



COVID-19

research update

May 6, 2020

Strategy to increase testing capacity

An [article describing a strategy to pool samples for RT-PCR testing](#) (The Lancet Infectious Diseases, April 28) states that the practice could expand the laboratory infrastructure and test kit capacity to screen large numbers of asymptomatic people. If samples are pooled for testing, only in the case of positive pool test results is a work-up of individual samples initiated. These data suggest that pooling of up to 30 samples can increase test capacity with existing equipment and test kits; and detect positive samples with sufficient diagnostic accuracy.

Evidence of presymptomatic and asymptomatic spread

A [literature review of the most recent epidemiologic, virologic and modeling evidence](#) (CDC Emerging Infectious Diseases, May 4) found support for possible transmission of SARS-CoV-2, the virus that causes COVID-19, from people who are presymptomatic or asymptomatic. SARS-CoV-2 transmission in the absence of symptoms reinforces the value of measures that prevent the spread of SARS-CoV-2 by infected persons who may not exhibit illness despite being infectious.

Mobility and virus transmission

A [modeling study uses death and mobility data from several regions in northern Italy](#) (Imperial College, May 4) found that, in the absence of additional interventions, even a 20% return to pre-lockdown mobility could lead to a resurgence in the number of deaths far greater than experienced in the current wave in several regions. The study estimates the impact on mortality of three post-lockdown scenarios over the next eight weeks: (1) mobility remains the same as during the lockdown, (2) mobility returns to pre-lockdown levels by 20% and (3) mobility returns to pre-lockdown levels by 40%. The mobility data was provided by Google and serves as a proxy for behavior change caused by non-pharmaceutical interventions, including change in visits to locations such as grocery stores, parks, transit stations, retail and workplaces. Because increases in the number of hospitalizations and deaths lag behind increases in transmission intensity, the control of a future potential resurgence in transmission relies on the early identification and isolation of infections and on the timely suppression of local clusters of infection.

A [study of cell phone data at various types of businesses](#) (MIT, April 26) found that "banks, general merchandise stores, dentists, grocery stores and colleges should face relatively loose restrictions and gyms, sporting goods stores, liquor stores, tobacco stores and cafes should face relatively tight restrictions." The study uses Safegraph data from cell phones, as well as measures related to 30 categories of businesses, to inform re-opening policies. The findings can inform re-opening policies and, if necessary, future closure policies.

A [study of the spread of COVID-19 using cell phone data](#) (NBER, April 1) found that small businesses should be permitted to re-open first, as these are generally less dense environments. A caveat is that these businesses would have to be as good as larger businesses at public health practices (i.e. wearing masks, no-touch doors). It is important to note that, since the study only looks at mobile tracking data, it does not include what people were doing in these stores (i.e. shopping, working).