ACHIEVING POPULATION HEALTH THROUGH MENTAL HEALTH INTEGRATION AND TEAM-BASED CARE

IMPROVED HEALTH CARE QUALITY, USE AND COST

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BACKGROUND

Intermountain Healthcare is the largest healthcare provider in the Intermountain West (9th largest in the U.S.) and is based in Utah, the state with the highest percentage of mental health issues. Properly diagnosing and treating mental disorders through an effective integrated team approach is vital to achieving population health, and to saving an estimated cost of 26 – 48 billion in medical and behavioral services.

adults in the U.S. suffer with mental Illness, the majority are seen in primary care

18% (of total population)

The World Health Organization predicts...

1 death every

seconds from **suicide by 2020**

OBJECTIVES AND TARGET POPULATION

The objective of Intermountain's Mental Health Integration (MHI) program, is to deliver the highest quality of care at the lowest possible cost to patients treated in primary care through high performing integrated team-based care.

Primary objectives are:

- Improve health care quality
- Deliver better patient outcomes
- Increase patient satisfaction
- Lower rates of healthcare utilization
- Reduce cost to the health care system
- Normalize mental health as a routine part of medical care

INTERMOUNTAIN HEALTHCARE SYSTEM DEPLOYS MHI TOOLS SYSTEM-WIDE

22	Hospitals
185	Clinics
59	Urgent Care/EDs
967,445	Primary Care Patients (Annual)

In 2000, Intermountain began to change the culture of primary care by embedding mental health screening and treatment within the primary care physician offices and continues to invest in MHI and utilizing TBC to help patients with mental illness properly manage and treat their conditions.

INTERVENTION

The MHI model developed at Intermountain provides a standardized clinical and operational team relational process. This evidence based care process uses a team care approach and tools for engaging patients and their families in managing their mental and physical health by incorporating mental health as a complementary component of wellness and healing.

- The MHI components and NCQA levels guide clinic teams through planning, adoption, and routinized phases of TBC.
- Successful implementation was developed through:
  - Clear communication
  - Shared decision making
  - Standardized care process models
  - Electronic medical record
- Our MHI – TBC study showcases the value of coordinated team relationships within a delivery system emphasizing the integration of physical and mental healthcare.

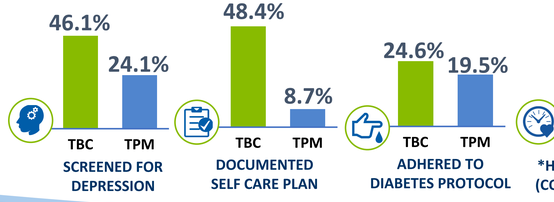
ESSENTIAL INTEGRATED ELEMENTS

1	**Leadership and culture** – champions establishing a core value of accountable and cooperative relationships
2	**Clinical Workflow** – engaging patients on the team and matching their complexity and need to the right level of support
3	**Information systems** – EMR, EDW, registries, dashboard to support team communication and outcome tracking
4	**Financing and operations** – projecting, budgeting and sustaining team FTE to measure the ROI
5	**Community resources** – who are our community partners to help us engage our population in sustaining wellness

POPULTATION HEALTH — TBC vs. TPM STUDY RESULTS

To evaluate the impact of MHI, we performed a retrospective, longitudinal, cohort study to assess 7 quality measures, 6 healthcare utilization measures, actual payments to the delivery system, and the investment costs of the program. Between 2003-2013, we reviewed 102 primary care practices (27 of which used TBC for MHI and 75 with traditional practice medicine (TPM) (i.e. usual care)) *(Figure 1).*

Data from 113,452 unique patients were tracked for over 10-years, comparing TBC compared to TPM showed that Intermountain's MHI program *(Tables 1,2).*



PAYMENTS TO PROVIDERS

Reduced **3.3%**

($3,401 for TBC vs. $3,516 for TPM) Difference of **$115.00 (PPYR)**

Intermountain Healthcare Investment **$22 (PPYR)**

PRIMARY CARE ENCOUNTERS

Reduced **7%**

HOSPITAL ADMISSIONS

Reduced **10.6%**

EMERGENCY ROOM VISITS

Reduced **23%**

* The MHI study used high blood pressure as a control variable. As researchers predicted, high blood pressure management did not show the same large improvements as shown for the conditions that TBC targeted, such as depression and diabetes. These results strengthen the link between Team-Based Care and the better clinical results shown in other areas.

TABLE 1: PATIENT PARTICIPATION AND INVOLVEMENT OF PRACTICES WITHIN THE TBC AND TPM GROUPS OVER THE STUDY PERIOD

	All 4 Years	3 Years	2 Years	1 Year	Total
Patient Participation[a]					
TBC, No. of patients (% of person-years)	28 063 (69)	5196 (10)	5249 (6)	24 888 (15)	163 226
TPM, No. of patients (% of person-years)	23 533 (54)	12 827 (23)	11 149 (13)	17 004 (10)	171 915
Practice Involvement[b]					
TBC, No. of practices (%)	12 (44)	2 (7)	2 (7)	11 (41)	27
TPM, No. of practices (%)	20 (27)	19 (25)	18 (24)	18 (24)	75

Abbreviations: TBC, team-based care; TPM, traditional practice management.

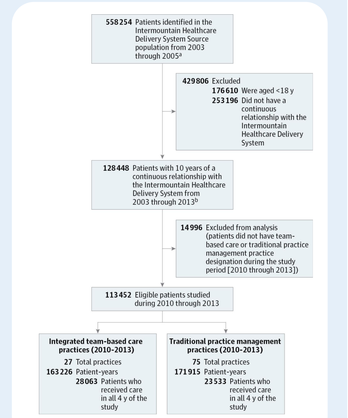
[a] Of the 128 448 patients who had a consistent relationship with the delivery system, 14 996 patients did not have TBC or TPM exposure (only planning or adoption TBC) during the study period of 2010-2013. Only the remaining 113 452 patients (TBC, 163 226 person-years; TPM, 171 915 person-years) were included in the analysis.

[b] Of the 113 total practices were studied over the period of 2010-2013, 102 practices were designated as TBC (n = 27) and TPM (n = 75). Eleven practices were designated as planning or adoption TBC throughout the entire study period 2010-2013.

TABLE 2: OUTCOMES FOR QUALITY MEASURES, SERVICE UTILIZATION, AND PAYMENTS FOR PATIENTS AND PRACTICES USING TBC AND TPM MODELS

	No. of TBC Events (%) (163 226 Person-Years)[a]	No. of TPM Events (%) (171 915 Person-Years)[a,b]	Odds Ratio (95% CI)[c]	*P* Value[c]
Quality Measures[d]				
Intervention variables[e]				
Depression screening among patients with active depression	21 787 (46.09)	11 407 (24.13)	1.91 (1.75 to 2.08)	<.001
Adherence to diabetes bundle	6646 (24.60)	5275 (19.53)	1.26 (1.11 to 1.42)	<.001
Documented self-care plan	4263 (48.35)	763 (8.65)	5.59 (4.27 to 7.33)	<.001
Noninterventon variables[f]				
Hypertension in control (<140/90 mm Hg)	54 198 (85.00)	62 297 (97.70)	0.87 (0.80 to 0.95)	.002
Documented advanced directives	15 686 (9.61)	16 171 (9.91)	0.97 (0.91 to 1.03)	.28 (NS)
Annual visit with PCP	137 357 (84.15)	126 016 (77.20)	1.09 (1.03 to 1.15)	.002
Service Utilization[g]	**No. TBC Events (Incidence Per 100 Person-Years)**	**No. TPM Events (Incidence Per 100 Person-Years)**	**IRR (95% CI)**	
Hospital admissions	15 427 (9.45)	17 334 (10.62)	0.89 (0.85 to 0.94)	<.001
Emergency department visits	29 555 (18.11)	38 383 (23.52)	0.77 (0.74 to 0.80)	<.001
Ambulatory sensitive visits	5350 (3.28)	6948 (4.26)	0.77 (0.70 to 0.85)	<.001
PCP visits	380 036 (232.83)	408 641 (250.35)	0.93 (0.92 to 0.94)	<.001
Specialty visits	348 507 (213.51)	355 619 (217.87)	0.98 (0.97 to 0.99)	.02 (NS)
Urgent care visits	90 852 (55.66)	91 770 (56.22)	0.99 (0.97 to 1.02)	.74 (NS)
Total Payments[h]	**TBC Rate (95% CI)[a]**	**TPM Rate (95% CI)[a]**	**β (95% CI)**	
Payments received, $	3400.62 (3353.39 to 3447.85)	3315.71 (3468.48 to 3562.94)	−115.09 (−199.64 to −30.54)	.008

FIGURE 1: FLOW OF PATIENTS THROUGH STUDY, INCLUSION AND EXCLUSION



FUTURE APPLICATION, GROWTH, AND SUSTAINABILITY

Team-based care has shown to be successful in MHI and has the potential to be scaled and extended to other diseases, conditions, and patient demographics. Within Intermountain, the MHI team structure provided, the foundation for Personalized Primary Care and standardized the team-based care strategy for population health management, expanded nursing care management resources, and adhered to national medical home guidelines. While this approach requires sustained investment in leadership, clinical and analytic workforce, a robust information system, and additional quality incentives, the savings to the healthcare provider exceed the cost and is sustainable. This is critically important on a nation-wide scale as the U.S. changes from a fee-for-service to a fee-for-value compensation plan.

INTERMOUNTAIN HEALTHCARE STUDY

JAMA: Association of Integrated Team-Based Care with Health Care Quality, Utilization, and Cost, 2016;316(8):826-834. doi:10.1001/jama.2016.11232

Scan with mobile device to view JAMA-MHI study

CONCLUSION

Intermountain Healthcare used big data to showcase how healthcare providers can invest in areas where there are significant clinical gaps, methodically test and measure new treatment alternatives, support their community, improve quality of care, and do so at a reduced cost. Further segmented data also showed how specific groups, such as patients with depression and diabetes could receive improved care using an innovative healthcare model.

Intermountain has the longest continuous medical record system in the world and because our commitment to healthcare delivery research, quality improvement, big data collaborations, and core principles are the driving value in our system-wide care initiatives.