

**Athens Institute for Education and Research
ATINER**



**ATINER's Conference Paper Series
PSY2018-2463**

**Integration and Incorporation of Pediatric Behavioral
Health Services Within a Tertiary Care Center**

**Timothy Zeiger
Penn State College of Medicine
USA**

**Lidija Petrovic-Dovat
Assistant Professor
Penn State College of Medicine
USA**

**Pevitr S. Bansal
Penn State College of Medicine
USA**

**Christopher A. Petersen
Penn State College of Medicine
USA**

Benjamin N. Fogel
Penn State College of Medicine
USA

Sarah M. Iriana
Penn State College of Medicine
USA

Cheston M. Berlin
Penn State College of Medicine
USA

Ying T. Chang
Penn State College of Medicine
USA

Jolene M. Hillwig-Garcia
Penn State College of Medicine
USA

Fauzia S. Mahr
Penn State College of Medicine
USA

Jasmine Marini
Penn State College of Medicine
USA

Beeta Verma R.
Penn State College of Medicine
USA

Kristen G. Yost
Penn State College of Medicine
USA

James Waxmonsky
Penn State College of Medicine
USA

An Introduction to
ATINER's Conference Paper Series

Conference papers are research/policy papers written and presented by academics at one of ATINER's academic events. ATINER's association started to publish this conference paper series in 2012. All published conference papers go through an initial peer review aiming at disseminating and improving the ideas expressed in each work. Authors welcome comments

Dr. Gregory T. Papanikos
President
Athens Institute for Education and Research

This paper should be cited as follows:

Zeiger, T., Petrovic-Dovat, L., Bansal, P.S., Petersen, C.A., Fogel, B.N., Iriana, S.M., Berlin, C.M., Chang, Y.T., Hillwig-Garcia, J.M., Mahr, F.S., Marini, J., Verma, B.R., Yost, K.G, and Waxmonsky, J. (2018). "Integration and Incorporation of Pediatric Behavioral Health Services within a Tertiary Care Center", Athens: ATINER'S Conference Paper Series, No: PSY2018-2463.

Athens Institute for Education and Research
8 Valaoritou Street, Kolonaki, 10671 Athens, Greece
Tel: + 30 210 3634210 Fax: + 30 210 3634209 Email: info@atiner.gr URL:
www.atiner.gr
URL Conference Papers Series: www.atiner.gr/papers.htm
Printed in Athens, Greece by the Athens Institute for Education and Research. All rights reserved. Reproduction is allowed for non-commercial purposes if the source is fully acknowledged.
ISSN: 2241-2891
25/06/2018

**Integration and Incorporation of Pediatric Behavioral Health Services
Within a Tertiary Care Center**

Timothy Zeiger

Lidija Petrovic-Dovat^{*1}

Pevitr S. Bansal

Christopher A. Petersen

Benjamin N. Fogel

Sarah M. Iriana

Cheston M. Berlin

Ying T. Chang

Jolene M. Hillwig-Garcia

Fauzia S. Mahr

Jasmine Marini

Beeta Verma R.

Kristen G. Yost

James Waxmonsky

Abstract

Objective: In order to improve the quality of care, address the needs of children with physical illnesses and improve collaboration between specialized clinics, integrated care models were developed based on a published models of collaborative care. Method: Health workers were surveyed regarding their experiences and challenges within current models of collaborative care. Results: Health workers reported positive experiences within the current collaborative care system. Areas of need still exist within these models, such as delayed medication visits for patients, referral processes, and physical distances between clinics that limit the interaction between providers. Discussion: Continuous feedback from patients and providers will be required to further evaluate the benefit of each model for patient care and to ensure financial sustainability. Conclusion: Developing models of care

¹Corresponding author

in which the needs of children are met in an establishment is the approach we are currently experiencing. Models are being expanded to other specialized sites that will be tailored based on feedback from patients and providers.

Keywords: Collaborative care, psychiatry, integrated care, pediatrics, medicine

Introduction

Pediatric mental healthcare is a growing concern in the United States. Roughly 20% of U.S. children suffer with some form of mental illness (Chesney, Goodwin, & Fazel, 2014). Those with medical illness are approximately four times more likely than their medically healthy counterparts to develop a psychiatric illness. Only 60% of these children, however, see a mental health specialist or receive any form of mental health treatment (Costello, Mustillo, Erkanil, Keeler, & Angold, 2003; Kessler & Merikangas, 2004; O'Connell, Boat, & Warner, 2009). These children more often present to primary care settings, which results in pediatricians serving as the first line provider for mental health issues (Costello, He, Sampson, Kessler, & Merikangas, 2014; Richardson et al., 2014). Mental health has a large financial impact as well, as the annual economic burden of childhood mental illness has been estimated to be over 200 billion dollars (Merikangas et al., 2010). Many adults can trace their mental health issues back to their younger years; in fact, fifty percent of adults with behavioral health problems report experiencing these issues in childhood and early adolescence (DeMaso, Martini, & Cahen, 2009). Given the prevalence of these disorders, and the lack of mental health providers, it is not possible for mental health specialists to be the first line provider for all cases (Macartney, 2011). Therefore, alternate models of care where mental health and primary care services are integrated are needed to more efficiently allocate scarce mental health resources to primary care providers (PCP).

Integrating Healthcare Services

Sustainable funding strategies should be developed in order to better integrate child psychiatry into the general pediatric healthcare system (Carroll, 2013). Thus, a comprehensive integration of healthcare services would attempt to meet an individual's behavioral and physical needs in multiple domains within a singular location. Data are limited, but studies demonstrating the efficacy of collaborative care models present positive outcomes. Three studies tested the effectiveness of collaborative care systems in comparison to routine usual care models with children diagnosed with Attention Deficit/Hyperactivity Disorder (ADHD) (Reed, Bell, & Edwards, 2011), depression (Costello et al., 2003), and a combination of behavioral and emotional disorders (Lucier-Green et al., 2016). Participants within those collaborative systems experienced better symptom trajectories (Reed et al., 2011) and symptom reduction (Costello et al., 2003; Lucier-Green et al., 2016) when compared to participants receiving usual care or treatment. These promising results provide a foundation for future research regarding collaborative care systems for children and adolescents struggling with mental health issues. These collaborative efforts have been outlined and demonstrate a clear working effort between various healthcare providers (Table 1). The current pilot site, a large academic teaching hospital within the northeastern portion of the United States, has developed different levels of healthcare integration across its academic medical campus, tailored to the needs of the specific patient populations and

clinical settings. Within this setting, pediatricians and psychiatrists play a unique role in providing care to their patients (Table 2). This report describes a PCP’s experience within the pilot collaborative care system, and speaks to the available models of care as proposed by Heath, Wise Romero, & Reynolds (2013).

Table 1. *Collaborative Care Model in Comparison to Traditional Models of Care*

Traditional Psychiatrist Model	Collaborative Model
1-on-1 interaction with the patient	Interaction with the team (e.g., physician, psychologist, social worker, etc.)
Assessments and long formulation of diagnosis and treatment planning	Clearer bullet points to provide to collaborative team with clear recommendation and time frame
Confidentiality, minimal sharing of information	Patient is more informed of the process and is provided consent information
Time available for every visit	Fast paced environment

Table 2. *Roles of Healthcare Professionals within the Collaborative Model*

Pediatricians	Both Providers	Psychiatrists
Monitor long-term care of patients needing psychotropic medications & Decrease wait time for more severe patients to enter traditional outpatient clinics	Screen, Diagnose, & Initiate Treatment	Support youth and familial development within: Schools, Child welfare agencies, & Juvenile courts

Models of Full Collaboration & Integration

Adolescent Medicine & Partial Hospitalization Program

The Adolescent Medicine & Partial Hospitalization Program is comprised of two settings: the Adolescent Medicine Eating Disorders Clinic (AMED) and the Eating Disorders Partial Hospitalization Program (PHP). These programs manage primarily eating disorders (e.g., anorexia nervosa, bulimia), but mood disorders (e.g., depression and anxiety) are commonly seen within these settings as well. AMED and the PHP work together under the model of “Full Collaboration in a Merged Integrated Practice”, the highest level of collaboration (Heath et al., 2013). Healthcare workers within this system include adolescent medicine providers (e.g., MDs and CRNPs), child and adolescent psychiatrists, fellows, psychologists, psychiatric assistants, clinical social workers, dietitians, and registered nurses. These clinics share a number of aspects to optimize patient care such as location, scheduling, and billing procedures. Healthcare providers also have shared access to patients’ electronic medical records (EMR), which facilitates convenient collaboration on a single patient case within the same building or across campus. The EMRs also facilitate communication between the healthcare workers in the

form of grand rounds and case conferences. These rounds allow professionals to meet and discuss aspects of certain cases in order to provide better care.

New patients receive an appointment within days of referral; and within the past year, the clinic reported a 90% fill rate. Consultation within the clinic is available on-site, in addition to curbside, messaging, and telephone methods. The PHP assists with daily referrals, diagnosis, treatment and relapse prevention for eating disorders. Referrals are typically made by the adolescent medicine provider; outside or self-referrals are initially screened by adolescent medicine specialists, who then discuss with other providers whether the case is medically fit to continue in the PHP settings. Typically, patients that exhibit appropriate symptom stabilization in PHP are gradually transitioned to outpatient care. In situations where the level of care at PHP is not enough or safety is cause for concern, patients are transferred to inpatient facilities.

As the HMC's first integrated healthcare system, this full collaborative model reported very few problems. One shortcoming occurred within AMED, where team members did not present a clear understanding of their role within the newly established clinical system. This issue has since been clarified, and AMED continues to build on its model, which emphasizes integrated care in real time, cooperation, a transdisciplinary approach when needed, team meetings, and continuous communication throughout the experience.

Close Collaboration Onsite with Some System Integration

Pediatric Behavioral Health Collaborative Care Program

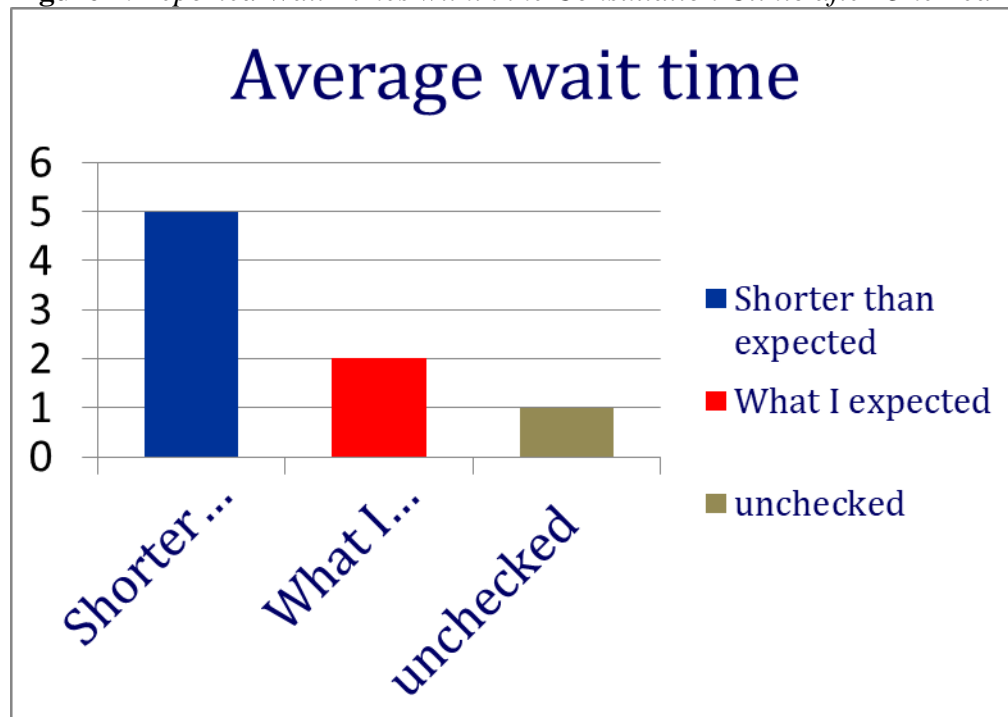
The Hope Drive Clinic (HDC) is the largest pediatric primary care center at the HMC, recording roughly 36,000 yearly visits. A collaborative program was developed by the Division of Child and Adolescent Psychiatry, and the Department of General Pediatrics. This model is an example of "Close Collaboration Onsite with Some System Integration", the fourth level within the integrated care model (Heath et al., 2013). Board certified child psychiatrists provide direct assessment of challenging cases at the General Pediatric Clinic and treatment recommendations

Each case is evaluated for the level of subsequent care with levels consisting of either PCP management or transfer to the specialty psychiatric clinic for more complex cases. Those requiring a follow up by the child psychiatrist were able to be seen at the outpatient psychiatric clinic by the same psychiatrist who performed the initial consult. Psychiatrists provide on-site consultation during the time they are at the clinic and phone consultation through the week; this includes small group didactics in topics selected by the pediatricians. Pediatricians were surveyed after the first 10 months of the collaborative program and expressed preference for the patient to be seen at a consultation clinic followed by a child psychiatrist until stabilized before returning to their PCP for a follow up. In the first year after the start of the clinic, the consultation clinic's fill rate was at 73%. Seven percent of patients cancelled their appointments and less than 10% no-showed for their scheduled appointment.

As a teaching institution, the HMC has integrated its trainees into this model where they see patients at this clinic under the close supervision of attending child and adolescent psychiatrists. Much like the PHP, fellows function as an active provider, conducting all components of the evaluation. The child psychiatry residents reported their rotation within the HDC to be a very positive experience, reporting a high level of satisfaction within the collaborative care aspect. In addition, at outpatient psychiatric clinics, residents were able to follow-up with their more complex patients evaluated at the pediatric clinic before returning to the primary provider.

The collaborative program made changes following feedback from the providers. A streamlined referral process using the EMR was created, as was a revised diagnostic report, which provides a succinct summary and step-by-step treatment modality. This model promotes shared use of scheduling methods, EMRs, and a shared location, allowing patients to easily access different types of care, but does not facilitate frequent meetings between providers. In addition, the departments do not share billing methods, which remains separated based on utilized services. Limited pilot data found that patients experienced shorter wait times at the clinic (Figure 1) and felt less stigmatized receiving psychological care at the HDC, as opposed to going to a psychiatry clinic for treatment. Overall, patients continue to reports high levels of satisfaction with their care.

Figure 1. *Reported Wait Times within the Consultation Clinic after One Year*



Separate Systems of Care

Cognitive-Behavioral Clinic

The CBT clinic functions as “Close Collaboration Onsite with Some System Integration”, the fourth level of the integrated model (Heath et al., 2013). This clinic operates within a shared outpatient facility, sharing scheduling procedures and EMRs, but hold different systems of billing. It is housed at the specialty pediatric clinic. The CBT clinic specializes in child and adolescent anxiety and mood issues, along with behavioral problems and sleep disturbances. Children presenting these problems are seen by psychologists, physicians, nurses, and social workers. Licensed Professional Counselors and psychologists extend their services to the Departments of Pediatrics, Gastroenterology & Hepatology, Neurology, Endocrinology, and Oncology. Children seen at this clinic often present with a plethora of comorbid issues including diabetes, irritable bowel syndrome, and headaches.

Due to the co-morbid medical conditions, there is often the necessity for collaboration among multiple healthcare workers on a single case. Psychologists communicate with pediatricians and provide them with vital information via evaluation reports, EMRs, telephone calls, in-person meetings, and at monthly grand rounds. At these ground rounds, healthcare workers discuss complex cases and coordinate innovative services for patient care. The collaboration between healthcare workers has been reported as the clinic’s biggest benefit towards patient care.

Basic Collaboration at a Distance

Endocrinology Clinic/Psychosocial rounds

The Endocrinology Clinic operates on the second level of the integrated model, “Basic Collaboration at a Distance” (Heath et al., 2013). This clinic is housed in a separate facility away from the behavioral health clinics and retains its own billing and scheduling processes. Physicians within the endocrinology clinic come in contact with children with a number of medical and mental health illnesses. These cases facilitate communication with behavioral health providers, especially psychologists and psychiatrists, through use of shared EMRs and consultation. These physicians have found psychosocial rounds where all team members, in-person or via phone conference, discuss their most challenging and acute cases. Providers have found these rounds to be a good way to communicate their needs when working with mental health issues. An initial area of improvement dealt with the physician’s inability to consistently attend these grand rounds due to distance between clinics. Patients who require assessment by child and adolescent psychiatrists are referred to the chronic illness clinic and evaluated at that location.

General Pediatrics Tourette Disorder Clinic

The Tourette Disorder clinic at the HMC serves children with tic disorders, including Tourette Disorder. This pediatrician-managed clinic is using a unique approach where board certified pediatricians specialize in diagnosis and management of Tourette disorder and tic disorders using psychotropic medications, counseling, and management of difficulties in school learning issues. Wait time at Tourette clinic for an initial appointment is up to 14 days. Common comorbid diagnoses within these clinics include ADHD, Obsessive Compulsive Disorder, anxiety, and Oppositional Defiant Disorder. There are challenges facing pediatricians when working with the tic disorder population; first-line providers that treat tics often lack the skills and knowledge to assess and treat common comorbidities. Typically, there is little opportunity to gain this exposure after residency training is over, especially for “talk therapy” treatments, so getting this exposure during residency is very beneficial.

Methods

Participants

Participants were eighty-three primary care providers within an outpatient pediatric clinic or family medicine clinic. Participants were invited to complete a confidential and voluntary survey (described below). Of that sample, 28 responded (34%) to this survey including 52% from the general pediatrics clinic and 45% from the family medicine clinic. The final sample included a number of healthcare individuals, including child psychiatrists, pediatricians, psychologists, therapists, and adolescent residents. Of the 28 providers that responded, majority of providers reported having practiced for longer than 20 years, while a smaller portion of responders (29%) had been practicing between 10 and 20 years.

Procedure

This investigation was approved by a university based Institutional Review Board. Voluntary investigator-designed online surveys were created and distributed by a secure web application REDCap (Research Electronic Data Capture). These surveys were administered to the various healthcare workers within the aforementioned collaborative systems. Additional questionnaires were administered to providers involved in models that exist at our institution to obtain providers' subjective experience with the current models of collaboration in order to improve the model.

Results

Of the 29 providers that responded, 57% of them reported that the majority (90%) of their patient population were children. Figure 2 displays the various

challenges faced by providers within the system, with 42% of the sample experiencing a difficulty in coordinating services and monitoring referrals as the most pressing obstacle. Subsequent responses looked at physician’s interests for future educational topics as reported in Figure 3. More than half of the primary care sample (52%) reported a primary interest in a psychiatrist led training focusing on methods of case management, while less than half (39%) reported a primary interest in medication management. Consultation methods were also reported on in Figure 4, with psychiatric assessment as the most preferred form (50%).

Figure 2. *Most Challenging Aspect of Mental Healthcare for Pediatricians*

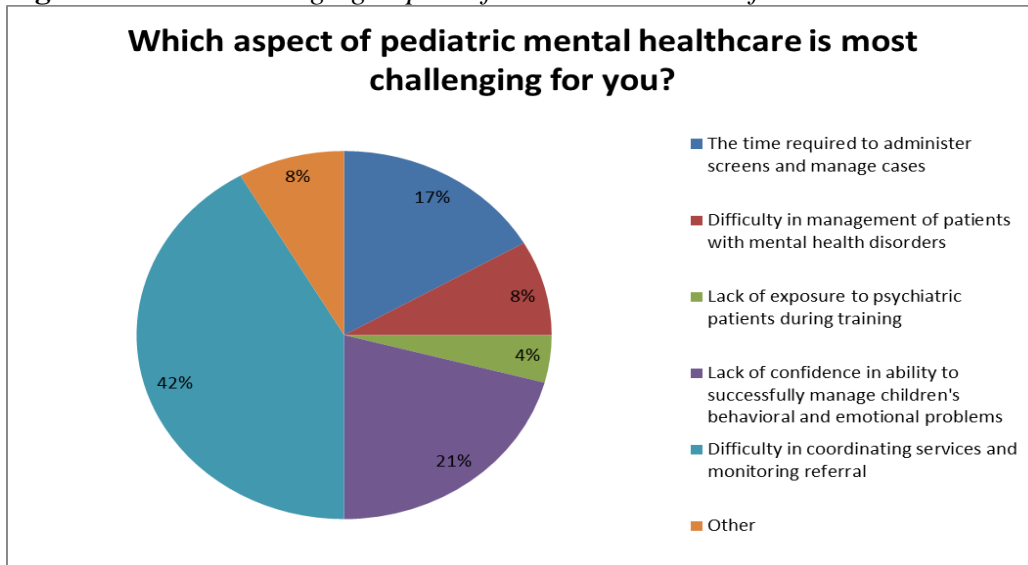
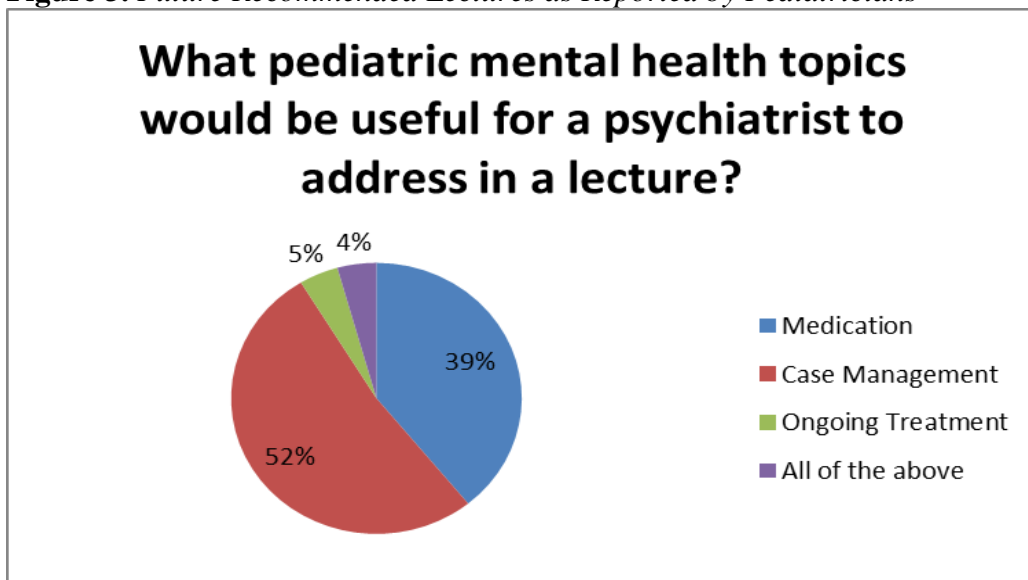


Figure 3. *Future Recommended Lectures as Reported by Pediatricians*



Discussion

Initial responses to this collaborative care model are promising. Providers and patients report shorter wait times as compared to referral to outpatient psychiatric clinic clinics; easier referral process; on-site scheduling and being able to come to the same location for all types of healthcare. These outcomes are similar to previous studies looking at the outcomes of collaborative care when compared to routine care practices, including: higher rates of patient satisfaction (Connor et al., 2006; Costello et al., 2003; Hilt et al., 2010; Lucier-Green et al., 2016; Rushton, Clark, & Freed, 2000; Weitzman & Wegner, 2015), better adherence to treatment (Connor et al., 2006; Hilt et al., 2010; Rushton et al., 2000), more positive experiences for healthcare providers (Dobrez et al., 2001; Romano-Clarke et al., 2013; Weitzman & Wegner, 2015), and overall better outcome results (Connor et al., 2006; Costello et al., 2003; Gardner, Kelleher, Pajer, & Campo, 2003; Lucier-Green et al., 2016; Rushton et al., 2000). Efforts to better educate providers are ongoing as well, so pediatricians are better prepared and demonstrate greater skills to provide care within the mental health field.

Conclusion

The American Academy of Child and Adolescent Psychiatry promotes the establishment of collaborative mental health partnerships between child and adolescent psychiatrists and PCPs in the pediatric medical home. A more communicative and coordinated relationship between the pediatric "medical home" and mental health providers is necessary in all systems serving children, including schools and juvenile justice systems. This is being achieved at the current pilot site by adjusting models to fit pediatrician and patient needs with the use of all levels of integration. Our initial experience reinforces that collaborative care is an efficient way to administer care that decreases wait times and improves adherence while improving the satisfaction of providers. Ultimately, there is no ideal model for collaborative care that fits all clinical settings. However, there is a need to tailor and evolve collaborative practices over time for each unique clinical setting. In addition, there is a need to ensure quality of care and positive experiences by obtaining feedback for patients, providers and residents, and other trainees. In our experience, prompt response to this feedback, even if immediate solutions are not identifiable, kept all team members working toward the goal of a truly collaborative care system.

References

- Carroll, K. (2013). Socioeconomic status, race/ethnicity, and asthma in youth. *American Journal of Respiratory and Critical Care Medicine*, 188(10), 1180-1181. doi:10.1164/rccm.201310-1768ED
- Chesney, E., Goodwin, G. M., & Fazel, S. (2014). Risks of all cause and suicide mortality in mental disorders: A meta-review. *World Psychiatry*. doi:10.1002/wps.20128

- Connor, D. F., McLaughlin, T. J., Jeffers-Terry, M., O'Brien, W., Stille, C. J., Young, L. M., & Antonelli, R. C. (2006). Targeted child psychiatric services: A new model of pediatric primary clinician-child psychiatry collaborative care. *Clinical Pediatrics*, *45*(5), 423-434. doi:10.1177/0009922806289617
- Costello, E. J., He, J., Sampson, N. A., Kessler, R. C., & Merikangas, K. R. (2014). Services for adolescents with psychiatric disorders: 12-month data from the national comorbidity survey-adolescent. *Psychiatric Services*, *65*(3), 359-366. doi:10.1176/appi.ps.201100518
- Costello, E. J., Mustillo, S., Erkanil, A., Keeler, G., & Angold, A. (2003). Prevalence and development of psychiatric disorders in childhood and adolescence. *Archives of General Psychiatry*, *60*(8), 837-844. doi:10.1001/archpsyc.60.8.837
- DeMaso, D. R., Martini, D. R., & Cahen, L. A. (2009). Practice parameter for the psychiatric assessment and management of physically ill children and adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry*, *48*(2), 213-233. doi:10.1097/CHI.0b13e3181908bf4
- Dobrez, D., Sasso, A. L., Holl, J., Shalovitz, M., Leon, S., & Budetti, P. (2001). Estimating the cost of developmental screening of preschool children in general pediatric practice. *Pediatrics*, *108*(4), 913-922. doi:10.1542/peds.108.4.913
- Gardner, W., Kelleher, K. J., Pajer, K. A., & Campo, J. V. (2003). Primary care clinicians' use of standardized tools to assess child psychosocial problems. *Ambulatory Pediatrics*, *3*(4), 191-195. doi:10.1367/1539-4409(2003)003<0191:PCCUOS>2.0.CO;2
- Heath, B., Wise Romero, P., & Reynolds, K. A. (2013). A standard framework for levels of integrated healthcare. In Washington, DC: SAMHSA-HRSA Center for Integrated Health Solutions.
- Hilt, R., Marx, L., Pierce, K., Sarvet, B., Becker, E., Kendrick, J., Kerlek, A. J., Biel, M., & Ptakowski, K. K. (2010). A guide to building collaborative mental health care partnerships in pediatric primary care.
- Kessler, R. C., & Merikangas, K. R. (2004). The national comorbidity survey replication (NSC-R): Background and aims. *National Journal of Methods in Psychiatric Research*, *13*(2), 60-68. doi:10.1002/mpr.166
- Lucier-Green, M., Arnold, L. A., Grimsley, R. N., Ford, J. L., Bryant, C., & Mancini, J. A. (2016). Parental military service and adolescent well-being: Mental health social connections and coping among youth in the USA. *Child and Family Social Work*, *21*(4), 421-432. doi:10.1111/cfs.12158
- Macartney, S. E. (2011). *Child poverty in the United States 2009 and 2010: Selected race groups and Hispanic origin*.
- Merikangas, K. R., He, J., Burstein, M., Swanson, S. A., Avenevoli, S., Cui, S., Benjet, C., Georgiades, K., & Swendsen, J. (2010). Lifetime prevalence of mental disorders in U.S. adolescents: Results from the national comorbidity survey replication-adolescent supplement (NCS-A). *Journal of the American Academy of Child and Adolescent Psychiatry*, *49*(10), 980-989. doi:10.1016/j.jaac.2010.05.017
- O'Connell, M. E., Boat, T., & Warner, K. E. (2009). *Preventing mental, emotional, and behavioral disorders among young people: Progress and Possibilities*.
- Reed, S. C., Bell, J. F., & Edwards, T. C. (2011). Adolescent well-being in Washington state military families. *American Journal of Public Health*, *101*(9), 1676-1682. doi:10.2105/AJPH.2011.300165
- Richardson, L. P., Ludman, E., McCauley, E., Lindenbaum, J., Larison, C., Zhou, C., Clarke, G., Brent, D., & Katon, W. (2014). Collaborative care for adolescents with depression in primary care: A randomized clinical trial. *JAMA*, *312*(8), 809-816. doi:10.1001/jama.2014.9259
- Romano-Clarke, G., Tang, M. H., Xerras, D. C., Egan, H. S., Pasinski, R. C., Kamin, H. S., McCarthy, A. E., Newman, J., Jellinek, M. S., & Murphy, J. M. (2013). Have rates

of behavioral health assessment and treatment increased for Massachusetts children since the Rosie D. decision? A report from two primary care pediatricians. *Clinical Pediatrics*, 53(3), 243-249. doi:10.1177/0009922813507993

Rushton, J. L., Clark, S. J., & Freed, G. L. (2000). Pediatricians and family physician prescription of selective serotonin reuptake inhibitors. *Pediatrics*, 105(6), e82-e82.

Weitzman, C., & Wegner, L. (2015). Promoting optimal development: Screening for behavioral and emotional problems. *Pediatrics*, 135(2), 384-395. doi:10.1542/peds.2014-3716