

A potential 2nd Wave of COVID-19: An approaching reality

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The pandemic of 2019-2020 coronavirus (COVID-19) has no parallel in recent times as a rapidly evolving catastrophe. Life has drastically changed as lock downs, and social distancing have become the new norms.¹ There are no approved standard therapies and the future situation is quite uncertain. Patients with comorbidities, older age, cancer, or immunocompromised appear to be at a higher risk of a complicated course and higher mortality.¹⁻⁴

A second wave refers to a subsequent serious increase in cases of a pandemic infection after the original wave has been repealed. Often, the first wave (herald wave), are followed months later by a more severe second or third waves of infection, as seen in the influenza pandemics of 1918 (H1H1), 1957 (H2H2), 1968 (H3N2), and 2009 (H1N1).³ The Spanish flu pandemic of 1918 was not eradicated swiftly and lasted 2 years spreading in successive waves. What triggers a second wave? The regional population is re-exposed to infection by an influx of infected people from another area. Relaxation of social distancing measures too quickly may be a contributing factor.⁴⁻⁶ The carelessness of people when moving around more and unnecessarily, without safeguards, creates more risks.⁵⁻⁸ Obviously, intensity of a second wave will depend on the level of herd immunity inherited from the first wave. The World Health Organization (WHO) has warned that coronavirus cases are surging alarmingly, and a serious situation is unfolding. European authorities are re-imposing strict local measures and weighing up further lockdowns.^{6,8}

The severity and impact of initial first wave of COVID-19 was grossly underestimated. Health experts claim that our behaviour and conduct will influence future outbreaks. Staying indoors, social distancing, hand hygiene and other safety measures have helped to restrict the pandemic. As communities begin to reopen, people are understandably eager to go out and resume regular activities.⁷ We don't yet have an effective therapy or vaccine, so the gradual re-openings must be coupled with safety, maintaining the same practices at workplaces and public places. Without herd immunity or an effective vaccine, many will be at risk particularly from asymptomatic carriers. The countries easing preventive measures should thoroughly revisit the situation, assess critically their health care system capabilities, and make preparedness plans. The window of

opportunity to prepare for a second wave may be small and the implications for health employees, organizations and economy could be more serious. We must anticipate, plan and prepare ourselves to deal with it pre-emptively. Outcome of a second wave will largely depend on how well we can apply the lessons learned from the first outbreak.^{7,9,10}

Lessons learnt form the First Wave

The outbreak of COVID-19 began in Wuhan China in late 2019, and later spread to 203 countries. Unprecedented public health interventions were instituted, and local transmission was contained, after a substantial infection and mortality. Most countries have experienced the end of first wave, understanding how the interventions helped to prevent the transmission.² It has affected everyone, everything and every aspect of life and economy. It is unpredictable how far this virus will continue to transmit.^{5,7} Despite arrested scatter; the virus is still here, decelerated but not eliminated. It is imperative to review our readiness to deal with the feared second wave.¹⁰

People are approaching their breaking points and are at the verge of defying isolation. The physical, emotional, and psychological health of people is visibly disturbed. Health-care systems, even in high-income countries, are exhausted. National and international political constructs are under substantial stress. Governments are doing their best to disrupt dissemination of infection and diminish impacts on their economies (unemployment, slowdown, and tumbled stocks), which has already produced short-term impacts and showing signs of long-term effects.⁵ Potential undesirable after-effects of premature relaxation of interventions, is increased transmission and ensuing second wave of infection.^{4,6,7,9} The WHO laid out criteria to meet before lifting restrictions. An increase in COVID-19 cases in autumn could be problematic, as seasonal flu usually accelerates at that time. Another concern is that fewer children have been getting their regular vaccinations, due to the pandemic. An outbreak of concurrent infections with COVID-19 could make it a hard and complicated challenge.

Though some individuals and communities are continuing to exercise social distancing seriously, the enthusiasm about returning to normalcy undermine the lessons learnt. Many have forgotten aggressiveness, severity, and fatality of this virus. It has a potential to cripple any health care

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system. More clusters will appear, and different countries will manage these differently. Countries will need to revisit lockdowns in some form as community transmission grows. How this is managed will be a major test of leadership and community engagement.^{4,6,10}

Preparing for the Second Wave

Scientists, epidemiologists and anthropologists should analyse the situation in depth and formulate comprehensive plans to deal with the virus. Consideration should also be given to the variations in health-care capacity when implementing interventions. Governments should ensure that the health-care system has adequate workforce, resources, and facilities to minimise the damage.^{5,7,9,10} We had underestimated the severity and impact of the first wave of coronavirus, so better to keep best practices. Business continuity should be a priority for the leadership. Knowledge sharing in any format is necessary.⁵ Some of the measures to adopt are:

1. Do an after-Action Report: What went well and what didn't
2. Review and update your policies and risk assessment
3. Continuously review and assess coordinated performance improvement
4. Provide necessary Supplies and enforce infection control practices
5. Revisit and update Policy for transfers and admissions
6. Revisit and update policies of appointments, DNR, CPR and of Ventilated Patient
7. Remain consistent with the most recent guidelines
8. Implement and review isolation strategy, cohort plans, tele-health initiatives, and virtual clinics
9. Manage Health Care Force with prioritized testing, staff shortage, PPE levels, Mentoring, psychosocial support, and improved compliance
10. Stay updated with local health authorities
11. Initiate early flu immunization campaign
12. Promote standard prevention and respiratory etiquette at workplace
13. Assess and improve Health care system and potential
14. Make sure household maintains 2 weeks supply of food, medicines and supplies
15. Ensure that everyone is up to date on vaccinations
16. Doctors, clinics and hospitals should stock up equipment and supplies
17. Movement and travel restrictions
18. Prefer Institution-based isolation over self-isolation

19. A government direct support to economic activity

A rise in COVID-19 cases could come if we relax social distancing measures quickly and extensively. There may not be an instant increase but a late one after few weeks and several cycles of infection. The surges after reopening also depend on behaviours of people whether they continue safety precautions religiously.^{4-6,8,10}

Lockdown measures may have averted 3.1 million deaths from COVID-19 across EU and UK.^{7,9} European countries are very far from achieving herd immunity, with a less than 4% infection rate.⁹ The lockdown measures caused an 82% reduction in infection.^{8,11,12} The risk of a second wave is very real if all interventions are abandoned.^{11,12} A second study, published in Nature, estimated that lockdown policies prevented or delayed around 530 million COVID-19 infections,⁷ but subsequent infection grew by 68% in Iran and an average of 38% a day across other countries.^{8,9} The physical distancing restrictions were imposed as a collective population response in communities. Lifting restrictions is also a population response to their socio-economic impacts. Thus COVID-19 pandemic exemplifies a coupled behaviour-disease system.⁸ Natural herd immunity would be expected to require at least 60-70% of the population to be infected, costing a huge mortality, a protracted pressure on healthcare systems, and collateral damage on economy.^{9,10}

Experts say one might be immune for a while and then lose that immunity in a few months. We don't yet know whether an antibody response can protect indefinitely.^{4-6,10} Even incorporating social and spatial heterogeneities does not completely remove the possibility of a second wave⁴⁻⁶ and interactions between the dynamics of disease spread and social processes are poorly understood.¹⁰ A second wave of Coronavirus infection is extremely likely to come in autumn or winter of 2020 and no one can predict the magnitude. The outcome will largely depend on how well we can apply the lessons learned from the first outbreak. The window to prepare is small and the implications for healthcare workers, organizations, and economy cannot be further emphasized. The forecast for vaccine availability is not possible in near future. We will have to rely on the expertise of public health officials and efforts to completely revamp workplace culture. We must start to plan for the worst and evaluate our emergency preparedness, and trainings. The decision makers and Governments should act and prepare immediately to ensure that the healthcare system has adequate workforce, resources, and capabilities to minimise the impact and risk of mortality. We should take the input from all health care providers in our institutes about their experiences earlier.

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