Supplemental Table 2. Study design, implementation outcomes, and lessons learned.

Author	Study Design*	Implementation Outcomes (*including measures used*)	Primary Implementation Lesson Learned
		DIRECT IN-PERSON CARE	
Macdonald et al. (2004)[24]	Qualitative evaluation of PMHW role in England using a purposive sample of 75 key informant interviews.*	**Acceptability/Appropriateness (PCP and MHP): (*key informant interviews*)** • PMHWs were organized in 3 models: 1) Outreach from CAMH; 2) Based in primary care, some "tier 3" CAMH contact; and 3) Working in teams independent of primary care/tier 3 CAMH. Across models, the PMHW role varied by: 1) degree of direct patient care, and 2) amount of support/CL to primary care. • Interview themes included: 　▪ GPs and PMHWs generally reported benefitting from the collaboration 　▪ Importance of planning (especially consulting with primary care about objectives of PMHW role) before implementation. 　▪ Feelings of isolation in "Outreach" PMHW in model 1 　▪ Concern from tier 3 about increasing referrals, concern from primary care that referrals were being blocked, and concern from PMHWs that patients were referred to them to try to bypass the tier 3 waitlist (vs for co-management as intended). 　▪ Increase in referrals to tier 3 in models 2 and 3 　▪ Concern about space in primary care. 　▪ In model 3 PMHWs had more clear protocols for their role which was helpful. Their presence increased tier 3 referrals and tier 3 saw more complex cases. PMHWs valued the connection with CAMHs and felt it led to less isolation. 　▪ Tier 3 workers wanted PMHWs to provide CL to PCPs, thus reducing referrals for less complex cases, but PCPs wanted PMHWs to do more direct patient care and relieve primary care burden. 　▪ Stakeholders emphasized the importance of adequate training in consultative work, caring for patients collaboratively and building "good will" by doing more direct patient care early on and easing into the CL role.	Preliminary negotiation and planning with primary care staff are important in setting up these positions, including with regards to space for the PMHW and their role in patient care. Relationship building in early stages is critical, through flexibility and willingness to do more direct clinical care in the beginning. Tension between direct care vs consultation and specialty/tier 3 capacity is an ongoing issue/reality. PMHWs need good interpersonal skills, lots of education and preparation for the role as well as support from CAMH/Specialty services. Overall their presence often led to an increase in tier 3 referrals likely due to increased identification of need.
Gardner et al. (2010)[34]	Observational study (prospective cohort) of collaborative service provided to youth screening positive for suicidal ideation.	**Feasibility: (*screening questionnaire results and medical record data*)** • 14% (209/1503) of screens completed were positive, 98% of positives were triaged by social workers, and 94% of screens were triaged on the same day as the screen. • MH evaluations were recommended for 87% of screen positives. • Out of 109 children referred to outside clinics, 65% received mental health services within 6 months • Patients with worse depression and fighting were more likely to be referred. • Black youth were less likely referred. • 10/1294 youths (0.8%) with negative screens and 7/209 (3.4%) with positive screens presented for a medical visit for suicidal thinking or behavior in subsequent 6 months.	Screening youth in waiting areas, followed by rapid collaborative follow up is a feasible approach to supporting high risk youth. Youth will disclose suicidal thinking on waiting room screens (rate of positive screens comparable to existing epidemiological data) and having a personal connection with specialty services for rapid evaluation results in higher rates of subsequent engagement in care than has been demonstrated without this connection.

Hickey et al. (2010)[25]	Program evaluation of PMHW role via a 116-item survey of PMHWs perspectives of their positions including their relationship with primary care and CAMH, management, career development, and job satisfaction (N=415 English PMHWs, response rate 64% of workforce).*	**Acceptability (PMHW):** (*116-item survey of PMHWs perspectives of their positions including job satisfaction ratings, burnout symptoms, number of sick days*) • PMHWs scored average of 37/55 (SD=7) on job satisfaction scale. • Higher satisfaction associated with: clinical supervision, training needs being met, less tensions with tier 1 or 3 services, less management experience, and CAMHS-based model. • Unmet training need was associated with reported (1) poor linkage with primary care, (2) tension with tier 3 CAMHS; and (3) less experience. • PMHWs in the primary care model were most likely to report dissatisfaction with professional isolation and work environment. • ¼ of PMHWs reported no sick days in past year, the rest reported 4 sick days on average • 15-22% of PMHWs endorsed burnout symptoms **Adoption**: (*program data on employment of PMHWs across trusts*) • 71% of trusts with CAMHS employed PMHWs, (increase since 2003). **Appropriateness (PMHW)**: (*116-item survey of PMHWs perspectives of their positions including relationship with primary care and CAMH, management, career development*) • 82% felt primary care services were somewhat or very receptive to PMHW model 94% and 89% perceived satisfactory or excellent links with primary care and tier 3 CAMH respectively • 58% and 48% reported tensions with primary care and tier 3 CAMH respectively regarding services PMHW wanted to provide (consultation/training to primary care) vs. preference of primary care (that PMHW conduct direct clinical care). • Respondents perceived increased access to services for vulnerable children. • 90% reported receiving adequate clinical supervision. • 51% reported unmet training needs due lack of financial resources, time, and courses. Only 12% attended a course for PMHW training and most did not want to attend courses offered (preferred training in specific interventions). **Feasibility**: (*program data on referral source and service provided*) • CL was the most common service provided. • Training was more frequently provided to school staff than others. • Most referrals for direct clinical care came from primary health care staff/GPs.	This program has been widely adopted and is perceived as appropriate. Job satisfaction was generally high, but variability in person and setting characteristics contribute to more or less satisfaction. Perceiving a good connection with both specialty CAMH as well as primary care were both predictors of job satisfaction, as was having clinical supervision and met training needs. Job satisfaction was higher among providers working solely in a primary care setting, which has significant implications for workforce development. Less experienced MH providers may require more support and continuing education in order to improve job satisfaction in this model.
Laukkanen et al. (2010)[27]	Observational study (prospective cohort) of the Finnish SCREEN intervention (N=2071 youth).	**Adoption/Penetration:** (*recruitment data*) • 2071 youths (69% female) entered SCREEN from 3 locations (56.8%, 31.1%, and 12.1%) during study (5/2005-12/2008). **Feasibility**: (*program data on clinical concerns and treatment engagement*) • 70.3% (N= 1456) of referred patients completed the intervention. • Most common reasons for referral: depression, anxiety (females in particularin), school/work issues, and aggression/antisocial behavior (males). • Mean number of therapy visits: 3.8 (female) and 3.5 (male). • Parents of male (vs. female) children participated more often in evaluation. • More females than males completed therapy(73.1% vs. 64.2 %,). • 62.7% (N=913) of completers were referred for additional treatment (e.g. psychiatric, addiction, child welfare). • Centers varied by percent of intervention completers (68.1%, 71.4%, and 78.0%). • Youths completed more often if parents participated (84.9% vs. 59.6%). • Completion was more common among youth with sleeping difficulty (74.4%), depression (73.8%), anxiety (78.4%) or self-harm (78.8%). • Completion was less common among youth with school/work problems (61.3%), substance abuse/dependence (67.2%), or trauma (64.6%). • Completers had higher initial GAS scores than non-completers (mean=56.6 (SD=9.6) vs. 54.2 (SD=10.7).	Engagement and retention in this brief intervention were very good, but some populations emerged as still difficult to engage including males and those with histories of substance abuse, trauma, and functional impairments (e.g. school and work). Different engagement strategies are probably needed and/or this intervention may not be as appropriate for these populations. There were differences in retention and referrals between centers, and certain patient characteristics (e.g. prior treatment, self-harm) predicted referral, which has implications for refining criteria for stepped collaborative care interventions.

Myers et al. (2010)[35]	Observational study (prospective cohort) of ADHD collaborative care over 14 months, N=116 children.*	**Acceptability (parent)**: *(parent interviews with 5 families per site)* • Parents were overall satisfied with the model. **Feasibility***: (psychiatrist and care manager interviews, symptom scales, program data on patient characteristics and treatment duration)* • 15 pediatricians referred 116 children age 6-12 years (95% Hispanic, 73% male). • Urban clinic had shorter treatment duration (Urban: Median=79, IQR=27-168; Rural:Median=131, IQR=61-190), delivered more psychoeducation (≥3 sessions), collected more self-report rating scales, made twice as many medication changes, prescribed higher medication doses. • Children at both sites showed equivalent decrease in ADHD symptoms. • Staff (e.g. care managers, psychiatrist) requested additional administrative help for implementation.	Collaborative care appears acceptable and feasible to treat ADHD in Latinx children, but significant administrative support and oversight of the care manager is required to successfully implement the model.
Pidano et al. (2011)[36]	Mixed methods program evaluation of ECC in CT including interviews with 19 pediatricians, 3 APRNs, 1 RN, 1 LCSW, and 8 staff from 12 (of 28) pediatric practices.*	**Acceptability/Appropriateness (PCP and staff)**: *(interviews with pediatricians and staff)* • Almost all interviewees reported benefit for providers and patients and that they would "very likely" or "absolutely" participate again. • Reasons for entering the relationship with ECC included a preexisting informal relationship, insurance, proximity, specialized services provided, and access to urgent appointments. • Changes reported to be most beneficial were: regular meetings between MHPs and medical staff, use of a formal referral form, and availability of consulting psychologist. • Communication between MHP and PCP (e.g. regarding diagnosis, treatment goals, and medication) was one of the most important factors in PCP perceptions of relationship success. Interviewees expressed concern about funding (was only available to Medicaid patients).	Communication between MH providers and medical providers - and in particular written communication - was the most important element of feasibility and acceptability. Statewide agreement to provide enhanced Medicaid reimbursement for collaborative care is a novel approach that could increase sustainability of such a program. Financial incentives for primary care practices could increase adoption.
Clark et al. (2014)[37]	Quasi-experimental pre-/post intervention design of "Your Choice" intervention (access to free counseling), N=581 completers.*	**Acceptability (parent and patient)**: *(consumer feedback questionnaires)* • Participants and families were satisfied with the quick access to free services, ability to choose type of therapy and provider (type/ethnicity/age/gender), and problem-solving to resolve barriers. **Appropriateness (parent and patient)**: *(consumer feedback questionnaires)* • Participants and families reported the interventions were safe and appropriate, and that they learned skills related to coping and communication. **Feasibility:** *(program data on patient and treatment characteristics)* • N= 581 culturally diverse youth age 10–24 completed the intervention. • Therapy modalities included individual (63.2%), group (30.4%), and family (1.9%) therapy, individual plus family (2.6%), and individual plus group (1.9 %).	Patients reported high acceptability & appropriateness of free, rapidly available services and their ability to choose the type of therapy received and provider characteristics.
Power et al. (2014)[38]	Controlled study with a quasi-experimental design. Participants were assigned to PASS (intervention, N=33) or COMP (care as usual augmented with parent education and support group, N=39) based on year of enrollment at each of 4 sites.*	192 children referred, 170 eligible for screening, 146 reached for screening, 118 met screening criteria, 92 completed diagnostic evaluation, 72 consented and assigned to PASS (n=33) or COMP (n=39). **Acceptability (parent)**: *(Treatment Evaluation Inventory, Short Form and Treatment Acceptability Questionnaire)* • Both interventions (PASS and COMP) were perceived by parents to be acceptable. **Feasibility:** *(program data on treatment engagement)* • Families who had ≥1 PASS session (n=29) received an average of 9.0 sessions (8.1 in person, 0.9 phone; range 1 to 23) • 76% of families who began received ≥3 sessions over an average of 4.6 months (SD 2.3; range 1 day to 7.2 months). • In-person sessions averaged 57.07 min (SD 14.46; range 10-120 min). Phone sessions averaged 24.63 min (SD 7.32, range 10-60 min). • All families received ≥1 component of PASS including brief family therapy (79%), consultation about school problems (72%), medication consult (55%), and crisis intervention (41%). • Family- school sessions happened on average 0.5 (SD 0.8) times per family, but only 8 families had at least one	Both intensive individual intervention as well as a family support group for ADHD were acceptable to parents and feasible in partnership with primary care. Overall engagement was excellent compared to usual in this population, particularly in PASS. Authors hypothesized that including crisis intervention in the model (vs referring out) contributed to engagement and acceptability with families. Partnering with schools to provide collaborative care is challenging even with dedicated staff for this role, with multiple administrative barriers. Other strategies may be needed to promote appropriate medication use.

Greene et al. (2016)[39]	Six-month Observational Study (prospective cohort) testing PIM-FIC at a pediatric primary care clinic and nearby mental health clinic with pre/post provider surveys (N=6 MH providers and N=7 PCPs).*	**Acceptability (PCP and MHP)**: *(pre/post surveys on communication and collaboration with MHPs and PCPs)* • No PCPs or MHPS were satisfied with their interprofessional collaboration at baseline, vs. 86% of PCPs and 67% of MHPs were satisfied after the intervention. • PCP satisfaction ratings after the project were similar to those of PCPs working in an on-site, integrated system **Appropriateness (PCP and MHP):** *(pre/post surveys on communication and collaboration with MHPs and PCPs)* • MHPs' expectations of information-sharing with PCPs increased from baseline (33%) to post-intervention (50%), while PCP expectations stayed the same (86% at both time points). **Feasibility:** *(pre/post surveys on communication and collaboration with MHPs and PCPs)* • Quantity and quality of communication between providers increased. Only 50% of MHPs and 29% of PCPs reported at least occasionally information sharing with the other pre-intervention, vs. 83% and 100% after. • Post-intervention, 71% of PCPs vs. 33% of MHPs reported receiving adequate information • More administrative support for information exchange led to better information sharing.	Simple communication tools and relationship-building activities can increase PCP/MHP communication and satisfaction with collaboration to a degree on par with on-site collaboration. Efficiency and timeliness are important components of collaboration. Pediatricians are more motivated than MH providers to increase collaboration, but it is possible/important to increase MH providers expectations of PCP's role in MH care and the information received from PCPs.
Hassink-Franke et al. (2016)[40]	Qualitative analysis of semi-structured interviews with 15 GPs who participated in a non-randomized controlled pre/post study of the program.*	**Acceptability/Appropriateness (PCP)**: (*semi-structured interviews with GPs*) • Participating GPs felt comfortable with the program and reported it: 　▪ Met their need for assistance with diagnosis and more expeditious access to specialty care. 　▪ Improved their competence to start and monitor ADHD medication in children 　▪ Helped to view treatment within primary care feasible and comfortable for patients and their parents. • GPs were satisfied with specialty consultation with psychiatrists when necessary. • Some GPs concerned that they received children back with a diagnosis before the one-hour training session had been conducted • Some GPs noted difficulty reaching psychiatrists for ongoing treatment recommendations. • GPs felt written guidelines for medication monitoring would be beneficial.	PCPs expressed discomfort with diagnosing ADHD without specialty input. Rapid access to diagnostic support and medication recommendations for ADHD can improve physician acceptability as well as feasibility of managing ADHD in primary care. PCPs value brief training and guideline-based care.
Huber et al. (2016)[41]	Observational study/program evaluation of this population-level intervention in a large, Midwestern rural county using archival program and county-level data reported by multiple involved sectors.	**Adoption/Penetration**: *(archival program and county-level data reported by multiple involved sectors)* • Increasing numbers of children screened over 4 years (1391 screened in 2011, 6155 screened in 2015). • By study end, screening occurred in juvenile court, 12/18 primary care practices and 23/27 school attendance centers. • Reasons reported for not implementing screening in some practices included small numbers of pediatric patients and involvement in other initiatives. • 18 out of 19 elementary and middle schools (94% of students) are implementing the social-emotional curriculum. • Teachers did not reliably submit fidelity checklists. **Feasibility**: *(archival program and county-level data reported by multiple involved sectors)* • Over the study period (baseline in 2011-2012 to follow up in 2014-2015) • Percentage of youth with positive screens decreased over time (16.6% vs. 11.7%) despite increased proportion of youth being screened (50% vs. 85%). • Approximately 75% of all 6–18-year-olds with positive screens had follow-up services in schools. • Increasing numbers of children accessed treatment in CMHC over time (464 vs. 1266). • Increasing numbers of parents of 6-18-year olds accessed parenting programs over time (86 families with 599 contacts vs 135 families, 955 contacts) • Graduation rate increased from 82.8% to 88%, while juvenile police reports decreased from 448 to 292	Characteristics of rural setting may make it easier to implement a multi-tier, multi-location intervention. Smaller practices may be less likely to adopt and thus their patients less able to benefit from population-level interventions. Established protocols, systems, and dedicated personnel can facilitate the cross-sector communication necessary for such a program, but sustainability is challenged by funding without grants. Even with these systems in place, collecting data from teachers is a challenge. Those without specialized MH training need significant training and support to implement protocols.

Fallucco et al. (2017)[42]	Observational (prospective cohort) study using electronic medical record (EMR) data of a specialty Child Psychiatry Consultation Model (CPCM) with n=25 PCPs, n=81 referred patients, and n=49 evaluated patients.	**Acceptability/Appropriateness (PCP): (***PCP satisfaction survey***)** • 21/22 PCPs completed satisfaction survey • All respondents agreed that consultations were useful, helped them meet patients' needs, and improved their skills in MH care. • Most (90%) agreed model improved access to child and adolescent psychiatry and increased comfort caring for patients with MH needs. • Biggest frustrations: some patients denied care due to insurance, and some refused referral. One provider reported not using the model enough to gain skills to treat patients **Feasibility: (***electronic medical record review***)** • 81 patients referred, 60 appropriately referred, 51 scheduled an appointment, 49 evaluated. • Referred patients able to receive appointments in <3 weeks. • 57% transitioned back to PCP; 10% required long-term psychiatric care. • Most (80%) had at least one comorbid psychiatric diagnosis. Most common diagnoses were anxiety (57%), ADHD (53%), and depression (39%). • Following consultation, treatment plan for most patients (82%) included therapy plus medication. Most patients (76%) received at least 2 follow-up visits.	Expedited child psychiatry consultation was well received by PCPs, and was thought to improve quality of care, access to specialists, and PCP skill level. Expedited consultation within 3 weeks seems to be very effective for initial patient engagement (85% showed for initial visits), and most patients in this model can be transferred back to PCP, which is important for sustainability. However, some barriers remain including insurance and initial patient engagement.
		DIRECT REMOTE CARE	
Polaha et al. (2007)[43]	Observational study (prospective cohort) of a pilot call-in service to address emotional and developmental concerns in young children (N=81) including program data and a 15-item parent satisfaction survey 30-60 days after the call (60% response rate).*	**Acceptability (parent): (***parent satisfaction surveys after calls***)** • Parent satisfaction ratings (measured on 15-question scale) were overall positive • For individual questions means (SD) on a 5-point scale ranged from 3.5(.97) ("The call-in service helped me to get other needed services") to 4.88(0.33) ("The clinician was courteous and pleasant"). • Parents calling about conduct problems had lower satisfaction and lower scores on the "needs met" item. • Parents calling about toileting, anxiety, and sleep reported high satisfaction. • All parents agreed written follow up materials were helpful. **Appropriateness**: (***program data, parent satisfaction surveys after calls***) • Toileting concerns appeared best suited to the format: most common concern (33%), brief calls, few parents called again, many reported high satisfaction, and could be addressed by evidence-based protocol. • Calls regarding repetitive behaviors/habits seemed to be "a good fit"- tended to be short, about younger children without complex MH histories, and could use evidence-based protocols. • Parents with anxiety and sleep concerns reported high satisfaction, short calls, low referral rate, and rarely called again. • Parents calling about conduct problems were more likely to be referred (33.3%) and call again (40%). **Feasibility**: (***program data including length of call and record review for demographic/clinical information***) • Calls averaged 21.29 min (SD 7.75), range 7-45 min. • Patients almost equally male/female, mean age 5.34 years (SD 3.76). • 11 had previous/current outpatient MH care, one had previous inpatient care, and 10 took psychotropic meds. • 10 were return calls (13.2%). • 22 calls (26%) resulted in referral to integrated primary care BH services. • All callers asked for written materials. • Most common concern was toileting, followed by conduct, anxiety, sleep, and repetitive behaviors. **Penetration**: (***program data including number of calls and referral source***) • 81 callers accessed the service over 70 weeks, either referred by PCP (70.7%), after seeing brochure at PCP office (24.1%) or after hearing from a "friend/other" (5.2%). • Calls evenly split across the 2 sites, 15% from families who were not patients at either site. • Low call volume.	A call-in service for parenting advice by psychologists recommended by primary care is well suited for toileting, repetitive behavior, and anxiety concerns, but less adequate for conduct problems. Parent satisfaction was high, particularly for non-conduct issues, but call volume was low. Increasing hours of availability, size of target population, visibility of service, and immediacy of call after recommendation could improve utilization and sustainability. Reimbursement would improve sustainability.

Myers et al. (2007)[32]; Myers et al. (2008)[31]; Myers et al. (2010)[30]	Observational study (retrospective cohort). Program evaluation of the telepsychiatry component of the CHART program (N=701).*	**Acceptability (PCP and parent): (r*eferring PCP and parent satisfaction surveys after visits*)** • In 2003-4 survey (50% response rate) PCPs endorsed high satisfaction. • In parent satisfaction surveys, 11 of 12 items showed mean overall scores ~4/5 on Likert scale; • Item with lower scores on parent survey was "my child would not have received the services of a specialist without telemedicine", authors interpreted that parents may not have perceived telepsychiatry to be the only option • Parents of adolescents endorsed lower satisfaction than parents of school-age children. • Higher satisfaction after follow-up vs. initial visits. **Adoption: (*chart review data and baseline needs assessment*)** • 190 PCPs (106 family physicians, 71 pediatricians) referred to telepsychiatry. • 701 patients treated from 2001-2007, with a mean of 2.8 appointments/patient (SD 1.9). • Pediatricians referred more often than family physicians and were more likely to refer multiple patients. • Lower rates of adoption by some providers and some sites. • Site with fewest referrals had not been initially interested in telepsychiatry during needs assessment. • Volume over time was affected by specialist availability. **Feasibility: (*chart review data*)** • Most common diagnoses ADHD followed by mood disorders, (14%) with developmental disorders. • Age of patients 2-21 years (mean age 8.6±3.2 years), mostly boys (69%). 6% of visits were for children 2-5 years old, 75% for children 6-13, and 19% for youth 14-21. • Demographic and clinical characteristics similar to usual outpatient MH samples (high complexity/comorbidity). • Most common services provided were diagnostic evaluations and medication management. **Sustainability/Cost: (*reimbursement records*)** • Reimbursements for CPT codes same as reimbursements in outpatient psychiatry. • Medicaid reimbursed 23% of billed charges in each clinic commercial insurers reimbursed 42% in telepsychiatry and 43% in the outpatient clinic. • More Medicaid patients in telepsychiatry; lower overall collectability of 28% for telepsychiatry vs. 38% for outpatient clinic.	Telepsychiatry is feasible and highly acceptable to providers. This strategy appears to reach a population in higher need compared to traditional outpatient models, but sustainability is challenged by lower reimbursement rates for publicly insured patients. Primary care practice and provider characteristics can significantly affect utilization of available telepsychiatry services within a practice. Having a local champion and engaged stakeholders is important for success. Lack of standardized care algorithms for telepsychiatrists may lead to differences in care patterns. Lack of available specialists is a barrier to success.
Jacob et al. (2012)[44]	Observational study (program evaluation) via survey of patients and providers and clinical record review, N=15 patients (11 completed survey).*	**Acceptability (PCP and parents): (*parent and PCP surveys*)** • Parents reported high satisfaction (4.58/5). • Providers (N=9) reported high acceptability/utility (5/5). **Adoption/Penetration: (*clinical record review for referral rate to service*)** • Low referral rate to service (numbers/time period not specified). **Cost: (*program expense data*)** • Telemedicine technology "setup" cost about $2000, plus about $350 per month. **Feasibility: (*clinical record review*)** • 15 patients seen, age 4-18 (M = 9.73, SD = 3.39), mostly male (10) and white (13). • High no-show/cancel rate (58%) (despite reminder calls) mostly for "personal reasons" or incomplete paperwork. **Sustainability: (*reimbursement data*)** • Reimbursement for telepsychiatry same as face-to-face visits, and therefore did not cover cost of equipment and added personnel.	This pilot study had low referral rates and high no show rates, affecting utilization, which they believed was partly related to lack of publicity, knowledge and comfort with the model, as well as some financial and technological challenges.

Reid et al. (2013)[29]	Randomized Controlled Trial of Parenting Matters vs. treatment as usual (N=178 parents).*	**Acceptability**: (*parent survey using satisfaction items*) • Parents rated overall satisfaction mean 5.5 (SD0.6) out of 7, and satisfaction with phone coach mean 5.7 (SD1.0) out of 7. **Feasibility**: (*call completion data, parents' report of reading booklet and seeking other appointments*) • Almost all week 2 and 5 coaching calls were completed. • Most parents read the entire booklet and on average used treatment ideas at least "sometimes," but 40% of parents reported their spouse did not read the booklet. • Few parents (4% intervention; 5% usual care) saw a FP or someone else (6% intervention; 13% usual care) for their child's discipline issue. Reassurance most common advice received. **Fidelity**: (*number of calls completed and review of 15 random audio recorded calls by 2 independent raters for adherence to protocol*) • 93 and 87% of scheduled telephone calls for weeks 2 and 5 were completed, respectively. • High ratings of desired coaching behavior (support, motivation, problem-solving behavior) 5.4(0.6) and consistency with protocol 5.9(0.1) based on a 6-point cognitive therapy rating scale.	A remote parenting support intervention is feasible, can be done with high fidelity and high levels of engagement, and is highly acceptable to parents, and shows small improvements in behavior problems in children who otherwise mostly do not receive care.
Myers et al. (2013)[45], Vanderstoep et al. (2013)[46], Myers et al. (2015)[47]; Rockhill et al. (2016)[48]	RCT of the effectiveness of ADHD Collaborative Care (N=111) vs. augmented primary care (N=112).*	**Adoption**: (*referral data*) • 530 youth referred by 150 PCPs over 2.5-years, 223 enrolled (88 PCPs made successful referrals). **Feasibility**: (*patient characteristics, attendance, and log of technical difficulties*) • Characteristics of patients: Mean age 9.25 years, 73.1% male, 91.5% White, median income of $35,000 to $75,000; 75% with at least 1 comorbid disorder • Intervention group attended average of 5.2/6 sessions, and 96% of controls attended single session. • Attendance did not differ by comorbidity. • Caregivers and children completed an average of 4.8/5 research assessments, 91.6% of telepsychiatry sessions for intervention group, 89.3% for telepsychiatry consultation in control group • Technical difficulties not reported at all in 73% of sessions, 2.4% had severe technical issues. **Fidelity**: (*protocol adherence based on ratings of a random sample of recorded telepsychiatry and therapy sessions*) • Fidelity to intervention protocols was 91.6%±9.5% for telepsychiatrists and 94.2%±9.7% for therapists.	Telepsychiatrists using treatment algorithms can practice with high fidelity to treatment protocols, and community therapists can practice with high fidelity to treatment protocols when trained/supervised virtually. Telepsychiatry interventions beyond one-time consultation and in collaboration with community therapists are feasible and can improve outcomes beyond one-time consultation for rural, underserved children. Local practice champions and past experience with telepsychiatry are factors that may influence adoption by pediatricians. Even with the convenience of telepsychiatry, scheduling challenges can still be a barrier to care.
		INDIRECT REMOTE CARE	
Connor et al. (2006)[49]	Observational study (retrospective chart review) of patients who completed initial TCPS direct evaluation (n=329) during first 18 months of operation.	**Adoption/Penetration**: (*chart review for number of referrals, service provided, demographics*) • Over 18 months there were 980 PCP phone consultations regarding 614 potential patient referrals. • 329 new patients (54%) had direct evaluation; 262 (43%) received only indirect consultation by CAP. • Average age 12.3, 43% female, mostly white/Caucasian. **Feasibility**: (*chart review for referral reasons, evaluation recommendations, number of visits*) • Low no-show rate for evaluation (7%) • PCP referral questions included diagnostic (63%, n=206), for comorbidity (12%, n=42), and for medication (25%, n=81). • After evaluation, 54% triaged to brief intervention within the TCPS model, 30% were judged too ill for the TCPS model and were referred to community MH services, and 16% returned to PCP. Referred children had moderate-severe symptoms including mostly ADHD, anxiety or depression. • A minority of the referred patients returned to their PCP after one TCPS visit. • Symptom severity as opposed to specific diagnoses was associated with referral to MH services.	Model including child psychiatry and full-time program coordination to facilitate communication with patients and visit scheduling seems effective in engaging patients. Low rates of single-visit consultations and high severity and comorbidity suggest other similar programs should consider more than a single-visit consultation. Lower than expected rates of calls related to ODD, conduct, disruptive behavior suggests more may need to be done to detect these disorders or serve this patient population with a CPAP model.

Lipton et al. (2008)[51]	Observational study/program evaluation.	**Acceptability (PCP):** *(no formal assessment tool reported)* • Positive PCP feedback, especially interpersonal communication **Adoption/Penetration:** *(program data)* • N=600 consults completed. • Initial uptake was slow (difficult to fit in PCP schedules, not reimbursed). • Barriers included lack of internet service in rural areas, not wanting to travel to telemedicine site. **Feasibility:** *(program data)* • 7% of consults included patient, 1% with patient alone, over 1/3 regarding First Nations Children. • Diagnosis noted for 63% of consults; 60% of these included disruptive behavior, anxiety or mood disorders • 8% of consults led immediately to a referral to more specialized care.	Practitioners were satisfied with this model, which can build clinical capacity, provide access to education and practice tools and potentially reduce isolation. However, important barriers to adoption included time commitment from PCPs. inability to get reimbursed, and poor internet service in many areas.
Sarvet et al. (2010)[61]	Observational Study (program evaluation) of MCPAP, including PCP satisfaction questionnaires.*	**Acceptability (PCP):** *(PCP satisfaction surveys)* • PCP reported improved access to child psychiatry on surveys. • Consults reported to be helpful by 91% of PCPs • Increased percentage of PCPs reported they: 1) could usually meet patients' psychiatric needs (8 to 63%); 2) agree/strongly agree that there was adequate access to a CAP (5 to 33%); and 3) were able to obtain timely CAP consult (8 to 80%). **Adoption:** *(program PCP enrollment data)* • From 2005-2008, MCPAP enrolled 1341 PCPs in 353 practices covering 95% of MA youth. **Feasibility:** *(program data including referrals and service provided)* • PCPs contacted MCPAP for consultation on diagnosis (34%), community resources (27%), and medication (27%). • Most phone consults provided by CAP (45%), face-to-face consults by CAPs (2517) and therapists (2537 encounters). • Low frequency of bridge psychotherapy visits (1294 of 33,335 [2.4% of total]). **Penetration:** *(practice-level utilization data)* • Practices varied in MCPAP utilization, mean 12 encounters/practice/quarter (range: 0 –245).	Variation in efforts to establish relationships with practices likely contributed to variation in utilization rate of CPAPs. Having consultation take place while patient is still in the office is helpful for both providers and families. Majority of providers who participated found the services provided to be useful.
Dvir et al. (2012)[22]	Survey of families (with the Patient Satisfaction Questionnaire) referred to UMass MCPAP during a 1-year period. N=158 (44%) questionnaires returned.*	**Acceptability (parents):** *(Parent survey including Patient Satisfaction Questionnaire)* • Most parents were satisfied with time frame (78.9%), quality (74.2%), match to child's need (69%), and appreciation of the problem (74.9%). • Half of parents reported improvement of the child's problem, and 58.6% reported the intervention helped. • 67.3% of parents reported more satisfaction with MCPAP vs. previous MH care. • No significant difference in parent satisfaction by clinical comorbidity or minority status. • No significant association between parent satisfaction and 1) longevity of problem or 2) time between referral and initial contact. **Feasibility:** *(Parent survey)* • Mean age of children=12 years; duration of symptoms 1 month-11 years (mean=2.83 years). • Time reported between referral and first MCPAP contact:25.9% i<week, 50.3% 1-3 weeks, 10.5% 3-4 weeks, 11.9% >4 weeks. • 25% attended a visit with a MCPAP clinician. • Time reported between referral and connection to community services: 3.7% <1 week, 43.2% 1-3 weeks, 13.7% 3-4 weeks, 29.5% >4 weeks (14.1% could not get a community MH appointment). • Mean reported appointments attended in the community 4.2 (SD = 7.542). •	Most phone contacts with MCPAP were made between 1-3 weeks of initial call. High parent satisfaction with timeliness and quality of service, which did not vary by demographics or wait time. Most patients connected to community providers remained connected by the end of the survey, but some children were unable to connect to ongoing care, thus limiting feasibility of this part of the model.

Study	Methods	Findings	Conclusions
Sheldrick (2012)[53]	Online survey sent to members of the MA Chapter of the AAP who practice primary care in 2010-2011 on use of and satisfaction with MCPAP services, response rate of 40.6% (N=305).*	**Acceptability (PCP):** *(utilization and satisfaction questionnaire)* • PCPs rated MCPAP more highly than other resources. • PCPs reported that MCPAP was the most satisfactory service for older patients, that they were usually satisfied with MCPAP, and that parents of young patients were also usually satisfied. • Compared to other MH services, PCPs reported that MCPAP was more timely and communicated more about patients. **Feasibility/Appropriateness:** *(utilization and satisfaction questionnaire)* • PCPs used MCPAP more for older (vs. younger) children ($P < .05$). • PCPs were more likely to use MCPAP for medication consults vs. other services. • • For younger children, PCPs were more likely to use other services (e.g., community-based MH clinicians, EI, schools, or developmental programs) than MCPAP for evaluation and behavioral therapy ($P < .05$), more likely to ask EI and schools for advice or consultation ($P < .05$), and just as likely to use developmental programs as MCPAP for medication consults. • For older children, PCPs were more likely to use MCPAP than other resources ($P < .05$), but more likely to use community MH clinicians than MCPAP for evaluation or behavioral therapy ($P < .05$), and just as likely to use community MH clinicians vs. MCPAP for medication consults. • PCPs reported that MCPAP communicated just as often as other providers about the care of young patients, and more often than other providers about older patients ($P < .05$). **Adoption/Penetration:** *(utilization and satisfaction questionnaire)* • 88% of respondents (N=267) had used MCPAP, with no demographic differences between users vs. non-users. • Most MCPAP users reported seeking medication consults/diagnostic evaluations (83%) and community referrals (87%).	MCPAP has been widely adopted and utilized for its multiple functions (diagnostic clarification, medication consults, and referrals). Data suggests that PCPs are more satisfied with MCPAP than other available MH services, particularly for school-age children and adolescents, and the services are generally provided in a timely manner. Providers generally rely on other services for children under 5, and thus seem to feel it is less appropriate to utilize MCPAP for younger children.
Aupont et al. (2013)[50]	Observational study (retrospective cohort) of the TCPS in MA, N=614 calls, N=329 evaluations.	**Feasibility**: *(program data on referrals and disposition, including TCPS clinical records)* • 42% of calls consisted of only telephone consultation to PCP by CP. • 355 youth were referred and 329 (93%) attended a psychiatric evaluation with CP. • 72% of youth continued with follow up in MH, and the rest (28%) transitioned back to PCPs for follow-up care. • Children with major depression (OR = 7.5) or anxiety disorders (OR = 5.1) were less likely to return to PCPs than children with ADHD despite no difference in severity of symptoms and functional impairment.	Patients with ADHD were more likely to be managed by PCP than those with mood/anxiety disorders regardless of clinical severity, suggesting this disorder may lend particularly well to phone consultation. Most patients for whom a full evaluation was recommended complied and needed specialty care, suggesting recommendation was appropriate.

Study	Design	Findings	Conclusions
Hilt et al. (2013)[56]	Observational study/program evaluation (retrospective cohort) of the WA PAL (2008-2011, N=1863 patients and 2285 calls) including PCP satisfaction surveys (N=168 providers of 592 who utilized service returned 272 surveys).*	**Penetration**: *(program utilization data for number of calls, PCPs, and consultations)* • Over ~3 years, there were 2285 PAL calls (645 calls in year 1, 776 in year 2, 864 in year 3) regarding 1863 patients from 592 different PCPs. 362 of these PCPs were from targeted rural counties. • PCPs from non-targeted counties called after hearing about PAL from colleagues. • CAPs conducted 120 in person/televideo consultations. **Feasibility**: *(program utilization data and Medicaid database analysis for referrals and outcomes)* • 65% of calls lasted 15 min or less • Calls were primarily regarding medication (58%), diagnosis (6%), about children already receiving medication (66%), about children with Medicaid coverage (56%) • 11% of calls regarding children who had seen CAP within past year. • 69% of calls regarding children with CAP-assigned CGAS <50. • Fee for-service Medicaid children had higher clinical severity than whole group (82% had CGAS score <= 50). • Among FFS Medicaid children (N=168), significant increase in ADHD and antidepressant medication use after call but no significant change in reimbursements for psychotropic meds. • After call outpatient MH visits for children with history of foster care increased 132%. • Psychosocial treatment recommendations offered during 87% of calls, more than recommendations to initiate pharmacotherapy. **Acceptability (PCP)**: *(PCP satisfaction survey)* • In 272 satisfaction surveys from 168 providers, overall high satisfaction (mean=4.6/5). **Fidelity**: *("quarterly blinded assessments" of PAL recommendations to best practice guidelines)* • PAL recommendations had 95% fidelity to peer-reviewed, best practice child MH treatment guidelines based on "quarterly blinded assessments."	Adoption was high, and non-targeted PCPs adopted after learning about the service from primary care colleagues in other counties. The service was utilized for children with high clinical severity but still most calls were short and ongoing management continued in primary care. Most calls were regarding medication management, but psychosocial treatment was recommended most of the time and more than medication initiation. Recommendations even in such a short call time have high fidelity to guideline-based practice. Overall PCP satisfaction was high. Fewer face to face consultations after phone consult compared to MCPAP.
Gadomski et al. (2014)[57]	Qualitative study using random sample of PCPS registered with Project TEACH (CAP PC and CAPES) in NY (recruited N=10 of 143 who had not yet completed training; N=30 of 139 who completed training).*	**Adoption:** *(PCP semi-structured interviews)* • Most (85%) of the 40 participants were pediatricians (vs family practice). **Acceptability (PCP)**: *(PCP semi-structured interviews)* • PCPs felt encouraged by quality of interactions with MH specialists, positive feedback from families. • Barriers reported included difficulties implementing screening, time constraints, competing demands, guarded prognostic expectations, and negative perceptions about MH system. **Appropriateness (PCP)**: *(PCP semi-structured interviews)* • Primary motivations for participating in Project TEACH included perceived increase in MH problems among their patients (either due to patients aging into adolescence or working with higher risk populations), perceived decrease in available MH resources. • Some PCPs indicated families preferred to receive MH treatment in primary care, others felt families would prefer specialist care. **Feasibility:** *(PCP semi-structured interviews)* • Trained PCPs reported increased confidence interacting with families about MH, assessing severity, prescribing medication and developing treatment plans and more willingness to take responsibility for diagnosis and treatment of MH problems due to change in attitude about MH care in primary care, self-efficacy.	This regional phone consultation and training program in NY was overall acceptable to participating PCPs, who reported need due to increasing MH concerns in their patients. Barriers remained including ability to address these issues significantly in primary care and negative impressions about MH care. PCPs are divided on the appropriateness of managing psychiatric problems in primary care. Training increases PCP confidence and willingness to manage psychiatric problems in primary care.
HobbsKnutson et al. (2014)[54]	Observational study (retrospective cohort) - program evaluation of MCPAP for the association between initial and subsequent contacts (N=4,436).	**Penetration:** *(program data on number of contacts and contacts per PCP)* • 4,436 initial MCPAP contacts during the study period, mean 3.83 contacts/PCP. **Feasibility**: *(program data on referrals, clinical characteristics, and repeat calls)* • Most contacts were for children aged 12–17 years (41%) and children aged 6-11 years (38%). 14% were for 0-5-year-old children. • 48% of contacts for diagnostic clarification. 28% related to accessing MH services. • 66% were not taking psychotropic medications at the time of the call. • PCP initial contacts with MCPAP were most commonly for children with depression or suicidality (20%), by anxiety disorders (17%), and ADHD (17%). • MCPAP utilization associated with initial contacts about medication management, polypharmacy, public and private health insurance (vs unknown or uninsured), and time of year (fewer contacts in summer). The child's primary MH problem did not predict utilization.	Finding of increased program utilization for consultation regarding management of psychotropic medications, may reflect reluctance in prescribing psychotropic medications and safety concerns. Pediatricians may manage children with less severe MH conditions independently, referring more complex cases for consultation regardless of the diagnosis. Results supported rationale for private insurance programs to contribute to funding of MCPAP (in addition to public funding).

HobbsKnutson et al. (2014a)[58]	Semi-structured interviews via email of program directors of state child psychiatry phone consultation programs in MA, WA, IL, ME, AR, TX.*	**Feasibility:** *(semi-structured interviews with program directors)* • None of the program directors reported any lawsuits related to clinicians' telephone consultation program activity. **Penetration:** *(semi-structured interviews with program directors)* • Average number of annual referrals was 3,652 but varied substantially by program. • Annual averages were 3137 in MA (started in 2004), 772 in WA (started in 2008), 772 in IL, 181 in ME (started in 2009), 46 in AR (started in 2009), and 40 in TX.	Lawsuits have not been a barrier to implementation of phone consultation programs, but since physician liability laws vary by state this may affect adoption of programs in other states.
Straus & Sarvet (2014)[33]	Observational study (retrospective cohort) of MCPAP since its inception in 2004 including baseline and annual PCP satisfaction surveys.*	**Adoption:** *(program PCP enrollment data)* • 95% of primary care pediatric practices enrolled within 3 years of start. **Acceptability (PCP):** *(PCP annual satisfaction surveys)* • High level of satisfaction, improvement in ability to meet patients' psychiatric needs (8% before enrollment vs. 64% in 2012). **Feasibility:** *(program and clinical data on response time, referrals, diagnoses, and conversion to direct care)* • Response time was within 30 minutes for 89% of calls. • Most common questions were diagnostic and around identifying community resources, followed by medication questions. • Most common diagnoses discussed were ADHD and anxiety disorders • Face-to-face consultations occur after 18% of phone consults. **Penetration**: *(program and call data on call volume)* • In fiscal year 2013 MCPAP recorded 20,641 encounters for 10,553 unique children. • Call volume has not decreased over time, anecdotally questions are more sophisticated (no data) **Sustainability/Cost:** *(program cost including insurance billing data in 2014)* • 6 FTE CAPs can cover 1.5 million children. The cost in fiscal year 2014 of supporting all 6 hubs was $3.3 million dollars ($2.20 per child). $200,000 was offset by money that project received from billing insurers for face-to-face visits. 58% commercially insured and 42% Medicaid in that year, similar to state distribution.	With population-based approach, CPAPs can serve a large number of children; good provider satisfaction and increases access for patients; now that many practices have started to integrate BH providers, can serve complementary roles. MCPAP has dramatically higher utilization for level of funding than other state-funded programs. Some children need access to more services, which care coordinators try to facilitate, but frequently such services are not covered by the child's insurance or there is inadequate capacity. Not all PCPs are motivated to use the service.
VanCleave et al. (2015)[23]	Observational Study (retrospective cohort). Cross-sectional analysis of 29,202 calls to MCPAP between 5/2005 and 7/2011 with practice-level data from 285 primary care practices (82% pediatric, 18% family medicine; 20% Central MA, 80% Boston/Western MA).	**Adoption:** *(program data on practice enrollment/characteristics and call frequency)* • PCPs of >95% children in MA have enrolled in MCPAP, the majority (67%) in 2005-6. • Size of practices ranged from <2000 to ≥10,000 patients; 30% had 1-2 FTE PCPs. • Average time to adoption was 178 days (median 78), and 55% of practices called in first 100 days. • Adoption within 100 days associated with assignment to central Massachusetts site (OR 4.42, 95% CI 2.16–9.04) and enrollment in 2007 or after (OR 4.09, 95% CI 2.23–7.49). • Practices with large panels were less likely to be late adopters (>365 days) (OR 0.21, 95% CI 0.07–0.74, vs <2000 patients); and less likely to be in the highest quartile of users. **Feasibility:** *(practice enrollment data)* • 77% of practices located ≥35 minutes by car from their regional MCPAP office. **Penetration:** *(program data on practice enrollment/characteristics and call frequency)* • Within the first year of enrollment, 84% of practices had called at least once. • Frequency of use varied, and 14% of practices were in the highest call volume category (>10 calls/year/1000 patients). • Overall call volume overall increased by 2011 to > 600 calls/month. • Most common reasons for calling were medication (31%) and ADHD (33%) • Frequency of use was associated with panel size, assignment to central site, and travel time to the MCPAP regional office. • Only 8% of practices with >10,000 patients were in the highest quartile of call frequency, vs 38% of practices with <2000 patients (P =.004).	Adoption varied considerably by practice characteristics, including enrollment rates, panel size and geographical distance from the regional MCPAP office. Practices assigned to the central (pilot) region and those who enrolled later were more likely early adopters. Larger practices adopted earlier, but smaller practices made more calls per patient after adoption. Practices further from the regional sites used MCPAP less frequently.

Kaye et al. (2017)[13]	Observational study/program evaluation of CAP PC (retrospective cohort) in NY (N=6285 phone consults to date) including PCP satisfaction surveys 2 weeks after consultation and annually, as well as pre and post-evaluations of educational sessions for PCPs.*	**Adoption/Penetration**: (*program call data and educational session data*) • 1931 PCPs registered for the program, 78% of these have utilized consultation phone line. • 8013 phone consultations for 6285 patients; Face-to-Face evaluations for 577 patients. • Number PCPs registered has grown by an average of 15%/year, number of phone consultations continues to grow. • Most calls from the upstate NY region. • Nearly 1200 PCPs have received formal education (total 17,523 CME hours) from the program. **Feasibility**: (*program call and clinical data including wait time and enrollment in PCP education*) • Mean call-back time 58 min • Reasons for calling included medication question (68%), referral assistance (26%), non-med treatment (20%), diagnostic clarification (20%). 37% of calls involved >1 reason. • Most calls regarding school age children and adolescents (41% 5–11 and 43% 12–17), 5% preschoolers and 11% older teens (18-21). 70% calls about privately insured children • Most common problems anxiety (24%), inattention (19%), sadness/depression (15%), aggression (9%), and oppositional-defiant behaviors (7%), developmental disabilities including ASD. 0.6% include questions about substance abuse. • In program's 1st year, most calls (52%) from PCPs who had taken REACH Mini-Fellowship educational program, but now most calls (64%) from PCPs who have not done the training. • Mean 12 days from PCP call to face-to-face evaluation. **Acceptability (PCP)**: (*PCP satisfaction surveys after consultations and PCP post-evaluations of educational sessions*) • PCPs reported that 93.4% of consults to be very or extremely helpful, 99.2% would recommend program to other PCPs. • Numbers consistent across years. • Evaluations of educational programming have been "outstanding". **Appropriateness (PCP): (***PCP satisfaction surveys*) • In annual surveys (24% return rate), PCPs report increase in confidence, skills and knowledge.	This phone consultation program is feasible and serves mostly school age children and adolescents, including a substantial minority (20%) with developmental disabilities and majority privately insured children. The program is highly acceptable to PCPs, who also report gaining increased confidence and knowledge from participation in consults and educational programming. Adoption in pediatric practices throughout the region continues to grow. Unclear reason for the regional differences in calling patterns as shown with other CPAP models.
Marcus et al. (2017)[59]	Observational Study including PCP satisfaction survey of the first 4 years of the MC3 (N=2676 patient referrals; N=33 PCPs surveyed).*	**Adoption:** *(program data on enrollment)* • In its first 4 years, the program has enrolled 894 PCPs in 40 counties in MI and works with 19 community MH regions and 5 school-based programs. **Acceptability (PCP): (***33 PCP satisfaction surveys*) • PCP survey (N=33) suggested high satisfaction, with 85% "strongly agreeing" and 12% "agreeing" with: "I felt more confident that I could effectively treat this child's behavior problems as a result of this consultation." **Feasibility:** (*program data on patient demographics*) • Preschool children represented about 12.4% of the total patient referrals, and were most often referred for resources, disruptive behavior, and parenting support. • 98% had no contact with psychiatrists at time of the consultation. • BHCs reported frustration making referrals for therapy in certain areas.	Integrating the BHC role and participating in patient phone calls and referring patients to telepsychiatry was an acceptable collaborative care model for PCPs. Regional BHCs still identified challenges finding community-based resources.

Sarvet et al. (2017)[52]	Mixed methods program evaluation of MCPAP via 1) >50 in depth interviews with key stakeholders including PCPs; 2) web-based survey of 47 MCPAP team members; and 3) 11 years of program data.*	**Adoption/Penetration:** *(program data on PCP/practice enrollment in MCPAP and PCP utilization)* • Near universal enrollment of pediatric primary care practices across MA, increasing use over time • Variation in use by region, despite same funding/population size. **Feasibility:** *(program data and >50 stakeholder interviews, including with PCPs)* • Contacts for community resources increased over time. • Most contacts result in PCP continuing to manage patients' behavioral health care and prescribing medications when needed. Stakeholders concerned about unreliability of external referrals. **Acceptability (PCP):** *(stakeholder interviews, including with PCPs, and web-based surveys)* • PCPs consistently report high satisfaction with MCPAP's response time and utility of consults. • PCPs frequently express desire for MCPAP to improve network availability for specialty psychiatric care for patients with complex needs. • Strengths reported: (1) responsiveness to PCP requests and family needs, (2) good quality of consultation including knowledge of local resources and staff consistency. • Weaknesses reported: uneven utilization across regions, PCP concern that medications recommended too often, need for increased support for special populations (e.g. ASD, infant/early childhood, substance abuse), limited help for follow up on external referrals, need for on-duty CAP to multitask (may slow operations), lack of data on race/ethnicity to assess disparities. **Sustainability:** *(stakeholder interviews)* • Stakeholders described changes over time in pediatric MH services in MA including adoption of IBH and PCMH models, movement towards alternative payment models, and administrative/financial barriers.	High adoption and PCP satisfaction with consultation program including quality of consults and response time. Despite high adoption, usage is uneven and varies by PCP and practice, reasons for this remain unclear. With changing MH landscape (more on site IBH and PCMH models), there is more demand for MCPAP as a source for community referrals and concerns about reliability of those referrals, as well as concern from PCPs that medication is recommended too readily. These will be important considerations for future adaptations. The model continues to rely on PCP to primarily manage care.
Platt et al. (2018)[60]	Observational study (retrospective cohort) of N=872 cases from the Maryland (BHIPP) database.	**Feasibility:** *(program/clinical consultation data on clinical severity and co-management)* • 73.8% of cases categorized as mild-moderate (CGI-S 1–4) and 26.3% as severe (CGI-S 5–7). • 67.3% of severe cases managed by a PCP alone; 32.8% were co-managed. • Lower unadjusted odds of severe cases being managed alone by PCP with: more psychotropic medications (OR 0.76, 95% CI 0.6, 0.96), prescription of antidepressants (OR 0.51, 95% CI 0.28, 0.95) or antipsychotics (OR 0.45, 95% CI 0.22, 0.94). • Among the 75 severe co-managed cases, 32% were receiving medication, 72% outpatient psychotherapy, and 6.7% school-based therapy. • No difference in provider characteristics or patient demographics between severe cases managed alone vs. co-managed.	CPAPs were designed to help PCPs address mild-moderate MH problems in primary care, but a substantial minority of cases are clinically severe, most reported to be managed by PCP alone. A different system may be needed to systematically address the needs of patients with higher clinical severity but limited specialty care.
VanCleave et al. (2018)[55]	Mixed method study using program data between 10/2010-7/2011, surveys and interviews with 14 randomly selected frequent and infrequent callers (PCPs) to MCPAP.*	**Penetration:** *(program data on calls by PCPs)* • PCPs (n = 993) made 6526 calls (mean = 6.6; median = 3) over 10-months. **Appropriateness (PCP):** *(surveys and interviews with infrequent and frequent PCP callers)* • Reasons for frequent calling: ability to receive timely, individualized guidance; ability to arrange therapy referrals; able to provide plan at point of care; families' preference to keep MH in primary care • Reasons for infrequent calling: gained skills through MCPAP previously, now only needed for complex cases; access to other resources; fear of being asked to manage cases out of comfort zone; wary of advice without specialist seeing the patient; misunderstanding the program.	Providers report gaining skills through phone consultation leading to lower need for specialty consultation, but some have concerns about scope of practice and fear about being asked to manage more than they are able. Timeliness of this modality is important for alleviating parent anxiety.

*implementation measured as a primary outcome

AAP = American Academy of Pediatrics; ADHD = Attention-Deficit/Hyperactivity Disorder; ADL = Activities of Daily Living; AR = Arkansas; ARPN = Advanced Practice Registered Nurse; ASD = Autism Spectrum Disorder; BH = Behavioral Health; BHC = Behavioral Health Consultant; BHIPP = Behavioral Health Integration in Pediatric Primary Care; CAMHS = Child and Adolescent Mental Health Services; CAP = Child and Adolescent Psychiatrist; CAPES = Child and Adolescent Psychiatry Education and Support; CAP PC = Child and Adolescent Psychiatry for Primary Care; CGAS = Children's Global Assessment Scale; CGI = Clinical Global Impression; CGI-S = Clinical Global Impression Scale; CHART = Children's Health Access Regional Telemedicine; CI = Confidence Interval; CL = Consultation Liaison; CMHC=Community Mental Health Center; COMP = Comparison Group; CPAP = Child Psychiatry Access Programs; CPCM = Child Psychiatry Consultation Model; CPT = Current Procedural Terminology; CT = Connecticut; ECC = Enhanced Care Clinics; EI=Early Intervention; FFS = Fee-for-service; FP = Family Physician; FTE = Full time equivalent; GAS = Global Assessment Scale; GP = General Practitioner; IBH = Integrated Behavioral Health; IL = Illinois; LCSW – Licensed Clinical Social Worker; MA = Massachusetts; MCPAP = Massachusetts Child Psychiatry Access Program; MC3 = Michigan Child Collaborative Care Program; ME = Maine; MH = Mental Health; MH/D = Mental Health and Child Development; MHP = Mental Health Provider; MI = Michigan; NHS = National Health Service; ODD = Oppositional Defiant Disorder; PAL = Partnership Access Line; PASS = Partnering to Achieve School Success; PCMH = Patient-Centered Medical Home; PCP = Primary Care Provider; PIM-FC = Practitioner-Informed Model to Facilitate Interdisciplinary Collaboration; PMHW = Primary Mental Health Worker; PSQ = Parent Satisfaction Questionnaire; RCT = Randomized Controlled Trial; RN = Registered Nurse; TCMAP = Texas Children's Medication Algorithm Project; TCPS = Targeted Child Psychiatric Services; TX = Texas; UMass = University of Massachusetts; VADPRS = Vanderbilt ADHD Diagnostic Parent Rating Scale; WA = Washington.