COVID-19
Next Steps to Reopening Safely

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Lifting population-wide social distancing will only be possible if we reduce transmission, shore up hospital systems, and build some core public health capabilities. There are 4 phases to response that we see right now

- **Phase 1: Slowing the Spread** – this is the phase we are in now.
- **Phase 2: State-by-State Reopening** – We will be able to begin lifting some measures like business closures
- **Phase 3: Establish Immune Protection and Lift Distancing More Fully**
- **Phase 4: Rebuild Readiness for the Next Pandemic**
Phase 2: Easing Social Distancing at a State or City Level

• Before we can start gradually lifting social distancing measures, we need 4 things to happen:

1. Sustained reductions in daily case numbers
2. Hospitals that are not under stress, operating not in crisis-mode. Also we need plentiful supplies of personal protective equipment, essential medicines, and ventilators
3. Much more widespread testing – need to be able to test anyone with symptoms and ideally their contacts
4. Scaled-up public health workforce to identify cases and trace the contacts of each case
Scaling Up Contact Tracing

• Contact tracing is a core public health tool. It is not new. We just don’t have enough

  • What does contact tracing actually mean?

• This capacity is needed to:

  • Break chains of transmission
  • Manage epidemics at an ongoing low level
  • Prevent future waves/surges of cases
  • Enable us to get back to work in a much safer way

• It can be combined with technologies/apps as workforce multipliers
Scaling Up Contact Tracing

• How do we accomplish this?
  • Massive workforce upgrade
  • Maybe as many as 100,000 new workers
  • Estimated cost of $3.6 billion
  • Coordination, guidance, and support from state and national levels
  • Cooperation with NGO’s and businesses
Phase 3: Establish Immune Protection and Open More Fully

• If we have a safe and effective vaccine that becomes widely available or a drug that can prevent infection and/or reduce severity of disease

• We will then be able to relax social distancing further and get back to a more normal life/economy

Phase 4: Rebuild Readiness for the Next Pandemic

• After the pandemic has run its course and/or we have a vaccine

• We need to begin preparing for the next pandemic
Resources

Johns Hopkins Center for Health Security: https://www.centerforhealthsecurity.org/

National coronavirus response: A road map to reopening

A National Plan to Enable Comprehensive COVID-19 Case Finding and Contact Tracing in the US

Public Health Principles for a Phased Reopening During COVID-19: Guidance for Governors

Enabling Emergency Mass Vaccination: Innovations in Manufacturing and Administration During a Pandemic

Recommendations for a Metropolitan COVID-19 Response—Special Area of Emphasis: Guidance on Protecting Individuals Residing in Long-Term Care Facilities

Developing a National Strategy for Serology (Antibody Testing) in the United States
Immunity After COVID19: The Individual, Public Health and Scientific Implications

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Why is it important to measure immunity to COVID19?

- Provides us a sense of current baseline of people who have been infected overall (prevalence).
- Gives a sense number of vulnerable population that might need medical care once we start opening.
- To attain “herd immunity” need around 60-70%.
- Gives us an idea of the “denominator” of the problem.
Current data about immunity after SARSCOV2

- Immunity is determined by antibodies as well as other immune cells (T cells)
- For all infectious diseases, small portion may not mount enough antibodies (what is enough antibodies? “Titers”)
- MERS/SARS study show survivors have “neutralizing” antibodies (those that block action of virus) but they decline between 1-2 years after infection (Payne et al, Mo et al)
- For other coronaviruses, prior infection with similar strain could reduce severity of infection with new strain (Callow et al, Reed)
- Animal study with SAR-COV-2 showed no reinfection after recovery when rechallenged (Bao et al)
Current Testing for COVID-19

- Diagnostic tests that detect genetic material of virus—look for active infection
  - Unclear how accurate these are in asymptomatic patients
  - Lot of issues with supplies for these tests
  - Are generally tests performed on saliva or nasal or lung fluid

- Antibody tests that detect immune memory—look for evidence of past infection
  - Concerns that many tests maybe positive when they should be negative “false positive, and vice versa, “false negative”
  - Are generally pin prick or blood draw tests
Are current immunity tests useful for individuals?

• Tests themselves maybe falsely positive negative or falsely positive so it’s hard to know how to advise patients
• Even if they are a true positive, we think that may mean patients are immune
  • But we cannot guarantee that with current science
  • we need to follow that up with understanding if there are enough levels of antibodies to prevent reinfection
Are current tests useful for public health?

- It could give us a sense of comparative burden in disease in different populations
- It could help identify hot spots that tell us where we need to concentrate public health surveillance when we open society
- It could tell us about trends over time in the same population
References


