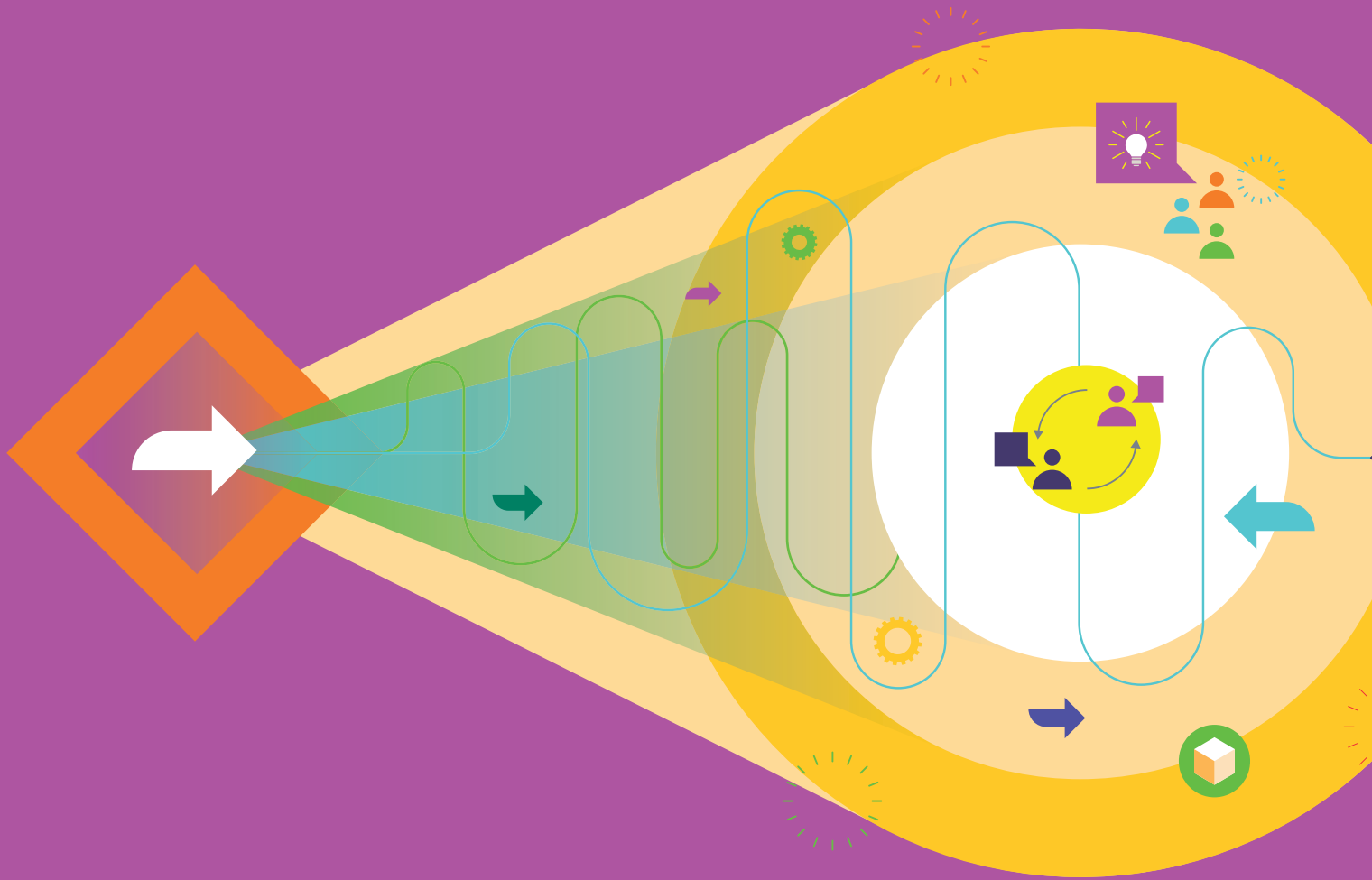


Building Vaccine Confidence: Supporting COVID-19 Vaccine Uptake in Health Care Workers

A RESEARCH BRIEF



Globally, health care workers are among the first groups of people to have access to the COVID-19 vaccine. Prioritization has been given to health care workers for a number of reasons:

- Health care workers have an elevated risk of exposure, infection, and disease.^{1, 2}
- Protecting health care workers will prevent the loss of a critical workforce.³
- Health care workers are a trusted source of vaccine information and play a key role in promoting vaccine acceptance and uptake.⁴

However, recent surveys suggest a high rate of COVID-19 vaccine hesitancy among health care workers is driven by low confidence in the safety and efficacy of the vaccine, with many indicating that they would rather “wait-and-see”. Developing effective strategies that increase vaccine confidence and lead to maximal vaccine uptake is crucial. High vaccine confidence among health care workers will also be important to ensure vaccine uptake in the general population.⁵

This research brief provides an overview of the issues surrounding vaccine confidence, barriers to building confidence and outlines strategies that may assist in building vaccine confidence. Sources are provided throughout the brief for further reference and a resource section is included at the end for additional reading.



THE WHY

Vaccine Confidence and COVID-19 Vaccines

The decision to vaccinate involves a complex mix of psychosocial, cultural, economic, political, and other factors that often go beyond exposure to misinformation and anti-vaccine movements. One suggested model for understanding people’s decisions to vaccinate is based around four Cs: ^{6,7}



Vaccine confidence is defined as the trust that patients, parents, or health care providers have in:⁸

- The recommended immunizations
- The provider(s) who administers vaccines
- The process that leads to vaccine development, licensure, manufacturing, and recommendations for use

Although health care workers may have high confidence in vaccines in general, the rapid development and deployment of the COVID-19 vaccine has generated safety and efficacy concerns. A survey conducted by the American Nurses Foundation in October 2020 exploring nurses' knowledge of and attitudes towards COVID-19 vaccine development found that 37% of respondents were not confident that a COVID-19 vaccine would be safe and effective and 36% of respondents indicated that they would not voluntarily receive the vaccine.⁹

The Kaiser Family Foundation survey on COVID-19 vaccine hesitancy in the US found that almost a third (29%) of health care workers were hesitant about receiving the vaccine.¹⁰ Worry about possible side effects and wanting to wait to see how the vaccine worked for other people were two of the most common reasons mentioned for being hesitant.

THE WHAT

Challenges in Building COVID-19 Vaccine Confidence

The COVID-19 vaccines bring some unique challenges that have not typically been an issue for other vaccines. While many factors influence vaccine confidence in health care workers, research shows the following as the main challenges to overcoming vaccine hesitancy:

Rapid development and novelty of COVID-19 vaccines

The unprecedented speed of trials to test COVID-19 vaccine safety and efficacy has increased people's perception of risk. There is also currently no long-term safety information, and efficacy in some demographic groups is not well understood.

New vaccine platforms (e.g., nucleic acid-based vaccines) have led to new concerns, such as the fear that these vaccines will alter a person's DNA.¹¹ Other uncertainties including the lack of transparency in the vaccine development process¹² and the duration of vaccine protection¹³ may undermine confidence.

Information sharing and social media

Social media can spread and amplify misinformation, disinformation, and anti-vaccine narratives that become difficult to refute.^{14,15} News media may overemphasize rare events¹⁶ and create associations between vaccines and unrelated adverse events¹⁷ increasing the perception of risk of COVID-19 vaccines.

Politicization of the pandemic and COVID-19 vaccine development

Governments have downplayed the pandemic and suppressed science,¹⁸ undermining public trust in both institutions. Political involvement in vaccine development has been shown to be associated with a decreased willingness to receive the COVID-19 vaccine.¹⁹

THE HOW

Strategies to Build Vaccine Confidence

Efforts to build vaccine confidence should focus on increasing trust in vaccine effectiveness and safety, in the public health response, and in health systems and government more broadly. A number of organizations have developed strategies specifically focused on building confidence in COVID-19 vaccines, including [The National Academies of Sciences, Engineering, and Medicine](#); [The US Centers for Disease Control and Prevention \(CDC\)](#); [Social Science in Humanitarian Action Platform](#); [The American Pharmacists Association](#); and the [American Psychological Association](#).

The following table synthesizes and combines evidence-based approaches to build vaccine confidence drawing from academic literature^{20, 21, 22, 23, 24} and organizations' strategies and guidance documents. The list is not exhaustive and focuses on approaches that are relevant to building confidence among health care workers in hospitals and other health care settings.

Table 1: Approaches to building vaccine confidence in health care workers

<p>Engage vaccine champions</p>	<ul style="list-style-type: none"> • Identify and partner with trusted leaders from different areas and occupational groups in the facility to help convey information and facilitate dialogue • Share their stories and reasons for choosing to receive the vaccine • Co-design targeted strategies for effective communication
<p>Host small discussions</p>	<ul style="list-style-type: none"> • Hold culturally and linguistically appropriate discussions with staff across all occupational groups to address questions, concerns and get input on how to increase vaccine confidence • Bring the discussion to where people are based • Consider applying principles of Motivational Interviewing²⁵ - empathy, collaboration, evocation and support for autonomy
<p>Communicate across multiple channels</p>	<ul style="list-style-type: none"> • Share key messages in multiple formats and across multiple channels (e.g., videos, blogs, emails, posters) • Make information available in multiple languages and use visuals • Tailor messages to specific populations
<p>Educate and empower staff</p>	<ul style="list-style-type: none"> • Educate clinical and non-clinical staff on COVID-19 vaccines and communication around vaccines • Provide an opportunity for staff to ask and have questions answered (e.g., dedicated phone line, email, social media livestreams) • Empower and provide resources to staff to have vaccine conversations with colleagues, family, friends, and community members
<p>Work towards racial equity</p>	<ul style="list-style-type: none"> • Acknowledge existing inequities and systemic racism • Acknowledge disparities in COVID-19 health outcomes by race and ethnicity • Make a commitment to advance health equity and work with trusted leaders to create health for all communities
<p>Measure and communicate inequities in vaccine distribution</p>	<ul style="list-style-type: none"> • Monitor vaccine distribution within the organization and communicate findings • Work with leaders to implement solutions to address inequities
<p>Make vaccine uptake visible</p>	<ul style="list-style-type: none"> • Provide pins, stickers, lanyards • Create photo galleries in break rooms • Record and share testimonials • Encourage people to share with colleagues, friends, and family that they received the vaccine

Things to Consider When Building Vaccine Confidence

Communication is fundamental to building vaccine confidence. Being credible, clear, empathetic, and honest have been shown to be essential in building trust and promoting acceptance of vaccines.²⁶ A better understanding of the barriers to and motivators of vaccination for particular populations can help target communication activities and messaging accordingly. Please refer to the Ontario Hospital Association’s research brief on [effective communication strategies](#) for more detailed guidance and recommendations.

Emotions such as fear, anxiety, and regret, are important drivers of vaccination.^{27, 28} Fear of infection or the severity of COVID-19 might strengthen a person’s intention to get vaccinated but eliciting anger can have the opposite effect.²⁹

Social norms, the shared rules within a group that determine behaviour, may increase uptake if the norm is to vaccinate but can be counterproductive if members of the group refuse to vaccinate.³⁰

Heuristics and cognitive biases, mental shortcuts that allow people to solve problems and make judgements quickly, influence vaccine decision-making.³¹ For example, people tend to assign more value to rare events and often ignore the true rate of occurrence leading to inaccurate probability judgments (base rate fallacy). When deciding whether to be vaccinated, people may exaggerate the risk of an anaphylactic reaction even though the likelihood of this happening is incredibly low. A useful list of cognitive biases can be found [here](#).

Other Approaches to Increase Vaccine Acceptance and Uptake

Interventions that draw on marketing³², psychological science³³, and behavioural insights³⁴ can also increase vaccine acceptance and uptake. The following table outlines examples of interventions that may be implemented as part of or in combination with vaccine confidence strategies.

Table 2: Examples of interventions to increase vaccine acceptance and considerations for implementation

Intervention	Considerations
Informational campaigns E.g., fear appeals, myth debunking	<ul style="list-style-type: none"> • Fear messages may increase intentions to get vaccinated but anger toward the message may undermine its impact (affect heuristic) • Correcting misinformation and refuting myths can be ineffective or counterproductive (belief perseverance and back-fire effect) • Sharing statistical probabilities of rare events and instead highlight the typical experience (base rate fallacy)
Incentives E.g., cash payments, gift cards,	<ul style="list-style-type: none"> • Reducing out-of-pocket costs (e.g., transportation fare) may increase vaccine uptake • Incentives may heighten perceived risks and decreased uptake • Rewards may decrease voluntary behaviour
Default appointments E.g., make vaccine appointments “opt-out”	<ul style="list-style-type: none"> • May work for people who already intend to get vaccinated but anger people who have low confidence • May increase the number of “no-shows” to scheduled appointments
Increase observability E.g., stickers, buttons, lanyards	<ul style="list-style-type: none"> • Visible signals of broad vaccine acceptance can help establish vaccination as a social norm • Some signals, such as buttons/stickers, may be counterproductive if uptake is low
Highlight natural scarcity E.g., reinforce privilege to be prioritized	<ul style="list-style-type: none"> • May counter “wait-and-see” attitude • Fear of not being able receive a second dose may increase hesitancy to get first dose

RESOURCES

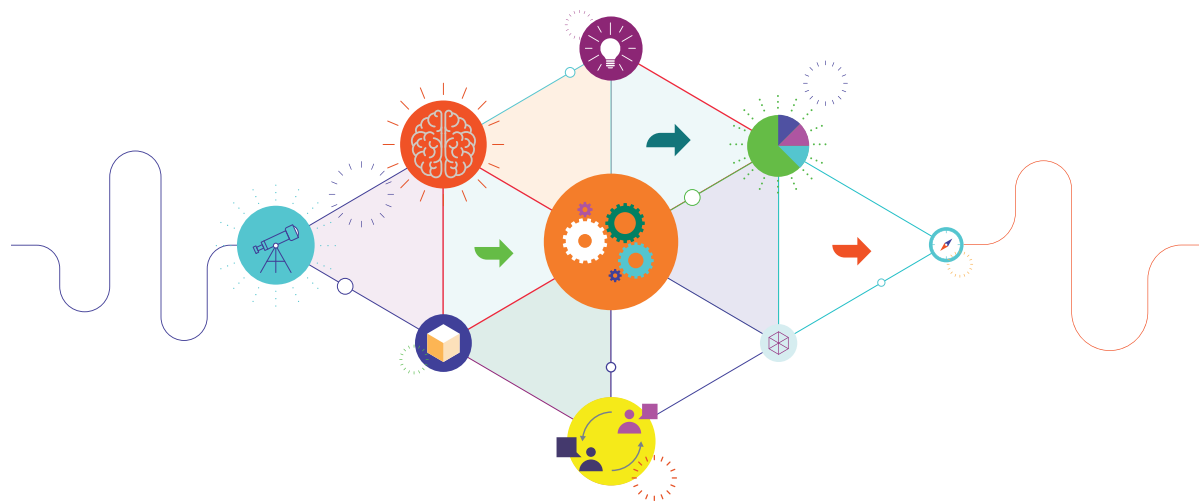
- The American Psychological Association – [Building Vaccine Confidence Through Community Engagement](#)
- American Pharmacists Association – [Vaccine Hesitance: Understanding and Addressing Vaccine Hesitancy During COVID-19](#)
- Center for Public Interest Communications [A practitioner’s guide to the principles of COVID-19 vaccine communications](#) – includes a set of principles for sharing vaccine information that can help increase trust, acceptance and demand for vaccination
- First Draft News [Vaccine Insights Hub](#) – insights, intelligence, and reporting guidance on emerging health and vaccine misinformation
- The US Centers for Disease Control and Prevention (CDC)
 - [Vaccinate with Confidence](#) – strategy to reinforce confidence in the COVID-19 vaccine
 - [How to Build Healthcare Personnel’s Confidence in COVID-19 Vaccines](#) – outlines steps facilities can take to make HCWs more confident in the decision to get vaccinated
 - [Toolkit for Medical Centers, Pharmacies, and Clinicians](#) – ready-made materials that can be used or adapted to build confidence about COVID-19 vaccination among your healthcare teams and other staff
- [Recipient Education Toolkit](#) – communication strategies and tips for effectively setting expectations and addressing questions from COVID-19 vaccine recipients
- [Long-term Care Facility Toolkit](#) – information and resources to help build vaccine confidence among healthcare personnel (HCP) and residents
- World Health Organization (WHO)
 - [Vaccine Safety Net \(@VaccineSafetyN\)](#) – network of websites, established by the WHO to provide reliable information on vaccine safety
 - [Vaccination and Trust](#) – scientific evidence behind WHO’s recommendations on building and restoring confidence in vaccines and vaccination, both in ongoing work and during crises
 - [Manufacturing, safety and quality control of vaccines](#)



ENDNOTES

- 1 Nguyen, L. H., Drew, D. A., Joshi, A. D., Guo, C. G., Ma, W., Mehta, R. S., Sikavi, D. R., Lo, C. H., Kwon, S., Song, M., Mucci, L. A., Stampfer, M. J., Willett, W. C., Eliassen, A. H., Hart, J. E., Chavarro, J. E., Rich-Edwards, J. W., Davies, R., Capdevila, J., Lee, K. A., ... Chan, A. T. (2020). Risk of COVID-19 among frontline healthcare workers and the general community: a prospective cohort study. *Lancet Public Health*, 5(9), E475–E483. [https://doi.org/10.1016/S2468-2667\(20\)30164-X](https://doi.org/10.1016/S2468-2667(20)30164-X)
- 2 Chou, R., Dana, T., Buckley, D. I., Selph, S., Fu, R., & Totten, A. M. (2020). Epidemiology of and Risk Factors for Coronavirus Infection in Health Care Workers: A Living Rapid Review. *Annals of Internal Medicine*, 173(2), 120–136. <https://doi.org/10.7326/M20-1632>
- 3 National Academies of Sciences, Engineering, and Medicine (2020). *Framework for Equitable Allocation of COVID-19 Vaccine*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/25917>
- 4 Yeung, M. P., Lam, F. L., & Coker, R. (2016). Factors associated with the uptake of seasonal influenza vaccination in adults: a systematic review. *Journal of Public Health*, 38(4), 746–753. <https://doi.org/10.1093/pubmed/fdv194>
- 5 Karlsson, L. C., Lewandowsky, S., Antfolk, J., Salo, P., Lindfelt, M., Oksanen, T., Kivimäki, M., & Soveri, A. (2019). The association between vaccination confidence, vaccination behavior, and willingness to recommend vaccines among Finnish healthcare workers. *PloS ONE*, 14(10), e0224330. <https://doi.org/10.1371/journal.pone.0224330>
- 6 Betsch, C., Böhm, R., & Chapman, G. B. (2015). Using behavioral insights to increase vaccination policy effectiveness. *Policy Insights from the Behavioral and Brain Sciences*, 2(1), 61–73. <https://doi.org/10.1177/2372732215600716>
- 7 MacDonald, N. E., & SAGE Working Group on Vaccine Hesitancy (2015). Vaccine hesitancy: Definition, scope and determinants. *Vaccine*, 33(34), 4161–4164. <https://doi.org/10.1016/j.vaccine.2015.04.036>
- 8 Assessing the State of Vaccine Confidence in the United States: Recommendations from the National Vaccine Advisory Committee: Approved by the National Vaccine Advisory Committee on June 9, 2015 [corrected]. (2015). *Public Health Reports*, 130(6), 573–595. <https://doi.org/10.1177/003335491513000606>
- 9 American Nurses Foundation (2020, October). *Pulse on the Nation's Nurses COVID-19 Survey Series: COVID-19 Vaccine*. <https://www.nursingworld.org/practice-policy/work-environment/health-safety/disaster-preparedness/coronavirus/what-you-need-to-know/covid-19-vaccine-survey>
- 10 Hamel, L., Kirzinger, A., Munana, C., & Brodie, M. (2020, December 15). *KFF COVID-19 Vaccine Monitor*. <https://www.kff.org/coronavirus-covid-19/report/kff-covid-19-vaccine-monitor-december-2020/>
- 11 Forster, V (2021, January 11). Covid-19 Vaccines Can't Alter Your DNA, Here's Why. *Forbes*. <https://www.forbes.com/sites/victoriaforster/2021/01/11/covid-19-vaccines-cant-alter-your-dna-heres-why/>
- 12 Nature. (2020). COVID vaccine confidence requires radical transparency. *Nature*, 586(7827), 8–8. <https://doi.org/10.1038/d41586-020-02738-y>
- 13 The Lancet (2020). COVID-19 vaccines: no time for complacency. *Lancet*, 396(10263), 1607. [https://doi.org/10.1016/S0140-6736\(20\)32472-7](https://doi.org/10.1016/S0140-6736(20)32472-7)
- 14 Puri, N., Coomes, E. A., Haghbayan, H., & Gunaratne, K. (2020). Social media and vaccine hesitancy: new updates for the era of COVID-19 and globalized infectious diseases. *Human Vaccines & Immunotherapeutics*, 16(11), 2586–2593. <https://doi.org/10.1080/21645515.2020.1780846>
- 15 Burki T. The online anti-vaccine movement in the age of COVID-19. *Lancet Digital Health*. 2020;2(10):e504–e505. doi:10.1016/S2589-7500(20)30227-2
- 16 Weiland, N., LaFraniere, S., Baker, M., & Thomas, K. (2020, December 16). 2 Alaska Health Workers Got Emergency Treatment After Receiving Pfizer's Vaccine. *New York Times*. <https://www.nytimes.com/2020/12/16/health/covid-pfizer-vaccine-allergic-reaction.html>
- 17 Torjesen I. (2021). Covid-19: Norway investigates 23 deaths in frail elderly patients after vaccination. *BMJ*, 372, n149. <https://doi.org/10.1136/bmj.n149>
- 18 Abbasi K. (2020). Covid-19: politicisation, “corruption,” and suppression of science. *BMJ*, 371, m4425. <https://doi.org/10.1136/bmj.m4425>
- 19 Kreps, S., Prasad, S., Brownstein, J. S., Hswen, Y., Garibaldi, B. T., Zhang, B., & Kriner, D. L. (2020). Factors Associated With US Adults' Likelihood of Accepting COVID-19 Vaccination. *JAMA Network Open*, 3(10), e2025594. <https://doi.org/10.1001/jamanetworkopen.2020.25594>
- 20 Badur, S., Ota, M., Öztürk, S., Adegbola, R., & Dutta, A. (2020). Vaccine confidence: the keys to restoring trust. *Human Vaccines & Immunotherapeutics*, 16(5), 1007–1017. <https://doi.org/10.1080/21645515.2020.1740559>
- 21 Jarrett, C., Wilson, R., O'Leary, M., Eckersberger, E., Larson, H. J., & SAGE Working Group on Vaccine Hesitancy (2015). Strategies for addressing vaccine hesitancy - A systematic review. *Vaccine*, 33(34), 4180–4190. <https://doi.org/10.1016/j.vaccine.2015.04.040>
- 22 Sondagar, C., Xu, R., MacDonald, N. E., & Dubé, E. (2020). Vaccine acceptance: How to build and maintain trust in immunization. *Canada Communicable Disease Report*, 46(5), 155–159. <https://doi.org/10.14745/ccdr.v46i05a09>
- 23 Schumacher, S., Salmanton-García, J., Cornely, O. A., & Mellinghoff, S. C. (2020). Increasing influenza vaccination coverage in healthcare workers: a review on campaign strategies and their effect. *Infection*, 1–13. Advance online publication. <https://doi.org/10.1007/s15010-020-01555-9>
- 24 Volpp, K. G., Loewenstein, G., & Buttenheim, A. M. (2021). Behaviorally Informed Strategies for a National COVID-19 Vaccine Promotion Program. *JAMA*, 325(2), 125–126. <https://doi.org/10.1001/jama.2020.24036>
- 25 Gagneur A. (2020). Motivational interviewing: A powerful tool to address vaccine hesitancy. *Canada Communicable Disease Report*, 46(4), 93–97. <https://doi.org/10.14745/ccdr.v46i04a06>

- 26 Dubé, E., Gagnon, D., & Vivion, M. (2020). Optimizing communication material to address vaccine hesitancy. *Canada Communicable Disease*, 46(2-3), 48–52. <https://doi.org/10.14745/ccdr.v46i23a05>
- 27 Chapman, G. B., & Coups, E. J. (2006). Emotions and preventive health behavior: worry, regret, and influenza vaccination. *Health Psychology*, 25(1), 82–90. <https://doi.org/10.1037/0278-6133.25.1.82>
- 28 Chou, W. S., & Budenz, A. (2020). Considering Emotion in COVID-19 Vaccine Communication: Addressing Vaccine Hesitancy and Fostering Vaccine Confidence. *Health Communication*, 35(14), 1718–1722. <https://doi.org/10.1080/10410236.2020.1838096>
- 29 Betsch, C., & Böhm, R. (2016). Detrimental effects of introducing partial compulsory vaccination: experimental evidence. *European Journal of Public Health*, 26(3), 378–381. <https://doi.org/10.1093/eurpub/ckv154>
- 30 Dubé, E., Laberge, C., Guay, M., Bramadat, P., Roy, R., & Bettinger, J. (2013). Vaccine hesitancy: an overview. *Human Vaccines & Immunotherapeutics*, 9(8), 1763–1773. <https://doi.org/10.4161/hv.24657>
- 31 Smith, J. C., Appleton, M., & MacDonald, N. E. (2013). Building confidence in vaccines. *Advances in Experimental Medicine and Biology*, 764, 81–98. https://doi.org/10.1007/978-1-4614-4726-9_6
- 32 Wood, S., & Schulman, K. (2021). Beyond Politics - Promoting Covid-19 Vaccination in the United States. *The New England Journal of Medicine*, 10.1056/NEJMms2033790. Advance online publication. <https://doi.org/10.1056/NEJMms2033790>
- 33 Brewer, N. T., Chapman, G. B., Rothman, A. J., Leask, J., & Kempe, A. (2017). Increasing Vaccination: Putting Psychological Science Into Action. *Psychological Science in the Public Interest*, 18(3), 149–207. <https://doi.org/10.1177/1529100618760521>
- 34 Betsch, C., Böhm, R., & Chapman, G. B. (2015). Using Behavioral Insights to Increase Vaccination Policy Effectiveness. *Policy Insights from the Behavioral and Brain Sciences*, 2(1), 61–73. <https://doi.org/10.1177/2372732215600716>



200 Front Street West, Suite 2800
Toronto, Ontario M5V 3L1
www.oha.com