

# An Exploration of Behavioral Health Productivity and Billing Practices Within Pediatric Primary Care

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## Abstract

**Objectives** To provide descriptive information on behavioral health (BH) productivity and billing practices within a pediatric primary care setting. **Methods** This retrospective investigation reviewed 30 months of electronic medical records and financial data. **Results** The percent of BH provider time spent in direct patient care (productivity) was 35.28% overall, with a slightly higher quarterly average ( $M = 36.42\%$ ;  $SD = 6.46\%$ ). In the 646.75 hr BH providers spent in the primary care setting, \$52,050.00 was charged for BH services delivered (\$80.48 hourly average). **Conclusions** BH productivity and billing within pediatric primary care were suboptimal and likely multifactorially derived. To promote integrated primary care sustainability, the authors recommend three future aims: improve BH productivity, demonstrate the value-added contributions of BH services within primary care, and advocate for BH-supporting health care reform.

**Key words:** adolescents; children; health care services; primary care.

According to the [Centers for Disease Control \(2013\)](#), 13–20% of youth nationwide have a psychiatric diagnosis in any given year, and rates of individual diagnoses are rising. For youth in need of behavioral health (BH) services, the first point of contact is generally the primary care provider ([Ford, Steinberg, Pidano, Honigfeld, & Meyers, 2006](#); [Williams, Klinepeter, Palmes, Pulley, & Foy, 2004](#)). However, tasked with surveying, screening, preventing, and treating a broad range of issues, primary care providers often fall short of adequately identifying ([Kathol, deGruy & Rollman, 2014](#)) and addressing BH problems. A recent study by Valleley and colleagues (2015) showed that even with routine BH screening, primary care providers responded to BH issues in only 21.4–50% of identified patients.

Contributing to the divide between the mental health needs of youth and the BH services they require are mental health stigma ([Cauce et al., 2002](#)) and limited mental health access, particularly in underserved areas ([Cummings, Wen, & Druss, 2013](#)).

Fortunately, health care in the United States is in a state of reform that affords psychologists the opportunity to embed within primary care and collaboratively address BH issues. The Patient Protection and Affordable Care Act (ACA; Public Law No: 111-148, March 23, 2010) mandates mental health coverage at a level similar to that provided for medical care. Additionally, health care delivery models such as the patient-centered medical home model and accountable care organizations encourage comprehensive, cross disciplinary approaches to primary care that include

BH providers (Korda and Eldridge, 2011). The ACA also actively promotes value-based health care that prioritizes affordable and accessible yet high-quality care, and financially incentivizes accordingly. While the fee-for-service era persists, active advocacy for health care reform that supports sustainable BH services within primary care is underway (Berwick, 2016; Kathol et al., 2014). With such reform, psychologists will be supported in providing revenue and non-revenue-generating services that improve both patient, provider, and clinic-wide functioning (Stancin & Perrin, 2014).

For BH providers collaborating to address the BH needs of primary care patients (i.e., integrated primary care; IPC), a number of delivery models or approaches exist. Blount (2003) described IPC approaches based on the level of integration between providers and treatment records, level of coordination in care, and degree of co-location between BH and primary care services. Heath, Wise, Romero, and Reynolds (2013) similarly outlined a continuum-based perspective to differentiate IPC delivery models. Along their continuum, IPC approaches ranged from simple coordination with improved communication (e.g., limited communication; separate records and facilities; little perceived value for one another's roles), to full integration (e.g., fully integrated record; shared offices and exam rooms; routine communication at system and individual levels; blended roles with full appreciation for one another's contributions).

Multiple additional IPC taxonomies exist. For example, Gatchel and Oordt (2003) described five IPC models including co-located clinics, primary care provider, staff adviser, stepped-care approach, and primary care BH. Collins, Hewson, Munger, and Wade (2010) described eight IPC models, three of which overlap those of Gatchel and Oordt. More recently, Margolis, Pollard, and Niemiec (2013), along with Vogel, Malcore, Illes, and Kirkpatrick (2014), used the terms vertical and horizontal integration to differentiate additional aspects of IPC, including the scope of referral (targeted vs. broad), selection of intervention (prespecified vs. clinician selected), and outcomes of interest (targeted outcomes vs. overall symptom reduction and functional improvement).

Closer inspection of IPC delivery models reveals that each has strengths and limitations. For example, while Gatchel and Oordt's (2003) colocated model allows for traditional mental health services and related interventions within primary care, the time required for services greatly reduces BH accessibility. On the other end of the continuum, the staff adviser model maximizes BH accessibility by providing brief consultation to primary care providers, but prevents the use of manualized treatments designed for the traditional mental health arena. Additionally, any IPC

approach could be seen as poorly suited to a given practice on account of its incompatibility with their interests and priorities. Thus, as many conclude (e.g., Collins et al., 2010; Gatchel & Oordt, 2003; Robinson & Reiter, 2007), there is no gold standard, one-size-fits-all approach to IPC.

Rather, selection of the "best" IPC approach rests on careful consideration of ones' unique context, including provider preferences, skills, and comfort with integration; buy-in of relevant stakeholders; and practical considerations such as staffing, space, and availability of electronic medical records. In the interest of finding the delivery model with the best fit, it is common for IPC practices to incorporate aspects of multiple models into a singular, hybridized approach (Collins et al., 2010; Talen, Valeras, & Cesare, 2013; Wallace et al., 2015).

Within pediatric populations, psychology-led, integrated BH services have produced significant clinical improvements for children. For example, Berkovits, O'Brien, Carter, and Eyberg (2010) compared two approaches to parent-child interaction therapy that were modified for the primary care setting. After intervention and at 6-month follow-up, both treatment groups demonstrated significant decreases in problematic parenting practices and child behavioral problems. In another study, Lavigne and colleagues (2008) compared three interventions delivered to preschoolers within primary care; all three interventions resulted in significant reductions in oppositional behaviors and externalizing difficulties that were maintained at 12-month follow-up. Using brief treatment approaches within a co-located pediatric psychology clinic, Sobel, Roberts, Rayfield, Barnard, and Rapoff (2001) found youth demonstrated significant improvements in target behaviors after intervention. Together, outcome-based studies suggest a variety of IPC delivery models and BH interventions of varying length and modality can benefit patients.

Data supporting the value-added benefits of pediatric IPC are also accumulating. Studies show IPC improves primary care provider utilization of BH services (Brawer, Martielli, Pye, Manwaring, & Tierney, 2010), reduces mental health stigma (Brawer et al., 2010), and increases both patient satisfaction (Finney, Riley, & Cataldo, 1991; Lavigne et al., 2008) and primary care provider satisfaction (Blount et al., 2007). BH services within primary care have also generated small, albeit meaningful, medical cost offsets (Katon, 1995), a finding lending support to the role of BH in reducing the exorbitant cost of health care for families in the United States (Cohen & Kirzinger, 2014).

Amidst mounting evidence in favor of IPC, a considerable gap in the literature exists with regard to BH provider productivity (i.e., percent of BH provider

time spent in direct patient care) and billing practices. Despite multiple publications describing productivity and billing practices as important future directions for study (e.g., Bruns, Kessler, & VanDorsten, 2014; Rozensky & Janicke, 2012; Tynan & Woods, 2013), an extensive literature review revealed no practice-based data on the percent of time BH providers spend in patient care; data on billing practices associated with BH services within primary care were also nonexistent. Like all models of service delivery, BH services within primary care should not be evaluated solely on the basis of economic viability, but must include such factors to demonstrate sustainability (Goodheart, 2010). As we approach an era of unparalleled health care reform, psychology is not likely to maintain its footing within primary care in the absence of practice-based evidence to guide its future.

The purpose of the current investigation was to provide descriptive information on BH productivity and billing practices obtained within a large, urban, pediatric primary care clinic. Specifically, this study explored trends and overall BH productivity, billing codes used, and total BH charges overall and by insurance type (e.g., Medicaid HMO plans, Blue Cross/Blue Care Network) over 2.5 years within the primary care setting. To provide context for results, data on nonattendance rates and BH encounter types (i.e., initial vs. follow-up visits) were also collected. In the absence of prior publications, the aforementioned factors were explored based on the authors' clinical experience, which suggested clinic-wide attendance difficulties and a preponderance of initial visits may impact BH productivity and billing outcomes.

## Methods

### Integrated Primary Care Setting

The pediatric primary care clinic is located in an underserved, urban setting, where 62.4% of those <18 years old live below the federal poverty level (United States Census Bureau, 2013). The clinic is a large, pediatric-residency-affiliated patient-centered medical home (i.e., 4,705 patients served from September 1, 2012 to February 28, 2015) that operates 4.5 days per week. Primary care providers include two to three attending physicians, four to six medical residents, one physician's assistant, and one to three medical students. Primary care providers engage in developmental screening routinely with patients aged 0–5 years, and use standardized screening tools to evaluate for social/emotional difficulties and autism spectrum disorder as concerns arise.

The BH service within the primary care clinic is run by two licensed pediatric psychologists and a postdoctoral psychology fellow. Costs associated with the BH service are subsidized by the affiliated hospital entity

on account of the service's central role in delivering coordinated, cross disciplinary care. Time allocated for the BH service is 1–3 half days per week (i.e., 195 min per half day). During each half day of BH services, one BH provider is on site and three BH encounters (i.e., initial or follow-up visits) are scheduled. BH encounters include both spontaneous (i.e., immediately after a patient's primary care visit) and scheduled (i.e., BH appointments made no more than 4 weeks in advance on a first-available basis) visits. Consequently, BH encounters on any given half day include varying combinations of initial, follow-up, scheduled, and spontaneous visits. When on site, but not engaged in direct patient care, BH providers participate in on-the-fly consultation with primary care providers, educate learners, develop and acquire BH handouts for general clinic use, generate flyers promoting BH services, conduct quality improvement projects, assist in case management activities, and conduct scholarly activities specific to IPC.

The primary care and BH service lines are highly integrated with unified records, shared exam rooms, and a communal provider workspace. BH requests come from primary care physicians and patient self-referrals for a myriad of developmental, behavioral, and social/emotional issues. Interventions are selected by the BH provider and designed to be problem-specific and brief (i.e., fewer sessions; shorter session duration) relative to traditional mental health settings. Initial visits generally incorporate assessment, feedback (i.e., including identified psychiatric diagnoses when applicable), recommendations, and intervention. Follow-up visits are scheduled at 3–4 week intervals, remain problem focused, and generally incorporate intervention and recommendations. Patients or families in need of a higher level of support owing to problem acuity or complexity are referred to traditional mental health settings. Specific interventions commonly used include diagnostic interviews, social/emotional screening, psychoeducation, cognitive and behavioral interventions, skills training, and motivational interviewing. Outcomes of interest generally consist of symptom reduction, problem resolution, and functional improvements. After BH encounters, feedback is routinely communicated to the primary care provider within the medical record, and whenever possible, in person.

Additional BH professionals (e.g., social workers, family navigators, care coordinators) are not on site. When the BH service is unavailable, primary care providers stratify the severity (i.e., mild, moderate, severe) and scope (e.g., narrow, broad) of the problem(s) identified. Based on their assessment, primary care providers then deliver general guidance and education that includes resources compiled by the BH service, provide warm handoffs for a future BH scheduled

**Table I.** Demographic Characteristics of Patients

Variables	BH service ( <i>N</i> = 204)		PC service ( <i>N</i> = 4705)		$\chi^2$	<i>p</i>
	<i>n</i>	%	<i>n</i>	%		
Age (years)					45.98	<.0001
0–2	9	4.41	1,023	21.74		
3–5	45	22.06	780	16.58		
6–11	97	47.55	1,436	30.52		
12–17	53	25.98	1,165	24.76		
18+	0	–	301	6.40		
Gender					8.46	<.001.
Male	127	62.25	2,428	51.60		
Female	77	37.75	2,277	48.40		
Race					3.09	.2133
African American	153	75.00	3,673	78.07		
Caucasian (Non-Hispanic)	46	22.55	857	18.21		
Other	5	2.45	175	3.72		

*Note.* Behavioral health service age is the patient age at the time of first BH service encounter. Primary care service age is the patient age on the last day of the data collection period (February 28, 2015). Other race = Asian, Biracial, Hispanic, Multiracial, and Unknown; BH = behavioral health; PC = primary care.

visit, and/or refer patients to community-based providers (e.g., community mental health, outpatient psychiatry and psychotherapy, school resources) using a referral guide created by the BH service.

### Participants

On approval by the institution's review board, electronic medical records were reviewed for all BH and primary care encounters between September 1, 2012 and February 28, 2015. Demographic characteristics of primary care and BH patients can be found in Table I. BH patients (*N* = 204) ranged in age from <1 year old to 17 years old (*M* = 8.62 years; *SD* = 4.14). A majority of BH patients were male (62.25%, *N* = 127), and 75% (*N* = 153) of patients were African American. Relative to the primary care service, the BH service had a generally similar racial composition ( $\chi^2 = 3.09$ , *df* = 2, *p* = .2133), young patients (0–2 years) were underrepresented ( $\chi^2 = 45.98$ , *df* = 3, *p* < .0001), and patients were more likely to be male ( $\chi^2 = 8.46$ , *df* = 1, *p* < .01).

### Definition of Productivity

BH productivity was broadly defined as the percent of BH provider time spent within the primary care clinic in direct patient care. Total half days, each consisting of 195 min, were used to calculate total BH provider time in the primary care clinic. Time spent in direct patient care was calculated based on the billing codes (current procedural terminology codes; CPT codes) assigned to each patient encounter at the time of service. Time spent in patient care for each encounter was estimated as follows:

- Psychiatric diagnostic evaluations and interviews: 60 min were assigned, based on the clinical experience of the providers.

- Psychotherapy sessions with duration ranges: The number representing the middle of the range (e.g., 25 min for a 20–30 min CPT code range) was assigned.
- Psychotherapy sessions with a specified duration: The duration specified as part of the CPT code (e.g., 50 min) was assigned.
- Health and behavior codes: 15 min were assigned per health and behavior unit specified in billing documentation.
- No charge codes: For the few BH encounters for which a billable CPT code did not apply, initial visits were assigned the mean duration of all billable diagnostic evaluations and initial health and behavior visits; follow-up visits were assigned the mean duration of all billable psychotherapy and health and behavior follow-up visits.

Patterns of BH productivity were explored by calendar-based months, quarters, and years. Quarters consisted of consecutive, 3-month intervals beginning at the start of the investigation (September 2012). Calendar years included 2012, 2013, 2014, and 2015. BH productivity was also explored by season and included autumn (September through November), winter (December through February), spring (March through May), and summer (June through August).

Contextual factors explored included nonattendance rates and BH encounter types. For the primary care service, nonattendance rates were defined as the percent of unattended appointments (cancelled and no show appointments combined) relative to the total number of scheduled appointments. For the BH service, nonattendance rates were defined as the percent of unattended appointments (cancelled and no show appointments combined) relative to the total number of scheduled and spontaneous BH encounters. At the outset of each BH visit, BH providers selected the encounter type and used a corresponding documentation template (i.e., “Behavioral Health Intake” or

“Follow-Up Behavioral Health Consultation”). BH encounter types were selected based on the following prespecified criteria: Initial visits included patients new to the BH service and patients previously seen by the BH service with a new presenting problem or who had not been seen in the past 6 months; follow-up visits included BH encounters addressing a previously identified BH problem within 6 months of the last BH encounter.

### Definition of Billing Practices

Billing practices included three main components: billing codes used, total BH charges, and total BH charges by insurance type. Unfortunately, data on reimbursement for BH services were incomplete owing to extended delays in collection, and thus unavailable for analysis.

Billing codes were defined as the CPT codes submitted for BH services provided in the primary care setting from September 1, 2012 through February 28, 2015. All billing codes were assigned at the time of service (i.e., immediately after BH encounter completion) and selected for their congruence with the respective CPT code definitions (e.g., psychotherapy, psychiatric diagnostic evaluation, health and behavior initial assessment). BH charges were defined as the total dollar amount of charges for BH services provided overall and according to insurance type (e.g., Commercial plans, Medicaid alone, Medicaid HMO plans). BH charges were calculated based on a fee schedule the billing department applied to all BH encounters from September 1, 2012 through February 28, 2015.

### Procedure

#### Data Collection

Data were retrospectively collected as part of a broader investigation of BH services within the pediatric primary care setting. For the current investigation, two categories of data were analyzed: BH productivity and billing practices.

Productivity data included the following: minutes of BH provider time spent within the primary care setting, minutes BH providers spent in direct patient care, dates of BH encounters, BH encounter types (initial vs. follow-up visit), and attendance rates for both BH and primary care services. The minutes of BH provider time spent in primary care were collected via retrospective review of the BH schedule within the electronic medical record and confirmed by the BH provider network schedule. A retrospective chart review was also used to determine the dates of completed BH encounters within the primary care setting, the billing codes assigned, and the number of initial and follow-up BH encounters. A report generated by the primary care clinic’s electronic medical record

provided data regarding nonattendance rates for both the BH and primary care services.

Billing practices data included the CPT codes submitted for each BH encounter, and charges for BH services within primary care from September 1, 2012 through February 28, 2015. A report generated by the primary care clinic’s electronic medical record, a financial report generated by the billing department, and a retrospective chart review provided data regarding the billing codes used. The financial report generated by the billing department also included total BH charges by billing code and by insurance type (e.g., Medicaid HMO plans, Commercial plans).

### Process to Ensure Reliability of Data Collection

Chart reviews were completed by dyads of affiliated and nonaffiliated researchers with 100% agreement for data collection and entry. Three documentation sources for service data and billing codes were cross-referenced with 100% accuracy. Financial and electronic medical record reports compiled by unaffiliated specialists were reviewed with a researcher and confirmed 100% accuracy of the dates recorded and operational definitions of variables captured.

### Statistical Data Analysis Methods

Productivity estimates were calculated by dividing the amount of time BH providers spent in direct patient care by the total time BH providers were in the primary care setting and multiplying the result by 100. Descriptive statistics were used to examine BH encounter types and BH productivity by day, month, quarter, and calendar year. Productivity was also inferentially explored for differences between seasons and between calendar years using a one-way analysis of variance (ANOVA). Chi-square analysis was used to compare attendance rates between the BH and primary care services.

Billing (i.e., CPT) codes used by BH providers and BH charges (i.e., total dollar amount of charges for BH services overall and by insurance type) were explored descriptively. To provide an estimate of charges a BH provider could expect to submit per hour of time spent in the primary care setting, an average hourly rate of BH charges was also calculated. This was done by dividing the total BH charges by the total hours BH providers were in the primary care setting.

## Results

### Productivity

During the 2.5 years under exploration, BH providers engaged in 149 separate days of service (some half days), and were present in the primary care clinic for 646.75 hr. Two hundred four patients were seen by

the BH service (4.34% of the 4,705 patients served by the primary care clinic). BH providers completed 244 encounters, which translated into an estimated 228.17 hr of direct patient care. Initial visits (i.e., psychiatric diagnostic evaluations; health and behavior initial assessments) had an average estimated duration of 59.05 min ( $SD = 5.84$ ). Follow-up visits (i.e., psychotherapy sessions; health and behavior reevaluations or intervention) had an average estimated duration of 35.86 min ( $SD = 12.64$ ). One follow-up visit was erroneously billed as a diagnostic interview. Consequently, the visit was treated as missing data and assigned the mean value of all follow-up visits (i.e., 35.86 min).

Overall BH productivity, defined as the percent of BH provider time spent within the primary care clinic in direct patient care, was 35.28%. BH productivity was characterized by high degrees of variability at daily ( $M = 34.02\%$ ,  $SD = 27.43\%$ ) and monthly ( $M = 36.51\%$ ,  $SD = 10.21\%$ ) intervals. As shown in Figure 1, increased stability in BH productivity was demonstrated when the interval under exploration was lengthened from months to quarters of a year ( $M = 36.42\%$ ,  $SD = 6.46\%$ ). While data on daily productivity were analyzed, they were not included in Figure 1 owing to the complexity of representing daily data graphically. One-way ANOVAs revealed no statistically significant difference in daily BH productivity means between seasons ( $F(3,143) = 1.896$ ,  $df = 3$ ,  $p = .133$ ), or calendar years ( $F(3, 143) = 1.978$ ,  $df = 3$ ,  $p = .120$ ). A descriptive comparison of BH productivity means by month (e.g., combining BH productivity means from all February months occurring between September 1, 2012 and February 28, 2015) revealed moderate differences by month. The combination of all July months were the least productive months ( $M = 20.00\%$ ,  $SD = 24.90\%$ ) and the combination of all January months were the most productive months ( $M = 46.00\%$ ;  $SD = 31.30\%$ ).

Rates of nonattendance (no-shows and cancelled visits combined) were 59.54% ( $N = 359$ ) for the BH service and 42.31% ( $N = 11,554$ ) for the primary care service. While the nonattendance rates for both services were high, the BH rate of nonattendance was significantly higher than the primary care rate ( $\chi^2 = 71.59$ ,  $df = 1$ ,  $p < .0001$ ).

With regard to rates of initial and follow-up BH encounters, 87.30% ( $N = 213$ ) of all 244 completed BH encounters were initial visits. The remaining 12.70% ( $N = 31$ ) BH encounters were follow-up visits.

### Billing Practices

As shown in Table II, psychiatric diagnostic evaluation billing codes were most commonly used to

charge for BH services provided ( $N = 200$ ) from September 1, 2012 through February 28, 2015. When examining financial data, a total of \$52,050.00 was charged for BH services provided within the primary care clinic. BH charges by insurance type were as follows: \$46,890.00 (90.09% of charges) was submitted to Medicaid HMO plans; \$1,405.00 (2.70% of charges) was submitted for self-pay; \$1,345.00 (2.58% of charges) was submitted to Medicaid alone; \$1,325.00 (2.55% of charges) was submitted to Blue Cross/Blue Care Network plans; and \$1,085.00 (2.08% of charges) was submitted to Commercial plans. Dividing the total charges for BH services (\$52,050.00) by the total hours BH providers were in the primary care setting (646.75 hr) from September 1, 2012 through February 28, 2015, BH providers were found to bill an average rate of \$80.48 per hour of time on site.

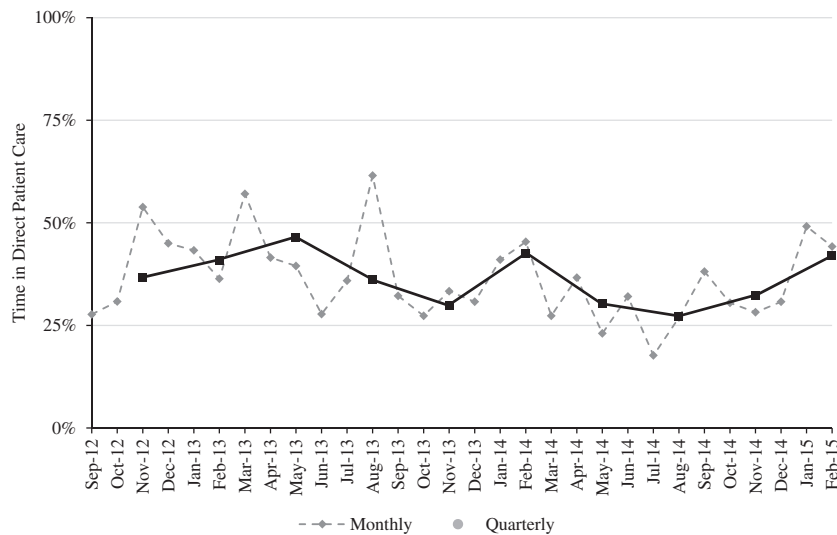
### Discussion

Despite widespread IPC interest and an unprecedented opportunity for psychology to establish itself within the patient-centered medical home, evidence of sustainability remains insufficient. To that end, this study retrospectively explored BH productivity and billing data within a large primary practice located in an urban, underserved community. In a fee-for-service framework, findings reveal fairly significant threats to IPC sustainability, namely suboptimal productivity, unpredictably variable productivity over time, and low billing rates.

#### Suboptimal Overall Productivity

In a purely economic sense, BH providers were underproductive. Explanations for inadequate time in direct patient care are broad, and include barriers to getting children with BH issues connected to BH services, high rates of nonattendance for scheduled visits, and limited continuity in BH caseload.

Although a goal of the IPC delivery approach under exploration was to increase BH service access, only 4.34% of primary care patients were seen by BH providers. Given that >25% of pediatric primary care patients present with BH risks (Blucker et al., 2014), the integrated BH service was underused. As suggested by Valleley, Romer, Kupzyk, Evans, & Allen (2015), one potential explanation may be that even with high integration, primary care providers fall short of identifying BH issues and responding to them with referral to BH providers once detected. Other possible explanations may be inherent to the IPC approach used. That is, aspects of the IPC approach such as absence of clear referral pathways (e.g., routine referral of all children with insomnia), lack of routine social/emotional screening at well-child visits, and part-time BH



**Figure 1.** Behavioral health service productivity by month and quarter from September 1, 2012 through February 28, 2015. Mean productivity was highly variable by month, and less variable by quarter.

**Table II.** Billing Codes for Behavioral Health Services Within Pediatric Primary Care (September 2012–February 2015)

Encounter type	Current procedural terminology codes	n
Initial	No Charge	7
	Psychiatric Diagnostic Evaluation [90791]	174
	Psychiatric Diagnostic Interview [90801]	25
	Health & Behavior Assessment, Initial [96150]	7
Follow-up	No Charge	1
	Psychotherapy Patient and/or Family 30 Minutes [90832]	6
	Psychotherapy Patient and/or Family 45 Minutes [90834]	11
	Psychotherapy Patient and/or Family 60 Minutes [90837]	4
	Psychotherapy (20–30) [90804]	3
	Psychotherapy (45–50) [90806]	2
	Health & Behavior Assessment, Re-Assessment [96151]	1
	Health & Behavior Intervention [96152]	1
	Family Psychotherapy, No patient [90846]	1
	Psychiatric Diagnostic Interview [90801] <sup>a</sup>	1

<sup>a</sup>Follow-up intervention erroneously coded as a Psychiatric Diagnostic Interview.

availability that results in an overreliance on scheduled visits may also contribute to reduced BH volume.

Compounding the issue of BH underutilization was the poor attendance rates for scheduled BH encounters. Barriers to BH service attendance span multiple issues. One factor illuminated by the current study was the poor attendance rate of the primary care service (57.69%). Similar primary care attendance rates have been documented elsewhere (e.g., George & Rubin, 2003), and suggest barriers to BH attendance within primary care are not unique to BH services.

Studies identify several factors associated with nonattendance that are disproportionately represented within underserved areas, including low income, high familial stress, racial minority status, and single-parent households (Gopalan et al., 2010; Kalb et al., 2012).

While some barriers to BH attendance are likely shared with primary care providers, the nonattendance rate of the BH service was significantly higher than that of the primary care service and comparable with those of nonintegrated, noncolocated, traditional child mental health services in urban settings (48–62%; McKay & Bannon, 2004). These findings suggest barriers unique to BH services also exist. Previous research commonly cites mental health stigma (Cauce et al., 2002) as a barrier to BH treatment. Additionally, the authors speculate that high nonattendance rates may be explained in part by delays between the BH referral and BH visit, an insufficient frequency of spontaneous visits, and by approaches to BH referral that inconsistently include aspects essential to facilitating follow-through (e.g., clarity and relevance of the referral reason to the patient and family; provision of brief education on the BH provider’s role; reassurance of BH provider expertise and trustworthiness; Robinson & Reiter, 2007).

Another identified factor likely contributing to low BH productivity was how few BH patients returned for follow-up visits. While the modal number of attended BH sessions in traditional mental health settings is one (Connolly-Gibbons et al., 2011), IPC was developed, in part, to ameliorate barriers contributing to this outcome (United States Public Health Service Office of the Surgeon General, 2001). Further study is needed to identify factors contributing to poor BH

follow-up. The authors suspect a combination of patient (e.g., multiple psychiatric comorbidities; pharmacologic management indicated), provider or service (e.g., limited appointment times available for scheduled visits; over-referral to outpatient services), and social (e.g., transportation problems, competing needs prioritized to BH issues) factors are implicated.

### Variable, Unpredictable Productivity

Fluctuations in productivity that could not be ascribed to a reliable pattern were noted day-to-day and month-to-month. Given this result, BH providers within primary care should be prepared for a fair degree of unpredictability in daily routines. To optimize nonrevenue generating time, BH providers are encouraged to focus efforts toward value-added contributions and benefits to the primary care setting at large. Examples include brief consultation with primary care providers, education on a variety of BH topics for health professionals, development of routine referral pathways to increase future BH productivity, development or acquisition of BH handouts, quality improvement projects, case-management activities, and scholarly activities specific to IPC. Empirically, additional studies of longitudinal BH productivity and identification of value-added benefits associated with IPC are needed.

### Low Billing Rates

If executed within a fee-for-service setting where the value-added benefits of IPC are not taken into account, BH charges would likely prove inadequate to support long-term financial sustainability. Billing rates in the range evidenced are particularly concerning given the significant barriers to BH reimbursement, including generally low reimbursement rates for mental health services (e.g., [Michigan Department of Health and Human Services, 2016](#)), and rates that vary based on insurance type ([Margolis, Pollard, & Niemiec, 2013](#)), BH date of service (i.e., same vs. separate day primary care visit; [Robinson & Reiter, 2007](#)), billing code used, and the geographic location of practice (e.g., [Department of Health and Mental Hygiene, 2016](#); [Missouri Department of Social Services, 2016](#)). Clinically, results suggest strategies to increase BH productivity will be essential to IPC sustainability in fee-for-service models. Outside fee-for-service models, IPC providers should strive to increase their value-added benefit, as previously discussed. Empirically, extending research into the cost and reimbursement of BH services delivered within various IPC models is critical. Securing grant funding will help existing IPC practices fund research initiatives to explore IPC and publish outcomes, and aid those interested in initiating IPC in securing the start-up costs.

### Limitations

The current investigation makes significant progress toward filling a void in IPC literature, but is not without limitations. By relying on a retrospective chart review, the accuracy, consistency, and breadth of data available were wholly dependent on the providers' documentation and the electronic medical record's capabilities. To that end, BH productivity results were estimates based on billing data, rather than precise documentation of time spent with patients. While productivity results were also affected by nonbillable BH encounters where an average encounter duration was applied in the absence of precise data, their infrequent occurrence renders the impact minimal. Factors of interest that could not be explored owing to lack of available data included reasons for nonattended visits, comparisons of spontaneous and scheduled visits, BH referral reasons, and reimbursement rates. Finally, owing to the focus on direct patient care activities and billing practices, highly valuable yet non-revenue-generating BH services within the primary care setting under investigation were not captured. Thus, the economically less desirable outcomes of the current investigation fail to account for the value-added services of integrated BH providers within primary care.

Statistically, the number of BH encounters captured within this study were insufficient to complete inferential trend analyses. Nevertheless, the results obtained were meaningful, and a first step toward revealing practice-based data where none previously existed. In addition, when comparing daily productivity between calendar years, the differences in group size limited the sensitivity of the statistical analysis. Methodologically, three of the five researchers functioned as BH providers within the IPC practice. While IPC experience aided in developing hypotheses for exploration in the absence of preexisting evidence, it potentially introduced bias into study design and result interpretation. Bias was limited by involvement of multidisciplinary, multisite researchers and reviewers from study conception through completion.

As noted by Collins and colleagues (2010), the diversity among IPC delivery models is vast. Consequently, study generalizability is limited to populations, primary care clinics, and models of IPC similar to those included in this investigation. That stated, the setting under exploration is also a study strength, given its likely resemblance to many other IPC practices ([Cameron & Mauksch, 2002](#)) and the proposed benefits of IPC to patients particularly within urban, underserved, low socioeconomic areas ([Blount, 2003](#); [Sanchez, Chapa, Ybarra, & Martinez, 2012](#)). Finally, the exploratory nature of this investigation renders explanations for results preliminary.



## Future Directions

As an exploratory study, the present investigation requires replication across a wide range of IPC approaches, primary care settings, and communities. Through replication, the scope, mitigating, and ameliorating factors associated with this potential threat to IPC financial sustainability can be clarified. Investigations are greatly needed that identify which IPC delivery models, billing practices, primary care characteristics, and BH services are associated with enhanced fiscal outcomes. Physicians have demonstrated support for the patient-centered medical home model by amassing data (Ward-Zimmerman & Cannata, 2012). Pediatric psychology too must establish empirical support for the value-added contributions of IPC services. Alongside IPC reimbursement analysis, investigations of medical cost offsets (e.g., reduced emergency department and urgent care visits; increased physician productivity), and ongoing exploration of value-added IPC benefits (e.g., increased provider and patient satisfaction; reduced physician burnout; improved primary care and BH attendance; improved patient outcomes) are needed. As previously alluded to, informing the future of psychologists within primary care will prove challenging without practice-based data to guide the way.

Clinically, increased interdisciplinary collaboration is needed to solve the practical, sociocultural, systemic, and economic obstacles continuing to impede access to BH services. Approaches to clinical practice that optimize patient and physician engagement, improve detection of BH concerns, and maximize provider productivity are also imperative. In addition, strategies to improve interdisciplinary synergy would be beneficial (e.g., interdisciplinary education, expanded BH service hours, routine screening practices, strategic primary care and BH scheduling, vertical service lines). Providers should also develop strategies to increase the likelihood of BH follow-up beyond the first visit.

Beyond service-sustaining implications, findings clearly reflect persistent barriers to BH service engagement. To maximize patient benefit and maintain BH accessibility within primary care, clinical innovation and research is needed with regard to best practices for single-session and brief interventions. While continuing to address barriers to service, BH providers have a responsibility to ensure the efficacy of the care provided in the present climate. The results of this investigation should compel providers to explore what change can be effected within one to three visits, if that is all that will likely occur.

Finally, without health care reform toward increased coordination, integration, and outcome-based incentives, BH services within primary care remain vulnerable (Vogel et al., 2014). While many

support such reform, change will not happen without psychologists garnering evidence of IPC benefits and actively advocating at local, regional, state, and national levels. Through advocacy for reform, a climate conducive to IPC sustainability can be promoted.

## Conclusion

The current investigation reveals both challenges and opportunities faced by psychologists within an increasingly collaborative, cross-disciplinary health care climate. This study is the first to provide practice-based information on BH productivity and billing practices within a pediatric primary care setting. Study outcomes underscore the need for additional investigations of IPC sustainability both from an economic lens, but also more broadly. Results also suggest BH providers within primary care must strive for favorable economic, patient, and clinic-wide outcomes. For IPC to sustain, clinical and empiric efforts to improve BH productivity, demonstrate the value-added contributions of BH services within primary care, and successfully advocate for BH-supporting health care reform are essential. Findings should not deter further IPC growth, but rather serve as the catalyst for continued exploration and innovation.

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## References

- Berkovits, M. D., O'Brien, K. A., Carter, C. G., & Eyberg, S. M. (2010). Early identification and intervention for behavior problems in primary care: A comparison of two abbreviated versions of parent-child interaction therapy. *Behavior Therapy, 41*, 375–387. doi: 10.1016/j.beth.2009.11.002
- Berwick, D. M. (2016). Era 3 for medicine and health care. *Journal of the American Medical Association, 315*, 1329–1330. doi:10.1001/jama.2016.1509
- Blount, A. (2003). Integrated primary care: Organizing the evidence. *Families, Systems, and Health, 21*, 121–134.
- Blount, A., Schoenbaum, M., Kathol, R., Rollman, B. L., Thomas, M., O'donohue, W., & Peek, C. J. (2007). The economics of behavioral health services in medical settings: A summary of the evidence. *Professional Psychology: Research and Practice, 38*, 290–297. doi: 10.1037/0735-7028.38.3.290
- Blucker, R. T., Jackson, D., Gillaspay, J. A., Hale, J., Wolraich, M., & Gillaspay, S. R. (2014). Pediatric

- behavioral health screening in primary care: A preliminary analysis of the pediatric symptoms checklist-17 with functional impairment items. *Clinical Pediatrics*, 53, 449–455. doi: 10.1177/0009922814527498
- Brawer, P. A., Martielli, R., Pye, P. L., Manwaring, J., & Tierney, A. (2010). St. Louis initiative for integrated care excellence (SLI<sup>2</sup>CE): Integrated-collaborative care on a large scale model. *Families, Systems, and Health*, 28, 175–187. doi: 10.1037/a0020342
- Bruns, D., Kessler, R., & Van Dorsten, B. (2014). The practice of psychology in medical settings: Financially sustainable models. In C. M. Hunter, C. L. Hunter & R. Kessler (Eds.), *Handbook of clinical psychology in medical settings: Evidence-based assessment and intervention* (pp. 199–216). New York, NY: Springer.
- Cameron, J. K., & Mauksch, L. B. (2002). Collaborative family healthcare in an uninsured primary care population: Stages of integration. *Families, Systems, and Health*, 20, 343–363. doi: 10.1037/h0089509
- Cauce, A. M., Domenech-Rodriguez, M., Paradise, M., Cochran, B. N., Shea, J. M., & Baydar, N. (2002). Cultural and contextual influences in mental health help seeking: A focus on ethnic minority youth. *Journal of Consulting and Clinical Psychology*, 70, 44–55. doi: 10.1037/0022-006X.70.1.44
- Center for Disease Control. (2013). Mental health surveillance among children: United States, 2005–2011. In Perou R., Bitsko R. H., Blumberg S. J., Pastor P., Ghandour R. M., Gfoerer J. C., et al. (Eds.), *Morbidity and Mortality Weekly Report*, 62(2), 1–35.
- Cohen, R. A., & Kirzinger, W. K. (2014, January). *Financial burden of medical care: A family perspective* (NCHS Data brief No. 142). National Center for Health Statistics. Retrieved from [http://198.246.124.22/nchs/data/data\\_briefs/db142.pdf](http://198.246.124.22/nchs/data/data_briefs/db142.pdf)
- Collins, C., Hewson, D. L., Munger, R., & Wade, T. (2010). *Evolving models of behavioral health integration in primary care*. New York, NY: Milbank Memorial Fund.
- Connolly-Gibbons, M. B. C., Rothbard, A., Farris, K. D., Wiltsey-Stirman, S., Thompson, S. M., Scott, K. . . . , Crits-Christoph, P. (2011). Changes in psychotherapy utilization among consumers of services for major depressive disorder in the community mental health system. *Administration and Policy in Mental Health*, 38, 495–503. (doi: 10.1007/s10488-011-0336-1)
- Cummings, J. R., Wen, H., & Druss, B. G. (2013). Improving access to mental health services for youth in the United States. *Journal of the American Medical Association*, 309, 553–554. doi: 10.1001/jama.2013.437
- Department of Health and Mental Hygiene. (2016). Physicians' services fee schedule 2016. Retrieved from <https://mmcp.dhmdh.maryland.gov/SiteAssets/pages/Provider-Information/2016%20Physician%20Fee%20Schedule%20pdf.pdf>
- Finney, J. W., Riley, A. W., & Cataldo, M. F. (1991). Psychology in primary health care: Effects of brief targeted therapy on children's medical care utilization. *Journal of Pediatric Psychology*, 16, 447–461. doi: 10.1093/jpepsy/16.4.447
- Ford, J., Steinberg, K., Pidano, A., Honigfeld, L., & Meyers, J. (2006). *Behavioral health services in pediatric primary care: Meeting the needs in Connecticut*. Child Health and Development Institute of Connecticut. Farmington, CT.
- Gatchel, R., & Oordt, S. M. (2003). *Clinical health psychology and primary care: Practical advice and clinical guidance for successful collaboration*. Washington, DC: American Psychological Association.
- George, A., & Rubin, G. (2003). Non-attendance in general practice: A systematic review and its implications for access to primary health care. *Family Practice*, 20, 178–184. doi:10.1093/fampra/20.2.178
- Goodheart, C. D. (2010). Economics and psychology practice: What we need to know and why. *Professional Psychology: Research and Practice*, 41, 189–195. doi: 10.1037/a0019498
- Gopalan, G., Goldstein, L., Klingenstein, K., Sicher, C., Blake, C., & McKay, M. M. (2010). Engaging Families into Child Mental Health Treatment: Updates and Special Considerations. *Journal of the Canadian Academy of Child and Adolescent Psychiatry*, 19(3), 182–196.
- Heath, B., Wise, R. P., & Reynolds, K. (2013). *A review and proposed standard framework for levels of integrated healthcare*. Washington, DC: SAMHSA-HRSA Center for Integrated Health Solutions.
- Kalb, L. G., Freedman, B., Foster, C., Menon, D., Landa, R., Kishfy, L., & Law, P. (2012). Determinants of appointment absenteeism at an outpatient pediatric autism clinic. *Journal of Developmental Behavioral Pediatrics*, 33, 685–697. doi: 10.1097/DBP.0b013e31826c66ef
- Kathol, R. G., & Rollman, B. L. (2014). Value-based financially sustainable behavioral health components in patient-centered medical homes. *The Annals of Family Medicine*, 12(2), 172–175. doi:10.1370/afm.1619
- Katon, W. (1995). Collaborative care: Patient satisfaction, outcomes and medical cost offset. *Family Systems Medicine*, 13, 351–365. doi: 10.1037/h0089387
- Korda, H., & Eldridge, G. N. (2011). Payment incentives and integrated care delivery: Levers for health system reform and cost containment. *Inquiry: The Journal of Health Care Organization, Provision, and Financing*, 48, 277–287. doi: 10.5034/inquiryjml.48.04.01
- Lavigne, J. V., LeBailly, S. A., Gouze, K. R., Cicchetti, C., Pochyly, J., Arend, R. . . . , & Binns, H. J. (2008). Treating oppositional defiant disorder in primary care: A comparison of three models. *Journal of Pediatric Psychology*, 33, 449–461. (doi: 10.1093/jpepsy/jsm074)
- Margolis, R. B., Pollard, C. A., & Niemiec, R. (2013). Transporting integrated primary care to the private sector: Addressing the business challenges. *Families, Systems & Health*, 31, 239–247. doi: 10.1037/a0032307
- McKay, M. M., & Bannon, W. M. (2004). Engaging families in child mental health services. *Child and Adolescent Psychiatric Clinics of North America*, 13, 905–921. doi: 10.1016/j.chc.2004.04.001.
- Michigan Department of Health and Human Services. (2016). Non-physician behavioral health. Retrieved from [http://www.michigan.gov/documents/mdhhs/Non-Physician\\_BH-012016\\_514585\\_7.pdf](http://www.michigan.gov/documents/mdhhs/Non-Physician_BH-012016_514585_7.pdf)
- Missouri Department of Social Services. (2016). Fee schedule. Retrieved from <https://dssapp3.dss.mo.gov/FeeSchedules/fsmain.aspx>

- Patient Protection and Affordable Care Act, 42 U.S.C. § 18001 (2010).
- Robinson, P. J., & Reiter, J. T. (2007). *Behavioral consultation and primary care: A guide to integrating services*. New York, NY: Springer.
- Rozensky, R. H., & Janicke, D. M. (2012). Commentary: Healthcare reform and psychology's workforce: Preparing for the future of pediatric psychology. *Journal of Pediatric Psychology, 37*, 359–368. doi:10.1093/jpepsy/jsr111
- Sanchez, K., Chapa, T., Ybarra, R., & Martinez, O. N. (2012). *Eliminating disparities through the integration of behavioral health and primary care services for racial and ethnic minorities, including populations with limited English proficiency: A review of the literature*. Washington, DC: U.S. Department of Health and Human Services; Office of Minority Health, and the Hogg Foundation for Mental Health.
- Sobel, A. B., Roberts, M. C., Rayfield, A. D., Barnard, M. U., & Rapoff, M. A. (2001). Evaluating outpatient pediatric psychology services in a primary care setting. *Journal of Pediatric Psychology, 26*, 395–405. doi: 10.1093/jpepsy/26.7.395
- Stancin, T., & Perrin, E. C. (2014). Psychologists and pediatricians: Opportunities for collaboration in primary care. *American Psychologist, 69*, 332–343. doi.org/10.1037/a0036046
- Talen, M. R., Valeras, A. B., & Cesare, L. A. (2013). Integrated behavioral health in primary care: Summarizing the lay of the land, marking the best practices, identifying barriers, and mapping new territory. In M. R. Talen & A. B. Valeras (Eds.), *Integrated behavioral health in primary care: Evaluating the evidence, identifying the essentials* (pp. 327–342). New York, NY: Springer. doi: 10.1007/978-1-4614-6889-9\_15
- Tynan, D. W., & Woods, K. E. (2013). Emerging issues: Psychology's place in the primary care pediatric medical home. *Clinical Practice in Pediatric Psychology, 1*, 380–385. doi: 10.1037/cpp0000042
- United States Census Bureau, American Community Survey. (2013). 2009–2013 5-Year American Community Survey: Poverty status in the past 12 months (Table S1701). Retrieved from <http://factfinder.census.gov/faces/tableseer/vices/jsf/pages/productview.xhtml?src=CF>
- United States Public Health Service Office of the Surgeon General. (2001). *Mental health: Culture, race, and ethnicity: A supplement to mental health: A report of the surgeon general*. Rockville, MD: Department of Health and Human Resources, U.S. Public Health Service.
- Valleley, R. J., Romer, N., Kupzyk, S., Evans, J. H., & Allen, K. D. (2015). Behavioral health screening in pediatric primary care: A pilot study. *Journal of Primary Care and Community Health, 6*, 199–204. doi: 10.1177/2150131914562912
- Vogel, M. E., Malcore, S. A., Illes, R. C., & Kirkpatrick, H. A. (2014). Integrated primary care: Why you should care and how to get started. *Journal of Mental Health Counseling, 36*, 130–144. doi: 10.17744/mehc.36.2.5312041n10767k51
- Ward-Zimmerman, B., & Cannata, E. (2012). Partnering with pediatric primary care: Lessons learned through collaborative collocation. *Professional Psychology: Research and Practice, 43*, 596–605. doi: 10.1037/a0028967
- Wallace, M. T., Cohen, D. J., Gunn, R., Beck, A., Melek, S., Bechtold, D., & Green, L. A. (2015). Start-up and ongoing practice expenses of behavioral health and primary care integration interventions in the advancing care together (ACT) program. *Journal of the American Board of Family Medicine, 28*, S86–S97. doi: 10.3122/jabfm.2015.S1.150052
- Williams, J., Klinepeter, K., Palmes, G., Pulley, A., & Foy, J. M. (2004). Diagnosis and treatment of behavioral health disorders in pediatric practice. *Pediatrics, 114*, 601–606. doi: 10.1542/peds.2004-0090