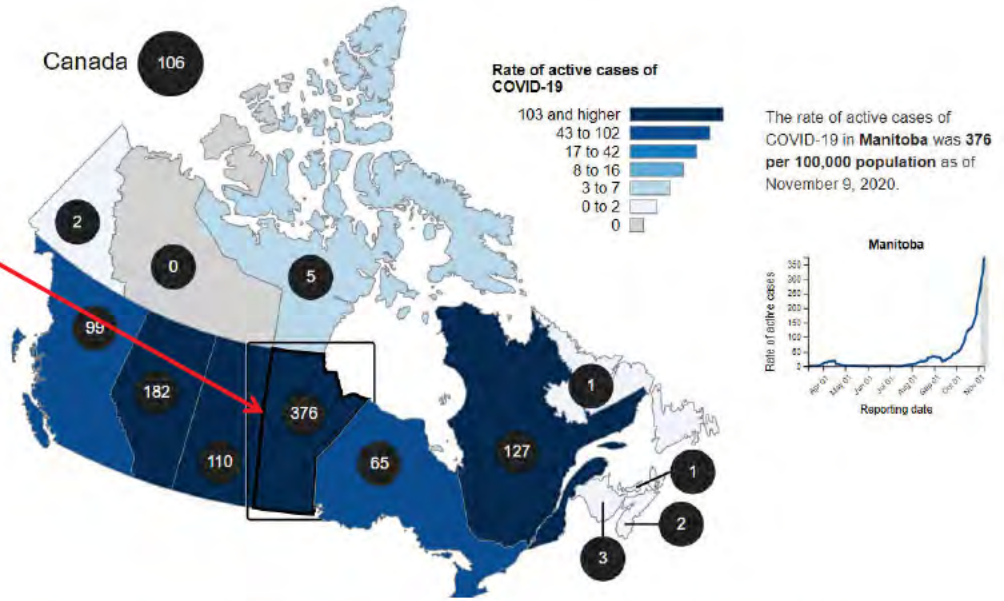
AB1519

COVID-19 NOVEL CORONAVIRUS

Manitoba

Manitoba Continues to be the Worst Performing Province in Canada for Active COVID Cases

Manitoba
376/100,000
(Nov. 9, 2020)



https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection.html

AB1520

COVID-19 NOVEL CORONAVIRUS

Manitoba

Case Numbers in Manitoba (to date)

8,878
Total Positive Cases

290,560
Total Tested

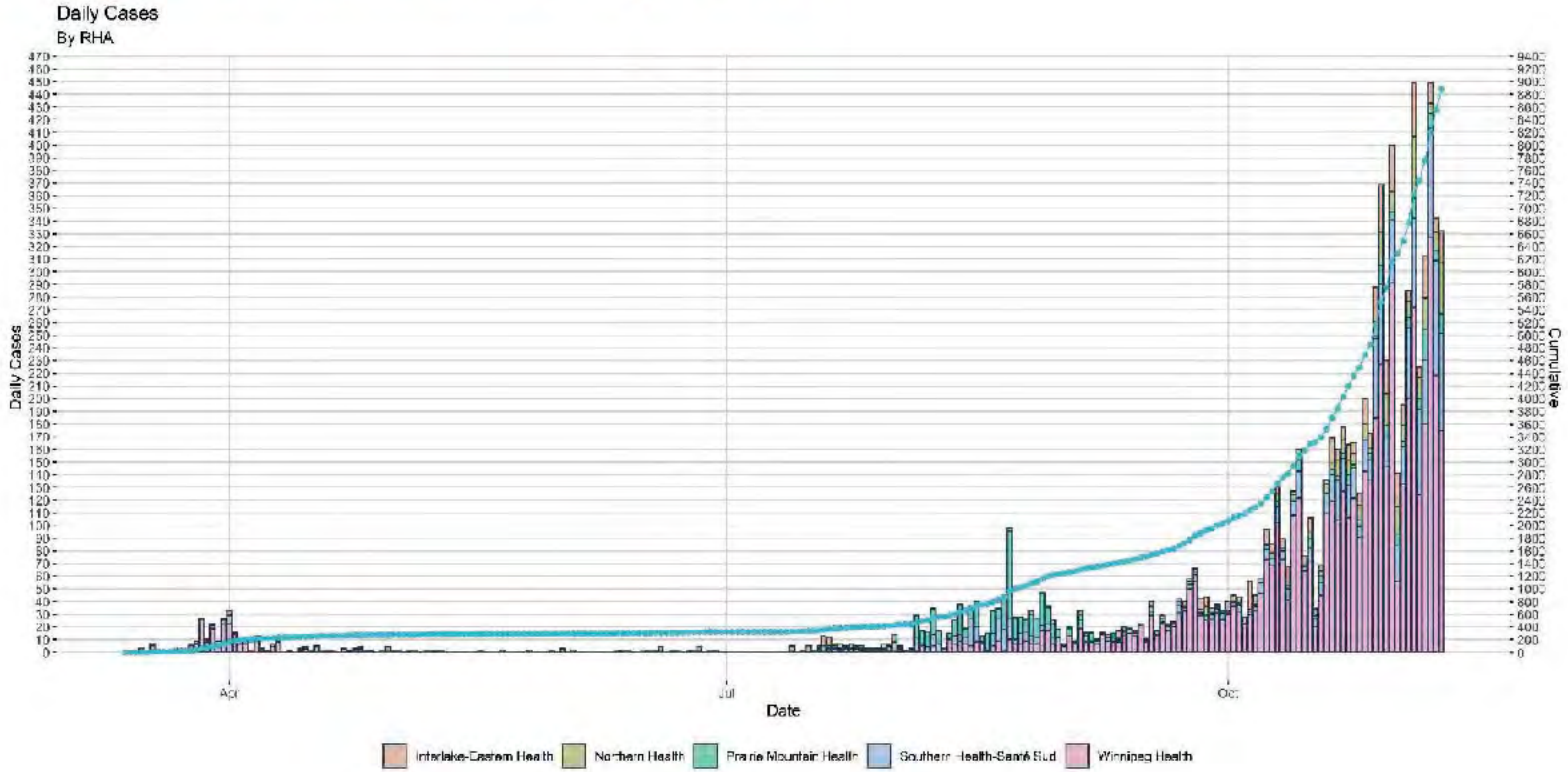
514
Total Hospitalized

106
Total ICU Stays

114
Total Deaths

AB1521

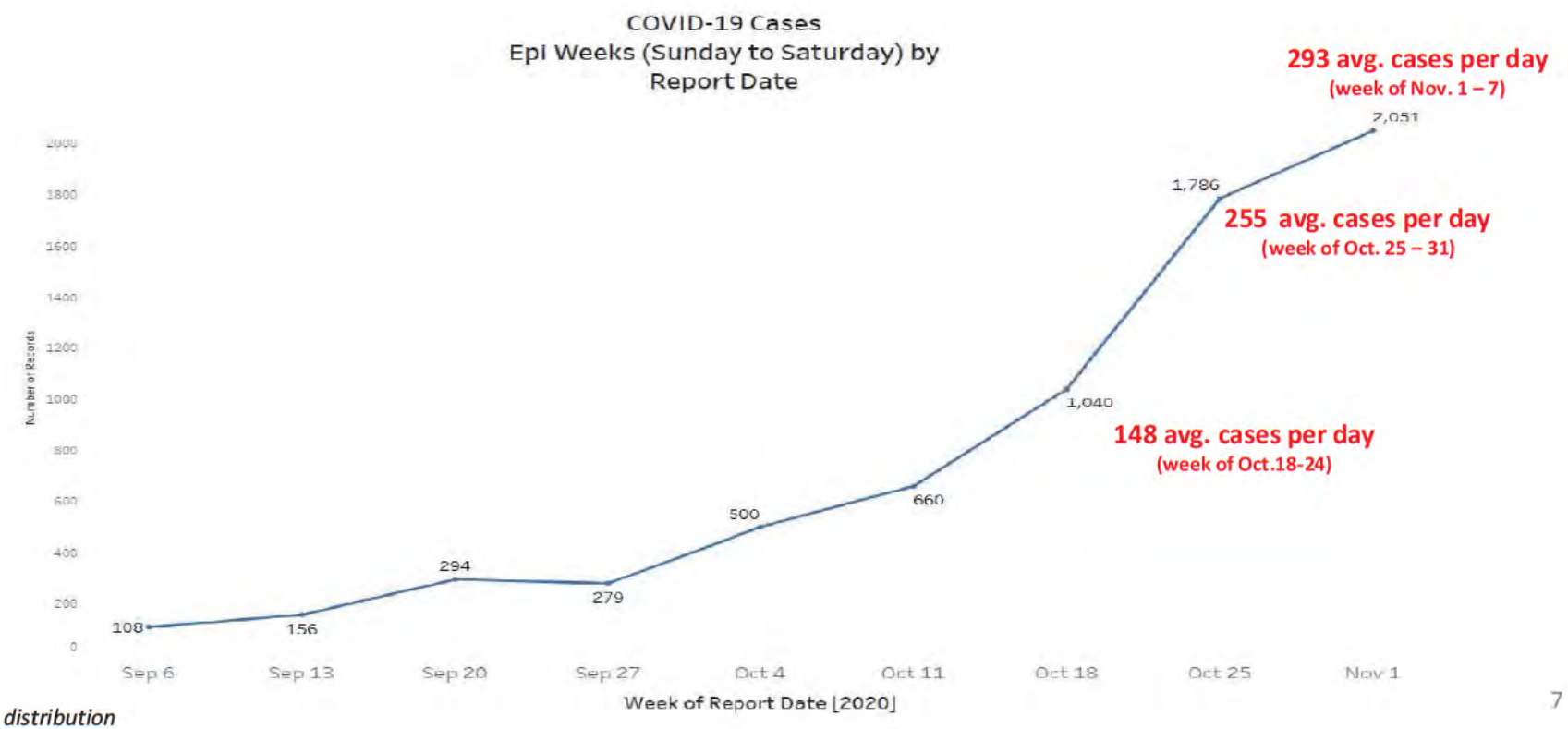
Daily COVID Cases by RHA



AB1522

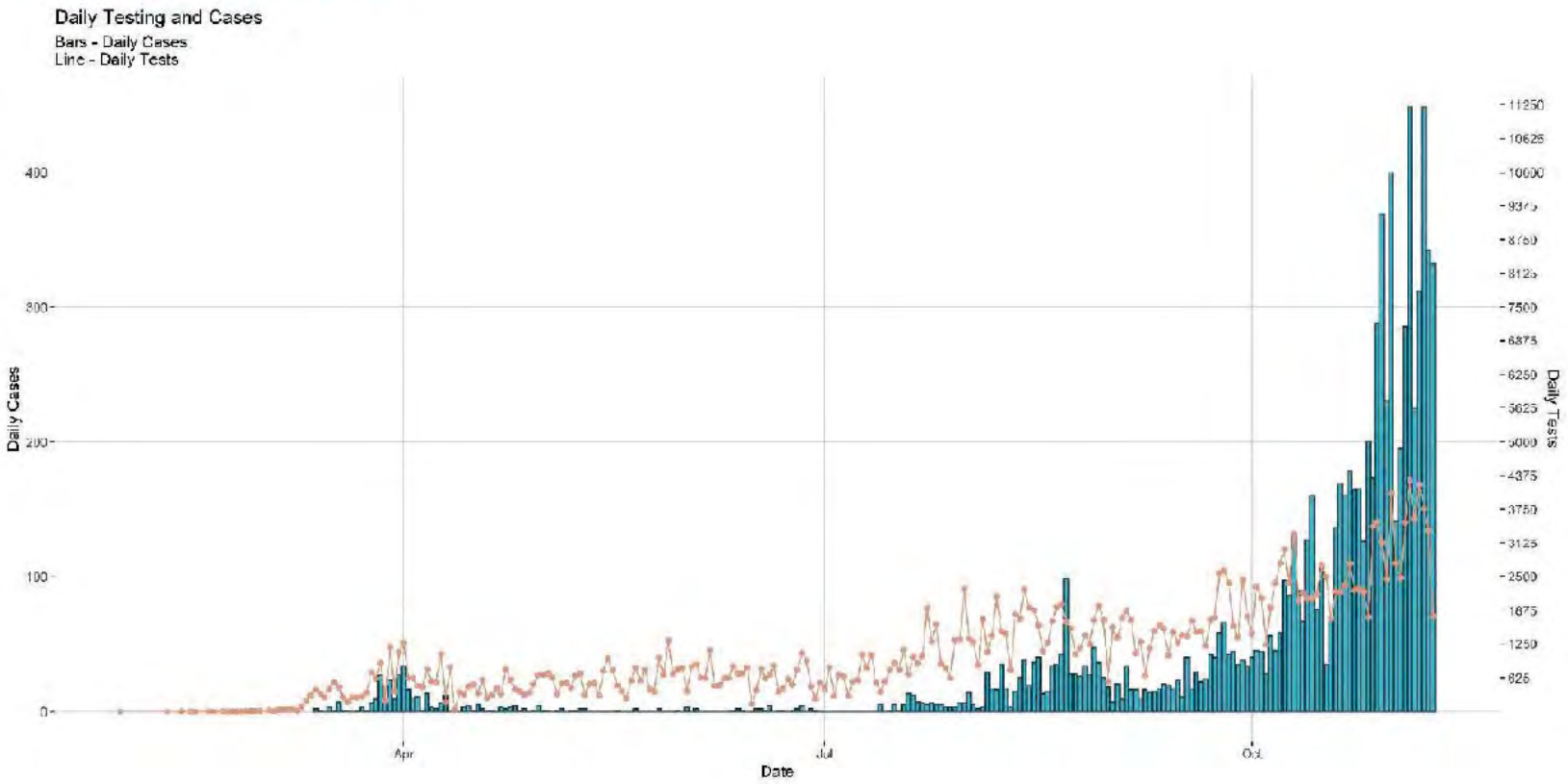
COVID-19 NOVEL CORONAVIRUS

Manitoba

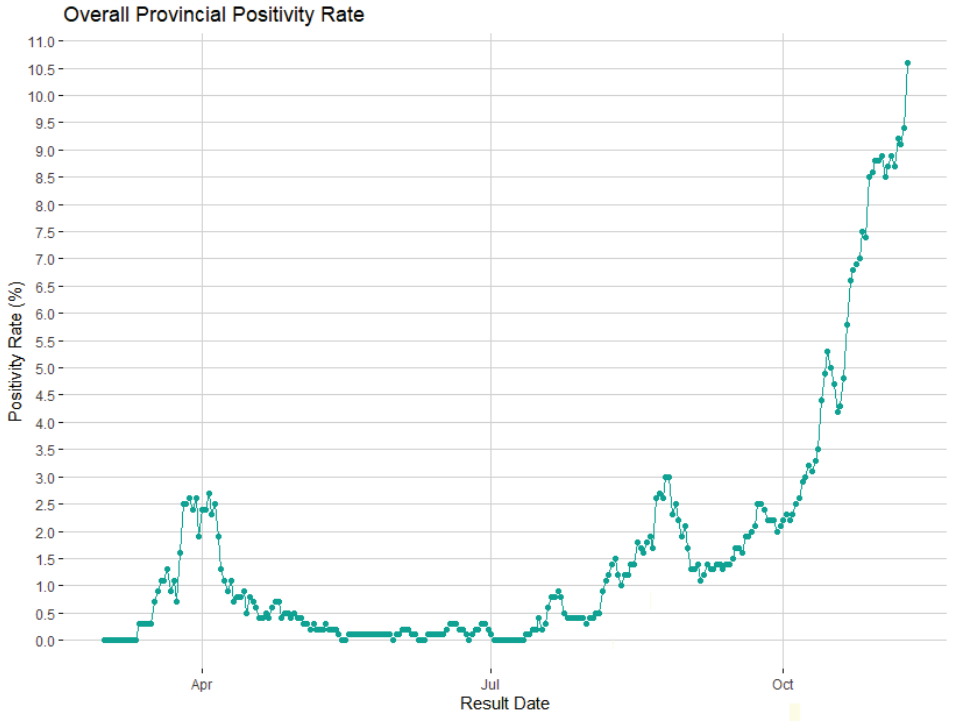


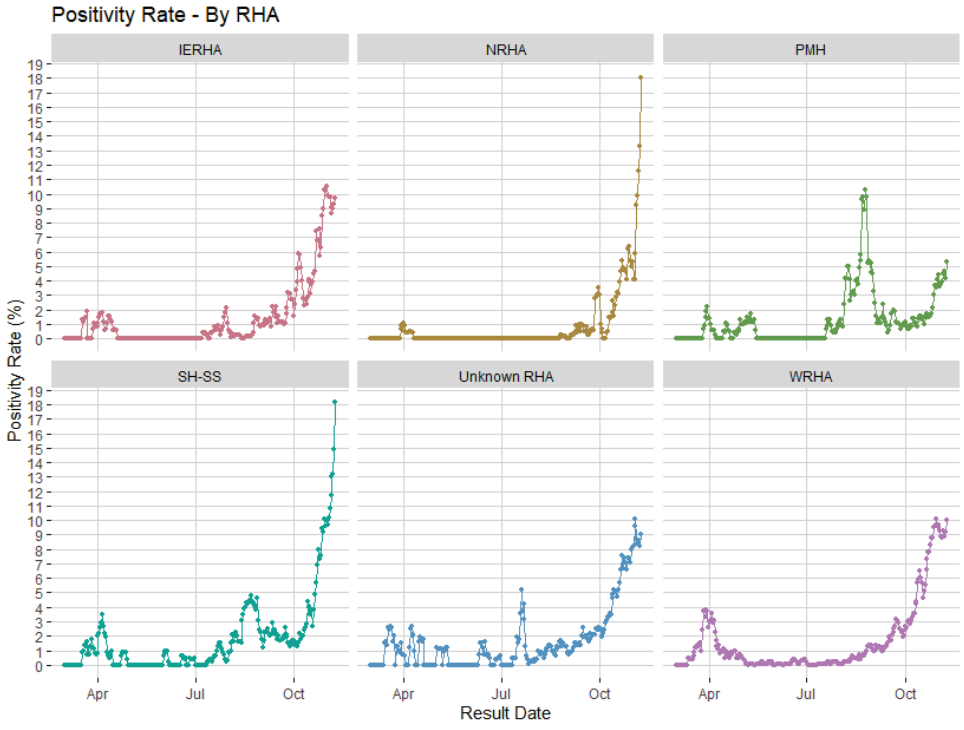
AB1523

Testing Timeline



Positivity Rates Provincially and by RHA





AB1525

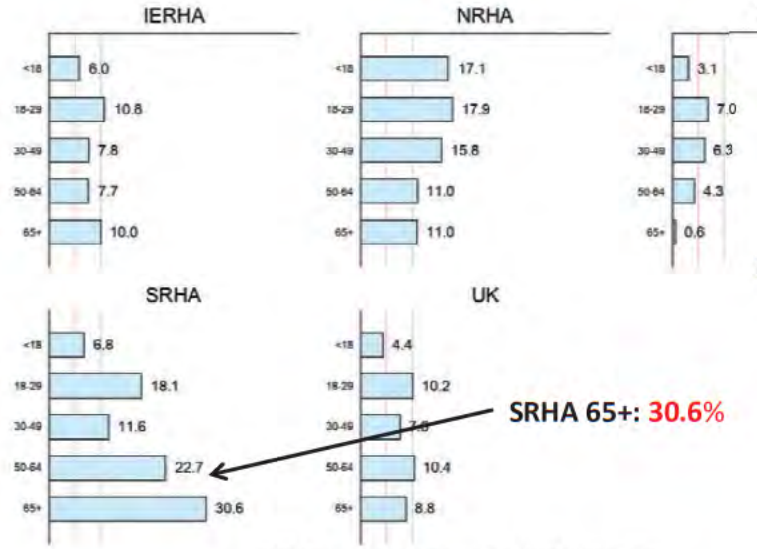
COVID-19 NOVEL CORONAVIRUS

Manitoba

Test Positivity % by Rural RHA

Nov. 5 – Nov. 9, 2020

10%



SRHA 65+: 30.6%

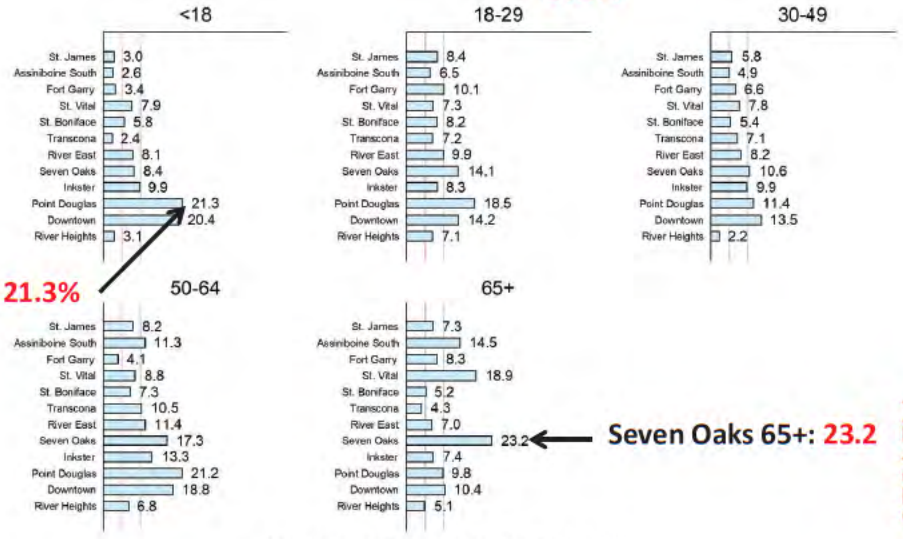
RHA 5-day (%): 05nov2020-09nov2020. Total: 10.0% (N: 6056)

Red line: 5%; Green line: 10% Does not include wards of the Public Trustee.

Test Positivity by Community Area (WHRA)

Nov. 5 – Nov. 9, 2020

9.2%



Point Douglas < 18: 21.3%

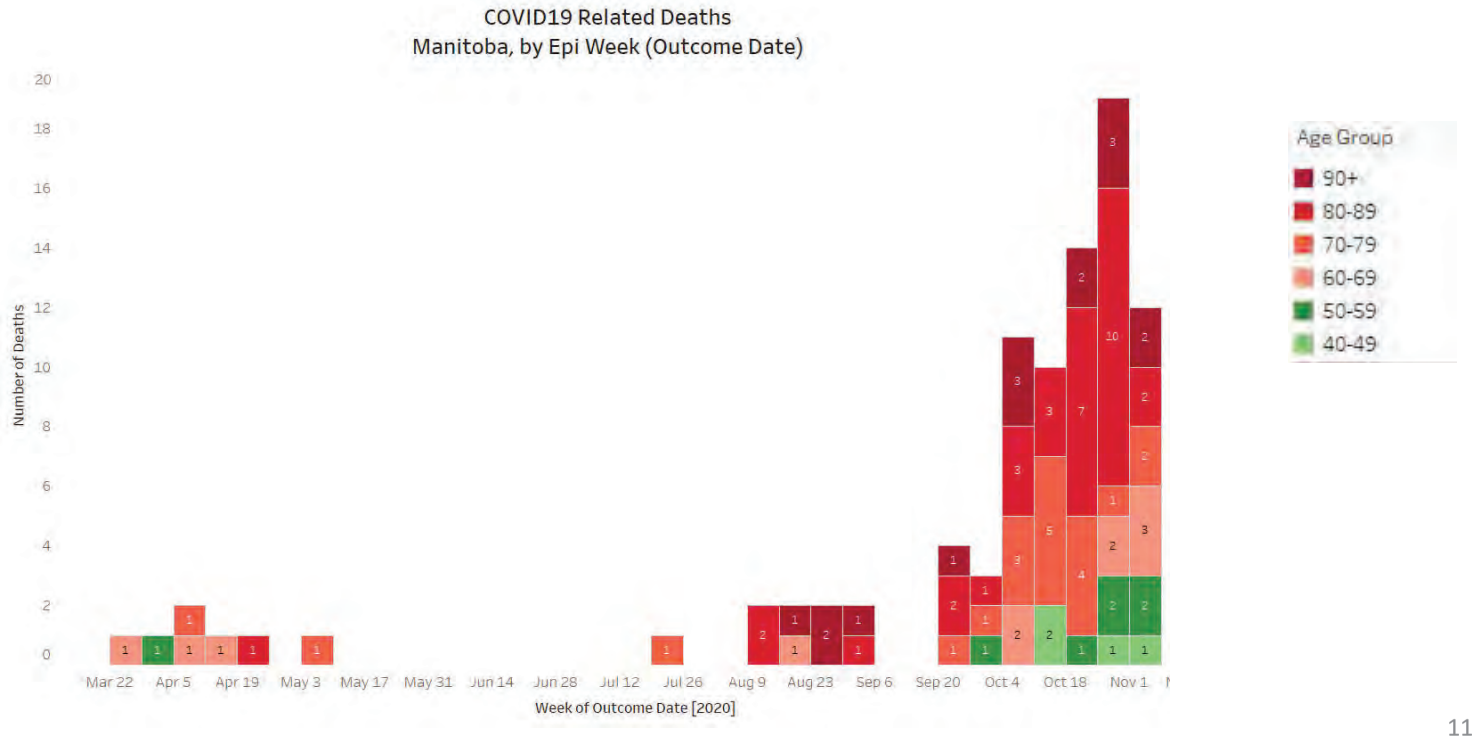
Seven Oaks 65+: 23.2

CA 5-day (%): 05nov2020-09nov2020. Total: 9.2% (N: 8622)

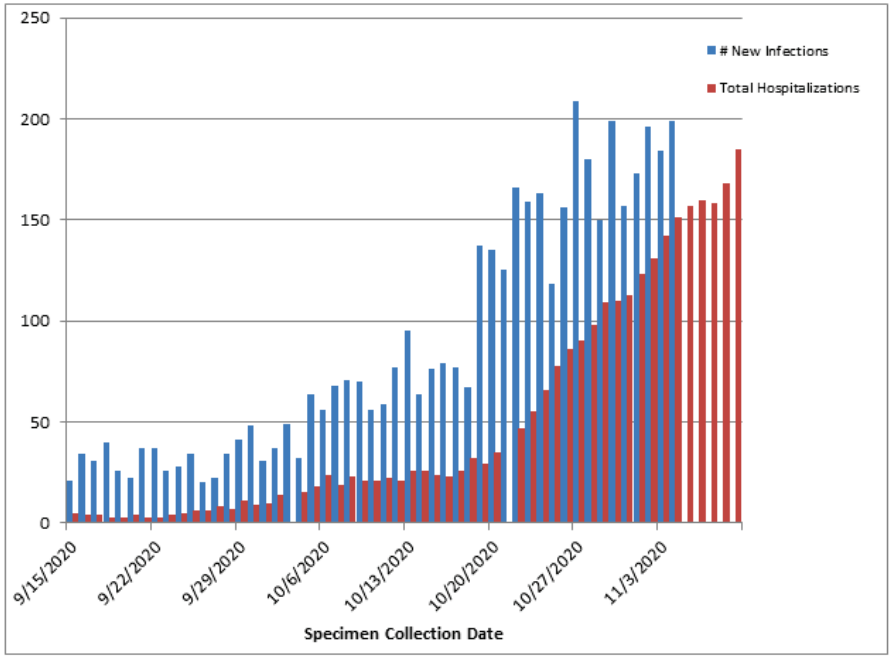
Red line: 5%; Green line: 10%. Does not include wards of the Public Trustee (Total n: 23)

AB1526

COVID-Related Deaths are now Rapidly Escalating



COVID-Related Hospitalizations are Rising Quickly

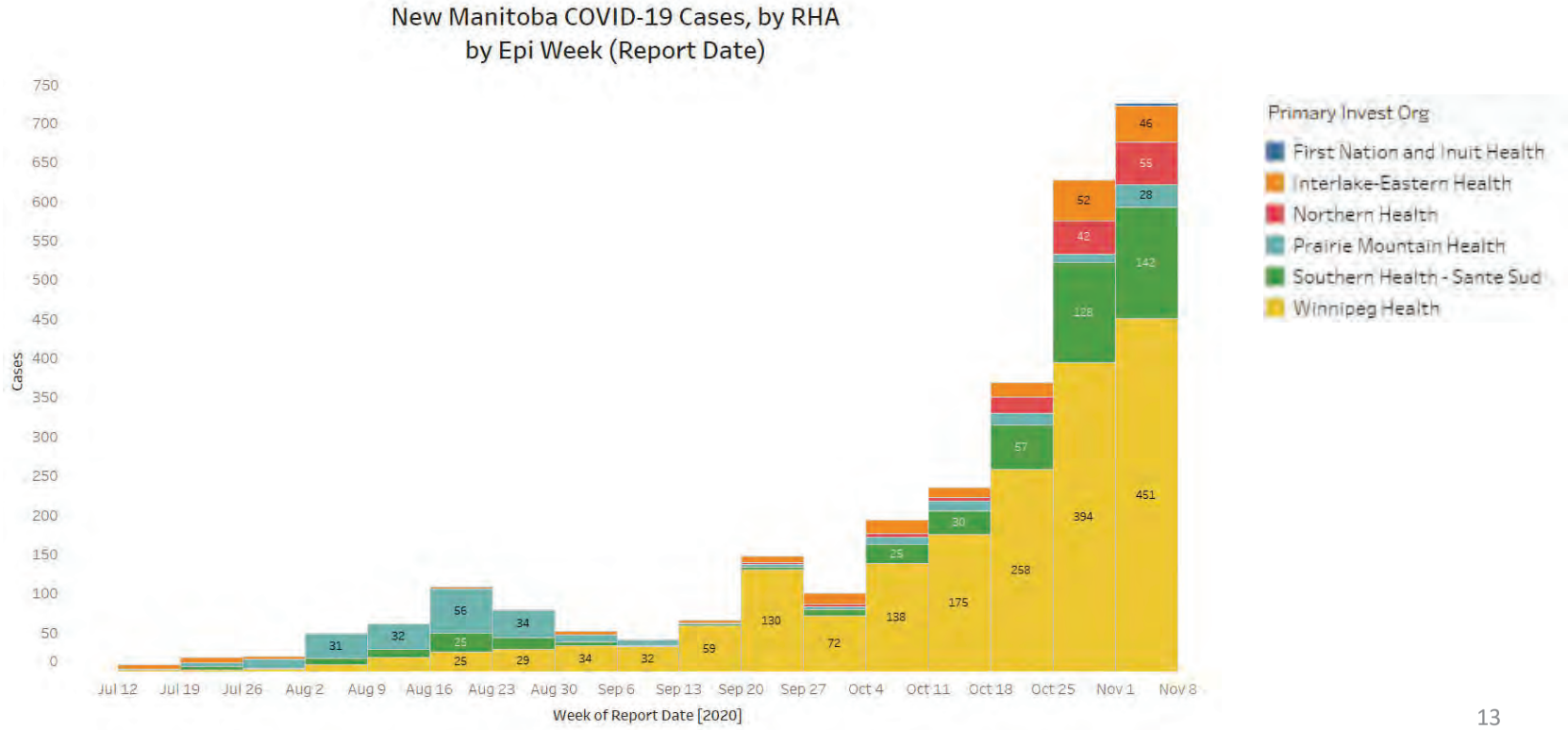


Note: Due to a lag in lab reporting from spec date to report date, all cases may not reflected above in more recent days. Hospitalizations are total daily hospitalizations and not new admissions.

AB1528

COVID-19 NOVEL CORONAVIRUS

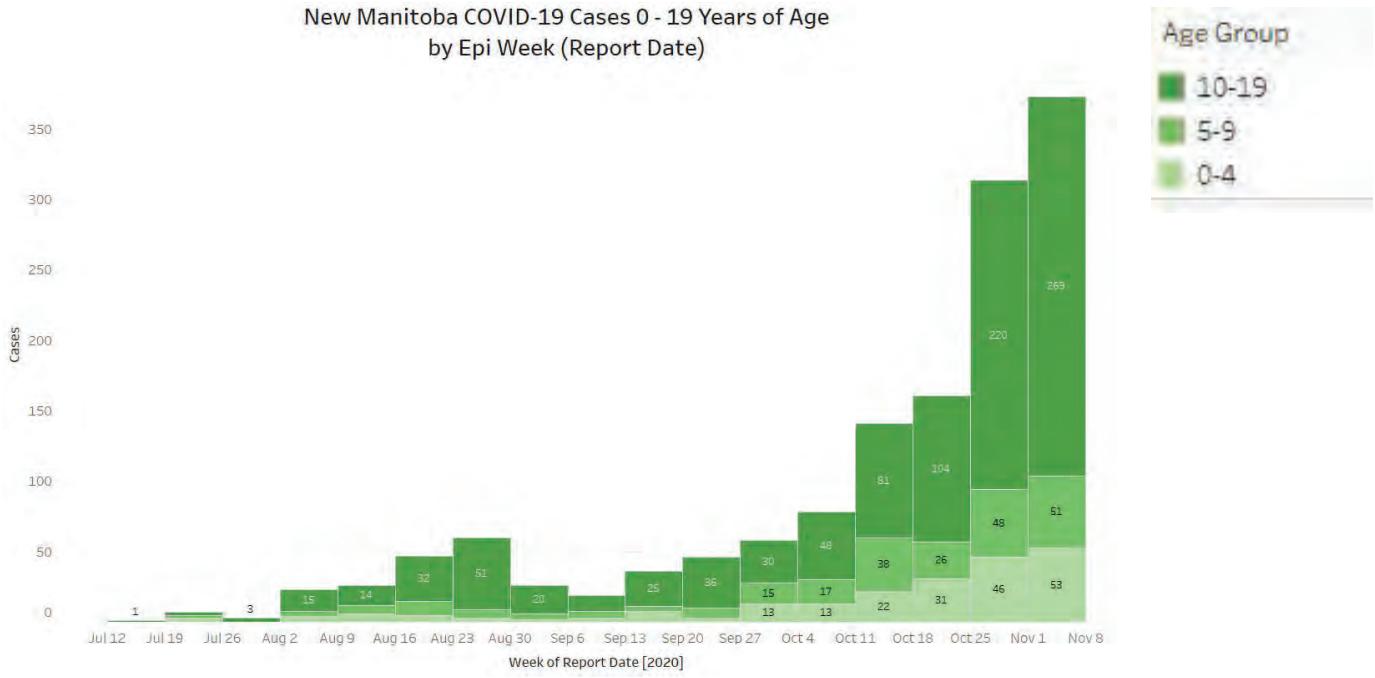
Manitoba

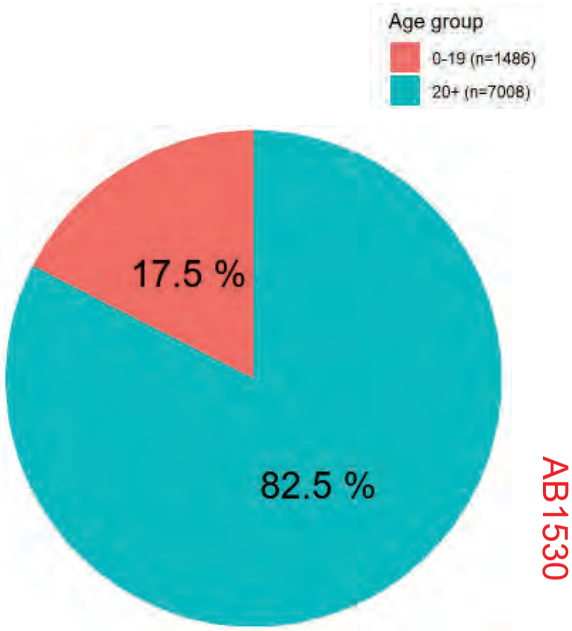


AB1529

COVID-19 NOVEL CORONAVIRUS

Manitoba





AB1530

COVID-19 NOVEL CORONAVIRUS

Manitoba

Information as of November 10 , 2020

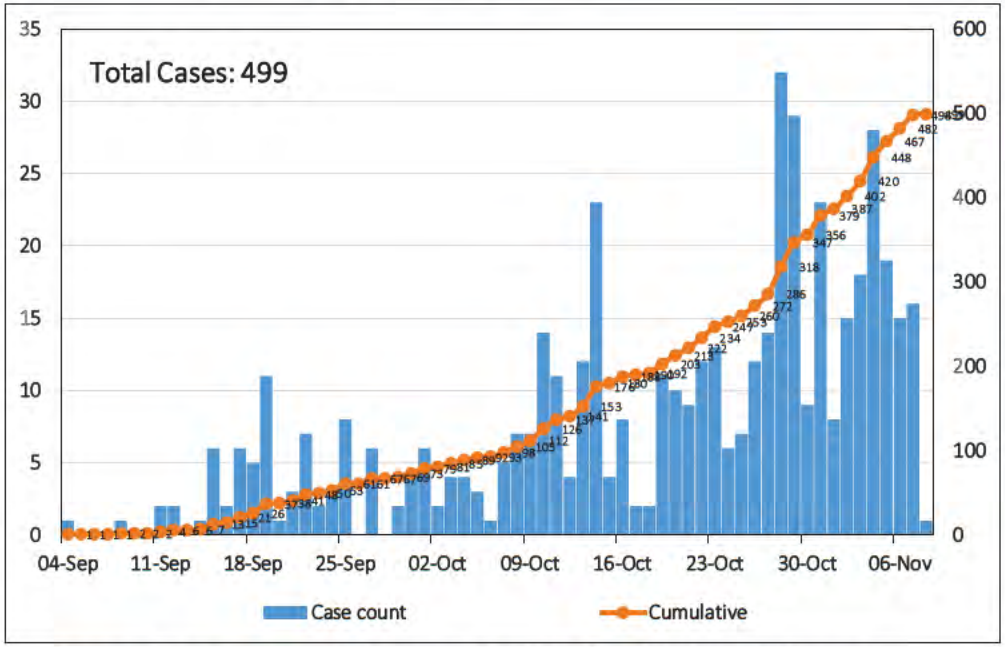


Figure 1: Epidemiological curve of COVID-19 school related cases in Manitoba since September 1, 2020

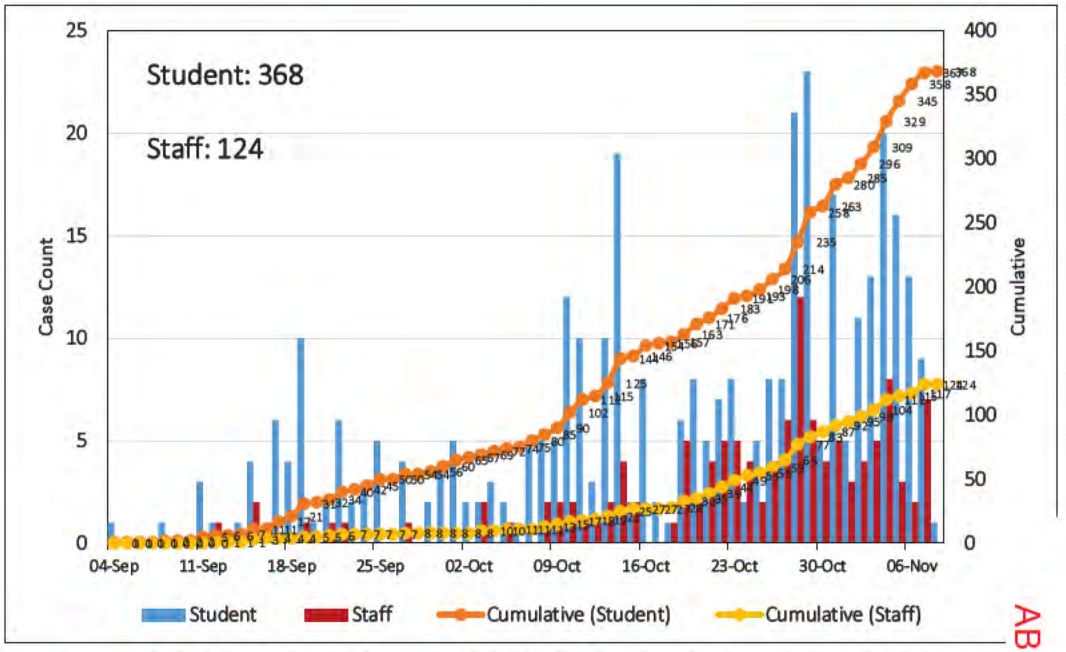


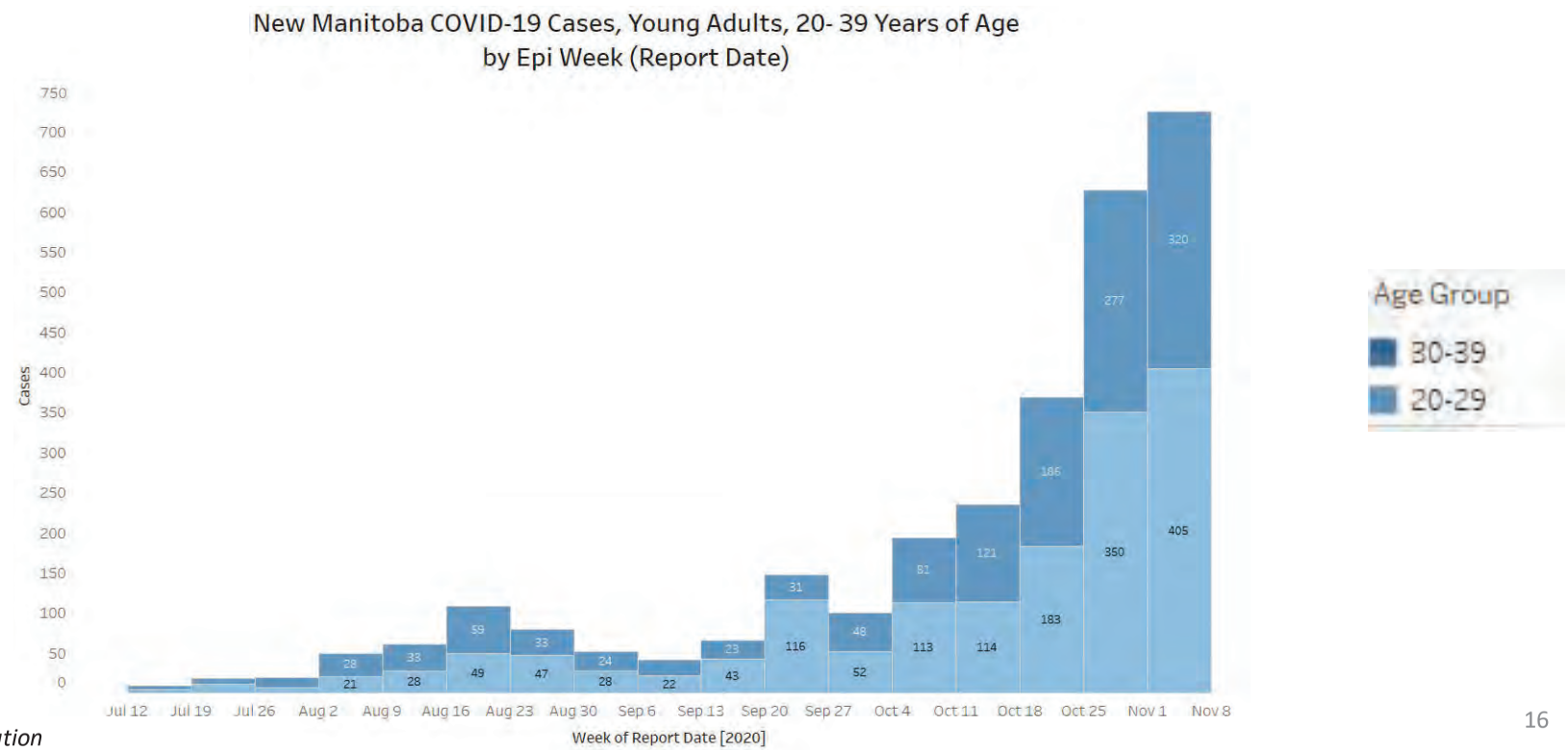
Figure 2: Epidemiological curve of COVID-19 school related cases(student and staff) in Manitoba since September 1, 2020

AB1531

**Seven (7) cases are not in school environment (they are either parents or younger siblings of school related cases). As such, Figure 2 totals 492 cases relating to school environment (students and staff)*

COVID-19 NOVEL CORONAVIRUS

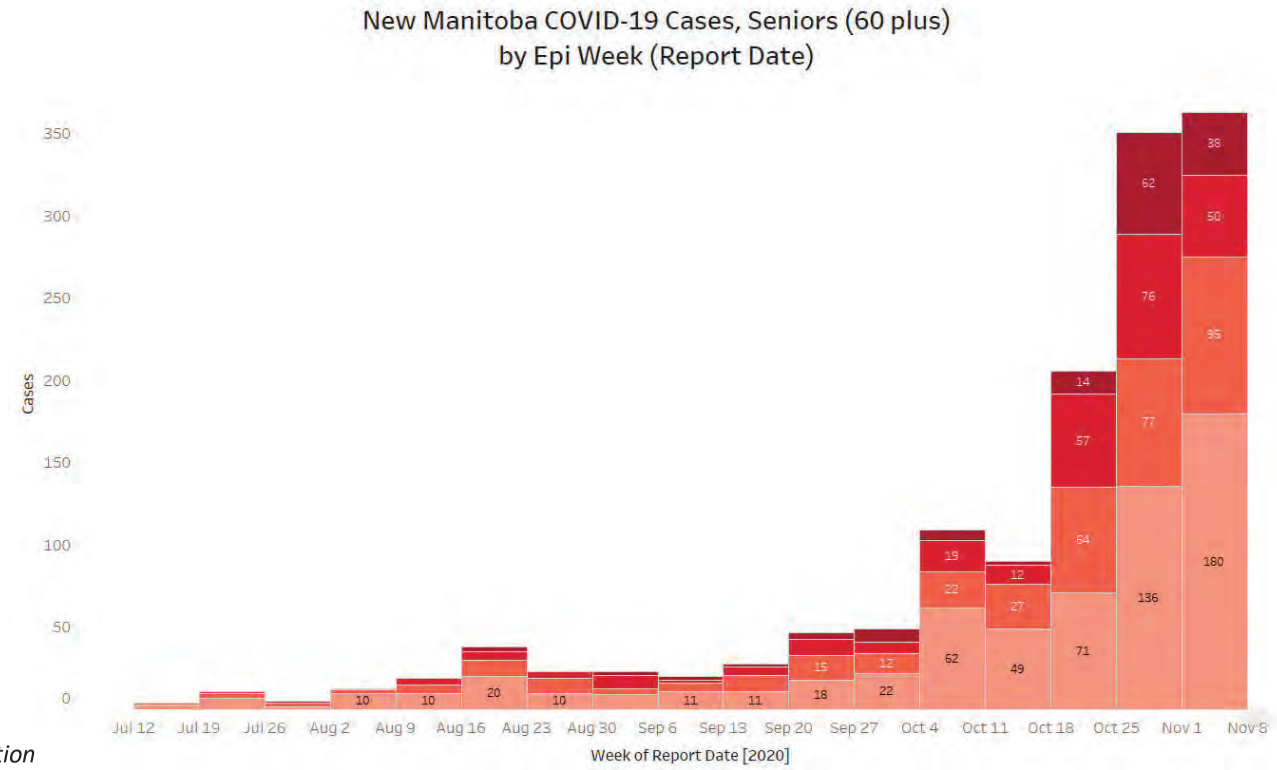
Manitoba



AB1532

COVID-19 NOVEL CORONAVIRUS

Manitoba



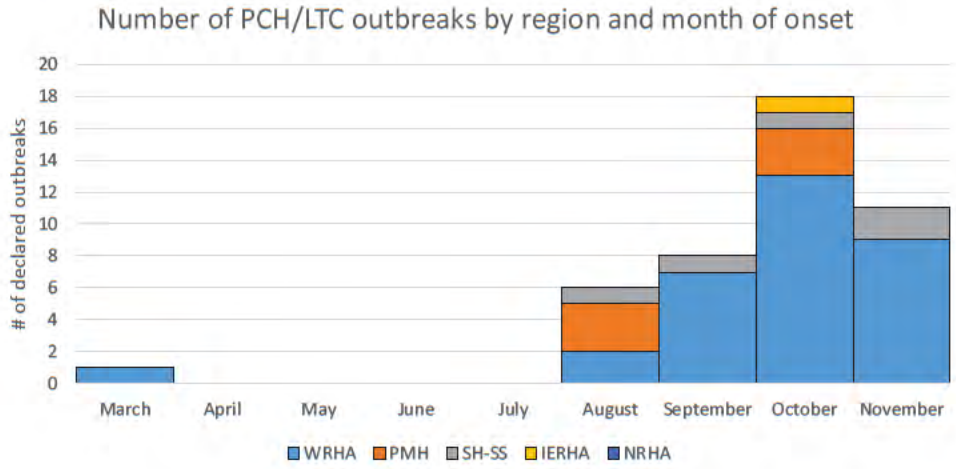
Age 60+ group at highest risk of severe outcomes

AB1533

PCH/LTC

- WRHA = 32 (73%)
- PMH = 6 (14%)
- SH-SS = 5 (11%)
- IERHA = 1 (2%)
- NRHA = 0

- 184 staff
- 336 residents



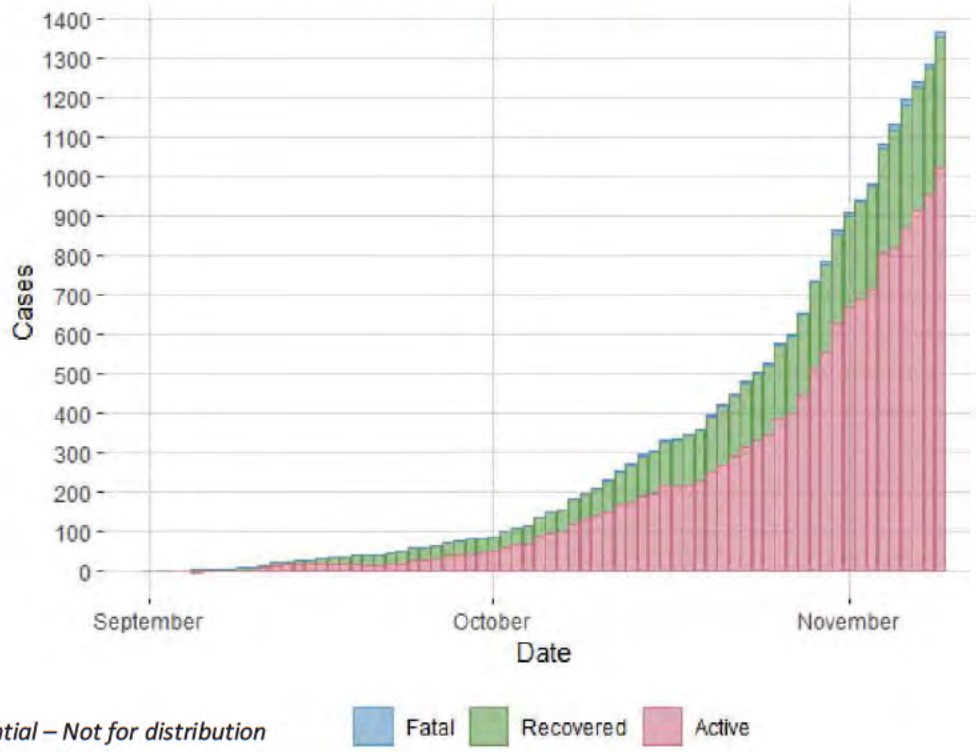
- Maples PCH = 66%
- Parkview Place PCH = 44%

COVID-19 Impact on First Nations: Summary

- This allows First Nations living in Manitoba to determine how their data are shared both internally and publicly
- It supports quick PH action in the communities
- Permission was granted to share these data internally (data as of November 8, 2020)

- First Nations make up roughly 10-12% of the population but 16% of all cases in the province

MB First Nations Experiencing Increased Cases with Severe Outcomes

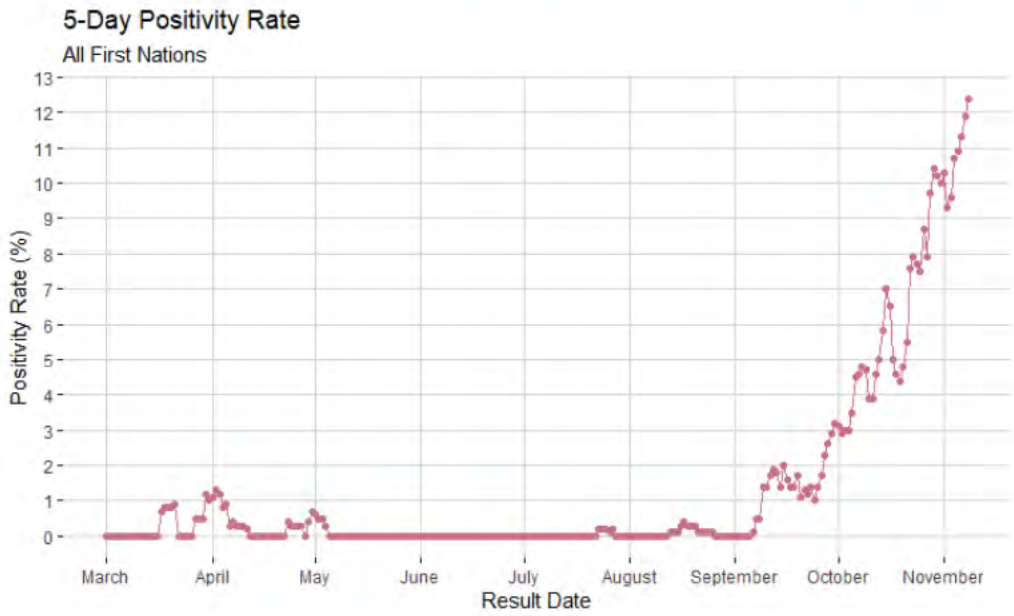


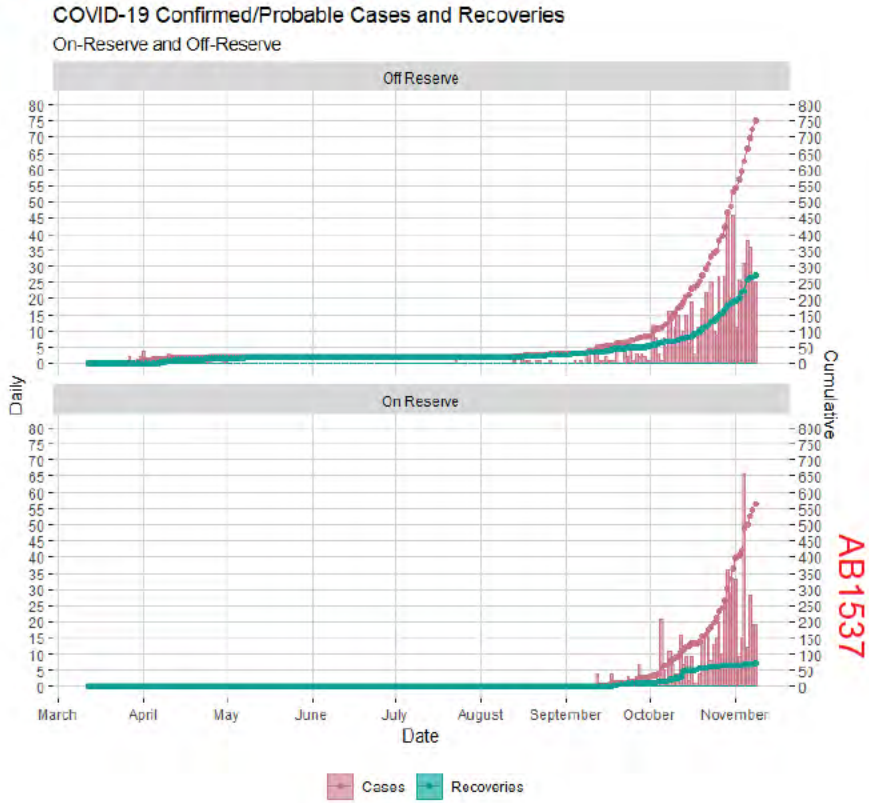
Data derived from the Manitoba First Nations COVID-19 Pandemic Response Coordination Team PRCT Bulletin. Statistics as of November 8, 2020.

COVID-19 NOVEL CORONAVIRUS

Manitoba

COVID-19 Impact on First Nations: Positivity Rate





AB1537

In the WHR, COVID19 Cases are Occurring Everywhere, but are Concentrated in Downtown and Seven Oaks

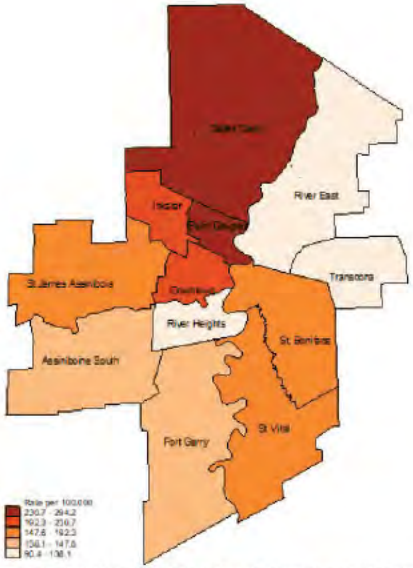


Figure 6: Age-standardized rate (per 100,000) map of COVID-19 cases from the last 7 days in the Winnipeg Health Region

TABLE 2: Frequency, Crude and Age-Standardized Rates (per 100,000) of COVID-19 cases, from the past 7 days in the Winnipeg Health Region by Community Area

	Number	Crude Rate	Age-Standardized Rate	95% CI
Community area				
St. James	92	153.2	159.3	128.1 - 195.8
Assiniboine South	55	156.3	147.6	110.2 - 193.7
Fort Garry	126	145.4	139.8	116.2 - 166.9
St. Vital	133	190.0	192.3	160.8 - 228.2
St. Boniface	86	145.4	148.2	118.5 - 183.0
Transcona	54	138.3	138.1	103.7 - 180.2
River East	129	132.3	136.3	113.7 - 162.1
Seven Oaks	223	295.1	294.2	256.8 - 335.5
Inkster	72	209.5	209.5	163.6 - 264.2
Point Douglas	120	253.0	251.2	207.8 - 301.1
Downtown	187	229.3	230.7	198.6 - 266.5
River Heights	53	93.2	90.4	67.3 - 118.9
Total	1,330	178.9	178.7	169.2 - 188.6

AB1538

COVID-19 NOVEL CORONAVIRUS

Manitoba

COVID-19 MODELLING

AB1539

Made-in-Manitoba Agent-Based Modelling Simulations

Made-in-Manitoba Agent-Based Modelling Simulations (cont.)

Simulation Scenarios and Projections

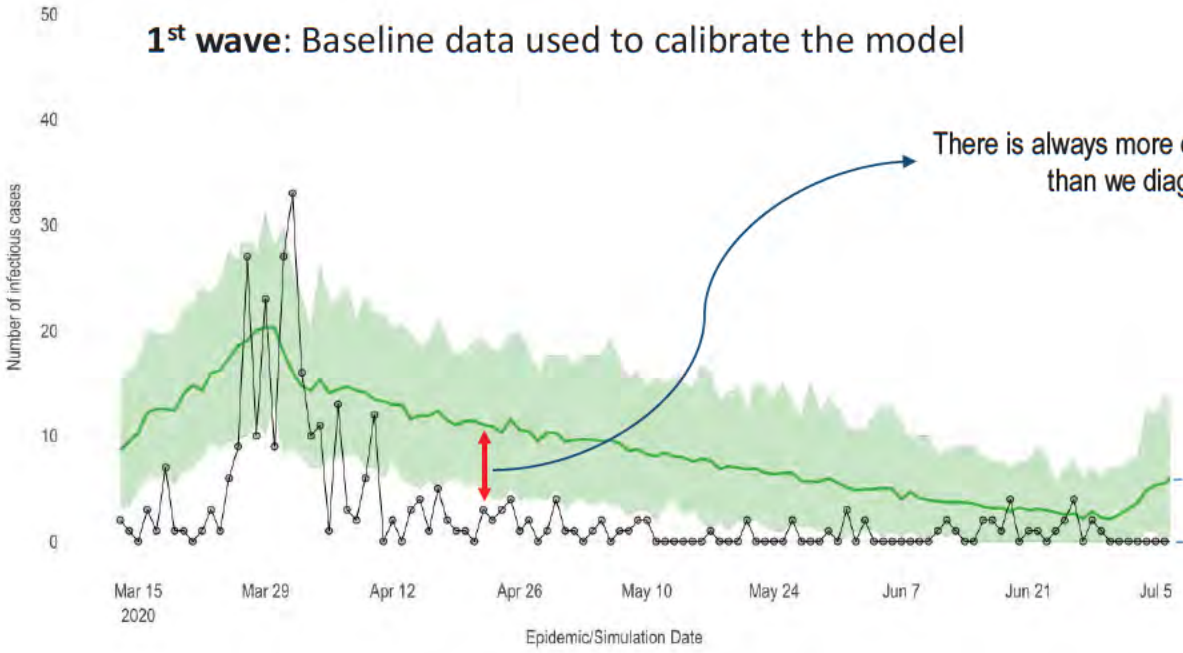
- Measures and the timing they are put in place are adequate but individuals behaviours are not well aligned with recommendations.
- Measures and the timing they are put in place may not be ideal and individuals behave as if the situation is not as serious as it really is.
- Measures and the timing they are put in place are not ideal and individuals behave as if there was no problem.

Notes on Modelling

Health Care Capacity Thresholds

Health Care Capacity Thresholds (cont.)

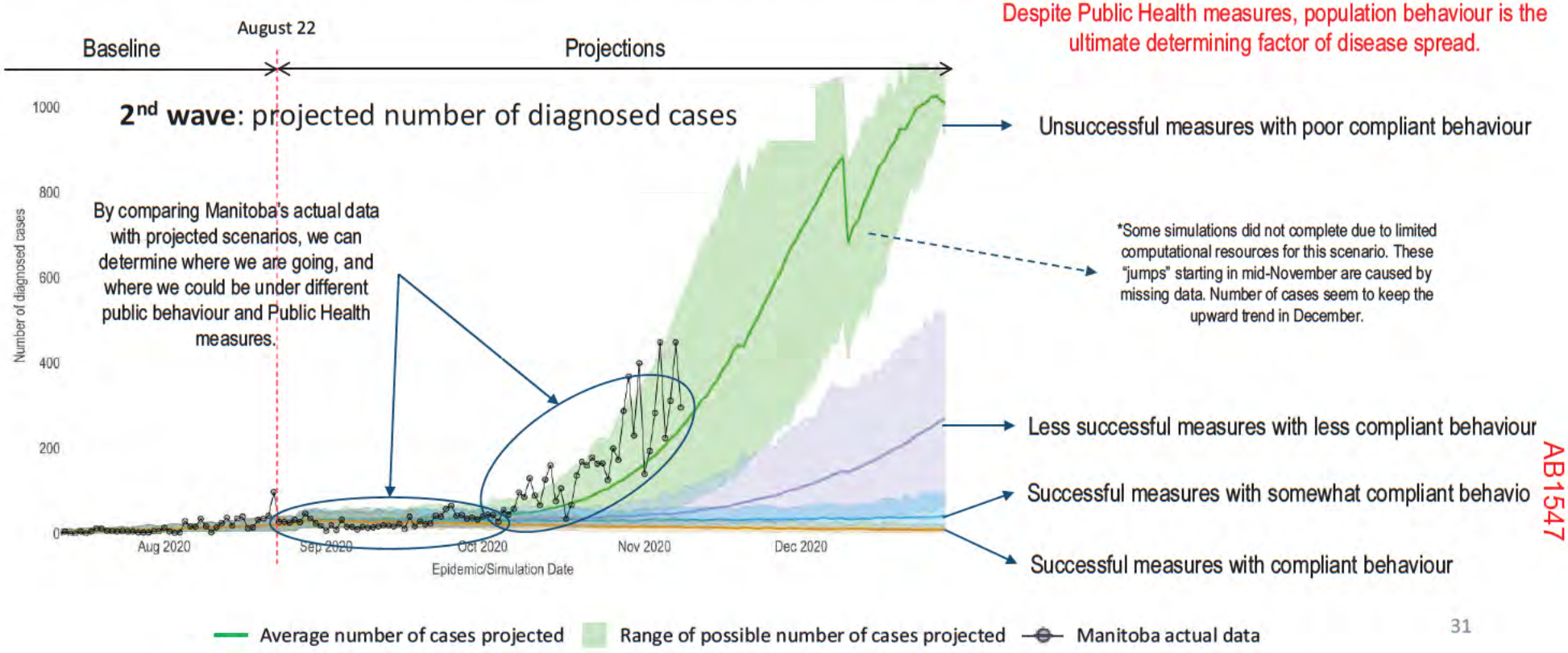
Baseline: The First Wave. Total Number of Infectious Cases (diagnosed or not)



This specific simulation includes all cases in Manitoba, **diagnosed or not**.

Manitoba data only includes diagnosed cases. Even if Manitoba data is showing zero cases, there may be cases circulating in the population that we are not aware of. This happens because there are asymptomatic cases or cases with mild symptoms that have not been tested.

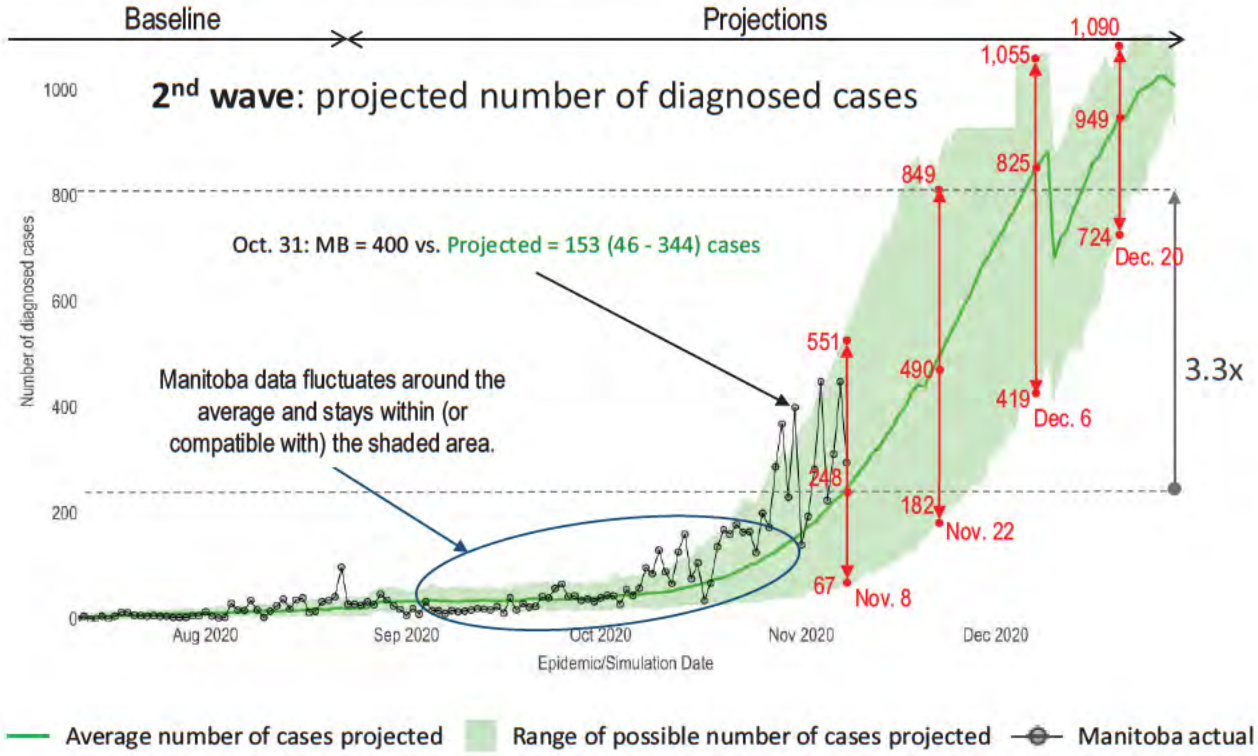
Projected Number of Diagnosed Cases in Different Scenarios (daily number of new cases)



AB1547

Projected Number of Diagnosed Cases (daily number of new cases)

Information from July 12 to December 30, 2020. Manitoba data extracted: 2020-11-09.



Manitoba is following the the **worst-case scenario simulated** in terms of number of cases.

Simulations reflect total number of cases **diagnosed** in Manitoba. There is always more cases out there than the ones we diagnose.

Real number of infections (including non-diagnosed ones) is projected to **be 5 to 15 times larger**.

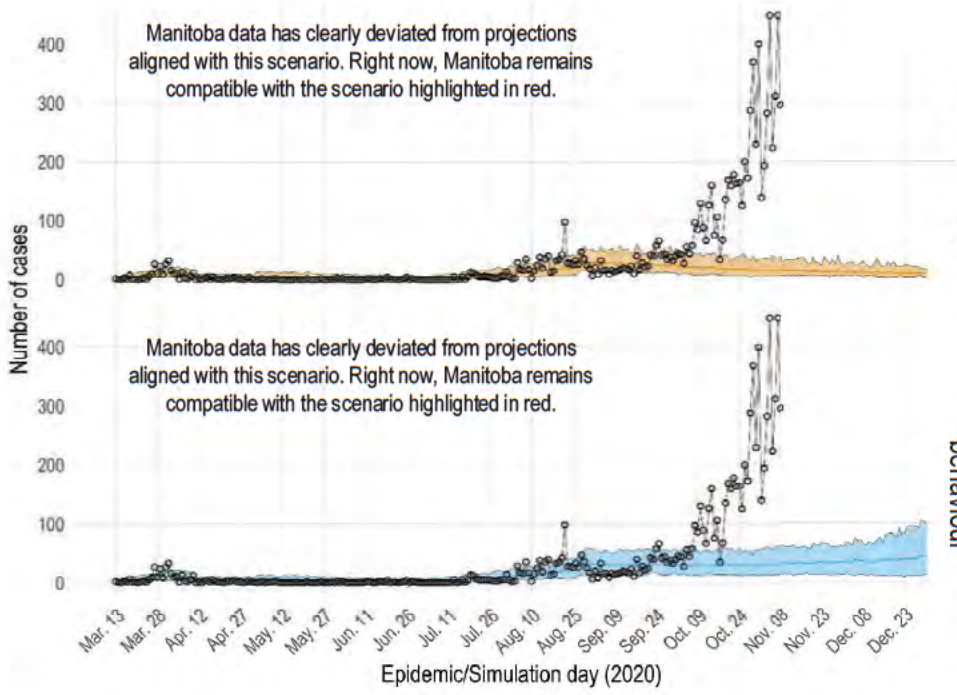
- **Public Health Capacity has been exceeded** (data entry backlogs and longer times to contact clients). We cannot handle 400-1,000 new cases a day.
- **Laboratory capacity may not be enough** to capture a more accurate picture.

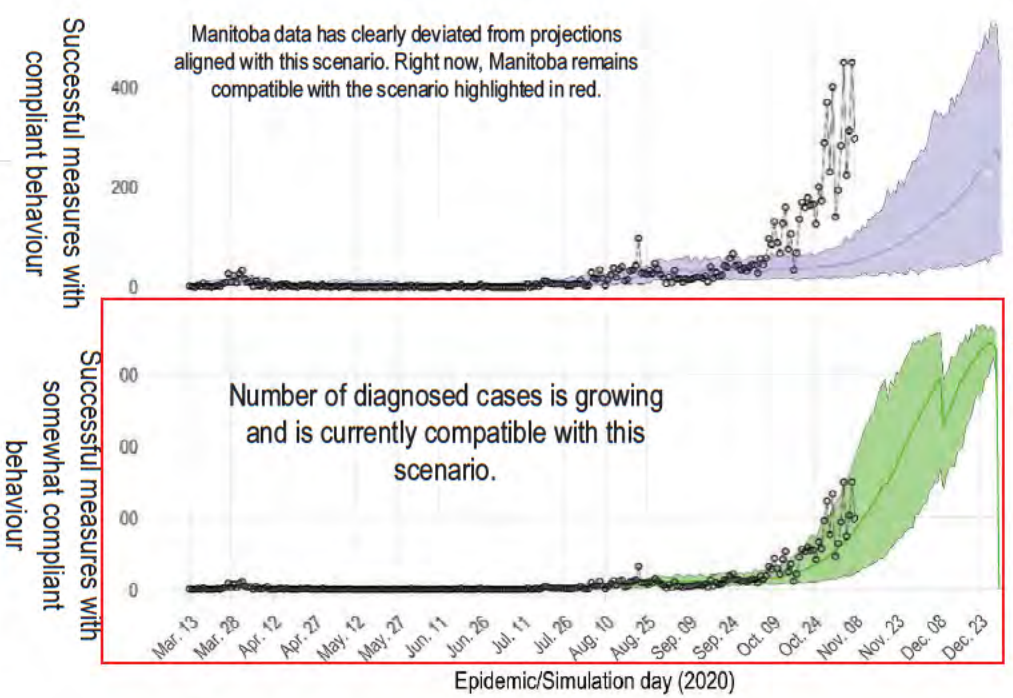
- Manitoba has seen **8,495 diagnosed cases to date** (Nov. 9).
- By Dec. 2, 2020 (**23 days from now**) the total number o diagnosed cases is expected to have **doubled**:

- **Projected - Dec. 2: 16,971 (7,956 – 28,569)** diagnosed cases.

AB1548

Projected Number of Diagnosed Cases at Different Levels of Public Health Measures and Public Behaviour (all scenarios)





Average number of cases projected Range of possible number of cases projected Manitoba actual data

COVID-19 NOVEL CORONAVIRUS

Manitoba

SYSTEM CAPACITY

AB1550

Manitoba Alignment With Projected Scenarios

- In terms of the number of cases and laboratory testing positivity rates, **Manitoba is aligned with the worst-case scenario simulated**, i.e. the one described as *Unsuccessful measures with poor compliant behaviour*.
- Although core public health measures (physical distancing and self-isolation when sick) haven't changed over time, **public behaviour has been driving the number of cases up**.
- In regards to interpreting projected health care capacity scenarios, we will not focus on the labels assigned to each scenario and that provide interpretation in terms of successful or unsuccessful public health measures or behavioural compliance.
- **Health care utilization relates to biological factors** such as the age and health profile of the population at a given time. Although volumes are driven by public behaviour and public health measures, these are not necessarily the main predictors for health care volumes.
- **Age and health profile can change over time**, which will make Manitoba data fit different curves (scenarios). For this reason, we will use the projections that best describe Manitoba data to highlight trends.

COVID-19 NOVEL CORONAVIRUS

Manitoba

Currently Available Hospital Capacity

1,956

Acute Hospital Beds

Current Vacancy

28%

AB1552

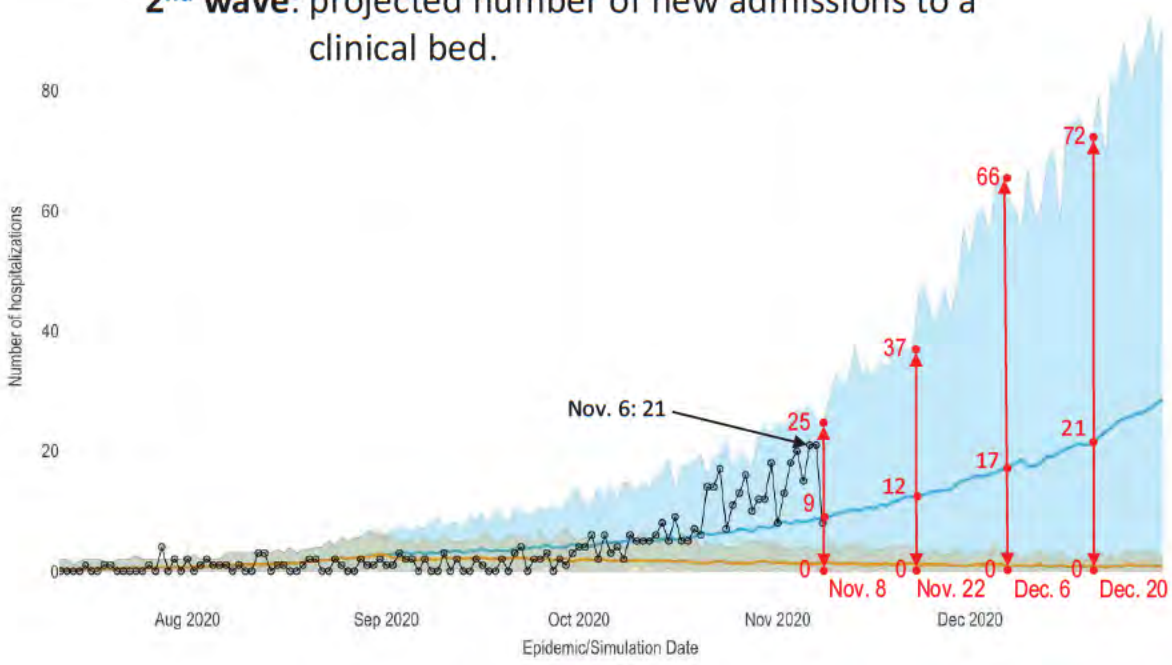
COVID-19 NOVEL CORONAVIRUS

Manitoba

Confidential –
Not for distribution

Information from July 12 to December 30, 2020. Manitoba data extracted: 2020-11-09.

2nd wave: projected number of new admissions to a clinical bed.



Average number of hospitalizations projected Range of possible number of hospitalizations projected Manitoba actual data

In the beginning of the 2nd wave, most cases were comprised of a younger and healthier population. That shift in population profile, when compared to the 1st wave, resulted in fewer hospitalizations.

With COVID-19 reaching Personal Care Homes and affecting the most vulnerable populations, we have been observing an increasing demand on the health system.

From this graph, if Manitoba data continues to follow this trend, we will be admitting to a clinical bed around:

- 9 (0 - 25) new patients on a single day by Nov. 8.
- 12 (0 - 37) new patients on a single day by Nov. 22.
- 17 (0 - 66) new patients on a single day by Dec. 6.
- 21(0 - 72) new patients on a single day by Dec. 20.

AB1553

COVID-19 NOVEL CORONAVIRUS

Manitoba

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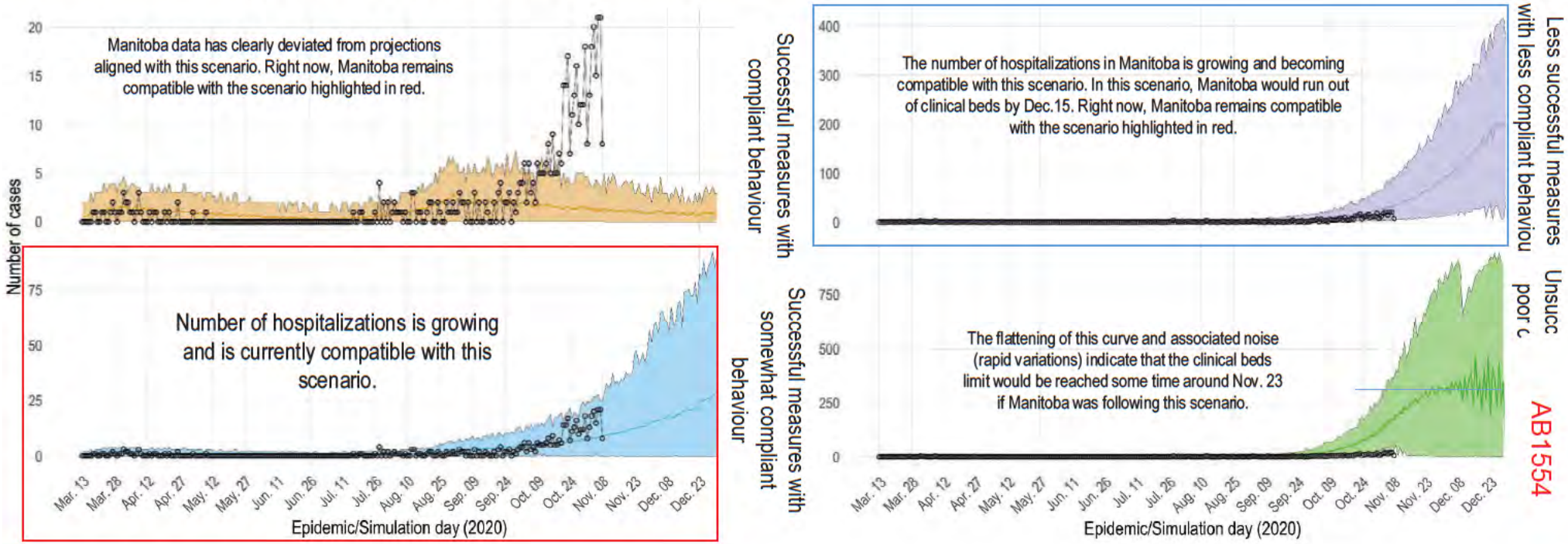
Not for distribution

Information from March 13 to December 31, 2020. Manitoba data extracted: 2020-11-09.



AB1554

COVID-19 NOVEL CORONAVIRUS

Manitoba

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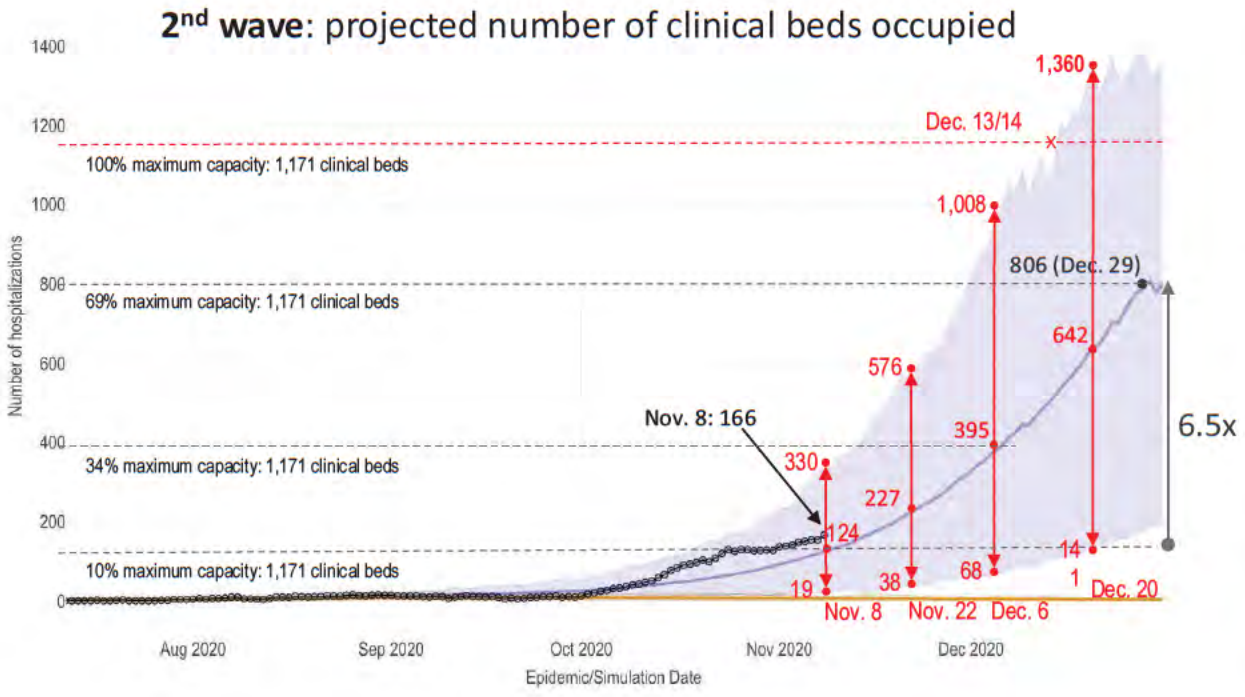
Information from July 12 to December 30, 2020. Manitoba data extracted: 2020-11-09.



The model considers **1,171 clinical beds as the maximum** number of clinical beds that can be made available for **COVID-19 patients**. It is important to note that most of these beds (~72%) are already occupied by COVID-19 and non-COVID-19 cases.

- COVID-19 cases are currently occupying around 14% of the number of clinical beds available to COVID-19 patients.
- **COVID-19 patients may require 100% of clinical beds capacity by Dec. 13/14**

The length of stay in a clinical bed vary with age and health profile of the patient, and other biological factors.

- If age and health profiles change, maximum capacity can be reached even sooner.

A patient my require a clinical bed for either a few days or several weeks, and then recover. Some patients may require clinical bed for a few days and then require ICU care.

When maximum capacity is reached, the model (and medical experts) assumes that patients have 90% probability of dying.

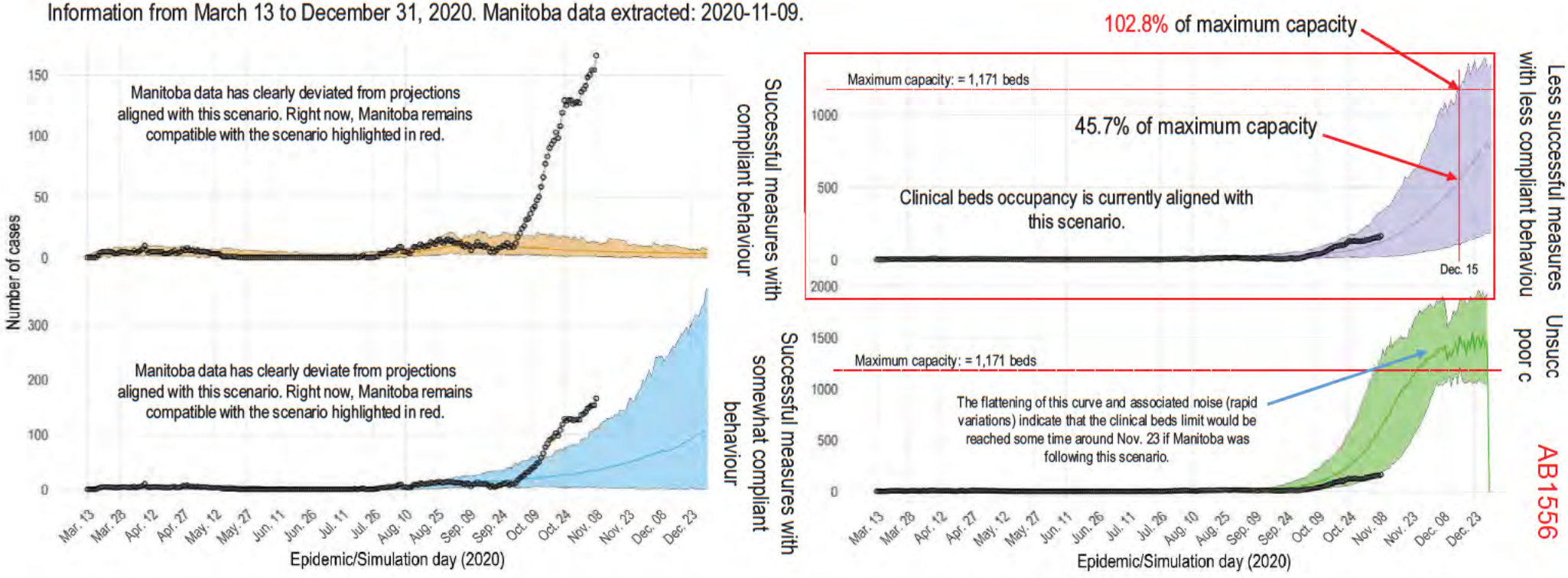
AB1555

COVID-19 NOVEL CORONAVIRUS

Manitoba

Confidential – Not for distribution

Information from March 13 to December 31, 2020. Manitoba data extracted: 2020-11-09.



AB1556

COVID-19 NOVEL CORONAVIRUS

Manitoba

Confidential –
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89 (67)*

Adult Intensive Care Hospital Beds

Current Vacancy

9% (45%)*

AB1557

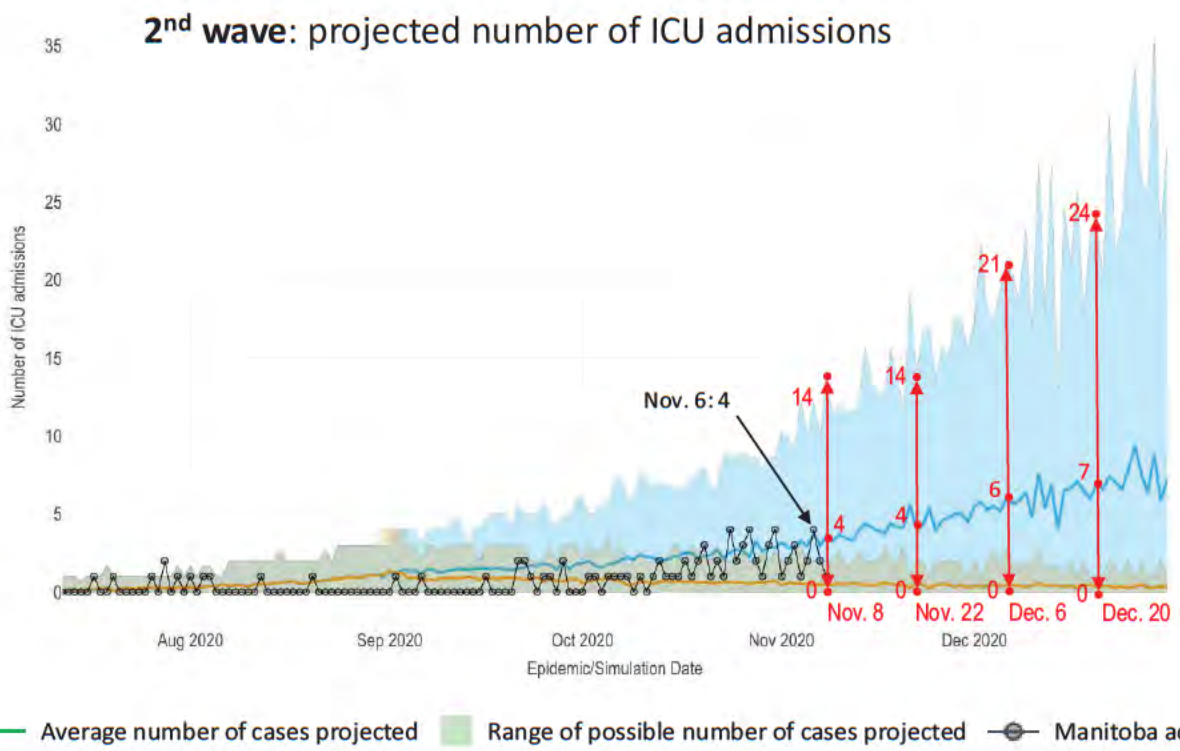
* (Numbers in parenthesis reflect capacity related to COVID-19.)

COVID-19 NOVEL CORONAVIRUS

Manitoba

Confidential –
Not for distribution

Information from March 13 to December 31, 2020. Manitoba data extracted: 2020-11-09.



Manitoba's trend for ICU admissions is currently not very clear. It seems to be best aligned with scenario described by blue curve

With a growing number of cases and hospitalizations, it is expected that the number of ICU admissions will grow and start following the blue curve more prominently, instead of decreasing as projected by the scenario represented by the orange curve.

From this graph, if Manitoba data is following the blue curve, it is expected that we will see around:

- 4 (0 - 14) new ICU admissions on a single day by Nov. 8.
- 4 (0 - 14) new ICU admissions on a single day by Nov. 22.
- 6 (0 - 21) new ICU admissions on a single day by Dec. 6.
- 7 (0 - 24) new ICU admissions on a single day by Dec. 20.

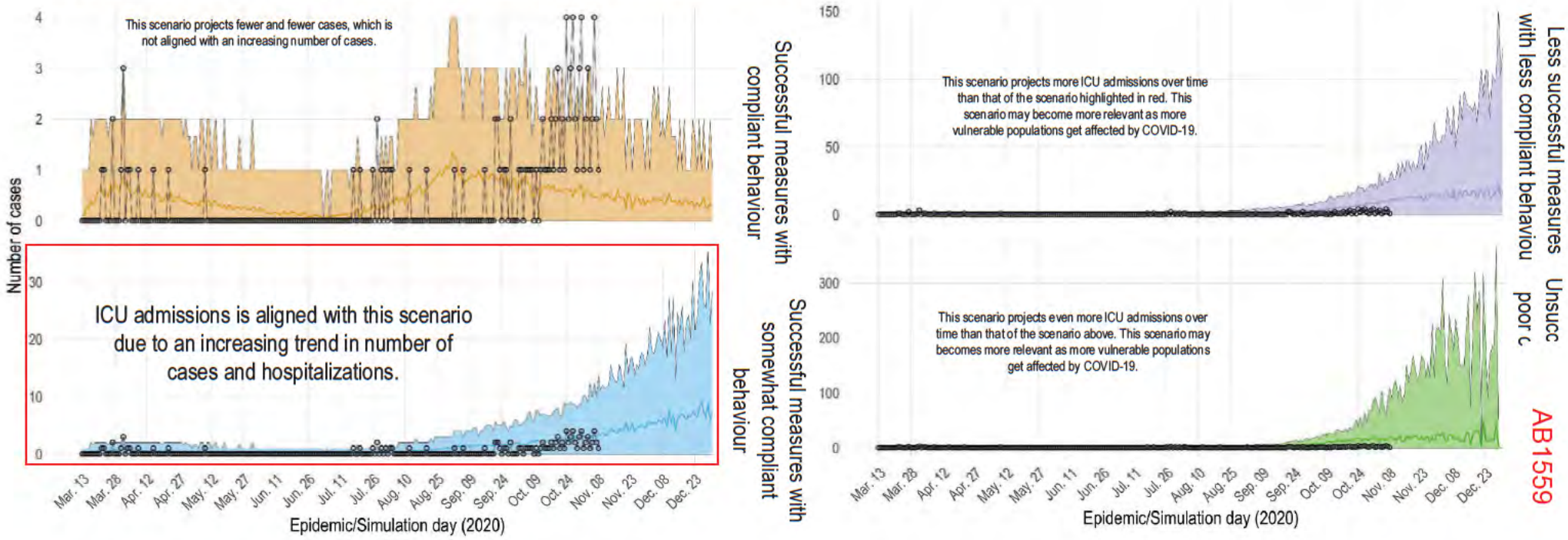
AB1558

COVID-19 NOVEL CORONAVIRUS

Manitoba

Confidential –
Not for distribution

Information from March 13 to December 31, 2020. Manitoba data extracted: 2020-11-09.



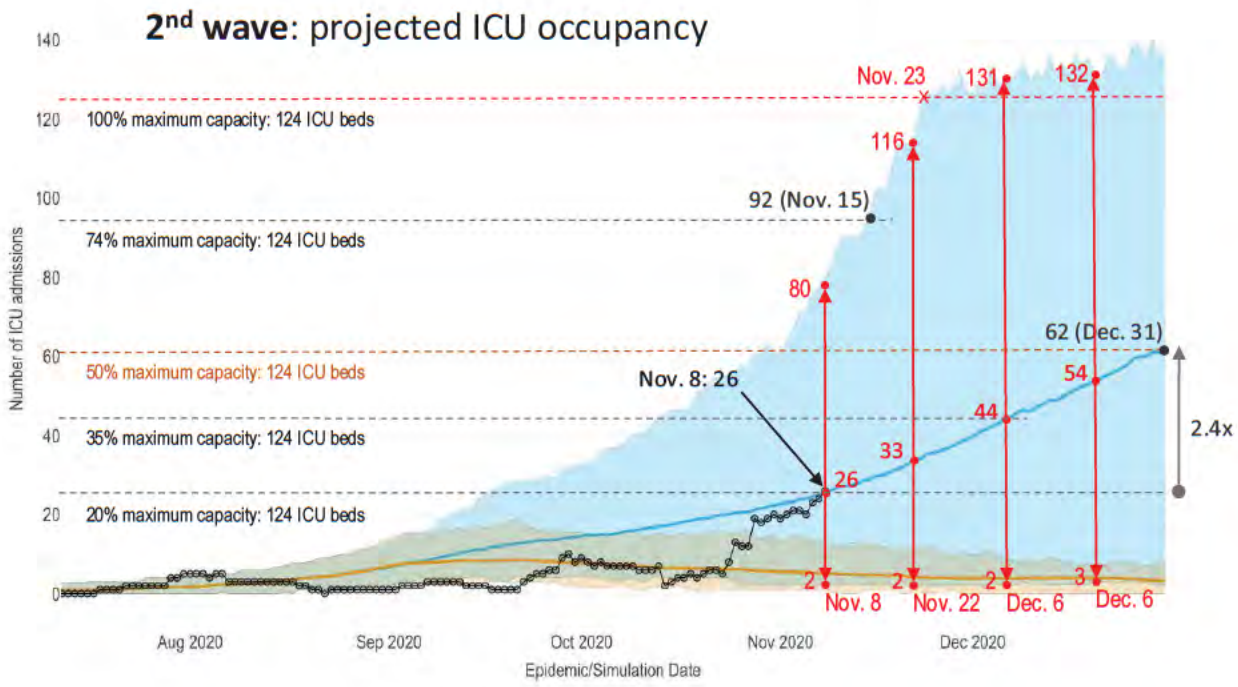
AB1559

COVID-19 NOVEL CORONAVIRUS

Manitoba

Confidential –
Not for distribution

Information from March 13 to December 31, 2020. Manitoba data extracted: 2020-11-09.



The model considers **124 ICU beds as the maximum** number of ICU beds that can be made available for **COVID-19 patients**. It is important to note that most of these beds are already occupied by non-COVID-19 cases. Currently, there are only 8 ICU beds available in the Province.

- COVID-19 cases are currently occupying around **21%** of the maximum number of ICU beds that can be made available for COVID-19 patients.
- **It is possible that COVID-19 patients may require 100% of ICU beds capacity by Nov. 23.**

The length of stay in an ICU bed vary with age and health profile of the patient, and other biological factors.

- If age and health profiles changes, maximum capacity can be reached even sooner.

A patient my require an ICU bed for either a few days or several weeks, an then recover. Around 50% of patients in ICU will die within few days.

- ICU capacity is reached around one month prior clinical beds capac is reached.

When maximum capacity is reached, the model (and medical experts) assumes that patients have 100% probability of dying.

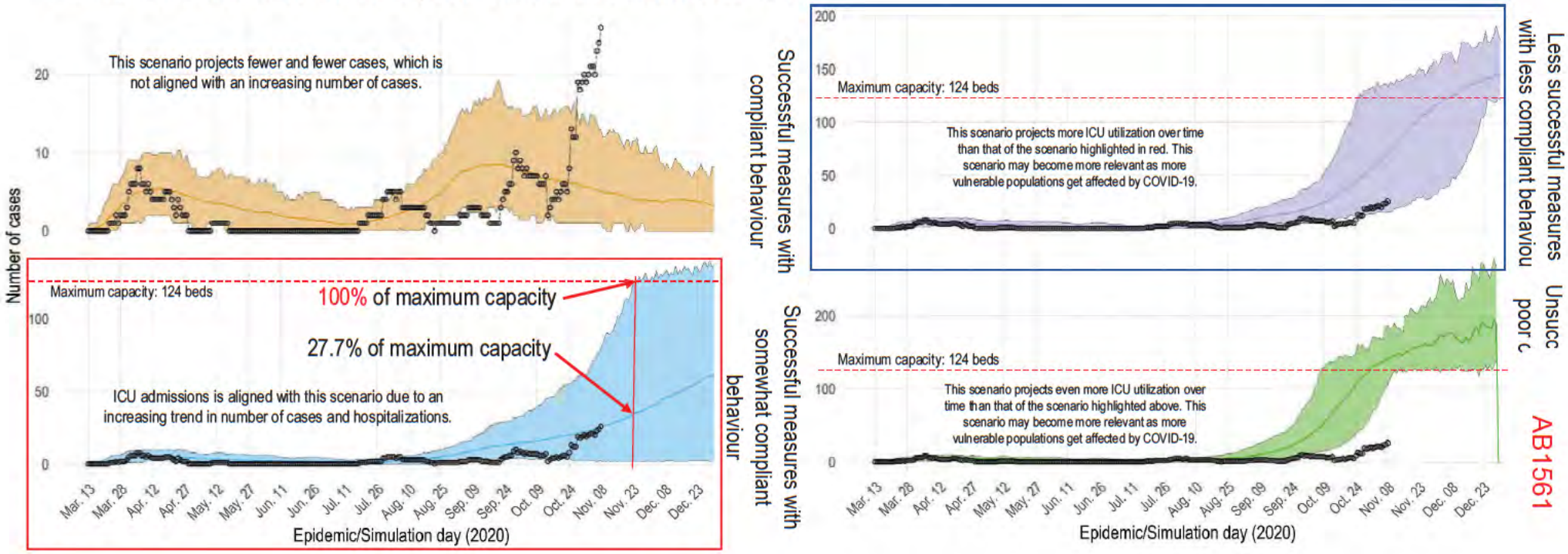
AB1560

COVID-19 NOVEL CORONAVIRUS

Manitoba

Confidential – Not for distribution

Information from March 13 to December 31, 2020. Manitoba data extracted: 2020-11-09.



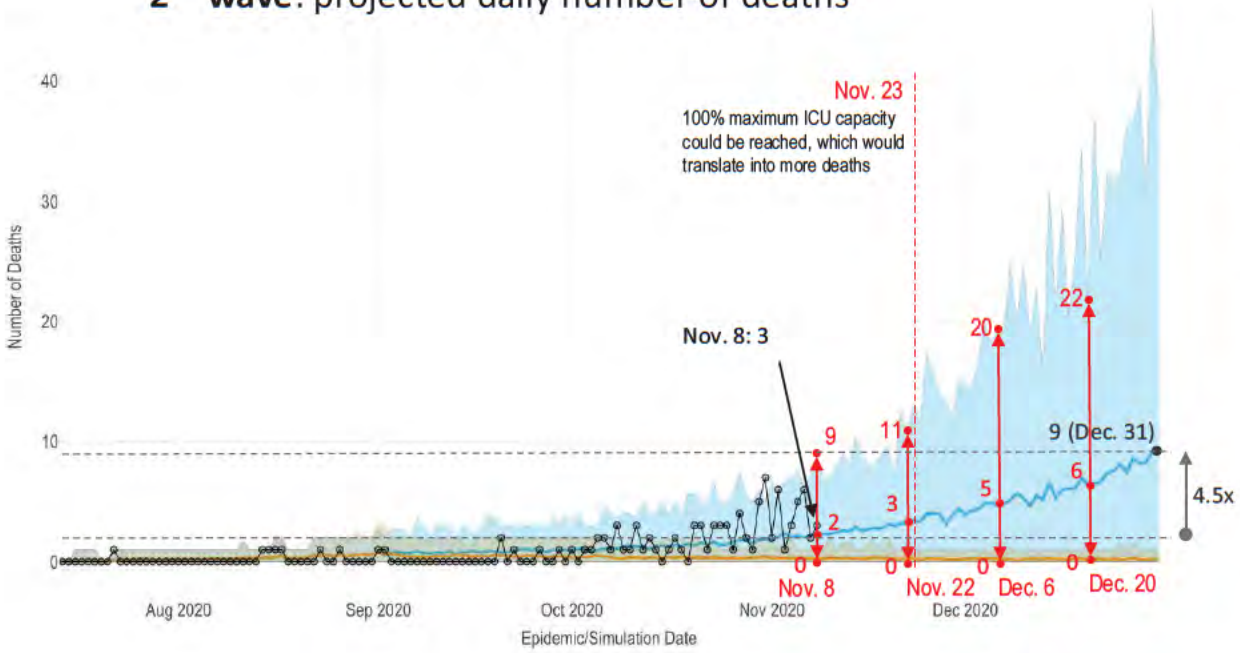
COVID-19 NOVEL CORONAVIRUS

Manitoba

Confidential –
Not for distribution

Information from March 13 to December 31, 2020. Manitoba data extracted: 2020-11-09.

2nd wave: projected daily number of deaths



Average number of cases projected Range of possible number of cases projected Manitoba actual data

When the ICU capacity has been reached, any excess patients requiring ICU will die for the lack of adequate care. At this point, the number of deaths will increase rapidly.

- Current total number of deaths: 109 (as of Nov. 9).
- By Dec. 10, 2020 (31 days from now) the total number of deaths is expected to have **doubled**:

- Projected: Dec. 10, 219 (46 – 597) deaths.

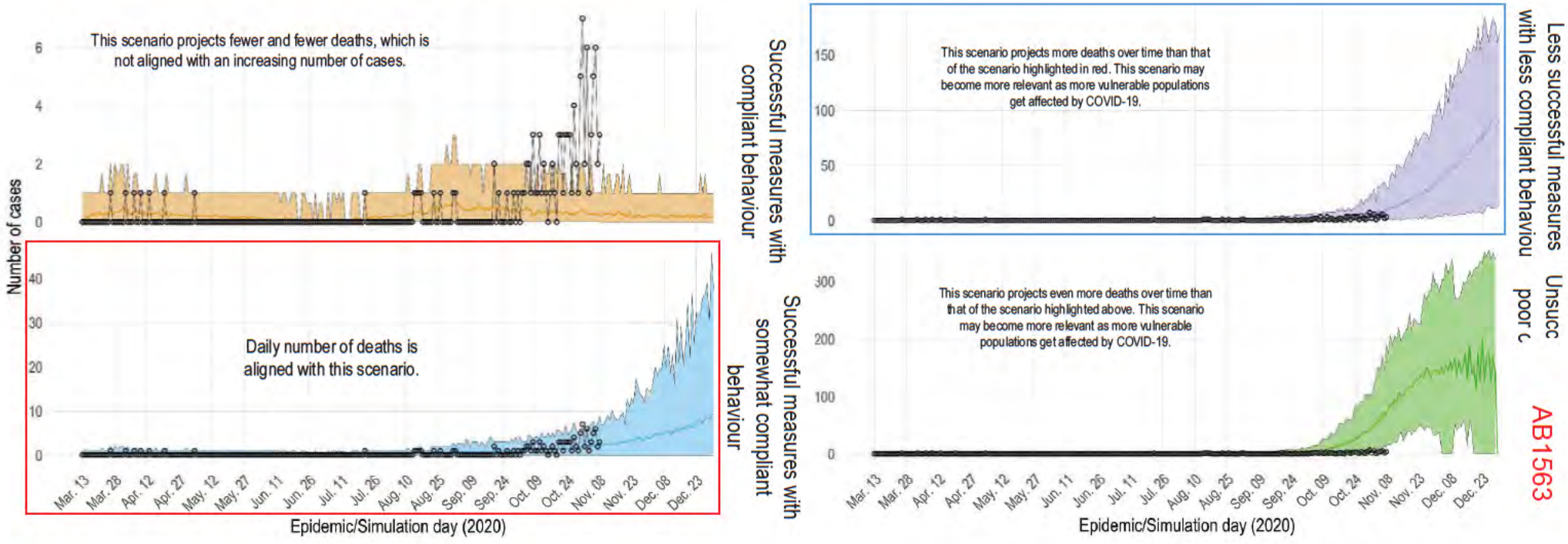
AB1562

COVID-19 NOVEL CORONAVIRUS

Manitoba

Confidential –
Not for distribution

Information from March 13 to December 31, 2020. Manitoba data extracted: 2020-11-09.



Average number of cases projected Range of possible number of cases projected Manitoba actual data

AB1563

If the rise in COVID-19 cases projected by the model continues to follow current trajectories:

- **The large volume of new cases will(?) render Case Identification and Contact Tracing ineffective** as a pandemic control measure. It will be impossible, for example, to follow up on 3500+ cases per week with existing resources (by the week around November 22, it is estimated that there will be 490 new cases of COVID-19 per day.)

- **The health care system may reach its limits in 14 days** as the demand for ICU and Medical beds overwhelm supply.
  - 100% ICU capacity can be reached with only COVID-19 cases as early as November 23.
  - Although it is currently not expected that the number of COVID-19 cases themselves will use the entire ICU capacity (124 beds) by November 23, a realistic scenario places ICU usage by COVID-19 cases at 50% by December 31.
  - **It is important to point out that ICU care is still needed for other health reasons** such as car accidents, violent crimes, other natural causes such as coronary diseases, strokes, and even Influenza.
  - As of Nov. 10, there are only 8 ICU beds available in the province.
  - **Properly staffing ICU units is really challenging** and a limiting factor to how far the system can be streached.

- **A shift in cases age and health profile towards more vulnerable populations has the potential to overwhelm the health care system sooner than the projections describing the current trajectory.**

COVID-19 NOVEL CORONAVIRUS

Manitoba

INTERVENTIONS

AB1565

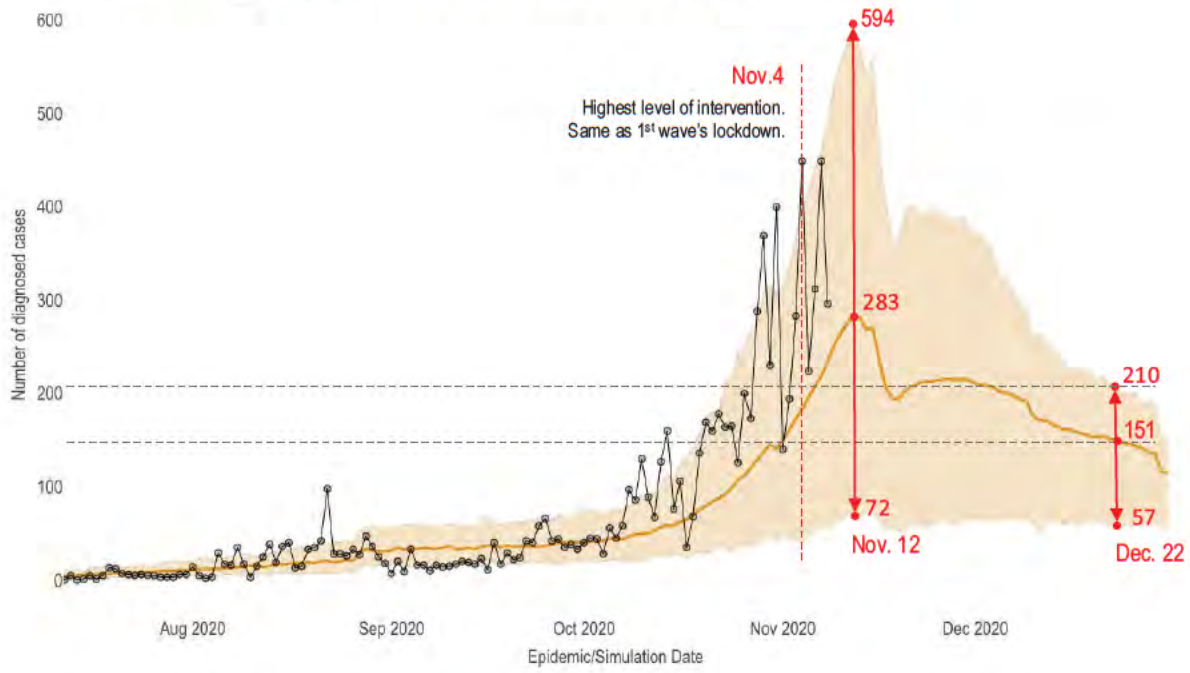
COVID-19 NOVEL CORONAVIRUS

Manitoba

Confidential –
Not for distribution

Information from March 13 to December 31, 2020. Manitoba data extracted: 2020-11-02.

2nd wave: projected daily number diagnosed cases



PRELIMINARY RESULTS

A scenario, same as the lockdown implemented in Manitoba during the 1st wave, has been simulated as a possible measure to change the trajectory of the diagnosed curve.

This measure is implemented starting November 4, and remains in effect until December 31.

If implemented on Nov. 4, we should still see an increase in number of diagnosed cases until Nov. 12 with 283 (72 – 594) cases diagnosed on that day.

It will take until Dec. 22 for the number of cases to be in the range 151 (57 – 210) cases on that day.

AB1566

COVID-19 NOVEL CORONAVIRUS

Manitoba

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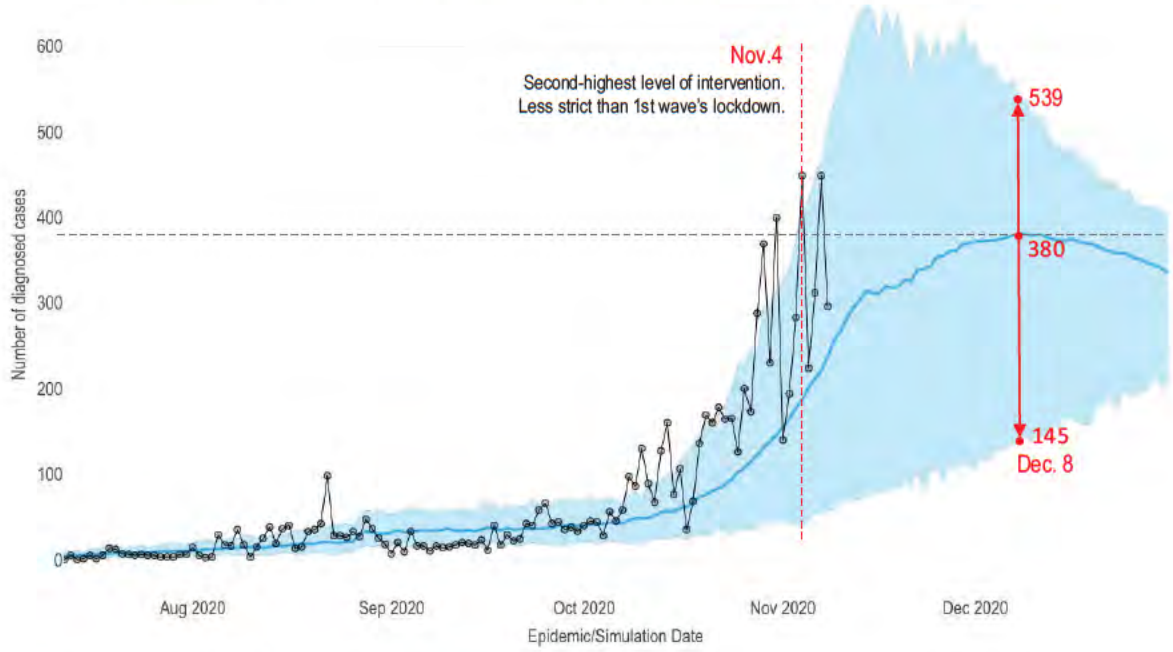
Not for distribution

Information from March 13 to December 31, 2020. Manitoba data extracted: 2020-11-02.

2nd wave: projected daily number diagnosed cases



PRELIMINARY RESULTS

A scenario, a bit less strict than the 1st wave's lockdown implemented in Manitoba, has been simulated as a possible measure to change the trajectory of the diagnosed curve.

This measure is implemented starting November 4, and remains in effect until December 31.

If implemented on Nov. 4, we should still see an increase in number of diagnosed cases until Dec. 8, 380 (145 – 539), but with a less steep growth rate than the current situation.

- The intervention scenarios presented here assumes that:

  - **PCH visitations are not allowed**.
  - **High compliance with physical distancing**.
    - Large gatherings, professional sports events, amateur sports events, indoor congregations (religious and non-religious) are limited or not allowed. May require curfew for proper implementation and compliance. Making sure that house parties are not taking place.
  - **High compliance with self-isolation if showing symptoms**.
    - Requires explaining how people showing symptoms should behave at home. Making sure that sick individuals do not show up for work.
  - **The model assumes importation levels compatible with work-related travel only**.

- **Any set of interventions need to be supported by epidemiological evidence in order to determine what types of restrictions would be effective.**

- Although this scenario mimics the one implemented during the 1st wave's lockdown, it may be possible to achieve these levels with targeted interventions instead of a complete lockdown by **making sure that compliance levels are high**.

COVID-19 NOVEL CORONAVIRUS

Manitoba

AB1569

This is Exhibit " G " referred to
in the Affidavit of Carla Loeppky
Affirmed before me this 4
day of March A.D. 2021

A Barrister-at-Law entitled to practice
in and for the Province of Manitoba

COVID-19
NOVEL CORONAVIRUS
COVID Response Update

Manitoba

Key Messages

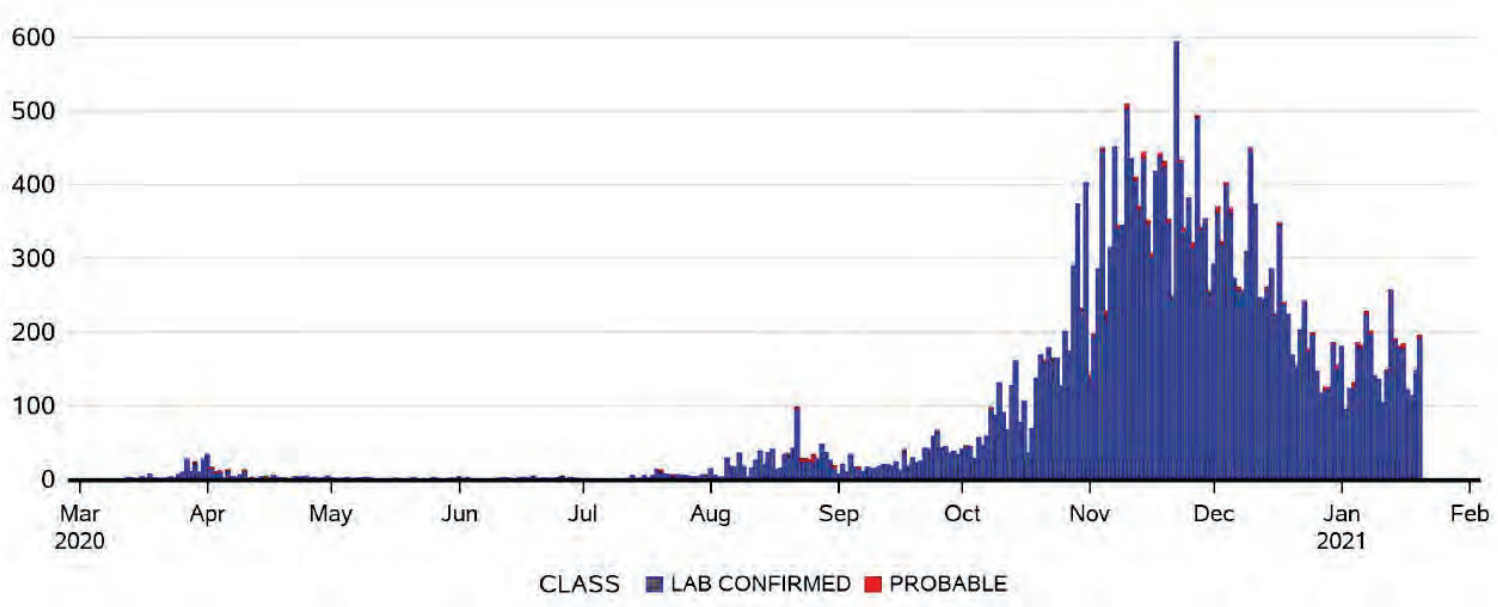
COVID-19 NOVEL CORONAVIRUS

Manitoba

CURRENT STATE

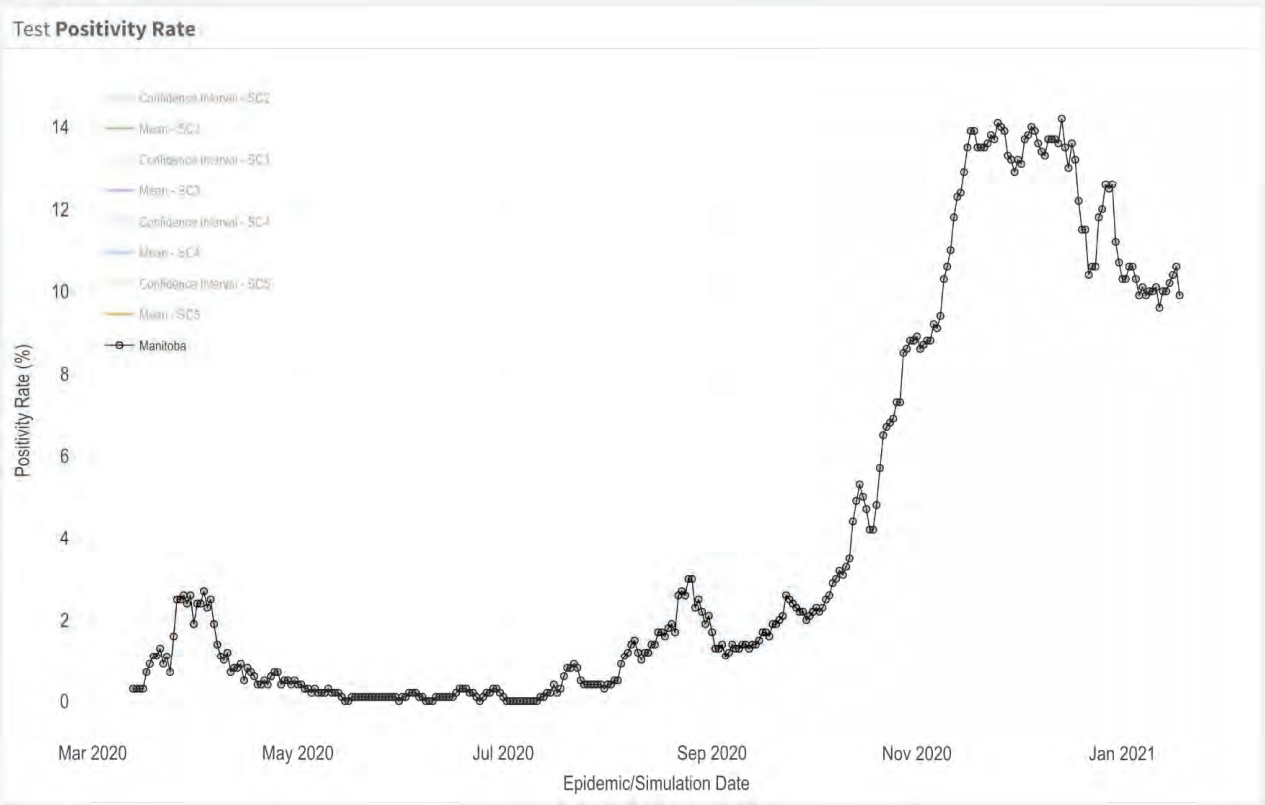
AB1573

Epidemic Curve of COVID-19 in Manitoba



AB1574

The Provincial Positivity Rate Has Decreased by Remains High

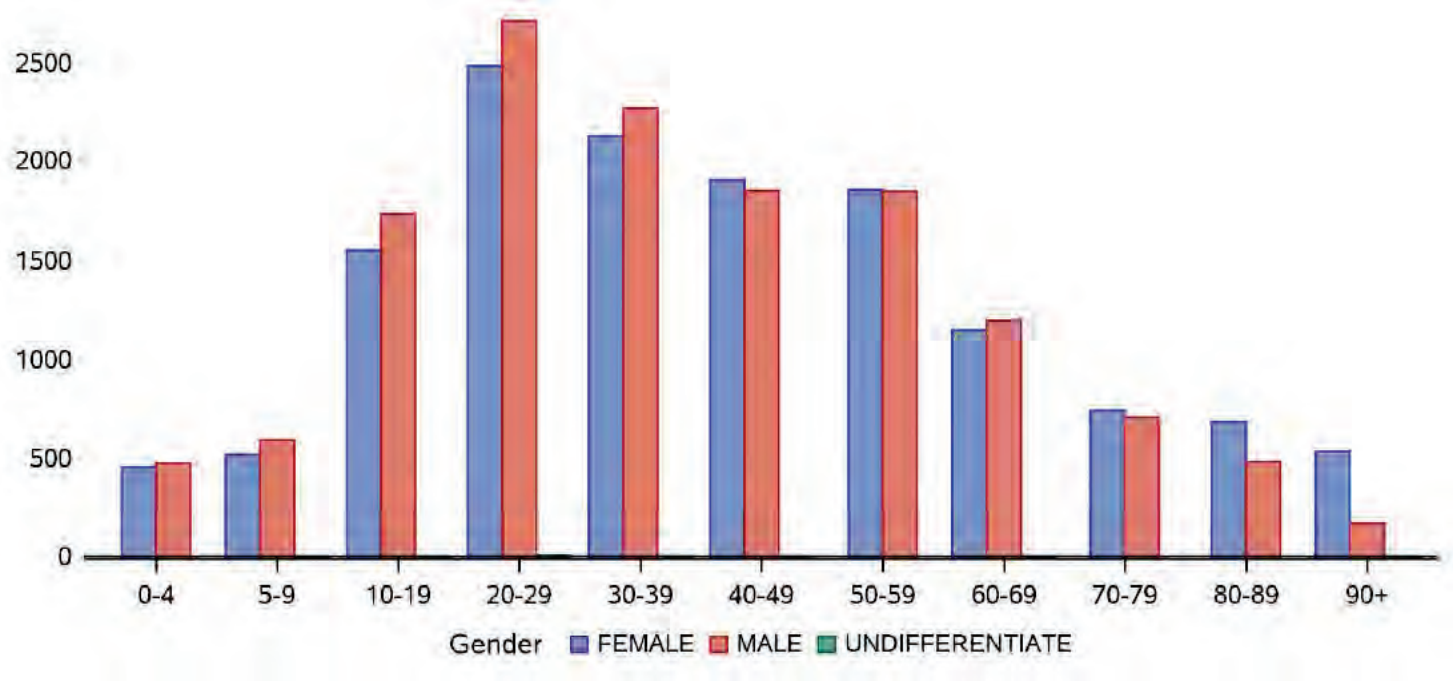


AB1575

Map of Active COVID-19 Cases in Manitoba by RHA

Region	# of Positive Cases	# of Positive FNIHB Cases	# of Active Cases	# of Active FNIHB Cases	# of New Cases	# of New FNIHB Cases
Prairie Mountain Health	1845	141	195	79	17	4
Interlake-Eastern Health	2056	873	334	296	9	8
Northern Health	3183	1806	1559	1316	105	72
Southern Health - Sante Sud	4563	159	205	129	13	0
Winnipeg Health	16442	210	912	114	54	2

COVID-19 Case Counts by Sex and Age-Group



COVID-19 NOVEL CORONAVIRUS

Manitoba

COVID-19 MODELLING

AB1578

Made-in-Manitoba Agent-Based Modelling Simulations

Made-in-Manitoba Agent-Based Modelling Simulations (cont.)

Simulation Scenarios and Projections

Scenario 1 - Extreme
Minimal restrictions and poor compliance lead to a rapid rise in cases.

Scenario 2 - Severe
Some restrictions and poor compliance lead to increased cases.

Scenario 3 - Moderate
More restrictions and good compliance lead to manageable case numbers.

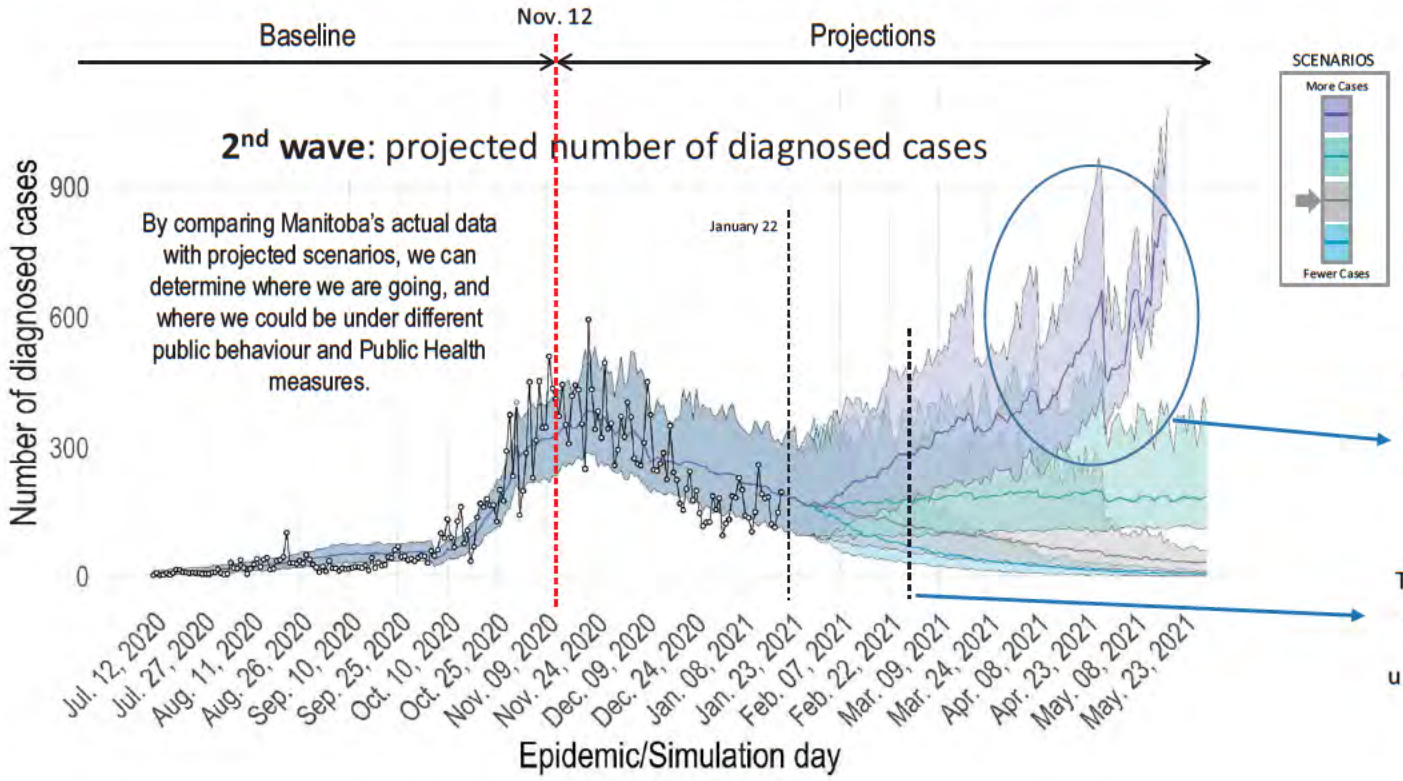
Scenario 4 - Controlled
Full restrictions and good compliance (lockdowns) lead to reduced cases.

Notes on Modelling

Health Care Capacity Thresholds

Health Care Capacity Thresholds (cont.)

Projected Number of Diagnosed Cases in Different Scenarios (daily number of new cases)



Simulations presented here project possible epidemic courses after January 22, 2021 at different intervention levels.

Simulations for scenarios Extreme and Severe are still running. For this reason, projections are still noisy and subject to change towards the end of the period simulated.

The effects of changing public health orders by January 22, 2021 will only be discernable by Late February/early March. Until then, it is unlikely that we will be able to tell for sure what trajectory Manitoba is following.

Manitoba: actual data **Projected:** average number of cases Range of possible number of cases

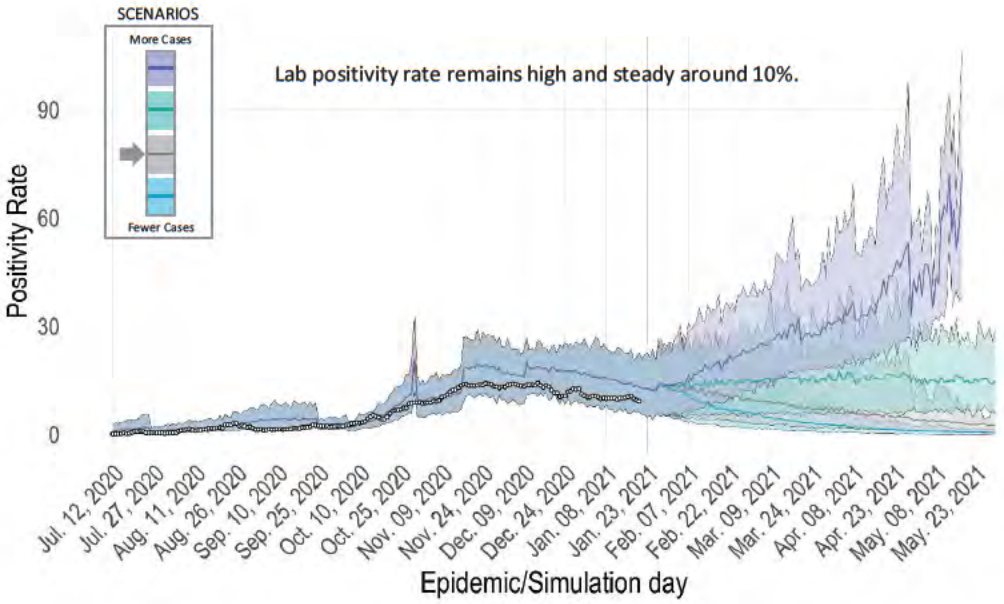
AB1585

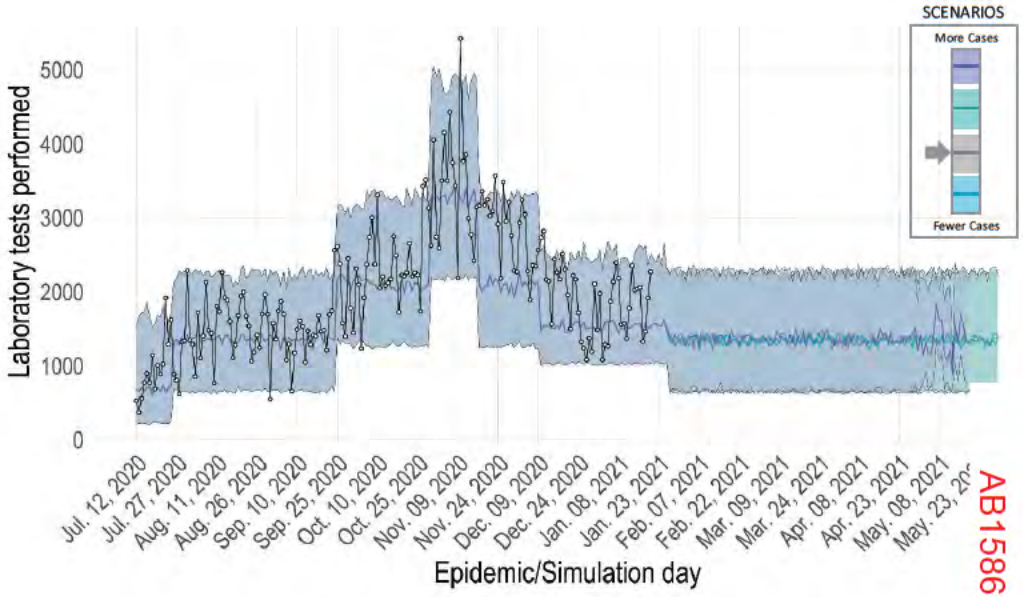
COVID-19 NOVEL CORONAVIRUS

Manitoba

Positivity Rate vs. Daily number of lab tests performed

Information from July 12, 2020 to May 30, 2021. Manitoba data extracted: 2021-01-21.





AB1586

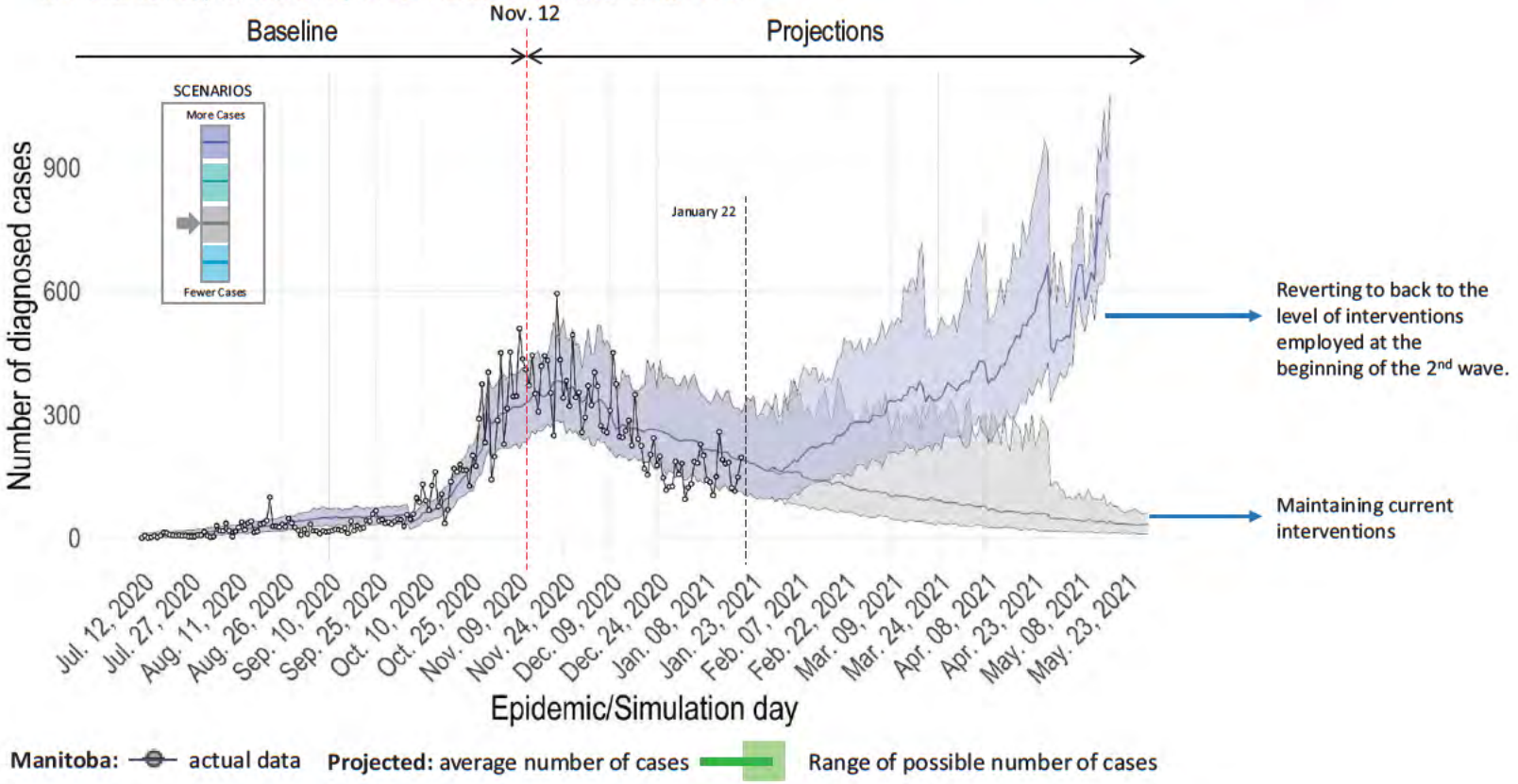
Manitoba: actual data **Projected:** average number of cases Range of possible number of cases

COVID-19 NOVEL CORONAVIRUS

Manitoba

Projected Number of Diagnosed Cases (daily number of new cases)

Information from July 12, 2020 to May 30, 2021. Manitoba data extracted: 2021-01-21.



Manitoba: actual data **Projected:** average number of cases Range of possible number of cases

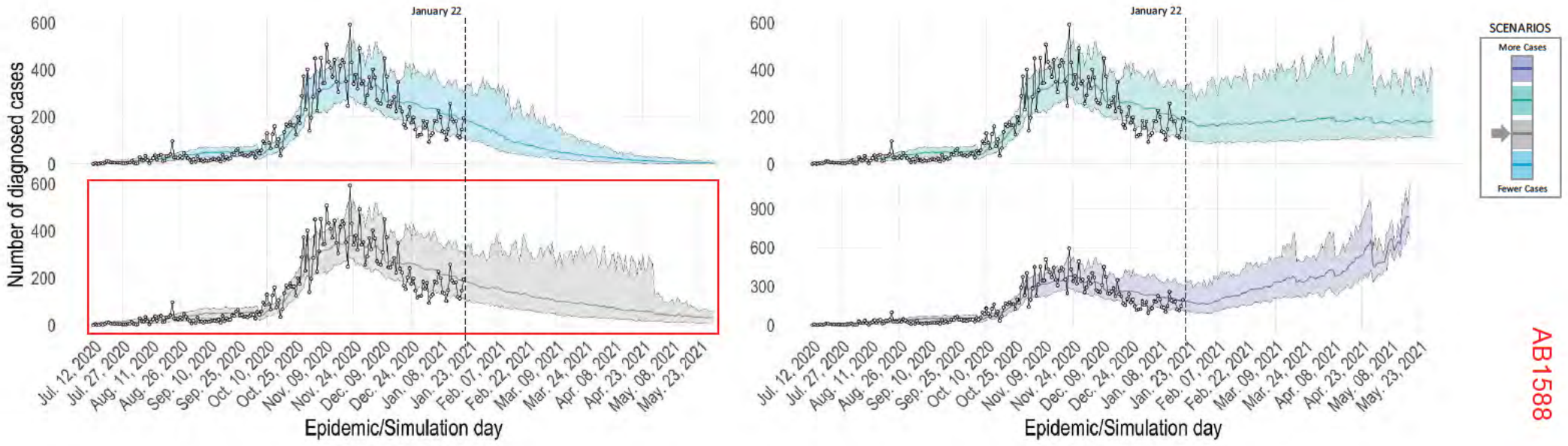
AB1587

COVID-19 NOVEL CORONAVIRUS

Manitoba

Projected Number of Diagnosed Cases at Different Levels of Public Health Measures and Public Behaviour (all scenarios)

Information from July 12, 2020 to May 30, 2021. Manitoba data extracted: 2021-01-21.



Manitoba: actual data **Projected:** average number of cases Range of possible number of cases

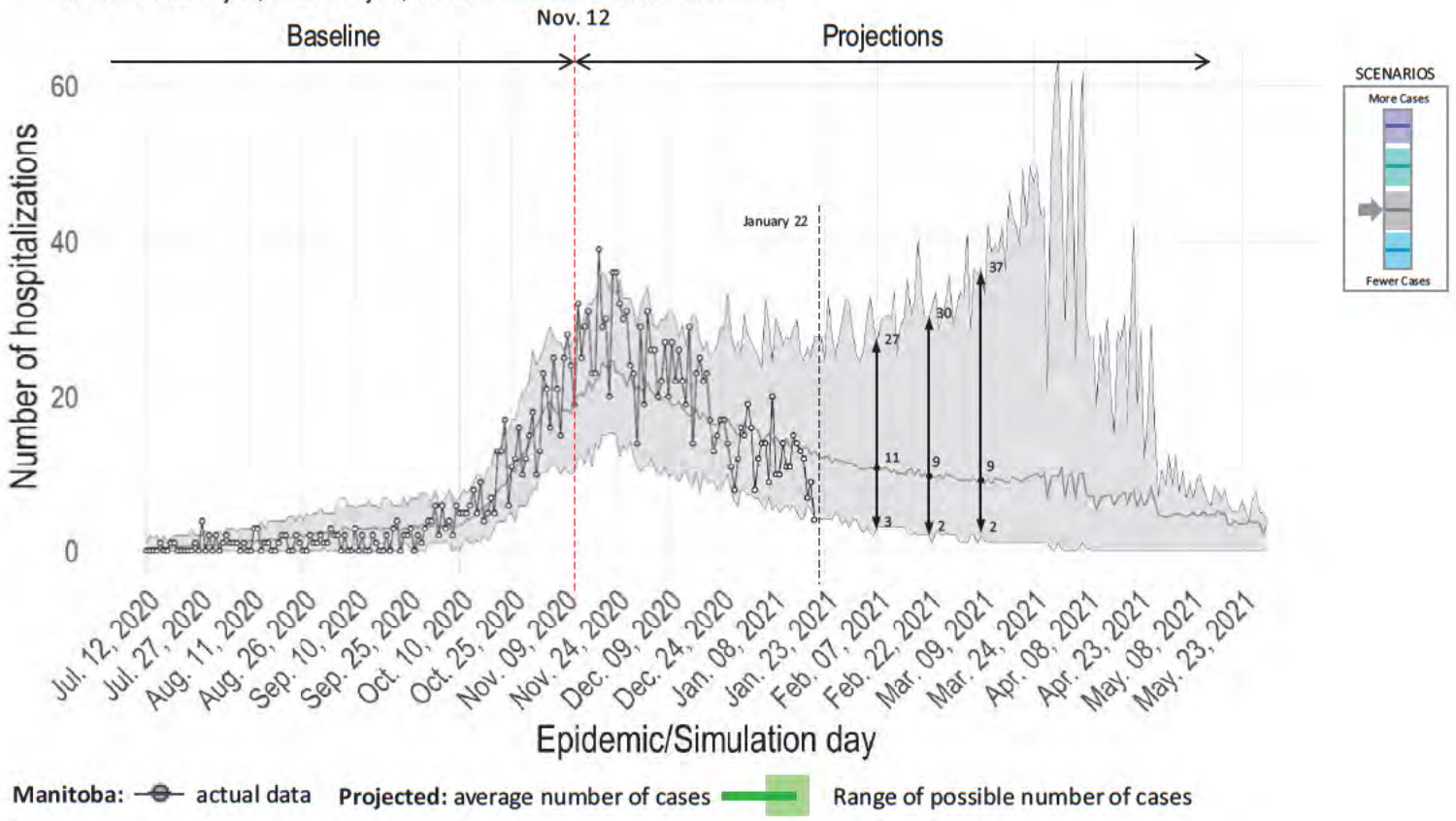
AB1588

COVID-19 NOVEL CORONAVIRUS

Manitoba

Confidential –
Not for distribution

Information from July 12, 2020 to May 30, 2021. Manitoba data extracted: 2021-01-21.



Manitoba: actual data **Projected:** average number of cases Range of possible number of cases

AB1589

COVID-19 NOVEL CORONAVIRUS

Manitoba

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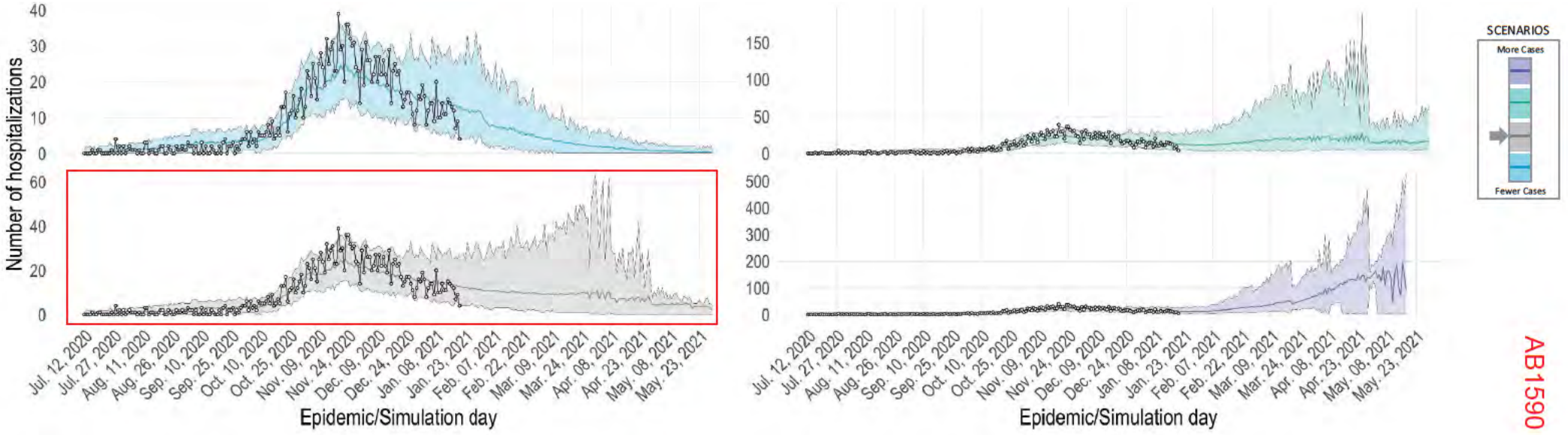
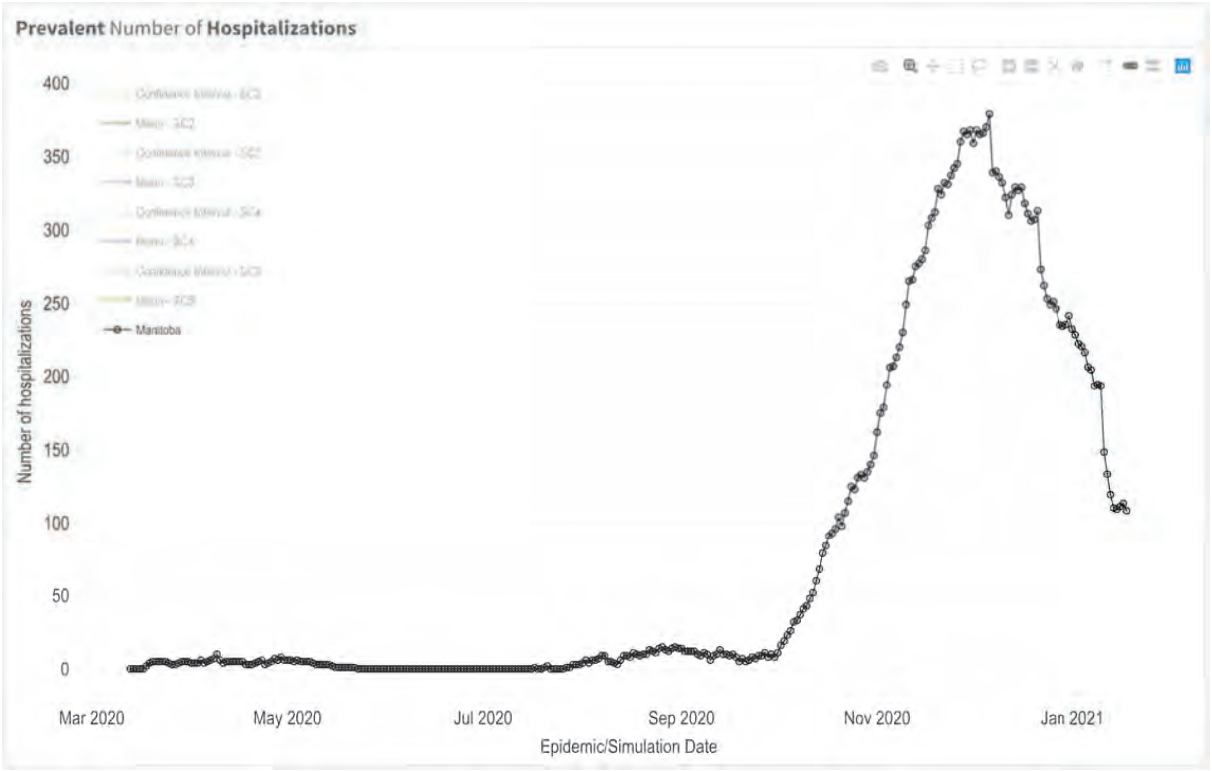
Information from July 12, 2020 to May 30, 2021. Manitoba data extracted: 2021-01-21.



AB1590

Manitoba: actual data **Projected:** average number of cases Range of possible number of cases

Prevalent Number of Hospitalizations (clinical bed utilization)



Simulations regarding prevalent number of hospitalizations are being revised and recalibrated.

COVID-19 NOVEL CORONAVIRUS

Manitoba

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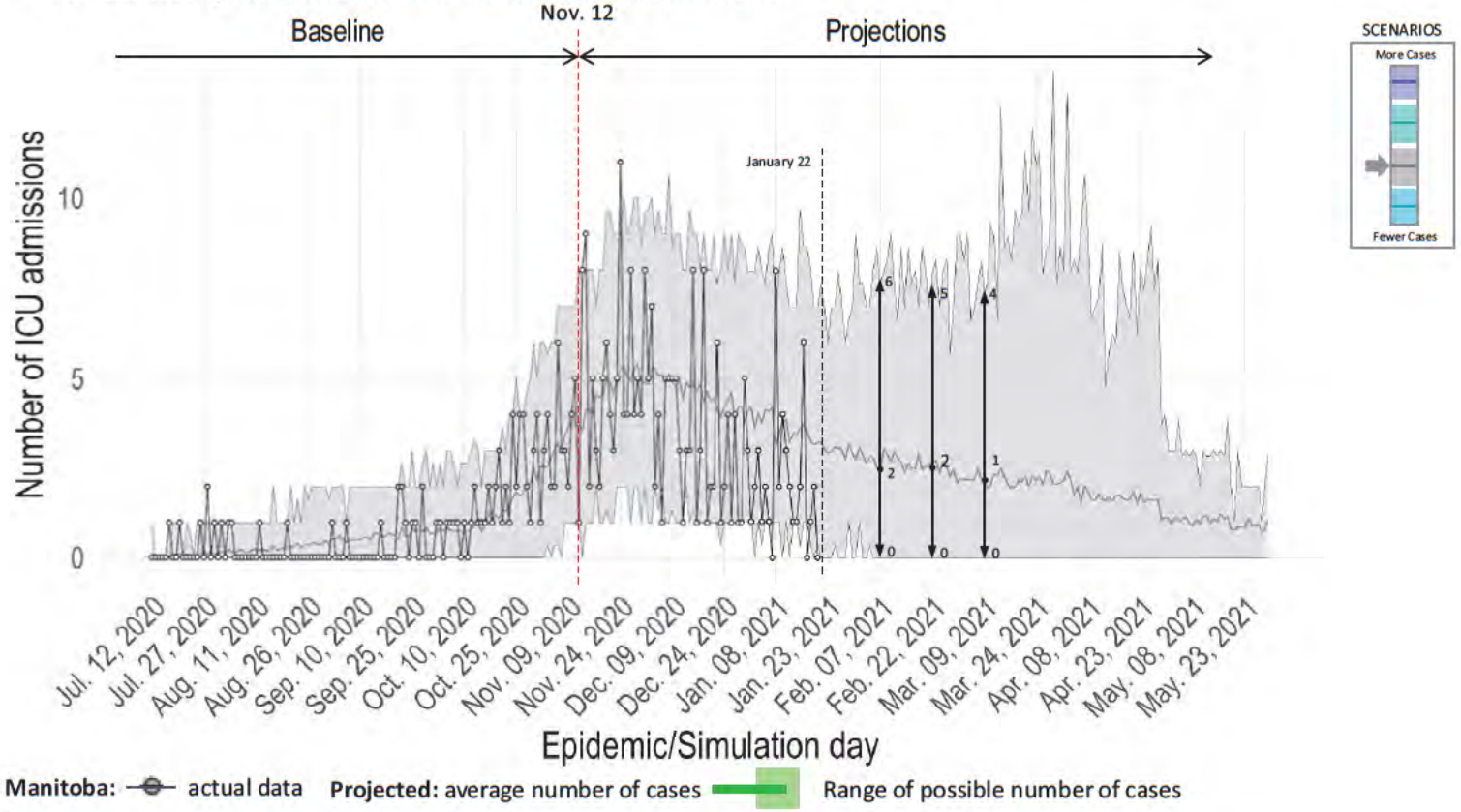
Information from July 12, 2020 to May 30, 2021. Manitoba data extracted: 2021-01-21.



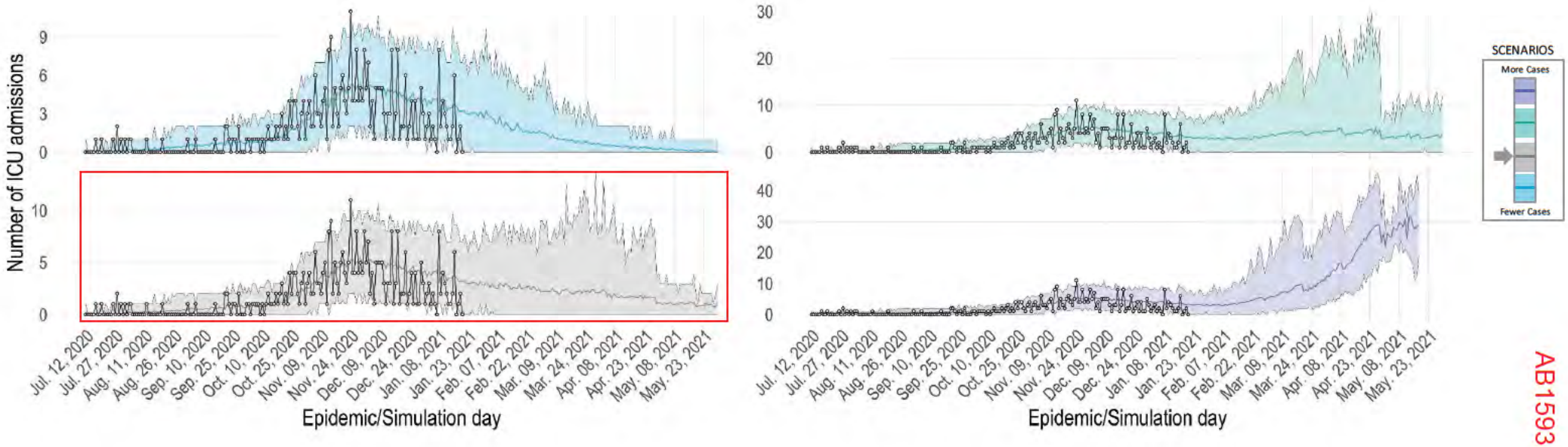
Manitoba: actual data **Projected:** average number of cases Range of possible number of cases

AB1592

COVID-19 NOVEL CORONAVIRUS

Manitoba

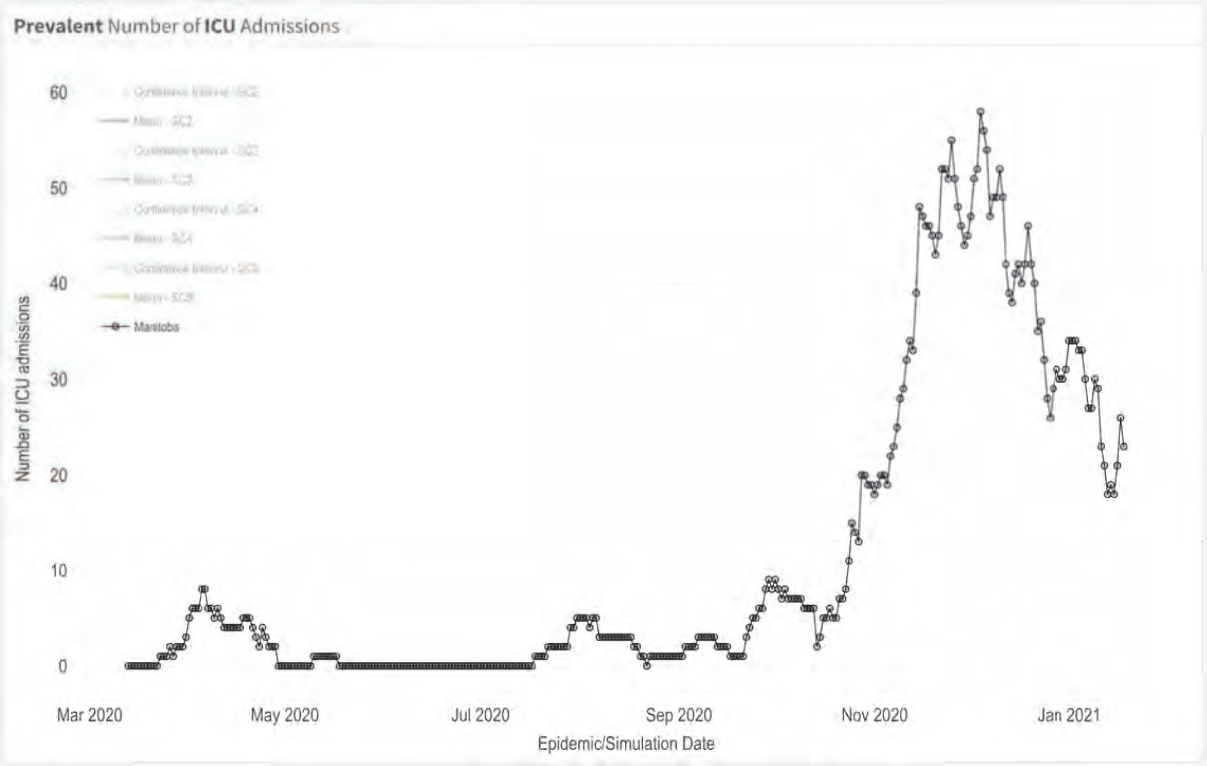
Confidential –
Not for distribution



AB1593

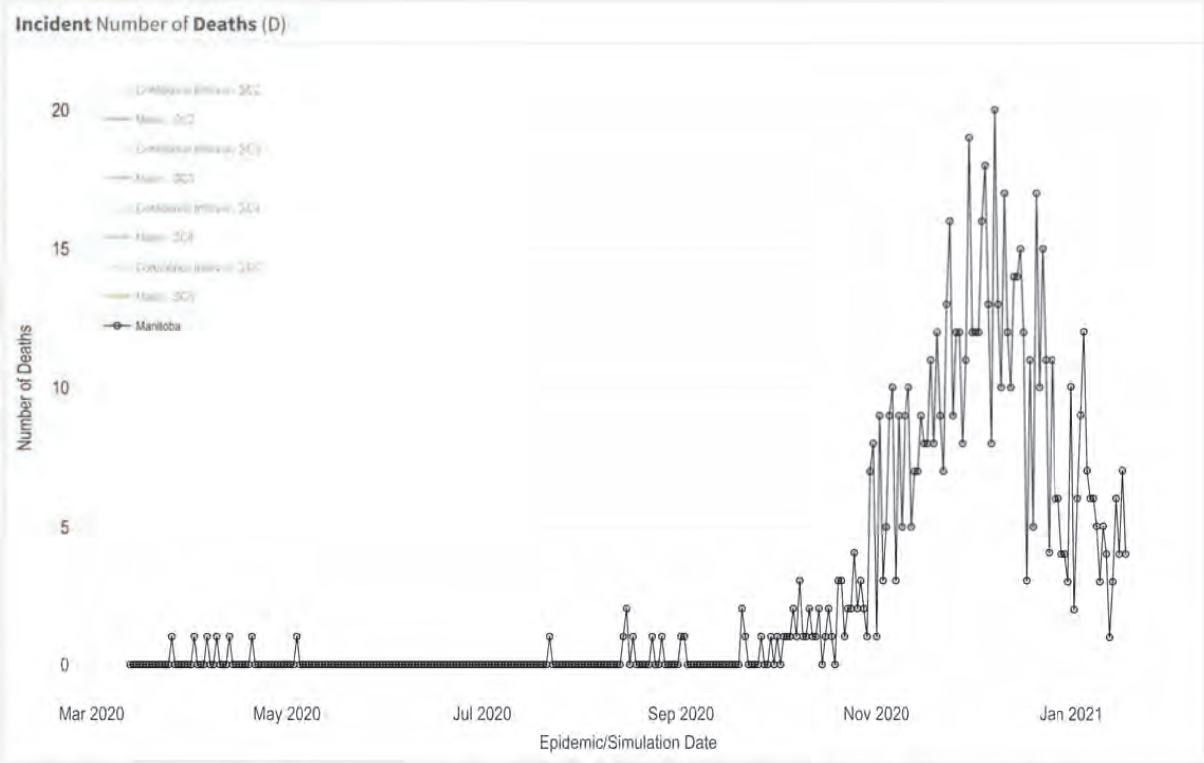
Manitoba: actual data **Projected:** average number of cases Range of possible number of cases

Prevalent Number of ICU Admissions (ICU occupancy)



Simulations regarding prevalent number of ICU admissions are being revised and recalibrated.

Incident Number of Deaths (daily number of deaths)



Simulations regarding incident number of deaths are being revised and recalibrated.

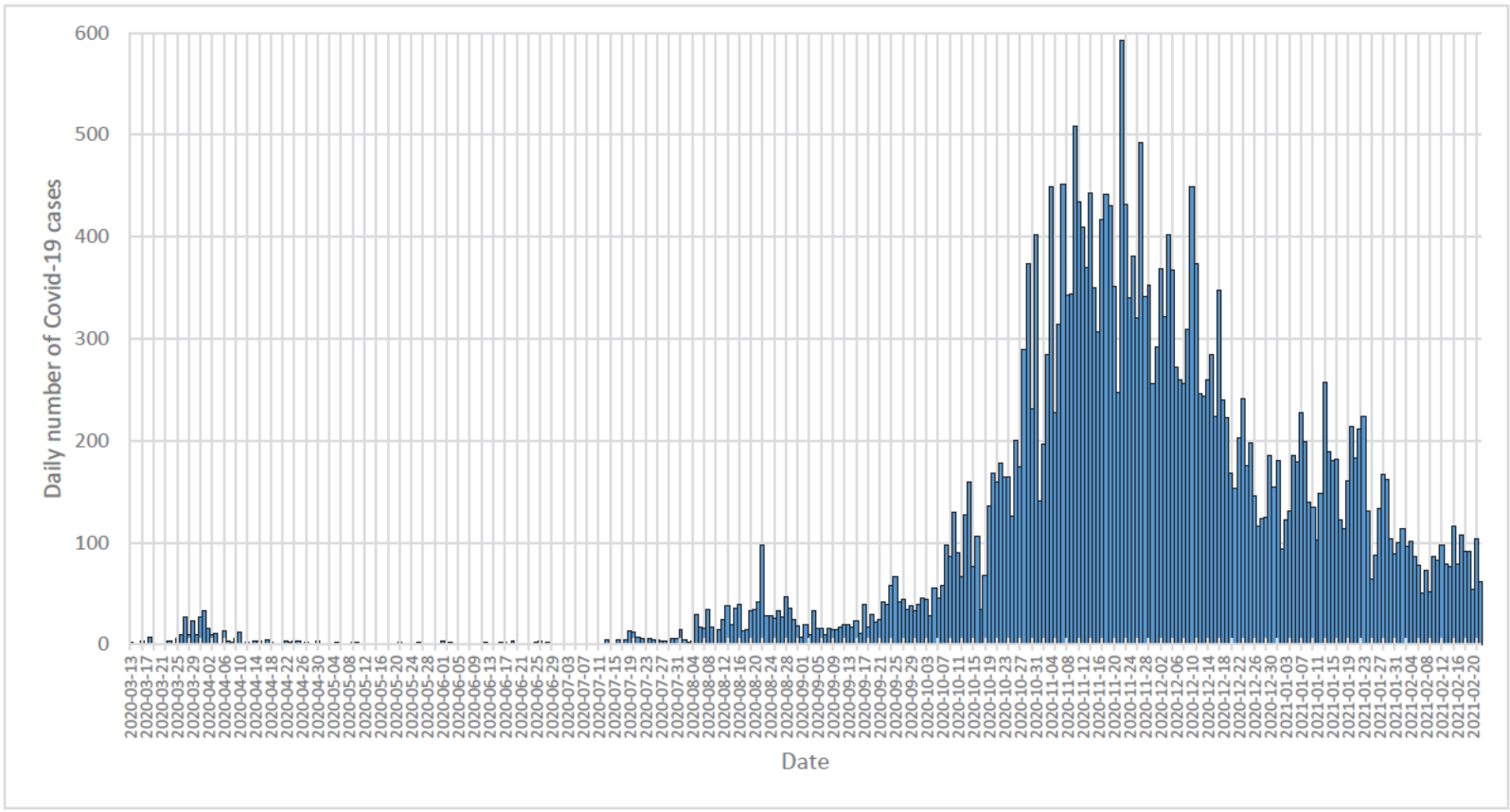
This is Exhibit " H " referred to
in the Affidavit of Carla Loeppky
Affirmed before me this 4
day of March A.D. 2021

A Barrister-at-Law entitled to practice
in and for the Province of Manitoba

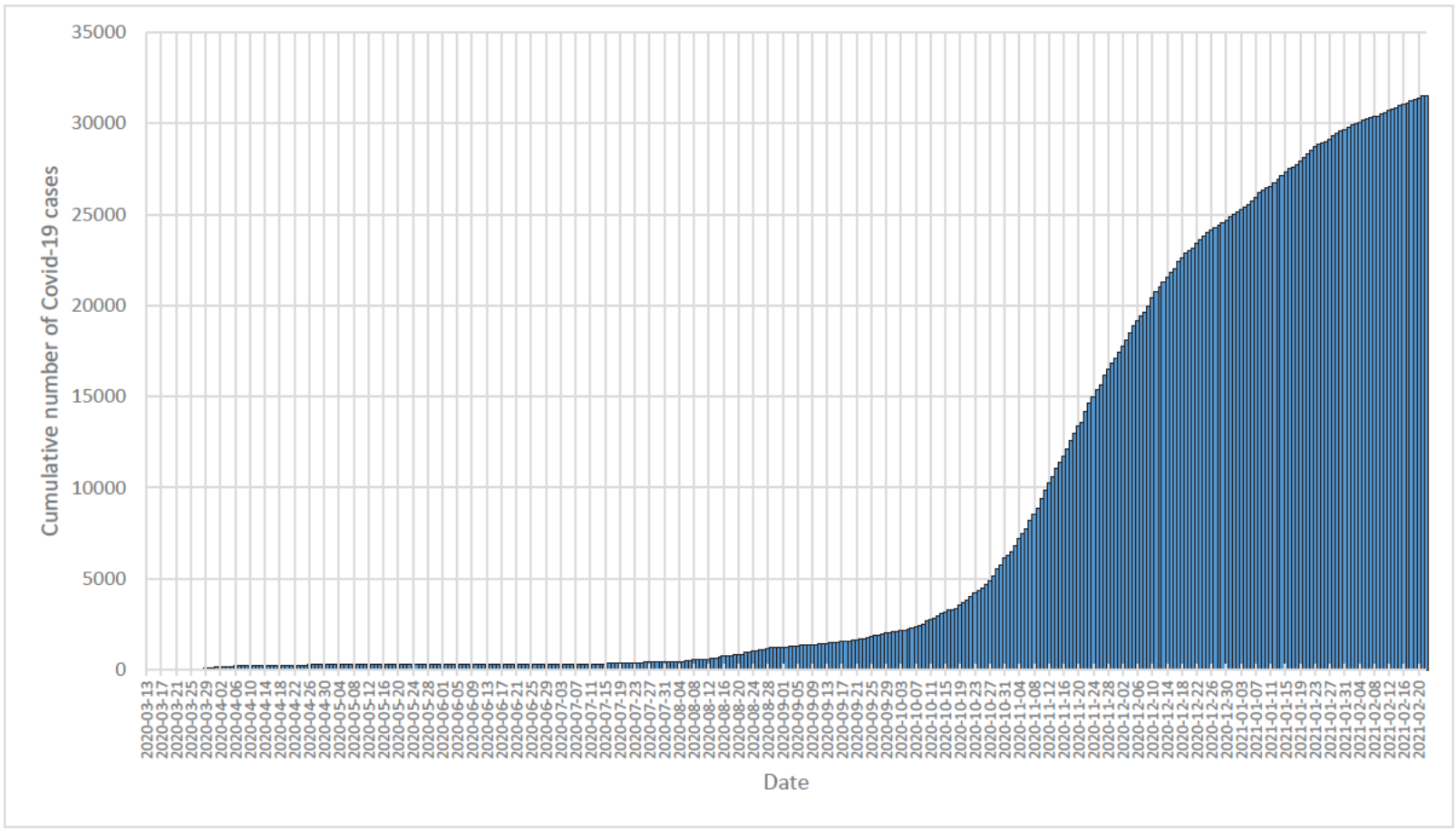
AB1597

COVID-19 Epidemiological Information

Total Daily Covid-19 cases (March 13, 2020 to February 22, 2021)

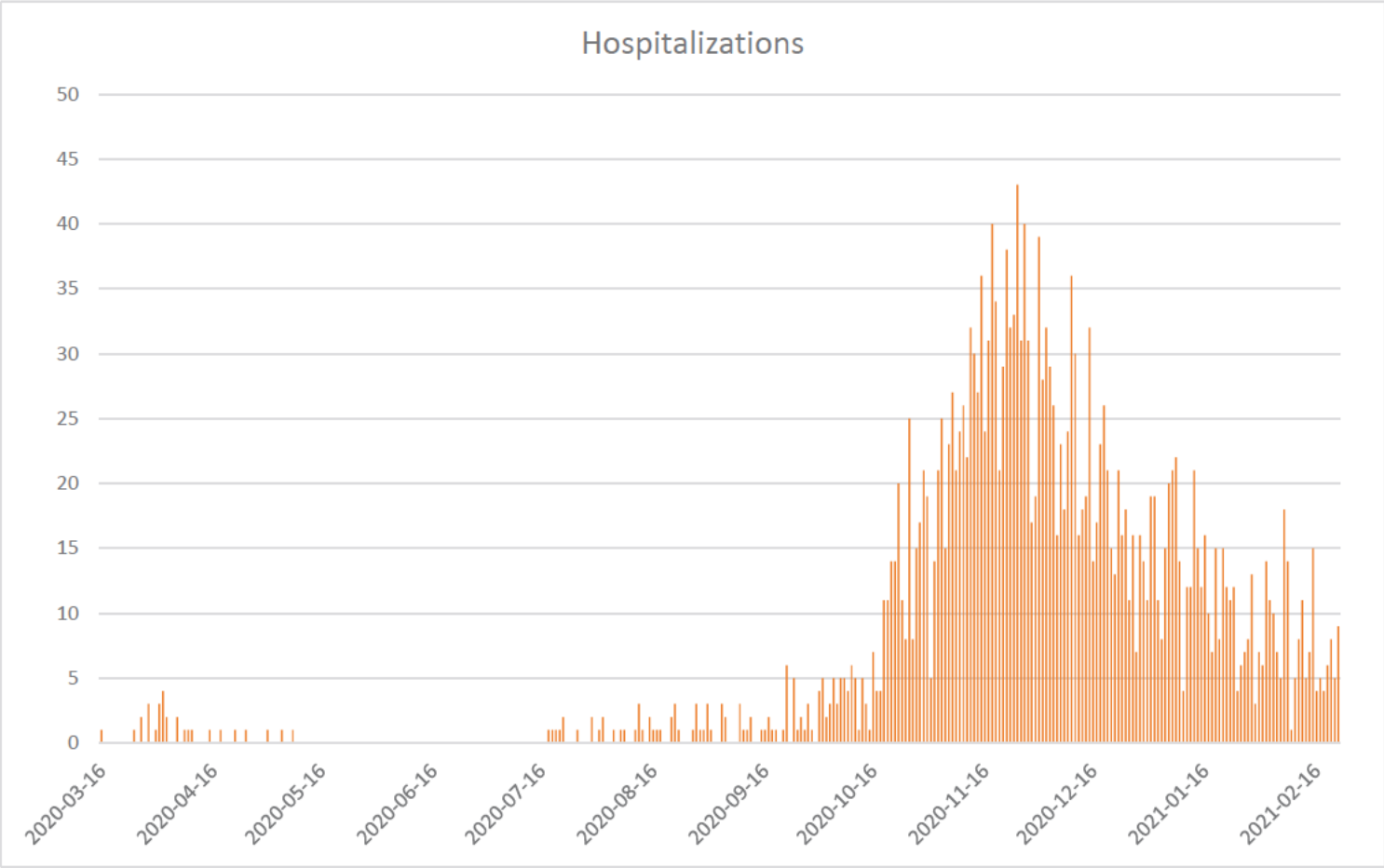


Cumulative Number of Covid-19 Cases (March 13, 2020 to February 22, 2021)

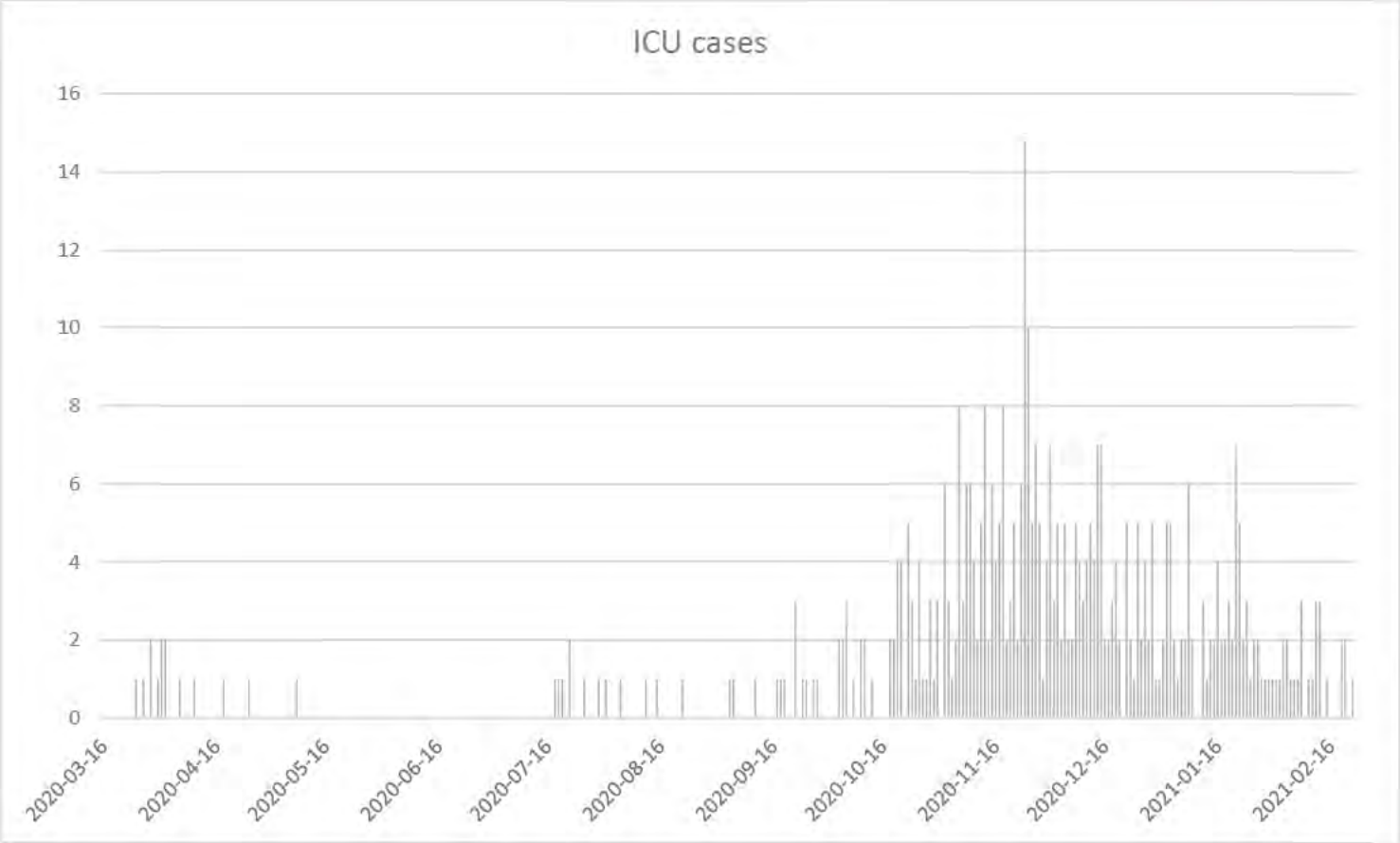


Serious Outcomes: hospitalizations, ICU cases and deaths (March 16, 2020 to February 22, 2020)

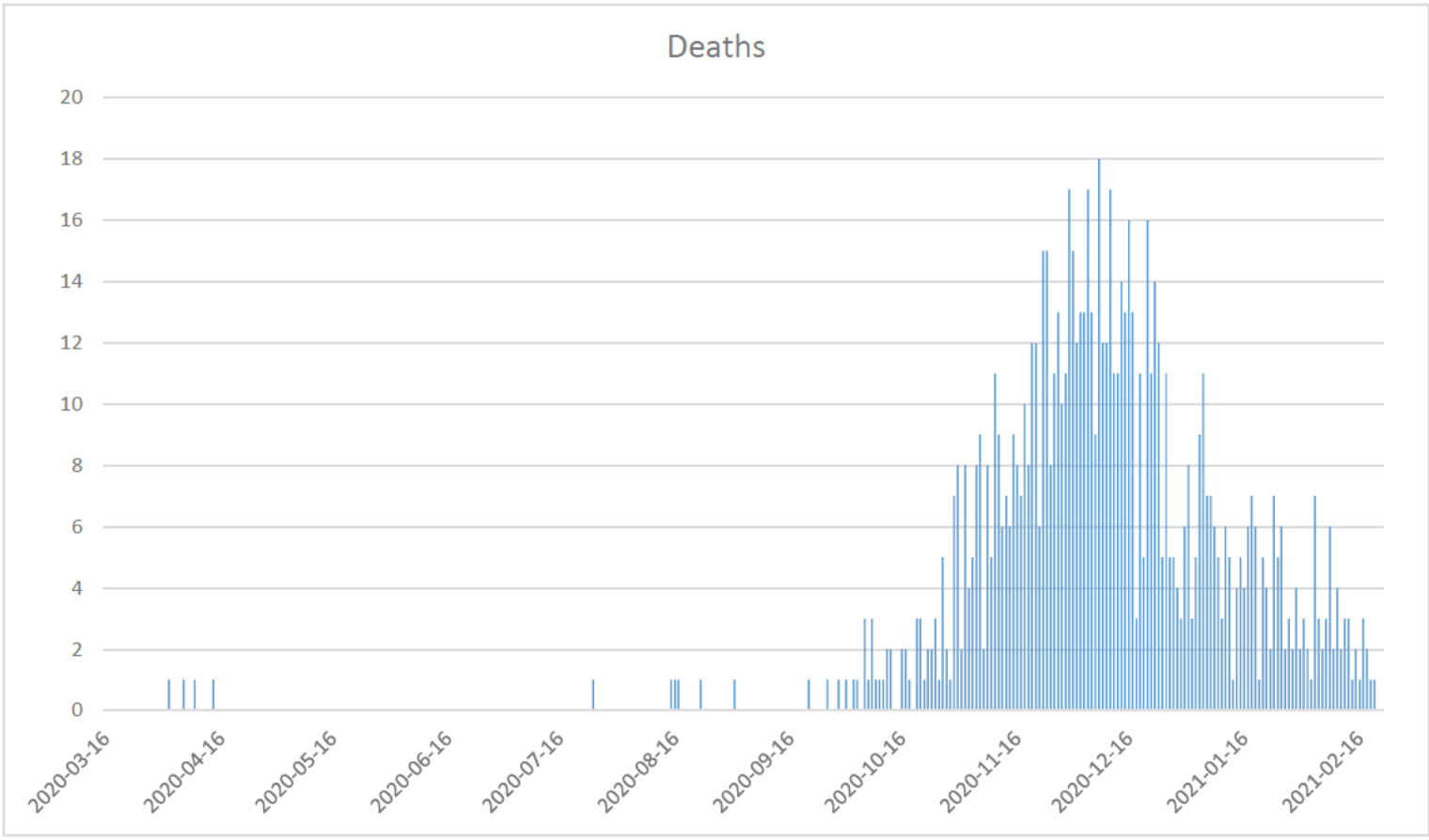
Daily number of hospital admissions, ICU admissions and deaths related to Covid-19



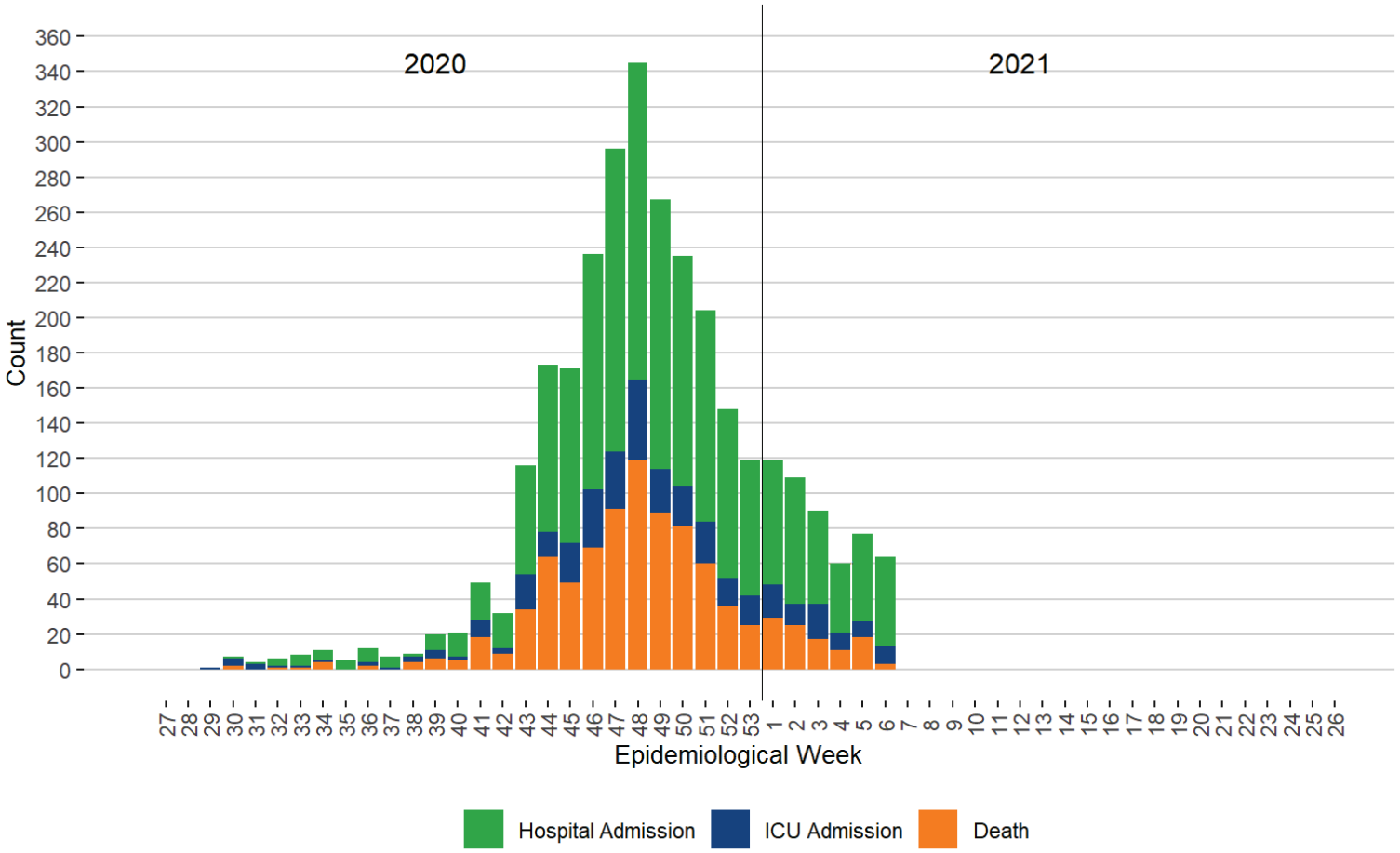
AB1600


ICU cases
16
14
12
10
8
6
4
2
0
2020-03-16
2020-04-16
2020-05-16
2020-06-16
2020-07-16
2020-08-16
2020-09-16
2020-10-16
2020-11-16
2020-12-16
2021-01-16
2021-02-16

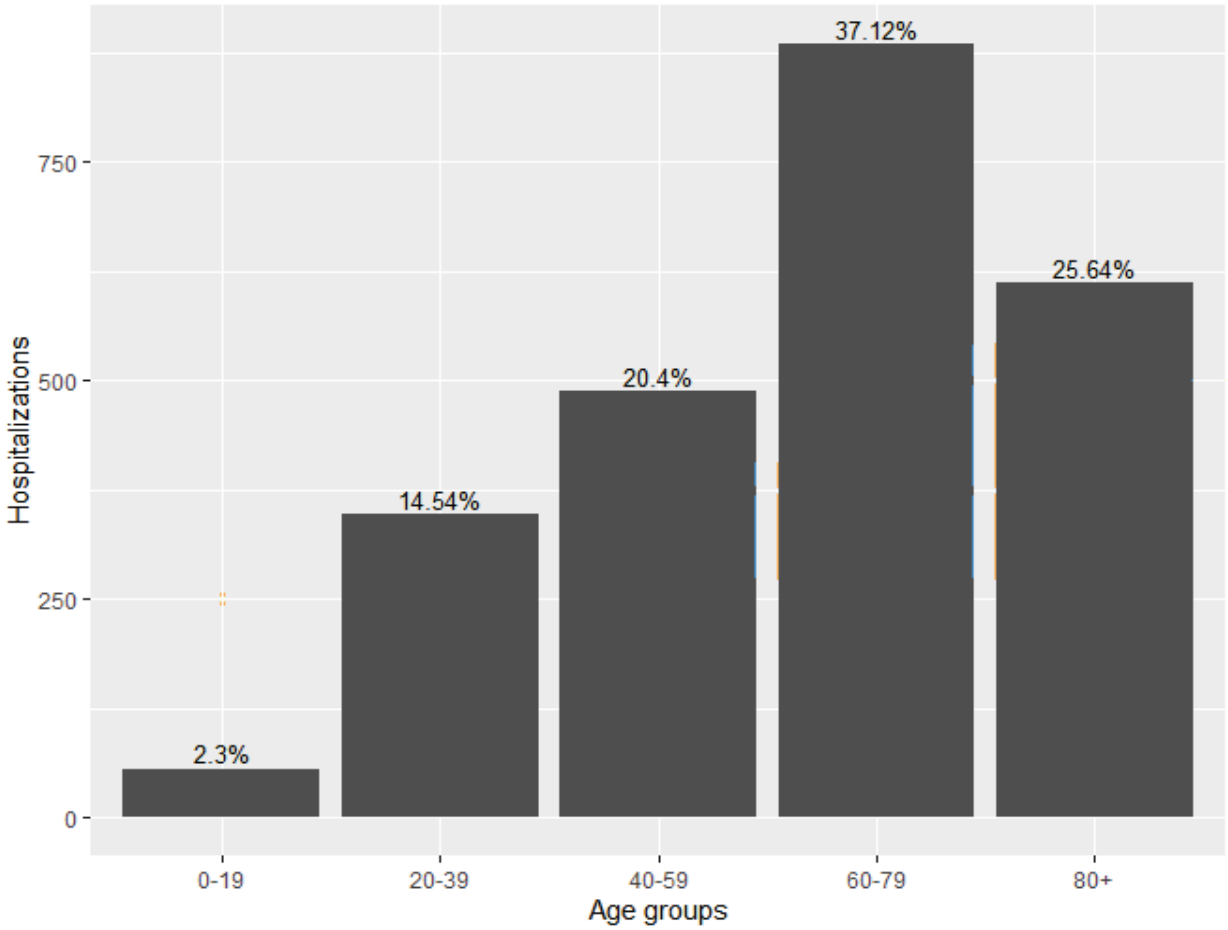
AB1601


Deaths
20
18
16
14
12
10
8
6
4
2
0
2020-03-16
2020-04-16
2020-05-16
2020-06-16
2020-07-16
2020-08-16
2020-09-16
2020-10-16
2020-11-16
2020-12-16
2021-01-16
2021-02-16

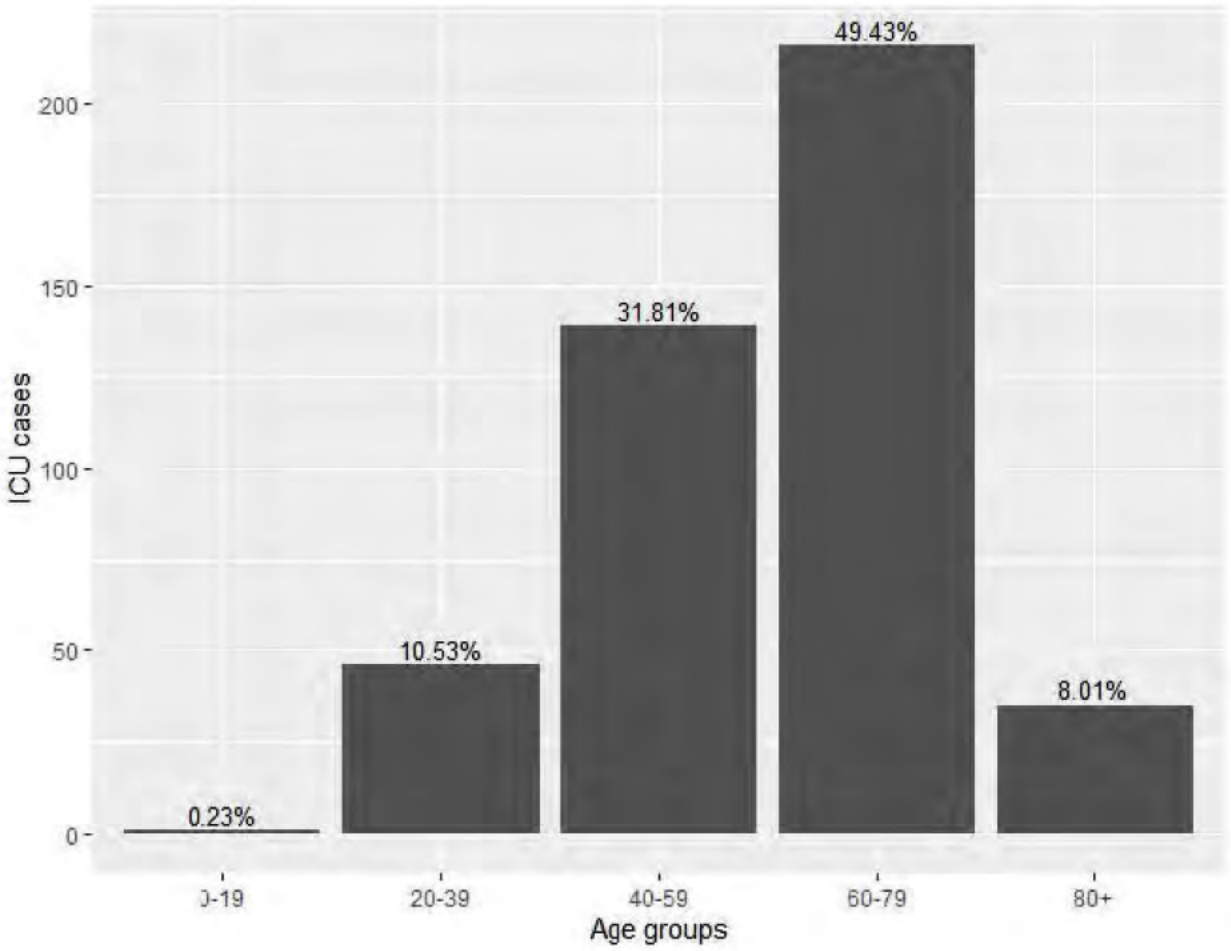
Severe Outcomes of COVID-19 by Week of Public Health Report Date (as of February 19, 2021)



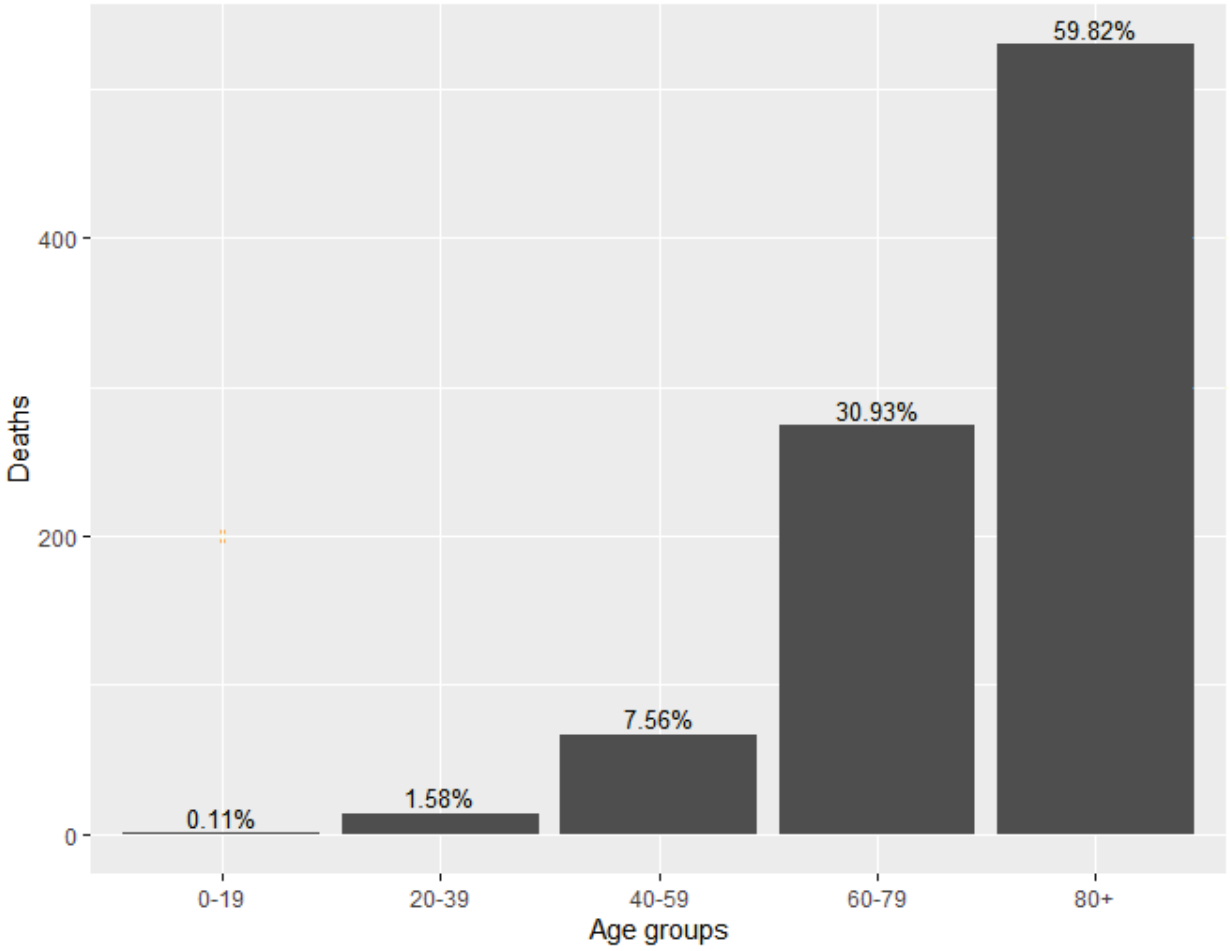
Age distribution of hospitalizations, ICU cases and deaths (as of February 22, 2021)



AB1604

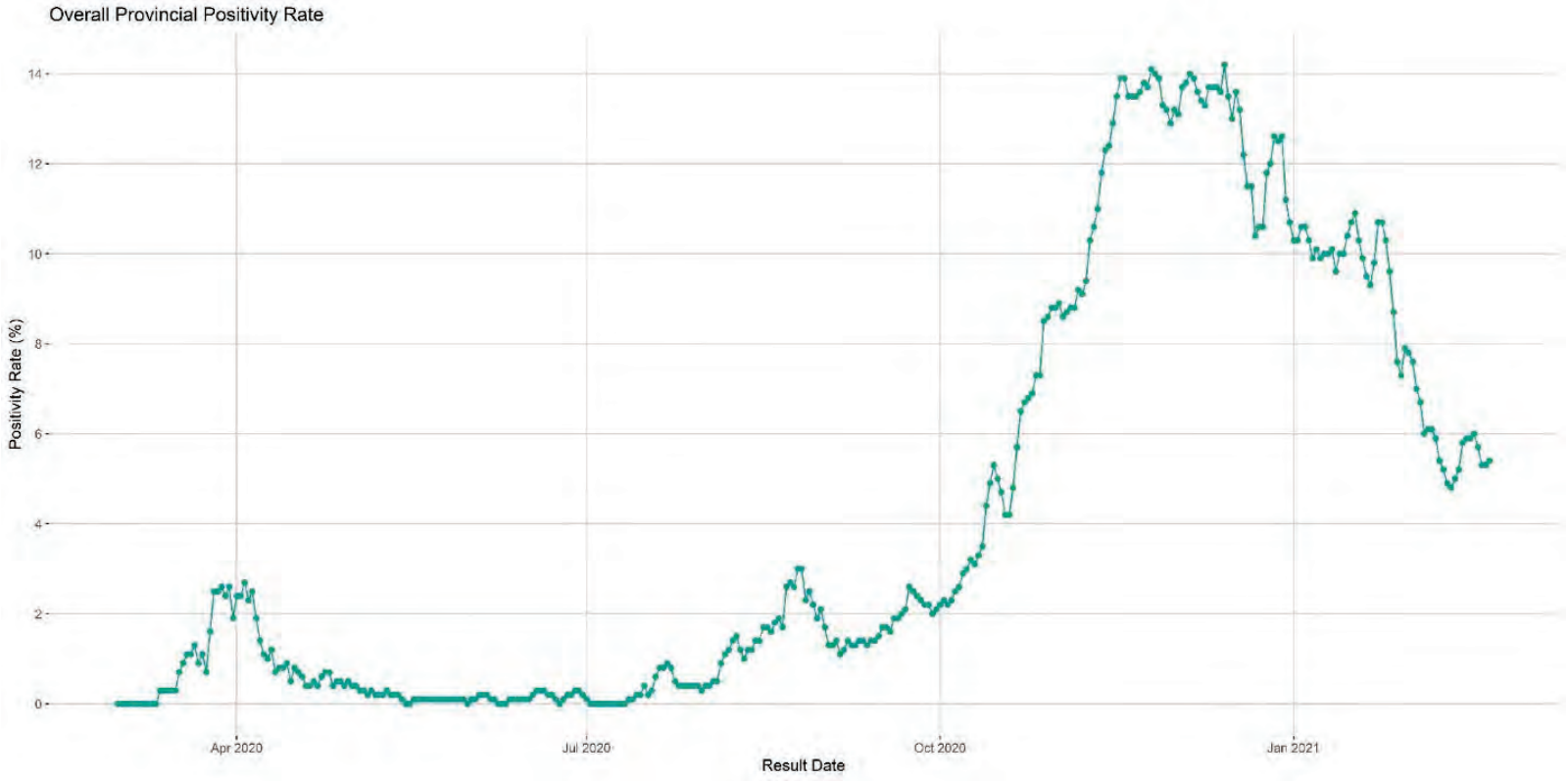

ICU cases
200
150
100
50
0
0.23%
10.53%
31.81%
49.43%
8.01%
0-19
20-39
40-59
60-79
80+
Age groups

AB1605

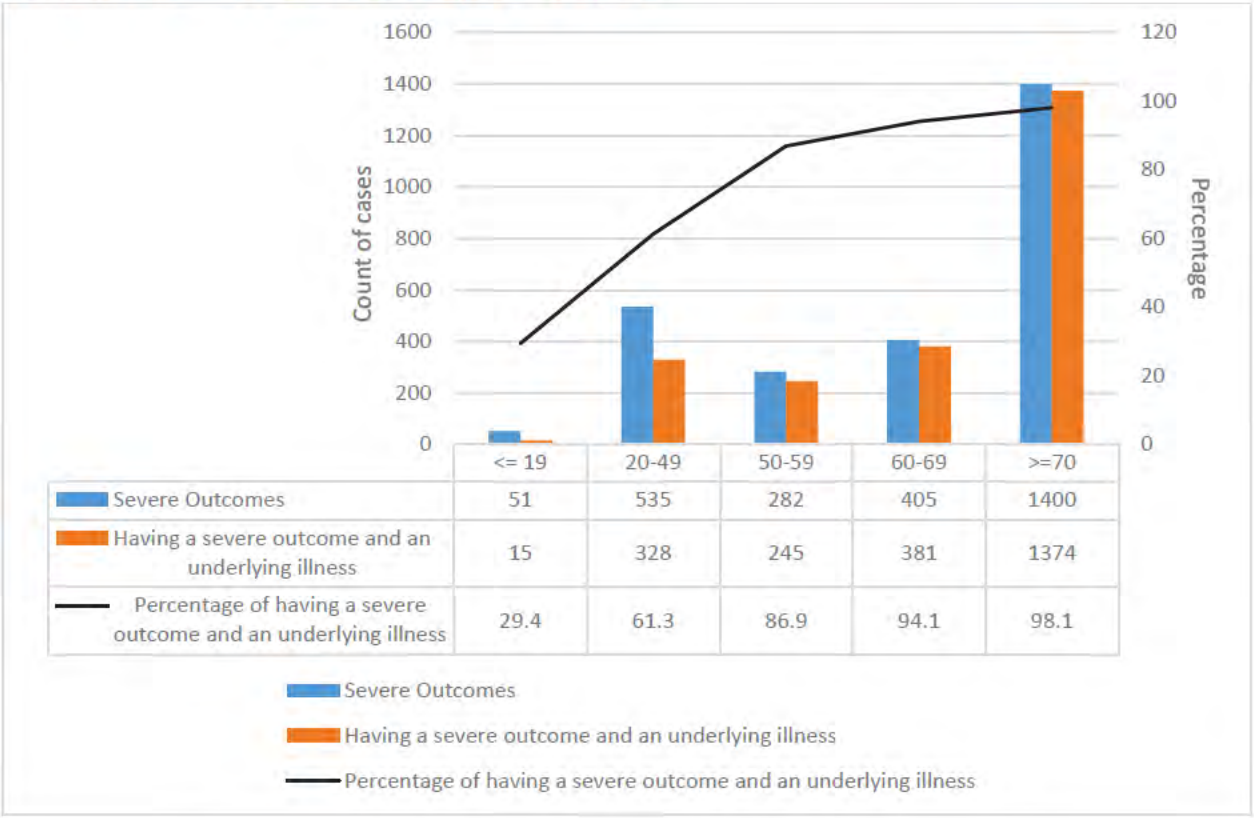

59.82%
30.93%
7.56%
1.58%
0.11%
400
200
0
Deaths
0-19
20-39
40-59
60-79
80+
Age groups

AB1606

Five-day test positivity rate (March, 2020 to February 25, 2021)



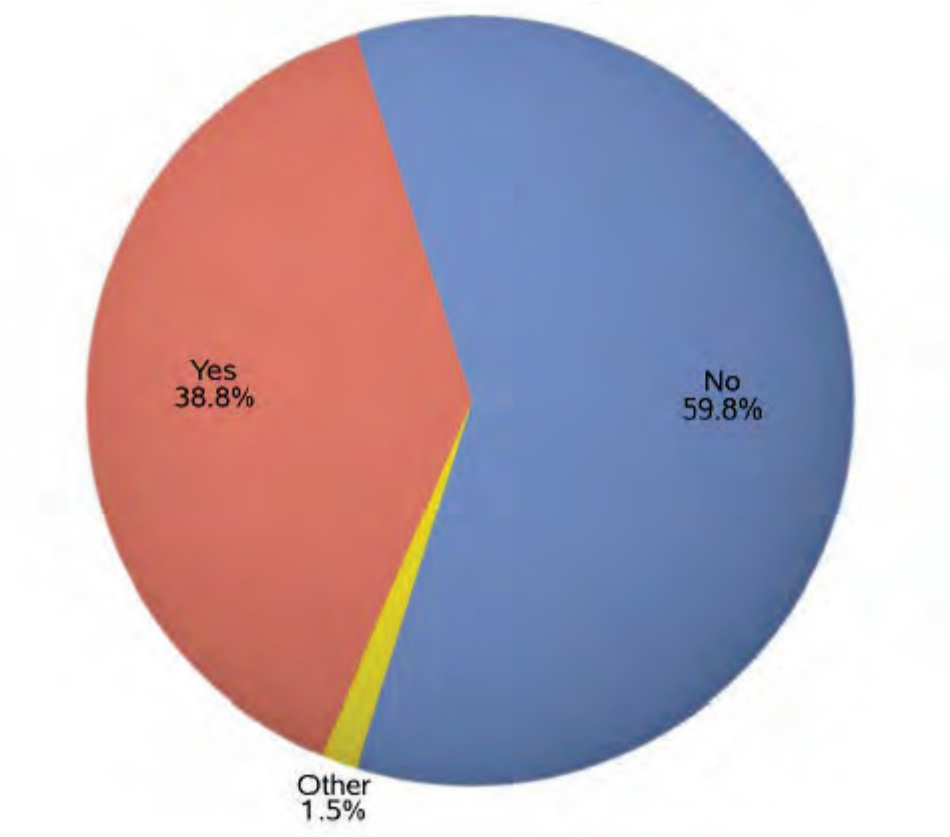
Number of severe outcome cases (hospitalizations, ICU and deaths) and number of severe outcome cases where patients had underlying conditions— as of February 23rd, 2021



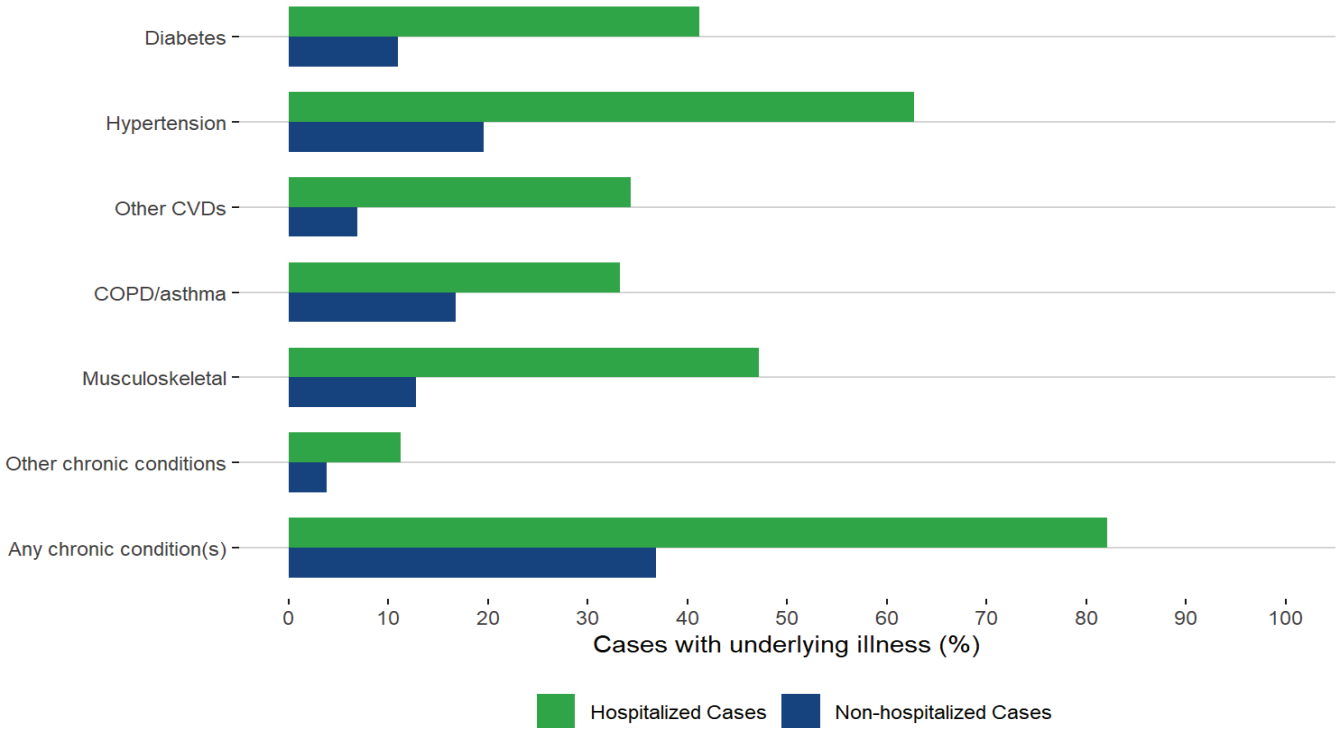
	<= 19	20-49	50-59	60-69	>=70
Severe Outcomes	51	535	282	405	1400
Having a severe outcome and an underlying illness	15	328	245	381	1374
Percentage of having a severe outcome and an underlying illness	29.4	61.3	86.9	94.1	98.1

Presence of an underlying Illness in COVID-19 Cases in Manitoba

As of February 25th, 2020 of 22,650 reports, there are 8,777 cases of COVID-19 indicating an underlying illness. These include co-morbidities such as cardiac, pulmonary, kidney, liver disease, diabetes, hypertension, asthma, and any immunocompromised status.



Percentage of COVID-19 Cases With Underlying Illnesses, Manitoba 2020 – 2021 (as of February 19, 2021)



Note. Musculoskeletal illnesses include: osteoporosis, osteoarthritis, juvenile idiopathic arthritis, gout and crystal Arthropathies; COPD-chronic obstructive pulmonary disease; CVD-cardiovascular disease; Other CVDs include: ischemic heart disease, heart failure, acute myocardial infarction, and stroke; Other chronic conditions include: parkinson's disease, multiple sclerosis, alzheimer's disease and epilepsy. About definitions of chronic conditions

Severe Outcomes in Manitoba

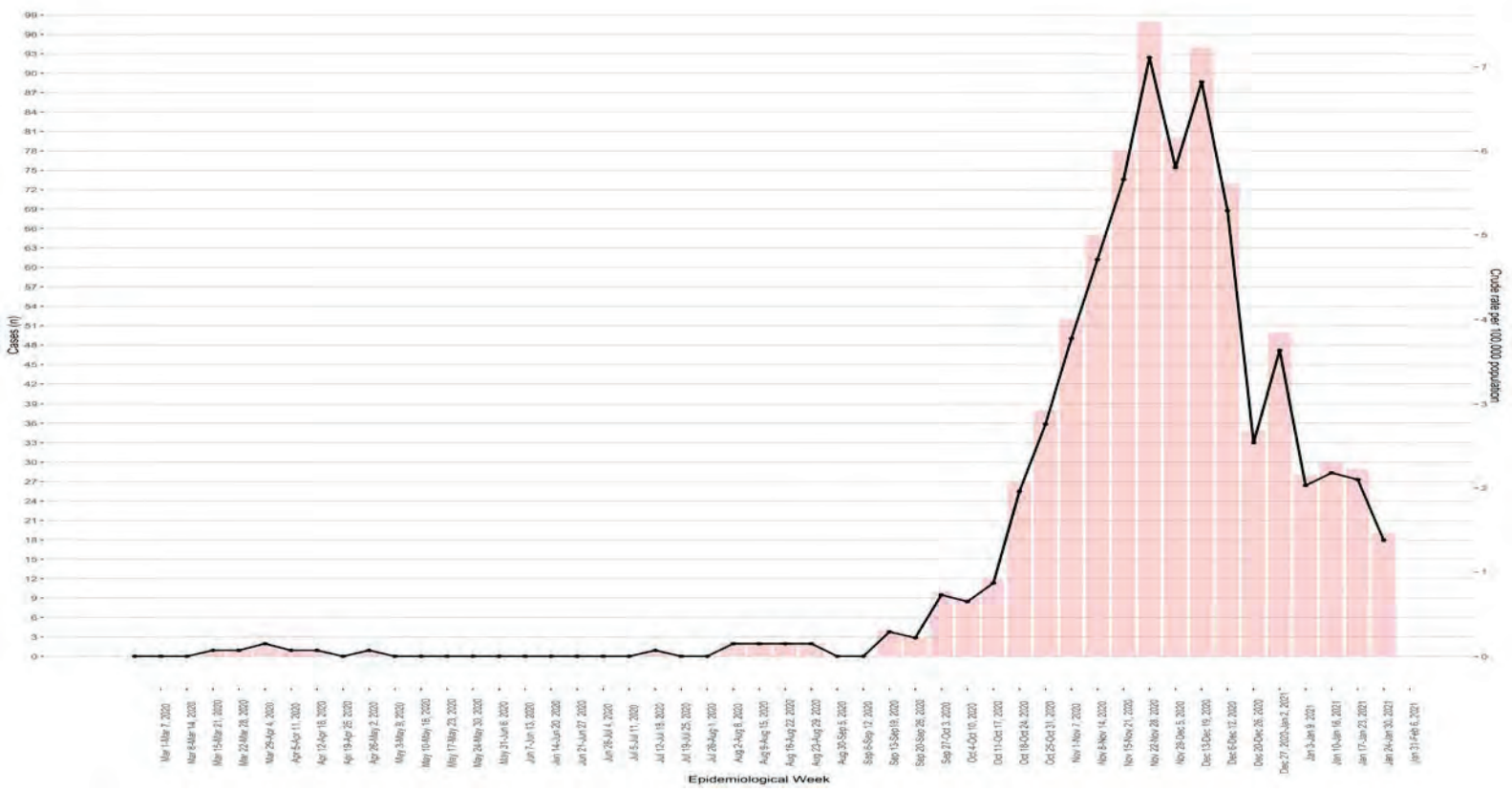
Counts, age-specific and age-adjusted case rates of death, hospitalization, ICU admission, and severity (death/hospitalization) outcomes among COVID-19 cases in Manitoba by socio-demographic characteristics, March 12, 2020 – February 08, 2021 (N=30,289)

Characteristics	Deaths		Hospitalizations		ICU admissions		Severe outcomes*		Total
	Count	Case rate (%)	Count	Case rate (%)	Count	Case rate (%)	Count	Case rate (%)	Count
Total	***850***	2.4	***2,131***	7.1	***409***	1.5	***2,553***	8.1	***30,289***
Age group (years)**									
19 and younger	1	0.0	51	0.9	1	0.0	51	0.9	5933
20-49	38	0.3	503	3.5	93	0.6	515	3.6	14355
50-59	44	1.1	261	6.6	87	2.2	270	6.9	3940
60-69	87	3.4	365	14.3	109	4.3	380	14.9	2547
70+	680	19.4	951	27.1	119	3.4	1337	38.0	3514
Median age (IQR)	83	(73-90)	67	(49-79)	62	(51-71)	71	(52-84)	37 (22-56)
Mean age (SD)	80	(14)	63	(21)	60	(15)	66	(21)	40 (23)
Sex									
Female	445	2.1	1086	6.7	167	1.2	1329	7.7	15130
Male	405	2.9	1045	7.5	242	1.8	1224	8.7	15138
Unknown	0	0.0	0	0.0	0	0.0	0	0.0	21
Health region									
IERHA	35	2	133	6.6	41	1.9	148	7.5	2332
NRHA	32	1.6	256	9.2	41	1.4	262	9.5	4149
PMH	51	2	103	5.4	20	1.3	140	6.7	2028
SH-SS	138	2.2	373	6.8	55	1.1	421	7.4	4677
WRHA	594	2.7	1266	7	252	1.6	1582	8.3	17103
Area level income quintiles									
Q1 (lowest)	150	2.5	680	10.1	152	2.2	712	10.7	8012
Q2	110	2	369	7	68	1.3	408	7.7	5547
Q3	90	1.9	282	6.4	53	1.3	318	7.1	4324
Q4	123	2.2	320	6.3	63	1.4	375	7.1	5036
Q5 (highest)	67	2	201	5.9	34	1	228	6.7	3791
Unknown	310	3.7	279	7.1	39	1.3	512	9.2	3579

*Severe outcomes include death or hospitalizations

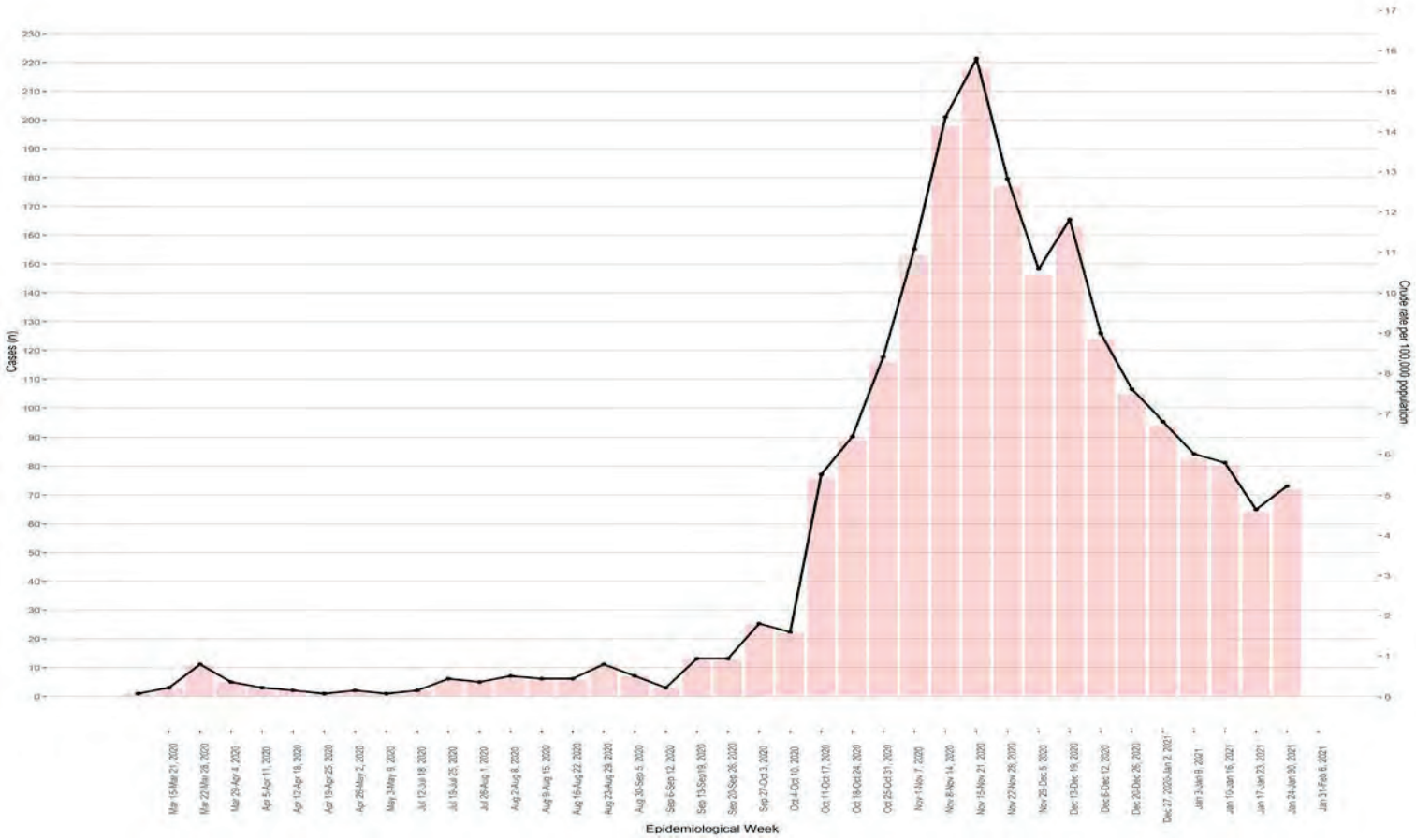
**Data presented is for age-specific case rates

Weekly count and crude mortality rate (per 100,000 population) related to COVID-19 in MB, March 12, 2020 – February 06, 2021



- The highest weekly count occurred on November 29-December 5, 2020 with a count of 98. The highest crude mortality rate occurred November 29-December 5, 2020 with a rate of 7.11 per 100,000 people.
- From March 1- October 3, 2020 the weekly count ranged from 0-4. From March 1- October 3, 2020 crude mortality rates ranged from 0-0.29 per 100,000. There was 0 new deaths from May 10- August 8, 2020, with the exception of 1 occurring July 19-July 25, 2020.

Weekly count and crude hospitalization rate (per 100,000 population) among COVID-19 cases in MB, March 12, 2020 – February 06, 2021



- The highest weekly count occurred on November 22-November 28, 2020, 2020 with a count of 218. The highest crude hospitalization rate occurred November 22-November 28, 2020, 2020 with a rate of 15.81 per 100,000 people.

- From March 15- September 19, 2020 the weekly count ranged from 1-11. From March 15-September 19, 2020 crude hospitalization rates ranged from 0.07-0.8 per 100,000. The average was 0.7 per 100,000 in this interval.