# Improving Discharge Follow-up Post-Hospitalization for Mental Health or Substance Use at a Certified Community Behavioral Health Center (CCBHC)

Samantha Reis, BSN, RN

Oregon Health and Science University School of Nursing

NURS 703B: DNP Project Planning

Spring Term, 2025

Submitted to Molly Goddard, DNP, PMHNP-BC

This paper is submitted in partial fulfillment of the requirements for the Doctor of Nursing Practice

degree.

# **Table of Contents**

Abstract	2
Introduction	3
Problem Description	3
Available Knowledge	4
Rationale	5
Specific Aims	5
Methods	5
Context	5
Intervention	6
Study of the Intervention	7
Measures	7
Analysis	
Ethical Considerations	8
Results	
Discussion	
Summary	10
Interpretation	11
Limitations	11
Conclusions	12
References	13
Appendices	17
Appendix A: QI Project Timeline in PDSA Cycle Format	17
Appendix B: Baseline CCBHC Successful 7-Day Follow-Up Outcomes	
Appendix C: Baseline CCBHC 30-Day Readmission Rates	19
Appendix D: Finalized Template for Nursing Follow-Up	

#### Abstract

**Background:** Inability to promptly receive outpatient psychiatric services post-discharge for patients recently hospitalized for mental health is associated with an elevated risk of suicide and readmission to acute settings (Goldman-Mellor et al., 2019; Wang et al., 2019).

**Methods and Intervention:** This quality improvement project conducted at a Certified Community Behavioral Health Center (CCBHC) sought to increase the rate of 7-day follow-up appointments and decrease the rate of 30-day readmission for recently discharged patients by designing a nurse-led appointment to address limited provider availability.

**Intervention:** This nursing appointment planned to bridge the gap by addressing discharge instructions, medication reconciliation, patient education, and safety plans until patients can be seen by their provider. **Results:** The project faced significant hindrances to full implementation, including staffing shortages and an impending transition to a new electronic health record (EHR) system, which limited collection of post-intervention data. However, the collected baseline data necessitates a recommendation for further follow-up and implementation to determine if improvements can be made in primary outcomes.

**Conclusion:** Accomplishments include formalization of the appropriate billing code for the nursing service, as well as a template to be used for necessary documentation required for billing purposes. Future work should focus on addressing these barriers and re-evaluating the effectiveness of the intervention in improving follow-up rates and reducing re-hospitalization.

Keywords: CCBHC, psychiatric hospitalization, nursing appointment, readmission, follow up

#### Introduction

## **Problem Description**

Lack of timely follow up (F/U) with outpatient services for patients who discharge after psychiatric hospitalization related to suicide attempts, mental health (MH) diagnoses, or substance use places patients at elevated risk of suicide (Chung et al., 2019). Research suggests the risk of suicide within 7 days of discharge is 300 times that of the general public (Chung et al., 2019). Most suicide attempts occur within 3 months of discharge, at a rate nearly 15 times higher than the general public, and this elevated risk remains high for the following 12 months, representing a dire need for swift connection to MH services (Chung et al., 2017; Chung et al., 2019; Goldman-Mellor, et al., 2019). Many barriers exist when it comes to establishing outpatient behavioral health care, and unfortunately, almost a third of high-risk patients do not follow up with a provider within 30 days of facility discharge (Chung et al., 2019). The National Action Alliance for Suicide Prevention created best practice guidelines that recommends following up with recently discharged patients within 24 to 72 hours or, at the latest, within 7 days (2019). In an effort to decrease the national rate of death by suicide, the Substance Abuse and Mental Health Services Administration (SAMHSA) created criteria to ensure that Certified Community Behavioral Health Centers (CCBHCs) are focusing on adequate F/U when patients step down from inpatient settings. Requirements for CCBHCs include tracking F/U with patients after behavioral health hospitalization or emergency department (ED) visits, as well as tracking acute readmissions and ED visits within 7 days and 30 days of discharge (National Committee for Quality Assurance [NCQA], 2019; SAMHSA, 2024).

A local CCBHC in a rural county of the Pacific Northwest has a total of six psychiatric providers, three of whom only work more than one day per week. This CCBHC serves an estimated 6,000 clients across the lifespan annually and is located in a city with only 13,000 residents. The facility tracks the measures previously mentioned, and over the past year has a success rate of F/Us within 7 days 45.9% of the time, and approximately 67% of patients at this CCBHC were readmitted or revisited the ED for MH

or SUD exacerbations. Unfortunately, many barriers exist for this facility, particularly lack of availability in providers' schedules, as well as limited behavioral health services due to its rural location.

#### Available Knowledge

Approximately 10% of patients discharged after a suicide attempt make an additional attempt within 5 days (Inagaki et al., 2019). Evidence indicates that MH symptoms upon admission remain unchanged in the 6 weeks post-discharge, demonstrating need for appropriate treatment (Chung et al., 2017; Goldman-Mellor et al., 2019; Mao et al., 2023; Wang et al., 2019). Unplanned psychiatric readmissions are estimated to be close to 16% for 30-days post-discharge (Muhammad et al., 2023). Therefore, preventing readmission and suicide attempts are of utmost importance in this high-risk population, with a small window of time that allows for crucial care coordination. In 2022, data from the NCQA reports that 48% of adults with private insurance followed up with their MH provider within 7 days of discharge, as compared to 36.6% with Medicaid, and 29% with Medicare (NCQA, 2022). Research suggests that F/U with an outpatient provider within 7 days of discharge is associated with increased adherence to medication regimens, higher utilization of outpatient MH services, lower rates of readmission, and most importantly, a lower risk of suicide (Beadles et al., 2014; Che et al., 2023). In another study, patients who made contact with and attended an appointment with their community MH provider after discharge were re-hospitalized at a rate of 22%, in comparison to 40% of patients who did not attend their appointments (Grinshpoon et al., 2011).

A variety of methods for increasing attendance for F/U appointments in patients post-discharge has been studied. A meta-analysis examined various interventions for improving 6-month F/U, including case management, telephone calls, letters, and postcard reminders, all of which appeared to have a lasting effect on decreasing risk for suicide attempts and increasing attendance of appointments (Inagaki et al., 2019). Another study examined a postcard intervention, which was correlated with decreased suicide attempts and readmissions 5 years after the intervention was complete (Carter et al., 2018). Another intervention that attempted to bridge the gap between discharge and outpatient F/U for patients who were readmitted for SUDs had a care coordinator discuss the reason for readmission, barriers to engaging in

community care, strategies for medication adherence, and safety planning (Hutchinson et al., 2019). The biggest precipitator for readmission cited by patients was medication adherence, and nearly 70% of the patients did not have a scheduled outpatient appointment with their established provider (Hutchinson et al., 2019). There is a paucity of current research on nurse-led F/Us in relation to discharge from hospitalization.

## Rationale

The Model for Improvement (MFI) created by the Institute for Healthcare Improvement (IHI) was used as the framework for this quality improvement (QI) project (Institute for Health Care Improvement, 2017). The IHI MFI has been scientifically studied and utilized in a wide variety of health care settings with the purpose of QI with significant success for change (Picarello, 2018; Langley et al., 2009). Additionally, Plan-Do-Study-Act (PDSA) cycles are often used in tandem with the IHI MFI to successfully enact change in health care (Picarello, 2018). A review of the current literature and root cause analysis identified that timely F/U for patients recently discharged from acute care settings for MH is lacking significantly. Only 50% of the providers available more than one day a week is a limiting barrier for scheduling F/Us, and there are no current strategies to mitigate or resolve this gap in care, which is concerning given the increased risk for repeat suicide attempts and readmission post-discharge.

## **Specific Aims**

Following the IHI MFI framework, it is our aim that by January 1, 2025, 75% of patients will attend a F/U within 7 days. This in turn will decrease the rate of re-hospitalization or ED visits for suicide attempts, SUD, MH exacerbations to a rate of 40%. The rate of F/Us will increase by having a nurse act as a liaison to complete intermediate F/Us to bridge the gap in care.

#### Methods

## Context

The project took place at a CCBHC that serves a county in Oregon of approximately 53,000 people (US Census, 2022). The most recent report of its patient demographics is taken from the 2015 Oregon Health Authority's (OHA) behavioral health profile. Of the Medicaid population in youth ages 12

to 17 years old, 39.2% had a MH disorder and 7.5% had a SUD (state 33.9% and 7.5%, respectively) (OHA, 2016). State and county averages are similar for the rate of SUDs in adults (OHA, 2016). Approximately 31% of adults served in this county had a mild to moderate MH illness (state 27.6%), whereas 11% had a serious persistent mental illness (SPMI) (state 14%) (OHA, 2015). The average patient age is approximately 40 years old (OHA, 2016). Services offered by the CCBHC include crisis intervention, psychiatric medication management, psychotherapy and group therapy, case management, addiction services, residential treatment programs, as well as wraparound services for youth and families.

Only 3 of 6 licensed psychiatric prescribers at this CCBHC are available more than one day per week for appointments with patients, leading to decreased access for patients. When Medicaid or Medicare patients who are seen at the CCBHC for medication management are hospitalized or go to the ED, this is documented via a daily report that is pulled using Collective Medical software that tracks care utilization of Medicaid and Medicare patients at surrounding facilities in Oregon and Washington. Once the CCBHC is alerted that a patient has been hospitalized, medical assistants (MAs) begin calling this patient to schedule a F/U appointment with their medical prescriber to reconcile medications, go over discharge instructions, and schedule additional services as relevant.

In total for the fiscal year (FY) of 2023, 68 CCBHC patients were hospitalized for a MH disorder or SUD, which led to a total of 148 events of inpatient or acute level utilizations of care. Of these 148 incidences, 68 were seen for F/U within 7 days (45.9%). Within 30 days of discharge from ED or inpatient, 67.6% of patients were readmitted to inpatient or returned to the ED for MH or substance use issues, meaning only 32.4% were not readmitted.

## Interventions

Once the CCBHC is alerted that a patient has been hospitalized or evaluated in the ED, MAs and nurses review Care Everywhere to get additional data and look at chart notes, and MAs begin calling the patient to schedule a follow-up appointment with their medical prescriber. If a patient cannot be scheduled to see their provider within 7 days of discharge due to limited provider availability, they will be scheduled with a registered nurse (RN) for a phone appointment in addition to the appointment with their

provider. The nursing appointment intends to address discharge instructions, medication changes, safety plan, and barriers to attending the outpatient follow up with their provider. The RN will remind the patient of their upcoming appointment with their provider at the end of the phone call. If the patient cannot be reached for scheduling, they will be called three times within 72 hours of discharge, again 1 week later, and again 2 weeks later. All documentation will be charted appropriately in a nursing-specific note that addresses all patient care and concerns and billed via a correct billing code. The daily report will continue to track readmissions and hospitalizations for all patients. This intervention will run from September 1st, 2024, through January 1st, 2025, with the first round of data analysis occurring on October 1st, 2024.

#### **Study of the Interventions**

The study of this intervention will include monitoring of the reports pulled by staff and the compliance specialist that detail patient hospitalizations and ED visits. Monitoring will also include evaluation of whether the phone calls with the nurse occurred, inability to make contact, and if the patients attended their appointment with their prescribing provider. An analysis will be conducted to determine if data post intervention indicates improvement as compared to baseline data. Any qualitative data in the form of observations of barriers or facilitators will be described in a narrative fashion.

## Measures

Baseline data will be evaluated from the month of September 2024 prior to intervention. The first primary outcome is the percentage of patients who followed up with a nurse or their provider within 7 days of discharge. The second primary outcome measure includes the percentage of patients who were readmitted within 30 days. These measures will allow for determination if the nursing F/U is associated with decreased rehospitalization, and if the intervention helps bridge the gap for F/U. Process measures for this project will be the number of patients who complete the F/U with the RN, the number of patients who become lost to F/U, and the number of times patients were contacted. Balancing measures for the project include several concerns. Firstly, there may be increased burden on the staff calling patients to get

them either scheduled with their provider or the nurse. Secondly, only one RN is assigned to the implementation of this project, which may detract significant time away from other nursing duties.

#### Analysis

Quantitative data obtained on targeted outcomes are reported utilizing basic descriptive statistics. Bar graphs are utilized to display the baseline data surrounding outcomes prior to intervention as planned. Additional qualitative data will be reported in a narrative and descriptive fashion based on interviews with stakeholders in the CCBHC as well as observations of barriers.

#### **Ethical Considerations**

This QI project was reviewed by OHSU's Institutional Review Board to confirm its non-research status (Project ID STUDY00027643). Additionally, a letter in support of this intervention was obtained from the project champion at the intervention site. Ethical considerations include the general risk of others seeing patient health information (PHI) before it is able to be de-identified. This will be mitigated by a secure data management strategy with password protected spreadsheets. Distress for MAs and nursing may be experienced if the project interferes with regular job duties. Though this intervention is intended to create a bridge to accessing care, some patients may experience frustration over speaking to a nurse instead of the provider known to them, particularly when disclosing sensitive details, so a trauma-informed approach is necessary.

## Results

Only one full PDSA cycle was completed over the course of this project as a result of several barriers (see **Appendix A** for visualization of timeline in PDSA format). In the "Plan" phase, baseline data on the primary outcomes of 7-day F/U rates and readmission rates in September 2024 were calculated via the monthly patient report summary that is sent out by the clinic's compliance specialist. Prior to intervention, the result of the rate of the 7-day post hospitalization F/U metric was 51.2%, whereas the 30-day re-admission rate resulted as 79.1%. In the month of September, a total of 4 patients were hospitalized, 2 were seen within 7 days, and all 4 were readmitted to the hospital. These numbers were added to the FY totals, which resulted as 31 patients hospitalized overall, but 44 occurrences of

hospitalization, meaning the same patients were hospitalized multiple times. Additionally, building a theoretical framework for a service note that met all of the Medicaid billing requirements for a post-discharge nurse-led F/U became an important focus. Another factor to consider was the upcoming transition of the electronic health record (EHR) system from Credible to Epic, projected for June 2025, which added complexity as the new system will require adjustments to workflows and documentation.

As for the "Do" phase, the implementation was delayed when the sole RN responsible for executing the F/U appointments resigned, which prevented the initiative from progressing in terms of direct patient care. Her final day at the CCBHC was November 1<sup>st</sup>, 2024. Hiring efforts were complicated by the findings that the necessary billing code for the service required an RN rather than a Licensed Practical Nurse (LPN) due to limitations in scope. A key stakeholder involved in the hiring process expressed that the requirement of a RN in a rural area further limited the pool of applicants, as they perceived that the number of RNs interested in working in community MH was limited due to more competitive pay at urban facilities, as well as a high level of burnout.

In the "Study" phase of the PDSA cycle, the CCBHC's billing team was consulted to identify the appropriate billing code for a nurse-led F/U, which was found to be code H2010, which is designated as a "comprehensive medication service for 15 minutes of time" (Oregon Health Authority, n.d.). By OHA's definition, it is a service delivered by a licensed RN or Qualified Mental Health Professional (QMHP) related to the prescribing, dispensing, administration, and management of medications for patients with chronic health conditions. Goals of the service are to help improve medication adherence, enhance patient understanding of medication management, reduce medication errors, and optimize therapeutic outcomes (OHA, n.d.). Additionally, any labs reviewed that are related to medications (e.g. antipsychotic lab monitoring) should be documented. Teaching and visual aids, including written materials, that the nurse may use for education with the patient should be documented to demonstrate the educational purpose behind this F/U with a RN. F/U plans and goals agreed upon by the patient and nurse should also be written in detail in the service. All of these variables needed to be addressed in the note for billing

purposes. Baseline data was taken from September 2024 and compared to national averages of readmissions and 7-day F/Us (see bar graphs in **Appendices B and C**).

Because the plan could not be fully implemented due to staffing shortages and the impending EHR transition, the baseline data on F/U and readmission rates were used to assess the starting point of the initiative. Consequently, data was unable to be captured surrounding process measures, balancing measures, and primary outcomes post-intervention. Additional training sessions and corresponding PDSA cycles were considered but ultimately not possible as dictated by time allowed. For further actions, the replacement RN will need to be briefed and trained on processes, including the use of the service note template for Medicaid billing purposes. Once the EHR transition from Credible to Epic is complete in June 2025, a "dot phrase" for the service note template will be created to streamline documentation and ensure consistency across the Epic system, hopefully contributing to greater ease of use. The team will revisit the plan and begin initiating the process of evaluating the success of the nursing appointments to determine the impact on F/U rates and readmissions.

## Discussion

#### Summary

This QI project aimed to increase the rate of 7-day F/Us and decrease the rate of rehospitalization with a novel nursing-led F/U appointment that bridges the gap for patients when provider schedules are limited. The specific aims sought to have 75% of recently discharged patients attend a F/U within 7 days and reduce re-hospitalization to 40%. However, study of the intervention was reduced to qualitative interpretations as a result of barriers that prevented intervention implementation, and the project shifted toward meeting the needs of the CCBHC. As a result, data is incomplete in terms of measuring the success or failure of specific aims of the project, aside from brief quantitative baseline data. The project also elucidated the appropriate billing code for this unique nursing-led appointment (CPT code H2010, which is designated as a "comprehensive medication service for 15 minutes of time.") Additionally, a template attached to this billing code (with the intent of being built into the CCBHC's current EHR) was created with all of the necessary requirements documented (**Appendix D**). However, the CCBHC's impending EHR transition reduced the template's utility to a future plan of a "dot phrase." **Interpretation** 

Baseline data underscores a continued need for further work on this project, as prior to intervention in September 2024, the CCBHC's rate of successful 7-day F/U was 51.2%. In comparison to national statistics, the CCBHC had a higher rate of 7-day F/U in comparison to the national average for patients with Medicaid (36.6%) (NCQA, 2022), which falls short of the set goal of 75%. Pre-intervention data shows that the CCBHC's 30-day readmission rate was a staggering 79.1%, whereas the national average for psychiatric readmission within 30 days of discharge is estimated at 16% (Muhammad et al., 2023). The CCBHC's 30-day readmission rate is 5 times that of the national average and therefore warrants increased attention and intervention. As previously mentioned, benefits such as increased adherence and understanding of medication regimens, higher utilization of other behavioral services, lower rate of suicide attempts, and a decreased rate of readmission is linked to F/Us within 7 days of discharge (Beadles et al., 2014; Che et al., 2023).

Additionally, feasibility of the intervention is unknown. While the CCBHC's current processes will be integrated with the intervention, there is a small number of staff to facilitate these procedures. This protocol also requires the RN to complete chart review ahead of time in addition to conducting these appointments, and it is unclear how much time this may detract from other nursing duties, which may be particularly impactful as there is only one RN with many responsibilities. Further, the CCBHC is already impacted by difficulties with staff retention, leading to high turnover and burnout. A further complicating factor is the upcoming burden on staff of learning a new EHR system, which may further hinder the speed with which this patient-centered intervention can be initiated.

## Limitations

The CCBHC's small number of patients hospitalized may skew results surrounding rates of readmissions and hospitalizations overall. Additionally, within the data set, a small number of patients are responsible for multiple re-admissions, leading to questions about severity of mental illness in this

population, which may explain the CCBHC's significantly higher-than-average rate of readmission within 30 days of discharge. When looking at baseline data, it is challenging to elucidate the reason behind an improved F/U rate in September 2024 (51.2%) as compared to FY 2023 (45.9%) (**Appendix B**), as no apparent changes have occurred in clinic processes other than possible fluctuating provider schedules. Despite a paucity of research on nurse-led interventions for patients discharged after psychiatric hospitalization, this project may provide valuable insight into sustainable methods for increasing F/U rates, particularly for MH clinics that receive SAMHSA funding that are required to track these outcomes regardless. If results are positive once further PDSA cycles are conducted, this could be generalizable to other outpatient settings.

#### Conclusions

According to the National Institute of Mental Health, suicide has risen to the top 3 causes of death for individuals between the ages of 10 and 34 years old (2025). For patients recently discharged from psychiatric hospitalization, the inability to F/U with MH services within 1 week of discharge places them at increased risk of psychiatric readmissions and suicide (Beadles et al., 2014; Che et al., 2023; Grinshpoon et al., 2011). A major barrier to swift F/U includes lack of provider availability for urgent scheduling. No current literature exists on nurse-led appointments with the intent of providing coverage when provider schedules do not allow for 7-day F/Us. This QI project was unable to obtain data on the feasibility or success of this intervention due to the CCBHC's short staffing, an impending EHR transition, and lack of time. The project accomplished identification of billing code H2010 for the service and created an appropriate template to be used for documentation of these appointments. Future directions for the project consist of training MAs and the newly hired RN, understanding the time burden of this intervention by surveying staff, and studying the implementation to determine if it improves primary outcomes. This intervention may be a feasible alternative solution to CCBHCs who are struggling with provider availability, but more data is needed.

#### References

- Carter, G. L., Clover, K., Whyte, I. M., Dawson, A. H., & D'Este, C. (2018). Postcards from the EDge: 5year outcomes of a randomized controlled trial for hospital-treated self-poisoning. *British Journal* of Psychiatry, 202(5), 372–380. doi:10.1192/bjp.bp.112.112664
- Che, S.E., Gwon Y.G., & Kim K. (2023). Follow-up Timing After Discharge and Suicide Risk Among Patients Hospitalized with Psychiatric Illness. *JAMA Network Open 6(10)*: e2336767. doi:10.1001/jamanetworkopen.2023.36767
- Chung, D., Hadzi-Pavlovic, D., Wang, M., Swaraj, S., Olfson, M., & Large, M. (2019). Meta-analysis of suicide rates in the first week and the first month after psychiatric hospitalization. *BMJ Open*, 9(3). https://doi.org/10.1136/bmjopen-2018-023883
- Chung, D. T., Ryan, C. J., Hadzi-Pavlovic, D., Singh, S. P., Stanton, C., & Large, M. M. (2017). Suicide Rates After Discharge from Psychiatric Facilities: A Systematic Review and Meta-analysis. *JAMA Psychiatry*, 74(7), 694–702. <u>https://doi.org/10.1001/jamapsychiatry.2017.1044</u>
- Falcone, G., Nardella, A., Lamis, D. A., Erbuto, D., Girardi, P., & Pompili, M. (2017). Taking care of suicidal patients with new technologies and reaching-out means in the post-discharge period. *World journal of psychiatry*, 7(3), 163–176. https://doi.org/10.5498/wjp.v7.i3.163
- Ghanbari, B., Malakouti, S. K., Nojomi, M., Alavi, K., & Khaleghparast, S. (2015). Suicide Prevention and Follow-Up Services: A Narrative Review. *Global journal of health science*, 8(5), 145–153. https://doi.org/10.5539/gjhs.v8n5p145
- Goldman-Mellor, S., Olfson, M., Lidon-Moyano, C., & Schoenbaum, M. (2019). Association of Suicide and Other Mortality With Emergency Department Presentation. JAMA Network Open, 2(12), e1917571. <u>https://doi.org/10.1001/jamanetworkopen.2019.17571</u>

- Grinshpoon, A., Lerner, Y., Hornik-Lurie, T., Zilber, N., & Ponizovsky, A. M. (2011). Post-discharge contact with mental health clinics and psychiatric readmission: a 6-month follow-up study. The Israel journal of psychiatry and related sciences, 48(4), 262–267.
- Hermer, L., Nephew, T., & Southwell, K. (2022). Follow-up Psychiatric Care and Risk of Readmission in Patients with Serious Mental Illness in State Funded or Operated Facilities. *The Psychiatric quarterly*, 93(2), 499–511. <u>https://doi.org/10.1007/s11126-021-09957-0</u>
- Hutchison, S. L., Flanagan, J. V., Karpov, I., Elliott, L., Holsinger, B., Edwards, J., & Loveland, D.
  (2019). Care Management Intervention to Decrease Psychiatric and Substance Use Disorder
  Readmissions in Medicaid-Enrolled Adults. *The journal of behavioral health services & research*, 46(3), 533–543. https://doi.org/10.1007/s11414-018-9614-y
- Inagaki, M., Kawashima, Y., Yonemoto, N. *et al.* (2019). Active contact and follow-up interventions to prevent repeat suicide attempts during high-risk periods among patients admitted to emergency departments for suicidal behavior: a systematic review and meta-analysis. *BMC Psychiatry 19*, 44. <u>https://doi.org/10.1186/s12888-019-2017-7</u>

Institute for Healthcare Improvement (IHI). (2017). *How to improve: Model for improvement*. Retrieved May 26, 2024, from https://www.ihi.org/resources/Pages/HowtoImprove/ScienceofImprovementHowtoImprove.aspx

Langley GL, Moen R, Nolan KM, Nolan TW, Norman CL, Provost LP. The Improvement Guide: A Practical Approach to Enhancing Organizational Performance (2nd Edition). San Francisco: Jossey-Bass Publishers; 2009.

- Mao, W., Shalaby, R., Owusu, E., Elgendy, H., Shalaby, N., Agyapong, B., Nichols, A., Eboreime, E., Nkire, N., & Agyapong, V. I. O. (2023). Status after Hospital Discharge: An Observational Study of the Progression of Patients' Mental Health Symptoms Six Weeks after Hospital Discharge. *Journal of clinical medicine*, *12*(24), 7559. <u>https://doi.org/10.3390/jcm12247559</u>
- Maoz, H., Sabbag, R., Mendlovic, S., Krieger, I., Shefet, D., & Lurie, I. (2024). Long-term efficacy of a continuity-of-care treatment model for patients with severe mental illness who transition from inpatient to out-patient services. *The British journal of psychiatry : the journal of mental science*, 224(4), 122–126. https://doi.org/10.1192/bjp.2024.9
- Muhammad, N., Talpur, S., Sangroula, N., & Washdave, F. (2023). Independent Predictors of 30-Day Readmission to Acute Psychiatric Wards in Patients With Mental Disorders: A Systematic Review and Meta-Analysis. *Cureus*, 15(7), e42490. <u>https://doi.org/10.7759/cureus.42490</u>
- National Institute of Mental Health. (2025). *Suicide*. National Institute of Mental Health. <u>https://www.nimh.nih.gov/health/statistics/suicide</u>
- Oregon Health Authority. (2016). County Behavioral Health Profile, 2015. Oregon Health Authority: Behavioral Health Mapping. <u>https://www.oregon.gov/oha/hsd/amh/pages/bh-mapping.aspx</u>
- Oregon Health Authority. (N.d.) Oregon Health Plan mental health Medicaid procedure codes and reimbursement rates for services provided on or after 01/01/07. https://www.oregon.gov/oha/HSD/OHP/DataReportsDocs/January%202007%20Mental%20Health %20Fee%20Schedule.pdf
- National Action Alliance for Suicide Prevention. (2019). *Best practices in care transitions for individuals with suicide risk: Inpatient care to outpatient care.* Washington, DC: Education Development Center, Inc.

National Committee for Quality Assurance (NCQA). Follow-up after hospitalization for mental illness: HEDIS measures and technical resources. Accessed April 10, 2024.

https://www.ncqa.org/hedis/measures/follow-up-after-hospitalization-for-mental-illness/

- Picarillo, A. P. (2018). Introduction to quality improvement tools for the clinician. *Journal of Perinatology*, 38(7), 929–935. https://doi.org/10.1038/s41372-018-0100-4
- Substance Abuse and Mental Health Services Administration. Certified Community Behavioral Health Center (CCBHC) Certification Criteria. Published February 2023. Accessed April 10, 2024 at https://www.samhsa.gov/sites/default/files/ccbhc-criteria-2023.pdf
- United States Census Bureau. (2022). Population and People in Columbia County, Oregon. https://data.census.gov/profile/Columbia\_County,\_Oregon?g=050XX00US41009
- Wang, M., Swaraj, S., Chung, D., Stanton, C., Kapur, N., & Large, M. (2019). Meta-analysis of suicide rates among people discharged from non-psychiatric settings after presentation with suicidal thoughts or behaviours. *Acta psychiatrica Scandinavica*, 139(5), 472–483. <u>https://doi.org/10.1111/acps.13023</u>
- Wong, B. H., Chu, P., Calaminus, P., Lavelle, C., Refaat, R., & Ougrin, D. (2024). Association between continuity of care and attendance of post-discharge follow-up after psychiatric emergency presentation. *Npj mental health research*, 3(1), 5. https://doi.org/10.1038/s44184-023-00052-9

## Appendix A

## **QI Project Timeline in PDSA Cycle Format**

# Plan-Do-Study-Act Cycle

#### PLAN

- **Goal:** Increase followups, decrease readmissions
- Develop nursing appointment plan
- Collect baseline data
  Determine appropriate
- billing/CPT codes
  Create service note
- template draft • Barrier: Impending
- transition from Credible EHR to Epic

July 2024 to September 2024

- DO
  RN resignation delays full implementation
  Research billing
- codes for nurse-led appt • Meet with Billing Dept
- Meet with Billing Dept for guidancePresent note to
- Present note to medical director for edits
  Barrier: Epic
- transition; difficulty hiring an RN versus LPN

October 2024 to November 2024 STUDY Evaluate progress based on barriers and knowledge that Epic transition begins June 2025

- Compare national data to CCBHC's baseline data to determine need
- Finalize billing code (H2010)
- Analyze service note to ensure it aligns with billing requirements and present to billing
   Evaluate barriers and
- Evaluate barriers and timeframe for hiring and training new nurse

December 2024

## ACT

- Train new RN and personnel on processes
- Integrate new service note and test billing
- Utilize a "dot phrase" in Epic for service
- template • Begin implementation of direct patient care w/ system

#### January 2025

# Appendix **B**

## Baseline CCBHC Successful 7-Day Follow-Up Outcomes in Comparison to the National Average



CCBHC successful follow-up outcomes in comparison to national average

# Appendix C

Baseline CCBHC 30-Day Readmissions in Comparison to the National Average



Rate of Readmissions within 30 Days of Discharge

CCBHC rate of readmission as compared to national average

## **Appendix D**

## **Finalized Template for Nursing Follow-Up**

The patient is seen for a nursing follow up post-hospitalization to address discharge instructions, changes to medication regimens, safety, and patient education. They were discharged from X facility on X/X/202X after hospitalization for X (suicide attempt, self-harm, suicidal ideation, substance use, etc).

The patient was hospitalized for the following dates:

Changes to medical history:

Changes to psychiatric history (new diagnoses, suicide attempt, self harm, etc):

Changes to social or legal history:

Data reviewed: -Chart notes from X facility -After visit summary -Labs

Current medications:

Medications that require lab monitoring, if applicable:

Lab results:

Next labs due:

Medication education:

-Discussed potential side effects, purpose, dosing, and timing for the following prescribed medications:

-Demonstration of proper administration of injectable medication provided for the following prescribed medication, if applicable:

-Written materials or visual aids provided, if applicable:

Patient questions and concerns that were addressed outside of med adherence:

Follow-up appointments scheduled with provider:

Safety plan: Provided facility crisis line information. Discussed follow-up with therapist and/or referral was provided (include date appointment scheduled if applicable).

#### References

- Carter, G. L., Clover, K., Whyte, I. M., Dawson, A. H., & D'Este, C. (2018). Postcards from the EDge: 5year outcomes of a randomised controlled trial for hospital-treated self-poisoning. *British Journal* of Psychiatry, 202(5), 372–380. doi:10.1192/bjp.bp.112.112664
- Che, S.E., Gwon Y.G., & Kim K. (2023). Follow-up Timing After Discharge and Suicide Risk Among Patients Hospitalized with Psychiatric Illness. *JAMA Network Open 6*(10): e2336767. doi:10.1001/jamanetworkopen.2023.36767
- Chung, D., Hadzi-Pavlovic, D., Wang, M., Swaraj, S., Olfson, M., & Large, M. (2019). Meta-analysis of suicide rates in the first week and the first month after psychiatric hospitalization. *BMJ Open*, 9(3). https://doi.org/10.1136/bmjopen-2018-023883
- Chung, D. T., Ryan, C. J., Hadzi-Pavlovic, D., Singh, S. P., Stanton, C., & Large, M. M. (2017). Suicide Rates After Discharge from Psychiatric Facilities: A Systematic Review and Meta-analysis. *JAMA Psychiatry*, 74(7), 694–702. <u>https://doi.org/10.1001/jamapsychiatry.2017.1044</u>
- Falcone, G., Nardella, A., Lamis, D. A., Erbuto, D., Girardi, P., & Pompili, M. (2017). Taking care of suicidal patients with new technologies and reaching-out means in the postdischarge period. *World journal of psychiatry*, 7(3), 163–176. https://doi.org/10.5498/wjp.v7.i3.163
- Ghanbari, B., Malakouti, S. K., Nojomi, M., Alavi, K., & Khaleghparast, S. (2015). Suicide Prevention and Follow-Up Services: A Narrative Review. *Global journal of health science*, 8(5), 145–153. https://doi.org/10.5539/gjhs.v8n5p145

- Goldman-Mellor, S., Olfson, M., Lidon-Moyano, C., & Schoenbaum, M. (2019). Association of Suicide and Other Mortality With Emergency Department Presentation. *JAMA Network Open*, 2(12), e1917571. <u>https://doi.org/10.1001/jamanetworkopen.2019.17571</u>
- Grinshpoon, A., Lerner, Y., Hornik-Lurie, T., Zilber, N., & Ponizovsky, A. M. (2011). Post-discharge contact with mental health clinics and psychiatric readmission: a 6-month follow-up study. The Israel journal of psychiatry and related sciences, 48(4), 262–267.
- Hermer, L., Nephew, T., & Southwell, K. (2022). Follow-up Psychiatric Care and Risk of Readmission in Patients with Serious Mental Illness in State Funded or Operated Facilities. *The Psychiatric quarterly*, 93(2), 499–511. <u>https://doi.org/10.1007/s11126-021-09957-0</u>
- Hutchison, S. L., Flanagan, J. V., Karpov, I., Elliott, L., Holsinger, B., Edwards, J., & Loveland, D.
  (2019). Care Management Intervention to Decrease Psychiatric and Substance Use Disorder
  Readmissions in Medicaid-Enrolled Adults. *The journal of behavioral health services & research*, 46(3), 533–543. https://doi.org/10.1007/s11414-018-9614-y
- Inagaki, M., Kawashima, Y., Yonemoto, N. *et al.* (2019). Active contact and follow-up interventions to prevent repeat suicide attempts during high-risk periods among patients admitted to emergency departments for suicidal behavior: a systematic review and meta-analysis. *BMC Psychiatry 19*, 44. <u>https://doi.org/10.1186/s12888-019-2017-7</u>
- Institute for Healthcare Improvement (IHI). (2017). *How to improve: Model for improvement*. Retrieved May 26, 2024, from https://www.ihi.org/resources/Pages/HowtoImprove/ScienceofImprovementHowtoImprove.aspx

- Langley GL, Moen R, Nolan KM, Nolan TW, Norman CL, Provost LP. The Improvement Guide: A Practical Approach to Enhancing Organizational Performance (2nd Edition). San Francisco: Jossey-Bass Publishers; 2009.
- Mao, W., Shalaby, R., Owusu, E., Elgendy, H., Shalaby, N., Agyapong, B., Nichols, A., Eboreime, E., Nkire, N., & Agyapong, V. I. O. (2023). Status after Hospital Discharge: An Observational Study of the Progression of Patients' Mental Health Symptoms Six Weeks after Hospital Discharge. *Journal of clinical medicine*, *12*(24), 7559. <u>https://doi.org/10.3390/jcm12247559</u>
- Maoz, H., Sabbag, R., Mendlovic, S., Krieger, I., Shefet, D., & Lurie, I. (2024). Long-term efficacy of a continuity-of-care treatment model for patients with severe mental illness who transition from inpatient to out-patient services. *The British journal of psychiatry : the journal of mental science*, 224(4), 122–126. https://doi.org/10.1192/bjp.2024.9
- Muhammad, N., Talpur, S., Sangroula, N., & Washdave, F. (2023). Independent Predictors of 30-Day Readmission to Acute Psychiatric Wards in Patients With Mental Disorders: A Systematic Review and Meta-Analysis. *Cureus*, 15(7), e42490. <u>https://doi.org/10.7759/cureus.42490</u>
- National Institute of Mental Health. (2025). *Suicide*. National Institute of Mental Health. https://www.nimh.nih.gov/health/statistics/suicide
- Oregon Health Authority. (2016). County Behavioral Health Profile, 2015. Oregon Health Authority: Behavioral Health Mapping. <u>https://www.oregon.gov/oha/hsd/amh/pages/bh-mapping.aspx</u>
- Oregon Health Authority. (N.d.) Oregon Health Plan mental health Medicaid procedure codes and reimbursement rates for services provided on or after 01/01/07. https://www.oregon.gov/oha/HSD/OHP/DataReportsDocs/January%202007%20Mental%20Health %20Fee%20Schedule.pdf

- National Action Alliance for Suicide Prevention. (2019). *Best practices in care transitions for individuals with suicide risk: Inpatient care to outpatient care.* Washington, DC: Education Development Center, Inc.
- National Committee for Quality Assurance (NCQA). Follow-up after hospitalization for mental illness: HEDIS measures and technical resources. Accessed April 10, 2024. https://www.ncqa.org/hedis/measures/follow-up-after-hospitalization-for-mental-illness/
- Picarillo, A. P. (2018). Introduction to quality improvement tools for the clinician. Journal of Perinatology, 38(7), 929–935. https://doi.org/10.1038/s41372-018-0100-4
- Substance Abuse and Mental Health Services Administration. Certified Community Behavioral Health Center (CCBHC) Certification Criteria. Published February 2023. Accessed April 10, 2024 at <u>https://www.samhsa.gov/sites/default/files/ccbhc-criteria-2023.pdf</u>
- United States Census Bureau. (2022). Population and People in Columbia County, Oregon. https://data.census.gov/profile/Columbia\_County,\_Oregon?g=050XX00US41009
- Wang, M., Swaraj, S., Chung, D., Stanton, C., Kapur, N., & Large, M. (2019). Meta-analysis of suicide rates among people discharged from non-psychiatric settings after presentation with suicidal thoughts or behaviours. *Acta psychiatrica Scandinavica*, 139(5), 472–483. <u>https://doi.org/10.1111/acps.13023</u>
- Wong, B. H., Chu, P., Calaminus, P., Lavelle, C., Refaat, R., & Ougrin, D. (2024). Association between continuity of care and attendance of post-discharge follow-up after psychiatric emergency presentation. *Npj mental health research*, 3(1), 5. https://doi.org/10.1038/s44184-023-00052-9