PEDIATRIC PSYCHOPHARMACOLOGY:

Improving Care Through Co-Management

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About the Child Health and Development Institute of Connecticut:

The Child Health and Development Institute of Connecticut (CHDI), a subsidiary of the Children's Fund of Connecticut, is a not-for-profit organization established to promote and maximize the healthy physical, behavioral, emotional, cognitive and social development of children throughout Connecticut. CHDI works to ensure that children in Connecticut, particularly those who are disadvantaged, will have access to and make use of a comprehensive, effective, community-based health and mental health care system.

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INTRODUCTION

In the interest of improving health and mental health care systems for children in Connecticut, the Child Health and Development Institute (CHDI) has been leading an effort over the past five years to advance a more integrated approach to the delivery of behavioral health and primary care services for children.

The goal of CHDI's investment has been to increase the capacity of primary care practitioners to address the behavioral health concerns of children in their care through screening, brief treatment for mild disorders, and where appropriate, referral for treatment. CHDI's work in this area has included reviewing and analyzing research and best practices, developing and delivering education and training, advocating for policy change, facilitating statewide planning to foster systems development, and funding demonstration projects.[2,3]

One specific result of this work has been the development of formal partnerships between primary care providers (PCPs) and 39 mental health clinics designated as Enhanced Care Clinics (ECCs) by Connecticut's Medicaid Program. These clinics receive 25% higher reimbursement rates for meeting certain criteria that include guaranteeing timely access to services based on urgency and coordinating care with primary care providers. With regard to the latter, ECCs are to develop formal agreements with at least two primary care practices. These agreements outline protocols for referral, shared treatment plans, communication, access for PCPs to consultation from child psychiatrists, and education and training. To assist with the development of these partnerships, CHDI, with funding from the Children's Fund of Connecticut, supported four primary care sites to enhance their capacity to address behavioral health concerns through partnering with ECCs. The results of this demonstration project are summarized in a 2010 report, *Integrating behavioral health and primary care: Making it work in four practices in Connecticut.*[4]

"The promise of pediatric mental healthcare will not be fulfilled unless primary-care clinicians and behavioral health specialists forge new collaborative relationships that enhance the delivery of evidence-based care to affected children and their families." [1]

CHDI's next phase of work is to focus on one significant and challenging aspect of integrated care: the management of psychotropic medications in the primary care setting. Through a review of the literature and surveys conducted in Connecticut, the following is clear:

- The use of psychotropic medications among children is on the rise.
- Pediatric primary care providers prescribe a greater portion of these medications than do mental health specialists.
- Stimulant medication for attention deficit/hyperactivity disorder (ADHD) is the most commonly prescribed medication by primary care providers.
- Beyond stimulants, many PCPs are uncomfortable with prescribing psychotropic medications, as they do not find that they are well prepared or supported to take on this responsibility.

To help better understand the role of child health providers in managing psychotropic medication and to set the course for future work in this area, this report summarizes the research literature and inherent challenges associated with pediatric prescribing practices, provides information about prescribing practices for the Medicaid population in Connecticut, describes some model co-management programs in other states, and provides recommendations for what can be done in Connecticut to strengthen the role of child health providers through co-management.

PEDIATRIC PSYCHOPHARMACOLOGY

Increase in Overall Psychotropic Drug Use and Related Concerns

Research consistently shows an increase in the number of children prescribed various classes and combinations of psychotropic medications. These increases have been seen across different populations, including very young children and adolescents, children insured by Medicaid and commercial insurance, and those in foster care.[5,6,7]

- A study by Zito et. al., involving Medicaid and HMO insurance claims data from almost 900,000 children and adolescents across three geographically diverse sites, found that the use of psychotropic medication was 2-3 times greater in 1996 than 10 years earlier, with rates in 1996 ranging from 5.9% to 6.3% of children.[8]

- Data from the National Ambulatory Medical Care Survey (NAMCS),[9] an annual survey of 3,000 randomly selected physicians about office visits, indicated that for adolescents 14-18 years old, the percentage of visits that resulted in a prescription for a psychotropic medication increased from 3.4% in 1994-1995 to 8.3% in 2000-2001.[10] The diagnosis recorded for approximately one third of psychotropic-related visits was attention-deficit/hyperactivity disorder (ADHD).[11] The authors noted that in 2001, 10% of office visits for males resulted in such prescriptions.

- In a more recent examination of NAMCS data (1996-2007), Comer, Olfson, and Mojtabai reported that 8.8% of office-based visits for children ages 6-17 involved a prescription for one of five types of psychotropic medications including stimulants, antidepressants, antipsychotics, mood stabilizers and sedative-hypnotic.[12]

One concern about recent trends in pediatric psychopharmacology is that many of these medications have not been studied or approved for use with children; thus little scientific evidence exists for understanding their immediate or long-term effects on a child's growth and development. Often these medications are prescribed 'off label', meaning for a mental disorder or age group apart from that for which they were approved by the Federal Drug Administration (FDA). Because of the lack of sufficient scientific evidence to support the use of psychotropics with children, careful diagnosis, treatment planning and monitoring for the effects are all the more critical.[13]

Another significant factor that affects appropriate medication in utilization by children is acceptance by families. Prescribing a medication is not equivalent to a child or adolescent actually taking the medication. Many factors influence a parent or child's adherence to a medication regimen including cost, side effects, attitudes and beliefs about psychotropic medications and mental illness, and the relationship with the prescribing provider.[14]

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The next section briefly addresses those classes of medications that are most likely to be prescribed by a pediatric primary care provider: stimulants for ADHD, antidepressants for depression, anxiety and other mild disorders, and on occasion, antipsychotics for more serious psychiatric concerns.

Commonly Prescribed Medications In Primary Care

Stimulants

ADHD is one of the most common psychiatric disorders diagnosed in children and adolescents, reported for as many as half of all youth treated at child psychiatry clinics and the most common behavioral health complaint presenting to pediatricians and family physicians.[15,16] The use of stimulant medication, such as Ritalin or Adderall to treat ADHD, which is approved by the FDA as effective for this purpose, has been on a steady increase since the late 1980's[17] and is the most widely prescribed class of psychotropic medication for children. The prevalence of the stimulant medication use is reported as high as 3.8%.[18] This is reflected in studies that reported that 42.9% of visits for psychotropic medications were for children with disruptive behavior problems including ADHD and from 56.3% to 85% of children diagnosed with ADHD were prescribed medications for the disorder.[19,20,21]

Antidepressants

Depression and mood disorders are also relatively common among children and adolescents. Estimated prevalence rates range from 2% to 8%, with higher rates in adolescents.[22] An increase in the use of antidepressant medication has been reported with prevalence rates among a large national random sample of commercially insured children as high as 2.4% of children (240 per 10,000) in 2002, up from 1.6% (160 per 10,000) in 1998.[23,24] The highest rate, 6.4%, was among girls aged 15-18.[23]

Based on the NAMCS data, Comer and his colleagues report that 21.5% of children and adolescents' office visits for psychotropic medications were related to mood disorders.[12] An analysis of data from the NAMCS and the National Hospital Ambulatory Medical Care Survey (NHAMCS), which collects data on the use of ambulatory services in hospital settings, indicated a rise in the number of office visits for children 7-17 involving depression from 1.44 million in 1995-1996 to 3.22 million in 2001-2002. The percentage of those visits that involved antidepressants increased from 47% to 52%.[25] Other research has shown that up to 25% of pediatric primary care clinicians and 42% of family physicians in the United States had recently prescribed a selective serotonin reuptake inhibitor (SSRI) such as Prozac, Celexa and Zoloft to treat depression for more than one adolescent under the age of 18.[26]

In 2004, the FDA issued an official 'black box' warning label on all antidepressant medications, stating that their use may increase the risk of suicidality (suicidal thinking and behavior) in children and adolescents, though the FDA did not report the actual occurrence of suicides following antidepressant use.[27] Following the warning, researchers noted a general decrease in the prescription of antidepressants accompanied by a decrease in the diagnosis of depression in children, and a shift in prescribing from primary care providers to psychiatric specialists.[28,29,30] There have been reports of an increase in suicide rates among youth following the warnings, which has raised concerns, but as of yet there is no evidence directly linking the increase to the issuance of the warning.[31]

Antipsychotics

Research findings, based on the NAMCS and the NHAMCS, indicate a nearly five-fold increase in the prescription of antipsychotic medication for children 2-18 years old between 1995-2002 (from 8.6 to 39.4 per 1,000 children).[32] The FDA

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developed and approved this class of drugs for treatment of adolescents and adults with bipolar disorder and/or schizophrenia. Antipsychotic medications, especially the newer so-called 'atypical medications' such as Risperdal and Zyprexa, however, are used for a range of diagnoses in children including autism, early onset bipolar disorder, disruptive behavior and aggression, uses that are considered 'off label' as their effectiveness and risks have not been thoroughly studied in children. Notably, 32% of the nearly 6 million antipsychotic prescriptions written for children resulted from visits to nonmental health professionals, including pediatricians and family medicine physicians.[32]

Polypharmacy

Polypharmacy, the simultaneous prescription of two or more psychotropic medications for children and adolescents is also on the increase. Based on office visit data from 2004-2007, Comer et al. reported that 20% of office-based visits that involved a psychotropic medication included two different classes of medication.[12] In visits involving multiple medications, antidepressants and drugs for the treatment of ADHD were the most commonly prescribed combination. A study of nearly 200,000 children and youth enrolled in Connecticut's Medicaid Program in 1998-1999 indicated a prevalence of 4.8% of children receiving at least one psychotropic medication and, of those, 13.6% received prescriptions for multiple psychotropic drugs.[33]

The American Academy of Child and Adolescent Psychiatry (AACAP) makes it clear that evidence to support co-prescribing psychotropic medications is limited and that a clear rationale is required for doing so.[34] Rationales for the use of multiple agents in children have been previously published.[35] AACAP recommends that before prescribing more than one medication, the provider should do the following: develop a plan for both the intervention and supervising the intervention; provide information and education to the child and family; ensure assent from the youth and consent from the parent/guardian; and conduct the medication trial according to AACAP guidelines. Even in the context of compliance with the AACAP principles, there remain unanswered questions about the effectiveness and safety of polypharmacy for children and adolescents.[12,8,21]

PSYCHOTROPIC MEDICATION AND PEDIATRIC PRIMARY CARE

From the time that Haggerty, Rogghmann and Pless first coined the term "the new morbidity" over 35 years ago,[36] there has been an expectation that PCPs will take on increasing responsibility in addressing the behavioral health problems of their patients. Approximately one-quarter to one-half of all pediatric primary care office visits now involve a psychosocial concern[37,38] and primary care providers prescribe the majority of psychoactive medications used by children and adolescents.[39,40] These findings relate largely to medications commonly prescribed

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for ADHD and depression. One report notes that PCPs prescribed approximately 70% of stimulants that children used[41] and another finds that two-thirds of office visits for ADHD medication were with primary care providers.[25,42,41] Based on an examination of the NAMCS data from the mid-1990's, Goodwin, Gould, Blanco and Olfson estimated that 2% of all office visits over a 4-year period were associated with the prescription of a psychotropic medication for anxiety, antipsychotics, and mood stabilizers. Of these visits, 85% occurred with a general practitioner or a pediatrician and only 15% were with a psychiatrist.[43]

In light of the decreased availability of mental health specialists, inadequate insurance coverage for mental health treatment, and less stigma associated with primary care visits as compared to treatment in the mental health system, supporting the increasing role of child health providers in addressing mental health issues is critical to meeting the needs of children.[44] This responsibility has been articulated in recent publications from the American Academy of Pediatrics (AAP), with the expectation that the role of pediatricians will expand to encompass additional competencies in a range of areas including collaboration with mental health providers.[45] AAP has published guidelines for the care of children with Attention-Deficit/Hyperactivity Disorder[46] and for Adolescent Depression,[47,48] which address the use of evidence-based medication.

Despite their expanding role and the expectations of the pediatric profession, a number of studies indicate that PCPs have concerns about their capacity and training for this type of care, perhaps with the exception of treating ADHD.

- A 2008 survey of 659 members of the American Academy of Pediatrics who were active in patient care found that pediatricians saw themselves as more responsible for diagnosing psychiatric disorders than providing ongoing treatment.[49] Seventy percent thought pediatricians should be responsible for managing ADHD but less than one third thought they should be responsible for managing or treating any other psychiatric condition.

- Although 66% of PCPs surveyed reported that they initiated treatment with a psychotropic medication, only 56% of those who did so indicated feeling sufficiently informed about the medication.[50]

- Another study by Fremont, Nastasi, Newman and Roizen reported that even when providers were comfortable in making mental health diagnoses they were not necessarily comfortable prescribing related medications.[51]

- Rushton, Clark, and Freed found that although 58% of pediatricians (262 of 452) stated that they prescribed selective serotonin reuptake inhibitors (SSRIs) for patients with depression, only 11% indicated that they were comfortable managing depression.[52]

- In a 2003 survey of pediatricians (n=100) in Massachusetts, most pediatricians preferred psychiatrists to initiate prescriptions for anxiety and depression but showed no such preference for ADHD.[53] Even without written communication from prescribing psychiatrists, pediatricians did report ordering refills of prescriptions for depression (76%) and anxiety (72%). Pediatricians (97%) in this study also expressed interest in receiving communications from prescribing psychiatric providers.

Very few PCPs have advanced training in behavioral pediatrics.[54] In addition to lack of training, PCPs experience other barriers in managing psychiatric medications for their patients including:

- lack of time within a pediatric practice to properly manage children with a psychiatric condition,
- inability to access consultation from specialists when needed,
- lack of mental health providers when referrals are needed, and
- inadequate insurance coverage for providing behavioral health services.

Pediatric providers...wrote prescriptions for nearly half (49.5% in 2009 and 49.8% in 2010) of the psychotropic medications prescribed for children covered by the HUSKY program.

PRESCRIBING PATTERNS FOR PSYCHOTROPIC MEDICATIONS AMONG CHILDREN IN CONNECTICUT

The patterns of psychotropic medication use and the role and perceptions of child health providers in Connecticut is very similar to the national findings. Based on data reported by ValueOptions, Connecticut's Administrative Service Organization for its behavioral health carve out for children enrolled in HUSKY (Medicaid managed care), 9.1% of children birth through 18 enrolled in HUSKY in calendar year 2009 were treated with a psychotropic medication (27,888 of the 308,160 children enrolled) and 8.7% in 2010 (28,045 of 321,053).[55] The most commonly prescribed medications in 2010 for these Connecticut children included:

- stimulants (53% of all children enrolled in HUSKY who were prescribed behavioral health medications)
- antipsychotics (26%)
- antidepressants (25%)

An analysis of Medicaid claims data for Connecticut in 1999[39] found that 45% of psychotropic prescriptions for children were likely initiated in primary care and only 37% by a psychiatrist. The Connecticut study also found that 80% of follow up visits following such a prescription were to pediatric, not psychiatric, providers. Only 16.5% of children visited a psychiatrist during the three months after they filled a prescription for a psychotropic medication.

More recent analyses of Medicaid claims data from Connecticut[55] again find significant prescribing activity by child health providers. Pediatric providers, including primary care physicians and other providers (nurse practitioners, physician assistants, pediatric specialists) wrote prescriptions for nearly half (49.5% in 2009 and 49.8% in 2010) of the psychotropic medications prescribed for children covered by the HUSKY program. The vast majority of these prescriptions were for stimulants; 65.6% of youth on stimulants had at least one prescription written by a pediatric provider, followed by antidepressants (28.1%), mood stabilizers (24.5%) and antipsychotics (20.6%).

Similar to findings reported earlier, PCPs in Connecticut also indicate that they are more comfortable prescribing stimulants and less comfortable prescribing atypical antipsychotics and drug combinations.[56] Results from two surveys conducted in Connecticut prior to the requirement that Enhanced Care Clinics partner with PCPs,[57] indicated that pediatric providers (n=110) varied in their comfort levels with prescribing different psychotropic medications in the absence of psychiatric consultation. Providers were asked to rate their comfort level in managing medications, including providing refills under three different conditions: a) when they are initially prescribed by a psychiatrist/psychiatric APRN, b) when they regularly consult with the prescribing provider, and c) when they have received written reports from the prescribing provider. Comfort levels were highest with regular consultation with the prescribing provider.

A COLLABORATIVE APPROACH TO CARE

Co-management between pediatric primary care and behavioral health services is one promising strategy for addressing the needs of a growing population of children who utilize psychotropic medications. Co-management gives PCPs access to timely information and necessary supports to assist them in providing effective psychopharmacologic treatment. Initiatives in Connecticut and elsewhere have created linkages between PCPs and mental health providers with a goal toward furthering integrated care, including co-management of psychotropic medications.

Research on models of integrated and collaborative primary and behavioral health care suggest that this approach results in improved outcomes for patients and providers such as reduced waiting times for behavioral health services, increased screening and identification of children with possible mental health disorders, and increased options for consultation.[4,58] In an evaluation of a demonstration of integrated care in Connecticut, Honigfeld and Nickel describe four aspects of collaborative care that are attainable within pediatric primary care and are sustainable once developed.[4] Lessons learned from four practices suggest that: 1) infrastructure building is necessary to support collaborative care, including development of routines and systems that ensure screening, referral and communication among providers; 2) payment for screening increases the likelihood that it will be incorporated into primary care services; 3) the extent to which a primary care practice can meet their patients' mental health needs depends on relationships between health and mental providers; and 4) location of mental health providers with pediatric primary care sites benefits patients, providers the delivery system in general.

Two models of primary care/mental health collaboration, where primary care providers have ready access to behavioral health consultation, are particularly relevant to the issue of prescribing psychotropics: the Massachusetts Child Psychiatry Access Project (MCPAP)[59,60,61,62] and Washington State's Partnership Access Line (PAL).[63,64,65]

Massachusetts Child Psychiatry Access Project

MCPAP, which was inaugurated in July 2005, was influenced by an earlier project, Targeted Child Psychiatric Services (TCPS) based at the University of Massachusetts Medical School.[59,60,61] TCPS provided telephone consultation and support to PCPs from child psychiatric providers, as well as psychiatric assessment and short term counseling (one to four sessions) for patients, when indicated. The program served 22 pediatric practices that were responsible for the primary care of more than 100,000 youth. Of 329 patients referred to TCPS, 54% were triaged to TCPS for short-term intervention, 30% with more severe problems were referred to community mental health services and 16% had their care managed by their PCP after consultation with the TCPS provider.[59]

MCPAP is a larger program that has enrolled most PCPs in Massachusetts resulting in 95% of children in the state covered by the project. MCPAP services are available to all children and adolescents regardless of insurance status, at a cost of approximately $2.00 per child per year.[60,61] MCPAP consists of six regional teams, funded by the State, each of which includes the full-time equivalent (FTE) of a child psychiatrist, one or 1.5 FTE licensed behavioral health provider, and a care coordinator; some teams also have a psychiatric advanced practice nurse.[60,61] The principal services provided to PCPs and their patients through MCPAP include telephone consultation, outpatient appointments for patients, referral to behavioral health providers in the community, care coordination and education for PCPs on the management of child mental health problems. Another critical aspect of the project is regular communication with the PCPs that occurs via the teams (especially the care coordinators) and in written form.[61]

From July 2008 to June 2009, nearly 30,000 contacts with MCPAP teams resulted in assistance with clinical management, evaluations, and referrals for behavioral health services in the community. The most frequently provided services during that time period were telephone consultations and care coordination requests to facilitate access to services in the community.[60] A central component of the program is that PCPs provide a substantial amount of direct psychiatric service. PCPs managed a third of patients after an MCPAP contact and are responsible for writing prescriptions for their patients, with consultation and communication from the psychiatric provider as needed.

Results from evaluations of MCPAP thus far suggest that it is accomplishing its goals. PCPs are surveyed at the time their practices enroll in MCPAP and periodically thereafter. Survey results as of June 2009 indicated that more than 90% of PCPs agreed that the consultation service was useful; approximately 80% agreed with the statement that they are able to consult with a child psychiatrist "in a timely manner"; and 63% agreed with the statement that they are usually able to meet the needs of children with psychiatric problems with existing resources. These results show a dramatic increase when compared to responses prior to the establishment of MCPAP when only 8.4% agreed that timely consultation was available and 8.4% felt able to meet their patients' needs.[60,61]

Washington State's Partnership Access Line (PAL)

Washington State's Partnership Access Line (PAL), launched in 2008, was intended to replicate MCPAP. Due to contextual differences such as the larger geographic area of the state and the population distribution, there have been a number of modifications. In addition, although PAL services are available to all children, there is an emphasis on those insured by Medicaid, who receive the most "resource-intensive" consultations.[64] As with MCPAP, PAL depends substantially on a telephone consultation service. The PAL consultants are expected to provide advice that is consistent with an on-line guide for PCPs.[63] The PAL team includes a social worker, a psychologist and an on-call psychiatrist. Services include in-person

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or telemedicine evaluations as well as assistance with accessing ongoing behavioral services in the community.[64] PAL has four primary aims: 1) demonstrate program feasibility; 2) achieve high levels of PCP satisfaction and improve assessment and intervention; 3) improve psychopharmacology practices; and 4) improve children's symptoms and functioning. Over its first two years of operation, PAL received more than 1,200 phone calls from PCPs, with an average of 3.17 calls per participating PCP. Results from 133 satisfaction surveys show that PCPs overwhelmingly believe that the service has improved access to care for their patients as well as increased their own skills in addressing the mental health needs of their patients.[65]

Both MCPAP and PAL are largely models that provide PCPs with easy access to mental health consultation. Neither involves co-management of care for patients that PCPs and psychiatrists share.

SUMMARY

The review of the literature clearly indicates that not only do children use a significant amount of psychotropics but primary care providers prescribe a significant proportion of these medications. The American Academy of Pediatrics has issued guidelines to assist in the management of a subset of mental health disorders (ADHD, mild depression in adolescents), yet pediatricians and other primary care providers have consistently reported lack of knowledge, capacity and comfort in taking on sole professional oversight over their patients' utilization of psychotropic medications. The lack of empirical support for many medications further complicates appropriate prescribing in children. Therefore ensuring that PCPs have access to specialists to assist in managing the care of children with mental health disorders is essential.

Emerging consultation models, such as in Massachusetts and Washington, can improve the capacity of PCPs to effectively manage psychotropic medication treatment in children with psychiatric disorders. The next level of system improvement involves building the systems and supports for a co-management approach to care. This review concludes with recommendations for moving toward a co-management solution, which can help ensure that children with behavioral health conditions will receive access to optimal care and achieve improved outcomes.

PEDIATRIC PSYCHOPHARMACOLOGY AND INTEGRATED CARE: RECOMMENDATIONS

Based on the information about pediatric psychopharmacology presented in this report, the following recommendations are offered.

Recommendation 1: Pediatric post graduate and continuing medical education should include training in the prescription and management of psychotropic medication as well as in collaborative care. Further, training should bring together pediatric and mental health providers in collaborative learning opportunities.

Education for PCPs on psychopharmacology and collaborative care should begin in residency and continue throughout their professional careers as the evidence-base for psychotropic medications in children is constantly changing. In addition to increasing pediatricians' knowledge, pediatric and psychology literatures also recommend that professional need to be further educated on how to better work together on behalf of children with psychiatric disorders.[66,67] Collaborative training of pediatric PCPs, child psychiatrists, child psychologists, and other mental health professionals can enhance the implementation of collaborative care. Courses, workshops, continuing education and other innovative educational models, such as learning collaboratives that bring together pediatric primary care and psychiatric providers in a data driven approach to practice improvement, can facilitate improved comfort among PCPs with prescribing as well as further integration of health and mental health care.

Recommendation 2: Collaborative care and co-management rely on relationships between providers. These relationships need to be supported by systems and tools that encourage identification of children with behavioral health needs, practice guidelines for medication management, seamless connection of children to services and ongoing participation of both specialties in care. Without such support it is doubtful that relationships will be sustainable and financially feasible.

Models in Massachusetts and Washington have shown how state supported medication consultation systems can improve care on a population level. Child health and mental health providers can join in the care of children when they work in delivery systems that support their relationships. Protocols that reflect state-of-the-art knowledge about psychotropic medication in children, templates to structure communication between providers, models for useful chart entries and patient education tools can support co-management efforts. PCPs and psychiatric providers working together to design and develop such resources will enhance the likelihood that they will be valid and appropriate for collaborative care.

Recommendation 3: Adequate funding for integrated care by both Medicaid and commercial insurance plans is needed to ensure participation of providers in co-managed care.

In addition to practice tools, adequate funding for health and mental services is needed to ensure that providers in both specialties can contribute to optimal care. Flexible reimbursement policies that allow PCPs to bill for mental health services and psychiatrists to be reimbursed for consultative services, both by phone and on site in primary care settings, will encourage providers to collaborate in the care of shared patients.

Recommendation 4: A role for families in building and evaluating co-management models is essential.

"Medical home" has been used to describe care that is family-centered and provided through a trusting collaborative partnership.[68] Nowhere is this more important than in addressing mental health treatment, including the use of psychotropic medications. Training and educational materials for providers need to promote an appreciation of the factors that facilitate communication between providers and caregivers, promote adherence to a medication regimen and provide strategies for how to best to support families in addressing their children's behavioral health challenges. PCPs need to work in partnership with families to achieve optimal outcomes. This includes providing family members with information about medications so that they are well informed about the benefits and costs of treatment and can have their questions and concerns addressed. The Connecticut Department of Children and Families has produced a booklet for parents, youth and providers on medications used for behavioral and emotional disorders, which serves as a model.[69] Family members' input in the development of co-management models and materials is critical to their implementation.

Recommendation 5: The system of mental health services cannot consist of medication alone.

Efforts to improve access to quality psychopharmacological treatment for children and adolescents, and to improve the capacity of PCPs to manage and co-manage these medications, are essential but not sufficient. To be successful, these endeavors need to include mental health specialists from multiple disciplines who can provide a range of psychosocial interventions in addition to medication. Not every child with a behavioral health disorder requires medication. There are an increasing number of non-pharmacological, evidence-based treatments for children and adolescents.[70,71] In some instances these interventions may be combined with medication (e.g., parent training for children with ADHD, cognitive behavioral therapy for children with anxiety) and in other instances they may be implemented without medication (e.g., cognitive behavioral therapy for children with posttraumatic stress disorder or interventions for children with Oppositional Defiant Disorder). The experience of programs in Massachusetts and Washington also underline

the importance of care coordination and case management activities to ensure that children are connected to needed services.

Recommendation 6: Ongoing research and monitoring are needed to ensure the continuous improvement of prescribing and co-management practices for psychotropic medication.

States and medical specialties should collect and monitor data trends in the prescription and management of psychotropic medication to children. The goals of adopting a data driven approach to monitoring medication are to improve the appropriateness of medication utilization and the opportunity to document changes in prescribing patterns by specialty. In addition, although the results of available studies suggest that pediatric PCPs are reasonably satisfied with collaborative efforts,[57] further research comparing treatment as usual with more integrated care models on patient outcomes is warranted. Research and monitoring should also include input from patients and their families regarding their satisfaction with new co-management models as well as effects on symptoms and functioning. In a time when states are experiencing budget crises, it is essential that they study the cost/benefits ratio of collaborative primary care and mental health care.

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