



Designed to be Pandemic-Ready

Long before COVID-19 impacted everyone everywhere we were designing our new hospital and campus to be ready for the next Ebola or SARS. Here's how we're making the new St. Paul's Hospital pandemic-ready.

Expanding Bed Capacity

- **We're adding capacity for 115 more beds, including up to 54% more critical care inpatient rooms**, for a total of 548 beds. This includes empty 'flex' spaces which can be easily re-purposed and equipped and put into use when demand warrants.
- **Medical and surgical inpatient rooms will be big enough to be used as intensive care rooms**, if needed, able to accommodate larger critical care teams and more equipment, like ventilators.
- **Our high acuity and cardiac surgery intensive care units have been designed to be 'flexed'** into intensive care units.
- **Medical gases, such as oxygen, will be piped into more exam and procedure rooms** so those rooms could be used for inpatient care.

Stocking Supplies

- **Personal Protective Equipment (PPE) supplies and other essential care items will be stored outside every inpatient room** to ensure PPE is readily accessible to care staff and medical units can stay clean and organized.
- **A new equipment depot and improved storage for supplies will allow for 'just in time' delivery** to inpatient units of equipment and PPE.
- **The hospital's new ambulance garage will have extra storage space** for PPE and other supplies.

Containing Outbreaks

- **100% of inpatient rooms will be single-patient**, versus just 15% today. This will greatly limit a patient's exposure to contagions and the potential spread of disease. Each room has a private washroom for the patient, plus a hand-washing sink for staff and family.
- **There will be over 90 special negative pressure 'isolation' rooms used for suspected or infectious patients.** Each room has a ventilation (HVAC) system that can be isolated so its air intake and exhaust is separate from other areas to stop airborne germs from escaping into staff or public areas. Many will have a small adjacent 'anteroom' where staff put on and remove PPE and wash up. Negative pressure rooms will be throughout the hospital — in Emergency, in the critical care, inpatient, maternity, renal and hemodialysis units, in the Urban Health and Mental Health Integrated Substance Use area, in surgical services, and in many procedure rooms.
- **Infectious patients may be cared for in one of 15 Outbreak Control Zones** which are 10 to 16 inpatient rooms/spaces that can be isolated as a group.
 - **Each zone has a ventilation system which can be switched to a negative pressure state** so the zone's air supply and exhaust become independent to prevent the re-circulation of airborne germs.
 - **Each zone will be self-sufficient** with its own medication room, clean/soiled utility rooms, and sterile storage rooms.
 - **The zone's entrance will be controlled by two sets of doors**, creating an anteroom between them, so one set can stay closed when the other is open. This ensures the zone maintains negative pressure plus provides a space where staff don and doff PPE.
- **The hospital will have more hand-washing sinks** including in all patient care, exam, and procedure rooms.





Limiting Exposure

- **In Emergency treatment spaces will be separated by walls and glass doors rather than curtains** to improve both privacy and infection control. And easy-to-clean walls or solid dividers will be used instead of curtains in all areas where patients need to be separated.
- **Emergency will have a decontamination room near its entrance which could be used to isolate a person** from other Emergency visitors who is suspected of being infected.
- **Our new Primary Care Triage and Access Centre could be used as an on-site testing facility** to help reduce peoples' exposure to Emergency patients and visitors.
- **The new ambulance garage could easily be converted into a testing or triage centre** during a pandemic so people are screened outside the hospital.
- **Outpatients will use separate street-level entrances** to our Urban and Mental Health Centre and our Centre for Healthy Aging to reduce their exposure to hospital patients.
- **Research and physician offices will be in a separate Clinical Support and Research Centre** on the health campus, rather than inside the acute care hospital.
- **There will be more visitor and family lounges to allow for physical distancing**, or to re-purpose during a pandemic.
- **Building entrances can be designated as 'staff only' or 'visitor only'** and there are more and wider stairways for separated foot traffic or physical distancing.
- **Each clinical area will have a staff lounge big enough to allow for physical distancing** so our front-line workers can take breaks on their unit rather than having to change out of their scrubs and head into the neighbourhood for a coffee.
- **Corridors for back-of house staff will be separated in many areas from public and patient hallways** to reduce a visitor's exposure to soiled supplies.
- **We'll have more conference and meeting rooms, many with room dividers**, to make physical distancing easier, and to re-purpose in a pandemic.
- **More elevators will make it easier for people to use physical distancing** while getting around.
- **Improved patient tracking will allow for faster and more effective contact tracing** in an exposure event.

Using Technology

- **A new hospital Care Coordination Centre will serve as St. Paul Hospital's version of an air traffic control tower.** The flow of patients through Emergency, and the entire acute care hospital would be monitored by a team who use data and predictive analytics displayed on a huge wall full of digital screens to make decisions. This view of what's happening hospital-wide will help them orchestrate all the daily logistics with fine-tuned precision such as assigning beds, managing critical care capacity, locating ventilators, opening Outbreak Control Zones, stocking PPE, planning discharges, and disinfecting rooms.
- **Virtual health technology will be available in most areas**, including the outpatient care centre, so clinicians and patients can meet via video.
- **Outside each patient room a digital screen will alert visitors and staff what PPE is required** and if the patient is in isolation. Screens are integrated with our clinical data systems, so auto-update in real-time.
- **All care team stations will have digital patient tracking screens to show the status of all patients** in the unit or surgical suite, and to coordinate care.
- **A new real-time location system will allow staff to track where equipment is anywhere in the hospital** making it easier and faster to find an available ventilator, stretcher, wheelchair, or any tagged piece.
- **Many corridors will have 'touchless doors'** which open by waving, to reduce the spread of germs.
- **New smart building technology will monitor the HVAC system in real-time** to ensure optimal air exchanges and relative pressure.

COVID-19 Lessons Learned

From our experience with COVID-19, we've added additional features to our hospital plans.

- **Ten MORE inpatient rooms will have the ability to switch to negative pressure** so they can be used as isolation rooms.
- **Two ORs will have 'rapid flush' air systems** so after operating on an infectious patient, air will be flushed and renewed in the room so the next operation can happen sooner and safely.
- **Waiting areas are designed** to promote good traffic flow and minimize the number of people in one space.
- **We're considering options for using UVC light to disinfect** in-room air spaces and surfaces, as an added layer of control.