

Lessons (so far) from the COVID-19 pandemic

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Everyone has had their life changed by the coronavirus disease 2019 (COVID-19) pandemic. Doctors' practices have been upended, and the whole population has had extreme alterations in how they live. It is easy to see the negative things, but many positives have also come to light.

It is now clear that science rules. When science is pushed to the back burner, society is a poorer place for ignoring it. The greater concept inherent in good science — open communication and collaboration — is now what will win the day. The genetic structure of severe acute respiratory syndrome coronavirus 2, the virus that causes COVID-19, was open-sourced immediately, and nations got behind funding research and ensuring a market for vaccines so the corporations could get on with building solutions. Even now when companies are losing the race to market, they are willing to partner with others that are ahead in commercialization in order to ensure an appropriate supply of vaccine. Hundreds of trials were swiftly put into place — randomized and prospective efforts to provide clear scientific proof and stop the inane chain of folk remedies being pushed by nonscientists. The World Health Organization database shows that 3547 trials were registered with ClinicalTrials.gov in 1 year for a single disease. That is uncharted waters for science. Funding agencies, both governmental and private, swung all the economic might they could behind efforts to support COVID-19 research. Almost all scientific journals fast-tracked COVID-19 research and pushed these papers to the front of the cue for publication. In many cases the fees for both publishing and viewing these data were waived. At the *Canadian Journal of Surgery* we prioritized COVID-19 papers, publishing early findings and new protocols to help in whatever way we could.

In these times of trouble, we also have learned where there were cracks in our armour. Some were obviously a problem before the pandemic. We have allowed the expertise in many manufacturing sectors to flow out of Canada. We had no response to the need to manufacture vaccines here; Canada now has a plan to manufacture vaccines, with federal support for infrastructure. It will probably be late for the current pandemic, as the 2 facilities are slated to come online in late 2021 and early 2023.¹ For some reason the federal government did a really poor job of procuring vaccines for Canada. Despite theoretically ensuring that Canada is supplied vaccines at 5 times the per capita rate we need, we lag far behind other countries for vaccination rates.² How hard is it for us to plan over 8 months what we would do if we got 10 000, 100 000 or

1 million or more doses? It seems to have been too much for our federal and provincial/territorial governments to think about the options and have a plan ready to roll. Even our local hospital centres had a huge variation in their vaccination schedules for at-risk caregivers.

Public health is in need of an overhaul — and not just throwing money into a black hole. It is apparent from this crisis that the people in charge of the day-to-day mechanisms of our pandemic response are overwhelmed. The lack of collaboration between federal and provincial/territorial governments is ridiculous, with daily press conferences in which the provincial premiers blame the prime minister and vice versa. And it is not apparent when we will be out of this crisis. We should be planning and building, as this is not the last time that we will experience a pandemic. The opportunity exists here for a hard reset. We are going to experience a generation of economic hardship no matter what happens. We need to ensure that the resources we use to rebuild are long lasting and that ongoing solutions don't just patch the holes or put out fires. This will require the federal government and the provinces/territories to have meaningful communication.

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