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## Improving physical health among people with serious mental illness: The role of the specialty mental health sector

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### Abstract

People with serious mental illness experience 10–20 years excess mortality, driven by undertreated physical health conditions. In the U.S., there is growing interest in models integrating physical health care delivery, management, and/or coordination into specialty mental health programs, sometimes called “reverse integration.” In November 2019, the Johns Hopkins ALACRITY Center for Health and Longevity in Mental Illness convened a forum of 25 experts to discuss the current state of the evidence on specialty mental health system-based integrated care

models and to identify priorities for future research, policy, and practice. This manuscript summarizes the group's conclusions. Key research priorities included identifying the active ingredients within multi-component integrated care models and development and validation of integration performance metrics. Key policy and practice recommendations included new financing mechanisms and strategies to build workforce and data capacity. Forum participants also highlighted an overarching need to address socioeconomic risks contributing to excess mortality among adults with serious mental illness.

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## Introduction

People with serious mental illnesses like schizophrenia, bipolar disorder, and major depressive disorder die 10–20 years earlier than the overall population.<sup>1–4</sup> This excess mortality is driven by comorbid physical health conditions including cardiovascular disease and cancer.<sup>2,5,6</sup> People with serious mental illness also experience elevated rates of and morbidity and mortality from infectious diseases, including HIV and hepatitis;<sup>7</sup> emerging evidence suggests this group is also disproportionately adversely affected by COVID-19.<sup>8,9</sup> Many people with serious mental illness, particularly those enrolled in Medicaid, do not receive guideline-concordant medical care physical health conditions.<sup>10,11</sup>

Several integrated general medical and mental health care models are being tried in the U.S., though they are not implemented in a systematic or standardized manner. In a fully integrated system, general medical and specialty mental health providers are employed by the same organization, co-located, use the same medical record and other health information systems, and practice team-based care. Due to the historical separation of the U.S. general medical and specialty mental health systems, in practice integrated care is often based in one setting or the other, with either a primary care (or, less commonly, another general medical setting) or a specialty mental health organization leading integration efforts. Regardless of which sector leads, integrated care operates along a multidimensional continuum ranging from basic care coordination to comprehensive, co-located, team-based care.<sup>12,13</sup> This continuum spans multiple domains related to both organizational structure and culture. Organizations seeking to integrate care may move along the continuum at differential rates within domains, for example a scenario in which an organization has no co-located services but has an organizational culture that is highly supportive of integration.<sup>14</sup>

The majority of extant research has focused on primary care-based integration models such as Collaborative Care.<sup>15–17</sup> or the Patient Centered Medical Home.<sup>18–22</sup> Less research has examined specialty mental health-based integration models, which are often lumped under the umbrella term “behavioral health homes” but in reality encompass a wide range of structures and activities.<sup>23</sup> This type of model has grown in recent years, in part due to SAMHSA's Primary Behavioral Health Care Integration (PBHCI) program<sup>24</sup> and the Affordable Care Act Medicaid health home waiver, which 17 U.S. states and D.C. have used to integrate physical health care delivery, management, and/or coordination into specialty mental health programs.<sup>25</sup> In November 2019, the Johns Hopkins University ALACRITY Center for Health and Longevity in Mental Illness convened a forum of 25 experts to discuss the current state of the evidence on specialty mental health system-based integrated care

models and to identify priorities for future research, policy, and practice that would advance an agenda to guide future implementation of effective models. This piece summarizes the group's conclusions.

Forum participants included researchers and practitioners who have led study and/or implementation of mental health system-based integrated care models in the U.S. Fifteen individual research experts from five universities and three large research think tanks were represented. Ten total practitioner experts representing two state Medicaid agencies leading relevant integration initiatives; two national mental health advocacy organizations; and two community health care organizations implementing primary care integration in their clinics participated in the forum. As our focus was on developing a U.S. policy agenda, we limited the participants to those conducting research or practicing in the U.S., though the group considered evidence from non-U.S. settings. The forum followed a semi-structured discussion process led by this manuscript's lead author. The forum was organized into three sessions focused on research, policy and practice followed by a final concluding session. Each session began with a short panel presentation, given by 3–4 of the experts participating in the forum, summarizing the current research/policy/practice landscape. Panel presentations were followed by moderated discussion guided by a semi-structured protocol, which was provided to participants in advance of the meeting. The concluding session summarized areas of consensus from the research, policy, and practice sessions and produced the blueprint for the conclusions reported in this piece.

## Evidence summary

Three randomized clinical trials (RCT) have tested U.S. specialty mental health-based integrated care models.<sup>26–28</sup> In two of the models tested, a general medical nurse practitioner and nurse care manager were co-located at the mental health clinic and led delivery, coordination, and management of physical health care for people with serious mental illness.<sup>27,28</sup> These models led to increases in primary care visits, receipt of preventive medical care, quality of cardiometabolic care, and self-reported physical health, but not improved clinical outcomes at 12-month follow-up. A third RCT tested a model in which a nurse and a health coach delivered tailored counseling, care coordination and care management to clients with serious mental illness attending one of four outpatient psychiatric rehabilitation programs and affiliated mental health clinics.<sup>29</sup> Trials results showed that this model reduced cardiovascular risk, measured by the Framingham Risk Score, at 18 months.

Replication of these promising clinical trial results in real-world specialty mental health settings has to date proven elusive. Integrated care models implemented in outpatient mental health clinics and psychiatric rehabilitation programs have increased primary care access as well as screening and monitoring of physical health conditions among people with serious mental illness.<sup>23,30</sup> But, real-world models have had very limited or no effects on quality of physical health care or physical health outcomes.<sup>23,30</sup> Importantly, a recent evaluation of the PBHCI program is pending release by SAMHSA; this evaluation will provide more comprehensive insight into the program's effects on physical health outcomes than earlier

PHBCI studies.<sup>31</sup> These findings are likely driven by a combination of factors, including the use of low-intensity integrated care interventions and implementation challenges.

Studies have identified multiple barriers to implementation of specialty mental health-based integrated care models, including inadequate financial and other types of incentives to implement coordinated, population-based care; lack of mechanisms to hold behavioral health and general medical providers jointly accountable for the overall health of people with serious mental illness; limited health IT capacity, particularly lack of adaptable shared electronic health records (EHRs) appropriate for both general medical and mental health providers,<sup>32</sup> and lack of risk stratification tools, e.g., databases that can be easily queried to identify patients with uncontrolled diabetes; insufficient staffing capacity, including both understaffing and lack of needed training among existing staff; and, in models without co-location, challenges engaging external medical providers.<sup>23,33–39</sup>

There are also important differences between specialty mental health-based and primary care-based integration models. In most behavioral health home programs in the U.S., prescribing remains siloed, with specialty mental health providers prescribing psychotropic medications and general medical providers prescribing medications for physical health conditions.<sup>23,33,35,40–42</sup> In contrast, in primary care-based models the primary care physician often prescribes both types of medications.<sup>43</sup> Relative to the privately-insured populations in which many Collaborative Care models have been implemented,<sup>44,45</sup> people with serious mental illness have more social and economic problems compounding their care needs.<sup>46–50</sup> Where primary care-based models typically focus on treatment for one psychiatric disorder, often depression, specialty mental health-based models focus on a broad range of physical health conditions and also often incorporate health behaviors.<sup>45,51,52</sup>

Most studies have examined how general medical-based models affect mental health outcomes and how mental health-based models affect physical health outcomes, but there is evidence indicating that both types of models can improve both categories of outcomes.<sup>15,20,53–55</sup> While primary care-based models have focused predominantly on anxiety and mild/moderate depression, they have also been shown to benefit people with serious mental illness.<sup>20,56,57</sup> A recent clinical trial found that the PRIMROSE intervention, designed to help general practitioners manage cardiovascular risk in serious mental illness, had no effects on total cholesterol but did reduce psychiatric admissions.<sup>58</sup> Future research should consider whether certain subgroups of people with serious mental illness are better served or whether certain interventions are best delivered by models based in one sector over the other.

## Research Priorities

The group of experts at the November 2019 Johns Hopkins ALACRITY Center forum identified five priorities for future research (Box 1).

### Identify Key Ingredients

The specialty mental health-based integrated care models shown to improve care access, quality, and health outcomes among people with serious mental illness in clinical trials

include multiple interacting components.<sup>26–28</sup> This complexity is a barrier to high-fidelity scale-up in often under-resourced public mental health settings. Simplifying integrated care models and disseminating the most effective aspects of these models will support implementation, but to date it is unclear which model components are the “key ingredients” for success. This issue is not unique to specialty mental health-based integrated care models; there is also a need to identify the active ingredients of care coordination and management interventions shown to be effective at reducing cardiovascular risk in the general population.<sup>59,60</sup> Identifying active ingredients in general population models would allow the field to then consider which features need to be adapted for serious mental illness.

We suggest that the Continuum-Based Framework for Advancing Integration of General Health in Behavioral Health Settings<sup>13</sup> can be used as a starting point for delineating ingredients. The eight framework domains are: screening, referral to care and follow-up; evidence-based care for preventive interventions and common general medical conditions; ongoing care management; self-management support that is adapted to culture, socioeconomic and life experience of patients; multi-disciplinary team (including consumers) with dedicated time to provide general health care; Systematic quality improvement; linkages with community/social services that improve general health and mitigate environmental risk factors; sustainability, with a focus on financing mechanisms. For each domain, the framework lays out preliminary, intermediate, and advanced activities. Identification of key ingredients could also be guided by other frameworks delineating stages of implementation, such as the Stages of Implementation Completion (SIC).<sup>61</sup>

To gather preliminary evidence on ingredient effectiveness, this framework could be retrospectively applied to models tested in existing studies. Meta-regression, a regression technique in which the outcome variable is the effect estimate of an intervention and the explanatory variables are characteristics of the intervention,<sup>62</sup> could then be used to explore whether specific ingredients are associated with improved outcomes and whether certain ingredients appear to influence some outcomes more than others.<sup>45</sup> Future evaluations of specialty mental health-based integration models should locate the ingredients of their models within this framework at the outset to make the ‘black-box’ of integrated care more transparent. Specialty mental health-based integration models of varying complexity also need to be rigorously tested head-to-head in comparative effectiveness trials, which should be powered to identify mediating and moderating relationships among model ingredients and have sufficient duration for the new care processes to influence patient outcomes.

### **Develop strategies for measuring fidelity**

Poor fidelity is one likely driver of the ‘voltage drop’ phenomenon, in which interventions shown to be effective in clinical trials are less effective in real-world settings.. Clinical trial staff carefully monitor and adjust implementation to ensure that model components are implemented as designed. In real-world settings, the integrated care model is often one of many competing priorities and fidelity is not typically monitored; as a result, components of the model are often under-implemented, significantly adapted, or not implemented at all. Development of valid fidelity monitoring strategies that are feasible to carry out in real-world settings is needed in order to bring effective integration models to scale and

also assist in developing metrics for quality improvement and accountability. The stages of implementation completion tool is one potential model.<sup>63</sup> Fidelity measurement should focus on the model ingredients identified as key to improving outcomes.

### **Further develop and evaluate performance metrics**

U.S. healthcare financing is increasingly tied to quality benchmarks through value-based payment models such as global budgeting and accountable care.<sup>64,65</sup> Performance metrics have the potential to incentivize implementation of evidence-based integrated care for people with serious mental illness, but limited measures focused on physical health in serious mental illness exist: the Healthcare Effectiveness Data and Information Set (HEDIS) currently includes three relevant measures: Diabetes Screening for People with Schizophrenia or Bipolar Disorder Who are Using Antipsychotic Medications; Diabetes Monitoring for People with Diabetes and Schizophrenia; and Cardiovascular Monitoring for People with Cardiovascular Disease and Schizophrenia.<sup>66</sup> In a literature review and Delphi process of existing integration measures, only two of 43 measure concepts were classified as having high importance, validity, and feasibility by a broad group of stakeholders: general medical screening and follow-up in behavioral health settings and mental health screening at general medical healthcare settings.<sup>67</sup> While 31 additional measures were deemed important, none were sufficiently valid or feasible to be considered ready for implementation. Future research is needed to determine which performance metrics are associated with improved care and health outcomes among people with serious mental illness, and to develop and evaluate strategies to implement valid measures. Building health IT capacity in specialty mental health programs will be critical to successfully collecting performance metrics that provide meaningful information while reducing data collection burden; building this capacity is a significant undertaking for mental health clinics that often requires external financial and technical support.<sup>68</sup> Building on the prior two recommendations, performance metrics indicating successful implementation of key model ingredients are one strategy for measuring fidelity.

### **Evaluate strategies to sustain and scale-up evidence-based interventions:**

Tailored interventions shown to improve physical health among people with serious mental illness have been shown in RCTs to reduce obesity, tobacco smoking, and cardiovascular risk among people with serious mental illness,<sup>26,29,69–73</sup> but to date these interventions have not been sustained long-term following clinical trials or widely scaled.. Implementation research, likely in the form of hybrid implementation-effectiveness trials,<sup>74</sup> is needed to test strategies (for example, provider training, facilitation, coaching, audit-and-feedback) to support adoption, high-fidelity implementation, and sustainment of evidence-based physical health interventions for people with serious mental illness within integrated care models.

Cost-effectiveness research can also support scale-up, as decision-makers frequently place high value on understanding cost-effectiveness. Specialty mental health-based integration models face the same “cost-effectiveness conundrum”<sup>75</sup> as primary care-based models: they require significant investments in staff and data infrastructure and, by design, identify previously unmet patient needs requiring additional services. Understanding the tradeoffs between costs and effectiveness is critical to inform policymaker decision making. If

integrated care models are costlier in the short-run but lower healthcare utilization and/or improve patient outcomes in the long run, the trade-off may be attractive to policymakers given that people with serious mental illness are likely to require publicly financed healthcare for most of their lives. If integrated models can significantly improve physical health and reduced premature mortality among people with serious mental illness, increased costs – even over the long-term – may be acceptable to policymakers. While integrated care models may generate cost-savings through reduced psychiatric hospitalizations,<sup>76</sup> psychiatric hospitalization rates have declined over the past several decades, decreasing the potential for further reductions.<sup>77,78</sup> The next wave of cost-effectiveness research needs to consider potential savings from personal health costs including reduced morbidity and mortality and reduced care-giving costs as well as potential savings from non-health sectors including labor and criminal justice.

These research priorities will need to be carried out through collaborations between researchers and health systems. The need to understand and tailor integration interventions to real-world healthcare settings is an integral component of all of these research priorities. Collaborations between researchers and large integrated health systems or consortiums of systems such as those used in studies of real-world implementation of Collaborative Care<sup>79</sup> are critical to the pursuit of this research agenda.

## Policy and Practice Priorities

Forum participants identified four policy and practice priorities (Box 2).

### Improve financing models:

Specialty mental health-based integration models have primarily been funded through (unsustainable) grant programs and modest per-member per-month insurance reimbursements.<sup>23</sup> Implementers have noted that payments are too low to cover the structural costs associated with care integration and that that multi-payer financing mechanisms are needed.<sup>23,33,35,36</sup> In addition, one-sided reimbursement, in which the entire payment flows to the mental health program (or, in primary care-based models, to the general medical program<sup>80</sup>), has been identified as an implementation barrier; with a one-sided payment mechanism, there is no financial incentive for external general medical providers to work with the specialty mental health program to coordinate physical health care for people with serious mental illness.<sup>33,40</sup> This is also a barrier in general medical system-based models. For example, the fact that reimbursement for CMS behavioral health integration codes flows entirely to the general medical provider, who then must set up contractual, ledger-transfer, or other strategies to pay behavioral health partners, has been cited as an implementation barrier.<sup>80,81</sup>

Potentially promising alternatives include hub-and-spoke<sup>82</sup> and accountable care models<sup>83</sup>, though the available evidence suggests that accountable care organizations (ACOs) are unlikely to improve care for people with serious mental illness without tying shared savings and losses to valid performance metrics.<sup>84,85</sup> In the absence of valid integration performance metrics, the ‘segmentation strategy,’ in which existing metrics of physical health care quality are assessed separately for persons with serious mental illness, is a potentially feasible

alternative.<sup>67,86</sup> For example, tobacco use is a leading cause of cardiovascular risk and premature mortality in serious mental illness.<sup>2</sup> Holding mental health providers accountable for recommending guideline-concordant cessation medications could be operationalized through application of existing HEDIS measures<sup>87</sup> to the serious mental illness population. This strategy ties in well with population segmentation, a core approach in population health management in which health systems use data tools to identify and monitor groups at high risk of adverse outcomes.<sup>88</sup>

### **Build workforce capacity:**

Lack of workforce capacity is consistently cited as a barrier to care integration.<sup>23,33,35,36</sup> As noted previously, the public mental health system in the U.S. is under resourced, and the U.S. faces a significant mental health provider shortage.<sup>89-92</sup> To meaningfully address the overall provider shortage, we need to increase mental health provider compensation; to increase compensation, we need to increase insurance payments for mental health services.<sup>93</sup> In the shorter-term, strategies for improving efficiency in team-based care models are needed, such as greater use of non-physician clinicians and peers.<sup>94</sup> General medical and specialty mental health clinical training, currently siloed, needs to be integrated so that the mental health workforce is trained in basic general medical competencies and so the general medical workforce is trained in mental health competencies.<sup>89,95</sup> Training in team-based care and care coordination should also be a central component of clinical training, and system reforms should focus on establishing a culture of “shared accountability” among both mental health and behavioral health providers. Given high levels of mental health stigma among providers and research showing that stigma impedes high-quality care,<sup>96,97</sup> incorporating stigma reduction strategies such as contact-based education<sup>98</sup> into provider training is also critical.

### **Build data capacity:**

The specialty mental sector has lagged behind the general medical sector in electronic health record (EHR) adoption, and when EHRs are in place they are often not compatible with general medical system EHRs.<sup>99,100</sup> This is an important limitation given that shared health records can improve quality of care for people with serious mental illness.<sup>101,102</sup> Lack of data tools supporting population health management has also been noted as a barrier to implementation of integrated care, as mental health programs often have no simple, automated way to identify individuals in their panel with physical health conditions in need of care. Working with EMR engineers to incorporate dashboards and reports into existing EMRs would enhance specialty mental health programs’ ability to efficiently conduct physical health coordination and management. Expanding funding provided through the federal HITECH Act to specialty mental health providers, who are currently excluded, could incentivize IT infrastructure development.<sup>103</sup> In addition, national and state-level data systems tracking care quality and health outcomes among representative samples of people with serious mental illness are urgently needed, for example a national system for tracking administrative claims-based measures of physical health care quality among Medicaid beneficiaries with serious mental illness. In the absence of such systems, we are unable to comprehensively characterize gaps in care, target interventions to specific subgroups of people with serious mental illness or geographic areas, or monitor progress.



### **Build a “behavioral health home” recognition program:**

The growth of primary care-based integration models has been propelled in part by the NCQA Patient Centered Medical Home (PCMH) recognition program.<sup>104</sup> PCMHs aim to improve management of chronic conditions, including but not limited to mental illness, and may improve care for people with serious mental illness.<sup>20,56</sup> The NCQA accreditation program delineates structures and activities that must be in place for PCMH accreditation, with three different levels reflecting varying degrees of adherence to the multi-component model. PCMHs and the Continuum-Based Behavioral Health Integration Framework discussed above are both based on the Chronic Care Model and include many of the same components. The NCQA Patient-Centered Specialty Practice recognition program can be applied to behavioral health homes, though this program does not specifically target programs focused on integrating physical health services into specialty mental health programs. It is worth considering whether a behavioral health home-specific program would support scale-up of specialty mental health-based integration models. Such a program could be based, initially, on the Continuum-Based framework, and then be revised over time to emphasize the key ingredients identified in future research.

A wide range of actors need to be involved in implementing these policy and practice recommendations. Government agencies such as the Centers for Medicare and Medicaid Services (CMS) and the Health Resources and Services Administration (HRSA) have key roles to play; CMS oversees the financing of integration initiatives in Medicaid and Medicare, and HRSA leads healthcare workforce development initiatives. Professional organizations such as the American Psychiatric Association and the National Association of State Mental Health Program Directors play an important role in advocating for policy change and could help to garner the policy support and political will needed to advance multiple of the recommendations above, including financing and health IT changes. Schools of medicine, nursing and allied health professions, as well as their accrediting bodies, have key roles to play in better incorporating integrated care into health professional training. The National Committee for Quality Assurance could lead development of a “behavioral health home” recognition program in parallel with their PCMH recognition program. These and other key actors should collaborate closely with researchers, both to support development of evidence-based policy and to facilitate rigorous evaluation of new policy and practice initiatives.

### **Conclusion**

There is growing interest in models for integrating physical health care delivery, management, and/or coordination into specialty mental health settings in the U.S. While often considered separately by both researchers and practitioners, models designed to integrate general medical and mental health services based in the specialty mental health sector versus the general medical sector are in many ways two sides of the same coin. Several of the research, policy, and practice priorities that we identified for specialty mental health-based models are also relevant for primary care-based models, particularly the need to identify key model ingredients and to improve financing mechanisms.

A final overarching conclusion from the forum was the need to address social determinants of health within integrated care models for people with serious mental illness. Upstream social determinants of health including poverty, unemployment, housing instability and criminal justice involvement, all overrepresented among people with serious mental illness,<sup>105–108</sup> are significant risk factors for adverse mental and physical health outcomes.<sup>108</sup> Reducing excess mortality in serious mental illness necessitates addressing these determinants in addition to improving clinical care. Promising models include ACOs, like Hennepin Health, that have incorporated the social services sector into their shared savings arrangements.<sup>109</sup> The Accountable Health Community model, currently being tested in 29 organizations across the U.S., builds upon the ACO model to explicitly target health-related social needs of Medicare and Medicaid beneficiaries.<sup>110</sup> The Program of All-Inclusive Care (PACE) program, which uses Medicare and Medicaid dollars to finance a full continuum of healthcare and social services for frail older adults,<sup>111</sup> could be adapted for serious mental illness. Future work should prioritize development, implementation, and rigorous evaluation of models for addressing both clinical and social drivers of excess mortality in serious mental illness.

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**Box 1.**

## Specialty mental health-based integrated care models: Research priorities

**1. Identify and unpack “key ingredients”:** Determine which elements of multi-component integrated care models lead to improved care and health outcomes, and their mediating or moderating relationships with one another.

**2. Develop strategies for measuring fidelity:** Create and validate strategies for measuring fidelity to the “key ingredients” of specialty mental health-based integrated care models.

**3. Further develop and evaluate performance metrics:** Develop performance metrics associated with improved health outcomes among people with serious mental illness that can be applied in quality improvement, accountability and incentive programs.

**4. Evaluate strategies to scale-up evidence-based interventions:** Test financing and implementation strategies to support scale-up of interventions shown to improve health outcomes among people with serious mental illness within the organizational structure of specialty mental health-based integrated care models.

**Box 2.**

## Specialty mental health-based integrated care models: Policy and practice priorities

**1. Improve financing models:** Existing evidence suggests that financing models should incentivize two-way collaboration between specialty mental health programs and general medical providers; incentivize shared accountability to outcomes; and support increased provider time across a the broad array of providers needed to work with people with serious mental illness who have complex needs.

**2. Build workforce capacity:** Address mental health provider shortages through long-term financial incentives and shorter-term approaches including task shifting, practice reform, and improved provider training.

**3. Build data capacity:** Increase data sharing capacity across the general medical and specialty mental health systems through integrated EMRs; build data systems to support population health management; enhance public health surveillance data capacity through systems to track key outcomes in the population with serious mental illness at the state and national levels.

**4. Create a “behavioral health home” recognition program:** Create a program parallel to the Primary Care Medical Home (PCMH) recognition program that recognizes “behavioral health homes” implementing key ingredients shown to improve care quality and health outcomes among people with serious mental illness in specialty mental health-based integrated care models.