

Transforming Primary Care: Key Collaborators to Enhance Patient and Provider Experience

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The primary care transformers are a set of evidence-based interventions designed to improve health, patient and clinician experience, and decrease total medical expenditures. The 18 transformers included in the PC4You bill address the buckets of patient access, mental/behavioral health care, collaboration and team-based care, lifestyle modification and care for the medically vulnerable and elders. They are presented as a menu of options, allowing each practice to select those that are most applicable to them and their patient population. Each transformer has a point value associated with it based on the anticipated effort and expense to implement them. The points for each practice are calculated based on the implemented transformers, resulting in assignment to a tier (bronze/silver/gold) which has a dollar value. The payment schematic for the transformers results in the additional investment in primary care to directly enable and support evidence-based activities tailored to individual communities and practices that will decrease health inequities, improve health, decrease cost and improve the experience of both patients and clinicians.

ACCESS TO CARE

Five of the transformers can be categorized into interventions that improve patient ease of access to care: walk-in/same day care, extended availability (weekends, mornings, late nights), telehealth, medical interpreters, and investments in social determinants of health.

Walk-in/same day care

Exactly as it sounds, this transformer would increase access to care by offering patients same day access to care and opportunities to walk in and receive care without an appointment. When patients are able to access their doctor's office more immediately, they are able to receive attention in a lower cost setting, rather than seek care in an expensive, medically unnecessary emergency room (ER) environment. Additionally, there is comfort and security in knowing you will be seen the same day for symptoms that are concerning. One study showed that access to same day care for mental health concerns is associated with significantly increased patient satisfaction, decrease in distress level, improvement in the condition at follow-up, and improvement in coping skills (1). There is resounding evidence that patients are far more satisfied with their clinical experience when allowed access to same day care (1, 2, 3). Moreover, physicians have reported high satisfaction with these services, stating they felt their workload decreased after implementation (4). Finally, this type of service could help eliminate unnecessary ER visits. It is estimated that over 9 million visits to the ER in the US each year are non-urgent. One study in Providence, RI showed an estimated \$1.28 million in unnecessary ED visits was avoided by adding walk-in services to an existing free clinic (5). Multiple studies show a high

return on investment for these services (5, 6). This suggests there could be an economic benefit to implementing same day services in addition to improved outcomes and higher patient and physician satisfaction.

Extended availability hours

Similar to how same day visits improve patient satisfaction and decrease unnecessary ER visits, extended availability to patients on the weekends, mornings, and late nights is sure to have similar impacts. Access to a primary care provider during extended hours is highly likely to replace off-hours visits to the ER. This is important not only to overall healthcare spending, but to individual patient costs as well. One study demonstrated significantly higher charges to patients in the ER as compared to an after hours clinic for the same diagnoses. Median charges were \$457 for children treated in the ER as compared to \$140 for those with similar conditions treated in an after hours clinic (7). Another study demonstrated that patients who had access to a primary care office with extended office hours had total healthcare expenditures that were significantly lower than patients that did not have access to these services (8). ER visits are not only costly, they are also lengthy. After hours care would save patients valuable time that may otherwise be spent in an overburdened ER. In fact, one study reported a significant reduction in time spent addressing non-emergent health issues in an after hours setting when compared to the ER (9). Extended office hours saves time and money, is convenient for patients, and improves access to non-emergent and urgent care, thereby reducing unnecessary and costly visits to the ER.

Telehealth

Telehealth has proven to be an important tool to increase access to care, especially during the COVID-19 pandemic, where it proved to be a life-line for patients and physicians.

Implementation of telehealth has the capability of offering more than just convenience for patients—this transformer could prove helpful for monitoring the most vulnerable patients. In a study on elderly patients receiving home healthcare services, access to telehealth virtual visits reduced likelihood of discharge to a higher level of care (such as a hospital or nursing home) to 15% as compared to 42% for those without telehealth monitoring (10). Access to telehealth is also essential to management of chronic diseases such as diabetes or hypertension. A randomized trial showed patients with diabetes had better blood sugar control when they had access to telehealth services, and patients with hypertension experienced a significant decrease in systolic blood pressure as compared to those without telehealth services to assist with management of their disease (11). Telehealth is not only a convenience for patients and clinicians, it is likely to improve patient outcomes by improving access to care.

Medical Interpreters

Medical interpreters are critical to increasing access to high quality care for patients with limited English proficiency (LEP). The use of interpreters in patients with LEP increases the number of prescriptions filled, recommended preventive services completed, and reduces health disparities (12, 13). Professional, medically trained interpreters are essential to delivering this type of care, as ad-hoc interpretation is associated with increased interpretation errors (14). One study showed

that 1 of every 40 malpractice claims were related to lack of adequate interpreter services (15). As a transformer, we hope this legislation will allow all primary care offices to access well-trained interpreter services so that patients may seek care in the language they understand best. It is a human right to have access to medical care in one's own language, as understanding your physician is key to patient autonomy.

Social Determinants of Health Investments

It is commonly understood that the social determinants of health (SDOH) (e.g. race, income, housing, access to healthy food, and much more) play a large role in overall morbidity and mortality. This transformer puts an emphasis on investing in services that help patients overcome these health-related social needs. The COVID-19 pandemic exposed health disparities that had already existed and shed light on the ways one's social circumstance dramatically affect outcomes. Though support for addressing SDOH is generally high, many practices feel ill-equipped to adequately support patients in these areas. Only 41% of clinician respondents to a survey gathering information on SDOH screening said they felt confident they could address social needs, and only 23% routinely screen for SDOH. They cited the greatest barrier to SDOH screening as being time and resources—with 50% saying they did not have the resources to adequately address SDOH (16). Physicians who felt their clinic was able to address patients' health-related social needs were less likely to report burnout. A study found that states that had a higher ratio of social to health spending (calculated as total social service spending divided by total medicare and medicaid spending) had better outcomes in multiple major disease measures, such as asthma, type 2 diabetes, and mortality rates for lung cancer (17). The investment in SDOH is expected to have a high return on investment, as studies also support the economic benefits of preventive social interventions to prevent ER visits. When unhoused patients were given access to basic social services such as transportation, laundry, and a food pantry at a Veterans Health Affairs clinic, there was a 19% reduction in ER visits, and a 34.7% reduction in hospitalizations (18). Investment in resources that could increase patient's ability to access care regardless of their social situation would save money, improve patient outcomes, and reduce physician burnout.

TEAM BASED CARE

Interprofessional collaboration is sure to improve clinical practice, patient experience, and reduce primary care clinician workload. Five of the transformers fall under this category of team-based care: medical scribes, collaboration with pharmacists, community health workers, care managers and social workers, and patient advisory groups.

Medical scribes

Medical scribes are an important transformer that have the potential to increase quality of physician-patient interactions, reduce physician burnout, and increase productivity. A medical scribe is someone who sits in on a doctor's visit, either in person or remotely via phone call, and assists with documentation as the encounter is unfolding. Multiple studies show that the presence of a scribe greatly increases physician satisfaction without any detriment to the patient

experience—many patients even report increased attentiveness from their physician when a scribe is being utilized (19, 20, 21). One study estimates time spent facing the patient increased by 57% and time spent facing the computer decreased by 27% (22). Physicians who have scribes report increased face time with patients, better chart quality and accuracy, and reduced time spent working on documentation (20). Studies show that the use of scribes can decrease time spent charting by as much as 50%, and the use of a scribe was shown to increase the likelihood that the chart would be closed within 48 hours (19, 20). Moreover, scribes are associated with increased physician capacity. One study in an emergency department showed a 15.9% gain in patients seen per hour, a 25.6% gain in consultations, and a reduced length of stay for the patient by 19 minutes (23). In primary care, there were similar findings in increased patients seen per hour (22). Finally, scribes are often aspiring health professionals—many with intentions to apply to medical or nursing school. The scribe model is mutually beneficial, as the role offers a teaching opportunity and experience in the clinical setting for the scribe, and offers demonstrated productivity, efficiency, and patient care benefits for the clinician and practice as a whole.

Collaboration with pharmacists

Pharmacists play an important role in assisting physicians with dosing and drug administration, but can also be major players in patient education. Many primary care clinicians do not feel they have time to counsel their patients in detail on their medications the way they would like to, and feel their pharmacy colleagues add value in this regard. In one study, 90% of survey respondents agreed or strongly agreed that having the pharmacist in the office makes management of the patient's medication more efficient, and 75% agreed or strongly agreed that having a pharmacist as part of the primary care team has made their job easier (24, 25). Beyond assisting clinicians in providing patient education, collaboration with pharmacy has been shown to improve patient outcomes. In practices where patients received pharmacist-led education on statins and cholesterol therapy, there was significantly higher likelihood that patients had cholesterol in target ranges (26). Studies have also shown better diabetes control, decrease in total cholesterol, and increase in pneumococcal vaccinations when pharmacists collaborate with primary care clinicians (27). There is potential for a large return on investment with this approach as well, with some studies demonstrating pharmacist-led patient education led to fewer emergency department visits and hospitalizations (27).

Community Health Workers (CHW)

This transformer is usually a volunteer or paid community member who serves as a frontline public health worker—connecting patients with resources, assisting with access to health services, and providing education to patients. These CHWs reside in the communities they serve and share similar backgrounds and life experiences to the patients who collaborate with them. This goes a long way in building trust between the healthcare system and communities who have been historically marginalized and underserved. CHWs have been shown to lead to better clinical outcomes for patients and have been demonstrated to be cost effective (28, 29, 30, 31). Another

study showed strong community buy in, revealing that 97% of patients were satisfied with the support offered by the CHWs (32). This transformer has the potential to offer a community connection to patients who may feel underrepresented and misunderstood by clinicians who may not share their identity, race, or other life experience.

Care Managers and Social Work

Another collaborative approach to improving patient outcomes includes the use of care managers and social workers to assist with complex social needs. Many primary care clinicians cite lack of time as a major barrier to addressing patient's health-related social needs that may interfere with their ability to follow up on recommendations made. A care manager or social worker can help clinicians manage these situations by providing dedicated time and expertise to work with patients. Studies have shown that there are health benefits to involving social workers in the care of patients—citing improved diabetes control, better behavioral healthcare, and improved self-management of health conditions (33, 34, 35). Patients report better communication and healthcare transitions as well when social workers are involved (36). Social workers are able to achieve these ends by assisting patients in overcoming social determinants of health such as lack of insurance and transportation. Interprofessional collaboration will not only reduce the workload of the primary care provider, but will improve the patient experience and promote better health outcomes.

Patient Advisory Groups

A patient advisory group (otherwise known as patient advisory board or council) is a committee of patients and families who regularly meet with clinical staff to improve the patient experience, influence clinic policy, and contribute to practice transformation. Primary care offices that have implemented this type of working group have found great success. Some examples of projects taken on by patient advisory groups include improving call center scripts, designing welcome packets, and even implementing quality improvement projects (37). In the past, patient advisory groups have been shown to influence and inspire better research by providing perspective that impacted treatment decision making and led to novel techniques for analyzing confounding variables (38, 39). Many primary care practices pride themselves on taking a patient centered approach. The only true way to do this, however, is to have a framework of leadership that promotes active participation from patients and families (40). Engaging patients is a proven means of ensuring that healthcare is patient-centered.

MEDICALLY VULNERABLE AND ELDER CARE

Medically vulnerable patients, including the elderly, disabled, and terminally ill, require a level of medical care that is difficult to obtain. Primary care physicians are often responsible for the requisition of such care, if not providing it themselves. These patients deserve the dignity of the

highest standard of care as they overcome significant challenges to improving quality of life. Advanced care planning, palliative care, and home care have been shown to improve patient care outcomes at the end of life. As such, PC4You prioritizes advanced care planning and home care/remote monitoring services to fulfill our ethical and economical imperative of optimizing the care we provide to this population.

Advanced Care Planning/Palliative Care

Advanced care planning and palliative care have been shown to improve patient care outcomes at the end of life (41). Palliative care is often delayed as it requires that a provider understand a patient's cultural and personal experience of illness and end of life. The ideal introduction of advanced care planning is in the primary care setting, as patients will be able to have open and honest conversations with trusted providers and avoid the challenges of addressing/traversing these complex conversations in the setting of acute illness.

Unfortunately, primary care providers face significant barriers to providing this extremely important care including burnout and limited availability of care (42, 43). Despite upwards of 95% of family physicians being comfortable with these conversations, less than 45% report actually having them for one reason or another (44). This leaves patients addressing these intense conversations in settings like the emergency department and intensive care setting or not at all, as patients are often not alert enough to be active participants in their care. The responsibility must then be absorbed by family, friends, and caregivers, fostering stress and confusion (45). Repairing delivery of advanced care planning and palliative care is imperative in providing the standard of care that medically vulnerable patients need and deserve. Several studies have found that physician's personal and professional experience with advanced care planning influences their ability to address these concerns with the appropriate patients (44). Although experience with time is certainly a necessary tool, targeted education can improve a physician's knowledge on filling this care gap. Studies of specific education interventions have proven not only an increase in delivery of this care to patients, but also positive secondary outcomes such as reduction in stress in family members/caregivers of these patients (42). Prevention of physician burnout ensures that there is enough workforce to continue the breadth of work that is done in primary care, including advanced care planning (43).

Restructuring care to expand to any outpatient setting with the coordination of other advanced care providers and support the value of this work with its monetary equivalent will rapidly expand access (45, 46). This monetary support can come from the cost savings that providing this kind of care affords the medical system. Use of palliative care saves the health system \$1,696 in direct costs per admission and \$279 in direct costs per day per patient (47). Time to intervention also impacts the amount of savings, as proved in one study that found cost savings of palliative care increases by preventing delay and incorporating this care within 2 days (\$2,568 in cost savings per admission) instead of 6 days (\$1,312 cost savings per admission) or not at all

(48). A review of 18 studies of the economic impact of advanced care planning showed that cost savings ranged from \$11,500 to \$64,827 per patient in the last 6 months of life (49).

Advanced Care Planning and Palliative Care both prevents physician burnout and generates significant cost savings (48-51).

Home Care and Remote Monitoring

As the need for primary care continues to increase at a rate that outpaces the growth of primary care clinician workforce, it is crucial to diversify the methods of delivery. Patients who are medically vulnerable face physical barriers to care in addition to requiring closer follow-up than their more able-bodied counterparts. Home care and remote monitoring has been broadly studied and is proven to improve patient centered outcomes including patient satisfaction with care (52, 53), reduced hospital and societal costs (54), reduced hospital visits without sacrifice of quality of care (55, 56) and improved follow-up and linkages to specialities or other services (57, 58).

MENTAL/BEHAVIORAL HEALTH

The importance of behavioral health care and addiction treatment is becoming increasingly appreciated alongside the traditional understanding of physical health. 57.8 million Americans, or 1 in 5 adults, experience mental illness in the US each year. Care for these conditions should be as prevalent as they are. The integration of these services into primary care makes them more accessible and effective, improving access, equity, patient satisfaction and physician burnout.

Integrated Behavioral Health

Integration of behavioral health care with primary care has been found to reduce depression severity and enhance patients' experience of care in community practices (59). This means that not only is behavioral health more adequately addressed, but it also improves the patient experience with health care overall. Gains from integrated primary care visits have been shown to be maintained for 2 years (60). In the care of children and adolescents, integration showed a significant advantage: the probability was 66% that a randomly selected youth would have a better outcome after receiving integrated medical-behavioral treatment than a randomly selected youth after receiving usual care (61).

Physician burnout is an increasingly dominant problem that integrated care may be a strategy for mitigating. Higher levels of integrated care were associated with higher personal accomplishment and lower depersonalization in routine practices (62, 63). Improved provider satisfaction not only enhances day-to-day provider-patient interactions, but also is essential for combating anticipated provider shortages and keeping physicians in primary care positions.

In terms of cost savings, embedding behavioral health alongside primary care has been shown to result in cost savings of \$860 per member per year, or 10.8% savings, for insurers (64).

Addiction Treatment

The opioid crisis is pervasive in the US with over three million citizens experiencing opioid misuse (65). Tragically, only 10% of people with substance use disorder receive treatment, partially due to inadequate access and limited management within primary care (66). Integration of SUD treatment into primary care allows for a relationship to be formed between the patient and provider. In situations of SUD, this relationship can often be the most stable and rewarding one. This foundational relationship is often thought to be the cornerstone of successful SUD treatment (67). Studies have found that SUD patients found it most rewarding when providers were able to understand their practical and psychosocial challenges, including their health concerns, which allowed them to be cared for as more full people (68). This is not only achieved by integration with primary care but federal law mandates that therapy is available and provided to people receiving MAT (67). This is often cited as a barrier to PCPs offering MAT, but a thorough integration of primary care, MAT, and behavioral health overcomes that barrier. It allows for more comprehensive care offerings as patients on MAT were found to have reduced general health care expenditures and utilization, providing support for expanding MAT services rather than relying exclusively on psychosocial, abstinence or detoxification interventions (69).

Integration of MAT with primary care is important for equity. The opioid epidemic has disproportionately affected rural areas, where a limited number of healthcare providers offer MAT. However, PCP utilization among rural medicaid enrollees with OUD is high, indicating a potential intervention point to treat OUD, especially if the individual's PCP is closer than the nearest MAT provider (70). As mentioned above, MAT and behavioral health offerings are crucial to patient health and satisfaction and integration will enable them to be accessible to a wider array of patients.

Similar to integration of behavioral health with primary care, MAT has the potential for cost savings: while MAT does necessitate increased pharmacy utilization, it subsequently leads to lower outpatient, inpatient, ER and total healthcare charges (~[\\$29,000 vs \\$49,000](#)) compared to members not on MAT (71).

Works Cited:

1. Harper-Jaques S, Foucault D. Walk-in single-session therapy: Client satisfaction and clinical outcomes. *J Syst Ther.* 2014;33(3):29-49.
2. Barwick M, Urajnik D, Sumner L, et al. Profiles and service utilization for children accessing a mental health walk-in clinic versus usual care. *J Evid Based Soc Work.* 2013;10(4):338-352.
3. Salisbury C, Munro J. Walk-in centres in primary care: a review of the international literature. *Br J Gen Pract.* 2003;53(486):53-59.
4. Giesen P, Smits M, Huibers L, Grol R, Wensing M. Quality of after-hours primary care in the Netherlands: a narrative review. *Ann Intern Med.* 2011;155(2):108-113.
5. Bicki A, Silva A, Joseph V, et al. A nurse-run walk-in clinic: Cost-effective alternative to non-urgent emergency department use by the uninsured. *J Community Health.* 2013;38(6):1042-1049.
6. Barry K, McCarthy M, Buckley J, et al. Four Years of CHEER: Cost and QALY Savings of a Free Nurse-run Walk-in Clinic Serving an Uninsured, Predominantly Spanish-speaking Immigrant Population in Providence. *J Health Care Poor Underserved.* 2019;30(2):806-819.
7. Goodrich S, Evans J, Gress T, Werthammer J. After-hours pediatric care compared with emergency department care: a retrospective charge analysis. *Clin Pediatr (Phila).*

2015;54(4):324-327.

8. Jerant et al., 2012
9. Sterner SE, Coco T, Monroe KW, King WD, Losek JD. A new after-hours clinic model provides cost-saving, faster care compared with a pediatric emergency department. *Pediatr Emerg Care*. 2012;28(11):1162-1165.
10. Finkelstein SM, Speedie SM, Potthoff S. Home telehealth improves clinical outcomes at lower cost for home healthcare. *Telemed J e-Health*. 2006;12(2):128-136.
11. Wakefield BJ, Holman JE, Ray A, et al. Effectiveness of home telehealth in comorbid diabetes and hypertension: a randomized, controlled trial. *Telemed e-Health*. 2011;17(4):254-261.
12. Jacobs EA, Lauderdale DS, Meltzer D, Shorey JM, Levinson W, Thisted RA. Impact of interpreter services on delivery of health care to limited-English-proficient patients. *J Gen Intern Med*. 2001;16(7):468-474.
13. Jacobs EA, Shepard DS, Suaya JA, Stone E-L. Overcoming language barriers in health care: costs and benefits of interpreter services. *Am J Public Health*. 2004;94(5):866-869.
14. Flores G. The impact of medical interpreter services on the quality of health care: a systematic review. *Med care Res Rev*. 2005;62(3):255-299.
15. Jacobs A, Ryan AM, Henrichs KS, Weiss BD. Medical interpreters in outpatient practice. *Ann Fam Med*. 2018;16(1):70-76.
16. Schickedanz A, Hamity C, Rogers A, Sharp AL, Jackson A. Clinician experiences and attitudes regarding screening for social determinants of health in a large integrated health system. *Med Care*. 2019;57(Suppl 6 2):S197.
17. Bradley EH, Canavan M, Rogan E, et al. Variation in health outcomes: the role of spending on social services, public health, and health care, 2000–09. *Health Aff*. 2016;35(5):760-768.
18. O'Toole TP, Johnson EE, Aiello R, Kane V, Pape L. Peer reviewed: Tailoring care to vulnerable populations by incorporating social determinants of health: The veterans health administration's "Homeless Patient Aligned Care Team" Program. *Prev Chronic Dis*. 2016;13.
19. Pozdnyakova A, Laiteerapong N, Volerman A, et al. Impact of medical scribes on physician and patient satisfaction in primary care. *J Gen Intern Med*. 2018;33(7):1109-1115.
20. Gidwani R, Nguyen C, Kofoed A, et al. Impact of scribes on physician satisfaction, patient satisfaction, and charting efficiency: a randomized controlled trial. *Ann Fam Med*. 2017;15(5):427-433.
21. Mishra P, Kiang JC, Grant RW. Association of medical scribes in primary care with physician workflow and patient experience. *JAMA Intern Med*. 2018;178(11):1467-1472.
22. Zallman L, Finnegan K, Roll D, Todaro M, Oneiz R, Sayah A. Impact of medical scribes in primary care on productivity, face-to-face time, and patient comfort. *J Am Board Fam Med*. 2018;31(4):612-619.
23. Walker K, Ben-Meir M, Dunlop W, et al. Impact of scribes on emergency medicine doctors' productivity and patient throughput: multicentre randomised trial. *bmj*. 2019;364.

24. Moreno G, Lonowski S, Fu J, et al. Physician experiences with clinical pharmacists in primary care teams. *J Am Pharm Assoc.* 2017;57(6):686-691.
25. White N. Reducing Primary Care Provider Burnout With Pharmacist-Delivered Comprehensive Medication Management. *Am J Lifestyle Med.* Published online 2020:1559827620976539.
26. Lowrie R, Lloyd SM, McConnachie A, Morrison J. A cluster randomised controlled trial of a pharmacist-led collaborative intervention to improve statin prescribing and attainment of cholesterol targets in primary care. *PLoS One.* 2014;9(11):e113370.
27. Norton MC, Haftman ME, Buzzard LN. Impact of physician-pharmacist collaboration on diabetes outcomes and health care use. *J Am Board Fam Med.* 2020;33(5):745-753.
28. Gary TL, Bone LR, Hill MN, et al. Randomized controlled trial of the effects of nurse case manager and community health worker interventions on risk factors for diabetes-related complications in urban African Americans. *Prev Med (Baltim).* 2003;37(1):23-32.
29. Campbell JD, Brooks M, Hosokawa P, Robinson J, Song L, Krieger J. Community health worker home visits for Medicaid-enrolled children with asthma: effects on asthma outcomes and costs. *Am J Public Health.* 2015;105(11):2366-2372.
30. Whitely et al., 2006
31. Jacob V, Chattopadhyay SK, Hopkins DP, et al. Economics of community health workers for chronic disease: findings from community guide systematic reviews. *Am J Prev Med.* 2019;56(3):e95-e106.
32. Otero-Sabogal et al., 2010
33. Rabovsky AJ, Rothberg MB, Rose SL, Brateanu A, Kou L, Misra-Hebert AD. Content and outcomes of social work consultation for patients with diabetes in primary care. *J Am Board Fam Med.* 2017;30(1):35-43.
34. Holst A, Ginter A, Björkelund C, et al. Cost-effectiveness of a care manager collaborative care programme for patients with depression in primary care: economic evaluation of a pragmatic randomised controlled study. *BMJ Open.* 2018;8(11):e024741.
35. Hudon C, Chouinard M-C, Diadiou F, Lambert M, Bouliane D. Case management in primary care for frequent users of health care services with chronic diseases: a qualitative study of patient and family experience. *Ann Fam Med.* 2015;13(6):523-528.
36. Hudon C, Chouinard M-C, Dubois M-F, et al. Case management in primary care for frequent users of health care services: a mixed methods study. *Ann Fam Med.* 2018;16(3):232-239.
37. Sharma AE, Angel L, AND Bui Q. Patient Advisory Councils: Giving Patients a Seat at the Table. *Fam Pract Manag.* 2015;22(4):22-27.
38. Oehrlein EM, Luo X, Savone M, et al. Engaging Patients in Real-World Evidence: An Atrial Fibrillation Patient Advisory Board Case Example. *Patient-Patient-Centered Outcomes Res.* Published online 2020:1-6.

39. Addis M, Cartwright C, Cowan P, et al. Patient Advisory Committee for a Chronic Opioid Therapy Risk Reduction Evaluation: Engaging Diverse Patients. *Prog Community Heal Partnerships Res Educ Action*. 2020;14(4):481-488.
40. Luxford K, Safran DG, Delbanco T. Promoting patient-centered care: a qualitative study of facilitators and barriers in healthcare organizations with a reputation for improving the patient experience. *Int J Qual Heal Care*. 2011;23(5):510-515.
41. Temel JS, Greer JA, Muzikansky A, et al. Early palliative care for patients with metastatic non-small-cell lung cancer. *N Engl J Med*. 2010;363(8):733-742.
42. Pelayo-Alvarez M, Perez-Hoyos S, Agra-Varela Y. Clinical effectiveness of online training in palliative care of primary care physicians. *J Palliat Med*. 2013;16(10):1188-1196.
43. Harrison KL, Dzeng E, Ritchie CS, et al. Addressing palliative care clinician burnout in organizations: a workforce necessity, an ethical imperative. *J Pain Symptom Manage*. 2017;53(6):1091-1096.
44. Snyder S, Hazelett S, Allen K, Radwany S. Physician knowledge, attitude, and experience with advance care planning, palliative care, and hospice: results of a primary care survey. *Am J Hosp Palliat Med*. 2013;30(5):419-424.
45. McCormick E, Chai E, Meier DE. Integrating palliative care into primary care. *Mt Sinai J Med A J Transl Pers Med*. 2012;79(5):579-585.
46. Owens D, Eby K, Burson S, Green M, McGoodwin W, Isaac M. Primary Palliative Care Clinic Pilot Project demonstrates benefits of a nurse practitioner-directed clinic providing primary and palliative care. *J Am Acad Nurse Pract*. 2012;24(1):52-58.
47. Morrison RS, Penrod JD, Cassel JB, et al. Cost savings associated with US hospital palliative care consultation programs. *Arch Intern Med*. 2008;168(16):1783-1790.
48. May P, Garrido MM, Cassel JB, et al. Prospective cohort study of hospital palliative care teams for inpatients with advanced cancer: earlier consultation is associated with larger cost-saving effect. *J Clin Oncol*. 2015;33(25):2745.
49. Dixon J, Matosevic T, Knapp M. The economic evidence for advance care planning: systematic review of evidence. *Palliat Med*. 2015;29(10):869-884.
50. Fitzpatrick J, Mavissakalian M, Luciani T, Xu Y, Mazurek A. Economic impact of early inpatient palliative care intervention in a community hospital setting. *J Palliat Med*. 2018;21(7):933-939.
51. McCarthy IM, Robinson C, Huq S, Philastre M, Fine RL. Cost savings from palliative care teams and guidance for a financially viable palliative care program. *Health Serv Res*. 2015;50(1):217-236.
52. Hicks LL, Fleming DA, Desaulnier A. The application of remote monitoring to improve health outcomes to a rural area. *Telemed e-Health*. 2009;15(7):664-671.
53. Ricci R Pietro, Morichelli L, Quarta L, et al. Long-term patient acceptance of and satisfaction with implanted device remote monitoring. *Europace*. 2010;12(5):674-679.

54. Varma N, Ricci R Pietro. Impact of remote monitoring on clinical outcomes. *J Cardiovasc Electrophysiol*. 2015;26(12):1388-1395.
55. MacIntyre CR, Ruth D, Ansari Z. Hospital in the home is cost saving for appropriately selected patients: a comparison with in-hospital care. *Int J Qual Heal Care*. 2002;14(4):285-293.
56. Leff B, Burton L, Mader SL, et al. Hospital at home: feasibility and outcomes of a program to provide hospital-level care at home for acutely ill older patients. *Ann Intern Med*. 2005;143(11):798-808.
57. Finello KM, Terteryan A, Riewerts RJ. Home visiting programs: what the primary care clinician should know. *Curr Probl Pediatr Adolesc Health Care*. 2016;46(4):101-125.
58. Perl S, Stiegler P, Rotman B, et al. Socio-economic effects and cost saving potential of remote patient monitoring (SAVE-HM trial). *Int J Cardiol*. 2013;169(6):402-407.
59. Balasubramanian BA, Cohen DJ, Jetelina KK, et al. Outcomes of integrated behavioral health with primary care. *J Am Board Fam Med*. 2017;30(2):130-139.
60. Ray-Sannerud BN, Dolan DC, Morrow CE, et al. Longitudinal outcomes after brief behavioral health intervention in an integrated primary care clinic. *Fam Syst Heal*. 2012;30(1):60.
61. Asarnow JR, Rozenman M, Wiblin J, Zeltzer L. Integrated medical-behavioral care compared with usual primary care for child and adolescent behavioral health: a meta-analysis. *JAMA Pediatr*. 2015;169(10):929-937.
62. Zubatsky M, Pettinelli D, Salas J, Davis D. Associations between integrated care practice and burnout factors of primary care physicians. *Fam Med*. 2018;50(10):770-774.
63. Zubatsky M, Runyan C, Gulotta S, Knight JR, Pettinelli JD. Burnout among behavioral health providers in integrated care settings. *Fam Syst Heal*. 2020;38(1):74.
64. Ross KM, Klein B, Ferro K, McQueeney DA, Gernon R, Miller BF. The cost effectiveness of embedding a behavioral health clinician into an existing primary care practice to facilitate the integration of care: A prospective, case-control program evaluation. *J Clin Psychol Med Settings*. 2019;26(1):59-67.
65. Azadfar M, Huecker MR, Leaming JM. Opioid Addiction. [Updated 2023 Apr 29]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2023 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK448203/>
66. Zubkoff L, Shiner B, Watts B V. Staff perceptions of substance use disorder treatment in VA primary care-mental health integrated clinics. *J Subst Abuse Treat*. 2016;70:44-49.
67. Jack HE, Oller D, Kelly J, Magidson JF, Wakeman SE. Addressing substance use disorder in primary care: the role, integration, and impact of recovery coaches. *Subst Abus*. 2018;39(3):307-314.
68. Mohlman MK, Tanzman B, Finison K, Pinette M, Jones C. Impact of medication-assisted treatment for opioid addiction on Medicaid expenditures and health services utilization rates in Vermont. *J Subst Abuse Treat*. 2016;67:9-14.
69. Tkacz J, Volpicelli J, Un H, Ruetsch C. Relationship between buprenorphine adherence and health service utilization and costs among opioid dependent patients. *J Subst Abuse Treat*. 2014;46(4):456-462.
70. Cole ES, DiDomenico E, Cochran G, et al. The role of primary care in improving access to medication-assisted treatment for rural Medicaid enrollees with opioid use disorder. *J Gen Intern Med*. 2019;34(6):936-943.
71. Padgett TM. The Advantages and Disadvantages of Medication-Assisted Treatment in Primary

Care Offices. *J Addict Nurs.* 2019;30(4):238-241.

References

Buche J, Singer PM, Grazier K, King E, Maniere E, Beck AJ. Primary care and behavioral health workforce integration: Barriers and best practices. *Behav Heal Work Res Cent.* 2017;1(1):1-16.

Wagner EH, Flinter M, Hsu C, et al. Effective team-based primary care: observations from innovative practices. *BMC Fam Pract.* 2017;18(1):1-9.

Basu S, Landon BE, Williams JW, Bitton A, Song Z, Phillips RS. Behavioral health integration into primary care: A microsimulation of financial implications for practices. *J Gen Intern Med.* 2017;32(12):1330-1341.

Cummings NA, O'Donohue WT, Cummings JL. The financial dimension of integrated behavioral/primary care. *J Clin Psychol Med Settings.* 2009;16(1):31-39.

Fehily C, Ling R, Searles A, et al. An economic evaluation of a specialist preventive care clinician in a community mental health service: a randomised controlled trial. *BMC Health Serv Res.* 2020;20:1-16.
Possemato K, Johnson EM, Beehler GP, et al. Patient outcomes associated with primary care behavioral health services: A systematic review. *Gen Hosp Psychiatry.* 2018;53:1-11.

Wagner EH, Flinter M, Hsu C, et al. Effective team-based primary care: observations from innovative practices. *BMC Fam Pract.* 2017;18(1):1-9.

Lagisetty P, Klasa K, Bush C, Heisler M, Chopra V, Bohnert A. Primary care models for treating opioid use disorders: what actually works? A systematic review. *PLoS One.* 2017;12(10):e0186315.

Thomas CP, Fullerton CA, Kim M, et al. Medication-assisted treatment with buprenorphine: assessing the evidence. *Psychiatr Serv.* 2014;65(2):158-170.

Urada D, Teruya C, Gelberg L, Rawson R. Integration of substance use disorder services with primary care: health center surveys and qualitative interviews. *Subst Abuse Treat Prev Policy.* 2014;9(1):1-9.

Barry DT, Moore BA, Pantalon M V, et al. Patient satisfaction with primary care office-based buprenorphine/naloxone treatment. *J Gen Intern Med.* 2007;22(2):242-245.

Press KR, Zornberg GZ, Geller G, Carrese J, Fingerhood MI. What patients with addiction disorders need from their primary care physicians: a qualitative study. *Subst Abus.* 2016;37(2):349-355.

Kim TW, Samet JH, Cheng DM, Winter MR, Safran DG, Saitz R. Primary care quality and addiction severity: a prospective cohort study. *Health Serv Res.* 2007;42(2):755-772.

Boudreau DM, Capoccia KL, Sullivan SD, et al. Collaborative care model to improve outcomes in major depression. *Ann Pharmacother.* 2002;36(4):585-591.

Castro EM, Van Regenmortel T, Vanhaecht K, Sermeus W, Van Hecke A. Patient empowerment, patient participation and patient-centeredness in hospital care: a concept analysis based on a literature review. *Patient Educ Couns*. 2016;99(12):1923-1939.

Coulter A, Locock L, Ziebland S, Calabrese J. Collecting data on patient experience is not enough: they must be used to improve care. *Bmj*. 2014;348.

Dickinson LM, Rost K, Nutting PA, Elliott CE, Keeley RD, Pincus H. RCT of a care manager intervention for major depression in primary care: 2-year costs for patients with physical vs psychological complaints. *Ann Fam Med*. 2005;3(1):15-22.

Fazel MT, Bagalagel A, Lee JK, Martin JR, Slack MK. Impact of diabetes care by pharmacists as part of health care team in ambulatory settings: a systematic review and meta-analysis. *Ann Pharmacother*. 2017;51(10):890-907.

Fraser MW, Lombardi BM, Wu S, de Saxe Zerden L, Richman EL, Fraher EP. Integrated primary care and social work: A systematic review. *J Soc Social Work Res*. 2018;9(2):175-215.

Hirsch JD, Steers N, Adler DS, et al. Primary care-based, pharmacist-physician collaborative medication-therapy management of hypertension: a randomized, pragmatic trial. *Clin Ther*. 2014;36(9):1244-1254.

Joo JY, Liu MF. Experiences of case management with chronic illnesses: a qualitative systematic review. *Int Nurs Rev*. 2018;65(1):102-113.

Kangovi S, Mitra N, Grande D, Long JA, Asch DA. Evidence-Based Community Health Worker Program Addresses Unmet Social Needs And Generates Positive Return On Investment: A return on investment analysis of a randomized controlled trial of a standardized community health worker program that addresses unmet. *Health Aff*. 2020;39(2):207-213.

Katon WJ, Schoenbaum M, Fan M-Y, et al. Cost-effectiveness of improving primary care treatment of late-life depression. *Arch Gen Psychiatry*. 2005;62(12):1313-1320.

Lin H-W, Lin C-H, Chang C-K, et al. Economic outcomes of pharmacist-physician medication therapy management for polypharmacy elderly: a prospective, randomized, controlled trial. *J Formos Med Assoc*. 2018;117(3):235-243.

McGregor J, Mercer SW, Harris FM. Health benefits of primary care social work for adults with complex health and social needs: a systematic review. *Health Soc Care Community*. 2018;26(1):1-13.

Rush CH. Return on investment from employment of community health workers. *J Ambul Care Manage*. 2012;35(2):133-137.

Sattler A, Rydel T, Nguyen C, Lin S. One year of family physicians' observations on working with medical scribes. *J Am Board Fam Med*. 2018;31(1):49-56.

Whitley EM, Everhart RM, Wright RA. Measuring return on investment of outreach by community health workers. *J Health Care Poor Underserved*. 2006;17(1):6-15.

Zillich AJ, Jaynes HA, Bex SD, et al. Evaluation of pharmacist care for hypertension in the Veterans Affairs patient-centered medical home: a retrospective case-control study. *Am J Med.* 2015;128(5):539-e1.

De Marchis E, Knox M, Hessler D, et al. Physician burnout and higher clinic capacity to address patients' social needs. *J Am Board Fam Med.* 2019;32(1):69-78.

Jacobs EA, Sadowski LS, Rathouz PJ. The impact of an enhanced interpreter service intervention on hospital costs and patient satisfaction. *J Gen Intern Med.* 2007;22(2):306-311.

Jones M. Walk-in primary medical care centres: lessons from Canada. *Bmj.* 2000;321(7266):928-931.

Junod Perron N, Piguet V, Bovier PA. Long-term effectiveness of a multifaceted intervention on pain management in a walk-in clinic. *J Assoc Physicians.* 2007;100(4):225-232.

Karliner LS, Jacobs EA, Chen AH, Mutha S. Do professional interpreters improve clinical care for patients with limited English proficiency? A systematic review of the literature. *Health Serv Res.* 2007;42(2):727-754.

Kirkman-Liff B, Mondragón D. Language of interview: relevance for research of southwest Hispanics. *Am J Public Health.* 1991;81(11):1399-1404.

Little C, Alsen M, Barlow J, et al. The Impact of Socioeconomic Status on the Clinical Outcomes of COVID-19; a Retrospective Cohort Study. *J Community Health.* Published online 2021:1-9.

Marcos LR, Urcuyo L, Kesselman M, Alpert M. The language barrier in evaluating Spanish-American patients. *Arch Gen Psychiatry.* 1973;29(5):655-659.

Myers K, Vander Stoep A, Zhou C, McCarty CA, Katon W. Effectiveness of a telehealth service delivery model for treating attention-deficit/hyperactivity disorder: a community-based randomized controlled trial. *J Am Acad Child Adolesc Psychiatry.* 2015;54(4):263-274.

Schäfer I, Hansen H, Schön G, et al. The influence of age, gender and socio-economic status on multimorbidity patterns in primary care. First results from the multicare cohort study. *BMC Health Serv Res.* 2012;12(1):1-15.