



Curing Hepatitis C through Labor & Delivery Admissions

PQC Connect

IN PARTNERSHIP WITH THE



Welcome & Acknowledgement

Learning Objectives:

1. Gain basic knowledge of Hepatitis C and medications used to treat Hepatitis C
2. Learn about Simplified Hepatitis C Treatment Algorithms
3. Improve comfort in discussing Hepatitis C and treatment with patients
4. Engage in case-based discussion on how to implement this in the L&D setting

The Mo PQC is supported by state and federal grant funding that enables the ongoing activities of the Missouri Perinatal Quality Collaborative (PQC). We gratefully acknowledge our funders for their commitment to improving maternal and infant health outcomes through quality improvement, collaboration, and data-driven care.

Pre-Evaluation



WashU

Curing Hepatitis C through Labor & Delivery Admissions

Laura Marks, MD PhD

Assistant Professor of Medicine

Infectious Diseases (& Addiction Medicine)

Washington University in St. Louis

Madeline McCrary, MD

Assistant Professor of Medicine

Infectious Diseases (& Addiction Medicine)

Washington University in St. Louis

Disclosures

- **All relevant disclosures have been mitigated.**
 - Co-PI on Gilead FOCUS grant supporting inpatient HIV, HBV, HCV screening and linkage-to-care
 - Co-PIs on an Abbvie retrospective study

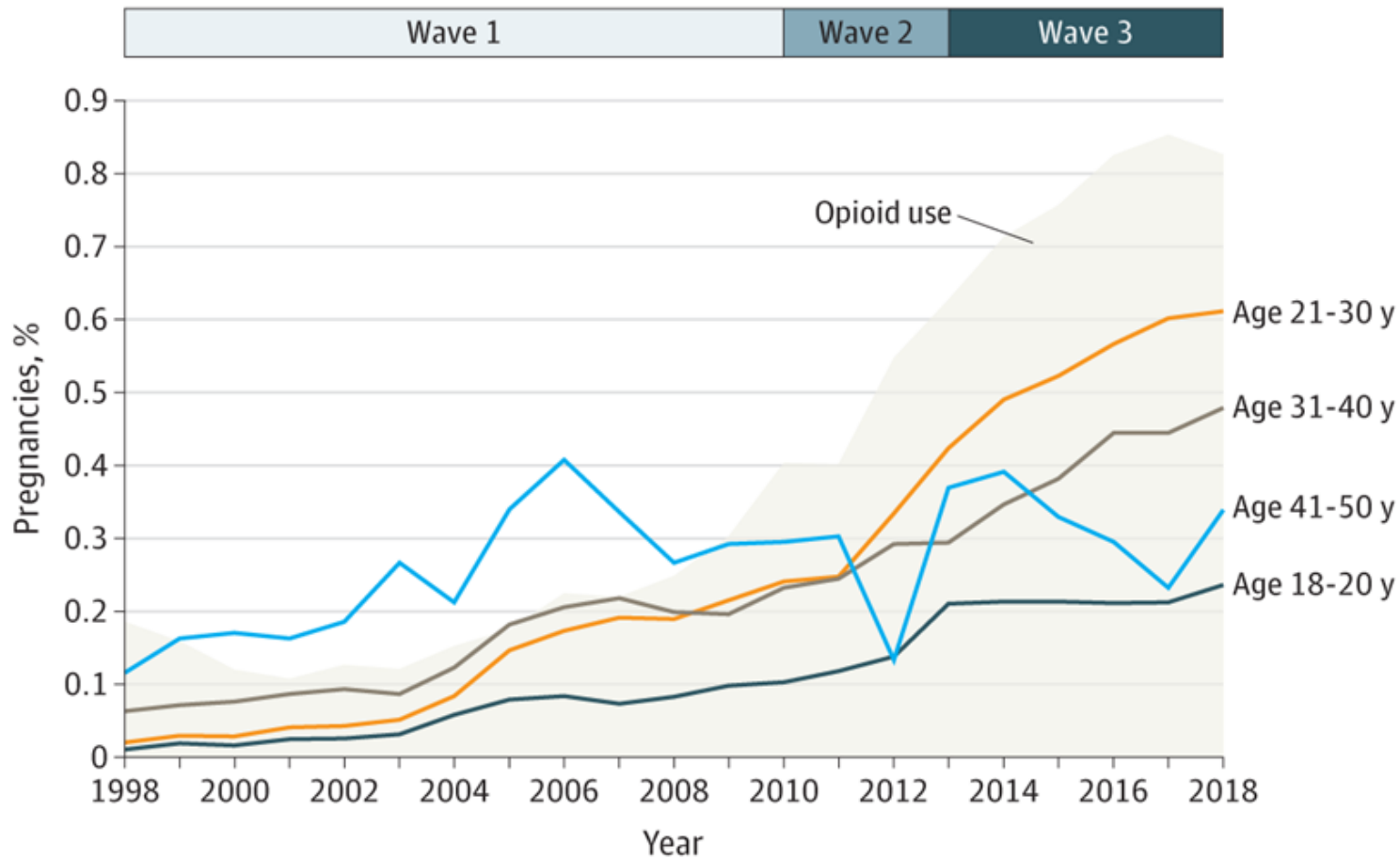


Outline

- Background
- Postpartum treatment
 - Breastfeeding data
- What we are doing at WashU
- Patient case
- Discussion



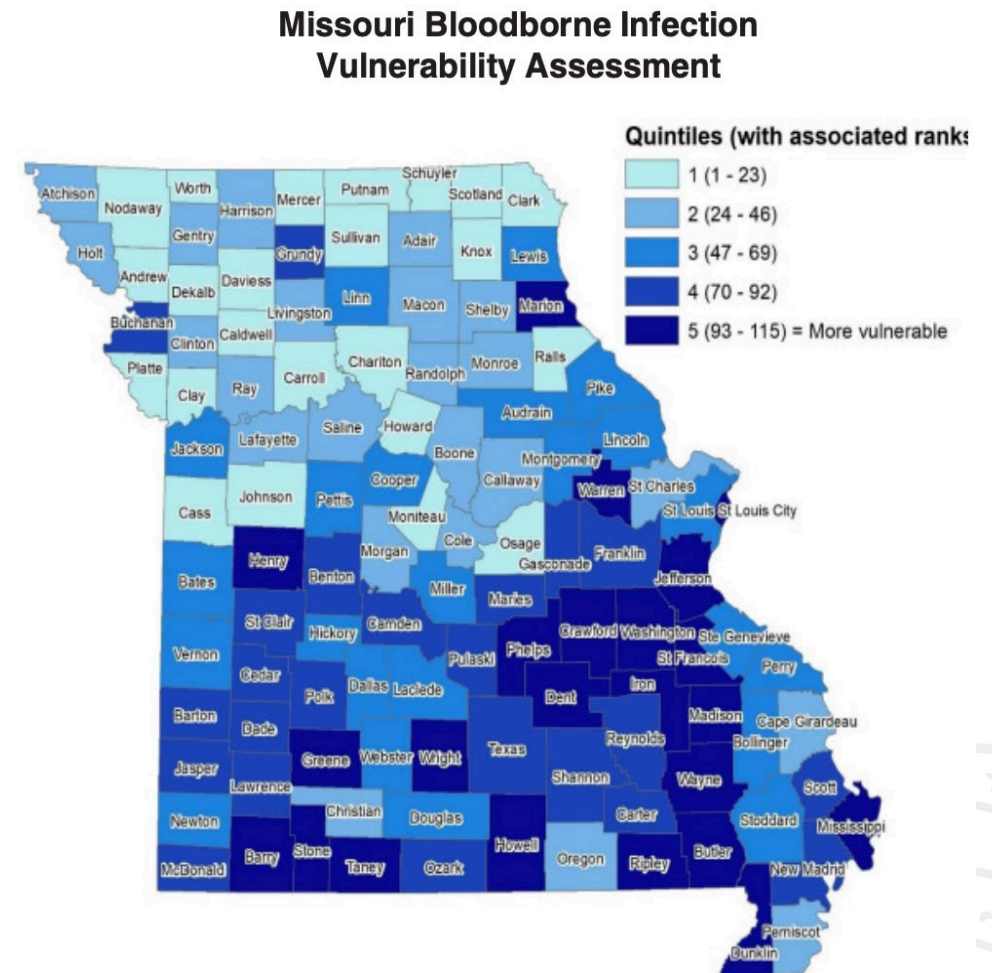
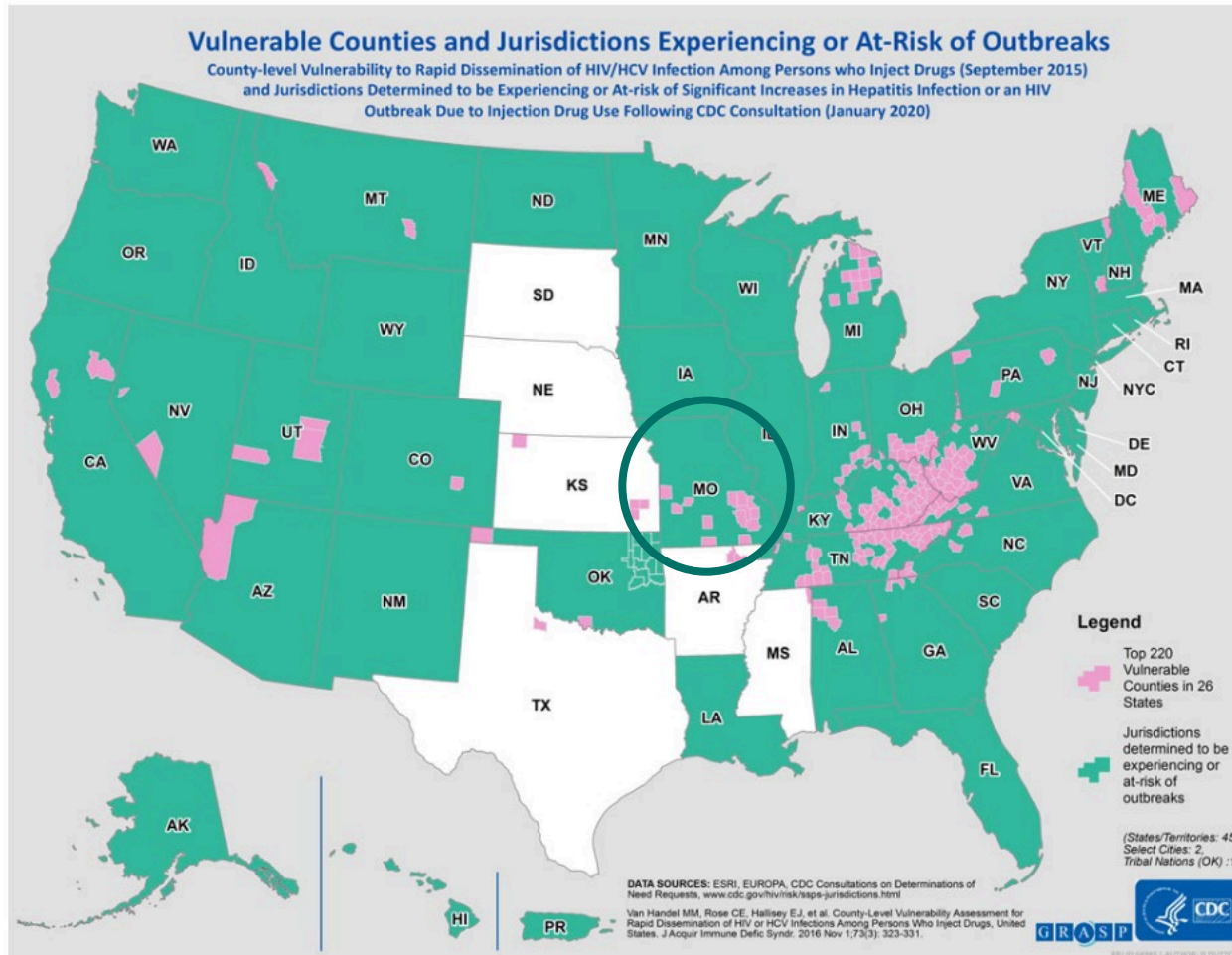
Hepatitis C (HCV) rising in reproductive-aged women



- National recommendations – screen for HCV during each pregnancy and link infected moms/exposed infants to care
- **Perinatal transmission – 8% (95% CI 5.2-11.5%)** among viremic mothers
 - Prasad et al 2023
- **Known maternal, fetal and neonatal adverse events associated with HCV in pregnancy** – intrahepatic cholestasis of pregnancy (intrauterine fetal demise), preterm labor, small for gestational age and hemorrhage
 - Quek et al 2024



Missouri is an EHE jurisdiction with 13 at-risk counties for HCV/HIV outbreak among PWUD



Direct Acting Antivirals: >95% cure, well-tolerated, safe



- 3 pills once per day x 8 weeks



- 1 pill once per day x 12 weeks



July 2021...

Medicaid expansion

No PA, no cost, full 8-week course



All pregnant persons should be tested

All exposed infants (mothers with +HCV RNA) should be screened

Recommendation for Universal Hepatitis C Screening in Pregnancy

RECOMMENDED

RATING ¹

As part of prenatal care, all pregnant persons should be tested for HCV infection with each pregnancy, ideally at the initial visit. (See [Recommendations for Initial HCV Testing and Follow-Up.](#))

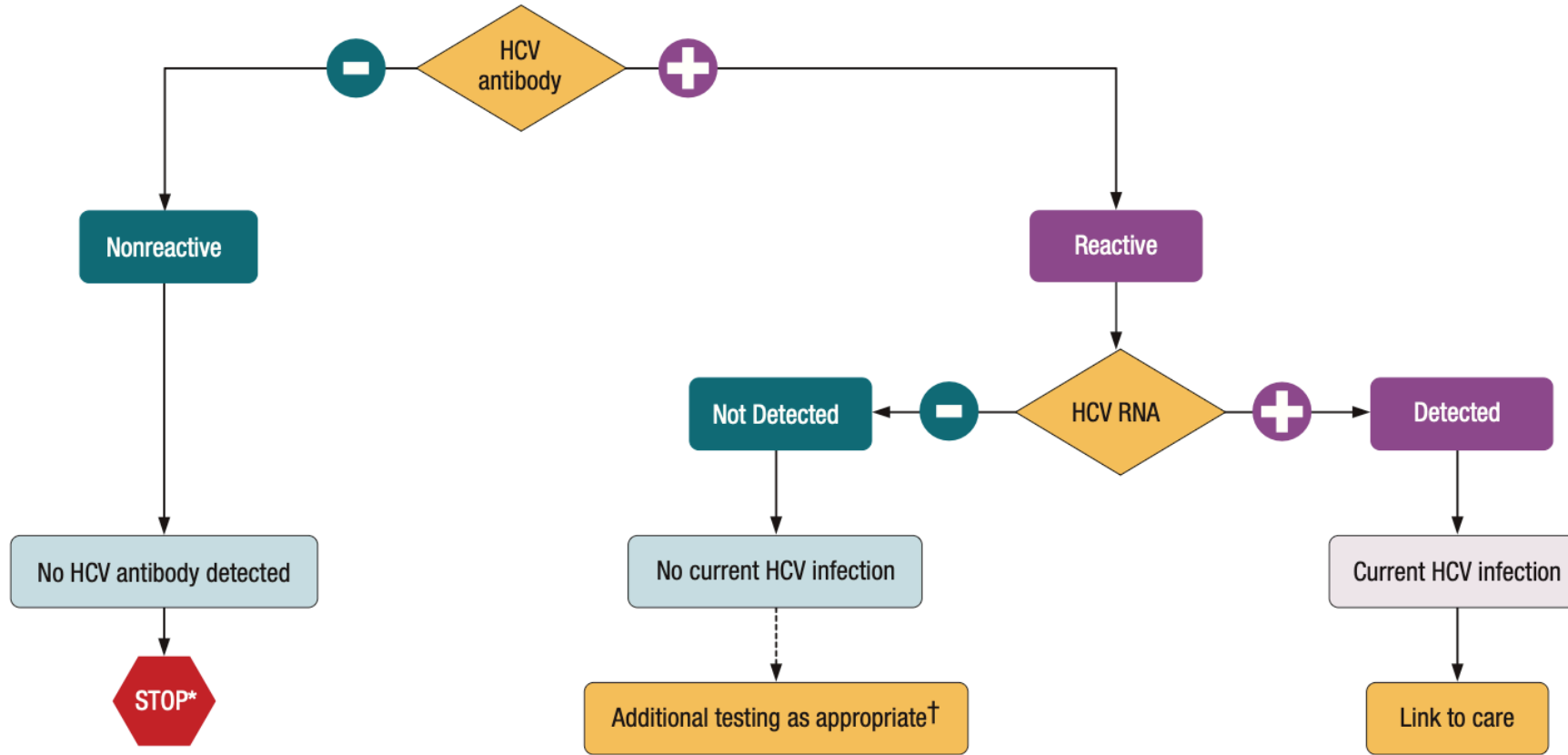
I, B

Updated CDC exposed infant screening recommendations (2023)

- Screen with HCV NAT (RNA) at 2-6 months of age



Recommended Testing Sequence for Identifying Current Hepatitis C Virus (HCV) Infection



Use HCV ab -> RNA reflex testing

Active HCV = +HCV RNA

Ab will be positive for life after exposure and does not mean ongoing infection
- Can also get reinfected!

* For persons who might have been exposed to HCV within the past 6 months, testing for HCV RNA or follow-up testing for HCV antibody is recommended. For persons who are immunocompromised, testing for HCV RNA can be considered.

† To differentiate past, resolved HCV infection from biologic false positivity for HCV antibody, testing with another HCV antibody assay can be considered. Repeat HCV RNA testing if the person tested is suspected to have had HCV exposure within the past 6 months or has clinical evidence of HCV disease, or if there is concern regarding the handling or storage of the test specimen.

Source: CDC. Testing for HCV infection: An update of guidance for clinicians and laboratorians. *MMWR* 2013;62(18).

Caveat to this!!

Patient with **NEGATIVE HCV Ab & elevated AST/ALT**

- Consider acute Hep C infection in your population!!
 - Substance use, sex with HCV+ partner (rare but happens)
- Send HCV RNA
- Treatment IS indicated for acute HCV (don't have to wait until chronic)

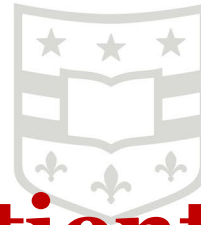


HCV & substance use – from the guidelines!

Recommendations for Screening and Treatment of HCV Infection in People Who Inject Drugs (PWID)	
RECOMMENDED	RATING ⓘ
Annual HCV testing is recommended for PWID with no prior testing, or past negative testing and subsequent injection drug use. Depending on the level of risk, more frequent testing may be indicated.	Ila, C
Substance use disorder treatment programs and needle/syringe exchange programs should offer routine, opt-out HCV-antibody testing with reflexive or immediate confirmatory HCV-RNA testing and linkage to care for those who are infected.	Ila, C
PWID should be counseled about measures to reduce the risk of HCV transmission to others.	I, C
PWID should be offered linkage to harm reduction services including intranasal naloxone, needle/syringe service programs, medications for opioid use disorder, and other substance use disorder treatment programs.	I, B
Active or recent drug use or a concern for reinfection is not a contraindication to HCV treatment.	Ila, B

**** Active or recent drug use or concern for reinfection is not a contraindication to HCV treatment ****



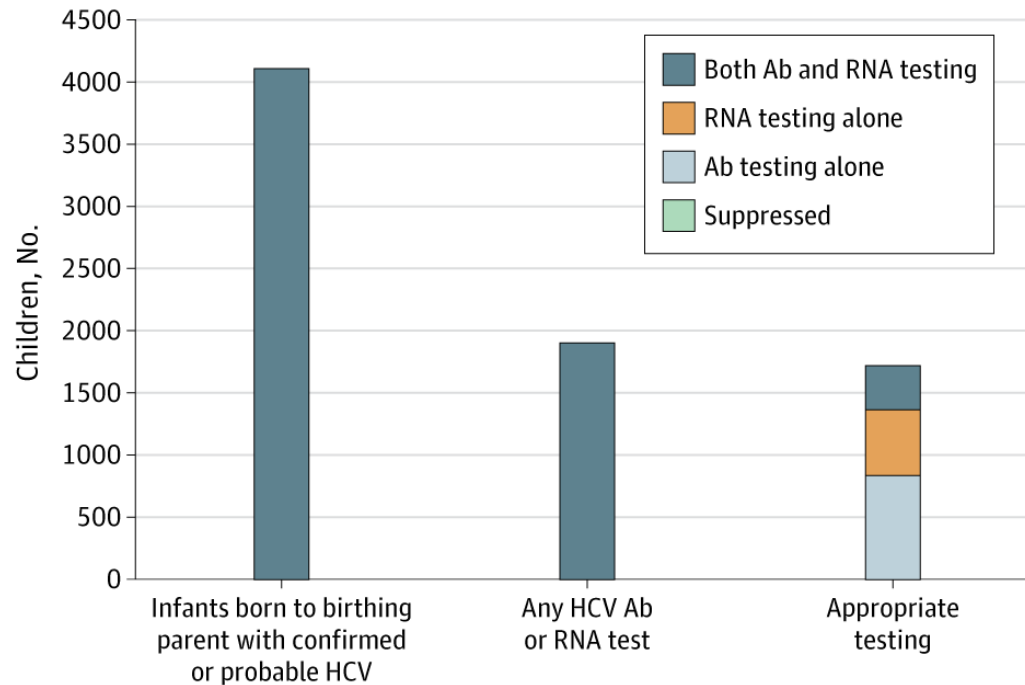


Less than 6% of patients on Medicaid with OUD and HCV received medication within 6 months of delivery

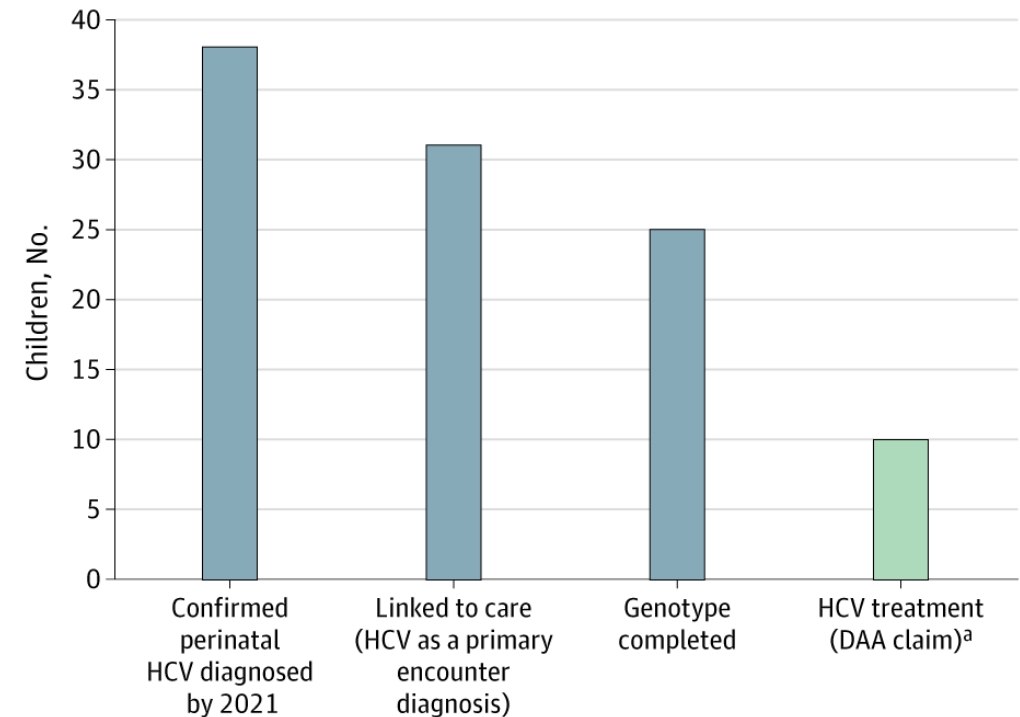
Less than 50% of exposed infants are screened

Only 1/3 perinatal infections after age 3 are treated

A HCV-exposed infants



B Infants with perinatal HCV infection



Comprehensive, patient-centered care



Co-location of services

- Addiction medicine
- HCV care and treatment
- Peripartum care
- Pediatric services
- Social work
- Administrative services

Integrated team model

- Multidisciplinary team members from the above specialties in planning and execution of clinic services

Treatment by non-specialist providers



HCV treatment prescription by non-specialist providers

- HCV treatment training or certification of non-specialist providers
- Teleconsultation support for prenatal providers for diagnostic or treatment support

HCV treatment dispensation and monitoring by non-specialist providers

- Primary care provider led programs
- Pharmacy led programs

BEST PRACTICES FOR HEPATITIS C LINKAGE TO CARE IN PREGNANT AND PERIPARTUM WOMEN

Active engagement and patient navigation



Outreach in new settings

- Outreach to prenatal providers for referral base

Active patient navigation and outreach

- Communication materials for awareness, understanding, and decision making
- Introductions of patient to future care providers or transitions
- Peer support models
- Social worker or care coordinator support
- Communication tools regarding risks and benefits of treatment

Information systems for patient tracking and alerts

- Appointment alerts or reminders for patients
- Electronic medical records alerts to providers for HCV status
- Automated lists or reports of individuals needing HCV treatment

Decreasing time to treatment initiation



Decrease waiting time for HCV diagnosis and evaluation

- Laboratory-based reflex testing for HCV RNA or genotyping
- Rapid turn-around or reporting of results
- Point-of-care testing in remote or hard-to-reach locations

Decrease time to initiation of HCV treatment

- Same-day initiation of HCV treatment with in-house pharmacy
- Initiation of treatment immediately post-partum, either in-hospital or within a week following discharge (if not breastfeeding)
- Option for treatment during prenatal period, per patient preference and joint-decision making

Address insurance or administrative barriers

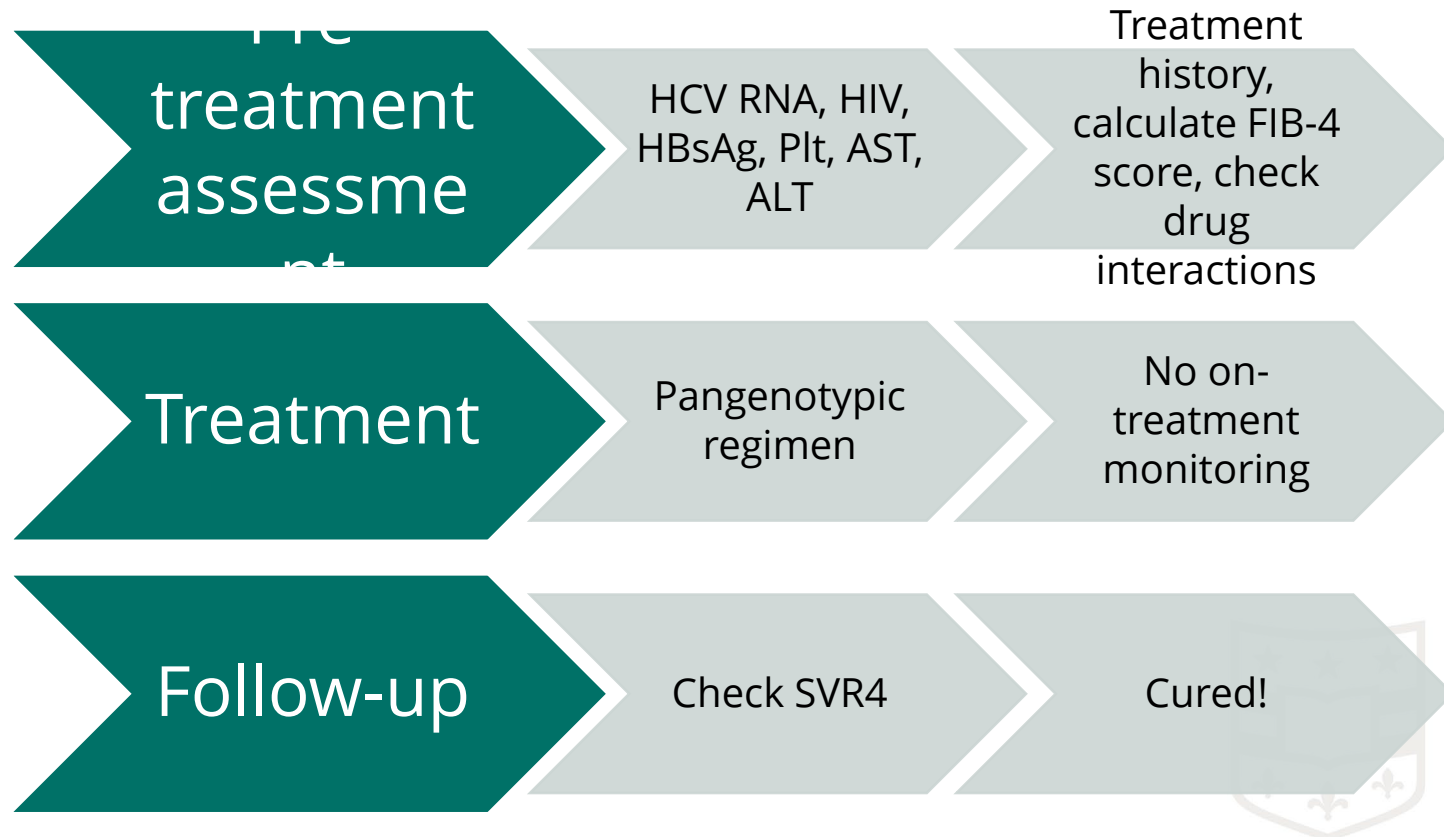
- Early initiation of prior authorization
- Provision of standardized supplemental evidence for prior authorization

Postpartum treatment is easy – it's an algorithm!

Labs typically obtained at prenatal visit or L&D as part of routine care

Check out HCVguidelines.org!

- Simplified treatment algorithms
- Even simpler (!) point-of-care algorithm



Treatment during breastfeeding is okay

And reduces loss-to-care

Sofosbuvir/velpatasvir (SOF/VEL)

- Estimated daily dose from breastmilk <1% of the weight-adjusted dose for children

Glecaprevir/pibrentasvir (G/P)

- EDD from breastmilk <1%

Manuscript in press at Clinical Infectious Diseases



Peripartum HCV treatment at WashU

2018

- Standard referral

2020

- ID telemedicine & e-consult
- **Post-partum treatment only**

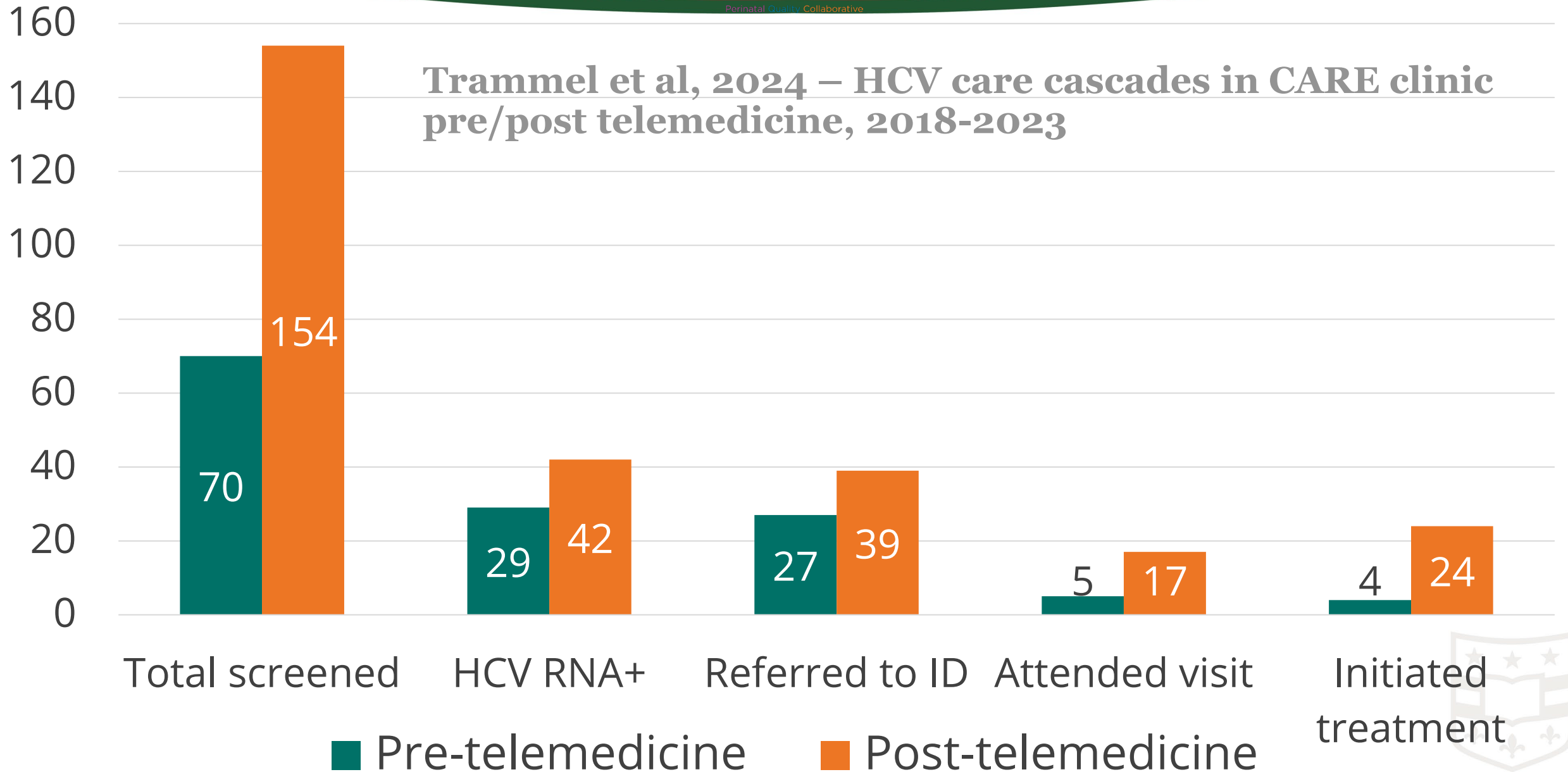
2022

- **Full courses of DAA delivered to L&D**

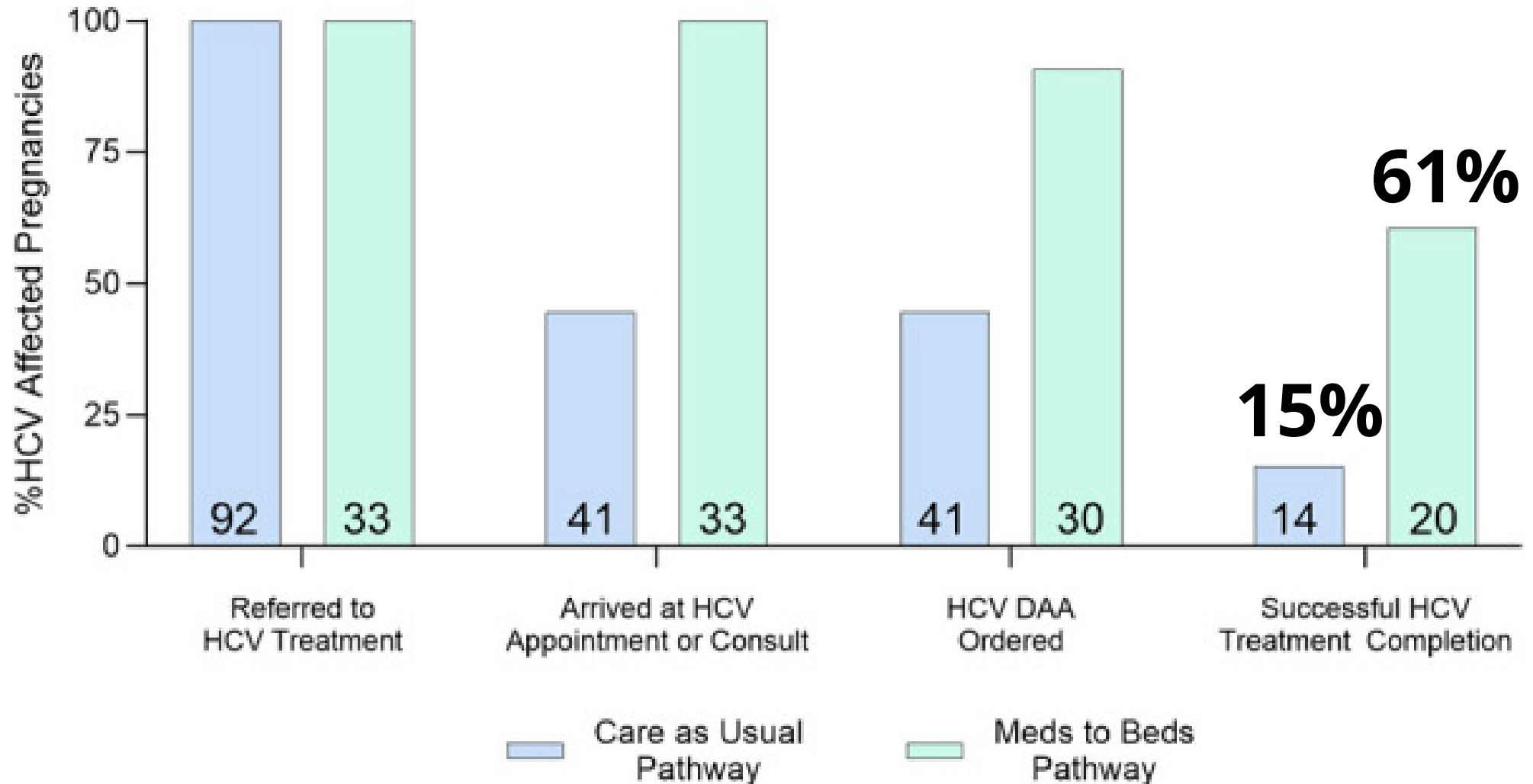
2024

- Prior services PLUS
- **Antepartum shared decision making and treatment**
- Active outreach
- Co-location

Trammel et al, 2024 – HCV care cascades in CARE clinic
pre/post telemedicine, 2018-2023



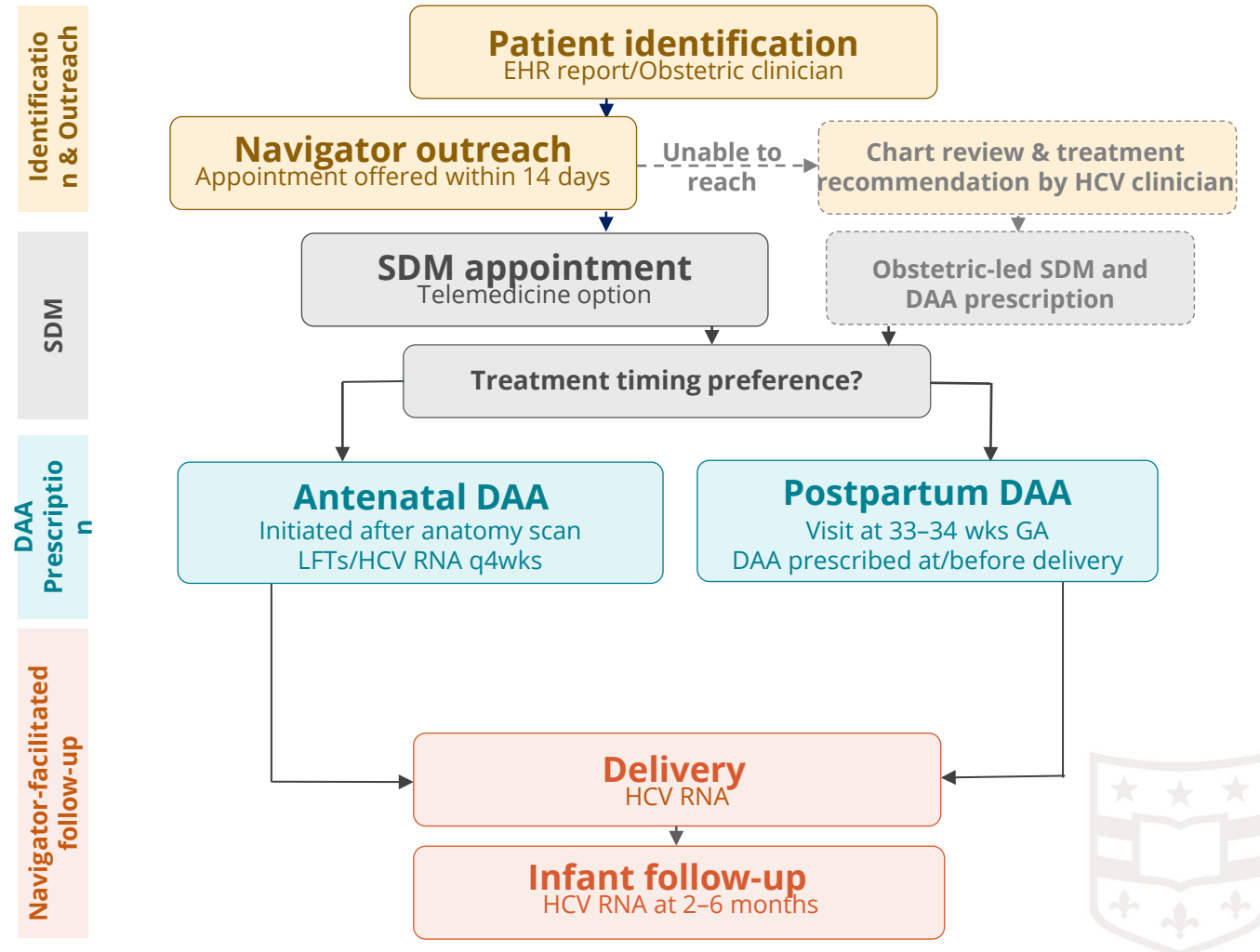
Medications at L&D improves treatment



WashU Hepatitis C Antenatal Linkage-to-Care Program (HALT-C)

If you have a patient who wants Hep C treatment during pregnancy:

Secure email Jessica CM –
Gallegos@wustl.edu



Breaking the cycle: Multiple opportunities for HCV care across the peripartum care continuum

Antepartum

Labor &
Delivery

Postpartum



Some lessons learned

- Full courses upfront = less logistical barriers
- Partner with pharmacists and your hospital pharmacy!
- If treating postpartum, try to coordinate medications before they deliver when possible BUT if you meet a patient in L&D, you can get their hep C treated!
- **Remind parents (and pediatricians!) – exposed infants needs to be screened at 2-6 months of age for HCV!**



Patient case

- Molly is a 32yo at 38w with limited prenatal care and opioid use disorder recently initiated on buprenorphine who presents for delivery.
- There are no prenatal records
- You send the routine L&D labs – CBC, CMP, HIV Ab/Ag, Hep B surface antigen, HCV Ab, RPR...



24-48hr later

Labs are back!

- HCV RNA is 1,600,500 IU/mL
 - HIV non-reactive
 - HBV sAg non-reactive
 - RPR non-reactive
 - Platelets are 251
 - AST is 45, ALT is 52
- Molly just delivered and wants to get her Hep C treated as soon as possible.
 - Meds – buprenorphine
 - HCV diagnosed this pregnancy
 - No prior HCV treatment
 - No known history of liver disease or symptoms of decompensated cirrhosis (ascites, UGIB, edema, etc)
 - She has Missouri Medicaid



HCVguidelines.org – Simplified Treatment Pathways

NOT eligible:

- Prior treatment (*for this infection, with a DAA – not interferon*)
- Pregnancy
- Decompensated liver disease
- HBsAg positive
- Known/suspected hepatocellular carcinoma
- Liver transplant



Almost ALL patients will be eligible postpartum

Steps:

- 1) Pre-treatment assessment**
- 2) Prescribe pan-genotypic medication** (G/P x8 weeks or SOF/VEL x12 weeks)
- 3) Check cure labs** with HCV RNA 4 weeks after treatment completion if no cirrhosis (3 months or 4 months from start date)

Back to Molly (32yo)

Steps:

1) Pre-treatment assessment

- Pretreatment labs
- Patient history (treatment? Cirrhosis?)
- **Non-invasive cirrhosis assessment (FIB4 ≤ 3.25)**
- Choose medication – Which med does insurance cover, check drug interactions

• LABS

- No active Hep B or HIV
- Wants to start medication immediately
- No known history of liver disease
- **Platelets 251**
- **AST 45, ALT 52**

$$\text{FIB-4} = \frac{\text{Age (years)} \times \text{AST Level (U/L)}}{\text{Platelet Count (10}^9\text{/L)} \times \sqrt{\text{ALT (U/L)}}} = \text{0.80}$$

- **FIB-4 score – 0.80 – Low likelihood of advanced liver fibrosis**



Back to Molly (32yo)

Steps:

1) Pre-treatment assessment

- Pretreatment labs
- Patient history (treatment? Cirrhosis?)
- Non-invasive cirrhosis assessment (FIB4 $\leq$ 3.25)
- Choose medication – Which med does insurance cover, check drug interactions
- HCV & treatment education

Cirrhosis assessment

- FIB-4 score – 0.80 – Low likelihood of advanced liver fibrosis

Medication selection

- No drug interactions with buprenorphine (or methadone!) and G/P
- MO Medicaid covers G/P with no PA or cost to the patient



Back to Molly (32yo)

Steps:

1) Pre-treatment assessment

- Pretreatment labs
- Patient history (treatment? Cirrhosis?)
- Non-invasive cirrhosis assessment (FIB4 $\leq$ 3.25)
- Choose medication – Which med does insurance cover, check drug interactions
- HCV & treatment education

What about side effects?

- Most people have no side effects
- Most common side effect is nausea/vomiting but should resolve in 2-3 days (can rx antiemetics if continues)

HCV counseling and education

Remind about infant screening at 2-6 months of age



Back to Molly (32yo)

Steps:

1) Medication prescribing

- Molly would ideally like to leave with medications if possible, or at least know how to get them
- You chat with **pharmacy** about where to send her medication. **It may require a specialty pharmacy.**
- You confirm her phone number, that her phone works and accepts calls. You give her the phone number for the pharmacy and tell her to let you know when she schedules the medication delivery



Back to Molly (32yo)

- Your hospital pharmacy was able to carry the medication and have it in stock - so you send the full 8-week prescription there
- Someone brings the G/P along with her other discharge medications to the bedside
- Molly has the medication and is ready to s
- Post-partum follow-up in clinic is arranged



3 pills once per day x 8 weeks

Back to Molly (32yo) – 6 weeks PP

- She's doing well postpartum
- Taking buprenorphine still
- Taking G/P – no issues, almost done
- Reports taking G/P has made her feel like she is doing something really positive for herself and her new baby. She is motivated.



Back to Molly (32yo) – 12 weeks PP

- Finished G/P 4 weeks ago
- Baby got screened at pediatrician's office at 2mos and was HCV negative
- Taking buprenorphine and doing well
- **Counseled on reinfection, harm reduction and referral to specialist if HCV RNA is detected on labs. HCV RNA ordered.**

HCV RNA at SVR4 was not detected – Molly is cured!



Questions??

MISSOURI
POC
Perinatal Quality Collaborative

Thanks to the
team at WashU!

Email:
Mccrary@wustl.edu



Meg Curtis, MD MS



Laura Marks, MD PhD



Madeline McCrary, MD (ID)



Jeannie Kelly, MD MS (MEM)

*Sign up for
the HIV/HCV
Show-Me
ECHO and get
started!!*



Jessica Elrod-Gallegos (SW/CM)



Jenny Mullersman (Nurse Nav)



Patty Werner (Nurse Nav)

Resources:

HCVguidelines.org – Simplified treatment pathways, guidelines etc

Hepatitisc.uw.edu – modules, guidance, calculators, clinical consultation

Liverpool drug checker – hep-druginteractions.org/checker

Q&A

Post-Evaluation



MATERNAL AND INFANT SYMPOSIUM

Tuesday, Oct. 13, through Thursday, Oct. 15
Branson Convention Center

This event is complimentary for all attendees.



PQC Connect

- Continue to join us monthly for PQC Connect webinars.
- Additional PQC Connect dates and registration can be found on the Mo PQC website Events page.

