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# Filling the Gap to Address Vaccine Hesitancy in Europe

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## INTRODUCTION

Vaccine hesitancy (VH) is a state of indecision regarding vaccination, marked by doubts despite vaccine availability [1].

Its relationship with vaccine uptake has been widely debated, though the cause-effect relationship remains unclear. Nevertheless, VH likely threatens the control of vaccine-preventable diseases, such as measles and hepatitis B, imposing unnecessary burdens on health systems.

Inappropriate access to information, inadequate vaccine offers, and administration have been identified as primary contributors to reluctance and doubts surrounding vaccine uptake. However, social and individual factors related to knowledge and attitudes further prolong this psychological state of indecision, leading to delayed vaccinations and even refusal. Despite extensive efforts to promote vaccination across European countries, VH persists, affecting vaccine uptake across various demographic groups and settings. Hesitancy varies by country, type of vaccine (whether recently approved or longstanding), and target populations, including children, vulnerable groups, or the general population.

Assessing the frequency, determinants, and impact of vaccine hesitancy presents a significant global and regional challenge [2]. Variations in definitions, data gaps regarding vaccine acceptance, and population coverage hinder precise evaluation. These discrepancies make it more difficult to develop targeted interventions and allocate resources to promote vaccination in a targeted manner and thus effectively improve vaccine acceptance on a large scale.

## BETTER EVIDENCE AND COOPERATION TO TACKLE VACCINE HESITANCY

VH has garnered global attention, particularly in Europe, the US, and Africa. As a result, multiple reports and studies have been published, including the determinants and consequences of vaccine hesitancy.

While many studies and reports focus on VH determinants and consequences, emphasis is now shifting toward improved strategies and recommendations [3], particularly through collaborations like EU-funded research consortia [4, 5].

Healthcare workers play a crucial role in countering VH. Training in communication, managing misinformation, and enhancing self-assurance are key strategies for interacting with hesitant individuals, including parents seeking advice on children's vaccination [6], and underserved communities, such as migrants [7], ethnically diverse [8], and prisoners [9].

A second focus is on the general population, aiming to combat misinformation and build trust in healthcare and science.

## THE GAP TO FILL

Despite increasing research on VH, there's a limited understanding of how to address it effectively. Key questions remain: Is VH a symptom of systemic inequities, or is it an inherent phenomenon in global societies? Should interventions target public health systems or individual decision-making? Understanding the complexities of VH within local and global contexts is essential. Europe lacks a unified framework for addressing VH. While some efforts show promise, a cohesive strategy for interventions remains absent.

It is also essential to address the ethical dimension, to be able to deal with traditional bioethical individual questions, but also focus on the dilemmas resulting from the unknowable statistical lives central in public health reasoning [10].

The gaps in evidence on interventions to address vaccine hesitancy can be summarized as follows:

- There is a need to map interventions to improve individual, communities and societal attitudes towards vaccination and to increase vaccine acceptance, intention, and uptake. Analyzing the performance of prior interventions will help to redefine future interventions and assess their efficacy in the EU and other countries.
- It is essential to identify the problems currently faced by implementing interventions in the field by considering the specificities of target countries and regions, their unique attributes, determinants, and the challenges they encounter.
- Interventions need to be designed based on research findings and previous activities, optimizing resources and actions, including current regular immunization procedures and follow-up vaccination intentions.
- Pilot activities need to be evaluated and implemented. This includes initiatives with the expected highest likelihood of success, such as training courses for frontline health workers and public awareness campaigns to combat vaccine hesitancy. Access to real time data is crucial.

In summary, there is an overall need to create a strong research-grounded sustainability strategy for ongoing implementations and interventions to tackle vaccine hesitancy, and toolkits and suggestions for scaling up in additional EU countries and beyond.

## A CALL TO MOVE FORWARD AND AN INTRODUCTION TO VAX-ACTION

Based on this needs assessment, we call on the scientific community and science funders to strengthen collaborative efforts to monitor, evaluate, and scale up interventions designed to address vaccine hesitancy. The authors propose contributing to this goal by leading a European consortium entitled "VAX-Action, tackling effectively vaccine hesitancy in Europe." This 30-month project was launched in December 2023 and is co-funded by the European Union's EU4H program (Grant Agreement No 101133273).

VAX-ACTION aims to make recommendations for action that support decision-makers to address vaccine hesitancy. Five EU countries – Portugal, France, Italy, Romania, and Czechia – will conduct the project, taking advantage of their unique features, including size, vaccination coverage, healthcare system, immunization programs (vaccination settings, involvement of family doctors, pharmacies, hospitals), and the population's trust in vaccines.

Since there is currently a paucity of evidence regarding the success of previous and ongoing interventions, VAX-ACTION aims to fill the urgent need to support the identification and implementation of key public health findings resulting from the surge in initiatives in the field of vaccination and vaccine hesitancy in Europe, notably:

- To ground in many of those initiatives that have already demonstrated encouraging results, whether for COVID-19 or routine vaccination, particularly catch-up vaccination that was neglected during the peak of the COVID-19 pandemic;
- To contribute to improving vaccine uptake and immunization rates by evaluating best practices and implementing strategies and activities that go beyond European regions and COVID-19 cases;
- To enhance vaccination intervention strategies and planning, advancing personnel planning and organization, and administering vaccinations as intended by countries and the current needs (e.g., new delivery models such as mobile units, preparing for future outbreaks);
- To evaluate whether findings may be used for future public health emergencies requiring mass vaccination or extensive routine immunization programs.

Vax-Action aims to implement a framework that can and should be used more broadly to address interventions in vaccine hesitancy, namely:

1. Action plans to address vaccine hesitancy and improve the understanding of and approaches to:
  - Health literacy, particularly gaps in knowledge and exposure to misinformation;

- Access, socioeconomic, practical problems, and concerns relating to prior experience;
  - Developing a shared understanding of the importance and benefits of immunization;
  - Positive experiences of immunization;
  - Concerns about risks and over-medicalization;
  - Trust towards the healthcare system, respecting cultural and personal beliefs.
2. Training for health professionals and officials in communication behaviors helping them to anticipate and address potential vaccine hesitancy.
  3. Regular evaluation and revision of applied frameworks/models as new evidence emerges.
  4. Update experts in healthcare journalism and social media communications to minimize the risk of compromising the public's right to timely and accurate information from official sources and traditional and digital media.
  5. Better engagement with communities to co-design programs, ensuring an active and robust two-way communication mechanism.
  6. Rights-based approach to target vaccination support to underserved communities.
  7. Further research to evaluate the overall effectiveness of the actual model and ease of implementation as part of an outbreak/pandemic response.
  8. Develop existing support mechanisms, such as the WHO immunization strategy process, focusing on global tools and frameworks concerning the development of national cost-effective immunization campaigns.
  9. Continue improving existing cross-border, cross-regional, and sub-regional collaboration platforms on information sharing and immunization strategies, learning from past successes and failures.

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## CONFLICT OF INTEREST

The authors declare that they do not have any conflicts of interest.

## GENERATIVE AI STATEMENT

The author(s) declare that no Generative AI was used in the creation of this manuscript.

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