



## Editorial

## Strategies to increase vaccine acceptance and uptake: From behavioral insights to context-specific, culturally-appropriate, evidence-based communications and interventions



Vaccines save least 5 lives a minute, but they could save many more [1]. An estimated 1.5 million deaths – the equivalent of 8 jumbo jets crashing every day – could be averted if global vaccination uptake improved [2]. Yet, increasing vaccine coverage is not as simple as educating people about the benefits of vaccination. There are many barriers and drivers which affect vaccine uptake, ranging from logistics such as ensuring people have access to and are aware of affordable vaccines, to socio-psychological factors underpinning people's acceptance to be vaccinated [3]. Until recently, much that had been done to address vaccine hesitancy and low vaccine coverage was based on untested beliefs or good ideas rather than on solid evidence, but this is changing. This special issue, stemming from an annual meeting on vaccine confidence and coverage [4], builds on an increasing body of empirical evidence seeking to identify the determinants of vaccine acceptance and uptake. Importantly, it also echoes changes in this field, by moving beyond understanding to action, highlighting a number of social and behavior change interventions that have been designed and tested for impact. In the remainder of this Editorial, we highlight the key points from the contributing articles and their implications for designing effective communication and intervention strategies to increase vaccine acceptance and uptake.

### 1. Communicating your reasons are not enough: Begin by understanding your target audience

“People just need to understand the benefits and value of vaccines!” This commonly-heard cry unfortunately assumes that low acceptance is due to lack of knowledge and thus providing facts and arguments will suffice to induce action. Most smokers understand the benefits and value of quitting smoking, illustrating that knowledge attainment does not necessarily influence health related behaviors. The research included in this issue highlights that vaccine hesitancy has numerous possible demographic and socio-psychological root causes, many of which are not knowledge-related. The development of effective strategies to sustain trust in vaccination programs requires an understanding of the particular social and psychological factors that determine the vaccination decisions of different populations with different vaccines. In this issue, a number of studies which variously investigated hesitant compliers (concerned but fully-vaccinated parents), hesitant mothers, pregnant women, parents of young children, and community leaders and members identified both common (eg. trust) and specific factors that may underpin vaccine acceptance in these different groups [5–10]. The important role in vaccine

acceptance and uptake of communities, which may manifest through co-localization or common interests, is also highlighted [11].

### 2. Saying it is not enough: Target your communications to the needs of your audience

Communication is important to sustaining uptake in any vaccination program, and while the content should be evidence-based, the development and implementation of communication is not always grounded in communication science principles. As a result, when vaccination communication strategies are tested for efficacy in terms of intentions to vaccinate they may often be ineffective, or may even backfire [12]. Through understanding the different communication needs of parents with different attitudes to vaccination, the study by Berry et al. helps facilitate tailoring of a communications intervention [8]. The lessons learned from an online hub of pro-vaccine information, that highlight the importance of transparency and credibility to build trust, and of tone, style (storytelling), and content (videos and animations) to increase resonance with readers provides a practical playbook for other online, and interpersonal, communications projects [13]. Ohlrogge et al. found that national influenza communications in Europe were often inconsistent with national recommendations and were rarely evaluated [14]. One challenge to the development of effective communications is a lack of consistent and validated outcome measures. This has, in part, been addressed by Kaufman et al., whose mapping of core outcome domains for communication on childhood vaccination allows the selection of appropriate measures for different communications approaches [15]. Parrish-Sprowl argues that research and practice that only account for message content misses the impact of the broader communication process and context [16]. Or, the way a healthcare professional (HCP), for example, talks about vaccination to a patient is as important, or perhaps more so, than what they actually say in terms of behavioral outcomes.

### 3. Communicating to people is not enough: Listen to and engage healthcare professionals too

A recommendation from an HCP consistently emerges as an important determinant of vaccination acceptance. While HCPs are usually the most trusted source of information on vaccines, they themselves may be unsure about vaccination or vaccination conversations with their patients. Atwell et al. observed that while

most midwives studied supported vaccination, they held a broad of beliefs and concerns related to vaccination [17]. Two new validated scales for measuring motivation of HCPs towards influenza vaccination and towards advocating influenza vaccination [18] can be used to better understand the drivers of hesitancy among HCPs. A six-country study showed that these scales can identify meaningful and actionable clusters of HCPs, which may inform the tailoring of communications or interventions according to underlying motivations [19]. Equipping HCPs with tools to communicate with their patients may also contribute to establish a more trusting and constructive dialogue. For example, an intervention based on motivational interviewing, which acknowledges the importance of the communication process and context through emphasizing the importance of respect and empathy, and of understanding the position of the parent regarding vaccines, showed effectiveness on acceptance, intention to vaccinate, and actual vaccine coverage [20].

#### 4. Communicating is not enough: Design culturally targeted interventions to improve access to vaccines

Bedford et al underscore the importance of viewing vaccine hesitancy as only one possible determinant of under-vaccination [21]. In India, where just over half of infants are fully vaccinated, mothers reported that non-vaccination of their children was variously due to challenges related to awareness, acceptance and affordability (both financial and non-financial costs) [22]. While Nagar et al.'s randomized controlled trial of a multicomponent intervention with a culturally tailored digital vaccination record and reminders in rural India did not significantly increase timely vaccination, the inclusion of process outcomes will allow further adaptation of the approach to better match communication to the user [23].

The contributions from this special issue illustrate implications for designing effective communication and intervention strategies to increase vaccine acceptance and uptake. Clearly, context matters and communications must be designed to fit the needs and motivations of individuals. However, such communication needs to be designed based on evidence and with validated process and outcome measures. This requires that national authorities, researchers, HCPs and public health professionals understand and act upon the fact that there is no one-size fits all strategy to solve vaccine hesitancy and that collaborative efforts are needed and must be sustained over time. To sustain and extend the remarkable successes of global immunization programs, governments and funding agencies should not just expand funding and support for research, monitoring and evaluation related to vaccine acceptance and uptake, but they should also mandate that efforts are evidence based and that communications and interventions are culturally and context appropriate.

#### References

- [1] WHO. <http://www.who.int/topics/immunization/en/>.
- [2] WHO Immunization Coverage. <http://www.who.int/news-room/fact-sheets/detail/immunization-coverage>.
- [3] Thomson A, Robinson K, Vallée-Tourangeau G. The 5As: a practical taxonomy for the determinants of vaccine uptake. *Vaccine* 2016;34:1018–24.
- [4] Fondation Merieux. <https://www.fondation-merieux.org/en/news/strategies-to-increase-vaccine-acceptance-and-uptake-2016/#> [accessed 18 July 2018].

- [5] Enkel SL, Attwell K, Snelling TL, Christian HE. 'Hesitant compliers': qualitative analysis of concerned fully-vaccinating parents. *Vaccine* 2018;36(44):6459–63.
- [6] Mendel-Van Alstyne JA et al. What is 'confidence' and what could affect it?: a qualitative study of mothers who are hesitant about vaccines. *Vaccine* 2018;36(44):6464–72.
- [7] Danchin MH et al. Vaccine decision-making begins in pregnancy: correlation between vaccine concerns, intentions and maternal vaccination with subsequent childhood vaccine uptake. *Vaccine* 2018;36(44):6473–9.
- [8] Berry NJ et al. Sharing knowledge about immunisation (SKAI): an exploration of parents' communication needs to inform development of a clinical communication support intervention. *Vaccine* 2018;36(44):6480–90.
- [9] Heyerdahl LW et al. Innovative vaccine delivery strategies in response to a cholera outbreak in the challenging context of Lake Chilwa. A rapid qualitative assessment. *Vaccine* 2018;36(44):6491–6.
- [10] Démolis R et al. A rapid qualitative assessment of oral cholera vaccine anticipated acceptability in a context of resistance towards cholera intervention in Nampula, Mozambique. *Vaccine* 2018;36(44):6497–505.
- [11] Attwell K, Smith DT. Hearts, minds, nudges and shoves: (How) can we mobilise communities for vaccination in a marketised society? *Vaccine* 2018;36(44):6506–8.
- [12] Nyhan B, Reifler J. Does correcting myths about the flu vaccine work? An experimental evaluation of the effects of corrective information. *Vaccine* 2015;33(3):459–64.
- [13] Finnegan G et al. Lessons from an online vaccine communication project. *Vaccine* 2018;36(44):6509–11.
- [14] Ohlrogge AW, Suggs LS. Flu vaccination communication in Europe: what does the government communicate and how? *Vaccine* 2018;36(44):6512–9.
- [15] Kaufman J et al. Identification of preliminary core outcome domains for communication about childhood vaccination: an online Delphi survey. *Vaccine* 2018;36(44):6520–8.
- [16] Parrish-Sprowl J. Vaccine hesitancy communication: what counts as evidence. *Vaccine* 2018;36(44):6529–30.
- [17] Attwell K, Wiley KE, Waddington C, Leask J, Snelling T. Midwives' attitudes, beliefs and concerns about childhood vaccination: a review of the global literature. *Vaccine* 2018;36(44):6531–9.
- [18] Vallée-Tourangeau G et al. Motors of influenza vaccination uptake and vaccination advocacy in healthcare workers: development and validation of two short scales. *Vaccine* 2018;36(44):6540–5.
- [19] Kassianos G et al. Motors of influenza vaccination uptake and vaccination advocacy in healthcare workers: a comparative study in six European countries. *Vaccine* 2018;36(44):6546–52.
- [20] Gagneur A et al. Motivational interviewing: A promising tool to address vaccine hesitancy. *Vaccine* 2018;36(44):6553–5.
- [21] Bedford H et al. Vaccine hesitancy, refusal and access barriers: the need for clarity in terminology. *Vaccine* 2018;36(44):6556–8.
- [22] Francis MR et al. Factors associated with routine childhood vaccine uptake and reasons for non-vaccination in India: 1998–2008. *Vaccine* 2018;36(44):6559–66.
- [23] Nagar R et al. A cluster randomized trial to determine the effectiveness of a novel, digital pendant and voice reminder platform on increasing infant immunization adherence in rural Udaipur, India. *Vaccine* 2018;36(44):6567–77.

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