Medical/surgical Readmissions in Patients with Co-Occurring Serious Mental Illness: A Qualitative Systematic Review of the Literature

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RESEARCH OBJECTIVES

The objectives of this systematic review were to:
(1) provide a synthesis of the literature investigating mental illness (MI) and medical/surgical readmissions in the adult population, and
(2) compare medical/surgical readmissions for patients with serious mental illness (SMI) with the non-SMI population.

BACKGROUND

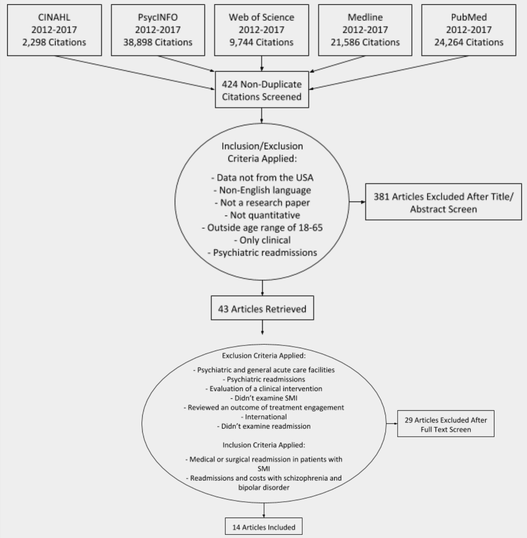
- Value-based population care models are replacing traditional patient care and business models to lower patient care costs and increase value.
- To motivate health care systems toward the new models, the Center for Medicare & Medicaid (CMS) enforced a penalty for hospital readmissions.
- Patients with serious mental illness are particularly vulnerable to rehospitalization

STUDY DESIGN

Databases: CINAHL, PsycINFO, Web of Science, Medline, PubMed

- January 1, 2012- December 27, 2017
- Used to identify relevant articles on the relationship between SMI diagnosis and readmissions
- Used in accordance with Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)

PRISMA Diagram:



Beyond readmissions as an outcome:

- Researchers examined, in addition to 30-day readmissions: 7-day, 60-day, 90-day, 180-day, and up to 5-year readmissions, costs, ED visits, outpatient utilization, and hospitalizations leading to mortality
- Median expenditure for an early rehospitalization for a non-behavioral health condition was nearly $1000 more among persons with SMI compared to those without SMI ($25,974.50 vs $25,037.00)

PRINCIPAL FINDINGS

Results:

Topic	Findings
Participants	**The sample sizes of the studies ranged considerably.** • <1000 patients (two studies); 1,000-10,000 (two studies); a little over 25,000 (one study); 50,000-100,000 (four studies); 100,000-500,000 (two studies); 500,000+ (three studies) • Eight studies did not report number of hospitals; one study reported data came from 11 health systems; remaining five studies reported the number of hospitals
Data Sources	**Data sources varied across studies, but most studies included patients from all payers.** • Data from- - Patients associated with a private plan (one study); Medicaid/Medicare beneficiaries (two studies); Veterans (one study); medical records (eight studies—six had access to outpatient records; one also had access to claims data); only claims data (six studies—two had access to outpatient in addition to inpatient claims) • Eleven studies used data from single states; one study used data from 11 health systems in 10 states; two studies used nationally representative databases
Patient Populations	**Studies examined readmissions among several different populations of patients** • Patients hospitalized for- - Range of medical/surgical diagnoses (four studies); specific medical diagnoses— chronic kidney disease, diabetes, chronic obstructive pulmonary disease, cancer, stroke, heart failure, acute myocardial infarction, and pneumonia (eight studies); specific surgeries— total knee arthroplasty and total hip arthroplasty (one study); maintenance hemodialysis (one study)
SMI Definition	**Studies used different diagnoses in examining mental illness** • 13 studies used ICD-9-CM codes or CCS codes to define mental illness 13 studies; one study incorporated outpatient prescription of antipsychotics into definition of "likely to be psychiatrically ill" • Six studies had access to outpatient panel data; eight studies used cross-sectional single cases • Three studies limited definition of mental illness to co-morbid depression • One study looked at both depression and substance use disorders • Four studies used definition of SMI as in Federal Register—bipolar disorders, major depressive disorder, schizophrenia disorders, other psychoses (one study used definition, no depressive disorders) • Four studies added alcohol and drug use disorder to Federal Register definition—two of which also included patients with anxiety disorders and one of which also included patients with dementia
SMI Rates	**The rates of co-morbid MI in patients significantly varied across the studies, which is likely attributable to the variation in definition of SMI and the nature of the data** Rates for patients hospitalized for- • General medical/surgical reasons: between 2.3% and 29%; Diabetes: between 2.2% and 6%; COPD: between 22% and 31%; CKD: from 2.2% to 11%; HF, AMI, pneumonia: one study found that nearly 29.4% had a psychiatric condition with depression (15.8%), substance use disorder (11.3%), and anxiety (7.1%) being most common; cancer: researchers identified 11% with a diagnosis of depression; undergoing TKA and THA: nearly 9% had depression; Veterans who had a stroke: percent of population with behavioral health comorbidities was—19.1% with SMI, 19.9% with substance abuse, 22.9% with depression, and 42.9% with PTSD

RELEVANCE TO PRACTICE

From a clinical and quality improvement perspective, the findings about the relationship between SMI and readmissions outlined in this review could be used by clinicians, case managers, and discharge planners to-

- Identify patients who may be at particularly high risk of readmission
- Create different and more intensive follow-up strategies essential to managing these high-risk patients to substantially reduce their risk of poor post-discharge outcomes

CONCLUSION

Our results suggest that-

- Patients with SMI have higher rates of medical/surgical readmissions than patients without SMI
- Given the prevalence of SMI in patients hospitalized for medical/surgical problems and the heterogeneity of evidence, further research on the relationship between SMI and readmissions is critically needed.

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