1163-92-425   **Peter C Jentsch***, pjentsch@uwaterloo.ca, and **Chris T Bauch** and **Madhur Anand**.
Interactions between social distancing and vaccination in an age-structured model of COVID-19. Preliminary report.

The COVID-19 pandemic has produced an unprecedented worldwide closure of schools and workplaces, and created widespread awareness of the importance of contact patterns. To this end, recommendations by the World Health Organization (WHO) include physical distancing, and avoiding large gatherings. The effects of school closure, workplace closure, and physical distancing, vary significantly with age in a population, and age has been identified as a significant risk factor for poor prognosis in COVID-19 infections. Furthermore, perceived importance of physical distancing, and facility closure, is affected by the perceived severity of COVID-19 infection, and this results in feedback with disease dynamics. In this work, we combine these observations in an age-structured model of COVID-19 spread coupled with behavioural dynamics, parameterized with data from Ontario, Canada. We use this model to test the efficacy of various age-structured vaccination strategies with respect to the date of vaccine availability, projected vaccination rate and other variables. We find that with respect to minimizing long-term mortality, the best vaccination strategy depends significantly on these factors. (Received September 06, 2020)