Impact of the pandemic on vaccine uptake, attitudes, and future immunization strategies

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Shannon MacDonald PhD, RN

Canada Research Chair (Tier 2), Applied Pediatric Immunization Associate Professor, Faculty of Nursing, University of Alberta Adjunct Professor, School of Public Health, University of Alberta Adjunct Professor, Department of Pediatrics, University of Calgary







Speaker: Shannon MacDonald

I have no conflict of interest to declare in relation to this presentation.

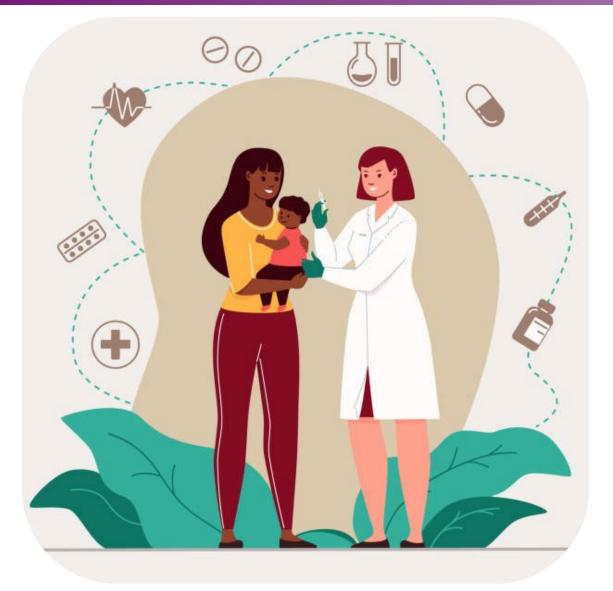




- Impact of the pandemic on routine immunization
- Strategies to improve vaccine coverage

CoverageAttitudes

Infant & preschool vaccine coverage





https://www.istockphoto.com/illustrations/baby-vaccination

Infant and pre-school vaccine coverage





Quebec: 18-month vaccines most impacted; quickly rebounded



Alberta: Coverage fluctuated with pandemic closures



Ontario: 2- and 7-year old coverage dropped and was slow to increase again

Ji et al. 2022. Impact of the COVID-19 pandemic on routine immunization coverage in children under 2 years old in Ontario, Canada. *Vaccine, 40*: 1790-1798 Public Health Ontario. *Immunization coverage report for routine infant and childhood programs in Ontario: 2019-20, 2020-21, 2021-22 school years*. July 2023 Kiely et al. 2022. COVID-19 pandemic impact on childhood vaccination coverage in Quebec, Canada. *Human Vaccines & Immunotherapeutics, 18*(1): e2007707 MacDonald SE, Paudel YR, Kiely M, Rafferty E, Sadarangani M, Robinson JL, Driedger SM, Svenson LW. Impact of the COVID-19 pandemic on vaccine coverage for early childhood vaccines in Alberta, Canada: A population-based retrospective cohort study. *BMJ Open.* 2022;12:e055968



School-based vaccine coverage

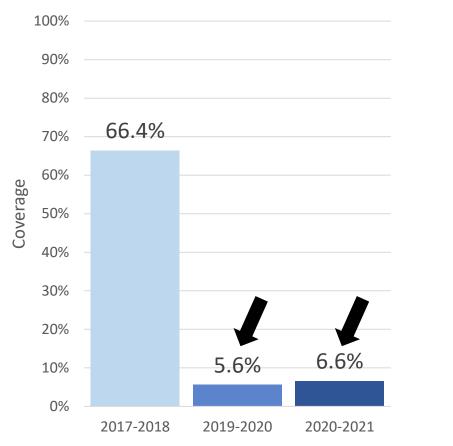


Applied Immunization research to inform best practice & policy

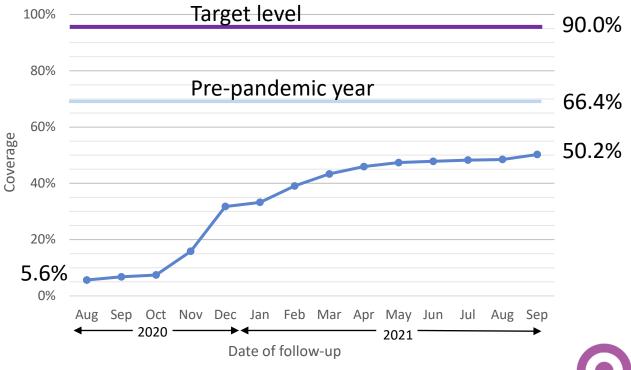
https://www.hopkinsmedicine.org/health/conditions-and-diseases/coronavirus/covid19-safety-tips-for-familie

School-based vaccine coverage: Human papillomavirus (HPV) in Alberta

HPV vaccine doses: Full coverage (2 doses) at end of school year



Trends in fully vaccinated for HPV: 2019-2020 pandemic cohort followed for a year

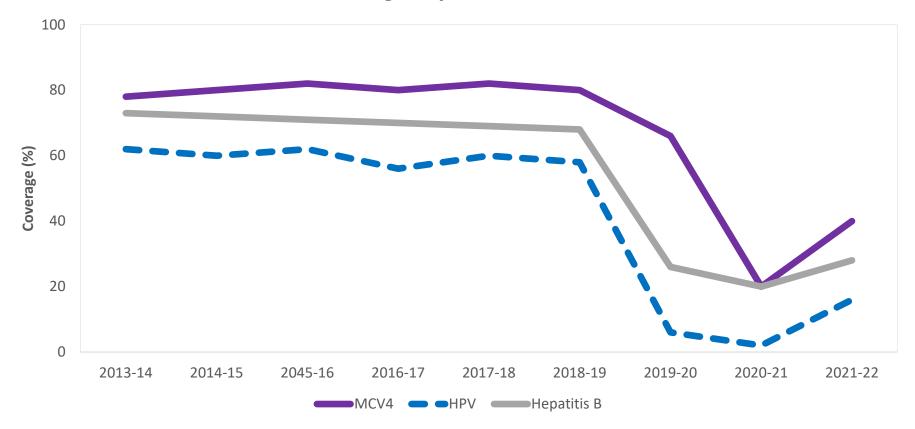




Sell H, Paudel YR, Voaklander D, MacDonald SE. School immunization coverage in adolescents during the COVID-19 pandemic: A retrospective cohort study. *Vaccine*. 2023;41(7):1333-1342.

School-based vaccine coverage: Ontario

Immunization coverage for Hep B, HPV, and MCV4 vaccines among 12-year-olds in Ontario

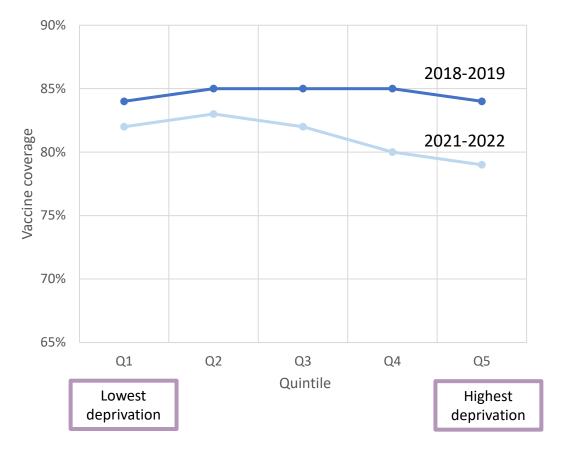




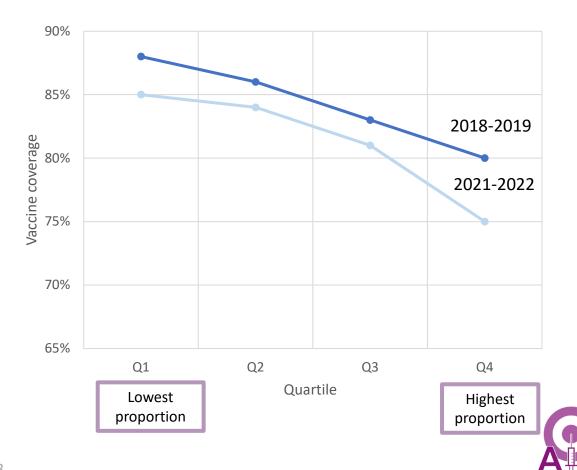
Public Health Ontario. 2023. Immunization coverage report for school-based programs in Ontario: 2019-20, 2020-21 and 2021-22 school years with impact of catch-up programs. https://www.publichealthontario.ca/-/media/Documents/I/2023/immunization-coverage-2019-2022.pdf?rev=8c17516457604f77aff7e0321157e536&sc_lang=en

School-based vaccine coverage: Quebec

HPV vaccine coverage (≥1 dose) by quintiles of the material deprivation index

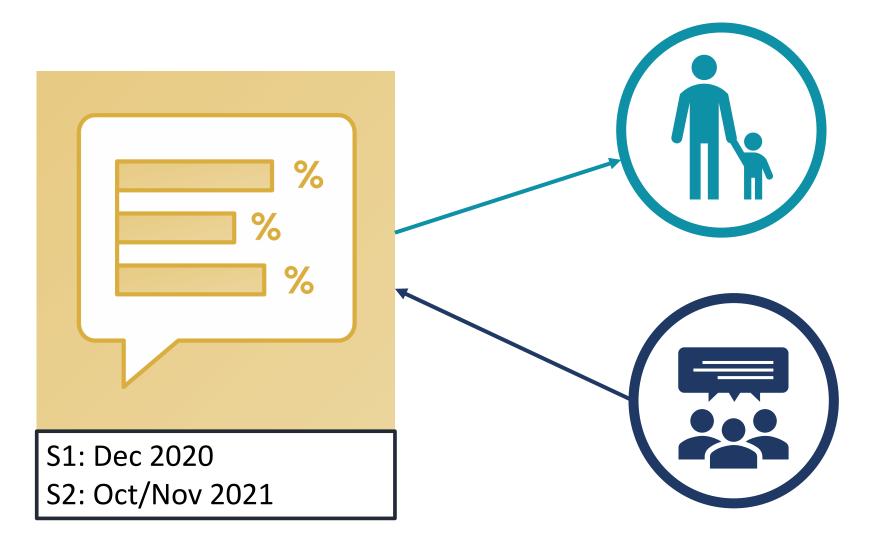


HPV vaccine coverage (≥1 dose) by quartiles of the proportion of immigrants in the dissemination area



to inform best practice & policy

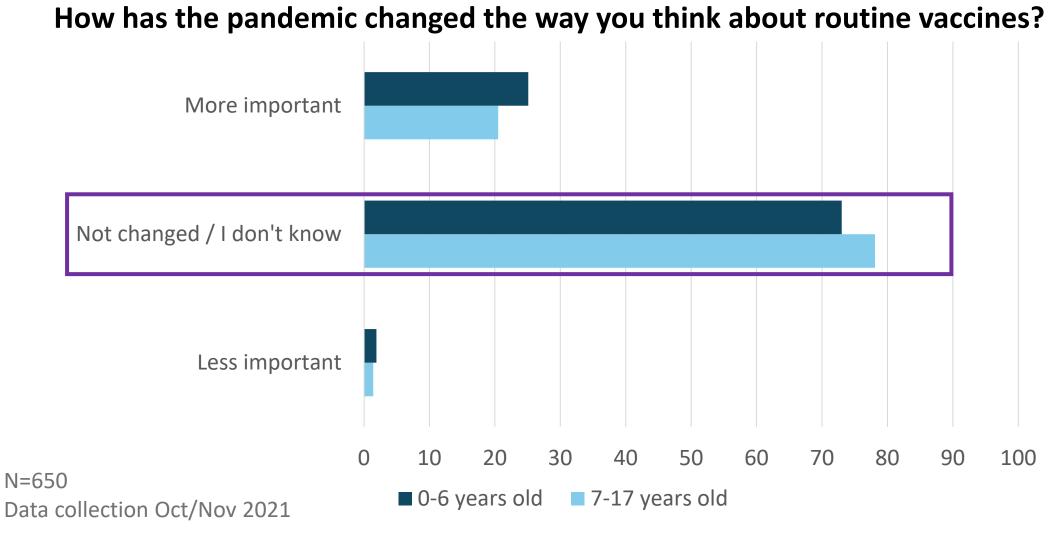
Impact on parental attitudes





Humble RM, Scott SD, Dubé E, Olson J, MacDonald SE. The impact of the COVID-19 pandemic on parents' perceptions and acceptance of routine childhood immunization: A national longitudinal study. 2022. *Vaccine*. In press

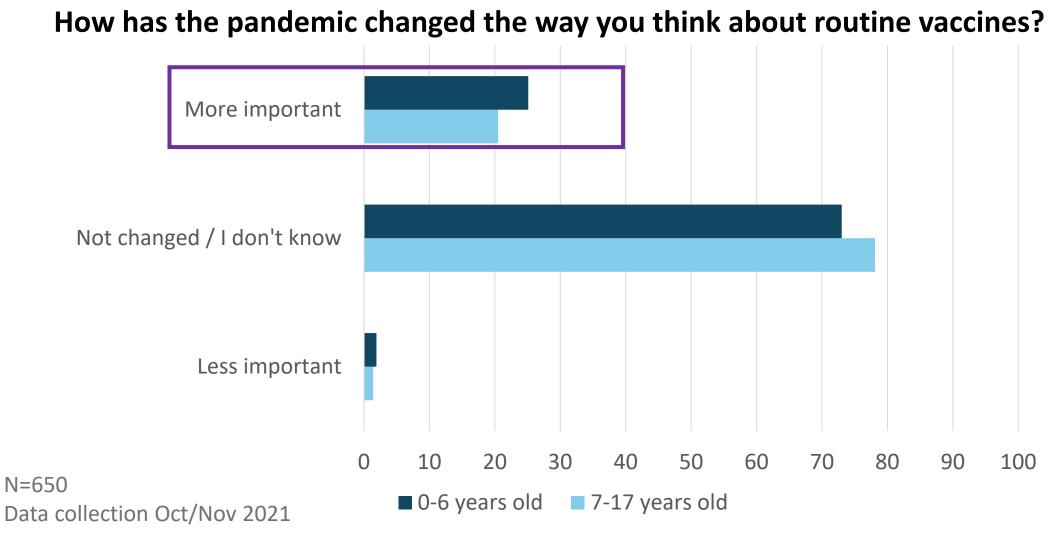
Impact on parental attitudes: Canada



Humble RM, Scott SD, Dubé E, Olson J, MacDonald SE. The impact of the COVID-19 pandemic on parents' perceptions and acceptance of routine childhood immunization: A national longitudinal study. *Vaccine*. 2023;41:407-415

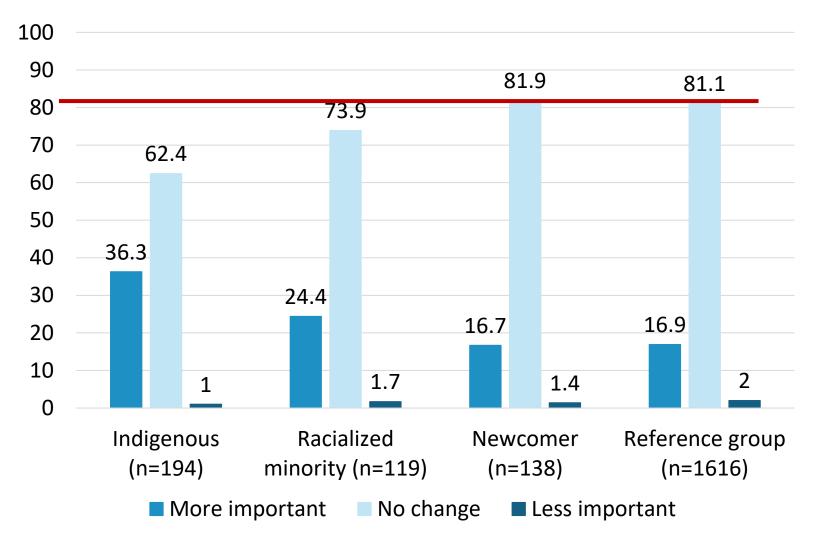


Impact on parental attitudes: Canada



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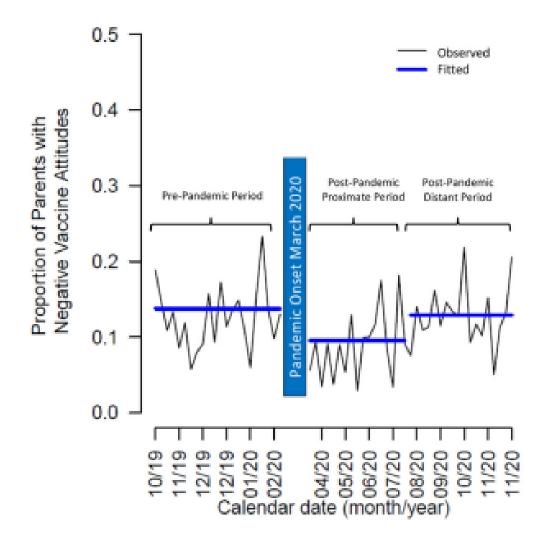
Impact on parental attitudes: Canada





Humble, R.M., Dubé, E., Olson, J., Scott, S.D., & MacDonald, S.E. Routine childhood vaccination among ethnocultural groups in Canada during the COVID-19 pandemic: A national cross-sectional study. Preventive Medicine Reports, Dec 2023; Volume 36. <u>https://doi.org/10.1016/j.pmedr.2023.102435</u>

Impact on parental attitudes: USA

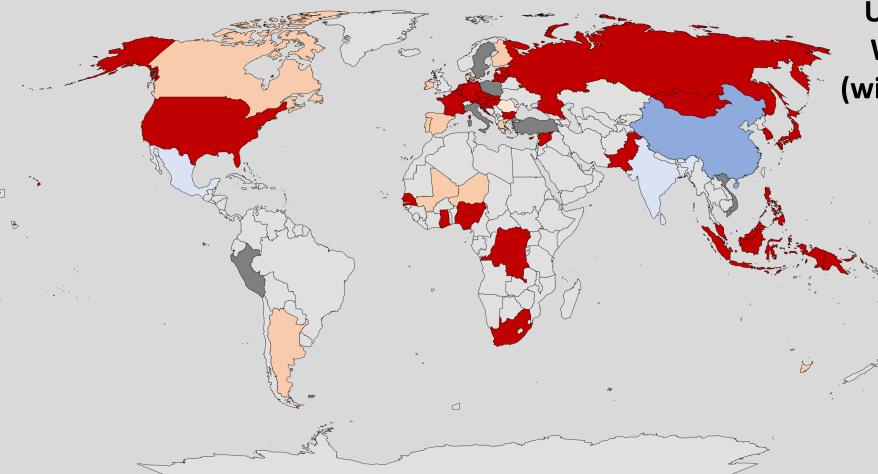


- Repeated cross-sectional surveys in Washington and Colorado
- More positive attitudes in early pandemic
- Followed by a return to prepandemic



Opel DJ, Furniss A, Zhou C, Rice JD, Spielvogle H, Spina C, Perreira C, Giang J, Dundas N, Dempsey A, Pahud B, Robinson J, O'Leary S. Parent Attitudes Towards Childhood Vaccines After the Onset of SARS-CoV-2 in the United States. Acad Pediatr. 2022 Nov-Dec;22(8):1407-1413. doi: 10.1016/j.acap.2022.06.014

Impact on parental attitudes: Global



-10% -5 to -10% 0 to -5% 0 to 5% 5 to 10% no change 0 no data

UNICEF - THE STATE OF THE WORLD'S CHILDREN, 2023 (with some important caveats)

> Surveyed "adults" rather than "caregivers" Didn't differentiate between COVID-19 and routine childhood vaccines



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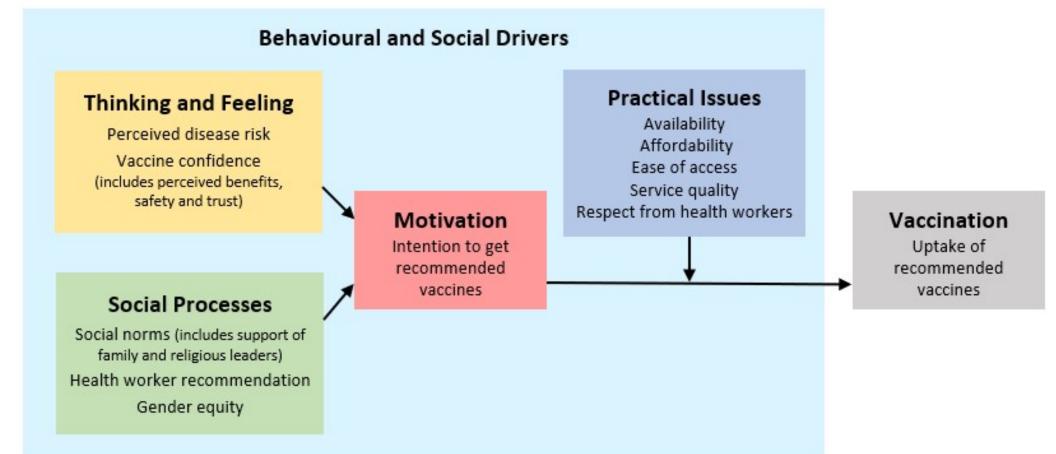
Building trust & confidence



- Culturally and linguistically appropriate educational materials
- Provider training opportunities
- Community engagement



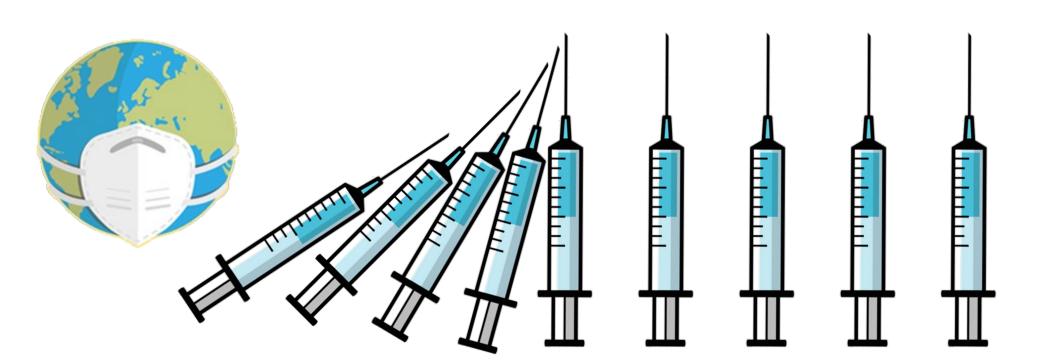
Factors influencing vaccine uptake





World Health Organization. Understanding the behavioral and social drivers of vaccine uptake. WHO position paper-May 2022

Impact on vaccine delivery





Strategies: Improving access



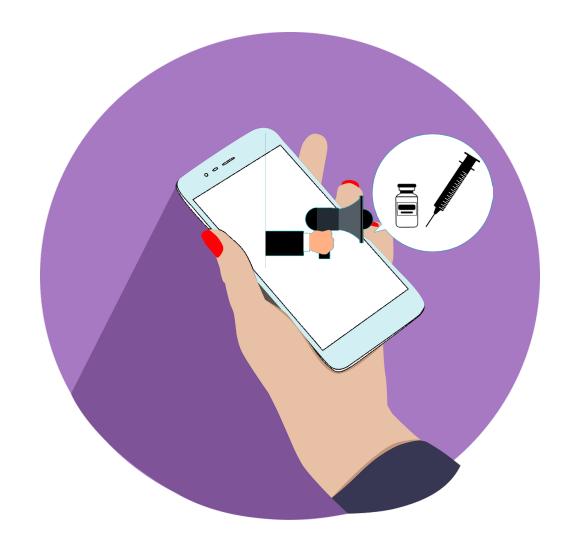
Leverage existing connections



Develop new opportunities



Strategies: Digital communication



- Prompts and reminders
- Decision-making tools



Context is critical: Existing delivery systems



School-aged children: School-based program

Infant program: Public Health Centres, physicians

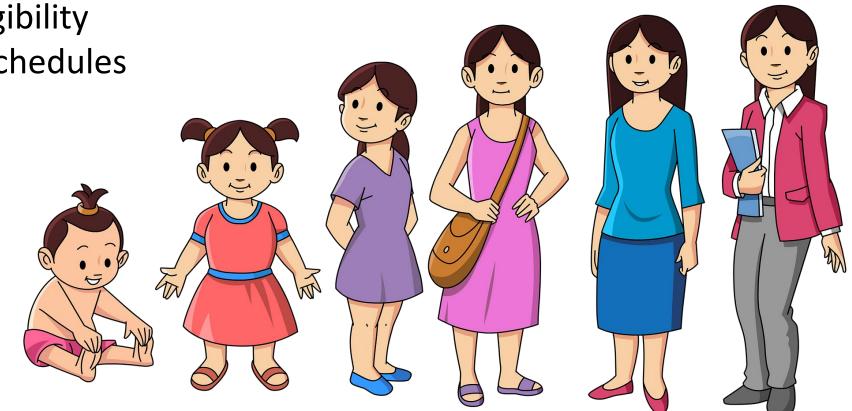


https://www.istockphoto.com/illustrations/baby-vaccination

https://www.hopkinsmedicine.org/health/conditions-and-diseases/coronavirus/covid19-safety-tips-for-families

Context is critical: Publicly-funded eligibility

- Vaccine eligibility
- Changing schedules





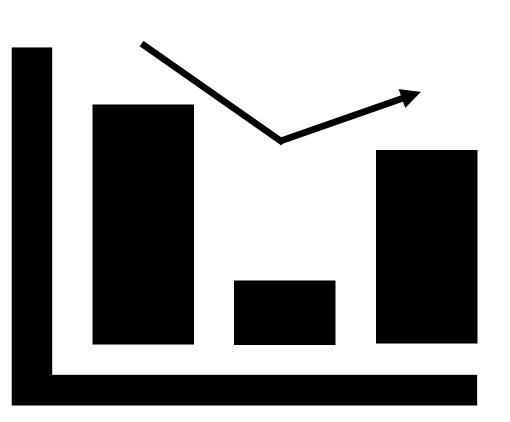
Context is critical: Data systems



- Data system strength
- Information sharing



Conclusion







Thanks to:

Members of my team who provided important content:

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- Crystal Du, MSc (Epi)
- Hannah Sell, MSc (Epi)

For more information, contact: Shannon MacDonald RN, PhD





Applied Immunization (Aimm) research team: aimmresearch.ca

