



Research letter

Maternal vaccination service provision in London and Liverpool: Organisation, recording of vaccinations and midwife training[☆]



Mohammad S. Razai^{a,b,*}, Chelone Lee-Wo^c, Sima Berendes^d, Caroline Free^d, Pippa Oakeshott^b

^a Primary Care Unit, Department of Public Health and Primary Care, University of Cambridge, Cambridge, UK

^b St George's School of Health and Medical Sciences, Population Health Research Institute, City St George's, University of London, London, UK

^c Maternity Unit, Women and Children's Division, St George's University Hospitals NHS Foundation Trust

^d Department of Population Health, London School of Hygiene and Tropical Medicine, London, UK

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ABSTRACT

Recommended vaccinations during pregnancy are safe and can prevent serious illness in both pregnant women and newborns. Despite this, uptake remains low in England. We explored maternal vaccination services at selected maternity sites in London and Liverpool, focusing on service delivery, vaccination recording and midwife training. Services included walk-in vaccination clinics, nurse-led rather than midwife-led vaccination, telephone and text reminders with links to online vaccination booking, multilingual leaflets, posters and digital apps with vaccine information links. However, practical barriers persist. These include poor integration between maternity and primary care data systems for recording vaccinations, limited and inconsistent midwife training, and logistical constraints on vaccine administration. Midwives reported difficulties accessing electronic vaccine records, and vaccination discussions with patients were often absent, particularly in group models of antenatal care. System-level improvements such as integrated data access, protected training time, clear documentation protocols and tailored outreach are needed to strengthen maternal vaccination services.

Introduction

In England, the NHS recommends vaccinations during pregnancy to protect the mother and the infant against pertussis (whooping cough), influenza and respiratory syncytial virus (RSV).¹ Routine maternal vaccination against COVID-19 is no longer recommended.¹ Pertussis vaccine is provided from 16 weeks, and RSV from 28 weeks to ensure optimal antibody transfer to the fetus.² Influenza vaccination is given during the flu season (September to March) to reduce maternal and neonatal complications.³ Maternal vaccines are generally safe and cost-effective, and the benefits outweigh any potential risks.^{4–6}

Despite this, vaccine uptake among pregnant women remains low, particularly in socioeconomically disadvantaged groups and some ethnic minority communities.^{7,8} Multiple factors contribute to this disparity, including the organisation of vaccine services, practical barriers and gaps in healthcare professional training.⁹ These system-level issues may result in vaccine-accepting women missing out on vaccination.¹⁰ In 2023, NHS data from 120 of 124 maternity trusts showed that while all were commissioned to deliver influenza vaccines and 89% were commissioned to deliver pertussis vaccines, actual delivery varied. Overall, only 25% of women received pertussis and 11% received influenza

vaccines via maternity trusts in 2021–22. Opportunistic vaccination delivery improved uptake, but inconsistent data reporting, especially for pertussis, created both additional workload and concerns about data reliability.¹¹

To identify opportunities to improve maternal vaccination uptake, we explored vaccination services in London and Liverpool, focusing on the organisation and recording of vaccinations and midwife training.

Data sources

This article draws on data obtained from direct correspondence and informal site visits to maternity units and primary care services in south London and Liverpool between April and July 2025. Information about service delivery, booking systems, vaccine availability, midwife training and immunisation data recording was gathered from maternity vaccination leads, midwives, healthcare managers, practice nurses, community pharmacists and publicly available documents. We provide a narrative synthesis to identify common operational challenges, initiatives and gaps in maternal vaccine provision across these care settings. As this is a research letter rather than a formal study, the information presented is descriptive and does not provide a replicable methodology.

This article reflects the opinions of the author(s) and should not be taken to represent the policy of the Royal College of Physicians unless specifically stated.

[☆] How patients were involved in this article: A pregnant woman provided feedback on the draft of this article.

* Corresponding author.

E-mail address: Msr37@cam.ac.uk (M.S. Razai).

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Results

Organisation of services

In secondary care, maternal vaccination delivery is the responsibility of individual maternity units, with oversight and support provided by the Local Maternity and Neonatal System (LMNS). The method of making the offer varies across maternity units (eg in-person or telephone conversation, leaflet, digital information, text message).

Box 1 summarises maternal vaccine services provided in hospitals and in the community in London and Liverpool. Most vaccinations are administered in hospitals, often in dedicated clinic rooms with a fridge to store vaccines. It is usually cheaper and more efficient for a trained nurse to administer vaccinations rather than a midwife. Staff also suggested practical, low-cost interventions to boost uptake, including installing clear signage in the ultrasound department to guide women to the vaccination room, and displaying vaccine information on waiting room 'Baby TVs'. Additional suggestions included ensuring that the vaccination room is close to the antenatal clinic; allow walk-in vaccinations; and embedding a mandatory prompt in both the initial booking antenatal appointment and postnatal discharge summary. These would ensure that midwives document whether vaccines were offered and record the woman's response.

Box 1. Maternal vaccine services provided in hospitals and in the community in London and Liverpool.

Hospital

- Vaccination may be discussed in person (eg at booking and during antenatal checks), by text with a link/QR code to book vaccination, by telephone (eg before the 20-week scan), or via leaflets, posters and 'Baby TV' in clinics.
- Women are encouraged to have vaccinations on site done by the vaccination nurse straight after they attend for their routine ultrasound scans, usually at 11–14 weeks, 20–22 weeks and 36–37 weeks of gestation. Most units avoid giving vaccinations before the 20-week anomaly scan in case an anomaly is blamed on recent maternal vaccination.
- There is a drop-in service on weekdays, or women can book a specific time and date via a QR code/email/telephone.
- Women admitted antenatally to hospital wards can receive vaccinations opportunistically, either via referral to the vaccination team or from a ward midwife who is suitably trained.

Community

- Some community midwives administer the vaccine as part of routine antenatal care and/or facilitate mini-vaccine clinics alongside general practices at a few larger health centres.
- The NHS commissions general practices to vaccinate pregnant women for pertussis, influenza and RSV through the General Practice Enhanced Service Specifications. However, practice nurses report they do relatively few maternal immunisations.
- Community pharmacies offer flu vaccines, but similarly report they rarely immunise pregnant women.

Novel communication efforts included social media interviews with vaccinated women and midwives, targeted materials for Black and Mixed Heritage women, and outreach such as Spanish-language community talks for Latin American women. An additional initiative involved making phone calls/texts the day before the 20-week scan and on the day by a member of the vaccination team, with text reminders and a link to a vaccination leaflet at 28 weeks for RSV vaccination, and providing a link or QR code to book a vaccination. Lastly, in line with NHS England's CORE20PLUS¹² framework to reduce health inequalities by focusing on underserved populations, community hubs are being rolled

out that act as local antenatal care centres. These hubs aim to support women who would otherwise face practical barriers accessing hospital maternity units, such as long travel distances or unaffordable transport.

Documentation of maternal vaccines

At present, in these units, there are several methods of recording maternal vaccinations, often running concurrently:

Record a Vaccination Service (RAVS)

The NHS electronic data collection system 'Record a Vaccination Service' (RAVS) is designed to update general practice records automatically when vaccines are given in maternity settings. However, some midwives find it difficult to access information on RAVS, so they don't know if women have been vaccinated within the maternity units. This is because midwives can only be granted access to RAVS by a manager who has assessed them as competent to administer vaccines under a Patient Group Direction (PGD), and who has confirmed that the midwife has completed the required training for using RAVS. PGD is a legal mechanism that allows authorised midwives to administer vaccines without a doctor's prescription, provided that they have completed specific training and sign-off. Another problem is that midwives cannot access the data of women who have received vaccines in primary care, as these teams do not need to document using the RAVS system. Thus, there is no reciprocal arrangement for maternity units to be informed of a vaccination given to a pregnant woman in primary care settings such as general practices.

Local paper or digital records and women's handheld records or maternity apps

Paper records in maternity units are generally being phased out. However, some new or existing IT systems do not have the correct data collection tools to capture vaccination performance data; hence, paper records may be used. The handheld records are duplicates of the clinical documentation.

Finally, asking pregnant women about vaccine uptake may be unreliable. Some women may confuse injections and blood tests or think that their anti-D injection was a vaccination. Women may forget opportunistic vaccination given in pregnancy, eg if they are given a flu jab when they bring an older child for immunisations.

Midwifery training

Training in maternal vaccination administration is not a mandatory component of midwifery education or continuing professional development. Both student and practising midwives typically receive only limited instruction on maternal immunisation, often embedded within broader public health teaching alongside topics such as smoking cessation, healthy weight and infant feeding. As a result, many midwives begin clinical practice without the detailed knowledge or confidence needed to counsel women about vaccination or to administer vaccines themselves. Although one maternity unit incorporated a 15-min slot for general maternal vaccination guidance into its mandatory training programme, this is not universal. In contrast, at one trust, the overall duration of the mandatory training schedule was reduced from 5 to 3 days, and vaccine education was deprioritised. We advocate for a dedicated training slot in future training schedules, especially given the local outbreak of pertussis in 2024 and the introduction of the RSV vaccine in September 2024. We also observed that midwives based in the community who do not regularly see severely unwell babies may be less engaged with vaccine promotion. To address this, we suggest that teaching sessions could incorporate emotionally powerful materials, such as videos of newborns with pertussis, to convey the real-world consequences of vaccine-preventable diseases.

Further practical barriers may prevent midwives from delivering vaccines.

- As mentioned earlier, midwives must undertake additional reading and be formally signed off under a PGD before they can administer vaccines. A few midwife vaccinators are trained through NHS England's e-learning platform, supplemented by webinars and basic life support training. However, the number of trained vaccinators is limited due to staff shortages.
- RSV vaccination is particularly challenging, requiring complex reconstitution and extended time for counselling, preparation and documentation – up to 20 min per woman vaccinated.
- There can be a substantial administrative burden, as vaccination must often be recorded in three electronic and paper records (RAVS national system, NHS performance data and local documentation).
- Midwives may accidentally administer duplicate doses. If a vaccine is given in general practice and the midwife is not informed, it may be administered again in error because of a lack of shared information. Such duplicate doses (for example, repeat pertussis vaccinations) are recorded as clinical incidents, adding further complexity to the process.
- Care group models, where pregnant women of similar gestation attend group sessions rather than individual appointments, do not always include discussion of maternal vaccination. Without one-to-one counselling, women may not receive the information to make informed decisions. This may particularly affect women who are vaccine-hesitant.

Discussion and conclusions

Despite the well-intentioned efforts of frontline staff, maternal vaccination services, at least in parts of England, continue to face systemic challenges. Service leads in these units noted that until basic infrastructure, staffing and electronic access were resolved, there was little bandwidth to focus on behavioural interventions to improve vaccine uptake. Improvements in infrastructure, reminder texts to pregnant women, and electronic documentation systems are promising but not yet sufficient.

Protected training time, simplified workflows, and integrated record access are essential next steps. To increase vaccine uptake, service redesign should prioritise embedding the training in midwifery preceptorship competencies (Nursing and Midwifery Council Standards for newly qualified midwives), including in the orientation of new starters. It is crucial to build vaccine confidence among both pregnant women and midwives to optimise vaccination.

Efforts to build vaccine confidence may be frustrated in the absence of essential operational components such as adequate staffing, provider training, reliable documentation and coherent service design. We have highlighted considerable variation in practice and isolated pockets of effective delivery. System-level improvements such as integrated data access, protected training time, clear documentation protocols, and tailored outreach are needed to strengthen maternal vaccination services.

Ethics approval and consent to participate

This article reports on existing services and publicly available information and therefore did not require ethical approval. The NHS Health Research Authority (HRA) decision tool confirmed that the work is not considered research. No patient data or identifiable participant information were included. Individuals who contributed information about their maternal vaccination services provided informed written consent by email. The work was undertaken as part of the *Vaccination in Pregnancy Study* (IRAS ID 333314).

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Data availability statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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.

CRediT authorship contribution statement

Mohammad S. Razai: Writing – review & editing, Writing – original draft, Resources, Methodology, Formal analysis, Data curation, Conceptualization. **Chelone Lee-Wo:** Writing – review & editing, Writing – original draft, Data curation. **Sima Berendes:** Writing – review & editing, Writing – original draft. **Caroline Free:** Writing – review & editing, Writing – original draft. **Pippa Oakeshott:** Writing – review & editing, Writing – original draft, Supervision, Methodology, Data curation.

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