



## Commentary

## To vaccinate or not to vaccinate? The dilemma of pregnant women

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## The problem

There is established literature clearly evidencing how infectious and preventable diseases can be more severe in pregnant women than in the non-pregnant population. During pregnancy women are at an increased risk of becoming seriously ill from disease (Say et al., 2014). Contracting influenza (flu) while pregnant is significantly more likely to result in serious complications and death than in non-pregnant women (Campbell et al., 2015) and is associated with a seven times higher risk of hospitalisation (Mertz et al., 2019). Flu can also adversely affect the unborn and newborn baby and has been associated with low birth weight, premature birth and death (Afuwape et al., 2022; UK Health Security Agency, 2022a,b). Pregnant women are at a higher risk of severe illness from Covid-19 with a higher likelihood of experiencing premature birth and stillbirth (Allotey et al., 2020).

In terms of uptake of vaccinations in this population, the UK sits somewhere in the middle of high-income country rates with the US and New Zealand having the highest uptake of the flu vaccination and the lowest coverage in Italy (Qiu et al., 2021). This can possibly be related to midwife recommendations where in the US they were reported to have been made by a very high percentage of midwives in the studies (Stark et al., 2016; Strassberg et al., 2018). Looking to other countries for policy and vaccination rollout differences is valuable but very variable as there are other considerations such as health insurance, availability and other societal and cultural differences.

Progress on promoting and administering vaccinations for pregnant women has been made which is clear from the routine vaccinations that are now offered to pregnant women with evidence detailing the safety and effectiveness of these vaccinations (Lynch et al., 2012; Regan et al., 2015; Villar et al., 2023). Additionally, the fact that vaccinations can be given in some cases as part of standard, already scheduled ante-natal appointments making it more convenient and accessible. However, there are various factors which may prevent more people from accepting vaccinations. One of these is the non-inclusion of pregnant women in clinical trials. The fact that the safety of many medications in pregnancy has not been established is unbalanced and has created inequalities but also adds to the uncertainty and mistrust of what is safe and what is not safe in pregnancy. Vaccination uptake by association also suffers as clinical trials establishing safety and efficacy of vaccinations in pregnant

women is non-existent.

This problem is very well illustrated by the recent Covid-19 pandemic in which pregnant women were not included in the testing of the vaccination. The message to pregnant women that they were not eligible for the vaccination was therefore interpreted as 'unsafe' for pregnant women and even after safety had been established and the rollout included pregnant women, the original message is still one that prevails (Birmingham Health Partners, 2022; Marcell et al., 2022). We recently conducted a qualitative study looking at decisions women make regarding accepting or refusing vaccinations during their pregnancy (Parsons et al. 2024) and found some women didn't feel any more at risk to illness during their pregnancy, they were fearful about the long-term effects of the Covid-19 vaccination on them and their unborn child, and expressed distrust due to conflicting government messages. This is concerning as lessons learned from history such as the damaging (and refuted) paper claiming links between the MMR vaccination and autism in 1998 (Godlee et al., 2011) which tell us that once these views are established, they are then very difficult to break down and correct, causing long-term damage to trust of vaccinations.

Even more worryingly we can also see that while vaccination uptake has always been relatively low in pregnancy, there is emerging evidence that views on vaccinations not just restricted to Covid-19 have changed since the start of the Covid pandemic in 2020. Flu vaccination uptake in the 2020–21 season was at 43.6 % declining to 37.9 % in the 2021–22 season (UK Health Security Agency, 2022a,b) and the whooping cough vaccination uptake is also falling year by year (UK Health Security Agency, 2023). In our recent study we found that women were more willing to express negative views on vaccination more so than in previous studies and we feel that Covid has effectively brought these views into the mainstream and made it acceptable in society to have negative views on vaccinations.

## What needs to be done

Based on what we now know about how pregnant women and midwives feel about vaccinations in pregnancy, and some of the factors that influence their decisions, such as the availability and convenience of vaccinations, how serious they consider the illness to be and how susceptible to illness pregnant women feel (Grimley et al., under review;

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Parsons et al. 2024), it is evident that clear and consistent message need to be made available to both healthcare professionals and pregnant women. Inconsistent government advice, or messages that change repeatedly without clear explanations impact the trust that pregnant women have in vaccinations. Healthcare professionals need to have reliable messages to confidently share with pregnant women.

The need for healthcare professionals to have accurate information, extends beyond government messaging, and includes the necessity for up-to-date facts and knowledge. Information on why pregnant women are at risk and why they should consider vaccinations, and safety and effectiveness of vaccinations should be incorporated into this information. This equates to the importance of appropriate training for midwives and other healthcare professionals involved in the care for pregnant women. Midwives told us that they often had insufficient information about vaccination, often only getting their information from watching the news.

One important consideration is about the delivery of vaccinations. Careful thought should be given around who is best placed to administer vaccinations to pregnant women. Care received by pregnant women often varies by geographical area, but also by the level of complication experienced during pregnancy. Complex or high-risk pregnancies are often consultant led, whilst other pregnant women have minimal interactions with healthcare professionals beyond midwives. Delivery of vaccinations should be accessible to all, regardless of the care received. Pregnant women and midwives told us that vaccinations that were offered at hospitals whilst they were attending other antenatal appointments, were convenient and were more likely to be accepted. In contrast, having to make additional appointments often led to obstacles such as work, childcare or forgetfulness, making it harder to fulfil and less likely to happen.

## Conclusions

Progress has been made towards increasing vaccination uptake in pregnancy, but it is evident that views and perceptions of vaccinations have been affected significantly by the Covid-19 pandemic. Some attempts have been made to address this, but this is not yet enough and more needs to be done. It is also important to consider how prepared we would be for future pandemics, in ensuring information and access to vaccinations in pregnancy. Currently it is clear that more work is needed in this area.

Read more about the findings of our two related papers for more information on views and experiences of both pregnant women and midwives on vaccination in pregnancy (Grimley et al., under review; Parsons et al. 2024).

## Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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