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# Effect of a Robust Electronic Medical Record Order Set on Hepatitis C Screening Rate at a Community Hospital

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## BACKGROUND

Hepatitis C Virus (HCV) infection is a liver infection that typically begins as an acute infection and if left untreated, can become a chronic infection. One-time HCV testing is recommended by the CDC and United States Preventive Services Task Force (USPSTF) for asymptomatic individuals based on evaluated exposure or other circumstances that increase HCV exposure (HCV Guidance, 2018); (CDC, 2012). Patients with severe mental disorders, such as schizophrenia and bipolar disorders are particularly at risk for HCV infection with past studies finding approximately 6.2 - 29.8% of patients with severe mental disorders having comorbid HCV (Ayano et al., 2018) – up to 9 times higher than the general US population (Rifai, Gleason, & Sabouni, 2010). This study focuses on the effectiveness of an established universal HCV screening protocol utilizing the electronic medical record (EMR) “EPIC” in the Psychiatric and Addiction Recovery Center (PARC) at Pen Bay Medical Center (PBM) for an at-risk population, evaluating the rate of screening, diagnosis, and follow-up care of HCV.

## STUDY AIMS

The goal of this study is to assess the effectiveness of the HCV screening protocol at the PARC at PBM which utilized an automatic order set on EPIC. Patients admitted to PARC before the intervention were compared to patients admitted after the screening protocol was operative. The two specific aims were:

- (1) to measure the rates of HCV screening in the PARC unit before and after the institution of the screening protocol and
- (2) to determine the rate of follow-up care in those patients found to be positive for HCV.

It was hypothesized that the proportion of patients admitted to PARC after the screening protocol was initiated would have a significantly higher screening rate and furthermore, that the patients that tested positive for HCV would have a significantly higher rate of follow-up care compared to the patients admitted before the protocol.

## METHODS

Starting in October 2016, universal HCV screening with laboratory testing was added to the initial admitting order set for the PARC unit at PBM (Figure 1). This process includes an automatic HCV screening and if the test results are positive, multiple intervention strategies are implemented. A retrospective chart review was conducted to collect patient information on HCV screening during admission, whether they were diagnosed with HCV, and if there was evidence of HCV follow-up care. The chart review was conducted comparing patients’ (EMR) before and after the implementation of the screening protocol established in January 2017.

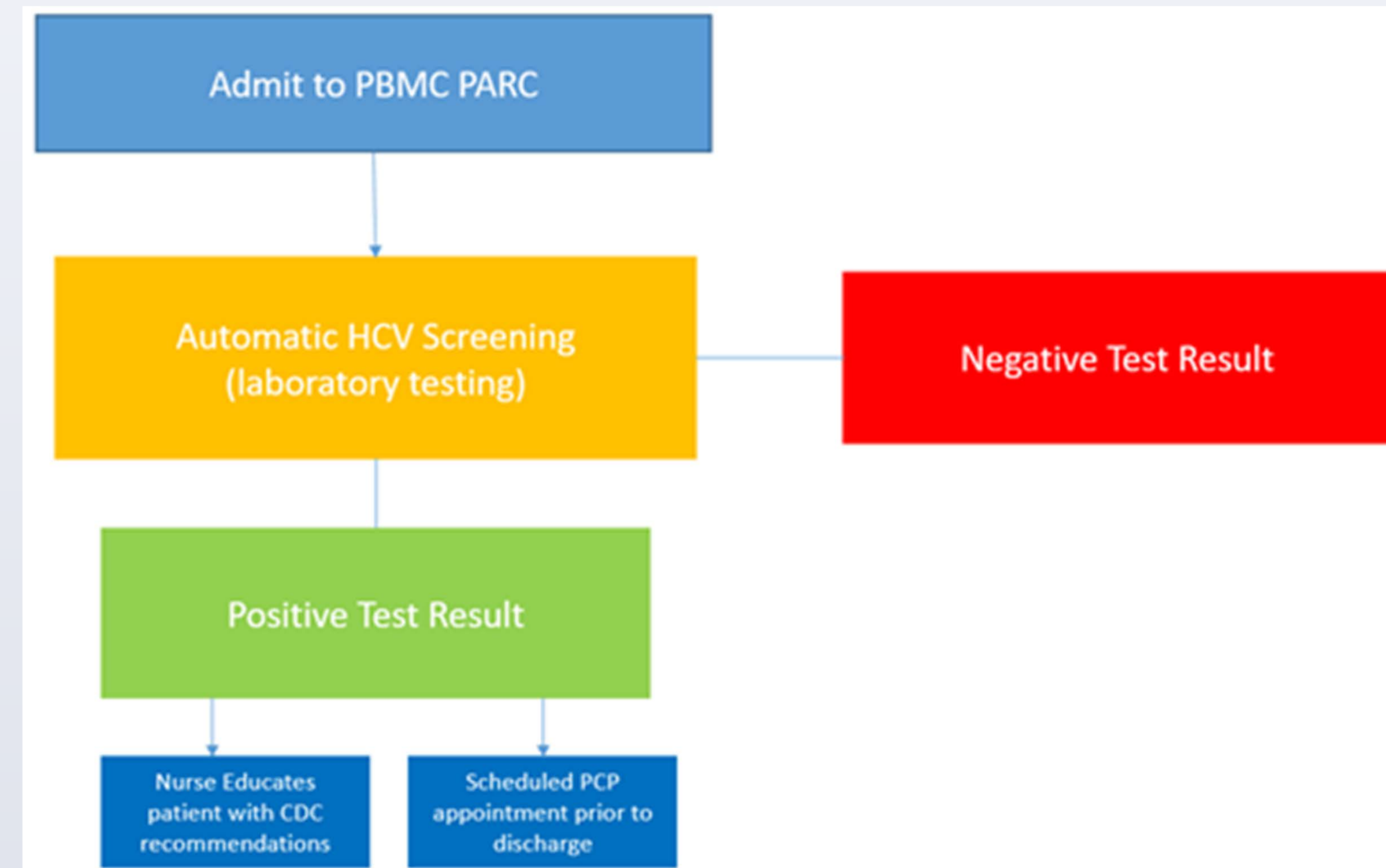


Figure 1. Flow of Care Chart - after institution of universal HCV screening protocol

## RESULTS

There were 613 patients admitted to the PARC unit from October 1, 2014 to September 30, 2015 and 484 patients admitted to the PARC unit from July 1, 2017 to June 30, 2018. The results indicate a significantly higher percentage of patients being screened following the institution of the screening protocol (95%) as compared to patients screened prior to the institution of the screening protocol (30%) (p<0.0001) (Figure 2). Additionally, 54% of the HCV positive patients screened following the institution of the screening protocol received follow-up care, compared to 45% of the HCV positive patients screened prior the institution of the screening protocol (Figure 3).

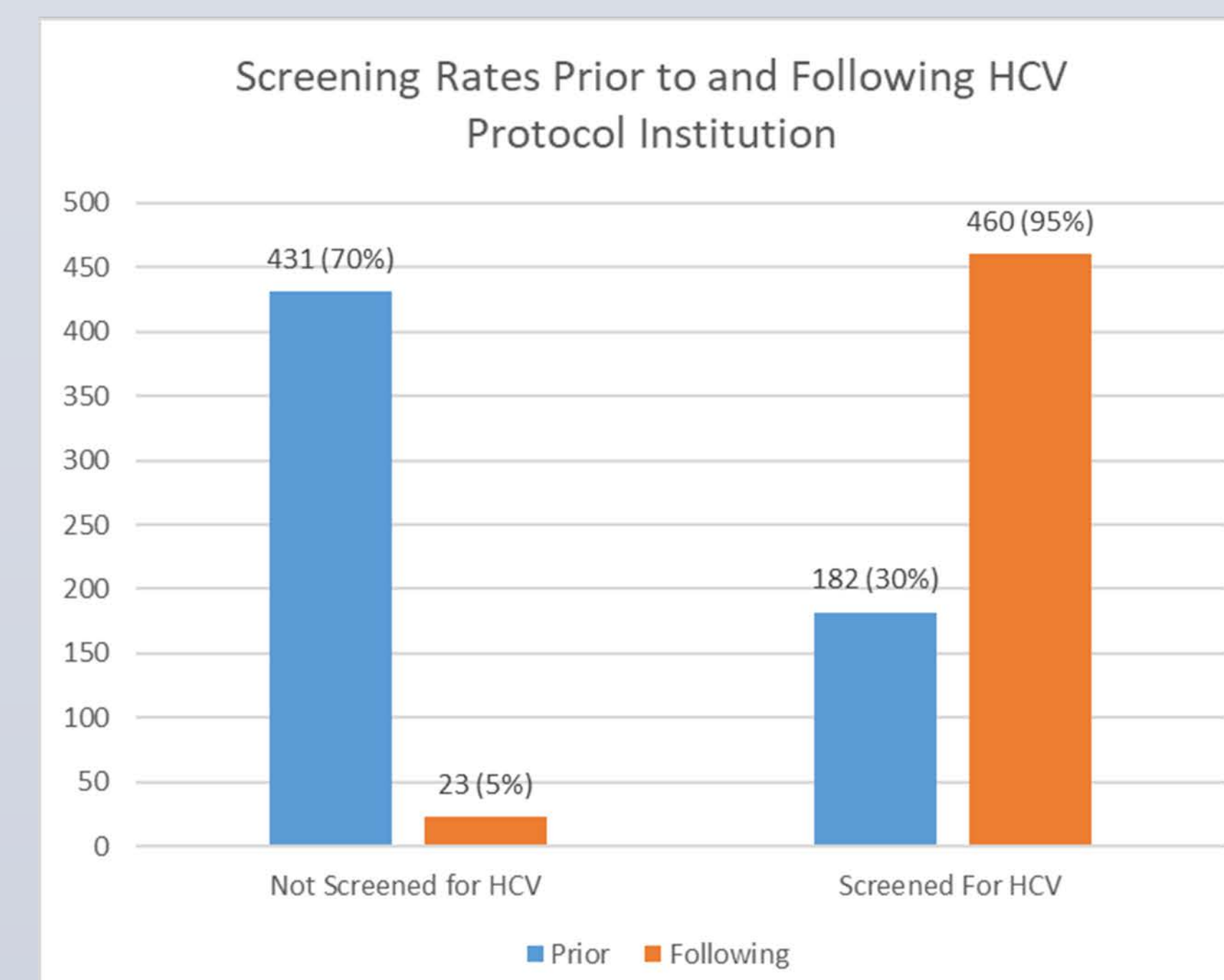


Figure 2. Screening Rates

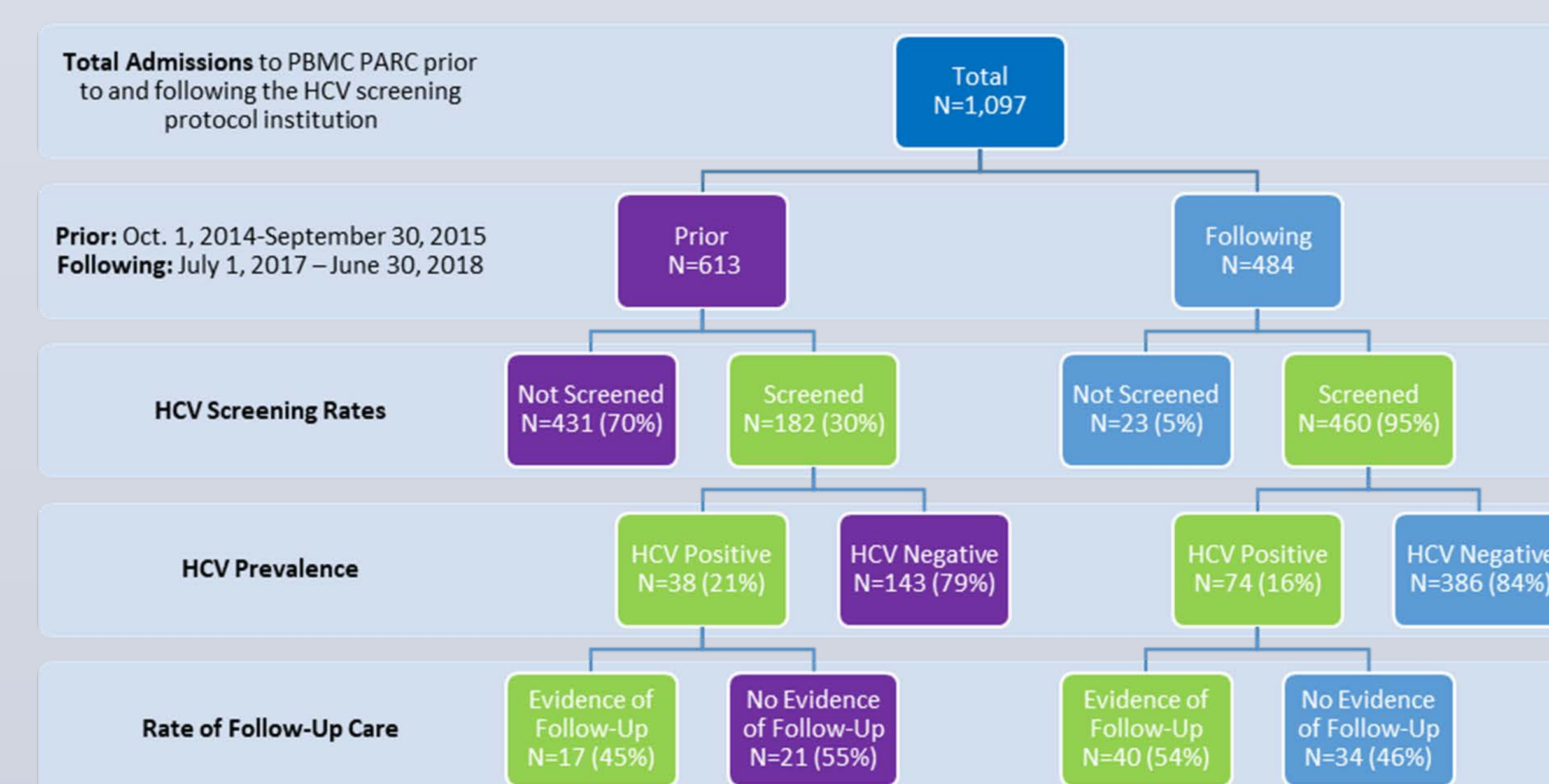


Figure 3. Data Summary.

## CONCLUSIONS

- 50% or more of patients infected with HCV also suffer from a psychiatric illness (Rifai, Gleason & Sabouni, 2010).
- Psychiatric nurses are on the front line for screening, identifying, and caring for patients with HCV, but only a low percentage of providers actually institute screening for HCV infection in their EMR order set (Sayas, McKay, Honermann, Blumenthal, Millett, & Jones, 2018).
- These findings suggest the success of the instituted universal screening protocol incorporated in the EMR order set at the PBM PARC unit and its importance in identifying at-risk patients and providing adequate treatment to those infected with HCV, which can furthermore lead to linkage to treatment and care.

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