

Perinatal Research Seminar

Mapping the delivery of interventions for vaccine preventable infections in pregnancy

Presenters: Nafisa Yussf, Dr Nicole Allard

—
29th November 2021



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Acknowledgment of country

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Lived experience speaker

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Community study

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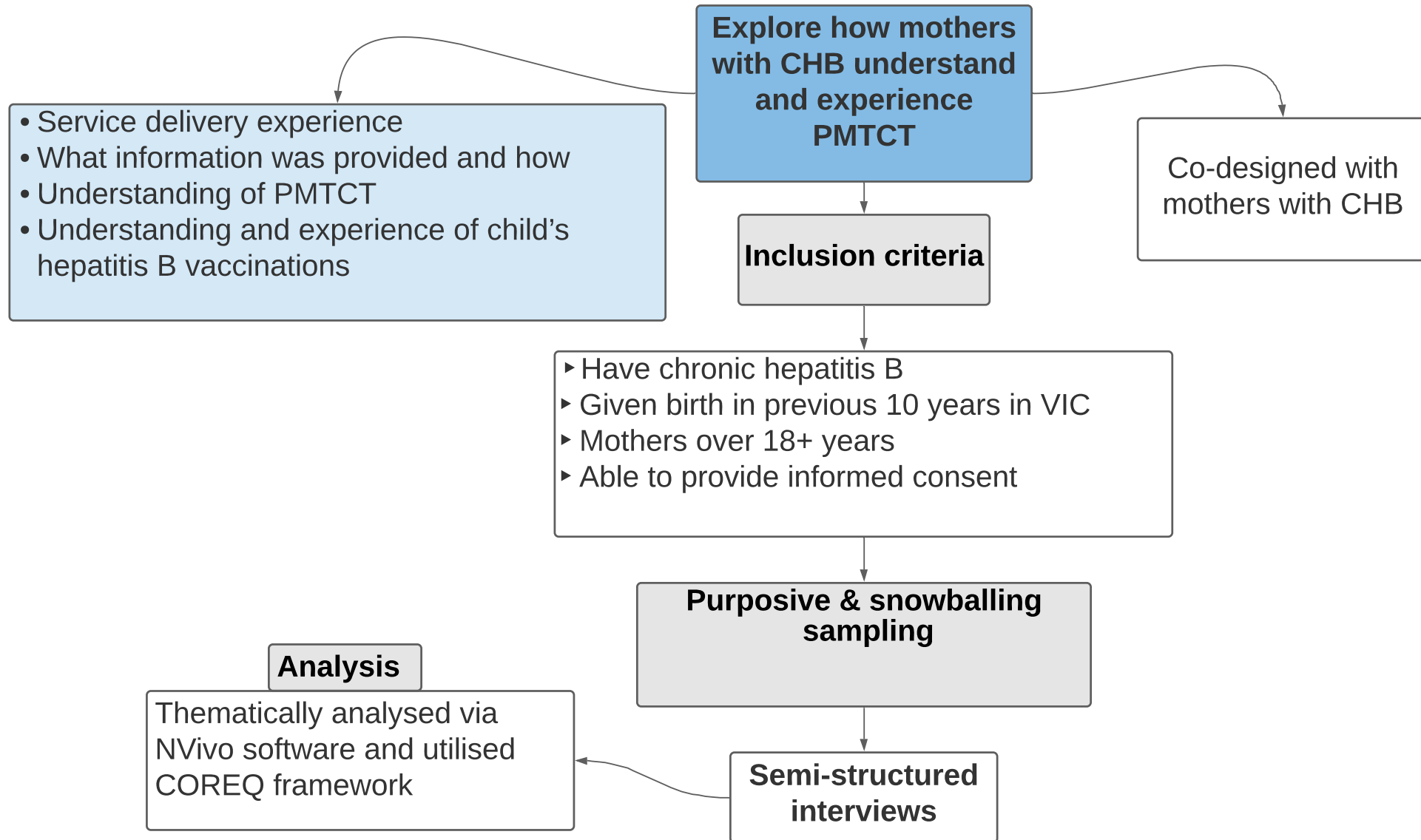
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Background



- ~800 women with CHB give birth annually in VIC
 - Evidence of local MTCT
 - Children exposed to hepatitis B perinatally have a higher risk (90%) of developing CHB
 - MTCT key priority – Triple elimination and National Strategy targets
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Community Methodology



Results: demographics

- 16 participants interviewed (age 18-59 years)
 - 11 born in Asian region
 - 5 born in African region
 - 7 required an interpreter
 - 12 with primary/secondary education
-

Results - key themes

1. Being diagnosed
 2. Understanding of hepatitis B
 3. Understanding of vaccination and transmission
 4. Navigating the health care system
 5. Hepatitis B fear and concerns
-

Theme: being diagnosed

“Yeah, when I give birth that’s when I find out. I’m very shocked. I didn’t know that” (Tham)

“He didn’t tell me anything. He just requested for some blood tests (Aarif)”

Theme: understanding of hepatitis B

“It's a disease that grows, progress in time, that there is no medicine about it, there's no treatment towards it, it's a forever disease” (Fatou)

“Ah, no, I mean they say it's like I'm the carrier, means that I have it, right?” (Yuri)

Theme: understanding of vaccination and transmission

“It builds the immune system against the hep B, I believe” (Yuri)

“They said there’s a chance of me passing it on to the child and they did the test as when she was born and she doesn’t have it, just me. So, they did that test, yeah and she doesn’t have it which is good” (Fatou)

[Via interpreter] *“The nurse told her very clearly that baby had to have the hepatitis B vaccination and can’t be breastfed for 24 hours” (Amala)*

Theme: navigating the health care system

“they didn’t really give me or get involved with my hepatitis B, I mean they know I have it...it’s in my history. They do blood test at each pregnancy. But they don’t provide any information on hep B” (Fatima)

“... sometimes I don’t understand well, what they are saying... even if there is an interpreter...sometimes I forget” (Amal)

“We tried to go a few times...twice or three times... yeah, they needed two nurses to do it... they said maybe it’s better if you go to the hospital.”(Rosa)

Theme: hepatitis B fear and concerns

*“now I got hepatitis B and my husband also go it. I don’t want to pass it to my children. I feel so sorry for them. I don’t want them to get hep B”
(Thawda)*

“Just that my, my blood, uh, is on the baby [at birth]...so they need to wash off, uh, the blood on the baby first” (San)

“I saw a lot of people dying with this disease, even my friends. Even my close friends did die from this disease. That's why I'm worried” (Fatou)

Discussion

- Complex experiences of diagnosis
 - Little to no formal CHB information
 - Poor understanding of hepatitis B (esp. protection of vaccination)
 - Concerns of passing CHB to infant and liver cancer
 - Poor social and emotional support (esp. during diagnosis and postnatal)
 - No relevant CHB and pregnancy resources
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Data Linkage & analysis study

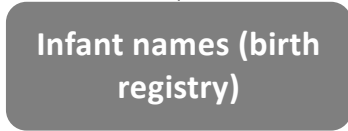


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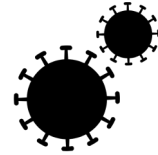
Linkage Methodology

Base cohort

Victorian Perinatal Data Collection



- Identify pregnant women
- Hepatitis B birth dose



Public Health Events Surveillance System
Hepatitis B notification (unspecified HBV)



Victorian Admitted Episode Dataset
Birthing episode – procedure and diagnosis codes
Hepatitis B immunoglobulin (HBIG)



Australian Immunisation Register
Infant hepatitis B vaccination status

Inclusion: live births, still alive after 24 hours
1/1/2009 – 31/12/2017

Deterministically linked at the Centre for Victorian Data Linkage using: name, date of birth, sex, Medicare number

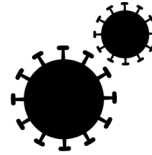
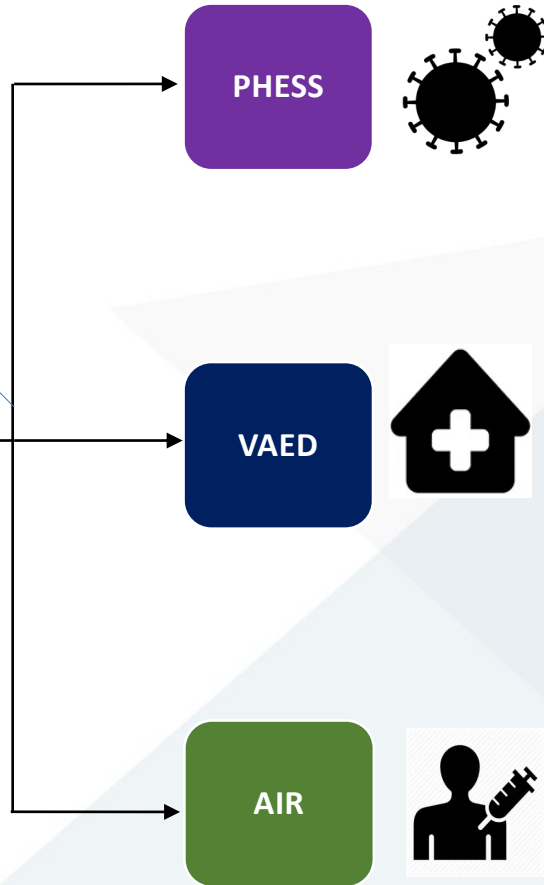
Linkage Methodology

Base cohort

Victorian Perinatal Data Collection



690,052 mother-infant
pairs identified



3,518 individual women diagnosed with CHB
- related to **5,213 (0.76%)** infants



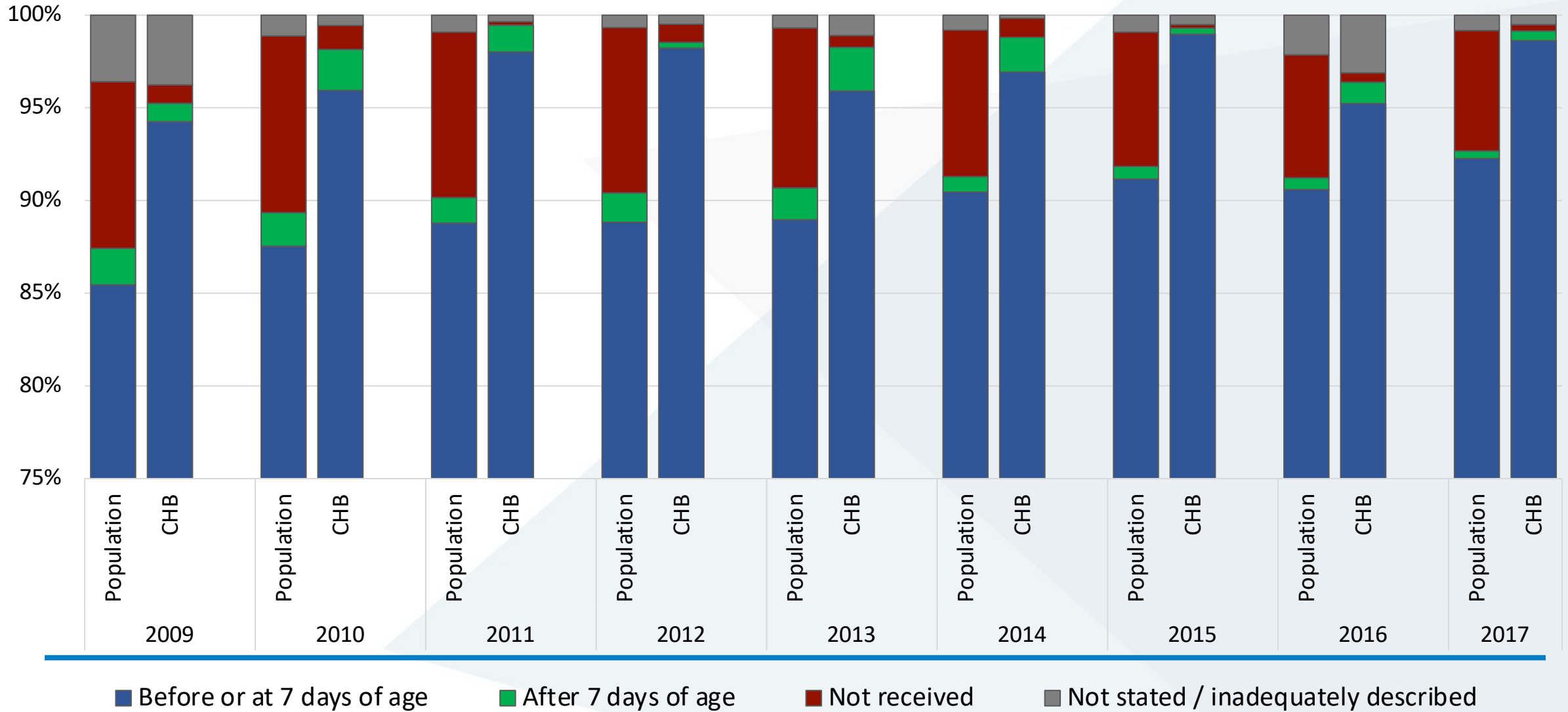
678,650 (97.7%) birthing events identified



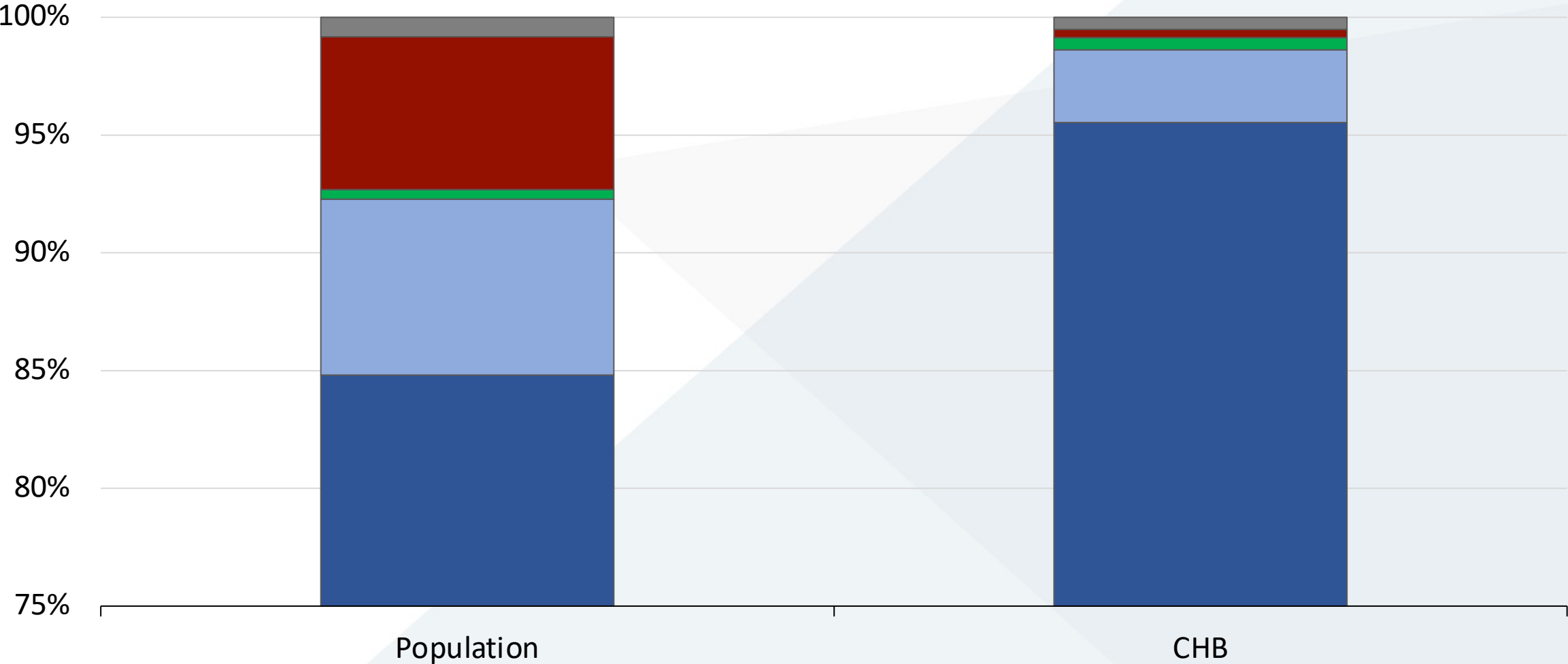
369,929 (53.6%) infants identified

Inclusion: live births, still alive after 24 hours
1/1/2009 – 31/12/2017

Results – Hepatitis B birth dose uptake



Results – Hepatitis B birth dose uptake, 2017



■ Less than 24 hours of age

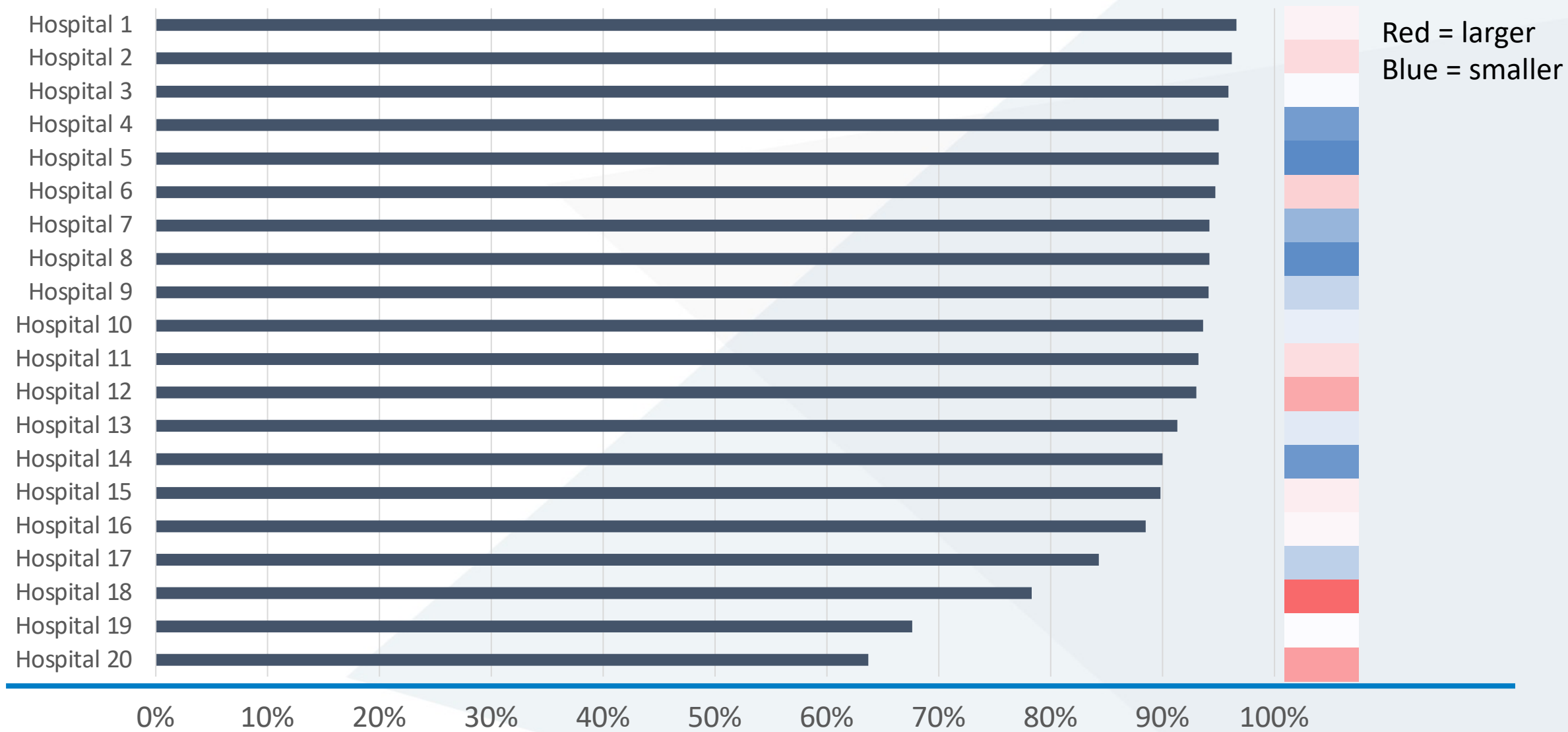
■ Between 24 hours and 7 days of age

■ After 7 days of age

■ Not received

■ Not stated / inadequately described

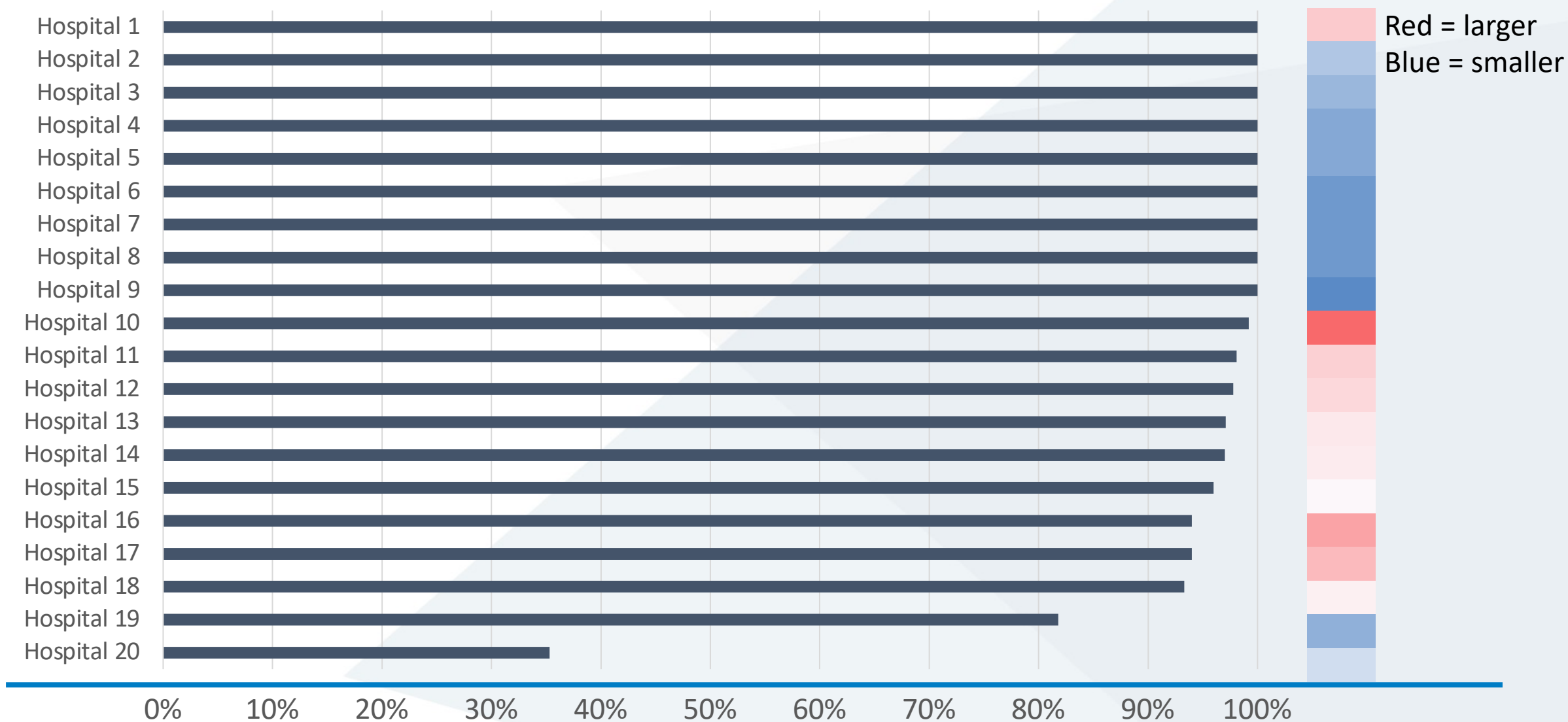
Timely hepatitis B birth dose uptake for general VIC by hospital, 2017



* Covers 80% of all hospital births

Hospital size

Timely hepatitis B birth dose uptake for HBV VIC by hospital, 2017



* Covers 90% of all hospital births

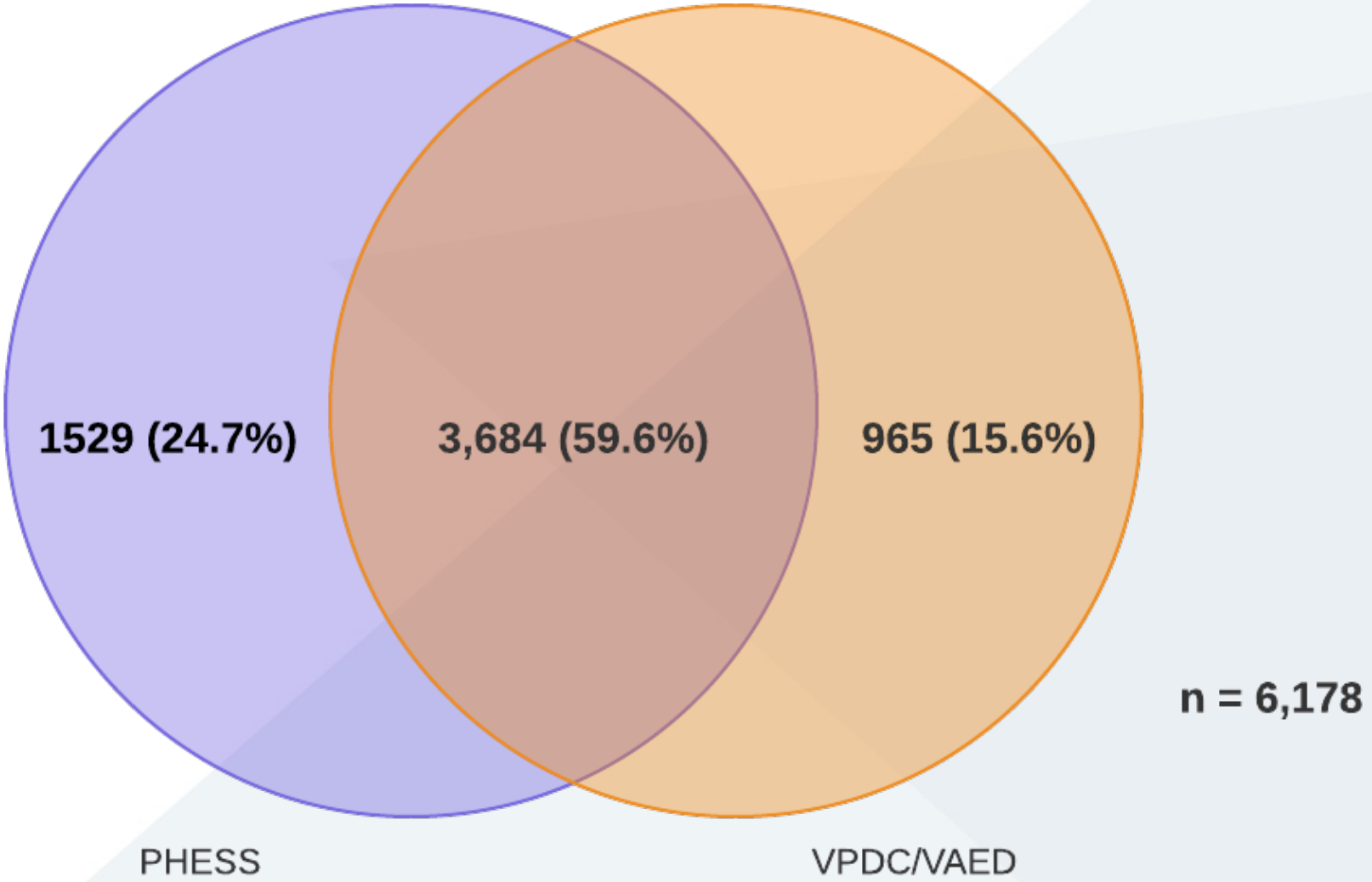
Hospital size

Factors associated with HBV birth dose uptake within 7 days – mothers with CHB

Variables	N	Adjusted OR	95% CI	p-value
Country of birth of mother				
Australia born	794 (13%)	—	—	
Overseas born	5,311 (87%)	1.73	1.09,2.75	0.019
Missing	73			
Hospital				
Public	5,200 (84%)	—	—	
Private	977 (16%)	0.18	0.12,0.27	<0.001
Missing	1			
Low birth weight				
>=2500g	5,761 (93%)	—	—	
<2000g	143 (2%)	0.39	0.12,1.24	0.111
>=2000g - <2500g	268 (4%)	0.83	0.34,2.06	0.693
Missing	6			

Multivariate analysis adjusted for: maternal age, maternal ATSI status, country of birth of mother, hospital of birth, birthweight, NICU/SCN admission, PHESS CHB notification, CHB identified through VAED/VPDC

Recording of CHB status



Hepatitis B Immunoglobulin (HBIG) uptake, 2009- 2017

- **Poor recording of HBG**

- **129** doses administered to infants born to mothers identified living with CHB during birthing event
 - **11** doses administered to infants born to mothers NOT identified living with CHB during birthing event.
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Evidence of local transmission

- 8 infants born in Victoria have a notification of CHB
 - 5 linked to mothers living CHB
 - 3 linked to mother who have never had CHB recorded on PHESS, VAED, VPDC
 - 6 mothers born overseas
 - 2 infants were siblings
 - All metro
 - Hospitals varied
 - All infants had their own VAED record, but none had evidence of HBIG
 - All received HBV birth dose within 7 days (whether <24 hours unknown)
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System mapping study



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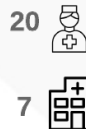
System mapping consultations



How are interventions for vaccine preventable infections (influenza, pertussis and CHB) delivered to Victorian pregnant women and their infants?

Who We Consulted

- Midwives
- Immunisation nurses
- Refugee health nurse
- Hepatitis Nurses
- Unit Managers
- Obstetricians
- ID Physicians
- Policy Advisors



Surveys

Survey 1: for **maternity unit managers** in birthing hospitals *and*

Survey 2: for **health providers** involved in the antenatal/postnatal care of pregnant women and their infants



Consultations

Initial scoping consultations with key health providers.

How We Consulted

60 minutes face to face interview at the health provider's work place.

Results

Analysed survey results and developed report.

Birthing hospitals survey distribution

Survey roll out

Phase 1: Feb 2021

Phase 2: March 2021

Birth hospitals survey

Public hospitals

Publicly available details

Private hospitals

Department of Health mailing list



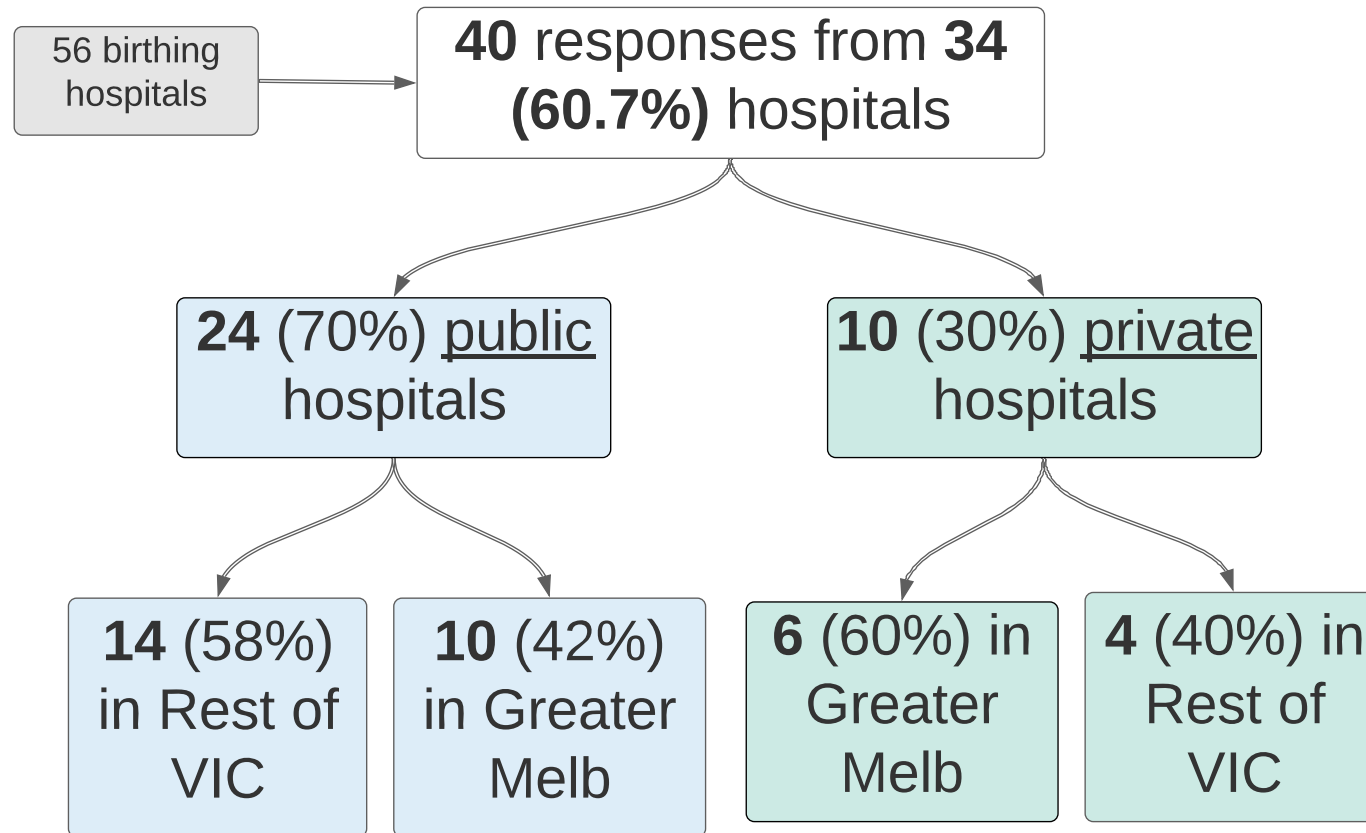
Birthing hospitals survey results

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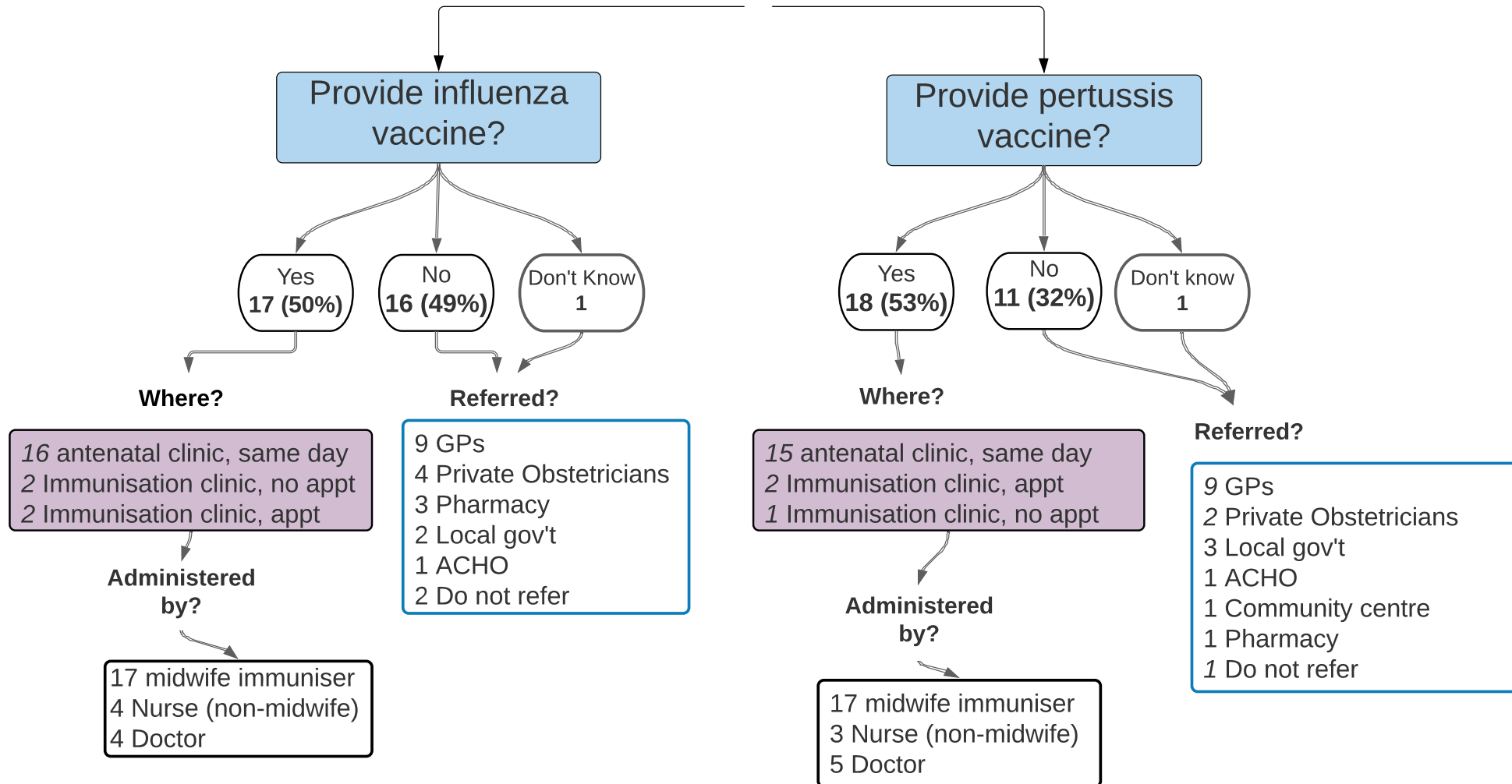
Demographics



Role

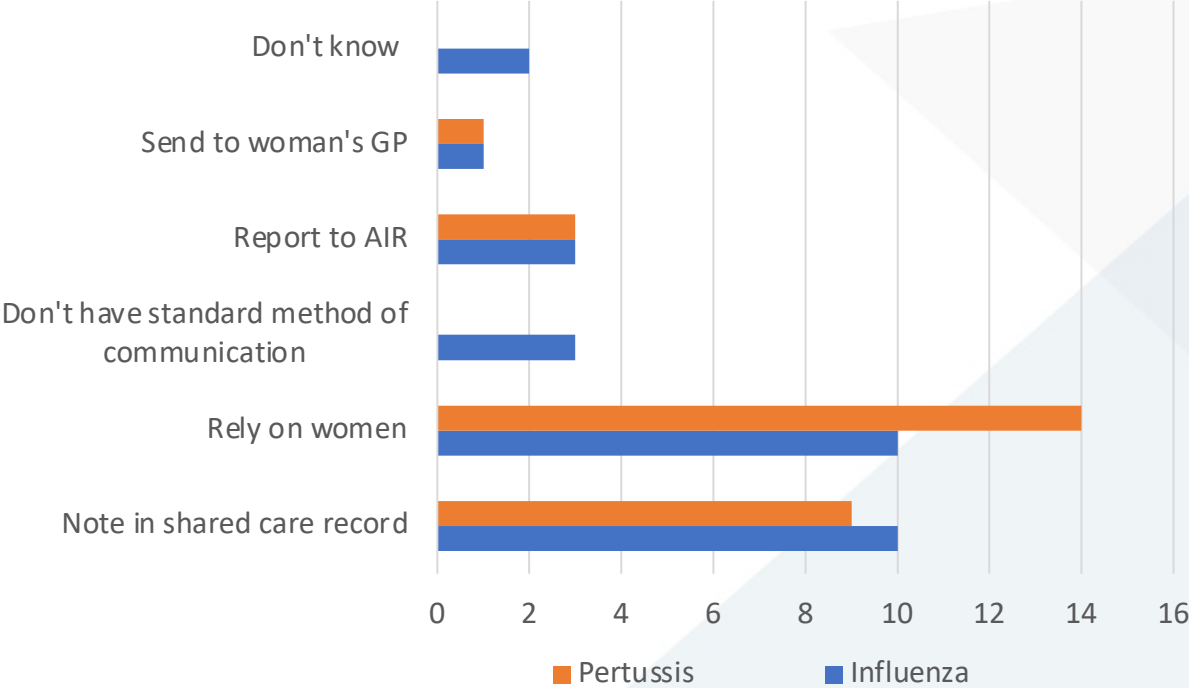
- **34 (85%)** Maternity Unit Managers
- **1** Director of Maternity services
- **1** midwife
- **1** Educator
- **3** unidentified

Influenza & Pertussis vaccination

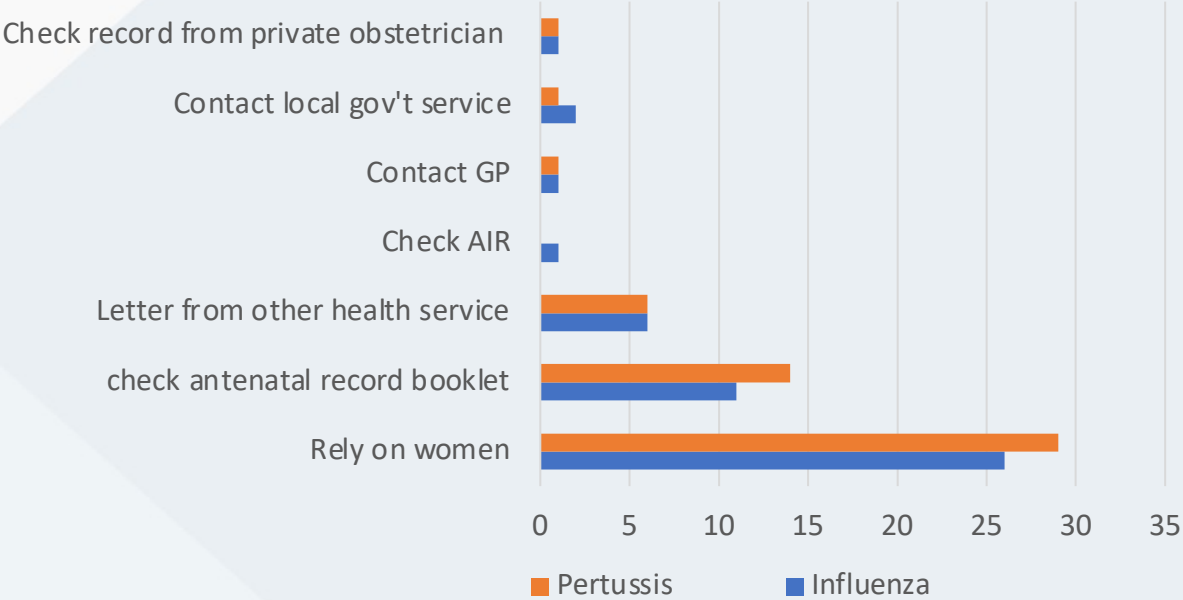


Standard methods for communicating vaccine administration*

Standard method of communication that vaccination has been administered in hospital?

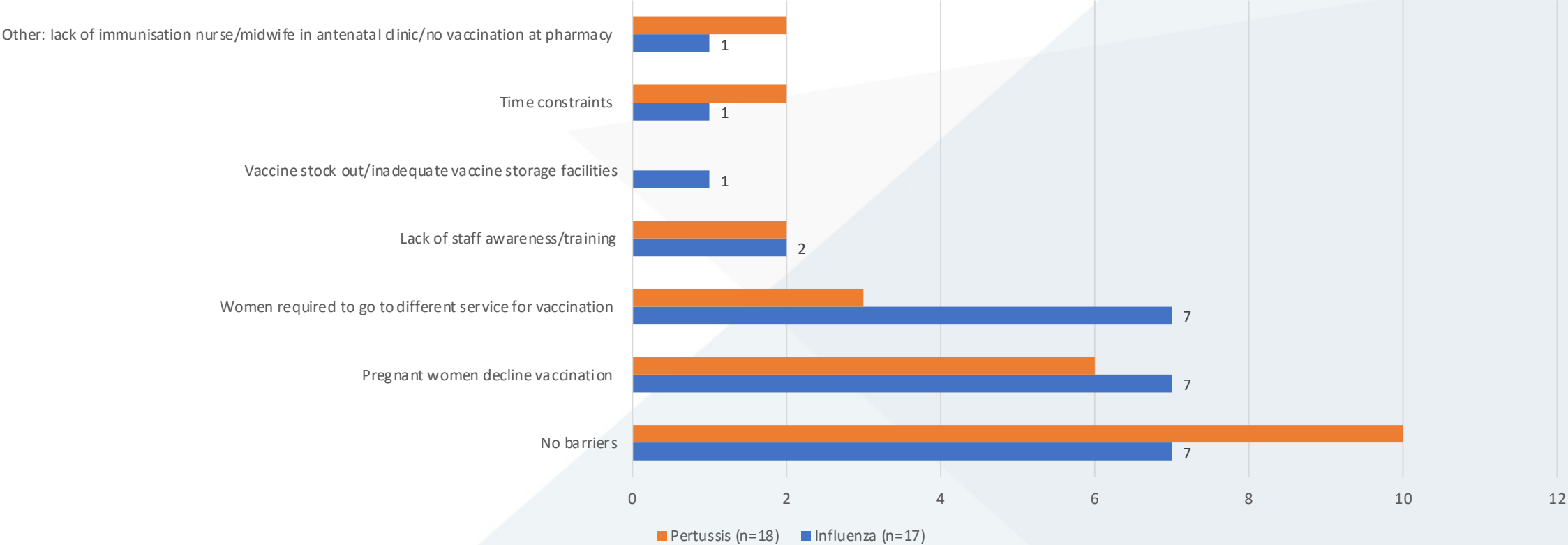


How does hospital know if vaccination has been administered in the community?



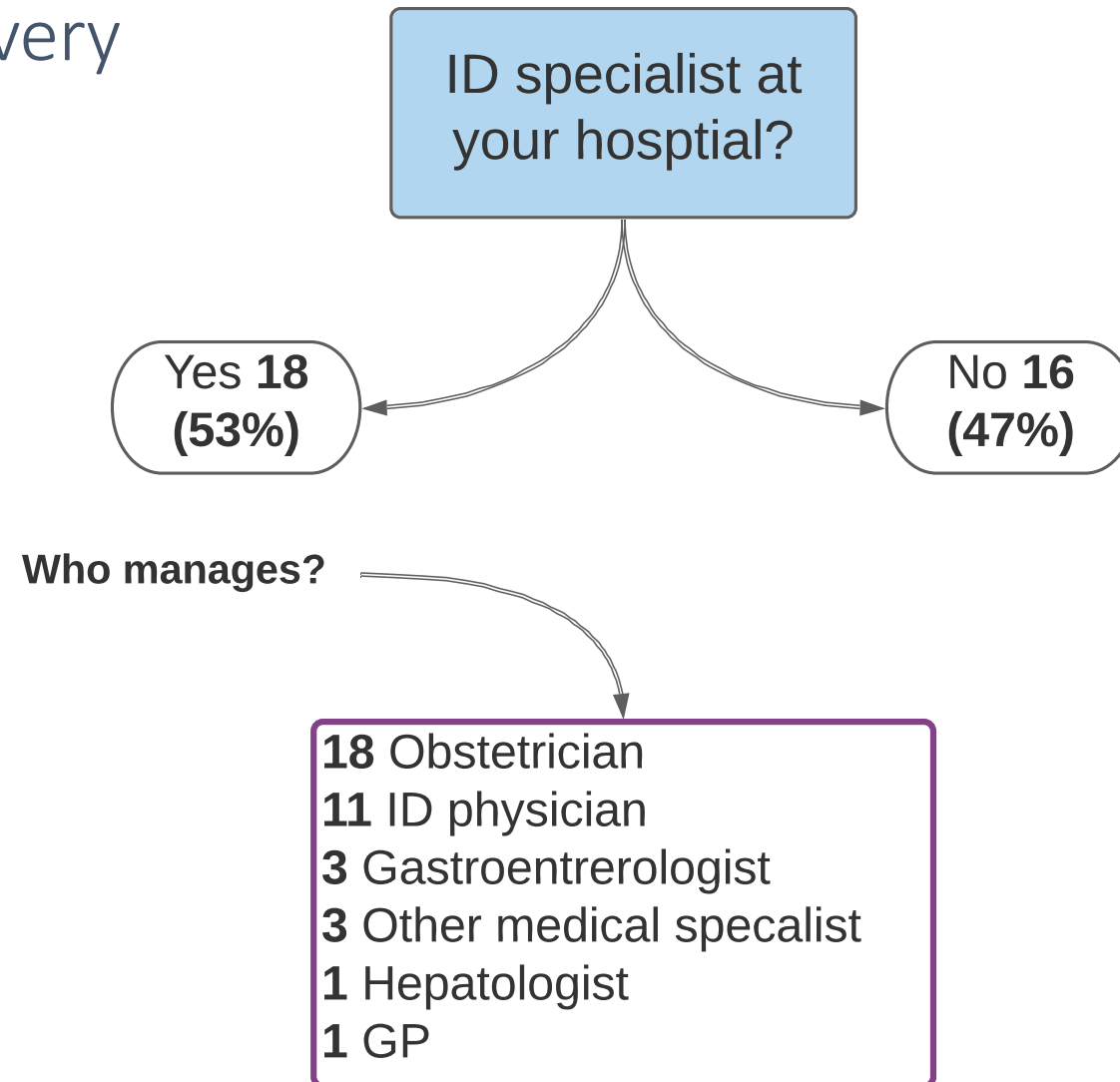
* Multiple response

Barriers to influenza and pertussis vaccine delivery*

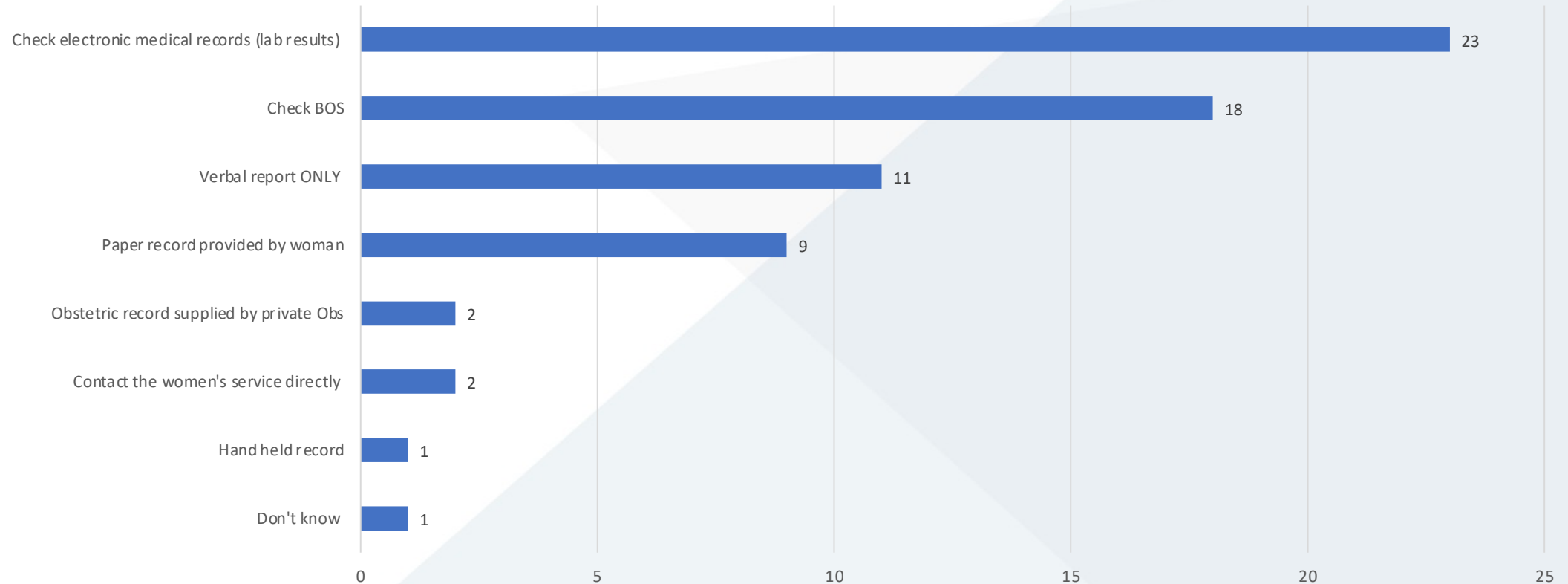


* Multiple response

CHB service delivery

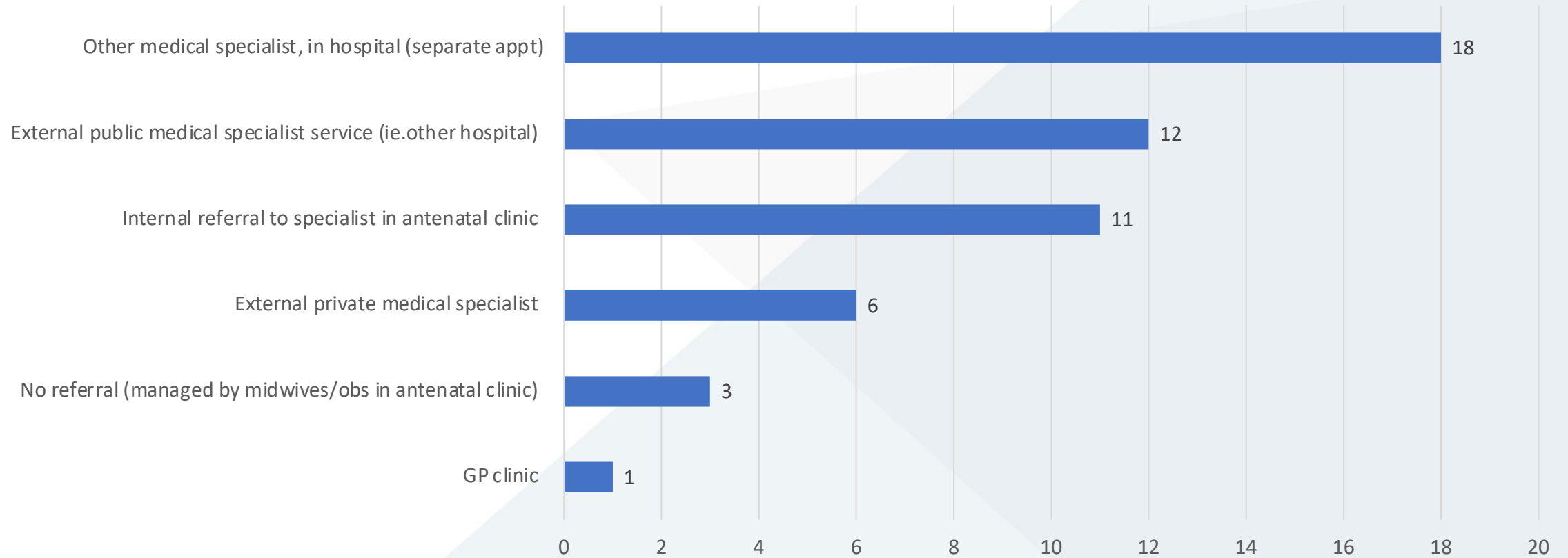


Is there a standard procedure to confirm a woman's CHB status during admission for delivery at your hospital? If so, how does this occur?



*Multiple answers

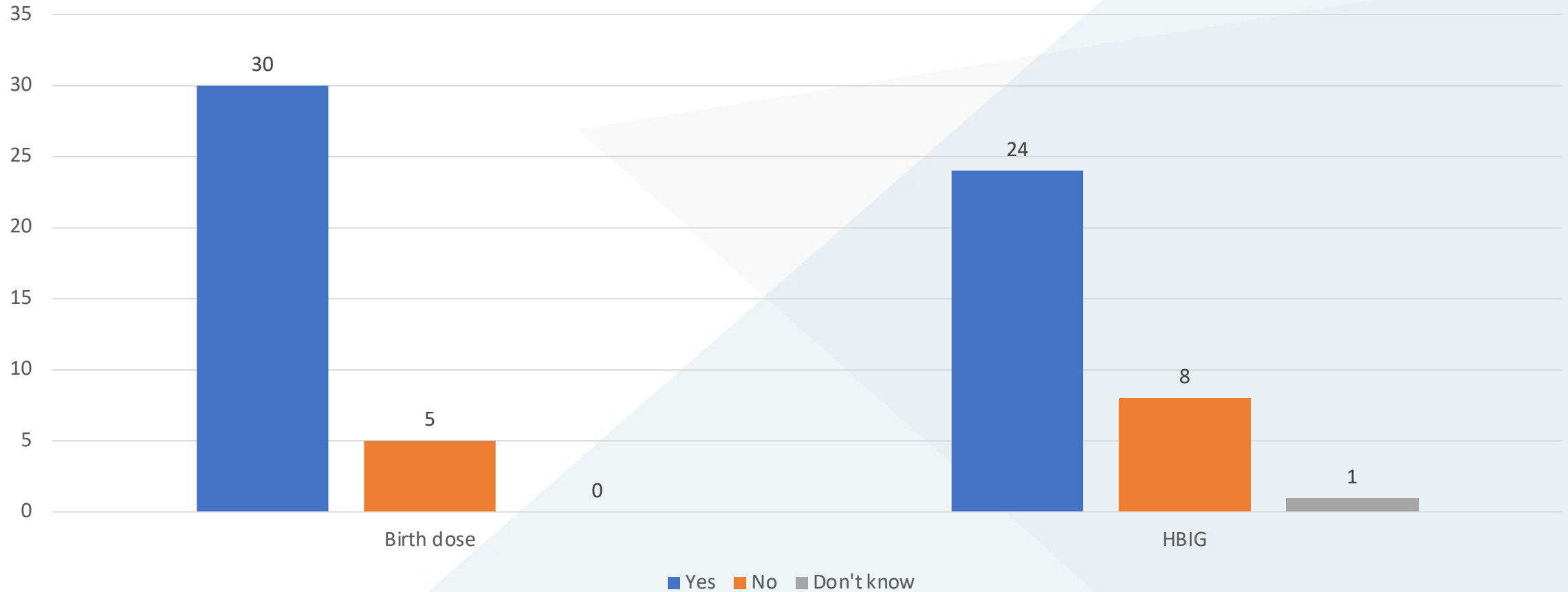
Where are pregnant women with hepatitis B referred to?



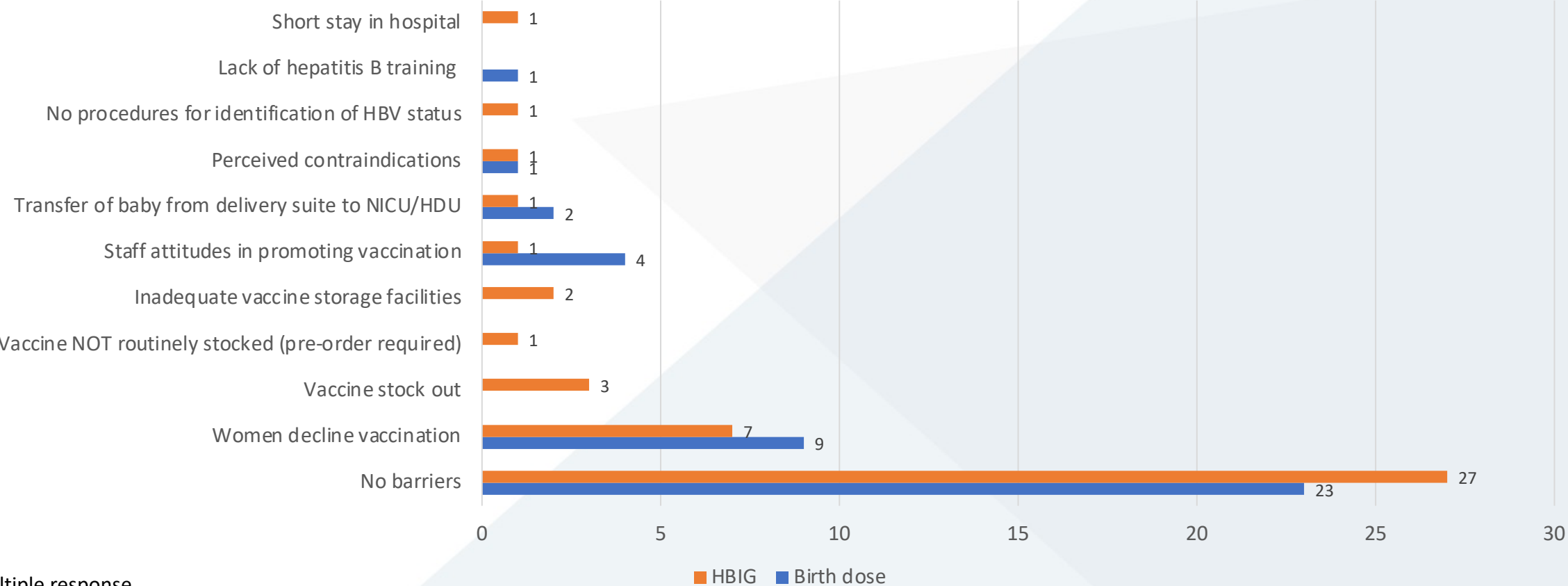
*Multiple answers

Protocol for seeking consent during antenatal care for the administration of **birth dose** and **HBIG** for their infant prior to presenting for delivery?

N = 34

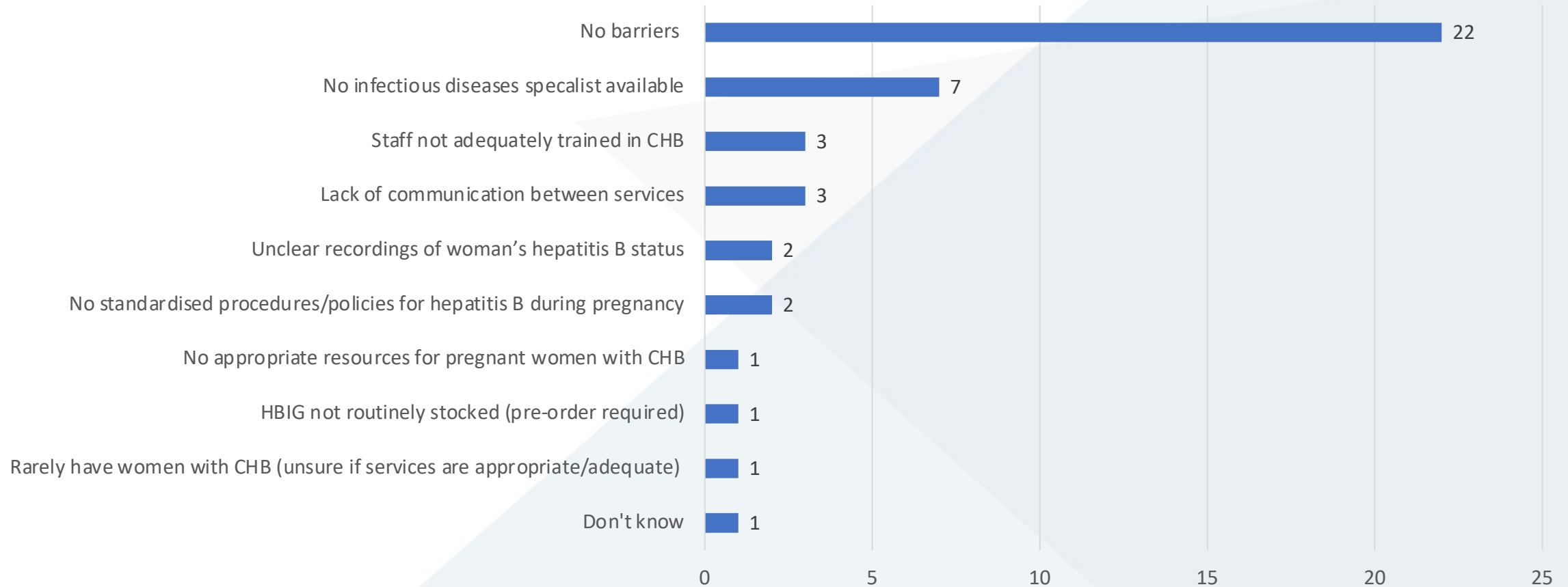


Barriers to HBV birth dose and HBIG delivery*



* Multiple response

What do you think are some of the **barriers for guideline-based** care delivery for mothers with CHB and their infants in your hospital?



Questions/comments

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Health Providers survey results

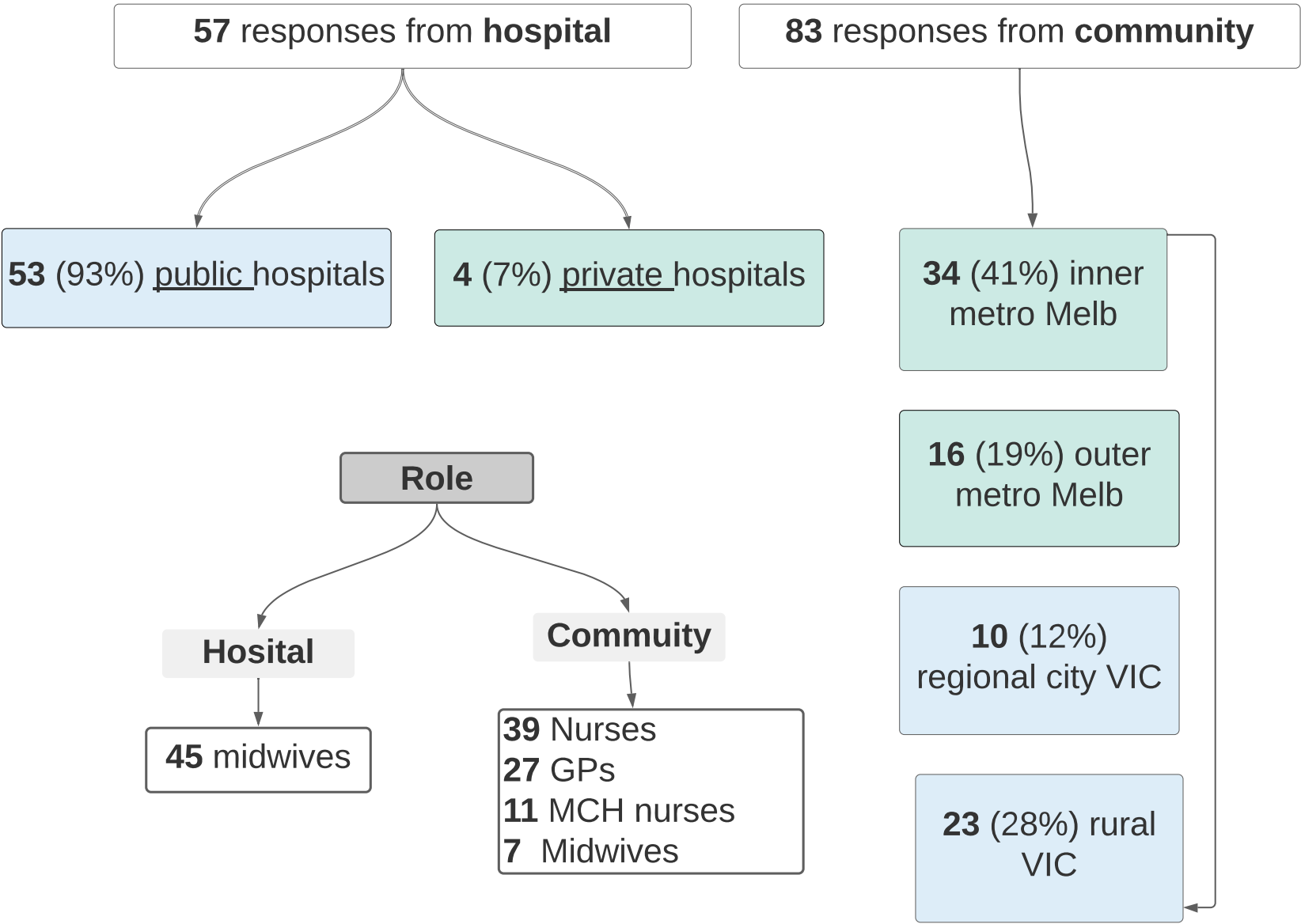
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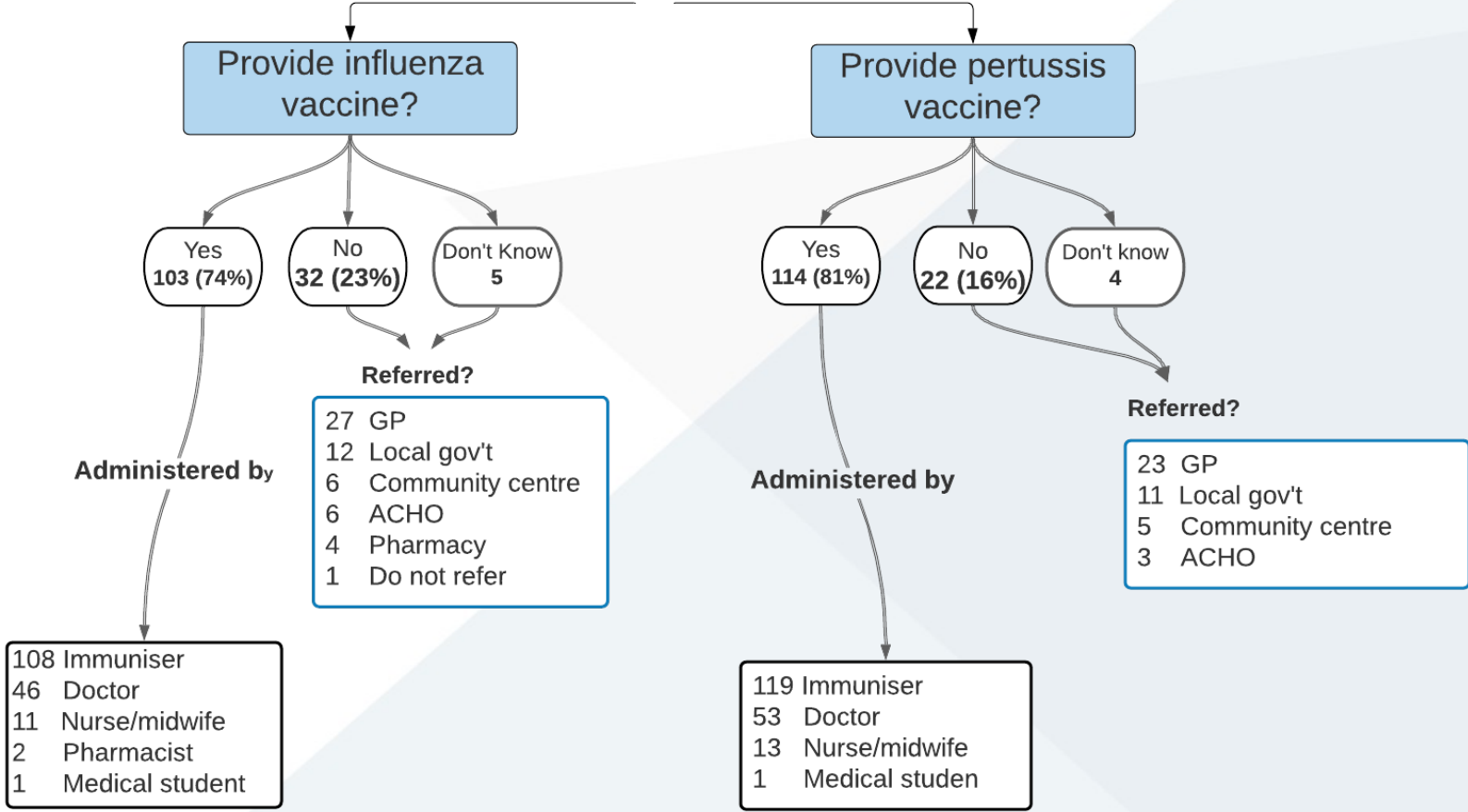
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Demographics

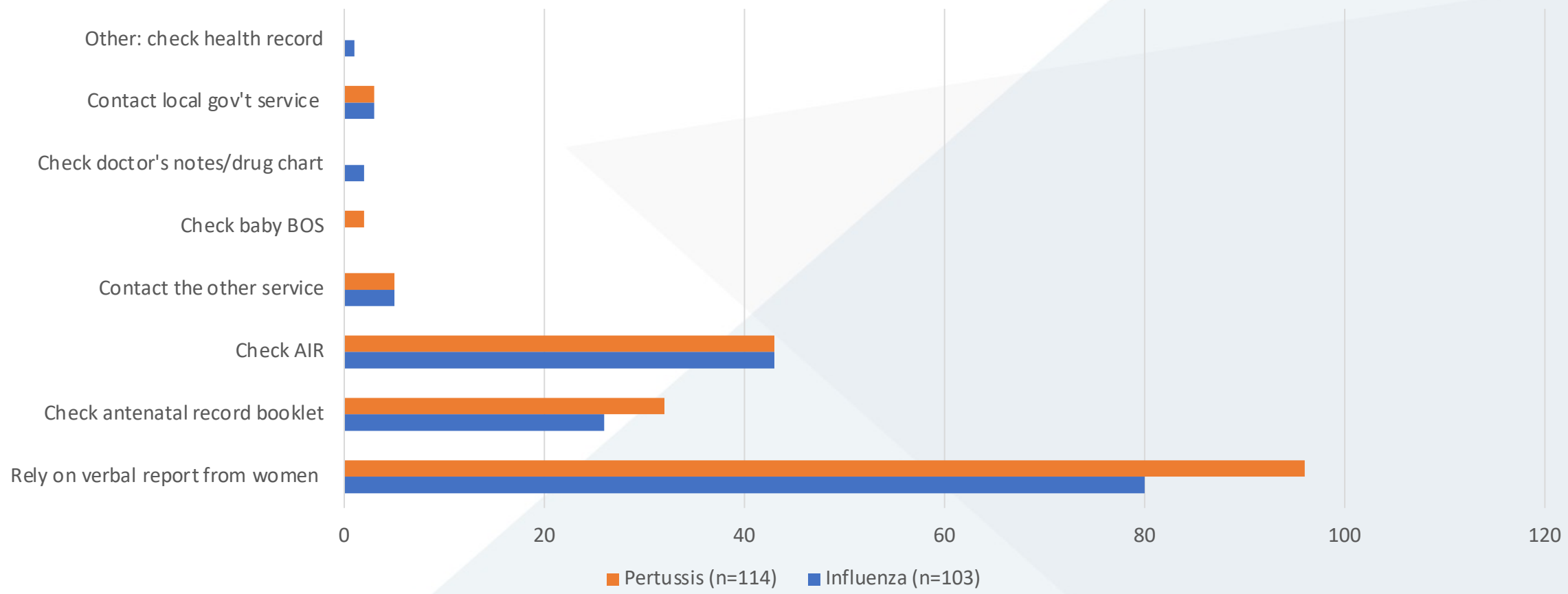
N=140



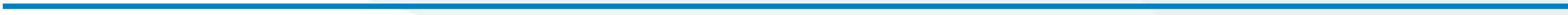
Influenza and pertussis vaccinations



How do you know if a pregnant woman accessing your service has already received influenza/pertussis vaccinations at another service?*

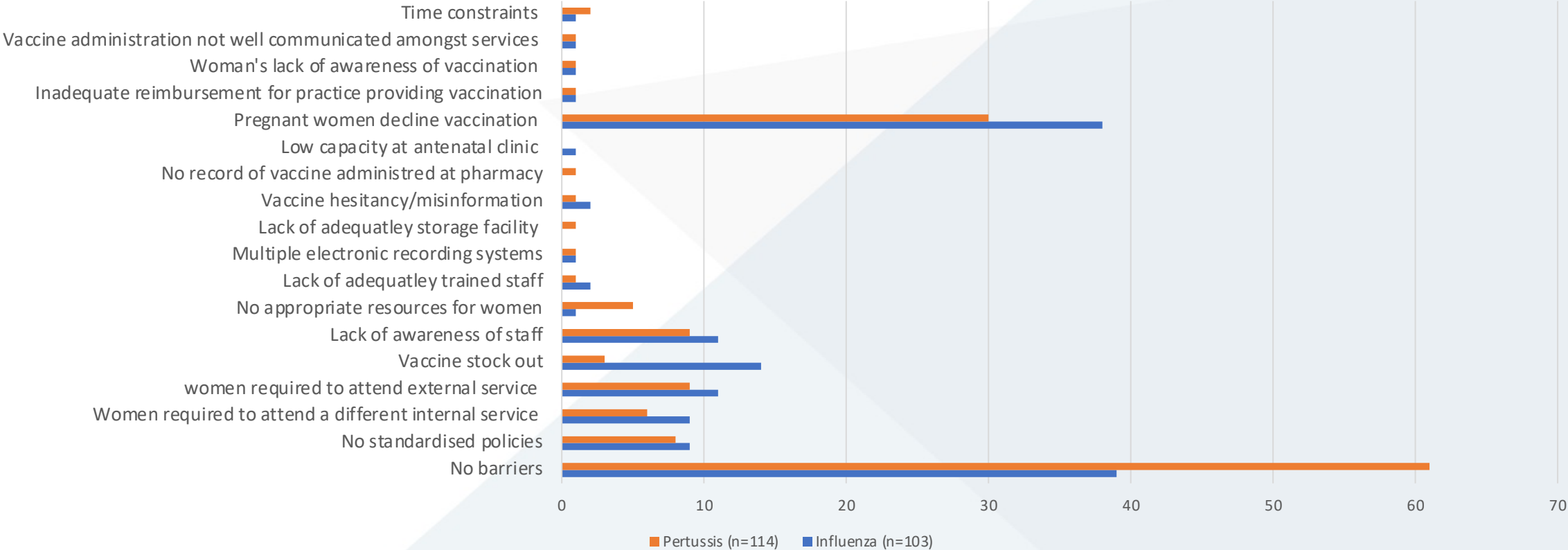


Multiple responses



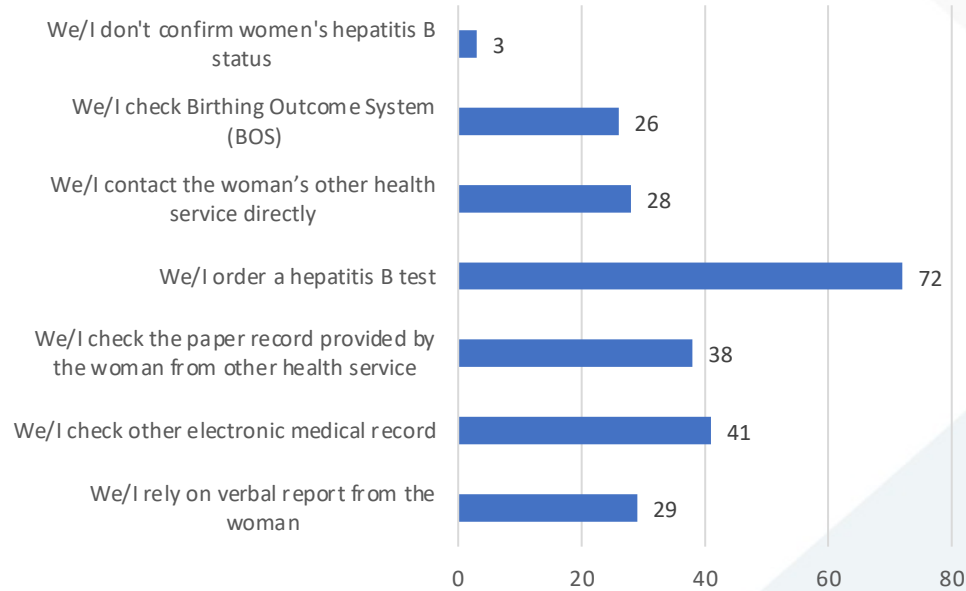
Barriers to influenza and pertussis vaccination administration*

N=140



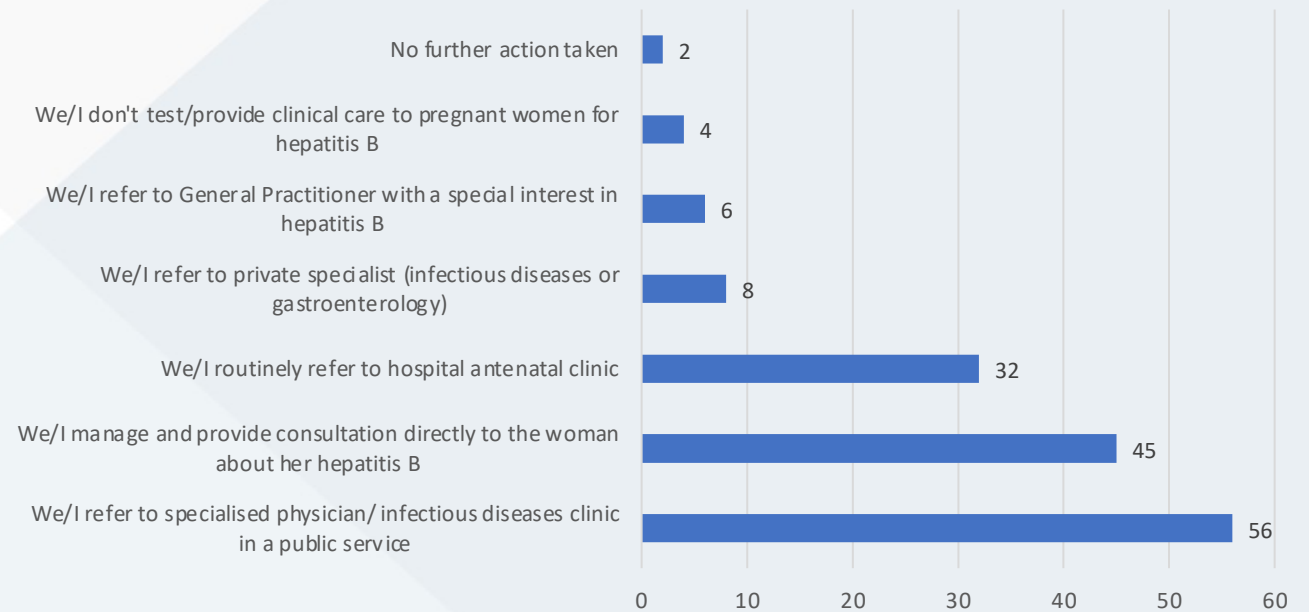
*Multiple responses

How do you confirm CHB status?



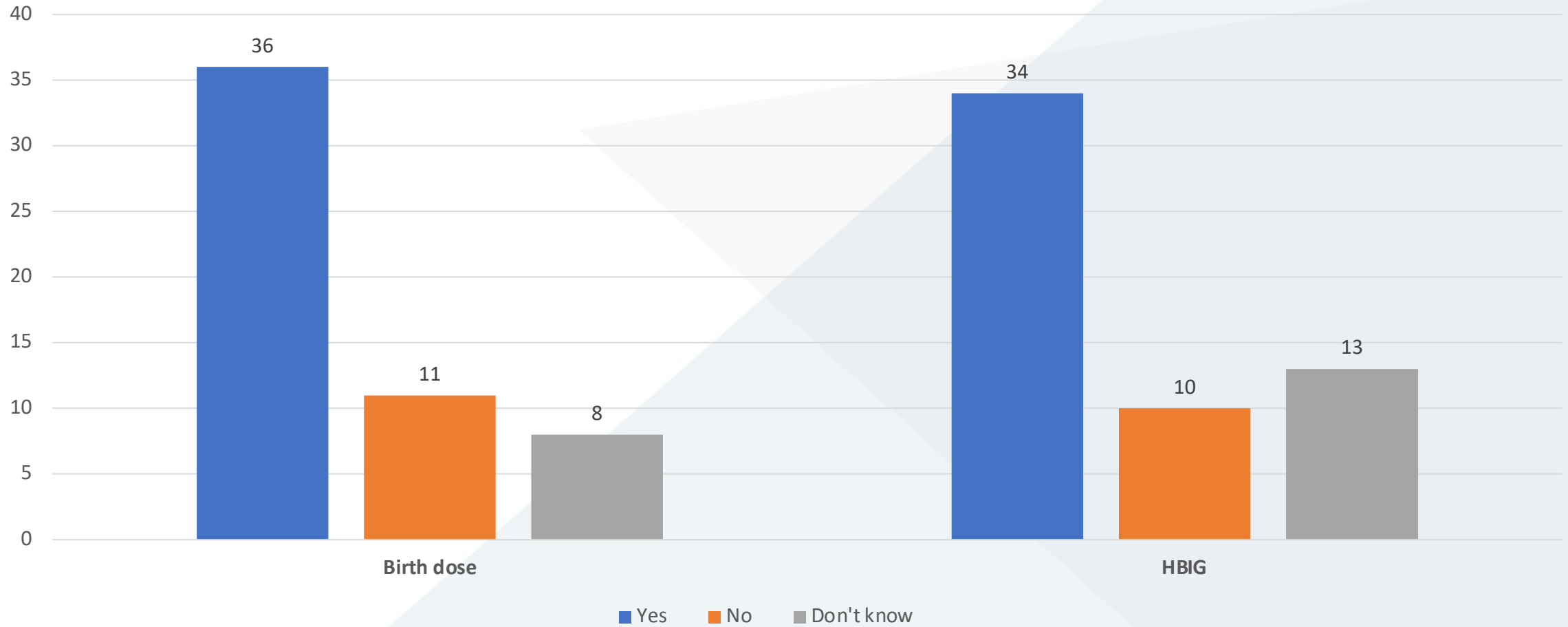
*Multiple answers

Pregnant woman tests positive for CHB, what are the next steps that occur in your service?



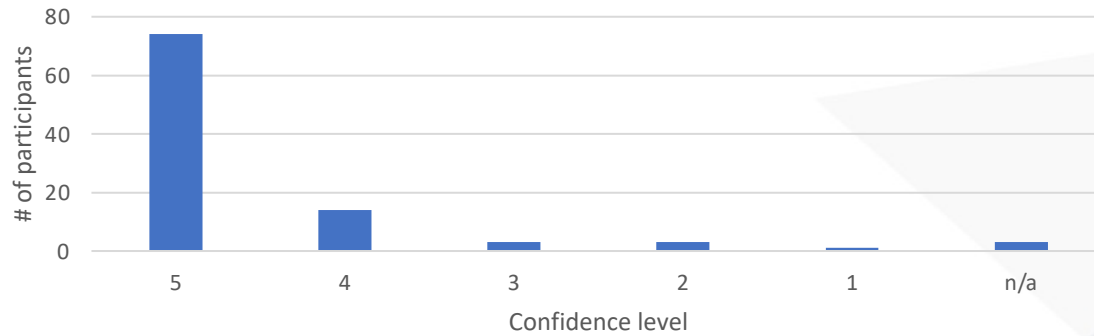
Consent for the administration of hepatitis B birth dose/HBIG vaccinations for their infant prior to presenting for delivery?

Hospitals only (N=57)

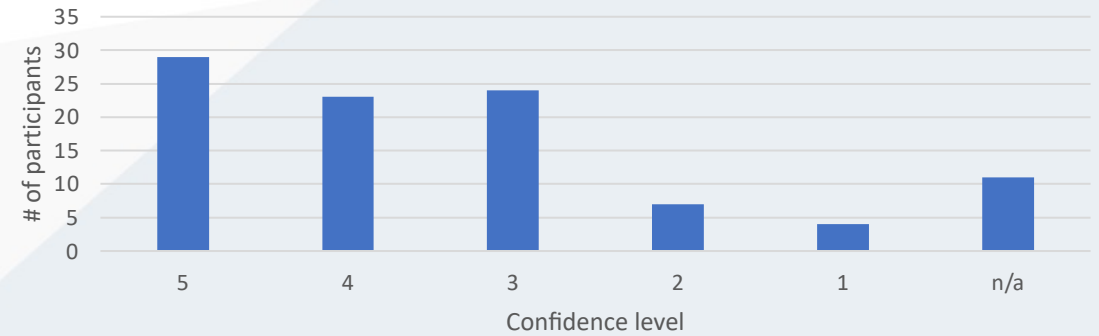


Scale 1-5: confidence in testing, treatment & ongoing care for CHB

How confident are you all pregnant women in your service are offered CHB testing?



How confident are you that all pregnant women with CHB receive HBV DNA testing during the 2nd trimester?



How confident are you that all pregnant women with CHB with a high viral load are prescribed antiviral therapy in the 3rd trimester?

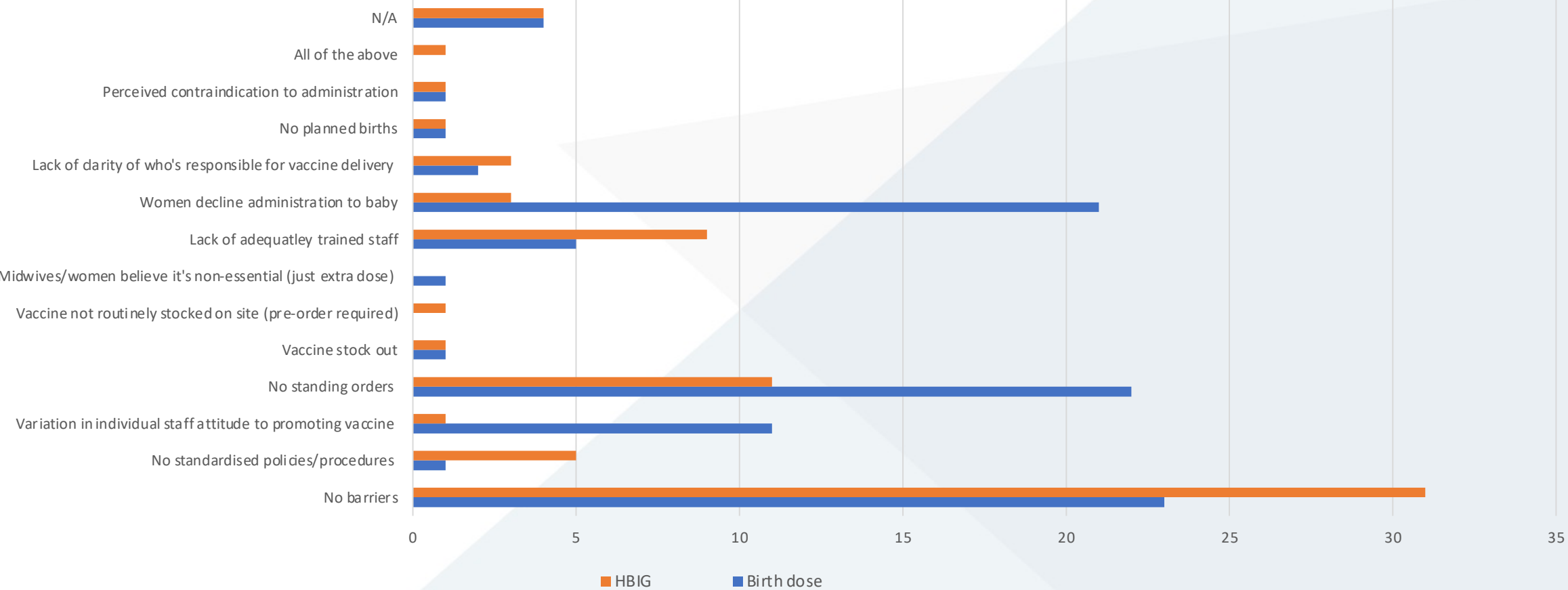


How confident are you that all women with CHB receive ongoing care for their CHB during pregnancy and after delivery?



Barriers to hepatitis B birth & HBIG vaccination administration*

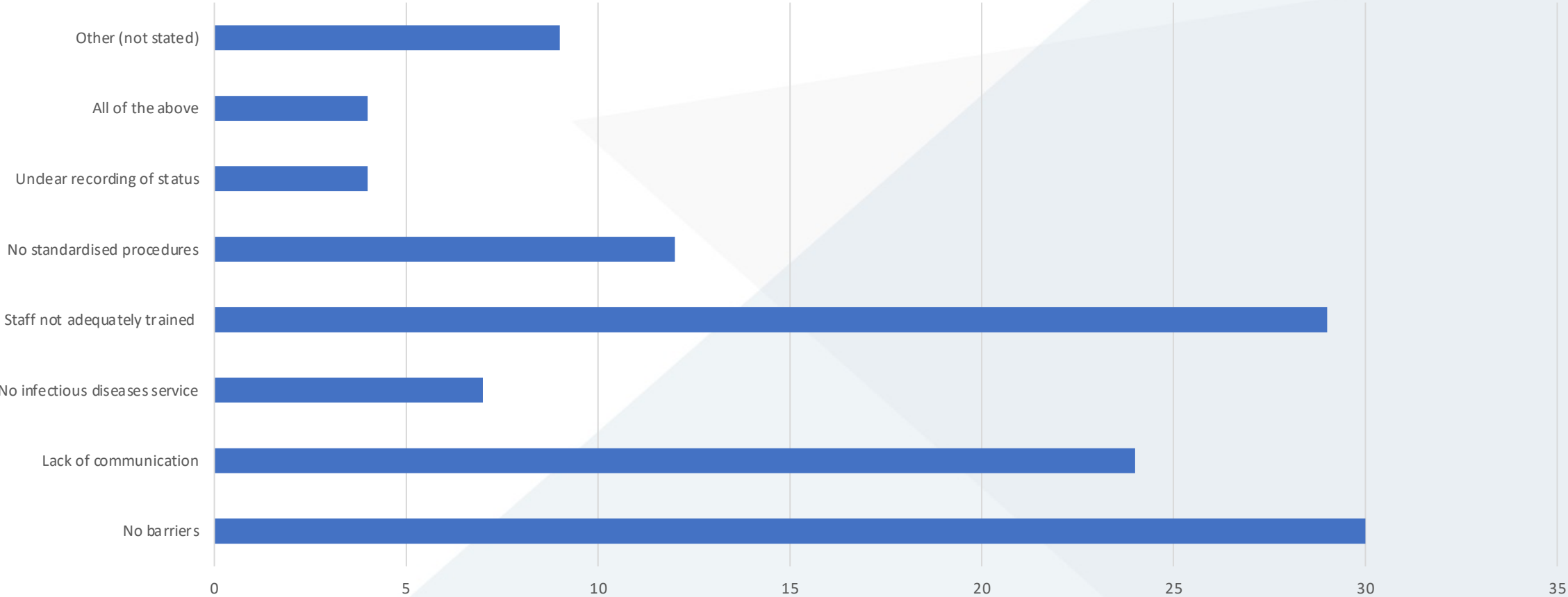
N=57



*Multiple responses

Barriers for CHB guideline-based care for mothers with CHB & their infants*

N=98



*Multiple answers

Recommendations

- Peer-support programs for pregnant women with CHB
 - Community co-designed hepatitis B health promotion campaigns
 - Culturally appropriate co-designed CHB pregnancy resources
 - Standardised state-wide policy for CHB care delivery in maternity hospitals
 - Standardise comprehensive maternal workforce training package (incl. cultural safety, trauma-informed practices)
 - Maternal vaccinations are embedded in antenatal vaccination clinics
 - Reporting to AIR (✓ July 2021) and checking of AIR is recognised as standard of care
-

Recommendations to measure quality improvement

- Timely birth dose is included as an indicator in the statewide strategy with targets 95% for all women and 100 % for women with CHB
 - Timely birth dose < 24 hours and HBIG deliver < 12 hours is a reported quality measure for birthing hospitals
 - Follow up of notifications of children < 5 diagnosed with CHB
 - HBIG stockout is a reportable incident
 - Continuous data linkage & analysis to monitor and evaluate the uptake of vaccine interventions and progress to triple elimination in Victoria
 - Feedback to hospitals of the findings of the study is undertaken
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Panel discussion

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