# Released, Relapsed, Rehospitalized



# Length of Stay and Readmission Rates in State Hospitals

A Comparative State Survey Executive Summary

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### LENGTH OF STAY AND READMISSION RATES IN STATE HOSPITALS

#### **A COMPARATIVE STATE SURVEY**

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#### **EXECUTIVE SUMMARY**

Psychiatric hospitalization remains an essential element in the continuum of mental health care for patients in psychiatric crisis.<sup>1,2,3,4</sup> At a minimum, intensive care in a psychiatric bed allows time for stabilization of acute psychiatric symptoms, much as intensive care in a cardiac bed promotes stabilization of acute cardiac symptoms.<sup>5</sup>

In the era of state mental hospital closures that began in the mid-1900s and has continued without pause through today, the number of state psychiatric beds for such care has plunged more than 96%. In 1955, the peak of state hospitalization, there were 560,000 beds avail-

"Reduction in LOS has resulted in a concern about 'quicker but sicker' with regard to psychiatric patients' continuing acute symptoms and need for intensive nursing services at hospital discharge."

> J.S. Lyons et al. Predicting readmission to the psychiatric hospital in a managed care environment: Implications for quality indicators. *American Journal of Psychiatry* (1997)

able for an estimated 3.3 million American adults living with serious mental illness and other disabilities. By early 2016, there were slightly fewer than 38,000 beds for 8.1 million people with the same conditions.<sup>6,7,8,9</sup>

The difference between the number of people who need intensive care to begin recovery and the number of beds available to serve them is more chasm than gap — a bed shortage of unparalleled proportions. Those without access to a bed often end up waiting for hospital admission in emergency rooms, or in jail cells following arrest, or never receiving hospital care at all.<sup>10</sup> At the same time, families, communities, taxpayers and public agencies are affected by common consequences of untreated serious mental illness such as increased risk for homelessness, incarceration, violence and others.

Releasing patients faster creates more bed capacity without requiring new beds. Unsurprisingly, given widespread psychiatric bed shortages and pressure on hospitals to reduce hospitalization costs, length of stay (LOS) has been shrinking for decades. In 1980, the median LOS for an acute episode of schizophrenia was 42 days.<sup>11</sup> By 2013, it was an estimated seven days.<sup>12</sup>

At the same time, the rate at which psychiatric patients are readmitted following discharge has been rising.<sup>13,14,15</sup> In short, ever more people are competing for an ever-smaller number of inpatient beds. Once admitted, they stay ever-shorter periods of time. And, after discharge, they are ever more likely to relapse and be readmitted within weeks or a few months.

Rehospitalization is viewed clinically as a "poor outcome." Psychiatric patients who are rehospitalized experience reduced continuity of care and quality of life compared with those who are not. Their caretakers are often demoralized.<sup>16</sup>

Rehospitalization is also costly, and rehospitalization for serious mental illness is especially costly. Schizophrenia and mood disorders, including bipolar, account for more readmissions of Medicaid patients than any other medical conditions.<sup>17</sup> Schizophrenia hospitalization alone cost \$11.5 billion in 2013, of which \$646 million resulted from readmission within 30 days of discharge.<sup>18,19</sup> The Centers for Medicare & Medicaid Services (CMS) Hospital Readmissions Reduction Program has already begun penalizing hospitals for "excess" Medicare readmissions for some conditions. There is no reason to believe similar sanctions will not be forth-coming for "excess" Medicaid rehospitalization.

"It is especially important to examine the quality of care provided in hospitals with short vs long LOS. If hospitals achieve shorter LOS by discharging patients too early, it is quite possible that those hospitals have higher readmission rates."

J. S. Harman et al. Profiling hospitals for length of stay for treatment of psychiatric disorders. Journal of Behavioral Health Services and Research (2004) Any number of factors impact hospital readmission, many of them unrelated to clinical aspects of hospitalization.<sup>20,21</sup> For example, a diagnosis of schizophrenia, the most disabling mental illness, increases the risk of readmission.<sup>22</sup> Inadequate bed supplies or restrictive bed-access policies reduce readmissions simply by rendering beds unavailable, irrespective of clinical circumstances. Meanwhile, access to robust outpatient and other services following discharge is reported to lower the risk of rapid rehospitalization.<sup>23,24</sup>

One clinical factor that has been subjected to repeated academic examination for its possible role in hospital readmission is the question of what role psychiatric length of stay plays in hospital readmission: Does reducing LOS increase the rate of rehospitalization by releasing patients at risk for relapse because they are not fully stabilized?

To date, no consensus or evidence-based guidance has emerged. Studies of the association typically have been limited to individual patients in single hospitals or regional systems, rather than populations. Since the turn of the cen-

tury, research has rarely considered the experience of public hospitals, where the most severely ill patients are treated at public expense. Resulting findings and conclusions have been inconclusive or contradictory.

To analyze psychiatric LOS and rehospitalization rates in a large population of patients being discharged from comparable facilities, the authors performed a novel comparative analysis of state hospital data for fiscal year 2015. The data were reported to the Substance Abuse and Mental Health Services Administration (SAMHSA) as a condition of receiving federal block grant funds.<sup>25</sup> They included LOS for discharged adult patients in 45 states and the District of Columbia and 30- and 180-day readmission rates in the same states.

The analysis found a statistically significant association between shorter hospital stays and rapid rehospitalization across the states. Among the findings:

- Patients in states with the shortest LOS were nearly three times more likely to be readmitted into a state hospital within 30 days or 180 days of discharge than patients in states with the longest LOS.
- Eleven states had a median LOS of two weeks or less. In those states, 1 in 10 patients (10.8%) was rehospitalized within 30 days of discharge, and slightly more than two in 10 patients (22%) were readmitted within 180 days.
- Nine states had a median LOS of four months or more. In those states, 2.8% (fewer than three in 100) patients were readmitted within 30 days of discharge, and 7.9% (fewer than eight in 100) were readmitted within 180 days.

Figure 1 illustrates the pattern. Each point on the graph represents an individual state's readmission rate at 30 and 180 days as a correlate of the median LOS in its state hospital system.

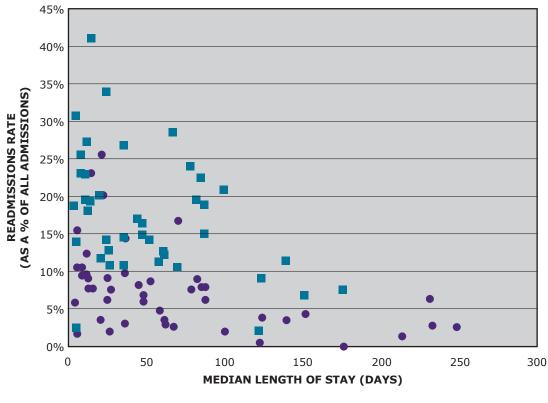


Figure 1. 2015 state hospital length of stay and readmission rates by state

• State hospital readmissions within 30 days

State hospital readmissions within 180 days

Because state hospitals are the facilities of last resort and serve only individuals with the most severe and dangerous symptoms, the association between LOS and rehospitalization may not be replicated in community and private hospitals, where patients typically have milder symptoms and may self-admit. However, precisely because state hospitals are legally obligated to serve their patients at public expense and treat the patients who are most severely compromised by serious mental illness, the association of LOS and readmission is a matter in which both patients and the general public have a considerable stake.

Ultimately, reducing length of hospital stay is a tactic for reducing the cost of serious mental illness by providing inpatient treatment to more people without providing more beds. With no apparent end in sight to the elimination of psychiatric beds and no clear guidance on safe minimum bed numbers, a clearer understanding of the clinical and economic impacts of this trend is needed to inform public policy and practice. Patients who are readmitted to state hospitals do so only after they have relapsed and deteriorated sufficiently to meet civil commitment standards. Often, they recycle through emergency rooms and the criminal justice and other public systems on the way back to the hospital, to their personal detriment and at enormous public cost.

#### RECOMMENDATIONS

The magnitude and impact of these public health issues demand the following actions:

- 1. Federal funding of research to assess the role of reduced length of stay in rehospitalization risk for psychiatric patients treated in public and private psychiatric facilities
- 2. Federal funding of a comprehensive analysis of the public service costs incurred by short-stay psychiatric patients who are rapidly rehospitalized, including emergency medical, criminal justice and homelessness costs that occur in the course of their relapses
- 3. Federal funding of an evidence-based assessment of psychiatric bed need in the United States by bed type, facility and location to provide guidance for supplying a safe minimum number of beds to meet need
- 4. Incentivizing the development of new psychiatric hospital beds through measures such as full repeal of the exclusion of institutions for mental diseases ("IMD Exclusion") from Medicaid reimbursement.

Rapid rehospitalization is the outcome of many factors. Given its impact on mental health recovery and its high public health cost, identifying contributors that might be mitigated to reduce the rate of readmission is humane, prudent and urgently needed. Length of stay is a leading candidate for such consideration.

#### **ENDNOTES**

- <sup>1</sup> National Association of State Mental Health Program Directors. (2014). *Assessment #10: Expenditures*. Retrieved from http://www.nasmhpd.org/sites/default/files/Assessment%20 10%20-%20Expenditures.pdf
- <sup>2</sup> La, E. M., Lich, K. H., Wells, R., Ellis, A. R., Swartz, M. S., Zhu, R., & Morrissey, J. P. (2015). Increasing access to state psychiatric hospital beds: Exploring supply-side solutions. *Psychiatric Services, 67*, 523–528. Retrieved from http://ps.psychiatryonline.org/doi/ abs/10.1176/appi.ps.201400570.
- <sup>3</sup> Allison, S., Bastiampillai, T., Fuller, D. A., Gupta, A., & Chan, S. K. (2016). The Royal Australian and New Zealand College of Psychiatrists guidelines: Acute inpatient care for schizophrenia. *Australian & New Zealand Journal of Psychiatry*. doi: 10.1177/0004867416667235
- <sup>4</sup> Page, A. C., Hooke, G. R., & Rampono, J. (2005). A methodology for timing reviews of inpatient hospital stay. *Australian and New Zealand Journal of Psychiatry*, *39*, 198–201.
- <sup>5</sup> Allison et al. The Royal Australian and New Zealand College of Psychiatrists guidelines.
- <sup>6</sup> Fuller, D. A., Sinclair, E., Geller, J., Quanbeck, C. & Snook, J. (2016). *Going, Going, Gone: Trends and consequences of eliminating state psychiatric beds*. Arlington, VA: Treatment Advocacy Center. Retrieved from http://www.treatmentadvocacycenter.org/storage/documents/going-going-gone.pdf
- <sup>7</sup> Treatment Advocacy Center. (2016). *Prevalence of untreated mental illness by state*. Retrieved from http://www.treatmentadvocacycenter.org/storage/documents/smi-prevalence-chart.pdf
- <sup>8</sup> National Institute of Mental Health. (2016). Schizophrenia and severe bipolar prevalence rate. Retrieved from http://www.nimh.nih.gov/health/statistics/prevalence/schizophrenia.shtml
- <sup>9</sup> United States Census Bureau. (1955). Statistical abstract of the United States, 1955. Retrieved from http://www2.census.gov/library/publications/1955/compendia/statab/76ed/1955-02.pdf
- <sup>10</sup> Fuller et al. Going, Going, Gone.
- <sup>11</sup> Taube, C. A., & Barrett, S. A. (1985). *Mental health, United States 1985*. Rockville, MD: National Institute of Mental Health (DHHS/PHS).
- <sup>12</sup> Health Cost and Utilization Project (2013). National inpatient statistics: Outcomes by 659 schizophrenia and other psychotic disorders. Agency for Healthcare Research and Quality.
- <sup>13</sup> Alwan, N., Johnstone, P., & Zolese, G. (2010). Length of hospitalization for people with severe mental illness. *Cochrane Database Systematic Review*, 1–29.
- <sup>14</sup> Appleby, L., Luchins, D. J., Desai, P. N., Gibbons, R. D., Janicak, P. G., & Marks, R. (1996). Length of inpatient stay and recidivism among patients with schizophrenia. *Psychiatric Services*, 47(9), 985–990.
- <sup>15</sup> Appleby, L., Desai, P. N., Luchins, D. J., Gibbons, R. D., & Hedeker, D. R. (1993). Length of stay and recidivism in schizophrenia: A study of public psychiatric hospital patients. *American Journal* of *Psychiatry*, 150, 71–76.
- <sup>16</sup> Appleby et al. Length of stay and recidivisim in public psychiatric hospital patients.
- <sup>17</sup> Health Cost and Utilization Project (2014). Conditions with the largest number of adult hospital readmissions by payer, 2011. Agency for Healthcare Research and Quality. Retrieved from http://www.hcup-us.ahrq.gov/reports/statbriefs/sb172-Conditions-Readmissions-Payer.pdf
- <sup>18</sup> Health Cost and Utilization Project. National inpatient statistics.
- <sup>19</sup> Cloutier, M., Aigbogun, M. S., Guerin, A., Nitulescu, R., Ramanakumar, A. V., Kamat, S. A., DeLucia, M., & Wu, E. (2016). The economic burden of schizophrenia in the United States in 2013. *Journal of Clinical Psychiatry*, *77*, 764–780.
- <sup>20</sup> Heeren, O., Dixon, L., Gavirneni, S., & Regenold, W. T. (2002). The association between decreasing length of stay and readmission rate on a psychogeriatric unit. *Psychiatric Services*, 53, 76–79.
- <sup>21</sup> Lyons, J. S., O'Mahoney, M. T., Miller, S. I., Neme, J., Kabat, J., & Miller, F. (1997). Predicting readmission to the psychiatric hospital in a managed care environment: Implications for quality indicators. *American Journal of Psychiatry*, 154, 337–340.
- <sup>22</sup> Appleby et al. Length of stay and recidivism in schizophrenia.
- <sup>23</sup> Lyons et al. Predicting readmission to the psychiatric hospital in a managed care environment.
- <sup>24</sup> Heeren et al. The association between decreasing length of stay and readmission rate on a psychogeriatric unit.

- <sup>25</sup> Substance Abuse and Mental Health Services Association. (2015). SAMHSA Uniform Reporting System Output Tables. Retrieved from http://wwwdasis.samhsa.gov/dasis2/urs.htm
- <sup>26</sup> Lee, S., Rothbard, A. B., & Noll, E. L. (2012). Length of inpatient stay of persons with serious mental illness: Effects of hospital and regional characteristics. *Psychiatric Services, 63*(9), 889–894.
- <sup>27</sup> Health Cost and Utilization Project. National inpatient statistics.
- <sup>28</sup> Cloutier et al. The economic burden of schizophrenia in the United States in 2013.
- <sup>29</sup> Health Cost and Utilization Project. National inpatient statistics.
- <sup>30</sup> Fuller et al. *Going, Going, Gone*.
- <sup>31</sup> Zhang, J., Harvey, C., & Andrew, C. (2011). Factors associated with length of stay and the risk of readmission

in an acute psychiatric inpatient facility: A retrospective study. *Australian and New Zealand Journal of Psychiatry*, *45*, 578–585.

- <sup>32</sup> Page et al. A methodology for timing reviews of inpatient hospital stay.
- <sup>33</sup> Length of hospital stay is not normally distributed. Most patients are discharged after a short period of time while ever smaller numbers stay for longer periods of time. To avoid distortion from the small numbers of ultra-long stays, nonparametric statistics and the median length of stay is the more valid indicator of LOS than mean (average) and is used throughout.
- <sup>34</sup> Appleby et al. Length of stay and recidivism in schizophrenia.
- <sup>35</sup> Health Cost and Utilization Project. National inpatient statistics.
- <sup>36</sup> Appleby et al. Length of inpatient stay and recidivism among patients with schizophrenia.
- <sup>37</sup> Zhang et al. Factors associated with length of stay and the risk of readmission in an acute psychiatric inpatient facility.
- <sup>38</sup> Allison et al. The Royal Australian and New Zealand College of Psychiatrists guidelines.
- <sup>39</sup> Substance Abuse and Mental Health Services Association. (2015). SAMHSA Uniform Reporting System Data, Outcome and Quality. Retrieved from http://wwwdasis.samhsa.gov/dasis2/urs.htm
- <sup>40</sup> Substance Abuse and Mental Health Services Association. (2015). Hawaii 2015 Mental Health National Outcome Measures (NOMs): SAMHSA Uniform Reporting System.
- <sup>41</sup> Fuller et al. Going, Going, Gone.
- <sup>42</sup> Substance Abuse and Mental Health Services Association. (2015). Minnesota 2015 Mental Health National Outcome Measures (NOMs): SAMHSA Uniform Reporting System.
- <sup>43</sup> Substance Abuse and Mental Health Services Association. (2015). North Carolina 2015 Mental Health National Outcome Measures (NOMs): SAMHSA Uniform Reporting System.
- <sup>44</sup> Substance Abuse and Mental Health Services Association. (2015). Idaho 2015 Mental Health National Outcome Measures (NOMs): SAMHSA Uniform Reporting System.
- <sup>45</sup> Stettin, B., Geller, J., Ragosta, K., Cohen, K., & Ghowrwal, J. (2014). Mental health commitment laws: A survey of the states. Arlington, VA: Treatment Advocacy Center. Retrieved from http:// www.treatmentadvocacycenter.org/storage/documents/2014-state-survey-abridged.pdf
- <sup>46</sup> Patient information held by Medicaid, Medicare, managed care and other insurance organizations could yield more comprehensive data but is not publicly available. Theoretically, de-identified electronic health records will someday make such analysis more feasible and accurate.
- <sup>47</sup> Alwan et al. Length of hospitalization for people with severe mental illness.
- <sup>48</sup> Figueroa, R., Harman, J., & Engberg, J. (2004). Use of claims data to examine the impact of length of inpatient psychiatric stay on readmission rate. *Psychiatric Services*, 55(5), 560–565.
- <sup>49</sup> Figueroa et al. Use of claims data to examine the impact of length of inpatient psychiatric stay on readmission rate.
- <sup>50</sup> Zhang et al. Factors associated with length of stay and the risk of readmission in an acute psychiatric inpatient facility.
- <sup>51</sup> Auffarth, I., Busse, R., Dietrich, D., & Emrich, H. (2008). Length of psychiatric inpatient stay: Comparison of mental health care outlining a case mix from a hospital in Germany and the United States of America. *German Journal of Psychiatry*, *11*, 40–44.
- <sup>52</sup> Lee et al. Length of inpatient stay of persons with serious mental illness.

- <sup>53</sup> Auffarth et al. Length of psychiatric inpatient stay.
- <sup>54</sup> Allison et al. The Royal Australian and New Zealand College of Psychiatrists guidelines.
- <sup>55</sup> Page et al. A methodology for timing reviews of inpatient hospital stay.
- <sup>56</sup> Figueroa et al. Use of claims data to examine the impact of length of inpatient psychiatric stay on readmission rate.
- <sup>57</sup> For 300–1000 mg in chlorpromazine equivalents. Allison et al. The Royal Australian and New Zealand College of Psychiatrists guidelines.
- <sup>58</sup> Figueroa et al. Use of claims data to examine the impact of length of inpatient psychiatric stay on readmission rate.
- <sup>59</sup> Zhang et al. Factors associated with length of stay and the risk of readmission in an acute psychiatric

inpatient facility.

- <sup>60</sup> Lamb, H. R., & Weinberger, L. E. (2016). Rediscovering the concept of asylum for persons with serious mental illness. *Journal of the American Academy of Psychiatry and the Law, 44*, 106– 110. Retrieved from http://www.jaapl.org/content/44/1/106.abstract
- <sup>61</sup> Creed, F., Tomenson, B., Anthony, P., & Tramner, M. (1997). Predicting length of stay in psychiatry. *Psychological Medicine*, 27(4), 961–966.
- <sup>62</sup> Klinkenberg, W. D., & Calsyn, R. J. (1998). Predictors of psychiatric hospitalization: A multivariate analysis. *Administrative Policy of Mental Health*, 25(4), 403–410.
- <sup>63</sup> Harman, J. S., Cuffel, B. J., & Kelleher, K. J. (2004). Profiling hospitals for length of stay for treatment of psychiatric disorders. *Journal of Behavioral Health Services and Research*, 31, 66–74.
- <sup>64</sup> Allison et al. The Royal Australian and New Zealand College of Psychiatrists guidelines.
- <sup>65</sup> Lee et al. Length of inpatient stay of persons with serious mental illness.
- <sup>66</sup> Fuller et al. *Going, Going, Gone*.
- <sup>67</sup> Appleby et al. Length of stay and recidivism in schizophrenia.
- <sup>68</sup> Lee et al. Length of inpatient stay of persons with serious mental illness.
- <sup>69</sup> Harman et al. Profiling hospitals for length of stay for treatment of psychiatric disorders.



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The Treatment Advocacy Center is a national nonprofit organization dedicated exclusively to eliminating barriers to the timely and effective treatment of severe mental illness. The organization promotes laws, policies and practices for the delivery of psychiatric care and supports the development of innovative treatments for and research into the causes of severe and persistent psychiatric illnesses, such as schizophrenia and bipolar disorder.