

### Association of Integrated Team-Based Care with Health Care Quality, Utilization and Cost

#### Take Away Points

- Integrated team-based care practices were associated with higher quality, lower acute care utilization, and lower actual payments received by the delivery system.
- The implementation of TBC practices was a resource-intensive health reform initiative, and further research would be needed to address value to the patient or the community.

#### The Issue

Limited evidence exists to support the utility of care integration with mental health and primary care teams. Intermountain Healthcare, an integrated delivery system, sought to address this gap in 2000 by incorporating physical and mental health interdisciplinary teams. This led to the Intermountain Mental Health Integration (MHI) program, an essential component of preventive medicine and chronic disease management. Preliminary evidence suggests that patients treated at team-based care (TBC) clinics, compared with traditional practice management (TPM) clinics, had higher satisfaction, improved quality outcomes, reduced cost, and decreased utilization. Although the benefit of a team approach appeared promising, additional evidence was needed to support its value within a large delivery system.

#### Source

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The objective of this study was to evaluate the association of receiving primary care in TBC practices compared to TPM practices with patient outcomes, health care utilization, and cost.

#### Study Methods and Design

The study utilized a retrospective, longitudinal, cohort design to assess the association of integrating physical and mental health over time practices with patient outcomes and cost. An enterprise data warehouse was used to identify patients over the observation period from 2003 through 2013. Participant eligibility included patients aged  $\geq 18$  years, had at least one outpatient visit 2003-2005, and had yearly encounters through 2013.

- Exposures included receipt of primary care in internal medicine, family practice, pediatric specialty or geriatric practices. Since the TBC was adopted and routinized over time, individual patients were assigned annually to TPM or TBC exposure based on the primary care practice visited. Practices were annually classified over 2010-2013.
- Main outcome measures included 7 quality measures, 6 health care utilization measures, payment to the delivery system, and program investment costs.
- Patients and practice cohort characteristics included demographic information (age, sex, race/ethnicity, yearly pay status), clinical characteristics (history of depression, diabetes, coronary

heart disease, congestive heart failure, atrial fibrillation, high blood pressure or cancer), and the Charlson Comorbidity Index was used to identify chronic conditions.

- Generalized estimating equation was used as main statistical method. Multiple comparison adjustments were also performed within categories for multiple measures.

### **Key Findings**

- The baseline demographics and clinical and practice characteristics showed no clinical differences in age, race/ethnicity, or insurance types among cohorts.
- For measures linked specifically to TBC deployment, compared to TPM practices, TBC practices had higher rates of screening for depression (46.1% vs. 24.1%; OR, 1.91,  $P < .001$ ), adherence to a diabetes care bundle (24.6% vs. 19.5%; OR, 1.26,  $P < .001$ ), and documentation of self-care plans (48.4% vs. 8.7%; OR, 5.59,  $P < .001$ ).
- For measures not directly linked to TBC deployment, TBC practices had lower proportion of patients with controlled hypertension (<140/90 mm Hg), larger proportion of patients with an annual visit with a primary care physician. There was no significant difference in documentation of advanced directives.
- Patients receiving care in TBC practices had lower rates of health care utilization in per 100 person-years calculation: emergency department visits (18.1 for TBC vs. 23.5 for TPM;  $P < .001$ ), hospital admissions (9.5 for TBC vs. 10.6 for TPM,  $P < .001$ ), ambulatory care-sensitive admissions and emergency visits (3.3 for TBC vs. 4.3 for TPM,  $P < .001$ ), and primary care physician encounters (232.8 for TBC vs. 250.4 for TPM,  $P < .001$ ). There was no significant difference in visits to urgent care facilities and visits to specialty care physicians.
- Payments to the delivery system were lower in the TBC group vs the TPM group (\$3400.62 for TBC vs. \$3515.71 for TPM;  $\beta$ , -\$115.09 [95% CI, -\$199.64 to -\$30.54]).
- The investment costs of the program were lower than the reduction in payments received by the delivery system.

### **Limitations**

- The study did not use program evaluation techniques to assess the marginal benefits of elements of the multifaceted TBC intervention, but focused only on highest and lowest levels of TBC to understand the relationship between practice types and outcomes.
- The study was performed in a fully-integrated delivery system limiting direct translations of findings in other healthcare settings.
- Quality, utilization and cost outcomes measured in this study were specific to Intermountain's corporate objectives and clinical integration structure; therefore, care received outside of the Intermountain system was excluded in the analyzed data set.

### **Final Thoughts**

Among adults enrolled in an integrated health care system, receipt of primary care at TBC practices compared with TPM practices was associated with higher rates of some measures of quality of care, lower rates for some measures of acute care utilization, and lower actual payments received by the delivery system. Overall, TBC practices seem to provide better care to patients at a reduced cost to the health system.