

HCV Liver Week Updates: Changing Epidemiology of HCV in the US

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Infectious Diseases

Hennepin Healthcare

HCV Echo Series

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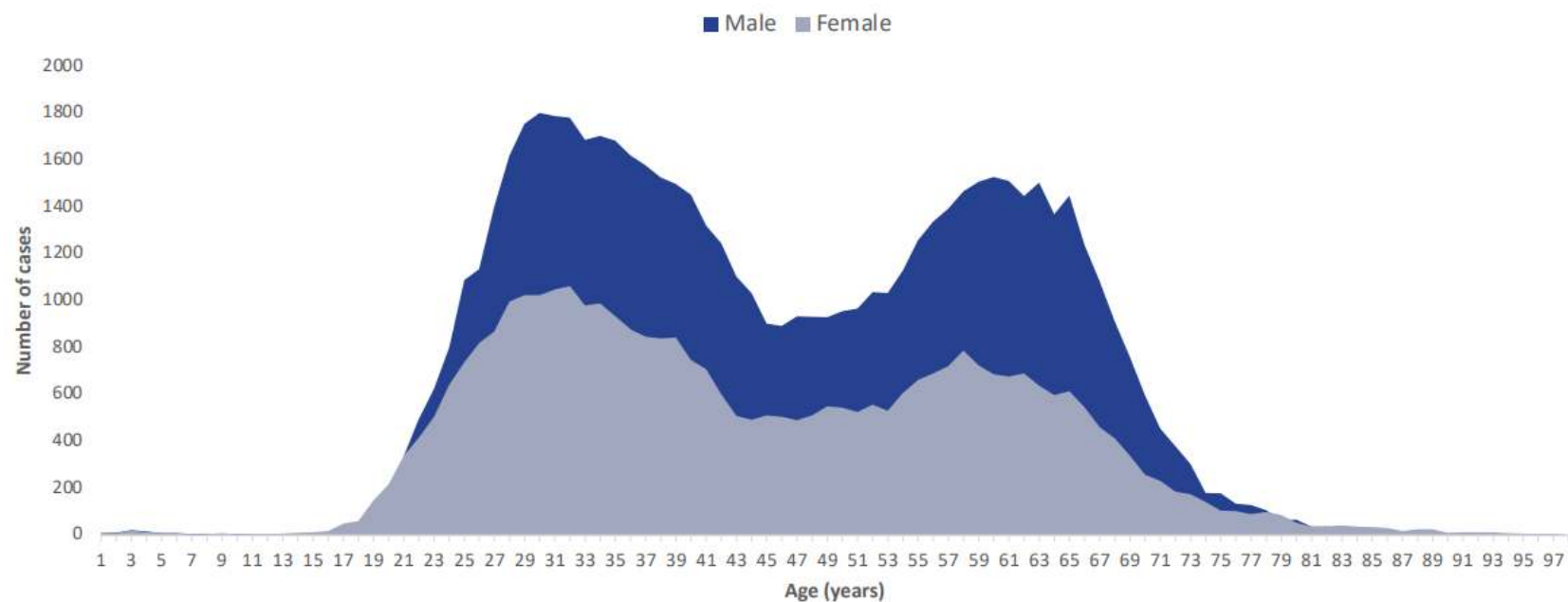
Objectives

1. Review changes in hepatitis C epidemiology over time within the United States.
2. Discuss potential downstream consequences of changes in HCV epidemiology throughout the US in our population.
3. Outline potential upcoming changes in HCV therapeutics.

Changing Epidemiology of HCV in the US

Figure 3.8

Number of newly reported* chronic hepatitis C virus infection cases† by sex and age
United States, 2020



* During 2020, cases of chronic hepatitis C were either not reportable by law, statute, or regulation; not reported; or otherwise, unavailable to CDC from Arizona, Delaware, District of Columbia, Hawaii, Indiana, Kentucky, Nevada, North Carolina, Rhode Island, and Texas.

† Only confirmed, newly diagnosed, chronic hepatitis C cases are included. For the complete case definition, see <https://ndc.services.cdc.gov/conditions/hepatitis-c-chronic/>.

Source: CDC, National Notifiable Diseases Surveillance System.

Centers for Disease Control and Prevention. Viral Hepatitis Surveillance Report – United States, 2020. <https://www.cdc.gov/hepatitis/statistics/2020surveillance/index.htm>. Published September 2022.



Changing Epidemiology of HCV in the US

Table 3.3

Reported risk behaviors or exposures among reported cases* of acute hepatitis C virus infection United States, 2020

Risk behaviors/exposures [†]	Risk identified	No risk identified	Risk data missing
Injection drug use	1,017	523	3,258
Multiple sexual partners	167	352	4,279
Surgery	142	713	3,942
Sexual contact [‡]	83	336	4,379
Needlestick	64	706	4,028
Men who have sex with men [¶]	44	258	2,803
Household contact (nonsexual) [§]	17	402	4,379
Dialysis patient	69	964	3,765
Occupational	9	923	3,866
Transfusion	1	885	3,912

* Reported confirmed cases. For the case definition, see <https://ndc.services.cdc.gov/conditions/hepatitis-c-acute/>.

† Reported cases may include more than one risk behavior/exposure. Case reports with at least one of the following risk behaviors/exposures reported 6 weeks to 6 months prior to symptom onset or documented seroconversion if asymptomatic: 1) injection drug use; 2) multiple sexual partners; 3) underwent surgery; 4) men who have sex with men; 5) sexual contact with suspected/confirmed hepatitis C case; 6) sustained a percutaneous injury; 7) household contact with suspected/confirmed hepatitis C case; 8) occupational exposure to blood; 9) dialysis; and 10) transfusion.

§ Cases with more than one type of contact reported were categorized according to a hierarchy: (1) sexual contact; (2) household contact (nonsexual).

¶ A total of 3,105 acute hepatitis C cases were reported among males in 2020.

Source: CDC, National Notifiable Diseases Surveillance System.

Centers for Disease Control and Prevention. Viral Hepatitis Surveillance Report – United States, 2020. <https://www.cdc.gov/hepatitis/statistics/2020surveillance/index.htm>. Published September 2022.



Acute Hepatitis C vs. Treated chronic HCV

- Rates of Acute HCV in 2020 were the highest of record: 66,700 estimated new cases
- Of the 107,300 newly reported cases of chronic hepatitis C during 2020, ~1/3 were from 5 states (FL, CA, PA, OH, AL).
- The highest rate of newly reported cases of chronic hepatitis C was in West Virginia (122.1 cases per 100,000 population), followed by Alabama (115.8 cases per 100,000 population), Louisiana (90.6 cases per 100,000 population), Mississippi (88.1 cases per 100,000 population), and Arkansas (82.9 cases per 100,000 population).
- There were 164 cases of perinatally transmitted HCV in 2020
 - Follow-up for infants born to mothers with HCV is suboptimal
- Rates of treatment for HCV are slowing down- a concerning trend:
 - 1,220, 664 in 2018
 - 1,140, 893 in 2019
 - 83,740 in 2020

Who is Being Treated for HCV?

Clinical Infectious Diseases

BRIEF REPORT

Characteristics of Persons Treated for Hepatitis C Using National Pharmacy Claims Data, United States, 2014–2020

Eyasu H. Teshale, Henry Roberts, Neil Gupta, and Ruth Jiles

Division of Viral Hepatitis, National Center for HIV, Viral Hepatitis, STD and TB Prevention, Centers for Disease Control and Prevention, Atlanta, Georgia, USA

Using national pharmacy claims data for 2014–2020, 843 329 persons were treated for hepatitis C at least once. The proportion treated increased annually among persons aged <40 years, insured by Medicaid, and treated by primary care providers. Monitoring hepatitis C treatment is essential to identify barriers to treatment access.

Keywords. hepatitis C; HCV; direct-acting antivirals; IQVIA.

In the United States, hepatitis C virus (HCV) infection is a leading cause of chronic liver disease, liver cirrhosis, and liver cancer. An estimated 2.4 million persons were living with chronic HCV infection during 2013–2016 [1]. Beginning in 2013, highly effective, well-tolerated, all-oral, direct-acting antiviral agents (DAAs) became available to treat hepatitis C. Treatment with DAAs reduces hepatitis C–related morbidity and mortality and also benefits public health by interrupting HCV transmission [2, 3]. Treatment is recommended for nearly all HCV-infected persons [4]. However, there remains a huge disparity in access



to describe the characteristics of persons treated for hepatitis C using national pharmacy claims data.

METHODS

Data on DAAs prescribed during 2014–2020 were obtained from IMS Health & Quintiles (IQVIA), which is a longitudinal prescription claims database that captured hepatitis C DAA prescriptions from an average of 93% of retail pharmacies, 69% of mail order pharmacies, and 76% of long-term care pharmacies in the United States over this time period. Data from “atypical” pharmacies, including hospital pharmacies, clinic pharmacies, correctional facilities, dispensing physicians, closed-wall health maintenance organizations, and home healthcare, are included in the IQVIA dataset; however, hepatitis C treatment data from the Veteran’s Affairs health system are not included.

For each DAA prescription in the database, IQVIA includes type of DAA prescribed, prescriber, payer information, and demographic characteristics of the prescription recipient. IQVIA acquired medical claims and race/ethnicity data from various sources, including ambulatory, hospital, and consumer databases, and linked these data to persons in the prescription database. More detailed information about the dataset is provided by IQVIA Inc (Powering Healthcare with Connected Intelligence—IQVIA). We determined the number of persons prescribed DAAs during 2014–2020 and describe the characteristics of payers, prescribers, and recipients of HCV DAAs. Only characteristics of the initial treatment course were included in

Teshale EH, Roberts H, Gupta N, Jiles R. Characteristics of Persons Treated for Hepatitis C Using National Pharmacy Claims Data, United States, 2014–2020. *Clin Infect Dis*. 2022 Sep 29;75(6):1078–1080. doi: 10.1093/cid/ciac139. PMID: 35171997.

Who is Being Treated for HCV these days?

- 64.6% of patients treated were “baby boomers”
- 27,800 were treated more than once (3.3%)
- 59.6% were male, 39.2% female
- Proportion of all persons treated in baby boomer cohort went from 73.6% in 2014 to 46.3% in 2020
- Medicare: 33.0%, Commercial insurance: 42.1%, Medicaid 21.2%
- From 2014 to 2020, the proportion of persons whose claim was paid for by Medicaid increased from 9.7% to 34.1% while claims paid by Medicare decreased from 31.3% to 25.8%
- 59.8% of all prescribers were specialists; this proportion of prescribers decreased from 67.9% in 2014 to 46.5% in 2020

What about Pregnant Women with HCV?

- HCV prevalence doubled between 2009 and 2014 among pregnant women
- Arguments are now being made to consider treatment of pregnant women with HCV
- Rates of vertical transmission are rising slightly, from 0.05-5.00% in 2014 to 3-10% in 2020.
- Great attrition after birth for infants born to HCV infected mothers:
 - In a study in Tennessee, only 23% of infants were tested for HCV after birth to a mother with HCV

TiP-HepC Pregnancy Registry

THE LANCET
Gastroenterology & Hepatology





Volume 7, Issue 7, July 2022, Pages 598-599

Correspondence

Hepatitis C in pregnancy and the TiP-HepC registry

Neil Gupta ^a , Lindsey Hiebert ^a, Paige A Armstrong ^b, Carolyn Wester ^b, John W Ward ^a

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[https://doi.org/10.1016/S2468-1253\(22\)00168-6](https://doi.org/10.1016/S2468-1253(22)00168-6)

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Refers to Ellen Dugan, Sarah Blach, Mia Biondi, Zongzhen Cai, Mindi DePaola, Chris Estes, Jordan Feld, Ivane Gamkrelidze, Shyamasundaran Kottilil, Siya Ma, Poonam Mathur, Shauna Montoya, Devin Razavi-Shearer, Kathryn Razavi-Shearer, Sarah Robbins-Scott, Jonathan Schmelzer, Homie Razavi
[Global prevalence of hepatitis C virus in women of childbearing age in 2019: a modelling study](#)
The Lancet Gastroenterology & Hepatology, Volume 6, Issue 3, March 2021, Pages 169-184

Gupta N, Hiebert L, Armstrong PA, Wester C, Ward JW. Hepatitis C in pregnancy and the TiP-HepC registry. Lancet Gastroenterol Hepatol. 2022 Jul;7(7):598-599. doi: 10.1016/S2468-1253(22)00168-6. PMID: 35709821.

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Add a Program



Home > Evidence base > Treatment In Pregnancy for Hepatitis C: The TiP-HepC Registry

Treatment In Pregnancy for Hepatitis C: The TiP-HepC Registry

CGHE launched the TiP-HepC project on December 3rd at the International Viral Hepatitis Elimination Meeting (IVHEM). In the video on the right, Dr. Neil Gupta, Chief Technical Officer for the Coalition for Global Hepatitis Elimination, presents an abstract on the TiP-HepC project at IVHEM.

[Contribute cases to TiP-HepC registry here](#)

Background

Hepatitis C virus (HepC) antenatal screening is now recommended in the US and is increasingly the standard of care globally. However, there are no current interventions to reduce perinatal HepC transmission. Virologic suppression via the use

Safety of HCV Treatment in Pregnancy

Chappell et al.

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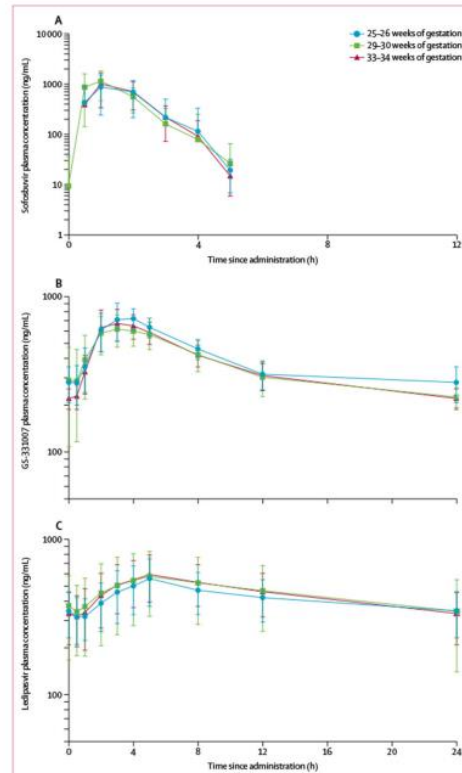


Figure 1: Mean concentration–time curves at each intensive pharmacokinetic visit
(A) Sofosbuvir plasma profiles. (B) GS-331007 plasma profiles. (C) Ledipasvir plasma profiles. One participant was excluded from all the primary pharmacokinetic analyses because of a dosing error.

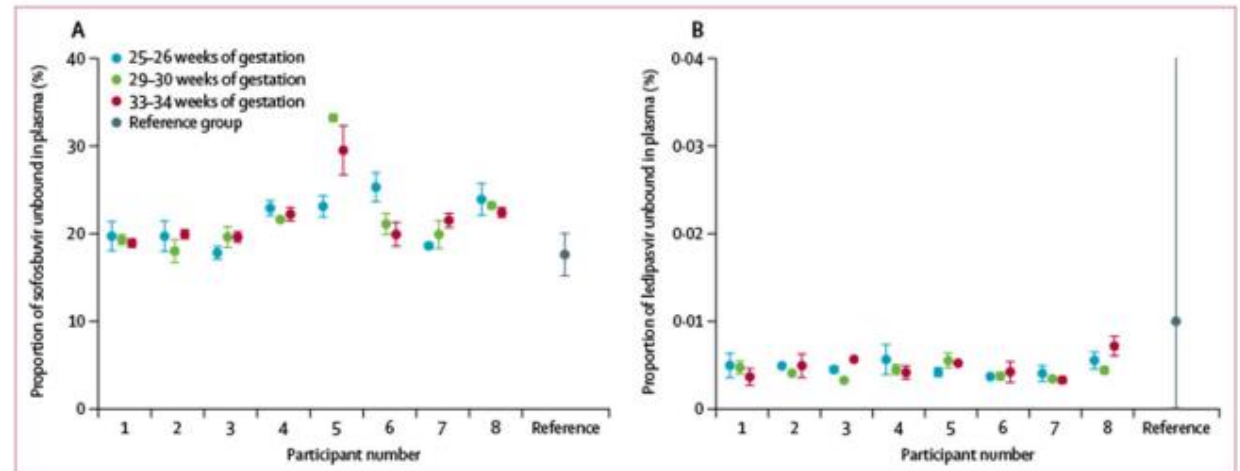


Figure 2: Ledipasvir and sofosbuvir plasma protein binding in the study group compared with the reference group
(A) Sofosbuvir plasma protein binding. (B) Ledipasvir plasma protein binding.

Safety of HCV Treatment in Pregnancy

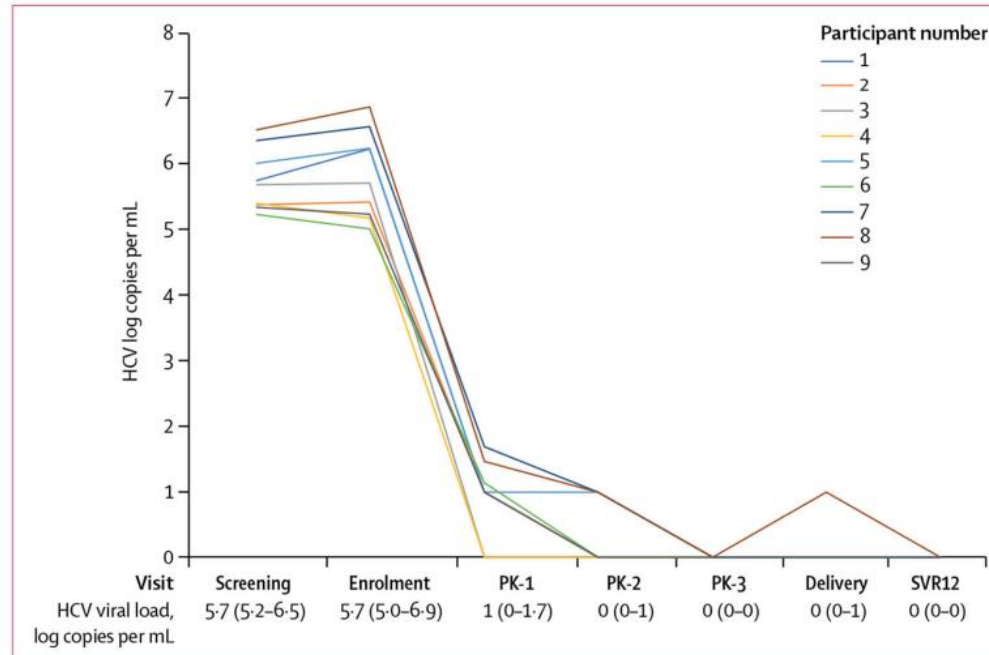


Figure 3: HCV viral response to ledipasvir–sofosbuvir during pregnancy

Data stated below the chart are median (range). PK-1 visit was between 10 and 21 days after treatment initiation. PK-2 visit was between 32 and 47 days after treatment initiation. PK-3 visit was between 59 and 74 days after treatment initiation. HCV=hepatitis C virus. PK-1=first pharmacokinetic visit. PK-2=second pharmacokinetic visit. PK-3=third pharmacokinetic visit. SVR12=sustained virological response 12 weeks after completion of treatment.

Safety of HCV Treatment in Pregnancy

Table 4:

Maternal adverse events and pregnancy outcomes

	HCV-infected pregnant women (n=9)
Maternal adverse events related to ledipasvir–sofosbuvir [*]	5 (56%)
Maternal adverse events >grade 2 related to ledipasvir–sofosbuvir	0
Discontinuation of ledipasvir–sofosbuvir because of adverse events	0
Gestational age at delivery, weeks + days	39 + 2 (36 + 6 to 41 + 0)
Vaginal delivery	5 (56%)
Scheduled caesarean section	3 (33%)
Emergent caesarean section [†]	1 (11%)
Apgar score at 1 min	8 (6 to 9)
Apgar score at 5 min	9 (8 to 9)
Male infants	7 (78%)
Infant birthweight, kg	3.29 (2.60 to 4.16)
Detectable HCV RNA in cord blood	0
Length of stay in hospital, days	3 (2 to 12)
Admission to the neonatal intensive care unit [‡]	3 (33%)

Data are n (%) or median (range). HCV=hepatitis C virus.

^{*} Four were grade 1 (three nausea or vomiting and one diarrhoea) and one was grade 2 (fatigue).

[†] Due to umbilical cord prolapse.

[‡] Reasons for neonatal intensive care admission: one shoulder dystocia and two neonatal opioid withdrawal syndromes.

New Approaches to HCV Treatment

- Ongoing discussions of including pregnant women in treatment protocols
- Improved community outreach to meet PWID where they're (literally) at and to eliminate obstacles to treatment/SVR
- Injectable therapies being whispered about in the pipeline
- More aggressive treatment approaches (and changes in policy) for PWID living with chronic HCV to eliminate community viral transmission
- In need of better harm reduction strategies

Special Thanks

- <https://www.cdc.gov/hepatitis/statistics/2020surveillance/data/pdf/table-3.3.pdf> Insert image of AASLD Liver Week advertisement

Discussion, Questions, Comments?