Research Data Brief

Facility and Client Characteristics Associated with Follow-Up After Discharge from an Inpatient Psychiatric Facility

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Key Findings

- On average, 28 percent of people discharged from an inpatient psychiatric facility received follow-up care within seven days, and half received follow-up care within 30 days.
- Inpatient psychiatric facilities operated by for-profit organizations and public agencies had lower rates of follow-up care than those operated by nonprofit organizations. Facilities that served a higher proportion of clients who were involuntarily committed also had lower rates of follow-up care.
- Rates of follow-up care did not vary by facility discharge practices; the availability of outpatient services; or the age, gender, racial, or ethnic composition of inpatient clients.

People discharged from inpatient psychiatric facilities (IPFs) require timely follow-up care to reach their recovery goals and prevent readmissions.[1] Several factors could influence the extent to which these people receive follow-up care, including the discharge practices of IPFs and the availability of outpatient services in the community. This study identified whether these factors were associated with the receipt of follow-up care for Medicare beneficiaries. The findings can inform strategies to target quality improvement to certain facilities and communities.

Methods

We merged 2018 National Mental Health Services Survey (N-MHSS) data[2] with 2018 Inpatient Psychiatric Facility Quality Reporting (IPFQR) program data.[3] The N-MHSS is an annual survey of every known specialty mental health treatment facility in the United States and its territories, including freestanding psychiatric hospitals and psychiatric units of general hospitals (n = 692 and 1066, respectively, in 2018). N-MHSS collects information on the services available from these facilities and their organizational characteristics. The IPFQR program assesses the quality of care for all freestanding psychiatric hospitals (including state hospitals) and psychiatric units of general hospitals that receive prospective Medicare payment (n = 1597 in 2018). This analysis included 468 freestanding psychiatric hospitals and 679 psychiatric units of general hospitals that we matched by address using the N-MHSS and IPFQR data, representing 72 percent of facilities in IPFQR.[6]

The IPFQR data include two measures relevant to this analysis. The first, Follow-up after Hospitalization for Mental Illness, reports the proportion of Medicare beneficiaries discharged from IPFs who received follow-up care from a mental health provider (psychiatrist, psychologist, psychiatric nurse, or social worker) within 7 and 30 days of discharge (FUH-7 and FUH-30, respectively).[4] The second, Timely Transmission of Transition Record, reports the proportion of patients discharged from the IPF for whom the facility transmitted a transition record to another facility, primary care provider, or other health care professional designated for follow-up care within 24 hours.[5] Each facility receives a single score for each measure. Higher scores indicate better performance. The Centers for Medicare & Medicaid Services calculates the FUH measures using Medicare data. As a result, our analysis of follow-up care is limited to Medicare beneficiaries. IPFs report the Timely Transmission of Transition Record measure using information from health records and other administrative data.

Findings

On average, 58 percent of patients had their records transmitted to the next provider within 24 hours of discharge based on the Timely Transmission of Transition Record measure performance (median = 68 percent; range 0 to 100 percent across IPFs). On average, 28 percent of Medicare beneficiaries discharged from IPFs received follow-up care within 7 days (median = 26 percent; range 0 to 81 percent across IPFs), and half received follow-up care within 30 days (median = 51 percent; range 6 to 96 percent across IPFs) (Figure 1).

We grouped IPFs based on their FUH-7 score: 0 to 19 (n = 253 IPFs) represented those at or below the 25th percentile, >19 to 35.7 (n = 507 IPFs) represented those from the 26th to the 75th percentile, and > 35.7 to 81.3 (n = 247 IPFs) represented those above the 75th percentile. We then used logistic regression to model the odds that the facility scored above the 75th percentile on the FUH-7 measure as a function of the IPF's discharge practices (including whether the facility conducts outcomes follow-up after discharge and their score on the Timely Transmission of Transition Record measure), the availability of outpatient services at the facility and in the county in which the IPF is located, other facility structural characteristics (for example, ownership, size, and so on), and the demographic characteristics of inpatient clients (see endnote 7 for all variables included in model).

The findings were consistent for the FUH-7 and FUH-30 measures, so we present only the FUH-7 findings for brevity. After controlling for other variables in the model, IPFs

operated by private for-profit organizations (odds ratio [OR]: 0.27; 95 percent confidence internal [CI]:0.15, 0.47) and public agencies (OR: 0.41; 95 percent CI:0.21,0.83) had lower odds of a high FUH-7 score than those operated by private nonprofit organizations (Figure 2). In addition, IPFs with a higher proportion of clients who were involuntarily committed (defined as more than 64 percent of clients, representing the 75th percentile of IPFs) had lower odds of a high FUH-7 score than those with a lower proportion of clients who were involuntarily committed (OR: 0.53; 95 percent CI: 0.31, 0.91). FUH-7 scores were not statistically associated with any other variables in the model. We implemented several different statistical models and conducted sensitivity analyses to confirm these findings.[8]

Discussion

Although about two-thirds of people discharged from IPFs have their record transmitted to the next provider within 24 hours, only about one-third of Medicare beneficiaries received follow-up care within a week and half of these beneficiaries received follow-up care within 30 days. These rates of follow-up care are slightly lower than rates found among Medicaid populations. For example, 39 percent of adult Medicaid beneficiaries received follow-up care within 7 days of a mental health hospitalization in 2018, and 58 percent received follow-up within 30 days.[9] Some IPFs had very high follow-up rates, however, and could serve as models to improve follow-up care at other facilities.

People discharged from IPFs operated by for-profit organizations and public agencies had lower rates of follow-up care than those discharged from IPFs operated by nonprofit organizations. This finding is consistent with the only other study that has examined the relationship between IPF characteristics and the FUH-7 and FUH-30 scores using data from IPFQR and the American Hospital Association Annual Survey.[10] There could be several reasons for this finding. Some studies have also found that nonprofit hospitals have stronger connections with other agencies in the community relative to for-profit hospitals,[11] which might facilitate follow-up care. Nonprofit hospitals also tend to be in communities with less poverty relative to for-profit hospitals.[12]

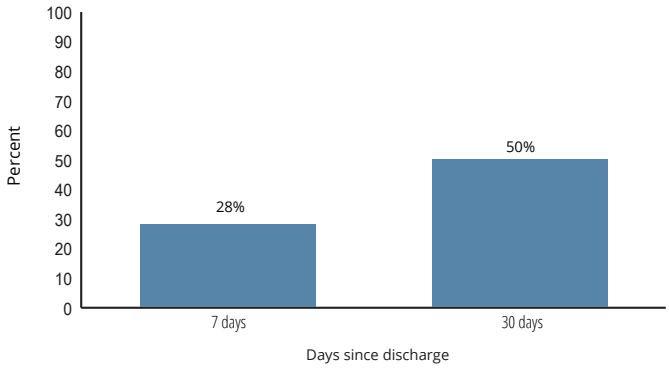
People who are involuntarily committed might have more severe conditions or other barriers to remaining engaged in care after their inpatient stay. IPFs that serve a high proportion of involuntarily committed clients might need to bolster discharge practices to identify and address these barriers before discharge. Programs such as Critical Time Intervention that incorporate systematic assessment of risk factors for treatment drop out (such as clients' motivation, past medication use, medical conditions, strength of their social network, housing stability, and life skills) have successfully improved continuation in treatment.[13]

None of the variables that directly measure IPF discharge practices—including whether the facility conducts outcomes follow-up after discharge, makes referrals electronically versus paper only, or transmits the discharge record to the next provider within 24 hours—was associated with performance on the FUH-7 or FUH-30 measures in our regression models. Previous research has found that people discharged for psychiatric conditions were more likely to have a follow-up appointment if the hospital communicated with an outpatient provider before their discharge, scheduled the follow-up appointment, and forwarded a discharge summary to the next provider.[14] The lack of consistent findings across studies could result from the use of different measures and the inability to measure the nuances of discharge practices with brief standardized questions. Finally, neither the co-location of outpatient services at the IPF nor the density of outpatient providers in the community were associated with follow-up rates. Although there was variation across IPFs in these characteristics, these variables do not measure the actual availability of services in the community (for example, the proportion of outpatient facilities accepting new clients or the wait time to an appointment). Performance on the FUH measures might also be influenced by factors the N-MHSS does not measure. The findings may also not be generalizable to populations that are not enrolled in Medicare.

IPFs that served a higher proportion of clients who were African American or Hispanic/Latino did not have systematically higher or lower follow-up rates. Past research found that FUH-30 scores (but not FUH-7 scores) were lower for IPFs in communities with a high proportion (more than 29.5 percent) of non-White residents.[10] That study, however, measured the characteristics of the community in which the IPF was located rather than the demographic characteristics of the clients served by IPFs, which could differ because IPFs often serve large geographic areas.

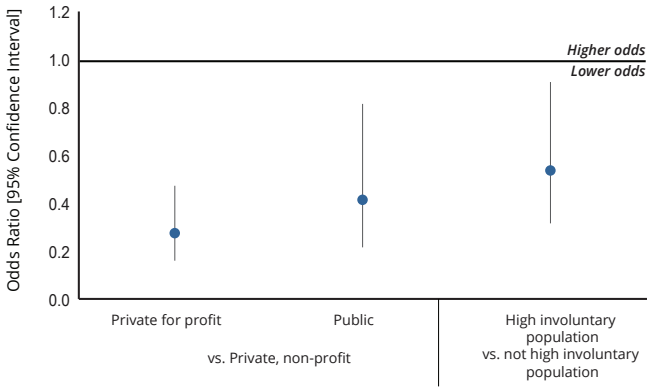
Efforts to improve engagement in follow-up care after discharge from an IPF could focus on IPFs operated by for-profit organizations and public agencies as well as those that serve a higher proportion of involuntarily committed clients. Further work to identify the characteristics of IPFs with high follow-up rates could identify models to replicate in communities with low follow-up rates.

Figure 1. Average IPF performance on 7- and 30-day follow-up after discharge measures



Source: IPFQR data for federal fiscal year 2018.

Figure 2. Facility characteristics associated with a high FUH-7 score



Source: IPFQR data for federal fiscal year 2018 merged with 2018 N-MHSS data.

Note: The odds ratio is calculated as the odds of a FUH-7 score above the 75th percentile among facilities in the category shown divided by the odds among facilities in the referent group controlling for other variables in the model.

Endnotes

1 Marcus, S.C., C-C. Chuang, D.S. Ng-Mak, and M. Olfson. "Outpatient Follow-up Care and Risk of Readmission in Schizophrenia and Bipolar Disorder." *Psychiatric Services,* vol. 68, 2017, pp. 1239-1246

2 Center for Behavioral Health Statistics and Quality. "National Mental Health Services Survey (N-MHSS), 2018 [Dataset]." Rockville, MD: Substance Abuse and Mental Health Services Administration, 2018.

3 QualityNet. "Inpatient Psychiatric Facility Quality Reporting (IPFQR) Program Measures." n.d. Available at https://www.qualitynet.org/ipf/ipfqr/measures. Accessed November 4, 2020.

4 QualityNet. "Inpatient Psychiatric Facility Quality Reporting Program Claims-Based Measure Specifications." Baltimore, MD: Centers for Medicare & Medicaid Services, 2020. Available at https://www.qualitynet.org/files/5eda97b96c4799002344a100?filename=FY21_IPFQR_CBM_Specs.pdf.

5 Physician Consortium for Performance Improvement Foundation. "Care Transitions Performance Measurement Set: Inpatient Discharges & Emergency Department Discharges." Chicago, IL, Physician Consortium for Performance Improvement Foundation, 2016.

The transition record must contain a core set of elements related to the patient's diagnosis, treatment, and care plan. Transmission can take place by fax, secure email, or mutual accessible electronic health records.

6 The IPFQR data included 1,597 facilities for the federal fiscal year 2018 reporting period. N-MHSS included 1,053 psychiatric hospitals and 689 psychiatric units of hospitals for a total of 1,742 facilities to potentially match with IPFQR facilities. We were able to match 1,147 facilities (72 percent of facilities in IPFQR) based on address. Among these matched facilities, 1,007 (88 percent) had a FUH-7 score and the same 1,007 (88 percent) had a FUH-30 score.

7 We modeled the odds that the IPF had a FUH-7 score above the 75th percentile as a function of four sets of variables: (1) variables that assess IPF discharge practices: whether the facility conducted client outcome follow-up after discharge (Yes/No), whether referrals are conducted electronically or paper versus paper only, whether the facility sends client health or treatment information to external providers electronically or paper versus paper only, and the Timely Transmission of Transition Record measure performance (measured as continuous variable); (2) variables that assess the availability of outpatient services: the number of N-MHSS facilities that offer outpatient care per 100,000 people in the county in which the IPF is located, whether the facility also provides partial hospitalization program (Yes/No), and whether the facility also provides outpatient care (Yes/No); (3) facility structural characteristics: IPF type (freestanding facility versus psychiatric unit), total number of inpatients on April 30, 2018 (measured as continuous variable), facility ownership (private for-profit, private nonprofit, or public agency), whether it has a specific program for people ages 18 and older with serious mental illness (Yes/No), where it has a specific program for forensic clients (Yes/No), and whether it has a specific program for seniors or older adults (Yes/No); (4) inpatient client demographic characteristics: the proportion of inpatient clients ages 0 to 17, 18 to 64, and 65 or older on April 30, 2018, the proportion of inpatient clients who were White, Black, Hispanic, and involuntarily committed on April 30, 2018. We fit the regressions using all variables and then, as a sensitivity test, used a stepwise process to enter each group of variables into the model in the order listed here to examine the effect of adding each set of variables on the coefficients and confidence intervals. Each model included a random effect to account for clustering of IPFs within state. Roughly 14 percent of IPFs did not report the proportion of clients by race or Hispanic/Latino ethnicity. As a result of the missing race and ethnicity variables and other random missingness across other variables, 747 IPFs were included in the full regression that modeled the FUH-7 binary outcome (representing 74 percent of all IPFs that had an FUH-7 score). The findings from this full model, however, were the same as the findings from the models that were limited to the first and second sets of variables listed above, which included a larger number of IPFs.

8 As a sensitivity test, we used linear regression to model the FUH-7 score as a continuous variable and found that the direction and statistical significance of the coefficients were similar to the binary models. We also modeled performance on the FUH-30 measure as a binary outcome (score above the 75th percentile) and a continuous variable using the same strategy as the FUH-7 measure. The findings were consistent with FUH-7 models. We also modeled the age, race, and Hispanic/Latino variables as continuous variables, and the findings were consistent.

9 Medicaid.gov. "Annual Reporting on the Quality of Care for Adults in Medicaid (FFY 2018)." 2019. Available at https://www.medicaid.gov/medicaid/quality-of-care/performance-measurement/adult-and-child-health-care-quality-measures/adult-core-set/index.html.

10 Benjenk, I., and J. Chen. "Variation of Follow-Up Rate After Psychiatric Hospitalization of Medicare Beneficiaries by Hospital Characteristics and Social Determinants of Health." *American Journal of Geriatric Psychiatry*, vol. 27, no. 2, 2019, pp. 138–148. doi:10.1016/j.jagp.2018.08.006.

11 Park, Sinyoung, Hanadi Hamadi, Emma Apatu, and Aaron C. Spaulding. "Hospital Partnerships in Population Health Initiatives." *Population Health Management,* vol 23, no 3, 2020. Available at https://doi.org/10.1089/pop.2019.0074.

12 George Washington University School of Business. "For Profit vs. Nonprofit Hospital Administration." November 5, 2020. Blog. Available at https://healthcaremba.gwu.edu/blog/profit-vs-nonprofit-hospital-administration/.

13 Dixon, L., R. Goldberg, V. Iannone, A. Lucksted, C. Brown, J. Kreyenbuhl, L. Fang, and W. Potts. "Use of a Critical Time Intervention to Promote Continuity of Care After Psychiatric Inpatient Hospitalization." *Psychiatric Services*, vol. 60, no. 4, 2009, pp. 451–458.

14 Smith, Thomas E., Maria Abraham, Natalia V. Bolotnikova, Sheila A. Donahue, Susan M. Essock, Mark Olfson, Wenjun S. Shao, Melanie M. Wall, Marleen Radigan. "Psychiatric Inpatient Discharge Planning Practices and Attendance at Aftercare Appointments." *Psychiatric Services*, vol. 68, no. 1, January 2017, pp. 92–95.

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