Australian healthcare provider perspectives on managing hepatitis c treatment during pregnancy: current practices and pathways forward

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Artwork: Daniel Evans/Walkabout Warriors

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We acknowledge the Traditional Owners of Country throughout Australia, and First Nations people's continuing connection to culture, land, sea, waters, and community.

We pay our respects to Elders, both past and present.

Acknowledgements and Affiliations

BUMP-C Community Panel

i2i

UNSW Implementation to Impact

The Royal HOSPITAL FOR WOMEN

Health Systems Research

UNSW NDARC National Drug & Alcohol Research Centre

CSRH

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Disclosures of Interest

- GKBM has nothing to disclose.

Background

- ~24,000-33,000 women of childbearing age (15-49 years) have HCV in Australia[1].
- In Australia, women aged 15-44 years who inject drugs are 53% less likely than women aged ≥45 years to receive HCV treatment[2].
- Stigma, child protection involvement, and a lack of targeted services contribute to this disparity[3-6].
- Treating people in pregnancy may eliminate the risk of vertical transmission during delivery, prevent transmission to others, and mitigate gender inequities in HCV outcomes.
- In Australia, pregnant people with HCV receive treatment when they finish breast/chest-feeding.
- Evidence suggests that DAA treatment is safe and effective during the third trimester[7-11].

The **aim** of the *Bridging unified management of pregnancy care in hepatitis C* (BUMP-C) study is to qualitatively investigate current hepatitis C care pathways for pregnant people and healthcare provider acceptability of integrating HCV treatment and pregnancy care in Australia.

Methods

- Between September 2024 and April 2025, in-depth, semi-structured interviews were conducted with healthcare providers with experience caring for pregnant people with HCV or at risk of acquiring HCV.

- Qualitative analysis was performed using Iterative Categorisation and coding was informed by the Health Equity Implementation Framework[12, 13].

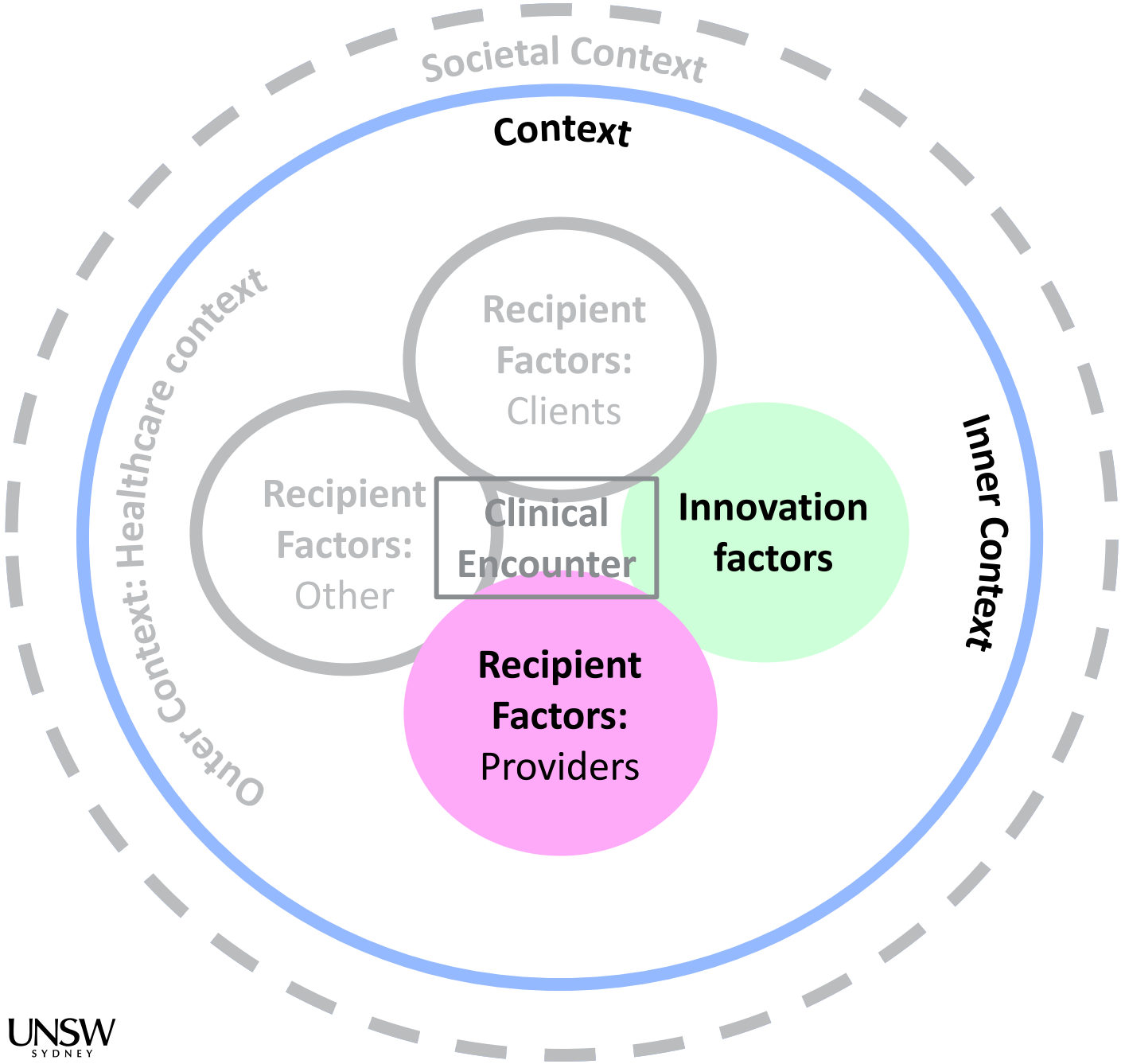


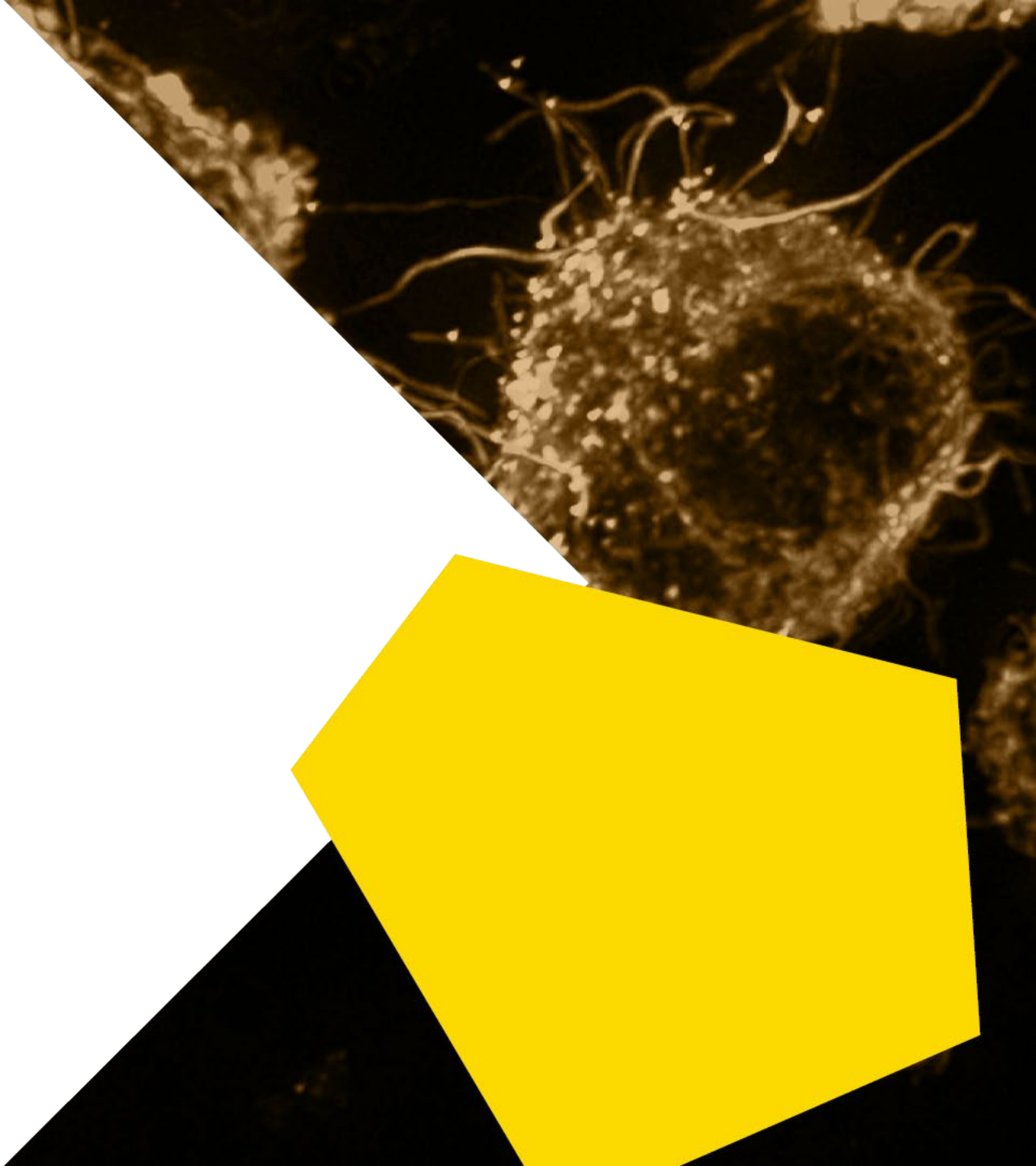
Figure 1: Health Equity Implementation Framework[13]

Results

- 30 providers were interviews (average interview time ~42 minutes).
- The median number of years in practise was 25 years (range:10-44).
- Most providers worked in NSW (n=13), then VIC (n=8). Tasmania was not represented.
- Quotes will be tagged with a participant number and the provider's speciality.

Specialty	Count
Nursing/Midwifery	8
Addiction Medicine	5
Obstetrics/Gynaecology	4
Paediatrics	4
Infectious Disease	3
General Practitioners	3
Gastroenterology	2
Teratology	1

Inner Context – Current pathways



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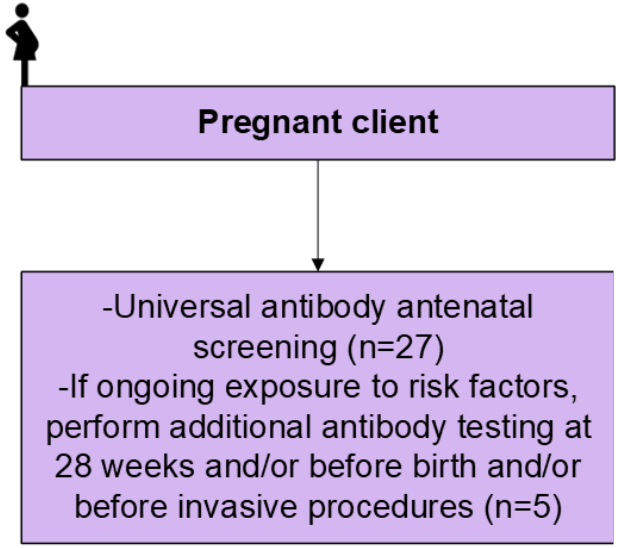


Figure 1: Current care pathways – Pregnant clients and Infants

"Infant needs testing with HCV RNA PCR at two and six months of age AND HCV antibody, HCV RNA PCR and LFT's at 12-18 months of age" – Local Operating Procedure of a metropolitan hospital.

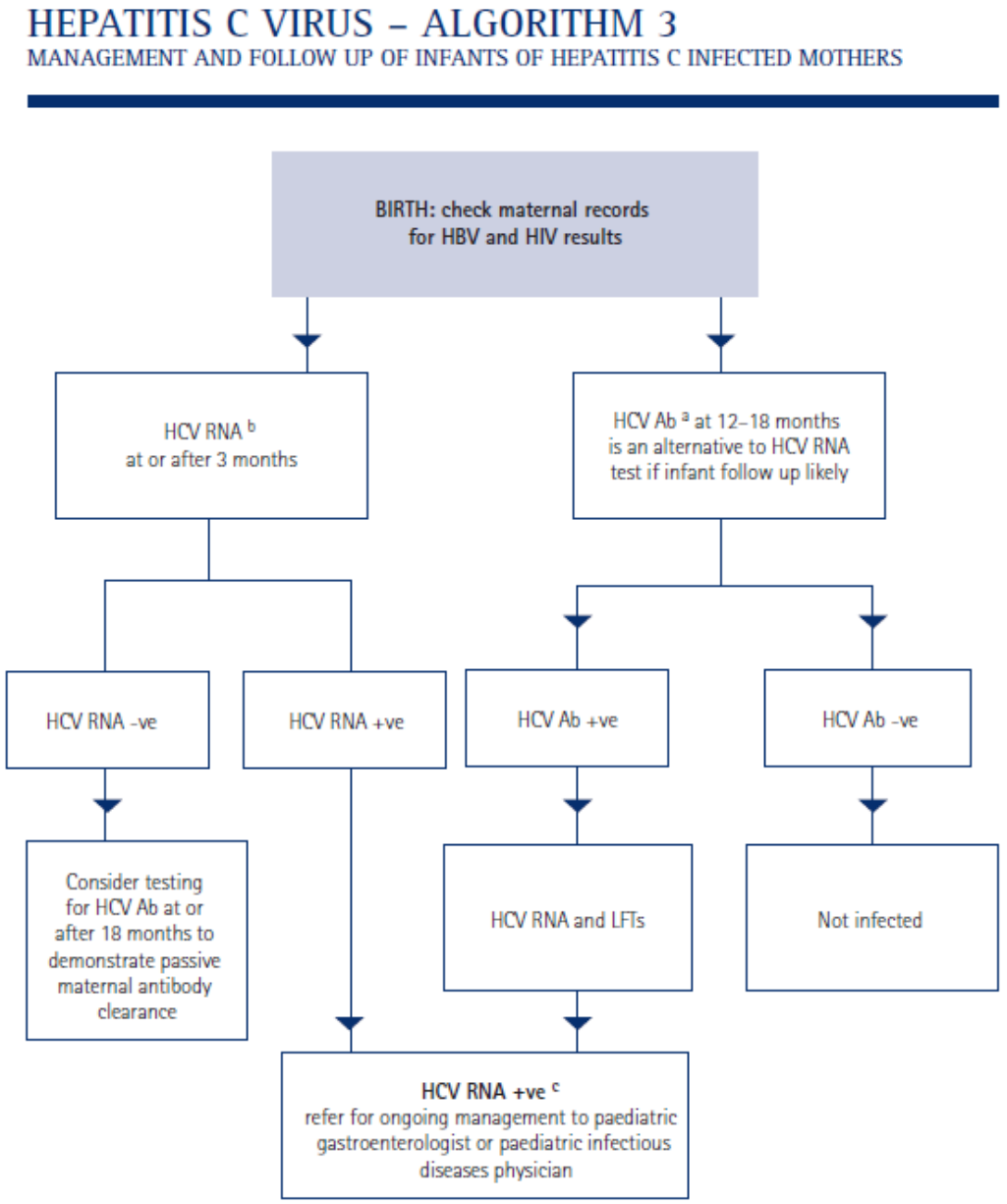
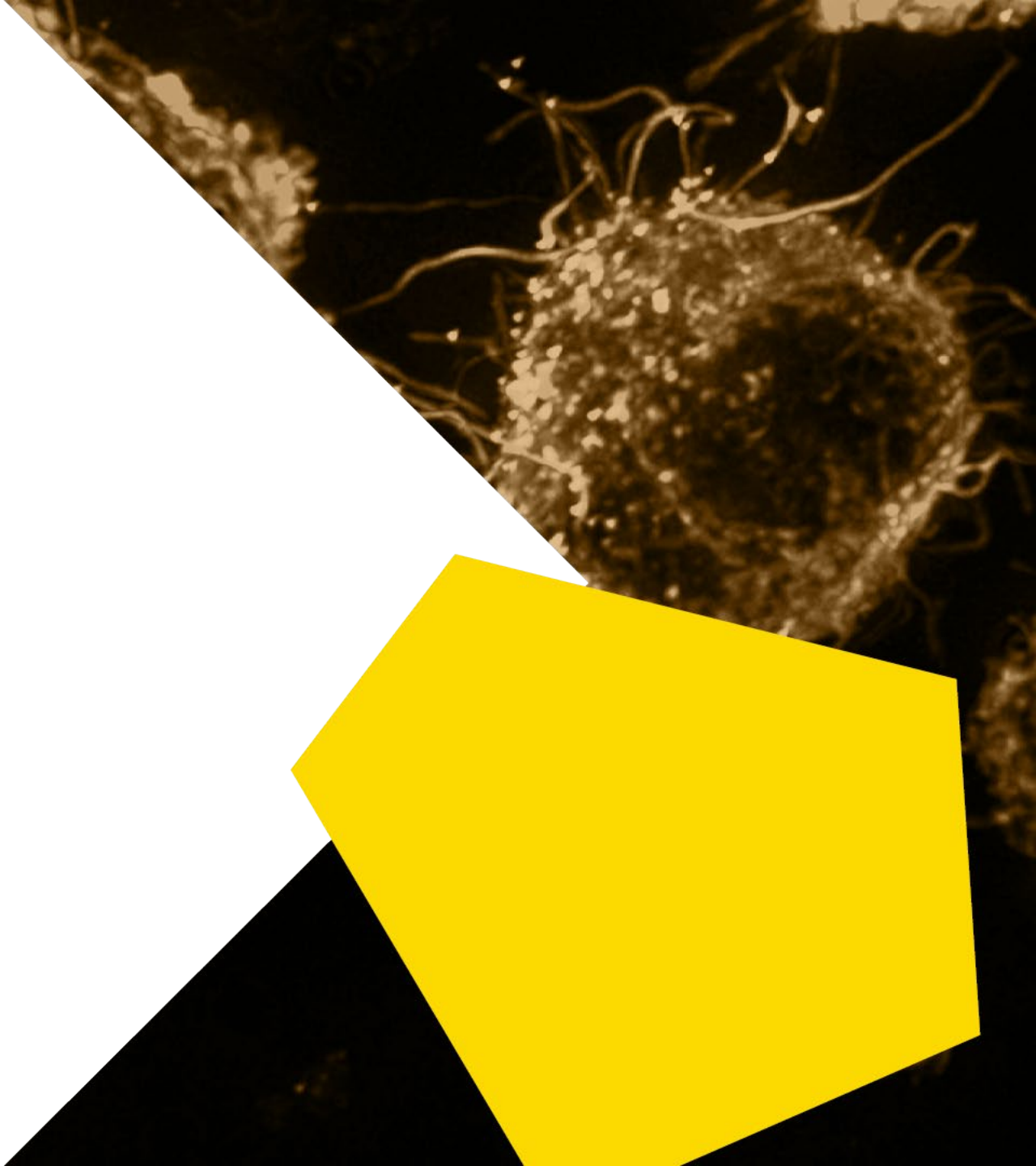


Figure 3: ASID Management of infants born to clients with HCV[14]

Inner Context – Successes and challenges



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Inner Context – Successes and Challenges

- Many providers acknowledged that it was a good thing that HCV testing is part of antenatal screening.

I think the screening is good. *I think most women are screened.* ***We probably don't miss too many people****…there's half a dozen blood tests that are done at the first antenatal appointment for screening different things and it's one of them…* ***If it's not done, then someone will more than likely pick up on it****; probably, because there's a computer system that it all needs to be entered into, that will sort of go, "There's a big, empty space here." So, it's pretty well done.*

– Participant 12, Obstetrician

Inner Context – Successes and Challenges

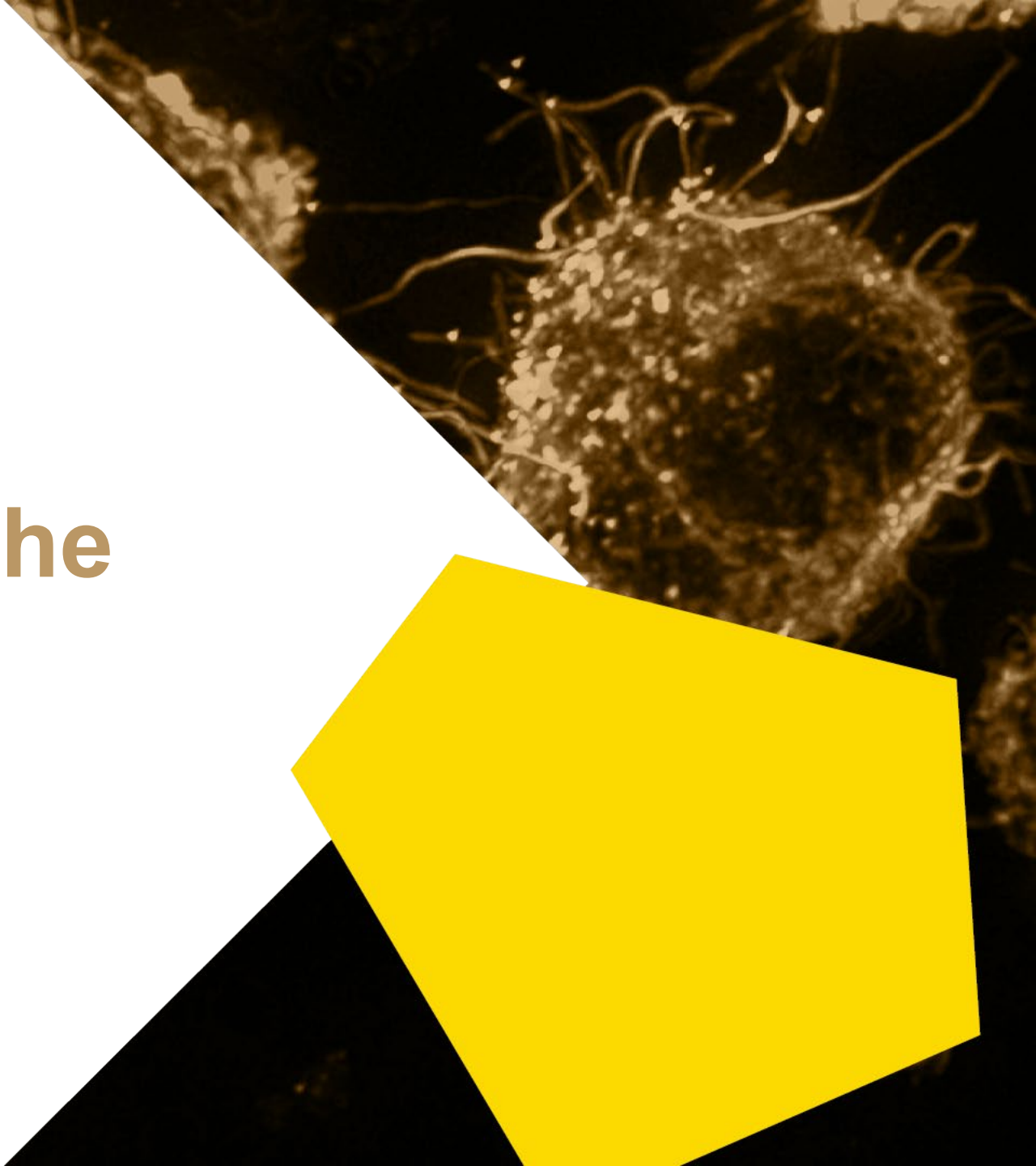
- Providers described the perinatal testing and management of clients with/at-risk of HCV as “ad hoc” and “fragmented”. When care was seen as going well, providers felt it was serendipitous rather than deliberate.

- Pathways were seen as poorly developed and unable to facilitate the long-term engagement of clients necessary to be able to offer treatment postpartum.

- Pathways were perceived as especially likely to breakdown when child “protection” services became involved in families’ affairs.

The guidelines for testing and management, up until very recently anyway, were that you didn't test [infants] until 12 to 18 months for serology…but ***the cohort that I see, we really struggle with loss to follow-up. Trying to make sure that children are appropriately tested, especially where they've moved caregiver—we have a very high proportion of children who go into care, and it is often very difficult to get information appropriately transferred from carer to carer****. By the time they get to 18 months, you know, I've got kids who are in their fifth placement and that history is just gone… I've then got a group of women who, you know, don't engage well with health services, so may not be keen to attend anywhere. And then we have the additional problems of a lot of movement.* ***And many of the women coming into the program, the birthing parents, are really struggling with their own things and making an appointment 18 months in advance just doesn't work.*** – Participant 18, Paediatrician

Characteristics of the Innovation



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Characteristics of the Innovation

- Offering DAAs in the third trimester is a good idea.

I mean I think [DAA treatment in the third trimester is] fantastic. I think a lot of our mums the like pregnancy is one of the few times that they have sort of consistent access to healthcare, just kind of by necessity because they're accessing their pregnancy healthcare. So, it's a time of great potential and ***being able to offer not just hep c diagnosis but treatment at that time would be great****.*

– Participant 22, Nurse

- Who should be responsible for delivering HCV treatment and what care models should look like was contested.

Characteristics of the Innovation

- Many providers thought obstetricians should be responsible for HCV care and treatment during pregnancy because they have the most frequent contact with pregnant clients.

- This was an idealised notion because HCV treatment was seen as beyond obstetricians' scopes of practice and because they already have an overwhelming workload.

If you thought about what would be ***the ideal model, midwives and obstetricians would be skilled and trained to prescribe DAAs****, so they could just do it as part of routine care.* ***I mean they've got so much going on already… But it's not like we're asking [providers] to give people chemo, you know? These drugs are pretty safe, and they've hardly got any side effects.*** *So, under supervision, potentially with a phone call from someone,* ***if they were just prescribing it and could integrate it into maternity care, that would be great.***
– Participant 15, Infectious Disease Physician

It would be ideal that it was integrated into maternity services *in the way that some vaccinations are. But I do see barriers in time...* ***If it was maternity clinicians, they simply don't have time to add an extra service to their workload****… So, if the plan was obstetricians doing it, it wouldn't happen without recruitment and expansion of the workforce. And,* ***to be perfectly honest, there's probably things that take priority if the workforce was to be expanded*** *that that would be put to first. Not because it's not important but just because there's so many things.* – Participant 12, Obstetrician

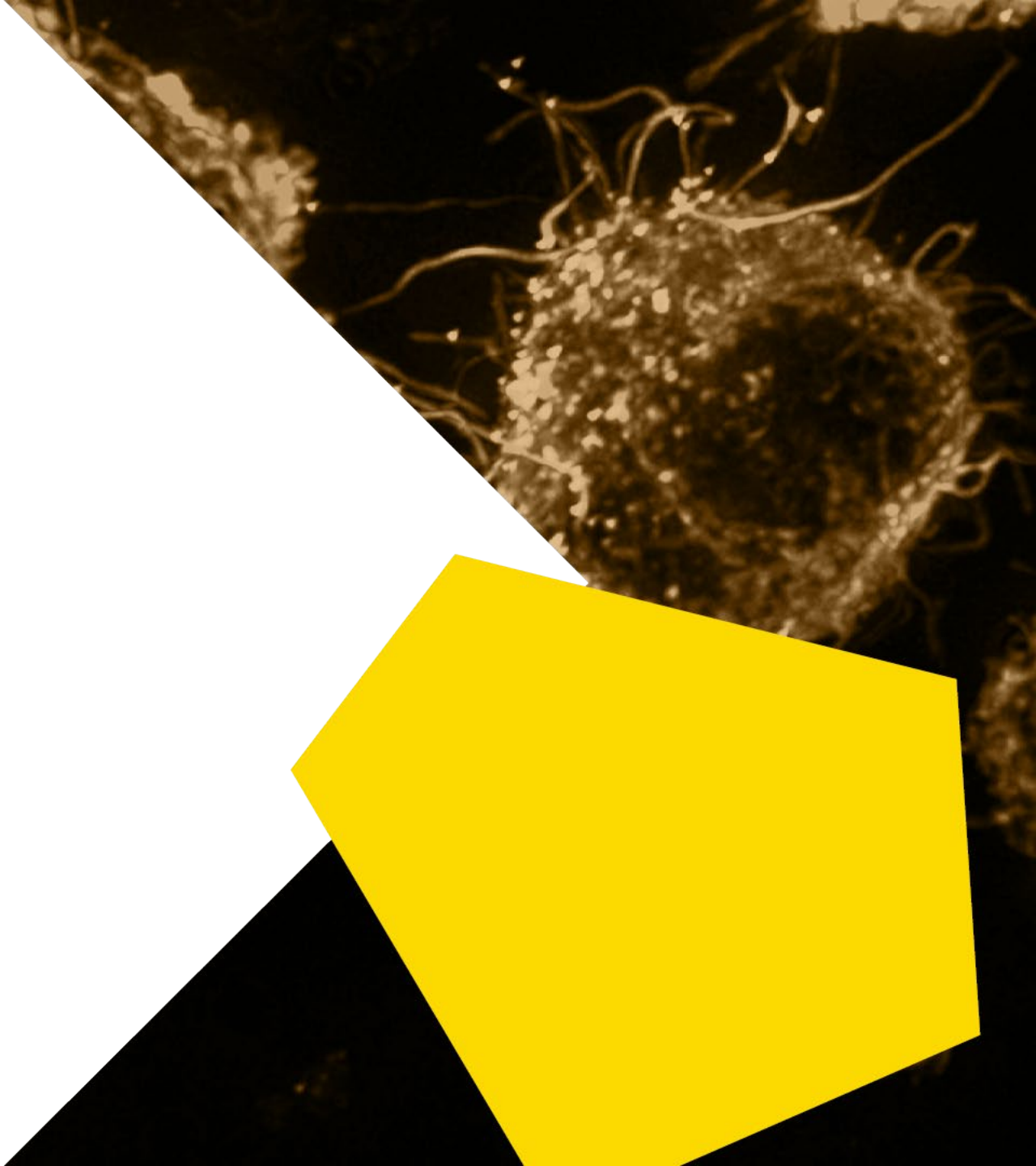
Characteristics of the Innovation

- Overall, providers seemed to be most in favour of infectious disease physicians managing antenatal treatment, especially in the form of shared care models.

So, joint care. I think that that model works better because there's so many things [about HCV/DAAs] that the obstetrician doesn't know enough about. *If the woman says, "Well, what if …" and then [the obstetricians] go, "Oh, I don't know," and look up the data* ***versus if there's an ID physician there…the ID physician can give the information about the medications and the risks with confidence*** *because [HCV is] their area of expertise*. – Participant 29, Paediatrician

- This model mostly seemed aligned with providers' comfortability of prescribing treatment (Recipient Factors).

Recipient Factors



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Recipient Factors

- All the infectious disease physicians that were interviewed (n=3) said they would be comfortable prescribing treatment to pregnant clients.
- They were not necessarily comfortable recommending it, given the “lack” of safety data. – Prescribers want obstetrician support before recommending treatment.

I think if the patient is keen for treatment, I would provide it in the third trimester*…if a patient said, “Look, I’d really like to try and reduce the risk to my baby. What do you think the risks are?” I’d say, “I think the risks are low. The evidence is not huge. But, if you wanted to do it, I’m comfortable to prescribe.” And I’m not quite sure that I would say, “I recommend treatment to you,” at this stage.*

– Participant 25, Infectious Disease Physician

I feel like we're always a little bit conservative and probably rightly just in [State], in general, about how we go about implementing new things, but particularly in pregnant women I think there'll be people who are very cautious about implementing this and, you know, argue the fact that the women could be treated easily after pregnancy with no risk. I, but I feel like it would take time to change peoples' opinions on that. **But I think a lot of that would revolve around how well it's accepted by the antenatal team and the hospitals delivering that antenatal care**... I feel like the infectious disease teams would be more willing to treat than maybe obstetricians and the midwives, but **I think that would be the group that really would need to, not change, but sort of be accepting of delivering treatment for it to really work or to be taken up successfully.**

– Participant 17, Nurse

Recipient Factors

- Providers who had extensive experience working with people who use substances seemed more comfortable prescribing DAAs in pregnancy than people who had less experience.

I suspect a lot of obstetricians will not be comfortable prescribing it… ***So, I'm an obstetrician with a particular focus in substance use in pregnancy and I do a few things outside the square. So, I might be a little bit more open to [prescribing DAAs in pregnancy] than someone else.***

– Participant 12, Obstetrician

- The reason for this difference is summarised by Participant 19.

I think what happens is that when you are dealing with a cohort where hep c is such a common comorbidity, it becomes your core business. *Whereas, if it's occasional or incidental and you're not doing it very often, it tends to fall outside that.* ***So, I can understand that, for example, an obstetrician in a dedicated service for women at risk of hep c would say, "Okay, that's my core business,"*** *because it's such a common comorbidity on top of all the other things happening in pregnancy. Whereas I can sort of understand the perspectives of those outside where it would be relatively uncommon—just saying maybe, "I'm just doing everything else and [HCV] can wait." I can see that.* ***But just to say from a mainstream, addiction-medicine service—it's core business, common comorbidity. So we'll probably just need a lead from the obstetricians to say it's safe. We'd probably be able to take it from them.*** – Participant 19, Addiction Medicine Specialist

Discussion

- This is the first qualitative study to consider antenatal HCV treatment in Australia.
- Interviews highlight the fragmented care pathways that likely prevent clients and their infants from progressing along the care cascade.
- Interviews highlight discordant views regarding who should deliver HCV treatment in pregnancy.
- Infectious disease physicians and providers who work with people who use substances seemed most open to prescribing treatment in pregnancy.
- Recruitment and interviews with clients are ongoing and their perspectives will be compared with providers.

KEY ACTIONS & TAKEAWAYS

- Key Action 1: Identify whether your organisation have guidelines for the perinatal management of HCV.
- Key Action 2: Identify who is responsible for following up infants born to people with HCV.
- Key Action 3: Help us recruit clients!

Scan me for the recruitment flyer

References

1. Dugan, E., et al., *Global prevalence of hepatitis C virus in women of childbearing age in 2019: a modelling study.* The Lancet Gastroenterology & Hepatology, 2021. **6**(3): p. 169-184 DOI: 10.1016/S2468-1253(20)30359-9.
2. Valerio, H., et al., *Factors associated with hepatitis C testing, treatment, and current hepatitis C infection among men and women who inject drugs: The ETHOS engage study.* International Journal of Drug Policy, 2024. **127**: p. 104394 DOI: https://doi.org/10.1016/j.drugpo.2024.104394.
3. Marshall, A.D., et al., *Applying a stigma and time framework to facilitate equitable access to hepatitis C care among women who inject drugs: The ETHOS Engage Study.* International Journal of Drug Policy, 2024. **129**: p. 104477 DOI: https://doi.org/10.1016/j.drugpo.2024.104477.
4. Bosak, J., et al., *"They just looked at me like I was human": The experiences of parenting women and providers with substance use disorder treatment.* Journal of substance use and addiction treatment, 2024. **157**: p. 209240-209240 DOI: 10.1016/j.josat.2023.209240.
5. Meyers, S.A., et al., *The intersection of gender and drug use-related stigma: A mixed methods systematic review and synthesis of the literature.* Drug and Alcohol Dependence, 2021. **223**: p. 108706 DOI: https://doi.org/10.1016/j.drugalcdep.2021.108706.
6. Coupland, H., et al., *Developing a model of care for substance use in pregnancy and parenting services, Sydney, Australia: Service provider perspectives.* Journal of substance abuse treatment, 2021. **131**: p. 108420-108420 DOI: 10.1016/j.jsat.2021.108420.
7. Chappell, C., et al. *Safety, Tolerability, and Outcomes of Sofosbuvir/Velpatasvir in Treatment of Chronic Hepatitis C Virus during Pregnancy: interim results from the STORC study*. 2023 22 Jul 2024]; Available from: https://www.natap.org/2023/AASLD/AASLD_11.htm.
8. Chappell, C.A., et al., *Sofosbuvir/Velpatasvir Pharmacokinetics, Safety, and Efficacy in Pregnant People With Hepatitis C Virus.* Clinical Infectious Diseases, 2025. **80**(4): p. 744-751 DOI: 10.1093/cid/ciae595.
9. Chappell, C.A., et al., *Ledipasvir plus sofosbuvir in pregnant women with hepatitis C virus infection: a phase 1 pharmacokinetic study.* The Lancet Microbe, 2020. **1**(5): p. e200-e208 DOI: https://doi.org/10.1016/S2666-5247(20)30062-8.
10. Zeng, Q.L., et al., *Sofosbuvir-based therapy for late pregnant women and infants with severe chronic hepatitis C: A case series study.* Journal of Medical Virology, 2022. **94**(9): p. 4548-4553 DOI: https://doi.org/10.1002/jmv.27877.
11. Yattoo, G.N., et al., *Safety and efficacy of treatment for chronic hepatitis C during pregnancy: A prospective observational study in Srinagar, India.* Clin Liver Dis (Hoboken), 2023. **22**(4): p. 134-139 DOI: 10.1097/cld.0000000000000082.
13. Neale, J., *Iterative categorization (IC): a systematic technique for analysing qualitative data.* Addiction, 2016. **111**(6): p. 1096-106 DOI: 10.1111/add.13314.
14. Woodward, E.N., et al., *The health equity implementation framework: proposal and preliminary study of hepatitis C virus treatment.* Implementation Science, 2019. **14**(1): p. 26 DOI: 10.1186/s13012-019-0861-y.
15. Australasian Society for Infectious Diseases, *Management of Perinatal Infections*. Third ed. 2022, Sydney, NSW, Australia: Australasian Society for Infectious Diseases