

Interprofessional Training in Developmental and Behavioral Health Within a Pediatric Residency Program: An Organizational Systems Case Study



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Abstract A systemic issue in traditional health service delivery models to children and adolescents is the difficulty in accessing quality developmental/behavioral health (D/BH) care. Contributors to this problem include the lack of available specialty D/BH specialists (e.g., child and adolescent psychiatrists and psychologists, developmental-behavioral pediatricians), as well as issues with insurance coverage and reimbursement when these services are paneled through behavioral health “carve-outs.” Given the difficulty in accessing these services, primary care physicians such as pediatricians and pediatric residents often become the de facto D/BH providers. However, a major barrier that these providers express in managing D/BH concerns is the lack of training they receive in medical school and residency. This chapter presents an organizational systems-level case study detailing how concerned stakeholders in a healthcare delivery system and training program have responded to problems pertaining to the need for improved care and resident training in D/BH. The case study intends to inform those who design, revise, and operate service delivery and training systems on a daily basis. To facilitate a more nuanced examination of implementation experiences, a simulated question and answer discussion is included at the end of this chapter.

Those involved in the provision of developmental/behavioral health (D/BH) services to children, adolescents, and their families who receive care in traditional health delivery systems are likely aware of two profound problems that call for attention and response. The first problem concerns the lack of access to care. While 20% of

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children suffer from a D/BH condition (Strine et al., 2008), 80% of them do not receive needed services (Kataoka, Zhang, & Wells, 2002). Reasons for the ineffectiveness in providing D/BH services in these health delivery systems are numerous; chief among them being a shortage of well-trained specialty D/BH providers (Kim, 2003), causing long wait times for care. Even when specialty providers are available, failure of follow-through by patients to these externally referred services occurs frequently (Cummings & O'Donohue, 2011).

Due to this difficulty in accessing services, pediatricians and pediatric residents practicing in primary care (i.e., primary care providers; PCPs) have long been expected to provide basic D/BH services and have become the “de facto” D/BH delivery system (Regier et al., 1993). This reality highlights the second problem in traditional health delivery systems—lack of training in D/BH delivery for PCPs who are expected to manage the 50–70% of their patients who present with D/BH concerns (Belar, 2008; Gatchel & Oordt, 2013).

Not only do pediatric residents report receiving inadequate training in managing D/BH problems (Hampton, Richardson, Bostwick, Ward, & Green, 2015; Shahidullah et al., 2018a, 2018b), but resident training in this area appears to have remained largely stagnant. This conclusion stems from surveys of residents' competencies in managing D/BH problems in 2004 and again in 2013 demonstrating no meaningful changes (Horwitz et al., 2015). In fact, training has remained so stagnant that the American Academy of Pediatrics (AAP) recently issued a policy statement (Foy, Green, Earls, & Committee on Psychosocial Aspects of Child and Family Health, Mental Health Leadership Work Group, 2019) and technical report (Green, Foy, Earls, & AAP Committee on Psychosocial Aspects of Child and Family Health, Mental Health Leadership Work Group, 2019) citing the need for pediatric residency programs to develop curricular innovations to improve residents' attitudes, knowledge, and skills in D/BH service delivery.

Over several years, members of the departments of pediatrics and psychiatry at Geisinger Health System in Danville, Pennsylvania, a large rural health system, held discussions related to these problems in their own delivery system. This process subsequently led to a call for action to address the poor access to D/BH services and shortcomings in pediatric resident training in primary care D/BH delivery. These stakeholders recognized the need to develop and implement an integrated delivery model whereby behavioral health clinicians (BHCs; pediatric psychologists) are embedded in primary care offices to offer greater access to D/BH services by positioning them where patients receive their general medical care.

Because of the advocacy efforts by these stakeholders, a D/BH pilot project was initiated in 2010, which integrated pediatric psychologists into primary care clinics to serve patients in conjunction with the PCP. Three pediatric primary care practice sites were selected for the initial pilot. The goals of the initiative were to improve access to and quality of D/BH care via insertion of evidence-based practices into primary care, while increasing continuity of care with PCPs.

1st Pilot: Integrating Developmental/Behavioral Health Within Primary Care

The results of the pilot were consistently positive with improved access to care, improved patient and PCP satisfaction, positive clinical outcomes for patients, improved quality of life and some cost reductions (see Novotney, 2014 for an overview of the integration of psychologists into primary care). These results were consistent with a recent outcome study of BH integration in pediatric primary care with a 5-year follow demonstrating improved access to quality BH services and averting some of the expected increased costs associated with providing more clinical services (Walter et al., 2019). Additionally, a meta-analysis evaluating data from similar integrated D/BH and primary care models demonstrated broad positive outcomes (Asarnow, Rozenman, Wiblin, & Zeltzer, 2015). This model has led to increased access to D/BH services for many children and their families that otherwise may not have been seen by a BHC. These families greatly benefited from the significantly shorter wait times to see a BHC, as typically they were seen on the same day or even same visit. Additionally, having the visit within the PCP office reduced the perceived stigma sometimes identified from obtaining services at a D/BH specialists' office.

Consistent feedback from the pediatric PCPs emphasized appreciation and enthusiasm for the integrated care model. Access to quality care improved in the integrated care sites as PCPs were doing a better job of identifying D/BH concerns and introducing these patients to the BHC during their clinic visit. However, the clinical model was not adequately addressing the D/BH training needs of pediatric residents so that residents could manage the BH concerns more independently (without simply using the on-site BHC as a readily available referral source). Stakeholders from psychiatry and pediatrics continued to meet to identify possible methods of improving direct training in D/BH for residents. Two major limitations to delivering training were identified: (1) lack of internal funding/compensation to dedicate additional time to teaching from BHCs and (2) lack of time in the pediatric residency training process that could be devoted to new educational elements given an already full curriculum. Realizing these limitations, the new model of enhanced residency training would need to be structured to be both time and cost-effective.

2nd Pilot: Improving Resident Education in Primary Care Developmental/Behavioral Health

The second wave of this new D/BH delivery system incorporated the same integration of care as the 1st wave, but expanded the model to include the pediatric residency training site (i.e., continuity clinic). In efforts to be systematic and responsive to AAP's call (Foy et al., 2019; Green et al., 2019) for addressing D/BH competencies for future pediatricians through pediatric residency training, stakeholders focused on

frequently occurring clinical presentations (e.g., ADHD, anxiety, depression, suicidality) and learner variables (i.e., knowledge and skills) specifically highlighted in the policy statements. Residents receiving enhanced training in D/BH in a primary care delivery system were expected to not only improve their knowledge and skills in D/BH, but also develop competencies to work in similar interprofessional and team-based settings in the future.

The use of the integrated D/BH pediatric primary care model in community practice sites plus the expansion into the continuity clinic site, resulted in the ability to address both previously identified problems: (1) improving access to D/BH care and (2) improving D/BH training for resident PCPs. Details about how this was accomplished as well as the key components of both the integrated service delivery model and the enhanced training model are next described in this chapter. The synergy between these two parallel efforts was critical to the success in making both comprehensive and sustainable health system changes. This chapter also discusses the importance of including both of these system changes as vital steps for making sustainable advancement in the D/BH delivery approach. Both quantitative and qualitative data were collected pertaining to D/BH learning enhancement of pediatric residents. The reader is referred to other sources to review that data, as the focus of this article is to describe the process by which the organizational innovation occurred.

Systems Intervention

Development

Stakeholder feedback. Clinicians and leaders in the health delivery system uniformly recognized that inadequate access to care and provider training clearly existed. This resulted in informal discussion among stakeholders and, subsequently, a more refined response from system leaders based on these stakeholder frustrations. The following are the key stakeholders and those committed to system changes described in the case study.

1. ***Behavioral health clinicians.*** These included primarily pediatric psychologists, but also child and adolescent psychiatrists who have provided services in specialty mental health clinics and other settings in the hospital including consults in the children's hospital, emergency department, and a mixed adult/adolescent inpatient psychiatric unit. These providers were acutely aware of the limited services for children and adolescents with D/BH problems available in their rural catchment area.
2. ***Those involved in training of pediatric residents in developmental/behavioral health.*** These included pediatric psychologists, developmental-behavioral pediatricians, and the pediatric residency and assistant residency program directors. These stakeholders recognized the inherent difficulty in being expected to provide quality D/BH training during the required 4-week developmental-behavioral

pediatrics (DBP) rotation. This rotation lacked the longitudinal continuity that residents cited as most beneficial to developing and honing skills in this area. There was a push by faculty stakeholders to embed D/BH training across the 3 years of residency training, rather than relying too heavily on the DBP rotation by itself to address these needs.

3. ***Child and adolescent patients and their families.*** Patients and families have frequently reported problems with access to D/BH care (appropriate care provided in a reasonable time period at a reasonable distance from their home).
4. ***Pediatric primary care clinicians in community practice settings.*** These include general pediatricians, family physicians, and pediatric midlevel practitioners. They have reported longstanding difficulty in providing D/BH care due to time and training limitations as well as access to appropriate D/BH specialists for patient referrals.
5. ***Department leaders.*** These include the Chairperson and Vice President/Administrative Lead for the Department of Psychiatry for Geisinger Health System. Although they were acutely aware of problems patients have had with access to D/BH services, they also articulated a clear need for implementing service delivery approaches that are financially sustainable.
6. ***Philanthropist.*** This individual made a significant financial contribution for innovative D/BH services and challenged the system to expand services for children and adolescents.
7. ***System health plan leaders.*** Psychologists and Department of Psychiatry leaders made requests to leaders of the systems' health plan (which covers approximately one-third of the patients served by the health system) to support changes in how D/BH services are delivered and paid for and how providers are trained in D/BH. They accepted the message and provided collaboration in developing service delivery innovations and provided financial support over three years for both an integrated care pilot project and a pilot project for enhanced D/BH training for pediatric residents.
8. ***Director of behavioral health research.*** This individual embraced these innovations and offered support and expertise in adequately measuring the outcomes of these innovations.
9. ***Senior leadership of the health system.*** These leaders were interested in the specific innovations implemented and the outcome data. Primarily because of their awareness of limitations with traditional service delivery models and the positive outcomes from prior pilot projects, they have supported expansion within the health system. In fact, this health delivery system at large has developed a reputation for encouraging innovation in healthcare delivery. Systems' leaders have had a history of being relatively flexible and supportive of innovation including implementation/evaluation of pilot projects to improve care.

The following sections describe the development of the two parallel innovations—D/BH integration in primary care and enhanced D/BH training for pediatric residents. Although these two processes enhance and impact the other, each will be described separately for clarity.

Steps taken to develop an integrated developmental/behavioral health service delivery system.

1. ***Awareness of limitations of the current developmental/behavioral health delivery model.*** These innovations would not have occurred without an awareness of the limitations of the traditional D/BH delivery system. These include long wait times from initial referral for D/BH services to the first appointment, high no-show rates to specialty clinics, problems with insurance coverage (including lack of insurance, limited insurance for mental health services, inconsistency of D/BH clinicians participating with some BH carve-out insurance companies), and D/BH outpatient specialty clinics being located at significant distances from patient's homes and PCP clinics.
2. ***Financial support.*** A local philanthropist challenged decision-makers in the system to provide quality D/BH care that is timely and sufficient to children and adolescents. A financial gift from this donor provided freedom for the stakeholders to consider many options and challenge the assumptions of traditional D/BH service delivery approaches with an aim to identify possible alternatives, such as an integrated primary care D/BH model.
3. ***Identify/adapt other successful integrated primary care behavioral health models.*** Discussions with directors and providers from other successful systems located in rural and underserved areas across the United States were conducted and provided a more detailed understanding of their models and how specific aspects of it may be replicated. Additionally, a pediatric psychologist and a pediatric psychology postdoctoral trainee were recruited from an existing program, which had already successfully implemented integrated primary care D/BH models.
4. ***Garnering support from key departments (Psychiatry, Pediatrics).*** This occurred in a variety of ways including informal discussions, presentations at internal conferences such as pediatric and psychiatry grand rounds, and presentations/discussions at administrative meetings.
5. ***Presentation to leaders of the systems health plan.*** Advocates from the departments of psychiatry and pediatrics made a request to leaders of the systems' health plan to present their concerns about the D/BH delivery system and the need for change. This request was received positively with an assigned task to design a pilot project and evaluate the consequences of that pilot project. Health plan leaders then provided financial support for the initial pilot project.
6. ***Needs assessment with pediatric PCPs.*** Recognizing the importance of input from PCPs, an early step was to assess their views about problems with the current service model to identify their perceived areas of greatest need and suggestions for changes. Several specific problem areas were identified, although the PCP's overarching concern was the lack of access to quality D/BH care.
7. ***Pilot project in which psychologists were fully integrated in primary care sites.*** Several potential sites were considered (site visits, staff interviews) and three sites were selected based on factors such as perceived need, enthusiasm

of PCPs for an integrated care model, projected volume of patients and practical issues such as space and administrative support. At the beginning of this pilot project, the PCP attendings and psychologists working collaboratively in the three pilot sites participated in a two-day training provided by *The Reach Institute* (www.thereachinstitute.org)—a multi-disciplinary organization with a prominent history of training PCPs in interdisciplinary collaboration and in the dissemination of high-quality scientific findings into applied settings.

8. ***Development of a research design to evaluate outcomes.*** Metrics assessed included access to care, patient satisfaction, provider satisfaction, patient outcomes such as target behavior and quality of life changes, degree of collaboration between PCPs and BHCs, and costs. This research design involved naturally occurring control methods that allowed comparison of the results from the three integrated care sites with (a) those same sites prior to implementation of the integrated care model and (b) non-integrated care primary care sites in the system (see Petts et al., 2018; Shahidullah et al., 2017, 2018a, 2018b for outcomes evaluations from this project).
9. ***Review of the results from the integrated primary care behavioral health implementation pilot project.*** Data obtained from the pilot project demonstrated consistent positive findings: improved patient satisfaction with care, improved PCP satisfaction with care, three-fold improvement in access to care, improved quality of life, and cost changes such as reductions in prescriptions for all medication and emergency department use.
10. ***Presentations of details of the pilot project including data about outcomes to health system leaders.*** Presentations were made to a group of the health systems' leaders and then at a quarterly meeting of the systems' board of directors. This led to support for expansion of this model to three more primary care sites (including the pediatric primary care training clinic for pediatric residents highlighted in this case study).

Steps taken to enhance developmental/behavioral health training for pediatric residents.

Once the integrated care delivery model was implemented successfully for several years and was demonstrated to improve access to D/BH services, an additional initiative was undertaken to address the issue of inadequate training for pediatric residents in primary care D/BH delivery and team-based care. To address this problem, the following steps were taken:

1. ***Awareness of the limits of the 1-month mandated developmental-behavioral pediatrics rotation for residents.*** The health systems' pediatric residency program has an ACGME-mandated rotation in DBP. This rotation fulfills the national requirements for training in D/BH. Although providing some worthwhile training, the limitations of this model include (1) limited amount of days spent by residents in the rotation (actual time spent engaged in D/BH education is impacted by resident vacation, post-call duty hours restrictions, and required longitudinal continuity clinic participation one-half day per week); (2) unpredictable patient types (it is difficult to ensure that the most pertinent diagnostic categories are

consistently assessed or treated by residents during the rotation); (3) a skewed patient population from which to learn as developmental-behavioral pediatricians and pediatric psychologists often see more severe or atypical patient types that are less frequently managed by general pediatricians (e.g., complex patients with autism, genetic conditions, eating disorders versus problems like ADHD and adolescent depression); (4) patients in specialty clinics are usually already diagnosed and have progressed in their presentation so the initial diagnosis and triage are not part of the training; and (5) treatment in the specialty setting does not account for the limited time or resources residents will face in their eventual outpatient clinics.

2. ***Development of a developmental/behavioral health training task force.*** This group was formed to consider ways to enhance D/BH training of pediatric residents in the context of an integrated care model. The task force was composed of those involved as supervisors of the mandated DBP training month as well as residency directors. Members included the pediatric residency director, assistant residency director, two developmental-behavioral pediatricians, two child psychiatrists, and four pediatric psychologists. This task force was charged with developing an enhanced training model consistent with the AAP's (2009; this Policy Statement was recently updated by the Foy et al., 2019 Policy Statement and Green et al., 2019 Technical Report) call for innovation. The task force recommended expanding the integrated care model to the pediatric resident continuity and acute care clinic and providing enhanced D/BH training to residents in that setting in addition to the DBP rotation.
3. ***Development of guiding principles of enhanced developmental/behavioral health training.*** The D/BH Training Task Force developed three guiding principles for their approach. First, the training model should fit consistently with the integrated care delivery model, such that the BH providers in the primary care sites are the key staff members that participate in the D/BH training for the residents. Second, the training model should be financially feasible and sustainable. Although the enhanced model is expected to require more staff time and subsequently more expense, it should be developed in a way that can be cost and time-efficient. Third, the training model should be able to be replicated and evaluated. This would require clear descriptions of the model so that others could replicate and evaluate the program.
4. ***Request for internal funding.*** Funding was obtained through an internal "Quality Fund" supported by the system's health plan, which partially supported two years of implementation of this training innovation. This internal funding source has supported other innovative approaches to health care delivery within the health system, including support for the development and evaluation of the initial integrated care pilot project.
5. ***Placement of behavioral health clinicians within the continuity and acute care training clinic.*** In September 2015, a pediatric psychologist and postdoctoral fellow began working full time in the training clinic with the dual goal of facilitating the integrated care delivery model and providing enhanced D/BH training via integrated service delivery and didactic exposure components. This location

served as the site for both resident general pediatric continuity clinic as well as the training site for pediatric urgent care. Key elements of the service delivery model included two BHCs embedded on-site for 5 days a week. These clinicians shared office space with attending and resident PCPs where they were available during clinic hours to receive what have been termed “warm handoffs” and “curbside consults.” Warm handoffs consist of brief, unscheduled encounters during which the PCP introduces the patient to the BHC for brief assessment and intervention for D/BH concerns. Curbside consults are defined as brief consultations regarding a specific patient issue or broad D/BH topic from the BHC to the PCP without bringing the BHC to the exam room to meet a patient.

The BHCs’ schedules were split to ensure that one of the two was always available for unscheduled warm handoffs and consults while the other provider was with their scheduled visits. Resident PCPs would either send a page to the BHC or precept directly with the BHC in conjunction with the attending PCP after identifying a D/BH issue with their patient. The BHC and resident PCP would briefly meet to discuss the patient’s history and reason for referral before the PCP would introduce the BHC to the patient in the exam room. Having a BHC always available for warm handoffs removed the need for PCPs to interrupt the BHC in their office/exam room while they were with scheduled patients.

6. **Curriculum development.** A curriculum was subsequently developed collaboratively by members of the departments of pediatrics and psychiatry based on the needs assessment and other stakeholder feedback. The curriculum consisted of two major elements—a didactic exposure component and an integrated service delivery experiential component (see Table 1). The didactic exposure included presentations delivered by BHCs, readings/quizzes on specific BH topics, and facilitated vignettes and case discussion. The integrated service delivery exposure consisted of warm-hand-offs, curbside consults, and clinical observations with performance feedback delivered by BHPs. A standardized patient simulation training was initiated 2 years later in 2017. In addition to facilitating learning enhancement in the context of more realistic clinical scenarios, Standardized patients also offer a mechanism in which to assess D/BH competencies on actual patient interactions is compared to simply relying on trainee self-report of their attitudes, knowledge, and competence (Shahidullah & Kettlewell, 2017). See Petts, Shahidullah, Kettlewell, and DeHart (2018) and Petts, Shahidullah, Jaques, Kettlewell, and DeHart (2019) for outcomes in response to standardized patient trainings within this D/BH curriculum. Standardized patient training was also used successfully with other pediatric resident learners within Geisinger (see Whitehead, Shahidullah, Kettlewell, Quinlan, & Strony, 2017 for outcomes from Geisinger’s emergency medicine residents).
7. **Development of a research plan to evaluate outcomes of the enhanced training curriculum.** Rather than considering the broad outcomes of the integrated care pilot project (access to care, patient satisfaction, cost, patient outcomes), the quantitative outcomes selected were specific to measuring changes in pediatric residents. These included key learner variables suggested by AAP (2009) of

Table 1 Enhanced training curricula for pediatric residents

<i>Didactic exposure</i>	
Lectures on D/BH topics	<ul style="list-style-type: none"> • Consists of BHPs (psychologist and postdoctoral fellow) delivering lectures on common BH concerns in primary care • 12 total lecture hours throughout year; approximately one per month • Topics included: <i>The Art of the Behavioral Health Referral, Behavior Management I & II, ADHD I & II, Anxiety I & II, Depression I & II, Suicide/Crisis Response I & II, Sleep, Feeding, Toileting, Child Abuse, Medical Unexplained Physical Symptoms, Common Factors I & II, Collaborating with Schools</i>
Readings and quizzes	<ul style="list-style-type: none"> • Consists of assigning readings for residents to read before each lecture • Readings consisted of relevant practice parameters or standards of care for each topic; if formal practice parameters or standards of care did not exist, then relevant journal articles were selected for each topic; resources from the AAP's Mental Health Toolkit⁴ • Pre-lecture quizzes were administered to residents for some topics (e.g., ADHD, anxiety, depression, suicidality); feedback and discussion of answers were embedded into the lectures
Case vignettes/discussions	<ul style="list-style-type: none"> • Consists of residents reading case vignettes corresponding to each lecture topic, then describing BH concerns and identifying appropriate evaluation steps, diagnosis, and treatment plans based on information presented in the lecture • Case discussions are built into lectures and discussed as a group • Time is allotted to discuss actual cases that residents see in continuity clinic
Standardized patient simulations ^b	<ul style="list-style-type: none"> • Consisted of trained and paid child/adult actors enacting commonly occurring behavioral health scenarios for training pediatric resident training purposes • Observation and performance feedback was provided individually by BHC and faculty preceptors as well as in a group format ("fishbowl" method)

(continued)

Table 1 (continued)

<i>Integrated primary care exposure</i>	
Warm handoffs	<ul style="list-style-type: none"> • Consists of on-site BHPs (pediatric psychologist and postdoctoral fellow) collaborating with residents on BH concerns through direct patient care • PCP directly introduces patient to BHP at the time of patient’s medical visit • To facilitate enhanced learning, accommodations were made to residents schedules to allow them to remain in the room to observe BHPs interactions with the patient
Curbside consults	<ul style="list-style-type: none"> • Consists of on-site BHPs collaborating with residents through indirect (informal discussions in resident clinic workroom) patient care • The resident informally obtains information or advice from the BHP to assist in the management of a patient with BH concerns
In vivo observation/performance feedback	<ul style="list-style-type: none"> • Consists of BHPs being in the room to observe residents in their conducting evaluations for ADHD, anxiety, depression, and/or suicidality, and to provide performance feedback to the resident after the clinical encounter • Feedback sessions were standardized to include the joint completion of a checklist • Checklist components consisted of degree to which the resident adhered to evidence-based practice parameters for a given condition as well as their use of “common factors” in the patient interaction (asking open-ended questions, reflective listening, allowing the patient ample time to talk) • This discussion included time for residents to self-reflect and assess their performance as well as to identify action steps to improve future performance
Joint precepting	<ul style="list-style-type: none"> • Psychologist precepts residents and psychology fellows in shared space • Psychologist also precepts the resident in conjunction with medical preceptor

^a<https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/Mental-Health/Pages/Addressing-Mental-Health-Concerns-in-Primary-Care-A-Clinicians-Toolkit.aspx>

^bThis training enhancement began in 2017 and was not part of the first 2 years of the D/BH curricula

knowledge and skills. Surveys and focus groups were administered at the beginning and end of the training year to measure growth over time in response to the curriculum. The Geisinger IRB provided approval for all data collection procedures. In an effort to demonstrate that learner variables improved over time in response to the curriculum (rather than other factors such as maturation or clinical

experiences/opportunities within the residency program), a control group of pediatric residents from comparable pediatric residency programs in the region were included. Sites did not differ significantly in their baseline knowledge and skills scores. See Shahidullah et al. (2017 IJHSE; 2018 NJ Pediatrics) for a review of the survey instrument, data collection methodology, and quantitative outcomes. Preliminary results indicate greater improvement in skills scores for residents in this pilot project who worked within the integrated care model alongside pediatric psychologists, when compared to residents at comparison sites. Qualitative data was also collected via focus groups held with pediatric residents both prior to and after integration with pediatric psychologists in the primary care continuity clinic occurred to inquire about attitudes, comfort, and confidence in managing D/BH concerns. Focus groups with a comparison site's residents were also held as a control group. Discussion of these results is beyond the scope of this chapter. However, the reader is referred to Petts et al. (2018) for a comprehensive review of the focus group methodology and outcomes.

Curriculum Implementation Case Study

The following case study describes the curriculum implementation chronologically from the beginning (July 2015) to the end (June 2016) of the pediatric residency training year.

July

At the beginning of the residency training year, both quantitative and qualitative needs assessment data were collected and ongoing discussions were held with systems stakeholders and the residency program leadership and training faculty. The obtained data indicated a clear need for enhanced D/BH training. Two BHCs were assigned to provide integrated D/BH services to clinic patients as well as to develop a didactic curriculum to be delivered in conjunction with this service integration. In an effort to maximize BHC availability given their clinical responsibilities, the didactics occurred during the residents Morning Report time slot, prior to usual clinic hours. The utilization of an already recurring educational time slot for residents ensured that as many participants as possible would be present. The didactic curriculum was developed based on the feedback from the initial needs assessment and focus groups transcripts. Participants in the focus group were asked about specific D/BH conditions they felt uncomfortable handling and would like focused didactics to help improve their knowledge and skills. Residents largely identified depression and anxiety as areas with uncertainty for which they would rely on making a referral. A

number of more common D/BH issues that regularly presented to the general pediatrician were also included although not specifically identified by the focus group data. These include topics such as somatic complaints/medically unexplained physical symptoms, trauma, suicidality, academic underachievement/learning disabilities, and procedural anxiety. The lack of identification of these issues by residents suggests either their lack of recognition of the prevalence of these conditions or lack of recognition of the potential role that BHCs can have in their management.

September

In September, two BHCs were embedded (shared space, office staff, and electronic health record [EHR]) in the continuity and acute care training clinic and began providing training via integrated service delivery. To be responsive to training needs, additional mechanisms to receive iterative feedback from residents and training stakeholders were implemented. Individual brief interviews with chief residents and select residents from each academic level were held within the first 2 months of training, and then periodically throughout the year. Additionally, the two BH training faculty attended all monthly primary care office management meetings for clinic staff which included the pediatric medical faculty. The agenda for these meetings included defined time to discuss progress, updates, and issues pertaining to both the integrated service delivery and didactic exposure for residents. Feedback was received from faculty that informed intervention/curriculum refinement throughout the training year. During the first meeting, two issues were raised by the BHCs. The first pertained to the lack of D/BH referrals received early on, compared to what was expected based on D/BH referral patterns at the other previously established primary care clinics in the hospital system. One hypothesis was that the academic school year had just begun and thus academic, developmental, behavioral, and emotional problems had not begun to be fully realized. However, another hypothesis, stemming from the needs assessment focus group data, suggested that the lack of referrals was due to a general lack of awareness on the part of residents as to the range of possible D/BH concerns that could potentially be addressed in primary care in general, and by BHCs specifically, or possibly the residents were not asking families about these issues.

Given the initial underutilization of the BHC in the clinic setting, an adaptation of the didactic curriculum was made. Rather than beginning as planned with the behavior management module, the BHCs and other training faculty determined that the initial lecture should provide a general overview to D/BH and the range of possible and appropriate referrals, with specific directions for the warm handoff and curbside consult process.

The second issue raised by the BHCs came from the recognition that residents had the potential to achieve a higher degree of learning through the referral. It was noted that residents would often make the handoff to the BHC and then leave the exam room to see their next scheduled patient. Although efficient from a patient throughput standpoint, it resulted in missed opportunities for training as residents

did not remain in the room to observe the BHC delivering time-limited evaluation and intervention. While no solution materialized that would encompass all situations, it was agreed upon that both BHCs and medical preceptors would encourage residents who had available time to remain in the room and observe. Preceptors also agreed to provide as much flexibility as possible in order to facilitate this interaction such as reassigning waiting patients to other residents who had openings. After this meeting and discussion, BHCs noticed an improvement in the number of residents who were able to remain in the room to observe the BHCs clinical interaction. Moreover, many of these residents shared that they found the experience to be beneficial to their learning.

October

BHCs began delivering the bi-weekly didactic curriculum for the duration of the training year. The didactics were delivered from 7:30 to 8:00 am during the Morning Report. The short time slot forced BHCs to keep the talks focused and applicable. Typically, there was at least an 80% attendance rate for the 33 residents in the program. At least one of the two chief residents and usually one faculty member was in attendance. This provided another avenue of quality control by having feedback from faculty on the relevance of lectures to training needs and objectives, as well as general feedback on presentation delivery. Feedback from all participants largely indicated that the lectures were beneficial and few changes needed to be made. However, some suggestions included making the lectures align with the American Board of Pediatrics Certifying Exam content and saving time at the end of lecture to discuss actual cases seen in continuity clinic.

November

During the first 2 months of enhanced D/BH training, warm handoffs and curbside consults were the extent of the integrated service delivery training components. However, informal feedback from residents indicated that their optimal learning typically came through authentic exposure to clinical situations and subsequent performance feedback. They noted that this type of learning was commonly facilitated by using simulated patients in their medical school training, although they had never had similar experiences in which the focus was on D/BH concerns. It was suggested that the BHC may be well-positioned to accompany the residents into the exam room, not to provide care, but to simply observe the resident and provide feedback. Training faculty worked with the systems' research center to develop a clinical observation checklist rubric that aligned with practice parameters (see Shahidullah et al., 2017 IJHSE; Shahidullah et al., 2018a, 2018b NJ Pediatrics for descriptions) for several of the most commonly presenting concerns in clinic and identified as areas of focus in

the AAP's (2009) policy statement. Collaboration with the research center ensured that the checklists were developed and scored in such a way that they could be used for systematic follow-up evaluation.

In mid-November, BHCs began observing residents during actual patient encounters when specific D/BH concerns were identified in an effort to evaluate the resident's patient interactions as well as provide management for these concerns. After the patient encounter, the resident would briefly meet with the BHC to review the clinical care checklist and discuss the components that they carried out in alignment with evidence-based practice parameters. Strengths were emphasized and areas for improvement were also generated. These conversations were confidential and information was not shared with the resident's attendings, medical preceptors, or residency program faculty. Scores were for resident education and self-monitoring only, not for research purposes.

December

Around the mid-point of the training year, additional feedback was received from residents and training faculty through individual interviews as well as the monthly clinic staff meetings. It was noted that residents found it suboptimal to pause an encounter when they identified a patient that had a D/BH concern in order to have a BHC observe the visit. This practice was deemed impractical and disruptive to patient flow and resident-patient rapport. A solution was alternatively developed to have the residents and the BHC meet in the morning before clinic to review and discuss patient lists and identify those scheduled appointments that clearly described the reason for appointment in the EHR as fitting a D/BH category. When identified in advance, the BHC would plan to be available to go into the exam room with the resident from the start of the appointment, after receiving verbal approval from patient, to observe and provide performance feedback.

This strategy was immediately implemented and improved communication and coordination of care. When BHCs sat down with each resident at the outset as they reviewed patients and pre-charted, they were not only able to identify which patients they could potentially have a BHC provide in vivo performance feedback, but also which patients had a high likelihood of eliciting a warm handoff. This coordination also facilitated opportunities curbside consultation from the BHC on specific patient concerns or D/BH topics in general.

January

January brought a noticeable increase in patients presenting with positive depression screens via clinic-wide use of the PHQ-9 for all adolescents. BHCs were available to manage these patient concerns via warm handoffs to conduct suicide risk assessments

and provide intervention. Although at times, after making the handoff to the BHC, residents needed to see their next scheduled patient, it was strongly encouraged that residents remain in the room and continue with the patient interview, assessing level and nature of suicidal risk with the BHC available to provide real-time observation and feedback before the handoff was made. If able, after the formal handoff, the resident remained in the room in order to observe the BHC establish rapport, carry out a suicide risk assessment, and arrive at a disposition. After a plan was implemented, a time was arranged for the resident and BHC to discuss the case in more depth in conjunction with the medical preceptor or attending.

Despite the availability of BHCs to provide support for suicidal crises during continuity clinic hours (typically 8 am to 5 pm), residents did not have immediate access to BHCs during all Acute Care Clinic hours (weekend mornings and weeknight evenings). Without a BHC present during these times, resident and attending PCPs sent these patients immediately to the emergency room (ER). In some cases, this was an appropriate disposition. However, in many cases the ER transfer was not indicated, as the patient may not have had any plan or intent beyond ideation. In these cases, an appropriate alternative option may have been to send the patient home with a safety plan and communicate with the BHC requesting an urgent appointment for the next clinic day. In response to the increased demand and requests for more training on responding to suicidal crises, an extra lecture was added to the didactic schedule in the spring which addressed voluntary vs involuntary hospital admission, suicide risk assessments (including evaluation of risk/protective factors), and developing a safety plan with the patient and their family.

June

At the end of the training year, in addition to the quantitative (see Shahidullah et al., 2017 IJHSE; 2018 NJ Pediatrics) and qualitative (see Petts et al., 2018) data collection, feedback was again obtained from residents ($n = 13$) through a brief survey asking the following three questions (topics are then listed in parentheses based on frequency counts and followed by any descriptive comments):

1. *What lecture topic was most helpful to you?* ADHD ($n = 5$), toileting ($n = 4$), behavior management ($n = 2$), anxiety, depression, referral resources available, motivational interviewing, suicide, learning disabilities, child abuse/trauma/ACES ($n = 1$ each), left blank ($n = 2$)
2. *What lecture topic was least helpful to you?* ADHD: “because we talk about it a lot, but I still think it’s worth going over, $n = 1$ ”; school programs ($n = 1$), left blank ($n = 6$); (other comments: “sometimes material very repetitive”)
3. *Is there a topic that was not covered that you believe would be helpful? Please list:* bullying ($n = 2$), eating disorders ($n = 2$); substance abuse ($n = 2$), diet/exercise/weight ($n = 1$), left blank or “none” response ($n = 4$)

Teaching faculty and pediatric residency program leadership provided feedback suggesting that residents needed more training in interpersonal communication skills, particularly working from a motivational interviewing framework. Possible next steps in curriculum development should include training specifically on interpersonal communication and patient engagement skills focused on fostering patient autonomy and shared decision-making (i.e., “Common Factors”; see Foy, 2014 article for description). This may likely come from expanding the motivational interviewing module and perhaps use of the institution’s standardized patient committee.

Conclusion

This organizational systems-level case study described how enhanced D/BH training was delivered in conjunction with an integrated service delivery model. This integrated care model offered a platform that created synergy between these two parallel efforts that were developed to specifically address two major problems in traditional health service delivery models—lack of access that these systems afford to D/BH care and the lack of training that PCPs receive in D/BH and team-based care. As described in the case study, this effort occurred over the course of several years and with the fiscal and logistical support from numerous stakeholders. While some aspects of the innovation may be amenable for off-site adoption, other aspects may not be without substantial financial or personnel support. Future research should assess the feasibility of delivering the training components with a high degree of fidelity. As all elements of this program may not be feasible within other sites, future research should evaluate the implementation and individual validity of the specific components within the program (didactics, warm handoffs, curbside consults, observations with performance feedback, joint precepting, standardized patients). This may be accomplished with a future dismantling study or component analysis study. Finally, some programs may be capable of utilizing additional training modalities that were not included in the package such as the use of standardized patients, computer-based learning, or electronic health record audits with performance feedback. The “value-added” that these learning enhancement opportunities provide must be evaluated in the context of their inherent “costs” (e.g., patient flow disruptions in busy clinics as a result of having the resident observe the BHC or vice versa). Financial costs should also be explored in future research by including key cost metrics given the importance and desire for financially sustainable D/BH services and training support. Partnerships with healthcare economists to examine this data could serve as an additional advocacy tool for the D/BH training initiative. To facilitate a more nuanced examination of implementation experiences, a simulated question and answer discussion is included at the end of this chapter.

**Authors Respond to Questions Concerning
the Systems-Level Innovation: Dr. Paul Kettlewell (PK),
Psychologist Involved in Training Curricula Implementation,
Dr. Paul Bellino (PB), Pediatric Residency Program Director**

Question 1. You described several possible options for enhanced D/BH training (didactics, shared care for patients, case conferences, simulated patients, etc.). How did you decide which training approaches to use in the training model and which approaches to exclude?

PB: Determining the method for training for me is more of a practical thing than any data driven decision. The truth is that time for any additional educational activity in residency is limited, so activities that overlay or enhance already developed and practiced curricular elements fit better into this already cramped timeframe. Also, I am a believer that one learns best from experience rather than a presentation or some on-line activity that requires no effort other than clicking a mouse. When a resident is engaged in the entire process of managing a real patient, taking responsibility for all elements of patient care as well as the risk associated with the outcome, they will not forget the lessons they learn. I personally prefer to expose residents to these situations in their training as I believe it will offer a lasting and deep understanding of the issues at hand. Since not all possible scenarios can be covered during the process of caring for patients, additional lectures or other formats should be used to supplement the needed medical knowledge, but these should still try to draw off the experiential learning process obtained during the actual care of patients.

Having said that, there are some times where a quick passage of medical knowledge is all that is needed. In those cases, an hour lecture or self-directed activity is adequate. It seems to me that you can pack in more information with a lecture, but younger physicians seem to like doing role-playing or case-based discussions. These are common processes in medical schools now. Personally, I think they are a waste of time, but I am from a different era than these guys. So, when I can, I ask presenters to at a minimum wrap their presentations around a case that can be used as an anchor for the material that they will be presenting.

Computer-based activities are interesting. They can be fun and look cool, however, in my experience, when a resident has to do something on their own time, it rarely gets done unless you spend a lot of time policing them. As such, I have found these not worth the effort it takes to develop and implement them. Some residents are quite keen to complete them and prefer this type of learning, so I do have them as supplemental activities or for special things that only involve selected residents (global health curriculum, etc.). Outside of that, if it something I want everyone to do, I rarely choose a computer-based activity.

Question 2. It appears that you have taken logical and progressive steps in the development of both the integrated care model and then enhanced D/BH training approach. You have and will continue to get some data and informal feedback from stakeholders (pediatric residents, pediatric attendings, business

leaders, and patients) you likely will need to make some modifications to your approach. How do you conduct applied outcome research when you have an intervention that is not “fully fixed” and that likely will change gradually even if modestly over the next few years?

PB: Residency education is a fluid thing. The ACGME puts out mandates that are general and do not specifically spell out exactly how a program is to accomplish a required element. This is to permit programs to best utilize the resources that they have in a matter that best suits their purposes. We have had many unique training activities over the years that cannot be replicated in most programs because of Geisinger’s unique attributes. Identifying resources and using them in creative ways is commonplace in resident education.

Whenever you begin a new educational process, it is imperative to review the outcomes to determine if it is having the desired effect. I expect that we will be able to review several things pertaining to this activity to determine if additional changes are needed. It will probably be easiest to obtain general feedback from residents and faculty about the basic processes, looking specifically at their attitudes about the manner in which the integrated D/BH activity functions as well as how they feel it impacts their patients and the resident’s education. Subjective evidence like this is always easiest to come by and it offers a good starting point to make changes. The changes made from this information from my standpoint are done to get additional buy-in and correct dissatisfaction with the new process. This is not hard scientific data that can be used to determine if the outcome of the program is as expected. That will need to be seen over time and more time-consuming efforts will be needed to determine this. Directly testing residents on D/BH issues, looking at ABP and ISE scores in D/BH domains, and potentially identifying changes in the handling of patients with D/BH issues by residents by utilizing the EHR are all potential ways of seeing this objective data.

Even when all of this is completed and it is felt that the system is running well, change will be inevitable. Alterations in facilities, patient expectations, social issues, ACGME educational requirements, etc., all will occur over time, making continued evaluation and alteration of the program necessary. It is anticipated that this process will need to be altered at some point to meet the changing needs of our learners, faculty, and their patients.

Question 3. Pediatric residents have numerous demands on them during their residency. What challenges did you face in getting them to commit to learning about behavioral health and doing the things you required such as attending didactic lectures or collaborating with psychologists in their continuity clinics?

PB and PK: Any primary care provider is, by definition, a generalist and is expected to handle a broad range of health problems. For a resident in training this is a daunting and at times an overwhelming task. It is one of the reasons that some residents choose to specialize, so that they have more sense of mastery over the areas of healthcare they are expected to be competent in managing. Because of that challenge for broad skills that pediatric residents must master and the limited time they have, we developed our

training model to be especially efficient. Most specifically, the curriculum involves lectures/discussions on D/BH topics that are only 30 min long and emphasize bottom-line knowledge and skills, with each lecture labeled, “What every pediatrician should know about”. Additionally, by moving our D/BH training to their continuity clinic, and providing help to them with their own patients, they could acquire skills in managing D/BH problems at the time in which they are most in need. Rather than being another training experience they have to squeeze into a busy week, our training experience often helped them get their job done more adequately and efficiently, which improved their “buy-in” with our training and curricula.

We also introduced numerous mechanisms to ensure that we received direct feedback from residents so that our training curricula could be implemented in an iterative process. Examples included focus groups, individual meetings with residents and faculty, confidential rating systems during didactic lectures for feedback, as well as other informal mechanisms such as conversations with residents in their continuity clinic. As indicated in the case study, there were numerous changes that occurred throughout the training year that were adaptations/modifications from the original curricular design. I would add that residents are motivated by the fear that they will need to know how to do something when they get out of residency. They know full well that they will need to handle D/BH issues and quite frankly are anxious that they will not have the needed skills to do so adequately. In educating residents, feeding off of this anxiety is quite useful. Residents will be more likely to cooperate with processes that offer them the practical information and practice experience that they feel will be needed for their future work as a general pediatrician.

Question 4. Health care organizations change leadership and resulting areas of emphasis at times. How can the changes you have made in service delivery and in enhanced training be sustainable if your organization’s priorities change? How can you solidify your changes so they are more likely to “stick”?

PK: In some ways it is fortunate for any of us involved in D/BH service delivery and training that in almost all health care delivery systems, there is a shortage of adequate D/BH services and training. Therefore, if a health care organization changes leadership, when the new leadership team assesses service delivery and training needs, D/BH will be among key areas that require attention. More importantly, if the D/BH training is of value and helps pediatric residents become both more competent and comfortable handling D/BH problems, it will be valued by both resident and attending pediatricians. Additionally, by combining our D/BH training with the implementation of the integrated pediatric primary care model we attempted to help attending pediatricians’ and residents’ experience the added value that the integrated care model provided. At least some of the pediatric primary care providers have told us that they no longer are willing to practice in a primary care setting without a BHC as a central member of their team.

In our health system, we did experience a change of senior leadership (a new CEO) from the time that our initiative (to change our D/BH service delivery and training approaches) was developed and proposed until the time we actually implemented it. The changes in leadership involved a transition from an emphasis on sound business

strategies to an emphasis on excellence in the patient experience. This involved some clear differences in emphasis, but frankly, both approaches required sound business approaches as well as genuine care for patients, so the changes were more complementary and a natural progression than a radical change. As a result, our initiative was not negatively impacted by system leadership changes.

Also, research shows that an element of organizational capacity that has been repeatedly found to be central to any type of systems innovation is strong leadership. We are fortunate that the key stakeholders behind this initiative—division heads and leaders from the systems health plan—were very supportive of the program and all the people who implemented it. This type of active support is critical, particularly when organizational turnover occurs—our health system’s CEO in our case—as these stakeholders in leadership positions can often engage the new decision-makers for ongoing support.

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