Hennepin Health

Substance Use Disorder and Hospital Readmissions

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Substance Use Disorder and Hospital Readmissions

Acute and chronic substance use disorder (SUD) complications are the leading cause of readmissions within the Hennepin Health population at Hennepin Healthcare (HHC). The pandemic exacerbated SUD harm nationwide, with drug overdose deaths increasing nearly 30% within the first year of the COVID-19 pandemic. Minnesota fared worse than many states, ranking as the 12th highest in overdose deaths from April 2020 - April 2021. Further concerning was the surge in disparities by race. American Indian and Black persons experienced the highest increases in drug overdose rates during 2019-2020 with overdose disparities widened between Black people and White people.

Focus Study Question

What is the impact on 30-day hospital readmissions within the Hennepin Health substance use disorder (SUD) population after deployment of a peer support specialist (PSS) to the Hennepin Healthcare (HHC) Emergency Department and inpatient settings?

Process and Documentation

Primary contributors to increased readmission risk include housing instability, serious mental illness, and SUD. Race has frequently been identified in the literature as a readmission risk factor, but is likely a surrogate for other factors, including social determinants of health (SDoH). The review of the medical records of readmitted Hennepin Health patients of color at Hennepin Healthcare noted that many had a SUD-related readmission and that few eligible patients had ever been connected to SUD services. However, without proactive SUD identification, the degree of the problem was not fully appreciated. Many patients with SUD presented with trauma or infection, but medical record review revealed these presentations were caused by intoxications or intravenous drug use. Thus, a concerted effort was needed to better identify and support this population.

Following this finding, Hennepin Healthcare and Hennepin Health set out to address SUD readmissions in a novel way to decrease health disparities. Hennepin Healthcare and Hennepin Health drew on the learnings from the 2019 readmissions work focused on the elevated Hennepin Health readmission rate when compared to the full hospitalized population at Hennepin Healthcare. SUD was the leading contributor to readmissions, followed by homelessness, but the work in 2019 targeted the latter factor due to greater existing community resources, acknowledging that SUD and homelessness are interrelated. This work proactively identified patients experiencing homelessness and connected them to outpatient services during hospitalization. What stood out during that pilot was the importance of designing work to avoid dependency on referrals, timing (hospitalization is often when patients are more open to change and inpatient contact eliminates struggle to contact patient post discharge), warm introductions advancing patient engagement and follow through building trust. These concepts were foremost in our thoughts as the new SUD workflow was designed.

A peer support specialist (PSS) was hired and deployed to the Emergency Department (ED) and inpatient settings. The PSS was hired by Hennepin County and located at the hospital, optimizing access to patients and dual resources through both the county and healthcare system.

The PSS seeks out eligible SUD patients, completes a warm introduction, and invites patients to services. In addition to the anticipated connection to detox, treatment, and intensive residential treatment services facilities, the PSS assisted with transportation to medical appointments, treatment programs, and post discharge lodging, living will and health care directives, and resume writing support which led to patient employment and stable housing.

The objective of this pilot was to proactively identify adult Hennepin Health patients with SUD, where Black and American Indian communities are overrepresented, in an attempt to reduce health disparities. The hospital's process was to offer patients SUD services after they were referred to the Addiction Medicine team, which resulted in many overlooked patients who did not receive a much needed resource connection. However, even when patients were

identified inpatient, Addiction Medicine's limited staffing could not accommodate the volumes of patients in need. This program strived for early, comprehensive detection of patients that would otherwise not be recognized as eligible for SUD services or community connection and provided greater capacity to support a larger number of individuals.

The 1-year program goal was the reduction of 30-day hospital readmissions at Hennepin Healthcare within the Hennepin Health population with SUD by 50% for a target of 15%. Readmission was defined as a subsequent inpatient hospitalization occurring within 30 days of inpatient hospital discharge.

The benefits expected to be gained by conducting the study included the following.

- Better connection to services that address social determinants of health.
- Enhanced patient experience.
- Reduction in 30-day hospital readmissions.
- Reduction in health disparities.

Study Methodology

- Patients with suspected SUD were proactively identified between January 1, 2022, and December 31, 2022. Acute care utilization was tracked in real time using Epic® the electronic medical record. Claims data was evaluated to assess impact on SUD related acute care utilization.
- 30-day hospital readmissions were defined as an inpatient encounter at Hennepin Healthcare, or outside hospital when identified within Epic®'s Care Everywhere, that occurred within 30 days of hospital discharge. Patients who left against medical advice, died within 30 days of discharge, were admitted under observation status or for a planned admission were excluded.
- Process measures were tracked weekly and included the number of patients screened, deemed eligible for intervention, and visited while on the hospital campus, as well as those who consented to and engaged in services in the community following discharge. Process measures were disaggregated by race and monitored on a regular basis, holding true to community patterns of need.

Sample Size

Four hundred eight five patients were screened for eligibility between January 1, 2022, and December 31, 2022; 45% of patients agreed to intervention. The sample size reflected patients who agreed to services. Patients with SUD were flagged for intervention by placement of an Addiction Medicine referral, identification of possible SUD by a Hennepin Health case management assistant, or probable SUD related presentation in the ED.

Results

From January 1, 2022, and December 31, 2022, 485 patients were screened for eligibility and 220 agreed to intervention. Thirty-three patients were visited by the PSS in the ED, and 17 were seen while in hospital-observation. One hundred sixty-nine patients were visited by the PSS while inpatient; this cohort populated the readmission denominator.

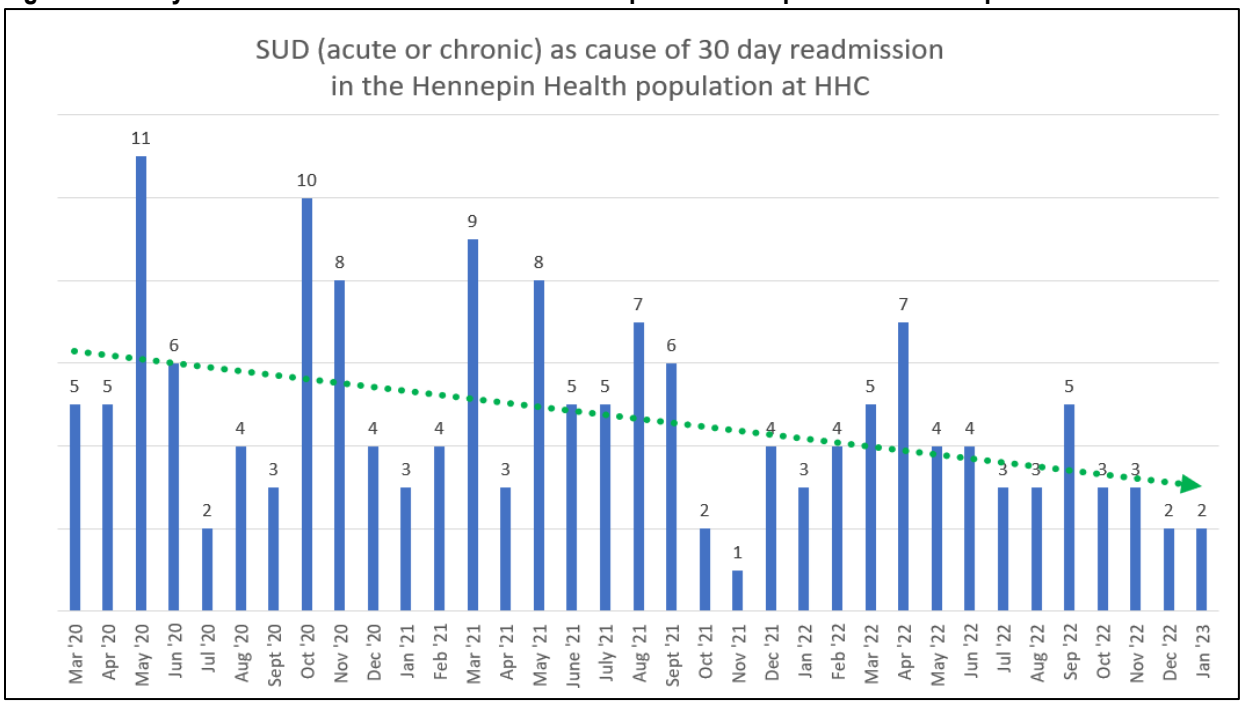
Patients were primarily English speaking, 16% were experiencing homelessness and 27% had a mental illness. Thirty-six percent were Black, 28% White and 18% American Indian; the median age was 47.5 years.

The readmission rate in the intervention group was 7.7% at Hennepin Healthcare and 11.8% when including outside hospitals. While the true baseline SUD readmission rate is unknown as the SUD population was not proactively identified prior to the pilot, the first month of the program served as a surrogate where readmissions were over 30%. However, it is acknowledged that the true baseline, in absence of any intervention, was likely even greater. In the

readmitted cohort, 40% of encounters were medical, a third medical and SUD-related, and a quarter were solely SUD-related. Ten percent of patients were discharged to a treatment or detoxification facility.

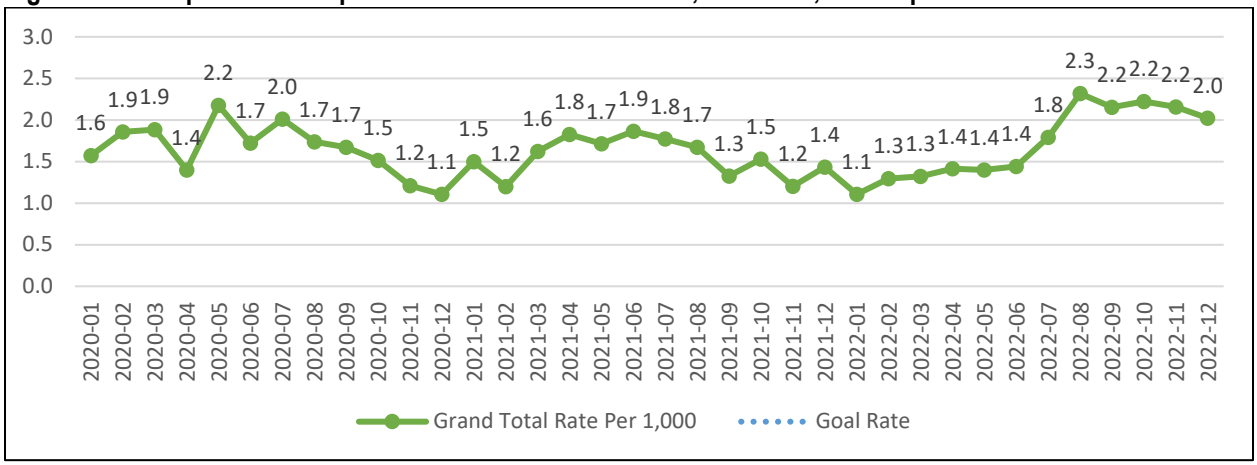
Internal Hennepin Healthcare data demonstrated a steady decline in SUD related readmissions within the Hennepin Health population (Figure 1). Hennepin Health claims data showed SUD admission rates across all hospitals to be on the rise. However, this contrasts with claims for Hennepin Healthcare, where SUD admission rates have more than halved (Figure 2, Figure 3), and SUD ED visit rates have decreased by over a third since this work began (Figure 4 - Figure 5).

Figure 1. 30-day Readmission due to SUD in the Hennepin Health Population at Hennepin Healthcare



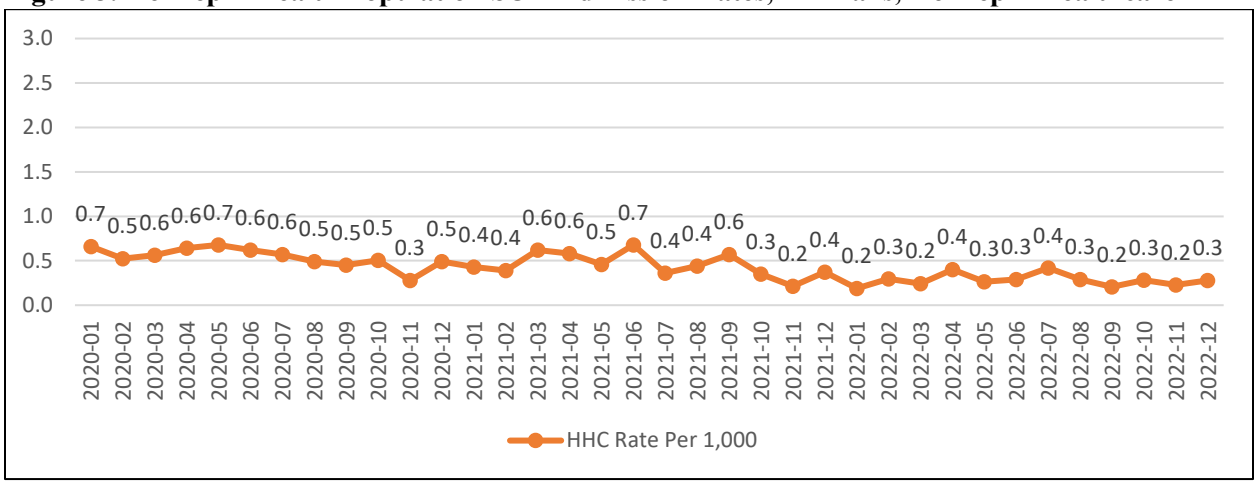
Data Source: Hennepin Healthcare Data Warehouse

Figure 2. Hennepin Health Population SUD Admission Rates, All Plans, All Hospitals



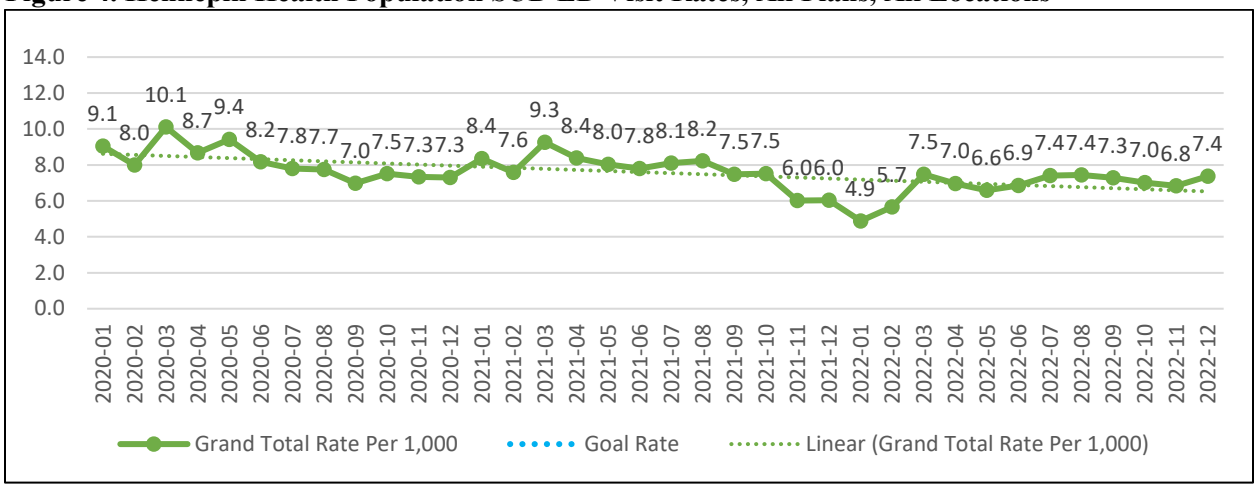
Data Source: Hennepin Health Data Warehouse

Figure 3. Hennepin Health Population SUD Admission Rates, All Plans, Hennepin Healthcare



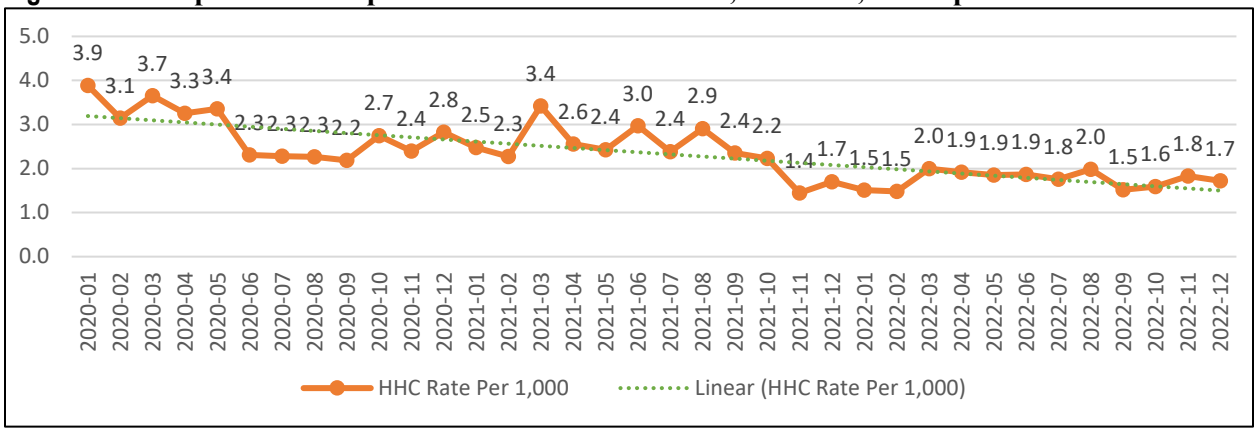
Data Source: Hennepin Health Data Warehouse

Figure 4. Hennepin Health Population SUD ED Visit Rates, All Plans, All Locations



Data Source: Hennepin Health Data Warehouse

Figure 5. Hennepin Health Population SUD ED Visit Rates, All Plans, Hennepin Healthcare



Data Source: Hennepin Health Data Warehouse

Recommendations and Next Steps

Hennepin Health reinvestment funding was secured to expand the Hennepin Healthcare SUD care model with the aim to prevent unnecessary hospitalization and commitments as well as improve links between patients and the SUD team with an enhanced emphasis on connection in the community setting. The model will consist of two pairs of Licensed Alcohol and Drug Counselors (LADCs) and peer support specialists. These teams will proactively identify Hennepin Health patients in the ED and hospital settings and provide patient directed services both on campus and following discharge to ensure successful patient transitions into the community. The project activities are outlined below.

- The continuity of care model would be multifaceted:
  - Guide patients and providers to utilize local detox centers for uncomplicated withdrawal syndromes to avoid unnecessary hospitalization and shorten ED lengths of stay.
  - Participate in early commitment conversations to steer willing SUD candidates to patient selected treatment options.
  - Engage with inpatient and outpatient treatment centers to coordinate safe and successful patient transitions back into the community, addressing patient specific needs (i.e., housing, transportation)
  - Actively attempt to reach out to patients who leave the ED or hospital prior to meeting with the SUD team to invite them into services.

- Patient support would be provided 7 days per week, including staggered hours to cover some evening hours.
  - This would shorten the length of stay in the ED as it is a common occurrence for patients to present to the ED on the weekend and be kept there until the Hennepin Healthcare LADC staff can assist with placement on Monday morning.

- Patients would be met in the ED or inpatient areas through an established workflow that identifies patients in real time following admission. If patients choose to engage with services following discharge, an individually tailored, patient directed plan would be developed and executed in the community.

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