CoLab
Community & Behavioral Health Policy

Practice report

Value-Based Care Models in Pediatric Mental / Behavioral Health Care

CoLab for Community and Behavioral Health Policy

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Contents

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Executive summary

This policy-focused report synthesizes findings from a partner-engaged scoping review to support health system partners' consideration of **value-based care (VBC)** models and their potential impacts at the intersection of **pediatric populations** and **behavioral/mental health care** (hereafter, mental health care).

Our search was unable to find a single, rigorously conducted study of a child mental health VBC alternative payment model (APM). However, the research literature does provide important insights for value-based payment design that should guide efforts to develop and test any specific models for pediatric mental health.

Here, we present considerations in response to our health system partners' questions, using "recommended courses of care," to offer more concrete examples of what quality looks like in pediatric mental health care and how it could be extended to value-based care.

1. Drawing on clinical judgment, partners' experience, and additional literature areas, CoLab recommends two different APMs tailored to primary care and specialty care sites of practice and, in doing so, considers costs and recommended practices for the following five levels of care: promotion and prevention, mild, moderate, serious/complex, and acute/post-crisis.
2. We suggest alternative payment models for VBC should specify the expected course of quality care in capitated or bundled contracts while developing shared savings approaches and additional incentives for a small number of quality indicators.
3. Given the need for routine collection of multiple measures for effective VBC, CoLab recommends start-up investments to support providers to adopt electronic health records with sufficient front- and back-end reporting to facilitate clinical decision-making, client progress tracking, and the reporting functions needed for billing and monitoring. We recommend providing upfront funds to build providers' capacity to collect and use client symptom and satisfaction measures (see appendix B for details on a promising client feedback measure).
4. We recommend continued engagement with clinical training organizations to support the workforce development needed to provide high quality pediatric mental health services.

Recommendations from our review and synthesis are informed by and share some similarities with payment innovations in pediatric mental health care being explored around the nation. For example, Partners for Kids Accountable Care Organization and the Blue Cross Blue Shield Massachusetts's Alternative Quality Contract have implemented APMs with capitated payments and pay-for-performance incentives for various quality targets and process measures.[1-4] Subjecting these innovations to more rigorous study is the next needed step in advancing our understanding of how to measurably increase quality and access to care for this critical population health need.

This report recommends attending to the payer-provider and state-payer relationship when considering the purpose of VBC models and how value is defined by different partners. Payers should consider incentivizing more mental health promotion and early intervention services while maintaining investments in specialty care. To make VBC models attractive, Washington State should consider shared savings models with managed care organizations based on the collective benefit to the state when pediatric mental health care is adequately addressed.

Background

Mental health challenges for children and youth are widespread, with an urgent and growing need for accessible and high-quality mental and behavioral health care. One in five children in the U.S. have a mental, emotional, developmental, or behavioral disorder, making mental health challenges the leading cause of disability and poor life outcomes facing young people.[5] Yet many children and youth are not receiving the mental health care they need. In 2016, about half of the 7.7 million children with a treatable mental health disorder in the U.S. did not receive adequate treatment.[6] At the same time, treatment of mental disorders accounts for the costliest childhood medical expenditures in our health system.[7]

Policymakers, payers, and providers are increasingly exploring value-based care (VBC) models as a strategy to address problems of both rising healthcare costs and poor outcomes, by paying for value rather than volume of services. Pediatric mental health* needs are a significant public health issue, but evidence on VBC models in this area is nearly nonexistent. Despite considerable interest in the potential of VBC and alternative payment models (APMs), recent reviews have found few approaches that account for the specific needs of children, and evidence on their impact is limited.[1] Similarly, few VBC models have focused on mental and behavioral health care.[8,9] Yet, dominant fee-for-service (FFS) payment models are frequently cited as a barrier to quality in both areas, with practitioners and academics noting that pure FFS models do not support the kind of integrated, coordinated care shown to be effective in pediatric and mental health care.[1,10-13]

Health systems can leverage VBC evidence from other areas to inform ongoing contract and model design to support children and youths' mental health care needs. Although payment reform can have positive impacts, it can also create perverse incentives with unintended consequences.† There are concerns that, unless VBC approaches are examined through the dual lenses of pediatric and mental health needs, this vital area could be neglected or potentially harmed by emerging models.

This report seeks to foreground children's behavioral and mental health needs in VBC. To support health system partners' consideration of VBC models and their potential impacts at the intersection of pediatric populations and mental health care, this policy-focused report synthesizes findings from CoLab's partner-engaged scoping review. This review was conducted in Washington State, with a focus on perspectives and questions from Washington-based partners. Funding was provided by the Washington State Health Care Authority (HCA).

* In this report, we follow the American Psychological Association in using the terms interchangeably and defining mental and behavioral health care broadly, as a category of health care service and delivery provided by several fields involved in psychological assessment and intervention (psychology, psychiatry, neurology, social work, etc.). This type of care includes but is not limited to psychological screening and testing, psychotherapy and family therapy, and neuropsychological rehabilitation.

† For example, positive impacts include outcomes like successfully improving the integration of care, or containing health care costs while maintaining or improving quality of care. Unintended consequences may include problems like exacerbating health inequities or decreasing access to care.

Overview of partner-engaged scoping review process

This project aimed to identify and map relevant evidence, explore what is known about effective VBC models in pediatric mental health, and support opportunities for shared understanding and dialogue on this topic among system partners.

Scoping reviews are an ideal tool to assess the extent of coverage of academic work on a topic, indicate the volume of literature available, and overview its focus.[14] This review took an approach informed by the Johnna Briggs guidelines for scoping reviews,[15] and the McGill University and Sax institute guidelines for rapid evidence reviews.[16,17] CoLab anticipated a relatively small pool of literature specific to VBC models in pediatric mental health, so the scoping approach drew from broader areas to clarify key concepts and definitions, and analyze knowledge gaps.

The **partner-engaged** approach involved health system partner participation at every step of the scoping review, so that questions, synthesis, and outputs could be responsive and tailored to partners' conceptual and informational needs. System partners for this review included various health system and insurance payers in Washington state – including Amerigroup, Molina, Excelsior – the state HCA, clinical and research subject matter experts. Engagement included all-partner group meetings, one-on-one conversations, and email discussions, to support knowledge exchange among and between researchers and health system partners.[18]

Partner-engaged scoping review process

- **Assess system partner interest:** Gathered policy-relevant questions and top VBC topics of interest among system partners (insurance payers, state HCA, and research subject matter experts).
- **Confirming conceptual approach:** Conducted a sensing literature review, then created and confirmed a scoping review approach and search strings with partners.
- **Initial search**: Conducted title and abstract screen and full-text screen, including academic reviews and authoritative grey-literature sources.
- **Coding**: Developed a codebook for data extraction and confirmed the coding approach with partners. Two team members from CoLab coded the included literature.
- **Narrowed the research question**: Met with partners to discuss the results of the initial search and refine the questions.
- **Narrowed the coding focus**: Conducted a second round of more targeted data extraction and coding based on partner feedback, considering the implications of study findings to policy, practice, and research.
- **Confirming presentation of results**: Results of the narrowed coding were synthesized in recommended courses of care to address emergent stakeholder questions.

Review phases & findings

I. Narrowing research question

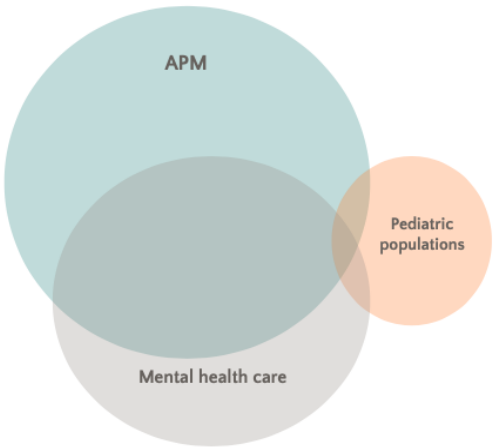
The first phase of partner engagement (summer 2021) culminated in an initial conceptual map of interrelated VBC topics and search terms. CoLab conducted the scoping search, screened titles and abstracts, and added literature from consultation with research subject matter experts, Google searches, and snowball references from returned papers (Preferred Reporting Items for Systematic Reviews and Meta-Analyses, Scoping Review Extension, PRISMA-Scr in Fig. 2).

39 articles and reports were initially included, most published within the last 5 years and focused on U.S.-based APMs. The results included 12 reviews, 14 academic expert opinion articles or conceptual papers, 8 empirical studies, and 4 authoritative grey literature reports (see Appendix A for included articles). CoLab developed a data-extraction codebook and confirmed the approach with partners. Data extraction included considering the scoped literature's implications for the intersection of mental health care and pediatric populations. Two team members coded the full-text articles.

No single, publicly available, rigorous case study of a feasible and effective child mental health VBC payment model emerged in the literature.

While there is VBC-related literature on APMs, mental health care, and pediatric populations separately, there is little evidence on how they overlap (illustrated in figure 1).[‡] Across peer-reviewed and authoritative, practice-based grey literature, there are only a few sources focused on how purpose-built APMs impact pediatric mental health value.

Figure 1: Scoped literature topic overlap



In the limited evidence on pediatric VBC, some models include integrated behavioral/mental health care, but few studies explore those models' impacts on mental health outcomes or spending. Similarly, in the already small area of mental health VBC, some models cover pediatric populations alongside adults, but there is very limited evidence on those models' impact for pediatric populations specifically. For example, only two of the 17 mental health APMs reviewed by Carlo et al. targeted children or adolescents (and both were pay-for-performance models), while 11 APMs focused on adults, and four APMs for mental health focused on all ages.[8] Another study examined how a general APM affected children's mental health care, but that APM was not designed specifically with children or mental health care in mind.[19]

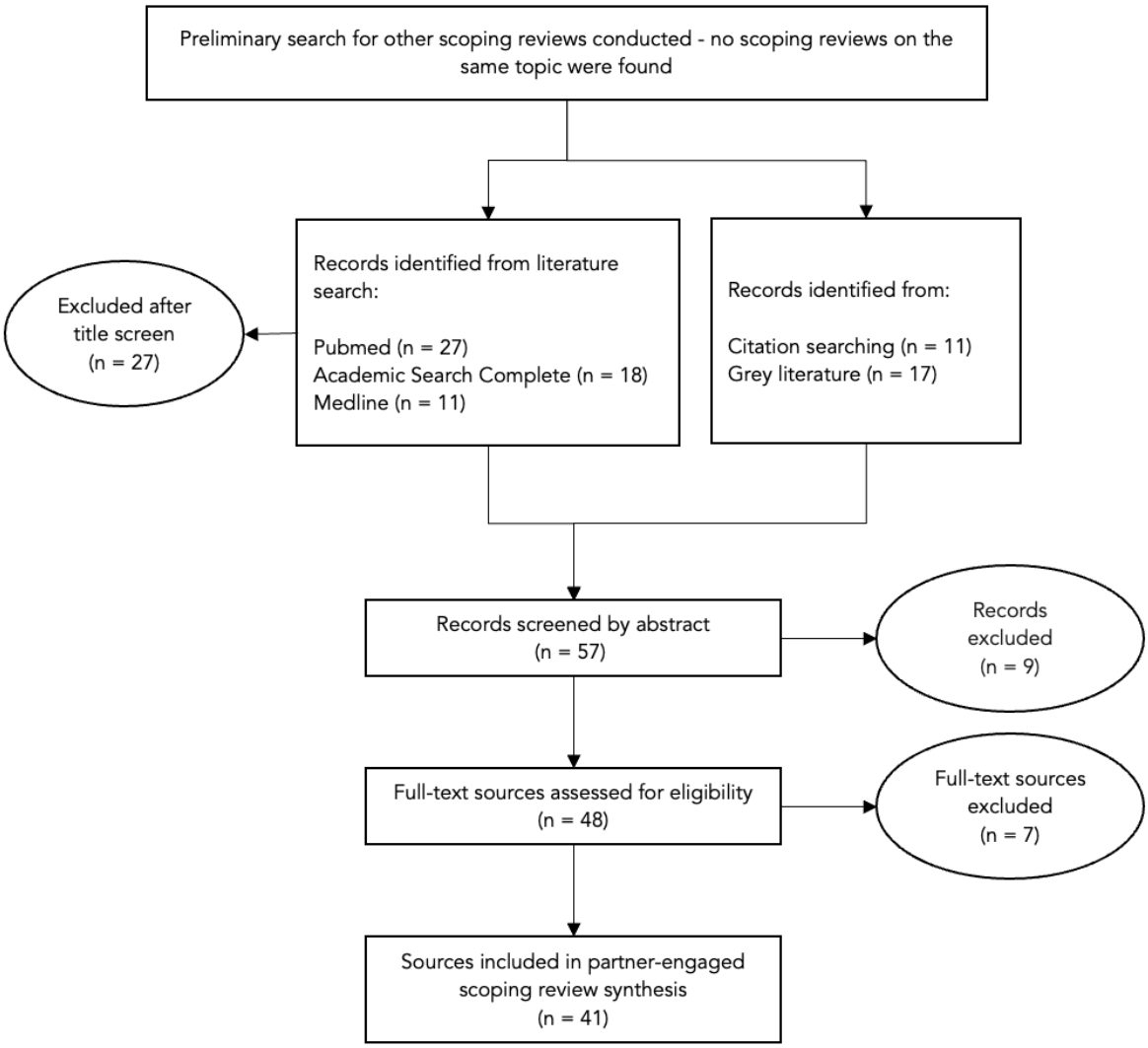
States and payers are also innovating and experimenting with models, but data on impact is not yet available. For example, the Center for Medicare and Medicaid Innovation (CMMI) launched the seven-year Integrated Care for Kids (InCK) model in early 2020, to drive and enable innovative pediatric VBC by piloting state-specific delivery

[‡] Much more is likely known about what does and does not work in terms of VBC design and implementation than what the published literature suggests, because VBC program sponsors (particularly private program sponsors) have gained experience through trial and error, but their technical and payment-related contract details are usually proprietary, and their implementation experiences are not being documented through traditional academic outlets.

system and payment models to better integrate care across sectors including physical health, behavioral health, and other local services.[20] The model's pre-implementation phase has been evaluated, but its quasi-experimental evaluation studies and data on health impacts will not be available for several years.[21]

Overall, the scoped literature is dominated by expert opinions and practice-based advice from providers and other health system partners, but it features very little empirical evidence about the effects and results of VBC models in pediatric mental health care.

Figure 2: Scoping review search strategy



II. Narrowing coding focus

Given the lack of robust, empirical evidence supporting a specific approach to pediatric mental health VBC, the team developed a strategy with partners to refine the review questions for more practice-relevant data extraction. One recently published grey literature report was added at this stage.[22]

The discussion produced eight key questions about VBC for pediatric mental health care:

- How are alternative payments models (APMs), value, and quality being defined in this literature?
- What should a VBC model aim to accomplish in pediatric mental health?
- Do different levels of care need different APMs?
- What kinds of measures should these APMs use?
- What do we know about risks of harm and gaming?
- How should APMs consider evidence-based practices (EBP)?
- What approaches to attribution are effective?
- What contextual factors are enablers or barriers to success?

CoLab used partners' questions to inform a second round of targeted coding and synthesis. Here, we provide brief responses to these thematic, recurring questions, with a snapshot of perspectives or patterns in the scoped literature and CoLab's pragmatic assessment and practice-relevant implications (noting that empirical evidence is limited and/or mixed in many cases).

How are APMs, value, and quality being defined in this VBC literature?

Generally, an **APM** is defined in this literature as any payment approach that is not solely fee for service (FFS) and has a link to quality measurement, including client engagement and outcomes. Payment models are understood as strategies or tools to influence provider behavior and represent one key element within broader VBC models. Using the Health Care Payment Learning & Action Network's (HCPLAN) APM framework is a pragmatic choice to support clarity and learning between health system partners (figure 3).

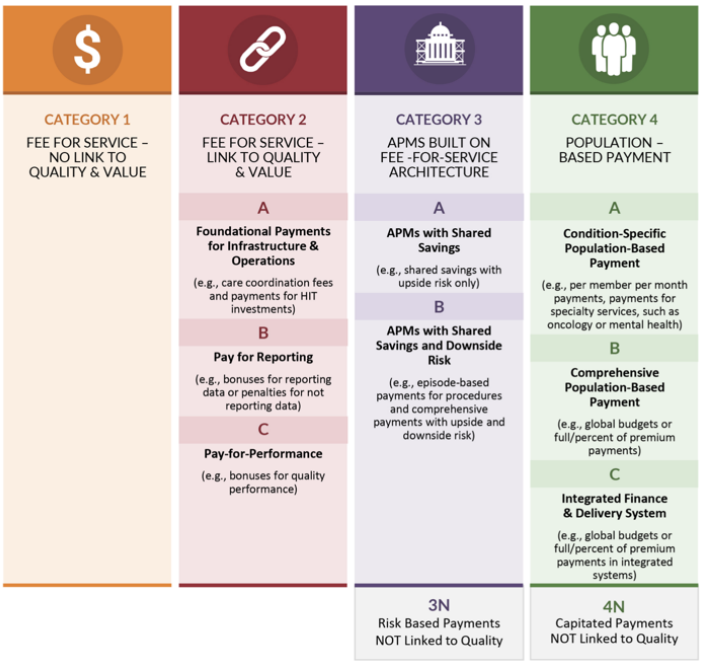
Value is usually defined implicitly, and most often as the optimal relationship between outcomes over the costs to achieve those outcomes (i.e., best health outcomes achieved per dollar spent).[23,24] But in practice, defining what counts as costs and desirable outcomes depends on one's vantage point and priorities. Different payer, provider, and patient perspectives result in very different value equations.[25] In pediatric mental health care, any definition of value should consider longer-term impacts on outcomes and costs, both within and outside the health sector.[26]

This reviewed literature (narrowly focused on value-based care) does not define **quality** care in pediatric mental health, although it does mention high-level facets of quality like access, equity, multi-generation care, and addressing social determinants of health (SDOH).

To address this gap, CoLab drew on clinical judgment and evidence on high-quality care outside this limited VBC literature to illustrate recommended courses of care (see Section III below), highlighting:

- Use of clinical measures to identify level of clinical severity, refer to appropriate course of care, and monitor progress;
- Use of an appropriate treatment matched to client symptoms;
- Family involvement in care;
- Access to care based on population estimates of need, reduced disparities in access, and successful engagement.

Figure 3: HCPLAN APM Framework



How should we articulate the purpose and success of a VBC model in pediatric mental health care?

VBC in pediatric mental health care cannot be defined solely by the reduction of costs relative to the effectiveness of care for two primary reasons.

First, unlike many other areas of adult physical care, the value of pediatric mental health care comes mostly from promoting health and preventing challenges later in life. This means most cost savings accrue to other state programs (e.g., justice, housing) through prevention, but cannot be easily recouped by the health care system. VBC models in other areas (e.g., adult care, chronic physical conditions) tend to focus on cost containment, but there are fewer short-term cost saving opportunities in pediatric mental health care. Although the need is great, the total number of children who require mental health care is relatively small compared to adult chronic conditions, limiting the attractiveness of investment from a business perspective.

Second, historical under-investment in both pediatric (primary, preventative) and mental health care areas means that health system spending may need to increase to expand access and simply meet existing demand. Reinvestment from inpatient and crisis services could provide some cost/value efficiencies, but likely would not meet the level of investment needed to address population health needs.

Consequently, CoLab recommends attending to the payer-provider and state-payer relationship when considering VBC purpose and value:

- Payers should consider incentivizing more mental health promotion and early intervention services while maintaining investments in specialty care.
- To make VBC models attractive, states should consider shared savings models with managed care organizations based on the collective benefit to the state when pediatric mental health care is adequately addressed.

Do different levels of clinical severity require different APMs to improve value?

The literature provided sufficient guidance on the benefits of APM tailoring to clinical severity to justify applying this framework to pediatric mental health VBCs. The primary value of tailoring APM design to differing levels of clinical severity is the ability to clearly define the desired quality of care for different provider contexts.

Accordingly, CoLab recommends tailoring VBC models to primary care and specialty behavioral health care environments with the key quality process and outcome considerations outlined below (more detailed descriptions provided in the following section):

1. **Promotion and prevention** (primary care). VBC models should focus on incentivizing access and integration of routine mental health promotion/prevention.
2. **Mild** (primary care/community care environments). VBC models for mild mental health needs in the primary care environment should focus on incentivizing access and engagement, and directly treating mild mental health needs through 'light touch' treatment including an expanded use of client self-guided and digital mental health resources.
3. **Moderate** (primary or specialty care). VBC models in the specialty care environment should focus on incentivizing and supporting delivery of high-quality and time-limited care based on the presenting need and demonstrable improvements in functioning, offering step down/maintenance care in a group or brief format, attending to the family ecology, physical health, social determinants of health, and preventing inpatient and crisis care.
4. **Serious/complex** (specialty care). VBC models for serious or complex needs should incentivize delivery of evidence-based intervention components, collection and use of client feedback measures, and coordination and support for family engagement in social services as needed.
5. **Acute/post-crisis** (primary care, specialty care and/or social service organizations). VBC models for the acute/post crisis care environment should focus on reducing wait times from the period of crisis or hospitalization to routine care, delivering a sufficient dosage of care (frequency) to stabilize care during the transition, and providing high quality treatment for the client's specific, presenting need.

APMs for prevention, mild and moderate care

Supportive payment model

Capitated APM – ideally as part of a broader comprehensive population-based global payment (HCPLAN 4B), or potentially as a primary-care focused, condition-specific population-based payment (HCPLAN 4A) – evolving from one- to two-sided risk and with adjunct P4P quality incentives (HCPLAN 2C). In addition to treatment, payments would include care coordination, ideally be paid prospectively, and would likely require foundational investments to build sufficient data infrastructure (e.g., registries, systems to document closed-loop referrals, mechanisms for communication with other service sectors such as schools and social service agencies and reporting capacity).

APM rationale & evidence interpretation

This recommendation is based on a mix of empirical evidence, theory, and expert opinion. Although aiming for a global, capitated APM with quality incentives is theoretically supported and has promising empirical evidence, it also presents practical implementation challenges and requires a long-term commitment from partners involved. This pairing of a pediatric primary care setting with a capitated plus pay for performance APM is based on two main evidence areas. First, other literature outside this review provides strong evidence that pediatric primary care and behavioral health integration is an important way to promote higher quality mental health care for children and families, especially those who face high barriers to care and limited access to mental health resources.[27-29] Second,

this review's more narrowly scoped literature suggests that comprehensive, prospective, population-based payment structures offer promising opportunities to support high-quality primary care that's fully integrated with behavioral health, by empowering better coordination among providers, supporting services tailored to community needs, and incentivizing investments in prevention and early intervention.[10,30]

A core idea behind this APM pairing is that many important aspects of value – such as well-coordinated care and longer-term health outcomes – are difficult to measure and cannot be "explicitly" incentivized through P4P measures or specified in discrete bundles of care. So, a global payment can "implicitly" incentivize those aspects of value that are challenging to target with specific financial incentives.

There is high-level agreement in the scoped conceptual and empirical literature that more flexible models with prospective payments tied to the patient (i.e., per capita) tend to better support providers to implement care not traditionally reimbursed by FFS and innovate service delivery, integrate behavioral and primary care, hire effective new roles (like counselors or coordinators), and/or build new services like online psycho-education - in contrast to payment based on volume of service (e.g., FFS) or the types of services provided (e.g., bundled payments).[1,4,11,22,31,32]

As discussed above, reviews of theoretical and empirical studies of general VBC models have recommended combining a relatively large base payment that implicitly stimulates value with relatively small payments that explicitly reward measurable aspects of value as a theoretically preferred APM in general (not pediatric or mental health specific). National interviews with health system leaders noted that the increased flexibility provided by a capitated APM is desirable for providers, and more likely to promote provider satisfaction.[30]

Caveats to this recommendation include that APM design should depend on provider and organization characteristics, i.e., that small independent practices may not be not well equipped to bear significant risk due to random variation in patient needs and the capacities off full time staff.[31] Capitation-based APMs have risks of incentivizing under-treatment, which is why adjunct quality incentives and adequate foundational payments for infrastructure and operations are recommended. Population-based models could exacerbate disparities based on geographic access or by encouraging client selection.[33] In exchange for more flexibility, providers are asked to assume more financial risk for costly outcomes, and contracts require negotiating the right balance in financial risk sharing between providers and payers.[34] Credible risk-adjustment methodologies are important to prevent providers from being unfairly penalized for caring for a disproportionate share of high-risk clients.[4]

In a context with organizational readiness and appropriate system capacity to measure and report on these outcomes, a condition-specific, population-based payment for pediatric mental healthcare is a promising APM to support quality care for pediatric clients with mild mental health needs.

Key real-world examples include Blue Cross Blue Shield of Massachusetts' Alternative Quality Contract (AQC), a global payment with quality bonuses. The AQC is one of the most-studied APMs in our scoped literature, and it has demonstrated positive quality results (though no spending impacts) for children. It also had success in incentivizing and supporting integrated care: nearly all participating organizations adopted new staffing models emphasizing team-based care, novel methods of patient interaction, health IT changes, and closer relationships across and within provider groups.[35] Contrary to initial concerns about global payment, one study in our scoped literature found no evidence of reductions in behavioral health service use or spending for children with ADHD in the first three years of the AQC implementation.[19]

Nationwide Children's Hospital's Partners for Kids' (PFK) Accountable Care Organization (ACO) is an intermediary organization that takes medical and cost risk for approximately 330,000 pediatric Medicaid recipients in Ohio,

through a subcontracted arrangement with Ohio's Medicaid managed care plans. PFK operates with a full-risk capitated APM, and receives age- and gender-adjusted per-member-per-month (PMPM) payments for all health care services including integrated primary care. PFK is held responsible for reimbursing providers for care, and can retain savings if the care provided costs less than the capitated amount. PFK both receives and gives quality incentives – PFK can get bonus payments from the managed care organizations for quality measures, and PFK also incentivizes its health care providers with bonus payments for performance on select measures, such as child and adolescent well visits and immunizations. PFK has been successful at both containing costs and improving quality on several selected areas, including reductions in rehospitalization rates and improvements on pediatric quality overall composite measures.[1-4]

A capitated APM with P4P was also recommended by a New York group exploring VBC models for pediatric populations, because the APM removes the harsh financial incentives to generate office visits and gives providers flexibility to innovate. Based on the group's literature review, data analysis, expert interviews, and practical experience with a range of value-based payment models, they suggest a capitated primary care payment, care coordination payment and performance incentive bonuses are best suited for this level of need.[30] New York has not yet implemented this model, but is actively seeking partners to pilot.[32,36]

Although there's strong theoretical support and promising empirical evidence for this APM approach, it requires that medical and behavioral health budgets are consolidated,[11] that providers have capacity to coordinate among themselves and between sectors (e.g. primary, secondary and social care), and that data systems can support sufficient tracking of client costs and outcomes.

APMs for moderate and serious/complex care

Supportive payment model

Case rate (another term for bundled/episode-based payments) with two categories of payment; shared savings (HCPLAN 4A or 3B, depending on underlying payment structures); and adjunct P4P incentives (HCPLAN 2C) based on number of actual clients served and adjusting the case rate when clients present with complex social needs requiring navigation (housing, caregiver mental health).

Outpatient only:

- Case rate covers flexible costs needed for outreach and digital health supports in addition to session visits
- Providers receive flexible case rate prospectively, but pay back parts of emergency room costs if use is above risk-adjusted targets
- P4P bonuses for % increased reporting of EBPs and the use of client-reported functional measures in clinical practice
- Complement with PMPM care coordination payments

Outpatient with complex health navigation (determined with clinical assessment):

- Case rate is higher to cover more intensive community outreach, flex funds for housing stabilization, embedded physical health consults
- Providers receive flexible case rate up-front, payer holds back costs for potential hospitalization, if client is not hospitalized the payer and provider shared those allocated costs as savings
- P4P bonuses for % increased reporting of EBPs, % of clients engaged in physical health/housing services, % use of client measures

APM rationale & evidence interpretation

This suggested supportive pairing is based on conceptual arguments and expert opinions in the scoped literature, but not based on strong empirical evidence. Conceptual insights suggest paying specialty provider groups (in this

case, BH specialists) per episode, per referred patient, plus adjunct value incentives may discourage excess servicing and encourage value.[31]

Case rates can be challenging to implement because of complexities for partners to define and agree on what falls within or outside the bundle for a case, and to determine the principal accountable provider.[37] Like any other fixed, bundled payment model, this APM raises concerns of stinting or withholding care within a case, or about up-coding patients to severity categories with higher remuneration, or to increase the overall number of cases. These concerns can be mitigated with audit processes and early evaluation of unexpected or unexplained changes in treatment or patient patterns.

Drawing from Liao et al.'s 2020 systematic review of population- and episode-based payment reform programs, episode-based models have been associated with modest reductions in Medicare spending without apparent compromises in the quality of care in areas outside of mental/behavioral health care.[33] Looking specifically at VBC models for pediatric care, the New York review group suggest considering episode-based payments for specialty care providers, e.g., in behavioral health that isn't fully integrated, based on their expert interviews, literature review, data analysis and practical experience with a range of value-based payment models.[30]

APMs for acute, crisis care

Supportive payment model

Episode-based bundled payment (HCPLAN 3B) with adjunct P4P quality incentives (HCPLAN 2C). Funding for an estimated number of episodes provided up-front to support continuity of the program, and incentivize a dedicated focus on navigating transitions in care, providing home support, and flexibility.

Adjunct P4P incentives for successful triage completion, engagement in outpatient care, clinical improvement. Shared savings if youth is not readmitted for hospitalization.

APM rationale & evidence interpretation

An episodes-of-care payment model is triggered by health care use (e.g., hospitalization) and aims to hold providers accountable for quality and costs across a pre-defined set of services delivered, over a specific period.

Episode-of-care APMs are intended to incentivize time-sensitive coordination among by multiple providers and in multiple settings, and have often focused on reducing spending on acute and post-acute care and improving coordination between the two settings.[33] These APMs seek to compel systems and payers to focus on well-described critical time windows for behavioral health patients, such as transition of care from inpatient to outpatient settings or vice versa. One conceptual paper from behavioral economics suggests hospitals are generally well positioned to move to APMs based on episodes of care, plus adjunct value-based incentives.[38]

The scoped grey literature tends to suggest based on practical experience (not backed by empirical academic studies), that bundled payments may offer a more feasible, pragmatic entry point for payment innovation as entities move towards more comprehensive value-based models of care and payment.[22]

Theoretically, episodic approaches to payment incentivize controlling costs and improving efficiency, and can simultaneously create incentives to increase activity levels and potentially reduce waiting times for appropriate care. To the extent there are opportunities for short-term savings within pediatric mental health, authors suggest such savings are most likely found in serving higher-need children with medical complexity, although there isn't strong or definitive evidence predicting cost savings.

In discussions, partners echoed themes in the literature and highlighted that a VBC model for this population may be challenging to implement in practice, because pediatric patients with acute mental health needs make up a relatively small proportion of the total patient population and their volume of acute episodes is relatively low (although evidence suggests volumes may be growing).[39]

Like any other fixed, bundled payment model, this APM raises concerns about potentially stinting or withholding care within an episode. There is currently little evidence on whether episode-based payments worsen geographic access disparities, and mixed evidence on whether episode-based models cause problematic patient selection.[33] This model is also dependent on having accessible, high-quality outpatient services, which may not be present.

It can be challenging for health system partners to define and agree on the episode and principal accountable provider.[37] While prospective payments are ideal in theory, in practice some grey literature recommend models start with "virtual" spending targets using retrospective, end-of-period reconciliation with claims, and use those data to later shift to "real" prospective payments that fundamentally change the payment system.[10] Virtual, retrospective payments might help reduce initial regulatory and administrative burdens and test the model to establish reliable benchmarks.[4,40] However, based on theories from behavioral economics, some authors argue incentives from retrospective payments are less salient.[10,31]

What kinds of measures should APMs incentivize in VBC for pediatric mental health? What measures should link quality to payment?

The literature includes a wide range of opinions on this question with very little empirical evidence regarding the types of measure that indicated improved quality. Short of empirical evidence, frameworks and taxonomies can support shared understanding of what constitutes quality care, and how those elements relate. For example, the Institute of Medicine (IOM) proposes six domains of quality: safety, effectiveness, patient-centeredness, timeliness, equity and efficiency.[41] Donabedian proposed a model where quality consists of structural, process, and outcomes measures.[42] Structure refers to the context in which care is delivered, including hospital buildings, staff, financing, and equipment. Process describes transactions between patients and providers during the delivery of care. Outcomes denote the effects of health care on the health status of patients and populations.[37,43]

Quality frameworks. Here, we use the Donabedian categories and discuss **structure, process, and outcome** quality measures, because of the model's long-lasting influence and continued usefulness to understand different quality domains and how they relate in health systems. Existing APMs rely heavily on process-focused measures to determine financial incentives. For example, a review of adult mental-health focused APMs noted 90% were evaluated based on process measures.[8]

Most proponents of value-based care, however, tend to call for payments linked directly to health outcome measures, rather than process measures.[23] Yet, this advocacy and preference to prioritize payments based on outcomes is a point of academic and practical debate.

Outcomes vs. process measures. Some authors in our scoped literature argue that attention has (or should) refocus on measuring processes in VBC, because incentives can be effective only if they change provider behaviors (i.e., processes of care).[37] These authors advocate for measuring processes that research has indicated are likely to improve patient outcomes (i.e., measuring evidence-based clinical processes as a proxy for outcomes), and draw on behavioral economics theory to argue that APMs should weigh process measures higher than outcomes in provider

incentive targets, because processes are more controllable by providers/organizations and measurable at relatively lower costs than outcomes.[38]

Outcome measures and bias. Specifically in mental health care, the scoped literature highlights significant downsides and measurement challenges for using symptom-based health outcomes to directly inform payment or financial bonuses. First, this literature repeatedly emphasizes the dearth of validated or endorsed outcome measures in pediatrics and mental health (separately and combined), and calls for more research and development of quality measures for health outcomes.[44,45] Second, authors note that tying payments directly to clients' health outcomes (e.g., symptom improvement) can be demotivating for providers, because a client's mental health outcomes are determined by many complex factors outside health care.[1,31,37,45,46] Conceptually, outcome measures may increase risks of client selection bias, by incentivizing providers to prioritize patients more likely to achieve good outcomes. Further, authors note that improved health outcomes achieved through high-quality pediatric mental care may happen on longer timescales than typically used to inform financial incentives through an APM. Lastly, key aspects of high-quality pediatric mental health care that APMs may aim to incentivize – such as a focus on prevention and access – are not reflected in outcome-based symptom measures.

Quality measures vs. performance targets. Considering disparate opinions in the literature, alongside clinical judgment, behavioral science theory, and partners' practice-based experiences, CoLab recommends that emerging APMs focused on pediatric mental health should distinguish between measures important for tracking quality and measures that are used as pay-for-performance targets. The former should be incorporated in quality checks that justify the continuation of flexible contracts and payments. The latter can be used to nudge provider behavior towards increasing quality and efficiency. Because many of the factors contributing to pediatric mental health outcomes are out of providers' control, paying for symptom outcomes directly can result in gaming and other unintended outcomes. Yet, outside of this scoped VBC literature, other research shows strong evidence for the clinical benefits of measurement-based care in mental health settings, defined as a systematic, ongoing assessment to monitor treatment progress and inform clinical decision-making.[47-50]

Based on input from clinical experts and practitioners, CoLab specifically recommends that APMs in this area should:

- Pay for a bundle of interventions appropriate to the level of clinical severity, generally with flexible, capitated contracts,
- Use process measures to check that the course of care was delivered, as a condition of continuing to receive flexible contracts,
- Provide additional incentives for a small number of high-quality care indicators,
- Develop shared savings for preventing escalation to higher-intensity levels of care, and
- Provide upfront funds to support capacity building to capture client symptom and satisfaction measures

What do we know about potential harms of APM in VBC for pediatric mental health?

APMs can present risks for harm through unintended consequences, with enough evidence to raise serious concerns, but not enough evidence to know precisely when and how different kinds of APMs are most likely to create harm.

Gaming. "Gaming" is an umbrella term for the misrepresentation of service delivery by providers to financially benefit the healthcare organization,[51] including the falsification of outcomes to increase financial incentives from the APM.[8] How APMs might harmfully bias client access to care is another area of concern in the literature (i.e., by

incentivizing "cherry-picking" or "cream-skimming" clients likely to generate good performance measures, or "dumping" clients less likely to generate good performance measures).

For example, while only 8 of 15 pay-for-performance (P4P) studies reviewed by Stewart et al. evaluated APM effects on gaming, half of those found evidence of potentially harmful changes in client selection or other kinds of gaming.[52] Similarly, although only 8 of the 17 studies reviewed by Carlo et al. evaluated various kinds of APMs for gaming or selection bias, half those also found evidence of these problems (1 noted gaming and 3 saw selection bias/adverse selection).[8]

Minimizing gaming. Based on the existing evidence and uncertainty about how APMs influence gaming, any VBC model in pediatric mental health should include careful monitoring and checkpoints to evaluate gaming and redesign its APM to address any evidence of emerging harms. The literature noted that methods to reduce potential harms include conducting routine audits and issuing penalties for gaming, using advanced analytics to more easily identify gaming, setting utilization, access, and retention measures, limiting the relative size of financial benefits linked to quality metrics, and implementing credible, effective risk adjustment methodology. Specifically considering pediatric mental/behavioral health care, CoLab recommends APM design in this area should:

- Always include prospective measures of gaming as part of ongoing monitoring, which could include reporting patient selection and comparing selection to population level estimates of need
- Implement risk-adjustment bundled payment to control for client factors, including SDOH
- Focus payment targets on process-of-care measures that are observable in clinical records and/or billing claims and difficult to artificially manipulate
- Ensure any adjunct quality incentives (i.e., P4P) reward both absolute performance and improvement over time
- In capitated payment models, ensure the base amount is sufficient to cover the course of care

Does an APM just mean enhanced reimbursement for evidence-based practices?

In the context of VBC for pediatric mental health, evidence-based practices (EBPs) are one of many important components of quality clinical care. Incentivizing and supporting evidence-based practices may be a goal of an APM, but CoLab does not recommend APMs only pay for EBP. This suggestion is based on clinical expertise combined with insights from other literature on evidence-based practice in pediatric mental health care.

Evidence-based definition. This scoped literature on VBC reflects broader trends of using "evidence-based" terminology in varied ways, often without explicit definition. Here, we define specific evidence-based practices (EBPs) more narrowly, as the components of tested treatment approaches or families, such as cognitive behavioral therapy or family systems therapy.[53]

Very few current APMs in this review's scoped literature directly link financial incentives to evidence-based *practices*. Some APMs do incentivize fidelity to broader evidence-based *models* of clinical care, such as patient-centered medical homes or collaborative care models for depression. However, the financial incentives in those cases target a range of system, process, and outcome measures.

Consequently, CoLab recommends that EBPs be incorporated into pediatric VBCs in two ways:

- As a quality measure captured as a part of routine quality care
- As part of a provider pay for performance metrics in which increasing the delivery of EBPs as a function of total client population drives one part of an incentive formula

What approaches to patient attribution are most effective for pediatric mental health VBC models?

Key questions posed by partners in this review were about guidance for determining attribution. Engaged partners expressed technical challenges with attribution, defined broadly here as the method used to determine which provider group is responsible for a patient's care and costs.[54] In pediatric mental health, attribution considering both primary care and specialist behavioral health settings can be particularly challenging.

The scoping review did not identify any published or gray literature in which a specific model for attribution was clearly discussed or studied. Although 8 of the scoped sources in this review mention attribution in VBC, none get into the technical level of detail requested by partners. This reflects a lack of evidence about effective attribution approaches generally in VBC, and for pediatric and/or mental health care specifically, with very little technical detail available on attribution in this VBC area (i.e., software used, implementation details, evaluation). While there are related literatures on more technical aspects of patient attribution methodologies, they fell outside the scope of this targeted review. Further evidence reviews and expert consultations are needed.

What contextual factors are enablers or barriers to success for a VBC model in pediatric mental health?

This literature repeatedly emphasizes that payment reform alone is not sufficient for a successful VBC model (however success is defined), and that there are predictable factors that aid or hinder implementation of APMs within the broader VBC approach.

Key factors to expect and address in VBC include

- healthcare workforce training and ongoing support,
- clinical care delivery models,
- health information technology (IT) infrastructure and interoperability,
- multi-payer arrangements, and
- providers/system measurement capacity.

Supportive government leadership, organizational cultures, and provider buy-in are also highlighted as important to success. However, the scoped literature doesn't feature technical implementation details about addressing these needs.

While payment reform can induce changes in all these areas (e.g., by incentivizing workforce changes, IT investments, care delivery changes), this VBC literature highlights a chicken-and-egg problem: many APMs require supportive contexts and organizational readiness to improve value, yet many aspects of supportive contexts and organizational readiness need APMs to motivate, support, or sustain those changes.

Pragmatically, health system partners may need to plan for initial investments in areas like health IT, measurement (e.g., pay for reporting) and workforce capacity/training before or at the same time as pursuing payment reform. This recommendation draws primarily on practice-based grey literature, but academic sources and evidence also highlight the importance of assessing and addressing these contextual factors. Given the need for routine collection of multiple measures for effective VBC, CoLab recommends:

- Start-up investments to support providers to adopt electronic health records with sufficient front and back-end reporting operability to facilitate clinical decision-making, client progress tracking, and the reporting functions needed for billing and monitoring.
- Continued engagement with clinical training organizations to support the workforce development needed to provide high quality pediatric mental health services.

III. Confirming presentation of results

After reassessing the scoped literature in light of partners' questions, CoLab identified an opportunity to synthesize themes and offer more concrete examples of what "quality care" looks like at different levels of clinical severity in pediatric mental health.

CoLab presented these "recommended courses of care" in the third phase of engagement (winter 2022) to link discussions of broader VBC evidence to examples of quality care in pediatric mental health. The five recommended courses of care present evidence-based clinical practices alongside a supportive APM, based on synthesized insights from the empirical, conceptual, and practice-based literature reviewed. Partners asked clarifying questions, provided feedback, and reviewed drafts to inform the final recommendations here. One recent grey literature report was added.[55]

Recommended courses of care: Evidence & development

This partner-engaged scoping review highlights the importance of specifying the courses of care for different level of mental health severity in developing APMs. Outlining the details of these clinical care models is outside the scope of this report. However, we note that a large literature is available on best practice and evidence-based approaches to mental health care for children and youth. Insurance payers and the state can draw from this literature, ideally with the guidance of mental health experts, to develop models of care that are clearly outlined in contract agreements. Our review of APMs suggests that clearly outlining and paying for the expected course of care will benefit both the provider and payer. A good starting place for building examples of clinical care models is the American Academy of Child & Adolescent Psychiatry's (AACAP) *Best Principles for Integration*.[56] Here, we provide a high level overview of what payers and providers might consider when developing these clinical care models.

What is the role of primary care in addressing pediatric mental health?

When considering the recommendation to increase investment and specifications for levels of treatment within primary care for children and youth, it is useful to reflect on the role of primary care in the mental health prevention and treatment continuum. For over four decades, the foremost primary care and mental health professional associations, public health organizations, and clinical experts alike have declared that primary care must assume greater responsibility for promoting healthy social-emotional development among youth and addressing their mental health conditions.[57-60] Despite this repeated recommendation, the pediatric healthcare landscape has shifted marginally and remains unequipped to care for pediatric mental health populations.[57,61] While this has been deemed an urgent priority for years, it has reached a new crisis level. In October 2021, the American Academy of Pediatrics, AACAP, and Children's Hospital Association jointly declared a "National State of Emergency in Children's Mental Health."[62] In this statement, they specifically urge policy makers and health systems to "accelerate adoption of effective and financially sustainable models of integrated mental health care in primary care pediatrics, including clinical strategies and models for payment."

In support of the aim to expand pediatric mental health care in primary care, this report presents examples of "recommended courses of care" to guide health system partners in adopting VBC models within their practices. CoLab acknowledges that the recommended courses of care discussed below are not necessarily reflective of the current clinical practice environment; however, the goal of this report is to help reshape the delivery of pediatric mental healthcare using innovative strategies.

Continuing to recommend the status quo or incremental changes will only further delay vital practice transformations and leave too many children and families without access to mental health care. While the courses of

care may seem implausible to primary care providers who currently face many barriers to providing mental health care (e.g., time constraints, insufficient training, high acuity of clients), the literature suggests adoption of VBC models would help address these system-level obstacles. Though this may be difficult to envision within the current practice environment, adequate resources and incentives can – and must – substantially transform the delivery of pediatric mental healthcare.

Assessing severity level for recommended course of care

Behavioral health screening process

Screening measures should be administered just prior to each well-child visit on an annual basis, in addition to measures already used in routine care. For young children, measures should be selected based on age at visit. Measures should be administered either prior to the appointment via electronic patient portal connected to the medical record or in the waiting room on a tablet or with pen and paper provided by the clinic and then uploaded to their medical record and scored via an automated process. Medical record progress note templates should include a section for questionnaire scores, which should be tracked over time.

It is critical for clinicians to discuss screening results (whether positive or negative) with the family during the visit and take appropriate steps for additional treatment and referral if indicated. In addition to screening measures, clinicians should inquire generally about behavioral health concerns with youth and caregiver. If initial screening and verification with clinical history-taking indicates no concerning symptoms, youth are enrolled in the universal, preventative course of care. If concerns are identified from screening measures or clinical history, further assessment from a licensed mental health provider is completed to determine appropriate clinical course of care.

Assessment of health-related social needs. Children's behavior throughout development reflects complex interactions between environmental and social influences and the developing brain. To capture the social and environmental factors of clients, at least one social needs measure should also be collected to assess complexity and level of the family's current social needs. If significant social needs are identified based on screening results, families should qualify for outpatient level of care with complex health navigation. This includes client navigation services to connect families with resources to address social needs. The client's current behavioral health difficulties should be considered in the context of identified social needs.

Global severity rating. After identifying the major concerns reported by the child and/or caregiver during the clinical diagnostic assessment and assessing the level of social needs, clinicians rate the overall severity of the issues based on degree of functional impact. This will determine the level of care they receive for the specified time-course.

Functional impact level

- Mild: Minimal to low degree of impact on function; overall maintaining function in all areas of child's life (i.e., home, school, and with peers)
- Moderate with low social needs: Currently causing some developmental difficulties or impacting one or more areas of child's life
- Serious / complex (i.e., moderate with high social needs): Currently causing some developmental difficulties or impacting function in one or more areas of child's life and significant social needs are contributing to or exacerbating impact on functioning
- Acute: Needing immediate attention to avoid serious physical and/or emotional injury

Considerations for clinical courses of care in pediatric mental health

1. Prevention / Promotion: Routine primary care

Mental health promotion and prevention activities are recommended best practices for pediatric and primary care but are currently inconsistently implemented and reimbursed. Prevention activities include implementing universal screening and having informed conversations about mental health with families. A number of validated, non-proprietary child, youth and family mental health screening tools are available for this purpose. Prevention capacity also includes the ability to directly assess or refer the family for further assessment when light touch mental health interventions in the clinic do not successfully address the child's presenting mental health need.

2. Mild: Early intervention, secondary prevention

Mild mental health needs are needs that can be addressed with short term or light support and can be meaningfully enhanced with self-guided clinical resources, including online training, manuals, and phone apps developed for youth or caregivers. In these cases, the provider is aiming to disseminate useful clinical information through support tools and/or light coaching to prevent further escalation of a mental health need. At this stage, the child is not experiencing major functional problems but the family or child is concerned about some disruptions in relationships, schools, or subjective distress and would like support to address these concerns. An average course of care is 4-5 sessions over approximately three months while providing suggestions for self-guided resources.

3. Moderate: Tertiary prevention, specialty consultation, treatment & coordination

Moderate mental health needs are needs that are causing meaningful disruption in the child's life. Common functional impacts of moderate mental health need include school absences, family conflict, self-harming behaviors (e.g., cutting), and difficulty participating in social activities. The recommended course of care for these needs are a time-limited series of psychotherapeutic sessions, oftentimes in combination with medication management, that follow a clear treatment modality relevant to the presenting concern. Psychotherapeutic sessions are goal-oriented while being responsive to client motivation, capacity, and preference for therapeutic approach. An average course of care is 9-12 weeks and can be addressed in outpatient settings in individual or group treatment. The clinician routinely checks in with the client (caregiver and/or child depending on the child's age and treatment modality) to assess whether the approach is working and adjusts the treatment plan accordingly.

4. Complex / Serious: Moderate with complex social needs

Serious mental health needs or complex needs involve as a prolonged pattern of functional impact for the child and may also include family social needs (e.g., housing, economic stability, caregiver behavioral health). A multi-disciplinary team approach is recommended best practice for addressing these complex needs in addition to discretionary funds for short-term family stabilization and to engage families into treatment. In addition to treatment by therapists trained in family-based mental health care, the course of care should include social service navigation support, medication management, and peer support, if desired by the family. Treatment might include group, in-home individual support for multiple family members, and consultations with other youth-serving systems (e.g., schools). Clients often drop out of mental health care due to other life demands and stressors at this level of need. APMs should recognize this and reward sites that can demonstrate continued family engagement. Average length of engagement is likely to be 6 months to a year with likely step down, supportive care for an additional year.

5. Severe: Acute / Post-crisis

Acute, post-crisis care is a distinct period of care following a crisis incident in which the usual course of care is disrupted due to a medical or mental health emergency. This course of care focuses on stabilizing the youth's mental health needs to support short term safety while also supporting engagement in longer term mental health care appropriate to the level of mental health need. The intensity of therapeutic contact increases in this course of care, with potential in-home care, 24/7 support, and service navigation to ensure smooth re-engagement in treatment. Average length of support is three months with approximately weekly contact.

4. Looking forward

This scoping review drew together Washington-based health system partners and varied academic literature to surface key ideas and questions about VBC models in pediatric mental health care.

Empirical research evidence on VBC model effectiveness for this area is limited, and what relevant evidence exists is predictably mixed – likely due to wide variation in contexts, implementation approaches, and populations/conditions studied, and the large number of VBC models without publicly available data on impact or APM contract details.

Public and private health system partners are continuing to innovate and explore models to improve value, and the available research evidence provides guidance despite areas of uncertainty. In addition to shaping the review results, the partner-engagement was valuable in-and-of itself, for supporting multi-payer and state discussion within Washington, and documenting health system partner questions and informational needs in this space.

(Re)Defining value in pediatric mental health VBC

Sources in this scoping review emphasize a strong case for long-term economic, social, and population-level benefits from VBC and APM in pediatric mental/behavioral health care.

However, developing a payment model that makes good, short-term business sense for payers is challenging, because potential savings are long-term and prevention-based, our systems have historically under-invested in primary and mental health care, and children's mental health needs make up a relatively small proportion of overall health care spending. Additionally, many of the savings from improved patient outcomes and reduced costs can be expected to fall outside the health system – in areas like justice, education, and social services – often called the "wrong pockets" problem in this VBC literature.[1,63]

In the literature scoped here, sources highlight that taking a longer-term, population-level perspective (vs. a short-term business case for cost savings) likely requires a more active role for governments and large payers to lead innovation. To make VBC models attractive, states should consider shared savings models with managed care organizations based on the collective benefit to the state when pediatric mental health care is adequately addressed.

Leadership opportunities

Defining value in pediatric mental health care – and designing supportive VBC models – presents a leadership opportunity for states and forward-looking payers in three key ways.

First, states can convene cross-payer, cross-sector, and inter-state conversations, and build evidence and consensus around quality definitions and measurement. In their value-based contracting initiatives, payers can also take a leadership role and consider ways to incentivize more mental health promotion and early intervention services while maintaining investments in specialty care. For example, New York's Medicaid program has taken a leadership role, launching a multi-stakeholder initiative in 2016 to make a child specific VBC model a reality. As of 2019, New York was seeking opportunities to pilot it with managed care plans and primary care providers.[36] In Massachusetts, an independent state agency called the Health Policy Commission has taken a role as convener to promote a state-wide framework for integrated care, shared standards, and a certification program for setting and monitoring progress toward integrated care delivery.[64] A case study comparing VBC in four countries recommends strengthening government involvement in driving change, and that policy makers should actively communicate their VBC agenda using common, clear language and definitions.[65] Although states can mandate VBC targets and reforms, examples from other jurisdictions highlight convening key health system partners in model design and implementation is vital alongside top-down directives.

Second, states can gather, share, and evaluate further technical assistance on challenging technical areas such as attribution and risk adjustment methodologies (especially including social risk factors and inter-sector data linking). Because so much activity in VBC is not captured in academic literature or public reporting, states could lead in knowledge exchange with other states to learn and build on existing contracting innovations. Continued conversations and transparent data-sharing about VBC in this space can support continued learning.

Third, states can facilitate public-private consensus and multi-payer collaboration around care delivery standards, quality measures, and APM designs to support and achieve integration of care, with a stronger focus on prevention, wellness, and population health management. For example, states can lead on developing and encouraging more clinical use of patient-reported outcome measures of global functioning in pediatric mental health care. Multi-payer agreement about measurement and APMs can potentially reduce administrative burdens for providers so the same model can be adopted across multiple payers, thus expanding the reach and potential impact of payment reforms. Outside of health care, state-level initiatives could explore ways to reinvest some of the shorter-term savings from sectors like education and justice back into children's health care, to sustain and scale effective APMs until they can realize the full long-term returns in health, based on the outcomes they achieve and the associated savings across the state budget.

States have an opportunity to partner with payers and providers to adjust risk and even contrive full-risk arrangements with health delivery organizations who are developmentally at the point to engage in these types of payment arrangements. This will enable states, payers, and system partners to safely conduct research on the effectiveness of alternative payment models needed to transform care delivery.

States and future-focused payers can take an important leadership role in ensuring pediatric mental health care needs are considered in ongoing and future VBC design, as well as monitoring impacts of existing or emerging VBC models.

Abbreviations

AACAP - American Academy of Child & Adolescent Psychiatry
ACO - Accountable care organization
AQC - Alternative Quality Contract
APM - Alternative payment model
BH - Behavioral health
CBT - Cognitive behavioral therapy
CMMI - Center for Medicare and Medicaid Innovation
CoLab - University of Washington CoLab for Community and Behavioral Health Policy
EBI - Evidence-based intervention
EBP - Evidence-based practice
EMR - Electronic medical record
FFS - Fee for service
HCA - Health Care Authority
InCK - Integrated Care for Kids
IT - Information technology
PCP - Primary care provider
P4P - Pay for performance
PFK - Partners for Kids
HCA - Washington State Health Care Authority
HCPLAN - Health Care Payment - Learning and Action Network
MH - Mental health
PMPM - Per member per month
SDOH - Social determinants of health
VBC - Value-based care

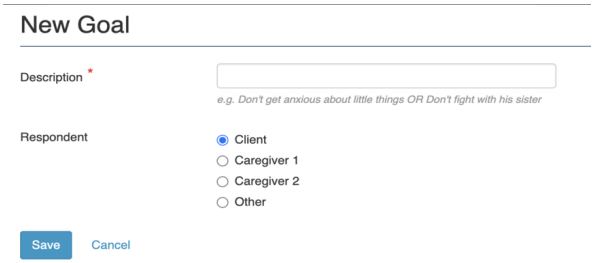
Appendix A: List of reviewed literature

First author & year	Type of paper	Location (if relevant)	Focus topic(s): APM, pediatric (PED), mental health care (MH), or theoretical/conceptual
Amarbayan 2021	opinion	Canada	PED-APM
Baggaley 2020	opinion	UK	MH-APM
Bao 2017	empirical	WA, USA	MH-APM
Barrett 2018	opinion	MA, USA	PED-MH
Barry 2015	empirical	MA, USA	MH-APM
Beveridge 1997	opinion	NA	Conceptual
Bruner 2017	opinion	USA	PED-APM
Carlo 2020	review	USA	MH-APM
Cattel 2019	review	NA (global)	MH-APM
Center for Health Care Strategies 2021	opinion + empirical (grey literature)	USA	PED-APM
Chee 2016	review	NA	APM
Conrad 2016	review	NA	Conceptual
Counts 2019 (A)	opinion	USA	MH-APM
Counts 2019 (B)	opinion	USA	MH-APM
Counts 2021	opinion	USA	PED-APM
Doran 2017	review	USA & UK	APM
Freeman 2018	review	USA	MH-APM
Joyce 2017	empirical	MA, USA	MH-APM-PED
Khullar 2017	opinion	MA, USA	APM
Liao 2020	review	USA	APM
Marcotte 2020	opinion	NA	APM
Miller 2017	opinion	USA	MH-APM
Mjaset 2020	opinion	MA (USA), Netherlands, Norway, England (UK)	APM
National Council for Behavioral Health 2018	opinion + empirical (grey literature)	USA	MH-APM-PED
Nemours Children's Health System 2020 (A)	opinion + empirical (grey literature)	USA	PED-APM
Nemours Children's Health System 2020 (B)	opinion + empirical (grey literature)	USA	PED-APM
Park 2018	review	USA	APM
Ross 2019	empirical	CO, USA	MH-APM
Smith 2016	opinion	USA	MH
Stewart 2017	review	USA	MH-APM

First author & year	Type of paper	Location (if relevant)	Focus topic(s): APM, pediatric (PED), mental health care (MH), or theoretical/conceptual
Stuart 2017	empirical	MA, USA	MH-APM
Teisberg 2020	opinion	NA	Conceptual
United Hospital Fund 2016 (A)	opinion + empirical (grey literature)	US (national review, focus on NY implications)	PED-APM
United Hospital Fund 2016 (B)	opinion + empirical (grey literature)	US (national review, focus on NY implications)	PED-APM
Wadmann 2013	review	NA	Conceptual
Wallang 2018	empirical	UK	MH-APM
Watkins 2011	empirical	USA	MH
Young 2001	opinion	Not mentioned (but focuses on USA)	Conceptual
Yuan 2017	review	NA	APM
Zuvekas 2016	empirical	USA	APM

Appendix B: Promising patient-reported outcome measure

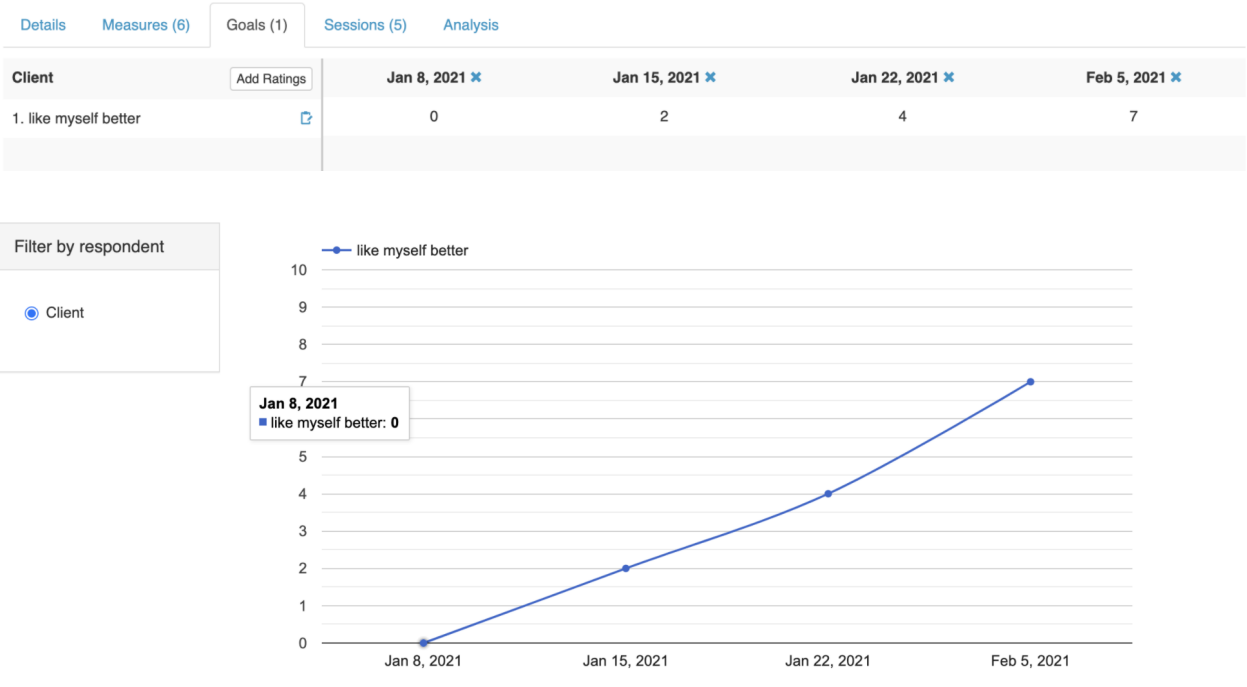
In response to partner needs and this scoped literature's calls for use of patient-reported outcome measures, CoLab conducted additional searches for available, validated, measures of client-reported global functioning to incentivize providers to use, but didn't find appropriate options. Next, CoLab consulted clinical experts and practitioners.



CBT+, a prominent national training group in children's mental health, had also conducted a search for available tools, and identified a range of possibilities for free, psychometrically sound standardized symptom and behavior measures.

They have developed and implemented a measure which aligns with use in a VBC context: a standardized personal goal rating to measure functional outcomes, derived and simplified for clinical use from an assessment of existing tools.[59] Using functional measures like this one – alongside other clinical assessments – helps address limitations of using symptom checklists alone for measuring the effectiveness of psychotherapy. CBT+ has now added the option of personal goal rating to accompany standardized symptom and behavior measures.

Importantly, the goal is client selected and in client voice. The instruction for progress over time is, "You said liking yourself better was a personal goal. On a scale of 1-10, how much progress would you say you have made since the last we tracked?"



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