

**Measles Vaccine Hesitancy Among Parents in Ohio**

香港醫療論文輔導中心 HKMTGC 版權所有 All Rights Reserved

## Measles Vaccine Hesitancy Among Parents in Ohio

### Introduction

In Ohio, the issue of measles vaccine hesitancy among parents has emerged as a significant public health challenge. This hesitancy, often fueled by misinformation and a lack of trust in the healthcare system, poses a threat to the well-being of children and the wider community. Measles, a highly contagious disease once nearly eradicated, has seen a resurgence due to declining vaccination rates. It is crucial to address this issue promptly and comprehensively to prevent further outbreaks and protect public health. Measles, caused by the

[REDACTED]

[REDACTED]

[REDACTED]

and even death, with a mortality rate of approximately 1 in 1,000 cases. The measles vaccine has been proven to be highly effective, with a 97% effectiveness rate after two doses (Gastañaduy et al. 2021). Achieving herd immunity, where 95% of the population is vaccinated, is crucial not only for protecting vaccinated individuals but also for safeguarding those who cannot receive the vaccine due to medical reasons, such as infants and the immunocompromised. When herd immunity breaks down due to vaccine hesitancy, it creates fertile ground for measles outbreaks. The resurgence of measles outbreaks in Ohio has placed a substantial burden on public health resources, healthcare systems, and communities. Korevaar et al. (2020) articulate that school and public places become hotspots for transmission, leading to fear, school closures, and community isolation. Hospitalizations due to measles and the associated public health interventions strain the state's resources and further highlight the importance of addressing vaccine hesitancy. This project plan aims to delve into the root causes of measles vaccine hesitancy among parents in

Ohio, critically appraise the methods for understanding this issue, and propose evidence-based actions for improvement. By doing so, it seeks to contribute to the collective responsibility required to maintain community immunity and protect public health.

## **Background**

### **Health issue**

Measles vaccine hesitancy among parents in Ohio is a complex issue influenced by a variety of factors. According to Scott et al. (2021), one of the primary drivers of this hesitancy is the fear of vaccine side effects. Parents often worry about potential adverse reactions to the measles vaccine, such as fever or mild rashes. While these side effects are typically short-lived and mild compared to the complications of the disease itself, they play a significant role in shaping parental attitudes towards vaccination. Understanding and addressing these concerns is crucial to improving vaccination rates.

[REDACTED]

[REDACTED]

[REDACTED]

continue to mislead parents, undermining confidence in immunization. This misinformation erodes trust in healthcare providers and public health institutions, further exacerbating vaccine hesitancy. Dispelling these myths with accurate, evidence-based information is vital to counteract the impact of misinformation on vaccination rates.

### **Scale and scope of the problem**

The scale and scope of the measles vaccine hesitancy problem in Ohio are substantial. As of 2022, vaccination rates in Ohio had fallen below the 95% threshold required for herd immunity against measles (Martoma et al. 2023). This decline in vaccination coverage has

directly contributed to measles outbreaks, putting vulnerable populations, such as infants and the immunocompromised, at risk. The consequences of these outbreaks extend beyond immediate health concerns, leading to a ripple effect of social and economic burdens.

Measles outbreaks place a significant burden on healthcare systems, leading to increased hospitalizations and the allocation of resources for outbreak control measures (Ceccarelli et al. 2019). These outbreaks disrupt communities, causing fear and anxiety, prompting school closures, and leading to community isolation. The economic toll of measles outbreaks includes

hesitancy in Ohio to protect both individual and public health.

Furthermore, measles outbreaks have social consequences, as they strain community cohesion and trust. The fear of contracting measles and the associated disruptions can lead to a breakdown in social bonds, as individuals may avoid public places and social gatherings. This isolation not only affects the quality of life but also hinders effective public health responses. Therefore, addressing measles vaccine hesitancy is not only a matter of individual health but also a collective responsibility to maintain community immunity and safeguard public health.

## **Main Discussion**

### **Critical Appraisal of Methods**

To comprehensively address measles vaccine hesitancy among parents in Ohio, it is imperative to critically appraise the methods available for understanding and tackling this public health challenge. Various research methodologies and strategies can be employed to gain insights into the root causes of vaccine hesitancy. These include quantitative surveys, qualitative interviews, focus group discussions, systematic literature reviews, and the analysis of social

media trends. Each methodology possesses distinct strengths and limitations that must be carefully considered when developing a comprehensive research approach.

Quantitative surveys, for instance, offer the advantage of providing structured, quantifiable data that can illuminate the prevalence of vaccine hesitancy in Ohio (Kaur et al. 2023). These surveys can collect information on the reasons behind hesitancy and the

of vaccine hesitancy. Respondents may provide answers influenced by social desirability bias or may not express the depth of their concerns, leading to potential gaps in understanding the issue.

On the other hand, qualitative interviews and focus group discussions enable a more profound exploration of parental perspectives regarding vaccination. These methods allow participants to express their concerns, beliefs, and experiences openly, offering valuable insights

acknowledge that the results of qualitative research may not be easily generalizable to the entire population due to the small sample sizes typically associated with these methods. Additionally, qualitative data analysis can be resource-intensive, requiring skilled interviewers, transcribers, and analysts.

Another valuable method for understanding vaccine hesitancy is through systematic literature reviews. This approach involves synthesizing existing research to identify common trends, patterns, and gaps in knowledge. By systematically reviewing published studies,

researchers can draw upon a wide range of evidence to inform their understanding of measles vaccine hesitancy (Torracinta et al. 2021). This method is particularly useful for gaining a

rigorously assessed to ensure the validity of the synthesized findings. Moreover, conducting a systematic literature review can be time-consuming, requiring a thorough search of databases, screening of numerous articles, and rigorous data extraction and analysis.

In today's digital age, as Pagoto et al. (2019) note, analyzing social media trends has become increasingly relevant in public health research, as misinformation and myths related to

analysis has its limitations, including the potential inability to capture the offline concerns of hesitant parents. It may also raise ethical considerations related to privacy and informed consent, as researchers navigate the use of publicly available online content for research purposes.

### **Consideration of Practical Examples**

Several practical examples from the literature can guide interventions to address measles vaccine hesitancy effectively. One approach is the implementation of community-based vaccine education programs. These programs involve local healthcare providers and community leaders in delivering accurate information about vaccines and addressing concerns in a culturally sensitive manner. For instance, community health workers can engage with hesitant parents

through home visits or community gatherings to provide information and build trust (LeBan et

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

success.

Another practical strategy is the use of immunization registries and reminder systems, which have proven effective in enhancing vaccination rates (Kempe et al. 2021). Immunization registries are electronic databases that track individuals' vaccination history, ensuring that they receive the necessary vaccines on schedule. Healthcare providers can access these registries to

[REDACTED]

[REDACTED]

[REDACTED]

healthcare providers identify pockets of under-vaccinated individuals, allowing for targeted interventions in communities with higher hesitancy rates.

School-based interventions also offer an avenue to improve vaccination rates, particularly for school-aged children. Schools can collaborate with local health departments to ensure that

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

risks of vaccine-preventable diseases. Organizing vaccination clinics within schools can further enhance accessibility for students and their families, reducing barriers to vaccination (Thompson

et al. 2023). These clinics can be scheduled to coincide with regular school health check-ups or during parent-teacher conferences, making it convenient for parents to ensure their children are up-to-date on vaccinations.

### **Strengths and Limitations**

The strengths of the proposed methods and strategies lie in their potential to provide a holistic understanding of measles vaccine hesitancy and offer targeted solutions. Quantitative surveys offer a broad overview, while qualitative methods provide depth and nuance, allowing for a comprehensive exploration of the multifaceted nature of vaccine hesitancy (Alamoodi et

real-time monitoring but also provides a rich source of data that reflects public sentiment and concerns, which can inform timely public health responses.

However, these methods also have limitations that must be acknowledged. Surveys, while valuable for their breadth, may suffer from response bias, as individuals may be hesitant to express their true views on vaccination, leading to potential underreporting of hesitancy. Furthermore, surveys may not fully capture the experiences and perspectives of hard-to-reach

offline concerns and attitudes related to vaccination, and ethical considerations surrounding data

privacy and consent must be carefully addressed when using publicly available online content for research proposes.

**Proposed Actions**

To address measles vaccine hesitancy in Ohio effectively, a multifaceted approach is

[Redacted text block]

should be empathetic, culturally sensitive, and grounded in evidence-based information.

Furthermore, it is crucial to create safe spaces where parents can express their concerns without judgment, fostering an environment of trust and understanding. Building this trust can be a gradual process, requiring ongoing communication and engagement with communities to address their unique needs and fears.

Second, reliable information should be disseminated to counter myths and misinformation. Public health campaigns should leverage various communication channels, including social media, to ensure accurate information reaches a broad audience (Pagoto et al.,

[Redacted text block]

tools to convey the importance of vaccination.

Finally, organizing community outreach and vaccination drives can increase vaccine accessibility and uptake. Regular follow-ups should be implemented to ensure that vaccine

schedules are maintained, reducing the risk of missed doses (Walker et al., 2019). These efforts can include mobile vaccination clinics in underserved areas, partnerships with local schools and childcare facilities to provide on-site vaccinations, and extended clinic hours to accommodate working parents. Moreover, creating incentives for vaccination, such as offering rewards or discounts for completing the recommended vaccine schedule, can further encourage participation.

The proposed actions should be carried out collaboratively, involving healthcare professionals, community leaders, educators, and public health experts. A timeline for

[REDACTED]

evolving dynamics of measles vaccine hesitancy. Continuous evaluation and refinement of strategies based on real-world outcomes and feedback from the community are essential for sustained impact and success in addressing vaccine hesitancy.

### **Evaluation**

Evaluation is a crucial component of any public health intervention, especially when addressing measles vaccine hesitancy among parents in Ohio. To measure the impact of the proposed actions and ensure their effectiveness, a comprehensive evaluation plan will be

[REDACTED]

have led to an increase in vaccine uptake (De Sarro et al. 2021). This assessment will involve

collaborating with healthcare providers, public health agencies, and immunization registries to collect and analyze vaccination data. The goal is to achieve a significant improvement in vaccination coverage, particularly among populations that were initially hesitant.

Additionally, the evaluation plan will include surveys and qualitative assessments to gauge changes in parental attitudes and beliefs regarding vaccination. Surveys will be

[REDACTED]

play a role in the evaluation process, as it provides real-time data on public sentiment and concerns related to vaccination (Alamoodi et al. 2021). Tracking trends in social media discussions can help assess whether there is a reduction in the spread of vaccine misinformation and myths. Any emerging concerns or resistance to the proposed interventions can be identified and addressed promptly through targeted communication strategies.

Another aspect of the evaluation plan is the measurement of community engagement and trust-building. This will involve assessing the level of community participation in outreach

[REDACTED]

reducing measles vaccine hesitancy and increasing vaccination rates in Ohio. The evaluation plan will provide a comprehensive view of the outcomes, allowing for evidence-based decision-

making and the refinement of strategies as needed. Continuous monitoring and evaluation will be integral to ensuring the sustained success of efforts to combat vaccine hesitancy and protect public health in Ohio.

### Conclusion

Addressing measles vaccine hesitancy among parents in Ohio is paramount to safeguarding public health and preventing outbreaks of this highly contagious disease. The resurgence of measles outbreaks in the state highlights the urgent need for evidence-based

[REDACTED]

burdens, strain on healthcare systems, and social consequences such as school closures and community isolation. Moreover, the success of this endeavor will rely on the commitment of all stakeholders and the adaptability of interventions to evolving challenges. Thus, ongoing monitoring, evaluation, and adjustment of strategies are crucial to ensuring sustained progress in building trust and increasing vaccine acceptance. As Ohio strives to protect its residents from

[REDACTED]

information, and actively engaging with communities, Ohio can strengthen its resilience against vaccine hesitancy, ultimately ensuring the health and well-being of its communities and contributing to the broader global goal of disease prevention and control.

## References

Adler, K., Salanterä, S. and Zumstein-Shaha, M., (2019). Focus group interviews in child, youth, and parent research: An integrative literature review. *International Journal of Qualitative Methods*, 18, p.1609406919887274. Available: <https://doi.org/10.1177/1609406919887274> [Accessed: 29 December 2023]

Alamoodi, A.H., Zaidan, B.B., Al-Masawa, M., Taresh, S.M., Noman, S., Ahmaro, I.Y., Garfan, S., Chen, J., Ahmed, M.A., Zaidan, A.A. and Albahri, O.S., (2021). Multi-perspectives systematic review on the applications of sentiment analysis for vaccine hesitancy. *Computers in Biology and Medicine*, 139, p.104957. Available: <https://doi.org/10.1016/j.combiomed.2021.104957> [Accessed: 29 December 2023]

Ceccarelli, G., Spagnolello, O., Borrazzo, C., Vullo, F., Cuomo, M.R., Milocco, M., Angeletti, S., Ciccozzi, M., Mastroianni, C.M., d'Ettorre, G. and Bertazzoni, G., (2019). Impact of the 2017 measles outbreak on the emergency care system of a large tertiary-care teaching hospital in Italy: a retrospective analysis. *European Journal of Public Health*, 29(5), pp.966-971. Available: <https://doi.org/10.1093/eurpub/ckz056> [Accessed: 29 December 2023]

De Sarro, C., Papadopoli, R., Cautela, V., Nobile, C.G.A., Pileggi, C. and Pavia, M., (2021). Vaccination coverage among health-care workers: Pre-post intervention study to assess impact of an on-site vaccination-dedicated clinic. *Expert Review of Vaccines*, 20(6), pp.753-759. Available: <https://doi.org/10.1080/14760584.2021.1915776>

Garett, R. and Young, S.D., 2021. Online misinformation and vaccine hesitancy. *Translational behavioral medicine*, 11(12), pp.2194-2199. Available: <https://doi.org/10.1093/tbm/ibab128>

Gastañaduy, P.A., Goodson, J.L., Panagiotakopoulos, L., Rota, P.A., Orenstein, W.A. and Patel, M., (2021). Measles in the 21st century: progress toward achieving and sustaining elimination. *The Journal of Infectious Diseases*, 224(Supplement 4), pp.S420-S428.  
<https://doi.org/10.1093/infdis/jiaa793>

Haldane, V., Chuah, F.L., Srivastava, A., Singh, S.R., Koh, G.C., Seng, C.K. and Legido-Quigley, H., 2019. Community participation in health services development, implementation, and evaluation: A systematic review of empowerment, health, community, and process outcomes. *PloS one*, 14(5), p.e0216112. <https://doi.org/10.1371/journal.pone.0216112>

Kaur, M., Coppeta, L. and Olesen, O.F., (2023). Vaccine Hesitancy among Healthcare Workers in Europe: A Systematic Review. *Vaccines*, 11(11), p.1657.  
<https://doi.org/10.3390/vaccines11111657>

Kempe, A., Stockwell, M.S. and Szilagyi, P., (2021). The contribution of reminder-recall to vaccine delivery efforts: a narrative review. *Academic Pediatrics*, 21(4), pp.S17-S23.  
<https://doi.org/10.1016/j.acap.2021.02.016>

Korevaar, H., Metcalf, C.J. and Grenfell, B.T., (2020). Structure, space and size: competing drivers of variation in urban and rural measles transmission. *Journal of the Royal Society Interface*, 17(168), p.20200010. <https://doi.org/10.1098/rsif.2020.0010>

LeBan, K., Kok, M. and Perry, H.B., (2021). Community health workers at the dawn of a new era: 9. CHWs' relationships with the health system and communities. *Health Research Policy*

and Systems, 19(3), pp.1-19. <https://doi.org/10.1186/s12961-021-00756-4>

Majid, U. and Ahmad, M., (2020). The factors that promote vaccine hesitancy, rejection, or delay in parents. *Qualitative Health Research*, 30(11), pp.1762-1776.

<https://doi.org/10.1177/1049732320933863>

Martoma, R.A., Washam, M., Martoma, J.C., Cori, A. and Majumder, M.S., (2023). Modeling vaccination coverage during the 2022 central Ohio measles outbreak: a cross-sectional study. *The Lancet Regional Health–Americas*, 23. <https://doi.org/10.1016/j.lana.2023.100533>

Osborne, N. and Grant-Smith, D., (2021). In-depth interviewing. In *Methods in Urban Analysis* (pp. 105-125). Singapore: Springer Singapore. [https://doi.org/10.1007/978-981-16-1677-8\\_7](https://doi.org/10.1007/978-981-16-1677-8_7)

Pagoto, S., Waring, M.E. and Xu, R., (2019). A call for a public health agenda for social media research. *Journal of Medical Internet Research*, 21(12), p.e16661. <https://preprints.jmir.org/preprint/16661>

Scott, E.M., Stein, R., Brown, M.F., Hershberger, J., Scott, E.M. and Wenger, O.K., (2021). Vaccination patterns of the northeast Ohio Amish revisited. *Vaccine*, 39(7), pp.1058-1063. <https://doi.org/10.1016/j.vaccine.2021.01.022>

Thompson, S., Meyer, J.C., Burnett, R.J. and Campbell, S.M., (2023). Mitigating Vaccine Hesitancy and Building Trust to Prevent Future Measles Outbreaks in England. *Vaccines*, 11(2), p.288. <https://doi.org/10.3390/vaccines11020288>

Torracinta, L., Tanner, R. and Vanderslott, S., (2021). Mmr vaccine attitude and uptake research in the united kingdom: a critical review. *Vaccines*, 9(4), p.402.

<https://doi.org/10.3390/vaccines9040402>

Walker, E.J., MacDonald, N.E., Islam, N., Le Saux, N., Top, K.A. and Fell, D.B., (2019).

Completeness and timeliness of diphtheria-tetanus-pertussis, measles-mumps-rubella, and polio vaccines in young children with chronic health conditions: A systematic review. *Vaccine*, 37(13),

pp. 1725-1735. <https://doi.org/10.1016/j.vaccine.2019.02.031>

■

香港醫療論文輔導中心 HKMTGC 版權所有 All Rights Reserved