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### Evaluating the Impact of a Pharmacist Run Pharmacotherapy Service on Hepatitis C Outcomes in a Large Integrated Health-System

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# Evaluating the Impact of Pharmacist Pharmacotherapy Service on Hepatitis C Outcomes within a Large Integrated Health-System



Jessica Hendrix, PharmD; Charmaine Hunt, PharmD, MS; Judy Perkins, RPH, BCACP



## Background

- The World Health Organization (WHO) estimates that 58 million people worldwide are chronically infected with hepatitis C virus (HCV) as of 2019 and approximately 1.5 million new infections each year.<sup>1</sup>
- Despite antiviral medications demonstrating cure rates >90% in persons with HCV infection, the diagnosis and subsequent treatment remain low. Of the 58 million people living with HCV, approximately 21% (15.2 million) were aware of their diagnosis, and of those, 62% (9.4 million) had been treated with direct acting antivirals (DAAs) by the end of 2019.<sup>1,2</sup>
- Guidelines for treatment of HCV change often in response to new drugs coming to market and published clinical trial data. Drug treatment decisions are often driven by patient specific factors that are both clinical and financial (i.e., payers).
- Clinical pharmacists provide evidence-based care to patients and allow primary care providers and gastroenterologists to focus on other aspects of patient care.

## Purpose

- The purpose of this study is to measure the rate of HCV cure and to characterize the impact of services provided and the added value of the pharmacist. Hepatitis C cure is defined as sustained virologic response at least 12 weeks after treatment (i.e., SVR12).

## Outcomes

### Primary

- To determine the rate of Hepatitis C cure vs treatment failure

### Secondary

- Determine the impact of services provided and the added value of the pharmacist within the Providence Oregon Pharmacotherapy Service Program

## Methods

### Design

- Retrospective data collection study
- Review of EPIC electronic health record (EHR) of patients referred for HCV treatment consideration from June 20th, 2017, to June 2021

### Population

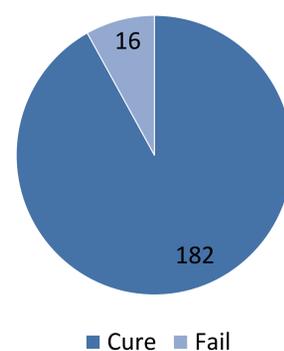
- Criteria for Inclusion
  - Patients referred to pharmacotherapy clinic for treatment consideration of Hepatitis C virus
- Criteria for Exclusion
  - Pregnancy
  - Incarceration

## Study Population Baseline Characteristics (n=198)

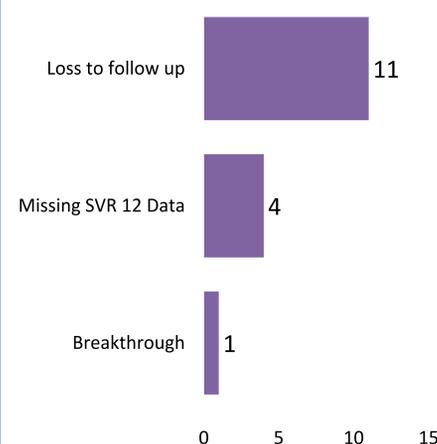
Demographic	Number of Patients n (%)
<b>Male</b>	125 (63)
<b>Female</b>	73 (37)
<b>HCV Genotype</b>	
1	8 (4)
1a	98 (49)
1b	28 (14)
2	8 (4)
2a	6 (3)
2b	29 (15)
3a	14 (7)
4	4 (2)
6	2 (1)
6a	1 (<1)
<b>Direct Acting Antiviral</b>	
Glecaprevir-Pibrentasvir	137 (69)
Ledipasvir-Sofosbuvir	33 (17)
Sofosbuvir-Velpatasvir	21 (11)
Sofosbuvir-Velpatasvir Voxilaprevir	7 (3)

## Preliminary Results

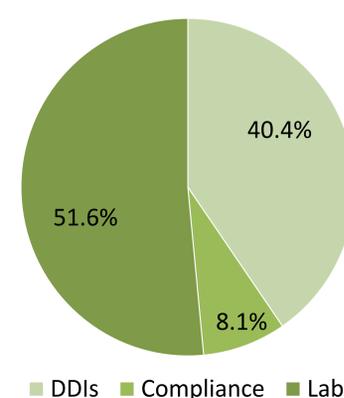
### Distribution of Patients that achieved HCV Cure (n=198)



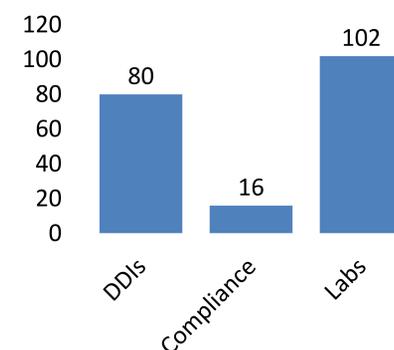
### Distribution of Reasons for treatment failure (n=16)



### Distribution of Interventions made by the Pharmacist (%)



### Distribution of Interventions made by the Pharmacist (n=198)



## Discussion

- From 2015-2018 an estimated 40% of people living in the US were unaware they were infected with HCV. Treatment with DAAs can cure HCV infection in more than 90% of patients, however reaching more people with HCV is a critical component of preventing transmission and saving lives.<sup>3,4</sup>
- A Pharmacotherapy service for patients with HCV offers the unique benefit of pharmacist clinical guidance, optimized operational flow, and outcomes tracking. These are all important factors in determining costs as well as cure rates for patients and payers.
- The preliminary results of this study show reasons for treatment failure include breakthrough infection (n=1), missing SVR12 data (n=4), and loss to follow up (n=11). The breakthrough infection was determined by the patient having a detectable viral load at 12 weeks post treatment. In four patients it was cost prohibitive to obtain 12-week labs due to lack of insurance or other financial resources. These four patients were classified as treatment failures due to missing SVR12 data. Eleven patients in the preliminary analysis failed treatment because of loss to follow up as they did not come in for 12-week labs and were off serviced by the pharmacotherapy clinic.
- Pharmacist interventions were captured for all patients encounters (n=198) and included drug drug interactions, coordination and/or facilitation of lab scheduling, and compliance. Preliminary results indicate that most Interventions were related to labs (51.6%) followed by drug interactions (40.4%) and then compliance (8.1%).
- Results and conclusions are ongoing and will be shared upon project completion in June 2022. All data collection and analysis are being conducted under the approval of the PSJH institutional review board IRB# STUDY2022000075

## Conclusion

- Results and conclusion are ongoing and will be shared upon project completion. Preliminary analysis indicates that utilization of the pharmacist is a highly effective and safe way of using DAAs for treatment of patients with HCV.

## References

1. Geneva: World Health Organization Interim guidance for country validation of viral hepatitis elimination; 2021. Licence: CC BY-NC-SA 3.0 IGO
2. National Academies of Sciences, Engineering, and Medicine. 2017. A National Strategy for the Elimination of Hepatitis B and C: Phase Two Report. Washington, DC: The National Academies Press doi.org/10.17226/24731.
3. Teshale et al. Characteristics of persons treated for hepatitis C using national pharmacy claims data, *Clinical Infectious Diseases*, 2022, ciae1139, doi.org/10.1093/cid/ciac139
4. Centers for Disease Control and Prevention. New Estimates reveal declines in hepatitis C treatment in the U.S. between 2015 and 2020. Accessed Jan 10, 2022. <https://www.cdc.gov/nchstp/newsroom/2021/2014-2020-hepatitis-c-treatment-estimates.html>