COVID-19 Research Watch
May 22, 2020

REGION-SPECIFIC LESSONS LEARNED

The Covid-19 Pandemic and the Incidence of Acute Myocardial Infarction [1]

To investigate the perceived decrease in the number of patients presenting with acute myocardial infarction (MI) following the emergence of Covid-19, the authors used Kaiser Permanente Northern California health system data to evaluate the incidence of MI both during the height of the pandemic in California (March 4th- April 14th, 2020), in the preceding months (Jan 1st- March 3rd, 2020), and the previous year (Jan 1st- Mar 4th, 2019). Data revealed up to a 48% decline in hospitalization rates for acute MI during the Covid-19 period compared with both the preceding months and the previous year. Characteristics of patients with acute MI differed during the Covid-19 period, with fewer patients presenting with pre-existing coronary artery disease, previous acute MI, and percutaneous coronary intervention. Conversely, patient demographic characteristics, vitals on admission, troponin I values, and comorbidities were similar to pre-pandemic patterns.

MODELS

Individual quarantine versus active monitoring of contacts for the mitigation of COVID-19: a modelling study [2]

Using Monte Carlo simulation models, the authors used two estimates of serial intervals (defined as "the time between symptom onset of infector–infectee pairs") to explore potential COVID-19 control strategies. The authors found that with a shorter serial interval (4.8 days) the mean time of infectiousness onset before symptom onset was 0.77 days, and with a longer serial interval (7.5 days) the mean time was 0.51 days. Individually quarantining at least 75% of infected contacts has the potential to contain an outbreak with a shorter serial interval 84% of the time. Active monitoring or individual quarantining of high-risk contacts may help with containment, but it is unclear whether one method is preferred over the other. The authors call for increased research on the serial interval and presymptomatic transmission patterns in order for policy makers to make informed decisions about, and consider the cost-effectiveness of, individual quarantine versus active monitoring of contacts.

NON-CLINICAL TRENDS

Early impact of the coronavirus disease pandemic and physical distancing measures on routine childhood vaccinations in England, January to April 2020 [3]

This study examined electronic patient records for the first 17 weeks of 2019 and 2020 to compare weekly vaccination counts for the hexavalent vaccine (diphtheria, tetanus, pertussis, polio, *Haemophilus influenzae* type b and hepatitis B) and the measles-mumps-rubella (MMR) vaccine. For the hexavalent vaccine, the percent change of vaccination counts decreased steadily in weeks 1-15 but increased in weeks 16 and 17 despite no

changes to the physical distancing measures, which were introduced week 13 of 2020. The MMR vaccination counts followed similar trends to 2019 in January and February but fell beginning week 11 and dropped 19.8% in weeks 13-15 compared to the same time frame in 2019. Similar to the hexavalent vaccine, MMR vaccination counts again increased in weeks 16 and 17. These findings suggest that stay at home messaging during the pandemic has impacted timely routine childhood vaccinations, in particular MMR, which are necessary to prevent vaccine-preventable disease outbreaks. Countries will likely need to introduce immunization recovery plans.

ADDITIONAL RESOURCES
UCSF Library COVID-19 Research and Information Resources
UCSF Institute for Global Health Sciences COVID-19 Resources
UC Davis One Health Institute COVID-19 FAQs
Harvard Viswanath Lab Myths vs Facts

Note on this Document: This document was assembled by graduate and doctoral students attending the University of California, San Francisco with the intent of facilitating the rapid dissemination of information to the global community in order to help during this time. Hannah Thomas and Brooke VanSickle contributed to these summaries. This work is volunteer based.

References:

1. Solomon, M.D., et al., *The Covid-19 Pandemic and the Incidence of Acute Myocardial Infarction.* New England Journal of Medicine, 2020.
2. Peak, C.M., et al., *Individual quarantine versus active monitoring of contacts for the mitigation of COVID-19: a modelling study.* The Lancet Infectious Diseases.
3. McDonald, H.I., et al., *Early impact of the coronavirus disease (COVID-19) pandemic and physical distancing measures on routine childhood vaccinations in England, January to April 2020.* Eurosurveillance, 2020. **25**(19): p. 2000848.