

# Hepatitis C Virus Care Cascade Assessment-One Step Closer to Micro-Elimination

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## Background

- Hepatitis C virus (HCV) is a leading cause of advanced liver disease and death.
- In the United States about 3.5 million people are living with HCV, but only 50% are aware of the infection, 16% are prescribed treatment, and only 9% achieve sustained viral response.
- The World Health Organization set a goal for 2030 to achieve a 65% reduction in HCV-related deaths and 90% reduction in transmission.
- An important step toward this goal is micro-elimination at local hospitals by addressing care gaps in the HCV care cascade.

## Methods

- A retrospective cohort was created of 1,041 unique patients who tested positive for HCV antibody (Ab+) in 2016-2018 at Tufts Medical Center in Boston, MA,
- Care cascade steps included HCV viral load (VL) testing, linkage to care, treatment initiation, treatment completion and sustained viral response (SVR).
- STATA/IC 14.1 was used to conduct bivariate analysis to identify factors associated with loss to follow-up (LTFU) across each care cascade step.

## References

- Stepanova M, Younossi ZM. Economic Burden of Hepatitis C Infection. Clinics in Liver Disease. 2017;21(3):579-594.
- World Health Organization. Combating Hepatitis B and C to reach Elimination by 2030. May 2016 <https://www.who.int/hepatitis/publications/hep-elimination-by-2030-brief/en/>

## Results

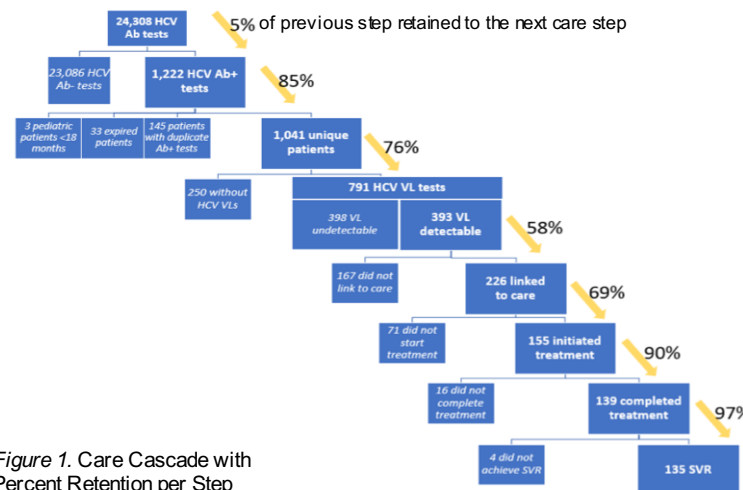


Figure 1. Care Cascade with Percent Retention per Step

## Discussion

- 12% of included patients had multiple HCV Ab+ tests within the two-year study period, indicating an overuse of Ab testing after a prior Ab+ and potential missed opportunities for immediate VL testing. This gap was further demonstrated in that 76% with Ab+ did not get VL testing.
- The care step with largest loss to follow-up (LTFU) was linking to care.
- Predictors of LTFU were similar at the care steps of getting a VL test and linking to care, while they were not comparable at later steps.

## Demographics

- 24,308 HCV Ab tests were completed from 2016-2018, of which 5% (n=1,222) were HCV Ab+ (Figure 1).
- 1,041 unique patients with HCV Ab+ were included in analysis after excluding expired patients, pediatrics <18 months and patients duplicated by multiple HCV Ab+ tests.
- This cohort had mean age 47 years, 61% male, 66% white, 72% public insurance, 12% HIV-positive and 13% HCV treatment-experienced. HCV Ab+ were initiated 52% from the outpatient setting, 42% from inpatient and 6% from the ED.
- Most frequent HCV risk factor was intravenous drug use, occurring in 64% of patients.

## Care Cascade Steps

- Of patients with HCV Ab+, 76% were tested for an HCV VL, of which 59% had detectable VL and 41% had undetectable VL.
- Of patients with detectable VL, 58% linked with care, meaning they attended an outpatient appointment with an HCV provider.
- Following linkage to care, 69% initiated HCV treatment, of which 90% completed treatment, of which 97% achieved SVR.

## Risk Factors

- Factors that were significantly associated both with getting a VL test and linking to care included older age, private insurance, HCV Ab+ being initiated in outpatient setting, HIV co-infection, cirrhosis and absence of intravenous drug use.
- However, the above factors were not significantly associated with achieving the subsequent care steps.

## Conclusion

- Assessment of the HCV care cascade at our hospital allowed us to identify clear care gaps and areas needing improvement.
- The care gaps have been further explored, and interventions are planned to lead us one step closer to local micro-elimination.