Supplemental materials for

Supplemental Appendix 1a. Peer-reviewed studies by citation, country and study design

Citation	Country	Study Design	Main Findings
Asgary et al. (2020)	Canada	Mathematical modeling	A drive-through simulation tool for mass vaccination during COVID-19 pandemic.
Danchin et al. (2020)	Australia	Clinical article	A review of vaccine development, hesitancy and priority groups. General practitioners are crucial in ensuring public confidence in the COVID-19 vaccine.
Devereaux et al. (2020)	Canada	Qualitative study	Three themes emerged public health nurses' experiences during the H1N1 2009 pandemic: anticipating an emergency, surviving the chaos, persevering over time.
Grohskopf et al. (2020)	USA	Report	Updates the 2019-2020 recommendations of the Advisory Committee on Immunization Practices regarding the use of vaccines in the 2020-2021 influenza season.
Hosangadi et al. (2020)	USA	Qualitative	Most of the 33 public health jurisdictions included had not planned for mass vaccination. Barriers include insufficient staff, increased patient load, cold chain issues, and operational issues.
Lee et al. (2020)	Australia	Review	Opinion piece for the inclusion of pharmacists in mass vaccination.
Libotte et al. (2020)	China	Mathematical modeling	Two problems for vaccine administration during the COVID-19 pandemic: minimizing the quantity of infected individuals during vaccination, and minimizing together the quantity of infected individuals and the prescribed vaccine concentration during the treatment.
Capitano et al. (2019)	USA	Case study	A university-based mass immunization program in response to a Meningococcal B outbreak included 4 opt-in mass vaccine clinics, and administered 5,175 immunizations overall.
Fisher et al. (2018)	USA	Case study	A university-based mass immunization program in response to a Meningococcal B

			outbreak resulted in low vaccination rates, but successfully reached high risk populations. Focused efforts on specific at-risk populations to maximize immunization rates of those most at risk. Students preferred email for communication.
Perman et al. (2017)	Australia, Canada, USA, UK, global	Review	Common themes found in 44 studies of school-based mass vaccination: leadership, organizational models and institutional relationships, workforce capacity and roles particularly the school nurse, communication with parents and students, and clinic organization and delivery.
Ha et al. (2016)	USA	Case study/ quality improvement	Quality improvement changes in mass vaccination clinic (clinic moved from hallway to auditorium, implementing linear patient flow, staff wearing vests, standardizing training) decreased the number of staff members required and the total number of hours worked.
Mcneil et al. (2016)	USA	Review	Anaphylaxis post-vaccination is rare in all age groups. The majority of cases occur 30 minutes to hours after administration.
Beeler et al. (2014)	Canada	Mathematical modeling	A simulation case study to improve staffing decisions at mass immunization clinics for pandemic influenza (e.g., mean registration time and immunization time was 1.16 and 1.35 minutes, resp., with variations by age group)
Gupta et al. (2013)	USA	Mathematical modeling	A simulation tool used for a drive-through mass vaccination clinic, in which 19,000 patients were served. Model helps determine the required number of lanes, staff needed, and average user waiting time in the system.
Erlewyn-Lajeunesse et al. (2012)	Ireland, UK	Observational study	Anaphylaxis following immunization is rare. Most children reacted more than 30 minutes after vaccination.
Beeler et al. (2011)	Canada	Mathematical modeling	A simulation of pandemic influenza transmission risk found number of expected infections in a mass immunization clinic to be less than 1% of people vaccinated, or 9 per 1,000 vaccinations daily, warranting infection control measures.

Carr et al. (2011)	Australia	Case study	A field exercise to simulate a pandemic mass vaccination clinic identified significant opportunities to improve clinic efficiency and capacity, and patient throughput time (e.g., decreasing the number of stations and the distance between them, increasing traffic guides).
Pereira et al. (2011)	Canada	Mathematical modeling	Projected five-year cost of electronic systems were comparable or cheaper than for hybrid systems (electronic and paper-based), at all public health unit population sizes, with the co-benefit of having data rapidly available for reporting.
Plough et al. (2011)	USA	Case study	Health equity lessons learned from 109 mass vaccination clinics, in which 200,000 people were vaccinated: wide racial disparities in vaccination rate, with black Americans vaccinated the least. A barrier in the black community was mistrust, and community-level informal messaging that ran counter to official messages.
Porter et al. (2011)	USA	Case study	Multiple H1N1 mass vaccination clinics initially modelled after the CDC's *Large-Scale Vaccination Clinic Output and Staffing Estimates: an Example*, and refined after each clinic to maximize efficiency.
Prosser et al. (2008)	USA	Economic evaluation	Non-traditional setting (i.e., mass immunization clinics pharmacies) are more cost-effective than scheduled doctor's office visits for vaccine administration.
Asllani et al. (2007)	USA	Mathematical modeling	Systematic approach PRE-MITIGATE and simulation analysis was implemented in a real mass vaccination clinic to optimize operating decisions.
D'Heilly et al. (2006)	USA	Case study	Mass vaccination clinics are safe, and adverse events following immunization are extremely low.
Fontanesi et al. (2006)	USA	Comparison	Both traditional and non-traditional settings should be used in vaccinating high-risk adults. Scheduled doctor visits promoted a thorough review of the patient's health history and contact information, whereas mass vaccination clinics were more productive and efficient: patients were more

			likely to be vaccinated, to receive the mandatory vaccine information statements, and to spend less time in clinic.
Herman et al. (2006)	Canada	Comment	Recommends that the same nurse prepare and administer the immunization to ensure that the right drug and right dose reach the right patient at the right site. In the setting of mass vaccination clinics, nurses may pre-load their syringes.
Billittier et al. (2003)	USA	Case study	Electronic registration and tracking systems were superior to paper-based and optical character recognition systems, particularly in terms of speed and accuracy.

Supplemental Appendix 2. Guidelines and resources by organization.

Citation	Country	Study Design
WHO (2020) Framework for decision-making: implementation of mass vaccination campaigns in the context of COVID-19: interim guidance, 22 May 2020	International	Guidance
WHO (2020) Safety of mass immunization campaigns	International	Guidance
Centers for Disease Control and Prevention (2020) COVID-19 Vaccination Program Interim Playbook for Jurisdiction Operation.	USA	Guidance
Centers for Disease Control and Prevention (2020) Guidance for Planning Vaccination Clinics	USA	Guidance
Centers for Disease Control and Prevention (2020) Resources for Hosting a Vaccination Clinic	USA	Resources
Centers for Disease Control and Prevention (2020) Pre-Vaccination Clinic Activities	USA	Guidance
Glendale Regional Public Safety (2020) Ten Principles for Holding Safe Vaccination Clinics at Satellite, Temporary, or Off-Site Locations	USA	Guidance
IAC (2020) Mass Vaccination Resources	USA	Resources
VaccineShoppe.com (2020) Clinic Planning	USA	Resources
Public Health Agency of Canada (2017) Vaccine annex: Canadian Pandemic Influenza Preparedness: Planning Guidance for the Health Sector. Appendix B – Planning Guidance for Mass Immunization Clinics	Canada	Guidance
CANImmunize (2020)	Canada	Resources: Digital immunization record
Royal College of General Practitioners (2020) Delivering Mass Vaccinations During COVID-19: A Logistical Guide for General Practice	UK	Guidance
Joint Committee on Vaccination and Immunisation (2020) Advice on Priority Groups for COVID-19 Vaccination	UK	Guidance
Royal College of Nursing (2020) Practical and clinical guidance for vaccine administration	UK	Guidance
Australian Government (2020) Australia's Covid-19 Vaccine and Treatment Strategy	Australia	Guidance
Australian Government (2020) Australian Covid-19 Vaccination Policy	Australia	Guidance
Australian Government (2020) Australian Immunisation Handbook	Australia	Guidance

Health Protection New South Wales (2020) Mass Vaccination Clinics during an Influenza Pandemic	Australia	Guidance
New Zealand Ministry of Health (2020) Immunisation Handbook 2020	New Zealand	Guidance
The Immunisation Advisory Centre (2020) Observation period post influenza vaccination – 13 years and above	New Zealand	Recommendation