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RESEARCH ARTICLE

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From vaccine hesitancy to vaccine motivation: A motivational interviewing based approach to vaccine counselling

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ABSTRACT

The COVID-19 pandemic highlighted Vaccine Hesitancy (VH) as an accelerating global phenomenon that must be addressed. According to the WHO, thirty to fifty percent of the world's population are VH. Motivational Interviewing (MI) is an evidence-based communication style demonstrated to significantly reduce VH. MI guides people toward change through the expression of empathy and by respecting an individual's autonomy. Healthcare providers (HCPs) are the primary implementors of vaccine policies and the most trusted advisors and influencers of vaccination intention at the individual patient level. Training HCPs in MI is one of the most effective strategies to overcome VH. Many countries are currently implementing HCP training programs and population-based MI interventions to improve vaccine uptake. MI conversations are 'the heart' of vaccine decision-making processes. Understanding individual patient-level drivers of hesitancy allows clinicians to efficiently provide tailored, accurate information that reinforces a person's own motivation and confidence in their own decision. This paper describes a 4-step practical framework designed to support HCPs in their dialogue with vaccine-hesitant patients. (1) **Engaging** to establish a trustful relationship and safety to freely express opinions, beliefs, and knowledge gaps; (2) **Understanding *what matters*** most to the individual; (3) **Offering Information** to co-build accurate knowledge in order to guide the individual toward vaccine intention (4) **Clarifying and Accepting** to validate an individual's decision-making autonomy. We believe that our pragmatic approach can contribute to greater acceptability of COVID-19 and other vaccines, and enable rapid deployment of practical MI skills across care systems.

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Introduction

Vaccines are justifiably one of the greatest scientific and public health developments in modern medical history, and the recently developed COVID-19 vaccines have reaffirmed this by demonstrating their efficacy in preventing morbidity and mortality.[1] Vaccine Hesitancy (VH) has been defined as "a state of indecisiveness regarding a vaccination decision."[2] Encountering vaccine hesitancy in historically marginalized communities of color, where significant disparities in COVID-19 hospitalization and death rates existed early in the pandemic, is disheartening since VH can contribute to worsening disparities.[3,4]

Distrust of the medical establishment and related institutions plays a central role in this hesitation and indeed in a wide range of health disparities.[5] Communication strategies that address VH by cultivating trust are therefore paramount and timely. Several recent papers also introduce motivational interviewing (MI) as a potential strategy to address COVID-19 vaccine hesitancy and provide an overview of MI skills and tools.[6–9] However, there are no guides that explain MI's basis, how it effectively addresses the roots of VH, and which provide a practical guide for its use with hesitant individuals. In this paper, we will discuss how MI can fundamentally repair distrust and thereby promote increased vaccine uptake as demonstrated in a series of studies by one of our authors (AG) that informed successful implementation of public health programs that improved childhood vaccination rates in Quebec.[10–13]

Our goal is to provide healthcare providers (HCPs) with MI strategies and tools that can assist them as they guide their patients from vaccine hesitancy toward vaccine motivation. Links to an MI Tip sheet,[14] video demonstrations,[15] and a case study[16] demonstrating the power experiencing MI has to shift vaccination decisions will be shared.

The MI framework

In this work, a simple 4-step MI-based practical framework will be introduced (Figure 1). This framework was collaboratively developed and tested in clinical settings by our group, that can be easily used by clinicians in busy practices to guide vaccination conversations: **1. Engage**: establish a trustful relationship and a safe place to talk, **2. Understand Their Views**:

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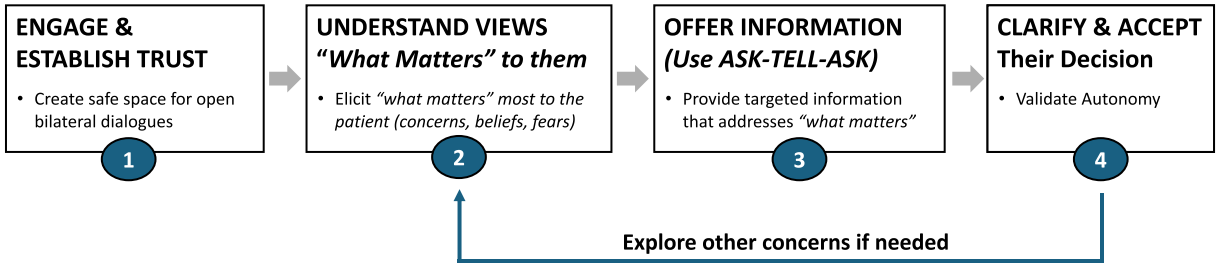

Figure 1. MI based framework. **1**. Engage: establish a trustful relationship and a safe place to talk, **2**. Understand their views: identify *"what matters"* most to the patient, **3**. Offer information: use *ask-offer-ask* to provide targeted information that addresses their concerns, **4**. Clarify and accept their decision: validating their autonomy.

identify *"what matters"* most to the patient, **3. Offer Information**: Use *Ask-Offer-Ask* to provide targeted information that addresses their concerns, **4. Clarify and Accept their Decision**: Validating their autonomy.

The key-MI principles in vaccine hesitancy

Miller and Rollnick[17] describe MI as a collaborative, person-centered, guiding conversation that elicits and strengthens motivation for change and is grounded in the "MI spirit."

The spirit of MI

A set of four guiding principles, (Compassion, Acceptance, Partnership, and Evocation (CAPE)), together called the Spirit of MI, form the heart and foundation of MI practice. In fact, practicing communication without incorporating MI Spirit, is not practicing MI because the "skills" of MI itself, can be used to manipulate others into making behavior changes. The spirit with which MI is practiced helps build rapport and trusting relationships with patients and clients.[18] **Compassion** is about committing to actively pursue the well-being of others and give priority to their needs.[17] **Acceptance** is about appreciating what the other person brings to the conversation (Unconditional Positive Regard) and respecting a person's right to change or not to change (Autonomy). It is also about empathy, or seeing through the eyes of another, trying to understand their perspective and *what matters* to them.[17] **Partnership**, similar to Shared Decision-Making, is about coming alongside the individual and collaborating as equals to problem solve.[17] **Evocation** is about pulling out the reasons for change that are meaningful to the individual from the individual themselves.[17]

Miller and Moyers[19] posit that the "spirit" of motivational interviewing is essential but not sufficient to generate behavior change. A combination of relational and technical variables contribute to MI's effectiveness.[20] The spirit of MI creates space to safely address both sides of ambivalence, while the directional aspect of the conversation promotes the resolution of this ambivalence toward change.

Change talk as a metric of success

A major goal of MI is to evoke and explore "change talk." Change talk is defined as everything the patient says that favors change, for example: *"I understand the importance of vaccination."* In contrast, "sustain talk" is defined as statements that favor the status quo, e.g., *"vaccination won't change anything."* The stronger the change talk *("I will"* is stronger than *"I might")*, the higher the likelihood a person will change.[21] Additionally, when sustain talk is associated with tension or conflict in the therapeutic relationship (discord), a person is even less likely to change.[20] Change talk can occur at any time and is often intertwined with sustain talk *("I know the vaccine can protect me, but it was developed so quickly.")*

In addition to learning how to evoke change talk, learning to listen for and recognize it is an important skill with the potential to save clinicians valuable time in busy practice settings. The emergence of change talk signals that the person is moving toward readiness for change, and that a clinician's time is being well spent. When providers notice stronger change talk, they can begin shifting the conversation toward vaccine planning. Reciprocally, conversations dominated by "sustain talk" signal continued ambivalence toward change. When a patient is not yet ready, deferring further vaccine discussion to a follow-up visit can add efficiency to clinical practice.

The 4-step model of the use of MI in VH

The ultimate goal of the **4-Step Model** (Table 1) is to build trust between the patient and the provider. Trust and confidence are foundational for effective partnerships with HCPs that support behavior change and decisions such as vaccination. In **Step-1 (Engage)**, applying the Spirit of MI allows for the creation of safe, judgment-free spaces for open dialogue. The patient will only be able to move toward a more favorable position on vaccination if he/she has confidence in their provider. **Step-2 (Understand)** is about actively listening to gain insight into why an individual is hesitant to get vaccinated. Active listening with curiosity and acceptance can show that you understand and want to help.

Each person has their own reasons for hesitating to vaccinate (Figure 2). Common concerns include: fear of side effects, concern about vaccine safety (by far the main cause), perception of low risk for disease, perception of vaccine ineffectiveness, distrust of the government, and lack of knowledge about diseases and vaccines.[22,23] For many of these reasons, structural inequities, which may include personal healthcare experiences, can play a significant role. By ascertaining an individual's personal causes of hesitation, pertinent information can be identified for use in Step-3.

Table 1. The 4-steps process of MI in VH.

4 steps process	Aims	MI Spirit and Skills	Actions
1 - Engage – Establish a relationship of trust	Demonstrate that: - You are curious to understand and help the hesitant individual - You will not impose your views - They can express their views without fear of being judged Establish a trusting relationship so that the person feels they can freely express their opinion about what matters to them	MI spirit: Compassion, Acceptance, Partnership Skills: Open-ended Questions Reflective Listening Affirmation	At this step: DON'T – Try to correct misinformation – Try to convince with more arguments DO – LISTEN to LEARN - this might be a different paradigm for HCPs – Let people express their fears and concerns without interruption – RESPECT that people need to talk to express their fears and emotions before they are ready to learn
Examples: Open-ended Question: *"Thank you for taking the time to have this discussion with me. What are your thoughts about receiving the COVID-19 vaccine?"* Complex Reflection- *"There is something that makes you insecure about vaccination. You would like to be reassured."* Affirmation- *"You are determined to find accurate information about the vaccine. It's really a difficult process with all the misinformation out there in the media."* Elicit Change Talk: *"What would you need to feel more comfortable about getting vaccinated?"*			
2- Understand their views	Understand the specific determinant(s) of the person's hesitation and its level of hesitancy Ascertain what specific relevant information will increase the person's perception of the importance of vaccination	MI spirit: Compassion, Acceptance, Partnership Skills: Open-ended Questions Affirmations Reflective Listening	At this step DON'T – Try to correct misinformation – Try to convince with more arguments DO – Use open questions to further clarify their concerns and let them explain without interruption. – Affirm the individual's desire to be and to act responsibly to keep themselves healthy – Use complex reflections and summaries to understand their specific concerns to help them feel understood and accepted even if they continue to be hesitant
Examples: Open-ended Question: *"Tell me more about your exact concerns"* Complex Reflection: *"It sounds like if you had reassuring data on vaccine safety, you might be more accepting of getting vaccinated"* Affirmation: *"You have done a lot of research and want to make sure you are making the best-informed decision for your child."*			
3 - Offer information Co-building new knowledge about immunization	To provide targeted information to fill knowledge gaps and correct any misinformation that was identified in step 2. To facilitate movement from ambivalence to action by: - Reinforcing and/or evoking change talk (help people find their own reasons for getting vaccinated) - Establishing and strengthening partnership - Co-building new knowledge that increases their perception of vaccine importance	MI Spirit: Partnership, Evocation Skills: Ask-Offer-Ask (3-step process) Ask · permission · what they already know or believe Offer · Information to fill gaps and dispel inaccuracies Ask · What they think about the new information · How does the new information impact their motivation?	At this step DON'T – Give information without asking permission – Give information that is not relevant to the person's concerns – Give too much information at once DO Once you have identified the relevant information to provide to the person, – Always ask permission to give information – Use the 3-step process starting with the person's knowledge – Validate with the person what this new information changes in his or her perception of vaccination, and does it improve his or her motivation to receive the vaccine
Examples: Ask: *"Would it be OK if I shared some recent information that has emerged about the vaccine?"* Offer: "*We have found that most of the people who were hospitalized with COVID at our hospital have not been vaccinated."* Ask:*"What do you think of that information?"*			

(*Continued*)

Table 1. (Continued).

4 steps process	Aims	MI Spirit and Skills	Actions
4 - Respect Autonomy and Planning - Clarify their decision - Make an action plan if they are ready	To strengthen the relationship of trust To provide space to continue the conversation in the future as new information emerges To move toward vaccine planning if the individual is ready To move the conversation and individual toward change without causing discord (little steps to build and maintain trust) To maintain a strong position (as a clinician) supporting immunization while ensuring that the person feels that they are respected and in control of their own decision.	MI spirit: Acceptance, Compassion Skills: Reflective Listening, Affirmation, Summaries,	At this step DON'T – Try to force a decision – Try to pressure for an immediate decision DO – Respect the individual's autonomy to decide for themselves – Show respect for their choice. – Allow time for reflection – Summarize and validate what they have said in a positive way moving toward a change – Remain available for further discussion – Move to planning when they are ready
Examples: Respect Autonomy *"I hope that the information shared is helpful, the decision is ultimately up to you"* Affirmation: *"Thanks so much for being open to having this conversation."* Planning: *"Now that you have this new information, what would you like to do?"*			

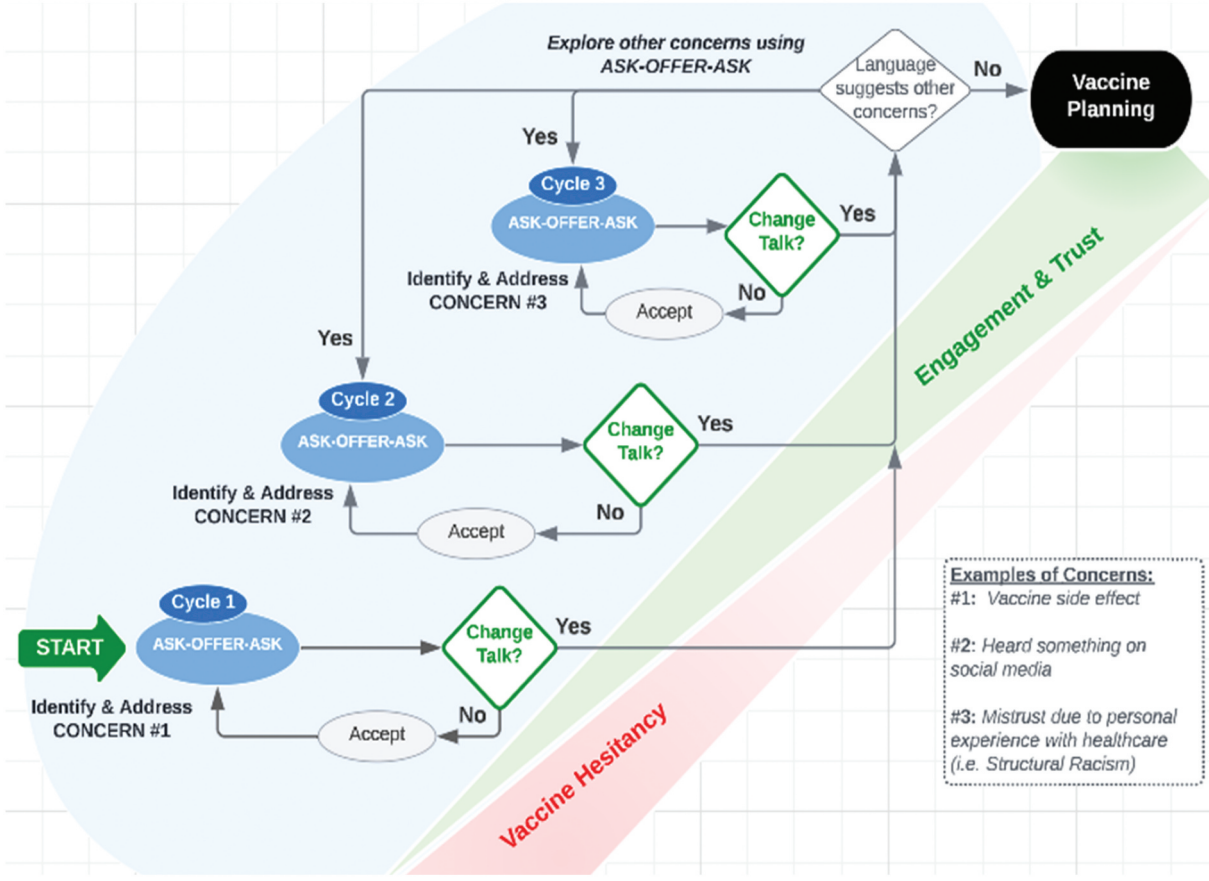

Figure 2. In step 3 (offer information) of this model, as each concern is elicited and addressed by the provider, the emergence of change talk signals an increase in trust and engagement, a decrease in vaccine hesitancy, and a greater readiness for vaccine planning.

Step 3 (Offer Information) is about providing information that makes sense to motivate the person to vaccinate, and to find their own reasons for their decision. This can be achieved by providing the relevant information using the *"Ask-Offer-Ask"* framework (Figure 3). During this stage, the emergence of "change talk" serves as a sensitive indicator of your effectiveness, and of the individual's motivation to vaccinate. As illustrated in Figure 2, individuals can have more than one concern that may need to be explored. As each concern is sequentially identified and addressed, engagement and trust improve as vaccine hesitancy declines. Once all concerns have been addressed in this way, we transition to Step-4.

In **Step-4 (Respect Autonomy/Planning)**, we start by summarizing the individual's perspective. At this point, depending upon the individual's readiness, there are two potential directions that the conversation can take. The presence of "change talk" suggests readiness and may serve as a trigger to discuss vaccine planning.[24] On the other hand, if an individual continues to be ambivalent or has strong reasons not to vaccinate, respecting their autonomy and validating their decision is essential to maintain and continue to build trust in the relationship. This strategy cultivates safety for the individual to return if they reconsider, or for the provider to, with permission, continue the conversation at the next visit. A case example is provided in Table A1.

Discussion

The reluctance to receive vaccinations has complicated efforts to stop the spread of diseases that may be prevented, jeopardizing the development of herd immunity and placing undue pressure on healthcare systems.[25] Previous studies indicate that several psychological factors, such as confidence, complacency and constraints play a role in influencing vaccination behavior.[26–28] However, VH is a complex and context-specific phenomenon that is also shaped by various social and cultural factors and can change over time. VH can be exacerbated by social judgment and misinformation. A recent study by Rajkhowa & al. demonstrated that social perceptions, influenced in part by the pervasive impact of social media, can lead to stigmatization and thus pose a significant barrier to accessing vaccination.[29] As evidenced by the monkeypox outbreak, because of the false belief and stigma that the virus only affects members of the LGBTQ + community, the general public was reluctant to get the vaccine for fear of being associated with this community. In addition, as emphasized by the COVID-19 pandemic, multiple phases of vaccine hesitancy exist and different societal reactions can be observed.[30] Kumar & al. described six phases that were observed during COVID-19 outbreak: vaccine eagerness, vaccine ignorance, vaccine resistance, vaccine confidence, vaccine complacency and vaccine apathy, demonstrating how crucial it is to modify awareness-raising

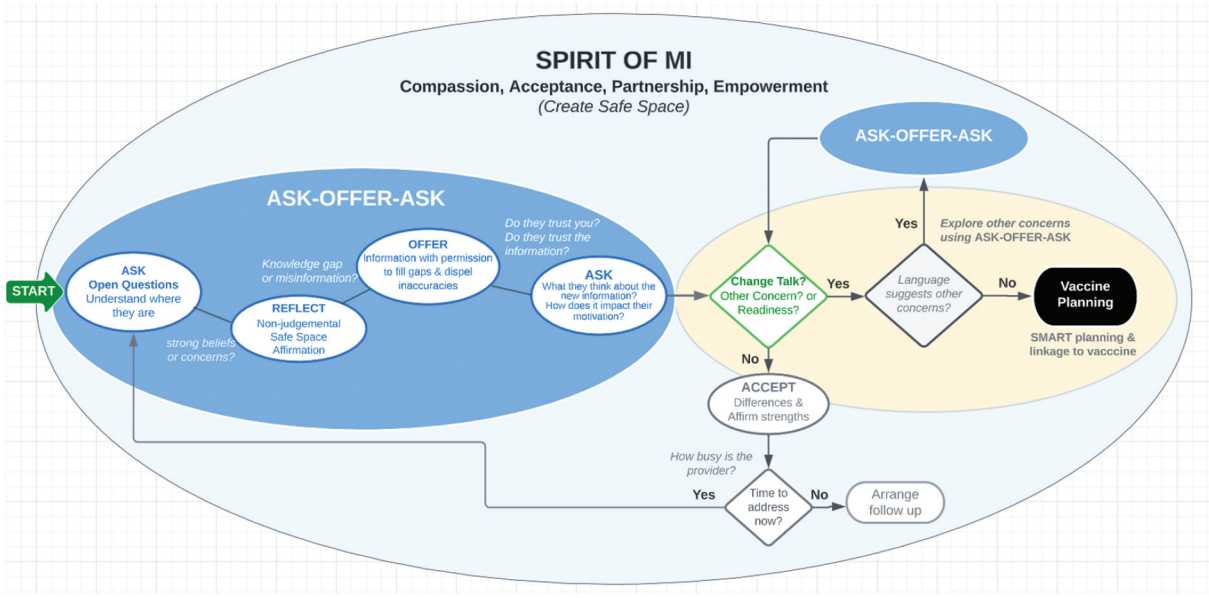

Figure 3. This graphic provides practical detail to guide clinicians through vaccine conversations using the MI-Vaccine hesitancy model. After the hesitant patient's concerns have been addressed, the emergence of change talk signals readiness for vaccine planning, while its absence suggests continued ambivalence and/or resistance that the clinician should accept to maintain a trusting relationship with the patient. The spirit of MI creates safe non-judgmental space for the conversation to occur. **Please note**: this algorithm was designed to be used simply as a guide. Like medicine, using the skills of MI is an art. For example, sometimes it is valuable to reflect back or further explore change talk when it emerges before giving information.

efforts during a pandemic or outbreak. Finally, VH can also be influenced by cultural and sociodemographic characteristics. In this regard, the COVID-19 pandemic brought attention to how crucial a surveillance program is in combating VH. Surveillance programs are essential for identifying who falls ill or dies, pinpointing high-risk subgroups, and assessing the extent of community transmission.[31]

In the search for an accurate conceptual framework for understanding the drivers of vaccination uptake and hesitancy, the WHO convened an expert working group that constructed a model consisting of 4 domains (Figure 4).

Motivation (or its converse, hesitancy) toward vaccination is influenced by both individual thoughts and feelings as well as social processes that include healthcare providers' recommendations and community norms. The decision to vaccinate and follow through, is in turn dependent upon motivation as well as practical considerations that affect access. Our 4-Step MI-based approach can help address an individual's ambivalence at any point along the continuum of the WHO model.

Each of these domains plays a role in VH throughout the US as well as the world.[32] Additionally, we cannot ignore racial and ethnic disparities in VH.[33] Corbie-Smith[34] rightfully points out that the focus on VH has ignored the real issues with vaccine access. Nevertheless, while access (e.g. practical issues) certainly is a factor, studies have shown that confidence and trust with regards to safety (e.g. what people think and feel) play the most significant role.[35] The legacy of explicitly racist practices in research and health care provision,[36] and moreover the persistence of implicit biases and structural inequities, especially in the US, almost certainly plays

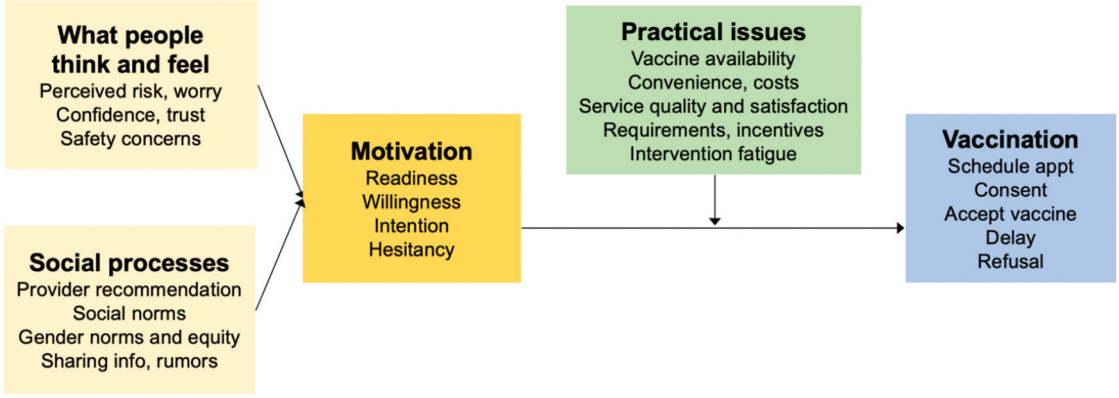

Figure 4. WHO model of the drivers of vaccination uptake and hesitancy.

a central role in reinforcing mistrust.[37] Indeed, trust with regards to safety is one of the major determinants of acceptance of vaccination.[26]

Seeking to address VH and remedy low vaccine uptake, governments have instituted several strategies for public health promotion and infectious disease control that have been commonly used in the previous and current century: barriers reduction, public mandates, and incentives. Reducing access barriers to vaccination is a major and an effective way of combating vaccine hesitancy, and can include improving accessibility, enhancing education and communication, building trust and addressing psychological and social barriers.[38] In US, where persistent health insurance disparities are observed, improving accessibility by lowering vaccines cost (Vaccines for Children program), represents an effective way to increase vaccine uptake in children.[39] The Majigi program, which promotes efficient community communication to debunk misconceptions and mistrust regarding the polio vaccine, has also led to an increase in the immunization rate of children in Nigeria, demonstrating the effectiveness of communications initiatives as a barrier-reduction measure.[40] While mandates' positive impact have been seen for measles, smallpox, or polio and evidence supports mandates for COVID-19 vaccinations, mandates have their drawbacks.[41] Compulsory rules and requirements for work and entry into restaurants, schools, etc. can inevitably elicit resistance. Such mandates magnify the distrust that already exists between healthcare institutions and various communities. Selective or targeted mandates may thus have the unintended negative effect of reinforcing the resistance to vaccination.[42] Thus, while mandates may have a more immediate impact, in the long run, they can backfire and lead to increased distrust. Similarly, incentives may have some positive influence on behavior, but they do so at the expense of trust, which ultimately mitigates their effectiveness.[43,44]

Addressing the distrust is thus necessary to resolve VH, and mandates and incentives work antithetically in this regard. Increasing attention has been paid to how to cultivate and strengthen trust by improving communication between HCPs and patients.[45] Recent surveys have demonstrated that Black and Brown communities, continue to view HCPs as the most trusted source of COVID-19 information.[46] According to the WHO[47] and European Council,[48] HCPs play a pivotal role in building and maintaining public trust, and in communicating the safety and efficacy of vaccines. They also serve as a critical link between vaccination policies and uptake. For these reasons, HCPs should be offered opportunities for continuing education and training on vaccine counseling.

MI is a communication style that can be useful in this regard. A well-established approach for behavior change counseling in which there is a focus on exploring and resolving ambivalence.[49] MI seeks to establish and strengthen a relationship based on trust, empathy, and respect for autonomy, all of which reduces reactance.[50] Evidence is mounting that MI can be helpful in improving vaccine acceptance. Gagneur et al.[10] demonstrated that an MI intervention reduced vaccine hesitancy by 40% and significantly improved vaccine intention and uptake in children aged 0–2 years. The impact was amplified in the most hesitant parents, with the proportion wanting to vaccinate their child increasing from 35% to 66%. In response to these findings, the Quebec government implemented a successful MI-based provincial program;[10–13-51] early data indicate that the impact of this program on the level of hesitancy and vaccine coverage is similar to previous studies.[52] The United States Center for Disease Control and other international organizations recommend MI as an effective strategy.[53] Adopting MI training to address VH[54] has demonstrated increased HCPs knowledge and skills using validated evaluation tools.[55]

It Is relevant to also mention an MI-aligned person-centered communication framework called "*What Matters to You?*" (WMTY).[56] First described by Barry and Edgman-Levitan[57] in a NEJM article on shared decision making, the WMTY global movement has spread to diverse care settings in over 50 countries.[58] The idea is to "ASK" what matters, "LISTEN" to what the individual shares, and then "DO" what matters, by coming alongside and incorporating what you learn into the person's care plan. WMTY is aligned with the spirit of MI and has been demonstrated to be one of 5 strategies with the potential to enhance physician presence and meaningful connection with patients during the clinical encounter.[59] Asking what matters is also one of the Age-Friendly Health System's 4 Ms and a foundational element of IHI's framework for improving Joy in Work.[60–62]

Conclusions

Training HCPs in communication skills such as MI is timely. In this paper, we have outlined an MI-based approach that can be used by HCPs to address VH. Imbued with the spirit of MI as described above, our 4-step approach invites patients to be honest about "*what matters most*" to them in a safe, non-judgmental atmosphere, and by our expression of unconditional acceptance of their perspective, they are more likely to be amenable to information we can subsequently offer to them about vaccines.

MI can be complementary to mandates and incentives to reestablish the trust between healthcare workers and people, and also between the community and healthcare institutions. MI looks beyond the carrot-and-stick approach of mandates and incentives to a fundamentally more collaborative provider/patient relationship such that while HCPs can learn the best practices in counseling, we still hold the patient's autonomy as paramount, even if they are at odds with recommended guidelines. This unconditional positive regard or acceptance is necessary to establish a transparent, trusting relationship. The cultivation of trust through MI can lead to a lessening of VH and strengthening of vaccine confidence and motivation, especially in marginalized communities in which trust has not been effectively cultivated by healthcare institutions. We conclude that training HCPs in MI aligned communication skills such as our 4-step guiding framework, can help address VH, and build vaccine confidence, and may be an effective strategy to lower the mortality and morbidity associated with COVID-19 and other vaccine preventable diseases. Our analysis highlights the critical need for a paradigm shift in how healthcare professionals and policymakers approach vaccine hesitancy. Rather than assuming that presenting scientific facts alone will persuade the hesitant, we should acknowledge the human elements at play. Vaccine

hesitancy is not merely a matter of knowledge gaps but often rooted in emotions, beliefs, and social influences. Consequently, policymakers and medical societies should take the initiative to implement educational classes focused on improving communication strategies when interacting with vaccine-hesitant patients.

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Notes on contributor

Dr. ***Arnaud Gagneur*** is a clinician-scientist and neonatologist affiliated with the Université de Sherbrooke (Canada) and the Centre Hospitalier Universitaire de Sherbrooke (CHUS) Research Center. For over 15 years, Dr. Gagneur has been addressing the issue of vaccine hesitancy by developing initiatives to promote childhood vaccination using the motivational interviewing (MI) approach. He developed and validated the PromoVac strategy, i.e., the concept of promoting vaccination in maternity wards using the MI approach. Through his research program, Dr. Gagneur has demonstrated the effectiveness of this strategy in reducing parents' hesitancy to vaccinate, increasing their intention to have their children vaccinated, and ultimately improving children's vaccination coverage. In collaboration with the Quebec Ministry of Health and Social Services, he co-led the implementation of the PromoVac strategy as a provincial public health program, the EMMIE program, and conducted its evaluation. Furthermore, Dr. Gagneur has created MI-based vaccination training programs for health professionals. He serves as the lead expert for the European Centre for Disease Prevention and Control (ECDC) expert group, which supports countries through vaccine acceptance training. Additionally, he is working with UNICEF and the U.S. CDC to develop training on the MI approach to immunization for healthcare professionals.

Abbreviations

VH	Vaccine hesitancy
MI	Motivational interviewing
WHO	World Health Organization
HCPs	Healthcare providers
WMTY	*What Matters to You*

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APPENDIX A

CASE EXAMPLE

Table A1. Case example: a vaccine-hesitant parent shifted her attitude and moved toward change and action after experiencing an MI-based conversation with her health care provider.

Dialogue	Skills demonstrated
HCP; Would it be OK if we spent some time during our conversation today discussing childhood vaccinations?	STEP 1: Establish a trustful relationship asking permission respect of the autonomy
Parent: Yes, but I want to warn you that I have reservations and many questions. HCP: OK I am here to help you find the information you need to make your own decision. Perhaps you can start by telling me what you think about vaccination and whether you have considered vaccinating your baby?	STEP 1: Spirit of MI (Non-judgement/Acceptation of hesitation) Skills (open questions, be curious about the concerns)
Parent: Yes, I am thinking of vaccinating Tobie, but not right away because I think kids get vaccines when they are too young. I have nothing against vaccines, I know that they protect against diseases, but I want to wait until Tobie is 2 years old. HCP: Ok, so you think that vaccinating your son is a good thing to protect him but you question the age at which he should receive his vaccines.	STEP 1: Spirit of MI (Non-judgement/Acceptation of hesitation) Actions: do not start counter argument, do not try to correct misinformation Skills: reflective listening to express empathy and to show you understand their concern. STEP 2: Understand the specific determinant(s) of the person's hesitation.
Parent: Yes, that's right, and anyway, I breastfeed my child and he doesn't go to daycare. HCP: Ok so by breastfeeding him and keeping him at home, you think you are protecting him from infections.	STEP 1: Spirit of MI (Non-judgement/Acceptation of hesitation) Actions: do not start counter argument, do not try to correct misinformation Skills: reflective listening to express empathy and to show you understand their concern.
Parent: Yes, that's right. HCP: You are indeed right. Through your milk you give him antibodies that protect him and it is true that daycare exposes babies to many germs.	STEP 1: Spirit of MI (Non-judgement/Acceptation of hesitation) Actions: do not start counter argument, do not try to correct misinformation Skills: affirmation, Affirm the mother's desire to act responsibly to keep her child healthy
Parent: Yes, and in addition, before the age of two I think that his antibodies are not yet developed. HCP: I can see that your child's immunity is really important to you. Would you mind if I shared some more information about how immunity develops in an infant?	STEP 1 Spirit of MI (Non-judgement/Acceptation of hesitation) Actions: do not start counter argument, do not try to correct misinformation Skills: reflective listening to express empathy and to show you understand their concern STEP 2: Understand the specific determinant(s) of the person's hesitation. STEP 3: offer information in order to co-build new knowledge. To provide targeted information to fill knowledge gaps and correct any misinformation that was identified in step 2. Skills: Ask-offer-ask: First Ask: ask permission
Parent: Yes, I would love that, I really want to know more about this HCP: Perfect. To start off, could you please share with me your understanding of where in the body antibodies are made?	STEP 3: Skills: Ask-offer-ask: First Ask: ask what the mother already know or believe. Start with the person's knowledge to co-build new knowledge
Parent: Um, that's a tough question. But I think I remember it's in the bones, right? HCP: Yes, that's right, the factories that make the antibodies are inside some bones and also in other organs. And in your opinion, at what age do they start working?	STEP 3: Skills: Ask-offer-ask: Offer information in order to reinforce the importance of immunization. Continue to ask what the mother already know or believe. Co-building of the new knowledge.
Parent: I have to admit that I don't know. HCP: It starts during pregnancy! In the womb, the baby makes its own antibodies. What do you think will happen at birth?	STEP 3: Skills: Ask-offer-ask: Offer information in order to reinforce the importance of immunization. Continue to ask what the mother already know or believe. Co-building of the new knowledge.
Parent: Oh yes, the baby will be able to protect itself against microbes. HCP: Yes, you're right. That's exactly what it does without antibodies a baby could be very sick. His immune system is already able to defend him. That's why we can vaccinate children at two months of age in order to protect them quickly. What do you think about it?	STEP 3: Skills: Ask-offer-ask: Second Ask: Validate with the mother what this new information changes in his or her perception of vaccination. STEP 4: Respect the autonomy. Actions: don't try to force a decision, don't try to pressure for an immediate decision. Skills: Affirmation to strengthen the relationship of trust
Parent: Yes, thank you, it makes more sense to me now. But I have to tell you that I am afraid that my baby will get a fever if he receives a vaccine CONCERN 2 : starting again the entire process . . . (to be continued . . .)	

(*Continued*)

Table A1. (Continued).

Dialogue	Skills demonstrated
Parent: Ok, I understand better now that diseases can also cause fever and that I am able to handle the slight fever that vaccines can cause. It's clearer in my mind. HCP: I'm so happy If I could help you to clarify all that information. Do you need something else to be more comfortable with the vaccination of your child?	Step 4: To move the conversation and mother toward change without causing discord (maintain trust by respecting the autonomy but moving toward the change)
Parent: No, I think I have all the information that I need. It makes more sense now. HCP: I'm really happy to be able to help you. "let me know when you are ready to arrange your child's vaccination"	Step 4: Moving to the planification of vaccination as the mother is ready.