Original Article

Iterative and comprehensive mental health assessment and treatment planning: the mental health dashboard

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Background: There is growing recognition of the prevalence of mental health disorders in children, and of the importance for recognition and selective prevention in the pediatric setting. Pediatric Primary Care Clinicians (PPCCs) need a tool to capture their observations, weigh risks against strengths, identify problems, and develop intervention plans, particularly when specialty mental health consultation is lacking or when referral for mental health treatment is difficult.

Methods: A Mental Health Dashboard is described as an innovative clinical tool to organize information about the mental health of children. This tool considers the child's life situation and clinical manifestations, organized in eight domains, and considering the child's developmental level. The tool allows identifying symptom patterns of concern, as well as child and family strengths, and guiding intervention planning. Screening tools may augment and anchor the findings.

Results: Case vignettes for a pre-school child with trauma, a school-age child with learning disability and symptoms of ADHD, and an adolescent with mood symptoms and substance use illustrate use of the Dashboard.

Conclusions: Primary Care Clinicians, who know the patient and family, are positioned to identify emerging symptoms as well as family strengths, and to mobilize community resources for intervention planning when the option of specialty mental health referral is not indicated or is unavailable. The Mental Health Dashboard arrays observations and organizes an intervention plan.

Keywords: Pediatric mental health assessment; Dashboard

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Introduction

Pediatric Primary Care clinicians (PPCCs) are positioned to recognize emerging psychosocial problems for primary (universal) prevention and may play a critical role in secondary (selective) prevention by screening, recognizing and responding to children's mental health needs (1,2). To do this, they need a process to systematically identify and track a broad array of related domains—social and cognitive development, emotion regulation, academic skills, and family environment—involved in healthy psychosocial growth. Currently available screening tools are specific to particular domains or disorders, and do not facilitate decision-making that incorporates a child's profile of strengths and vulnerabilities.

The ideal tool would enable documenting the emergence of "sub-threshold" psychosocial problems in relation to developmental variations, and allow weighing observed symptoms in relation to the child's psychosocial context, as well as the strengths in the child and family. A tool to assist in identifying disorders and developing an intervention for selective (secondary) prevention of mental health disorders would strengthen the hand of the PPCC, who knows the child and family, and knows the community resources including, but not limited to specialty mental health referral.

Behavioral and social-emotional problems: what if the diagnosis doesn't fit the child?

To understand and classify children's psychiatric disorders, a diagnostic system must take into account genetic predisposition, developmental context, key relationships and earliest experiences. In contrast to the DSM IV (3) and DSM PC (4), the DSM 5 (5) incorporates developmental and lifespan considerations, yet while recognizing that diagnoses may present on a spectrum, still consists of a volume of distinct diagnoses. For every child who meets criteria for a mental health diagnosis, two children have troubled behavior or feelings with consequent functional problems (6). In some primary care settings, as many as 40% of children have significant functional problems, and about one in four meets criteria for at least one diagnosis. Recognizing a sub-threshold condition may be an opportunity for prevention (7). Yet, identification of children's mental health problems by PPCCs has been shown to be lacking for most (8) and an American Academy of Pediatrics (AAP) membership survey indicated that, excepting uncomplicated ADHD, pediatricians feel unprepared to diagnose, manage or medicate most common child and adolescent psychiatric disorders (9). Although behavioral, psychosocial and educational concerns present in up to 50% of pediatric office visits, detection is lower, especially for younger children and only 4–17% of psychiatric illness is recognized (8). In response to this problem, the AAP Mental Health Task Force developed an algorithm for integrating mental health care into Pediatric Practice (10).

Screening

Screening for developmental delay has been recommended by the AAP at periodic intervals (11,12). It has been widely advocated (13,14) to also use standardized tools to screen for mental health problems, and although logistically feasible (15), these are infrequently employed (16). Validated tools are available, many in the public domain (17), although most focus on specific symptom clusters (e.g., ADHD, depression, anxiety) rather than on core constructs that influence children's psychosocial development, such as the quality of relationships, cognitive and social strengths, and functional adaptation. Especially in young children, the interplay of environmental, developmental, and emotional issues means that any potential behavioral or emotional problem should be approached initially as a "trouble of unknown origin," just as fever in a young child often triggers a work-up for causes that are not readily obvious. A broad screening approach is necessary not only to better identify true underlying causes, but also to capture emerging patterns of symptoms that do not reach diagnostic thresholds in any one domain. Otherwise, emerging sub-clinical problems may stay too long below the radar, and opportunities for preventive intervention will be lost. Broad approaches also maximize the chance that if intervention seems indicated, children and families will find some aspect around which they are motivated to engage in further evaluation and treatment.

The challenge of mental health treatment planning in the pediatric medical home

Anecdotally, PPCCs experience frustration in diagnosing a problem for which they feel unable to offer treatment. Treatment planning for identified mental health conditions ideally consists of pre-referral interventions in the pediatric office, efforts to link with school-based or community programs, or, if diagnostic criteria for a DSM-5 or ICD-10-CM disorder exist, in-office treatment and/or referral to a mental health specialist. The AAP has developed strategies to assist pediatric practices to improve mental health care (18). Nonetheless, pediatricians report that they feel pressed to prescribe beyond their scope of practice or comfort level when specialty mental health consultation is not available (19), or to manage children referred back from specialty mental health providers, sometimes on multiple psychotropic medications.

We present the following article in accordance with the MDAR reporting checklist (available at https://pm.amegroups.com/article/view/10.21037/pm-20-72/rc).

Methods

The Mental Health Dashboard: a practical integrated approach

Rationale

Experienced clinicians recognize children's problems and strengths, but perspective and nuance are hard to capture in the medical record. Often however, the child's symptoms are mixed or sub-threshold, and don't meet diagnostic criteria; there are obstacles to referral; and the PPCC is aware of both contextual stressors that may be precipitating the child's problem, and of strengths in the child and family

that may mitigate it. The Mental Health Dashboard is intended to organize these perceptions, engage the family in co-observation of the situation, guide recommendations and management, and track the child's progress. Screening tools anchor concerns in relation to thresholds for symptom abnormality, but re-application of standardized screening tools focusing on specific symptom clusters at successive clinic visits, to track a child's progress, is cumbersome and time-consuming in practice.

Time-pressured practitioners need a single brief, practical tool to capture clinical observations, to document the emerging or sub-threshold psychosocial problems vis-a-vis developmental variations (4), to map apparent symptoms in relation to the child's psychosocial context, to simultaneously record strengths and weaknesses for treatment planning, and to easily track progression over time. The Mental Health Dashboard is proposed as such a tool.

This work did not involve direct patient contact. The vignettes described are hypothetical. Approval by the Ethics committee was not required.

Description

As Shown on *Tables 1-4*, the Dashboard presents children's function as a continuum from normal variation through problematic adjustments or adaptations, to emerging psychopathology, including symptoms that meet criteria for a psychiatric diagnosis. *Table 1*: Child's Situation notes observations of the child's psychosocial environment, previous traumatic experiences, primary support for the family, care-giving, functional changes, physical environment, recent events, and health status, and *Table 4*: Child Manifestations notes observations of the child's developmental level and to six domains of function in behavioral and social emotional development (I) thinking (cognition, language), (II) attention and executive functions (III) behavior and control of impulses, (IV) modulation of mood and anxiety (V) capacity for relationships (VI) self-regulation, of bodily states and processes, and (VII) gender and sexual development. An eighth domain, substance abuse, can be added for adolescents.

For each domain, the Dashboard displays Strengths, Expectable status, and Problem indicators or Red Flags, pointing to possible psychiatric diagnoses for severe problems. Selected psychiatric diagnoses are suggested. Graphic display on a single page allows capturing associations between domains, such as school-related anxiety in the child with learning problems, or relationship difficulties in the child who has suffered neglect and abuse, rather than considering them as separate, multiple problems or co-morbid psychiatric diagnoses. Of note, the domain clusters associated with the Dashboard domains are similar to those identified for preschool children (20). Since children develop in the context of their environment, especially the interpersonal environment of their closest relationships, the relationship domain is also tracked.

Screening and assessment instruments already in use may inform some of the Dashboard's domains. Developmental level, for example, always tracked by the PPCC, may be screened according to guidelines set by the AAP (21), necessary because the child's behavioral or emotional progress should be understood in relation to her/his developmental capacity. Moreover, assessments of development may change. For example, a neglected or traumatized infant/pre-school child may exhibit developmental delay, but the child may catch up when properly stimulated and cared for, or if the symptoms of trauma resolve. A pre-visit questionnaire can pre-populate the Dashboard and guide focused exploration by the pediatrician once the visit has begun (see Appendix 1 for parent and provider questionnaires that match Dashboard domains).

Table 1 presents a template for practitioner use, and *Table 2* presents anchor points.

The child's situation

Details about the Dashboard domains in this section are found on *Table 2*. Brief clinical implications are noted here.

Psychosocial environment, supports and relationships

Blighted or troubled attachment begets adaptations by the child that may evolve to resemble psychiatric symptoms, more often seen in children in unstable homes, and in out-of-home placement.

ACEs and traumatic experiences (22)

Inquiry about adverse child experiences (ACEs), stress or trauma should be routine. Toxic stress develops if the adversity is severe or extreme or prolonged with inadequate support from a caregiving adult. This over-activates the child's stress response system and has been associated with significant health and mental health problems in adulthood.

Primary support

In evaluating parenting patterns, Baumrind's (23)

Table 1 Clinical silhouette—child's situation

Domain	Strength	Expectable situation	Risk/problem, RED FLAG	Possible diagnosis
Psychosocial environment				
Traumatic experiences				
Primary support				
Caregiving				
Functional change				
Environment				
Events				
Health				

description of four parenting styles is widely used: authoritative parents consistently provide developmentally appropriate guidance and limits to support learning and shape behavior, and respond warmly to the child's needs. Authoritarian, Permissive, and Uninvolved parents present challenges for the children's self-management of impulses or understanding of their own emotions. A red flag is raised if discipline is inconsistent, harsh or developmentally inappropriate.

Parental mental health creates the emotional climate for children who are dependent on the parent for survival. Maternal depression and substance use are associated with child emotional and behavioral problems (24).

Caregiving

Caregiving refers to care by other persons than the parents. The US Department of Labor statistics has shown that in 2020 for children under 18, 71.2% of mothers are employed, despite pandemic-related increase in unemployment (25). Because non-parental care has an important impact on the child, the PPCC should inquire about the quality of this care.

Change in the living environment

Changes in the environment disrupt the child's functioning or may stress and distract parents and handicap their parenting. Millions of families, at the time of this writing, experience disruption as a result of COVID 19. If a child has been removed from the home, this is typically preceded by troubled attachments or toxic stress, compounding the stress of separation from the parents. This may apply as well to children in the juvenile justice system; 50% to 70% of these youngsters meet criteria for a psychiatric disorder (26).

Physical, economic, legal, and virtual environment

Environmental threats may be physical, e.g., toxic agents such as lead and poor air quality, or social, e.g., poverty, unemployment. Stressed or over-worked parents may substitute excessive screen time to substitute for interacting with their child.

Events

What happens to the family, happens to the child. This includes exposure to violence, disaster, medical and mental illness, and military deployment (26), and most recently the COVID 19 pandemic (27,28).

Migration and asylum-seeking is burgeoning. Even if the child is with a family member, the stress experienced is severe. A recent meta-analysis (29) reveals that for migrating children 22.71% have PTSD, 13.81% have depression, 15.77% have anxiety.

The child's health status

PPCCs attend first and routinely to the child's health. They are aware that ill children and children with special health care needs experience stress and other psychological effects as a consequence of their illness or condition (30).

The child's manifestations

Parents typically appeal to the PPCC for guidance about the difficulties they perceive in their child's development, behaviors or feelings. These are not couched in diagnostic categories such as externalizing or internalizing behaviors; they fall into domains: problems with learning or language development, problems with attention, impulsivity, fears/

Table 2 Mental Health Dashboard—child's situation anchor points

Dashboard domain	Strength	Expectable status	Risk/problem RED FLAG	Possible diagnosis
Psychosocial environment	Nurturing environment, strong family, community support systems	Average resources. Safe environment	Strained resources, sibling with SCHN or mental disorder	Disaster, exposure to community violence, unstable home, or no home, foster care DSM 5—V code (specify) ICD-10-CM—various, e.g., Z59.5 extreme poverty, e.g., Z63.29 upbringing away from parents
ACEs and traumatic experiences	Never, none, or if any: resilience, without symptoms	Usual stressors or resilience, with some symptoms	Trauma or exposure to frightening situations Significant behavioral & emotional symptoms related to past traumas	Physical or sexual abuse, domestic violence, witnessing death e.g., DSM 5: 309.81: PTSD e.g., ICD-10-CM: F43.1
Primary support	Unusually good	Average, good enough	Maternal depression, parental DD, substance abuse or mental illness	Parent incapable of providing for child's emotional needs e.g., DSM 5: V code (specify) e.g., ICD-10-CM: Z69.010
Care-giving	Unusually good	Average, good enough	Parent(s) stressed, over-worked, limited availability	Child maltreatment or neglect e.g., DSM 5: V code (specify) e.g., ICD-10-CM: Z69.010
Functional change	Stable	Birth of sibling, move to middle school etc.	Recent move to new community, illness, loss of significant relationship etc.	Loss of parent e.g., DSM 5: V code (specify) e.g., ICD-10-CM: Z63.5
Environment (educational, occupational, housing, economic, legal)	No stressors	Some stressors, but family able to manage	Several/many stressor and limited supports	
Events (disaster, violence)	None	None	Exposure to disaster, violence	
Health status	No active health concerns	No serious health concerns	Chronic or acute medical conditions	DSM 5, ICD-10-CM: listed as medical diagnosis

Adapted from Knapp, P, Laraque-Arena D, & Wissow LS. Iterative Mental Health Assessment IN Foy JM (Editor) Mental Health Care for Children and Adolescents – A guide for Primary Care Clinicians. Istaca (IL) American Academy of Pediatrics 2018. 173-226.

worries, moods, troubled relationships, and regulation of appetite or sleep. These are general domains, which roughly map onto diagnostic categories. Before considering assigning a diagnosis the PPCC must consider what difficulties or problems the child is manifesting, whether they are emerging, or prominent, and how they may interact with the child's overall functioning The Dashboard organizes the appraisal of the child's mental health by consideration of developmental levels and eight domains shown on *Tables 3*,*4*. These are now briefly explained. DSM-5 and ICD 10 CM diagnoses are italicized.

Table 3 presents a template for practitioner use, and *Table 4* presents anchor points. Brief clinical implications are noted here.

Developmental Level

PPCCs routinely assess developmental level, and the AAP has published tools to assist (11). Early intervention (EI) improves developmental progress. Recognizing developmental lag underlies rating risk on other Dashboard domains, which are linked to developmental, not chronological age.

Cognition and language

Deficits in intellectual functions, and communication disorders, are usually recognized in preschool or school settings, although parents are often aware of them before. These may be defined by testing, usually in the school, and the PPCC should advise parents to pursue this to qualify

Table 3 Clinical silhouette—child's manifestations

Dashboard domain	Strength	Expectable situation	Risk/problem, RED FLAG	Possible diagnosis
Developmental level				
Cognition, language				
Attention, executive function				
Control of impulses				
Anxiety				
Mood				
Capacity for Relationships				
Self-regulation				

the child for educational assistance. Psychosis, even in the prodromal stage, impacts thinking, communication, and self-care. Vigorous intervention is indicated for indicated (tertiary) prevention.

Attention and executive function

Problems with cognitive capacities such as attention, memory, persistence, and problem-solving, broadly termed executive functions, are best identified by history. Attention and executive function are set awry by mood and anxiety disorders and by posttraumatic stress disorder (PTSD), which features hypervigilance or numbing or avoidance. Noting problems with cognitive capacities, particularly attention, does not necessarily indicate a specific diagnosis, and must be viewed in the context of the other domains.

Control of impulses

Symptoms of impulsivity, arguing, defiance, or sudden uncontrolled anger and aggression must be assessed in the context of parenting. If they are associated with inconsistent or punitive parenting, referral for parent management or family therapy is indicated. If they are persistent and not due to child-rearing practices, diagnoses such as oppositional defiant disorder (ODD), intermittent explosive disorder (IED), or conduct disorder (CD) might be considered.

Anxiety and sequelae of trauma exposure

Anxiety is an expectable neurobiological response to stress, and likely mobilizes a person in an adaptive way. Children who have experienced neglect, particularly emotional neglect, must struggle alone with anxiety. However, even with good parenting, anxiety in some children is ignited too easily and is hard to assuage.

Anxiety disorders are not uncommon in children. Sequelae of trauma exposure, which up-regulates the anxiety response, are varied. PTSD, intense and disabling, occurs in response to a catastrophic traumatizing event, causing the child to experience injury or overwhelming threat. Three clusters of symptoms are identified by history-taking: re-experiencing, avoidance of re-exposure, sometimes with psychological numbing, and a constant hyperalert state (increased startle, irritability, anger, or sleep difficulties).

Mood

Mood disorders occur in 14% of adolescents, of whom 4.7% have severe disorders (31). Girls are more often affected; there are no differences statistically by different demographic characteristics. The Bright Futures/AAP periodicity schedule (21) recommends routine depression screening for all adolescent health supervision visits, and the US Preventive Services Task Force also recommends screening children age 12–18 in primary care (32).

Irritability is a symptom both signalling that a child is troubled and it is a symptom troubling to families. If it is severe (tantrums), frequent (≥3 times weekly), chronic (lasting weeks), and persistent (most of every day), and out of proportion to the situation, disruptive mood dysregulation disorder (DMDD) may be present (33). DMDD was developed in the DSM-5 because bipolar disorders were often diagnosed in school-aged children; however, the clinical course is different, and children with DMDD do not benefit from treatment for bipolar disorder.

Capacity for relationships

Earliest attachment underlies the lifelong capacity for relationships. Original studies of attachment have identified

Table 4 Mental Health Dashboard: child manifestations anchor points

Dashboard domain	Strength	Expectable status	Risk/problem RED FLAG	Possible diagnoses (examples)
Develop-mental level	Gifted child Precocious	Average range, age-appropriate	Area of delay Lagging, inconsistent or immature	DSM 5: intellectual disability ICD-10-CM: e.g., intellectual disability F71-F79, F79
Cognition, language	Strong verbal & cognitive ability	Average range Able to perform & express self at age level	Area of delay or disability	DSM 5: specific learning disorder (with specifiers), Communication disorders ICD-10-CM: e.g., F81.0
Attention, executive function	Above-age abilities to concentrate, learn	Focuses on tasks at age level, eager to learn	Distractible, impersistent, forgetful, in-consistent etc.	DSM 5: ADHD ICD-10-CM: F90.0-F90-2
Control of impulses	Child mature for age in managing his strong urges or feelings	Re-directable, able to wait, to name feelings, knows "good" from "bad"	Impulsive, reckless, frequent accidents, aggressive etc.	DSM 5: disruptive, impulse control, and conduct disorders ICD-10-CM: e.g., F91.0-2, F91.0
Anxiety	Resilient, able to maintain equilibrium under stress	Untroubled by anxiety, or recovers promptly if stressed	Subject to fears and worries, difficult to reassure	DSM 5: anxiety disorders, trauma and stressor-related disorders ICD-10-CM: e.g., Generalized Anxiety Disorder F4.1, PTSD F43.10
Mood	Well-modulated with good range Ability to control, express and understand feelings	Reacts as expected to positive or negative events Good range and modulation of moods	Mood swings, irritability or persistent sadness thoughts of self Harm, or over-reaction to events	DSM 5: e.g., major depressive disorder, bipolar disorder, DMDD ICD-10-CM: e.g., major depressive disorder F33.0, F33.41, bipolar disorder F31.xx
Capacity for relationships	Deep and diverse relationships Strong, intense and well-modulated interactions	Age-expected range of relationships Expressive, reciprocal, capacity for empathy	Isolated, avoidant, or confrontative, lack of empathy, cruel etc.	DSM 5: e.g., autism spectrum disorder. Conduct disorder with limited prosocial emotions ICD-10-CM: e.g., autism F84 conduct disorder with limited prosocial emotions F91.1
Self-regulation	Able to maintain adequate sleep and appetite even when under stress	Age-expected self-control. Recovers from stress-related disruptions Maintains regular routines	Sleep or appetite easily and persistently disrupted by emotions or events	DSM 5: e.g., anorexia nervosa, somatic symptom disorder, sleep-wake disorder ICD-10-CM: eating disorder F50.9 etc. Sleep disorders, G47 etc.
(Adolescent): substance abuse	None	Some experimentation	Frequent or solitary use of drugs, interfering with function	DSM 5: e.g., substance-use disorder ICD-10-CM: F1 xx, or code by substance

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that most infants and toddlers have a secure attachment with their primary caregiver. Three insecure attachment styles have been identified: insecure and avoidant, resistant and ambivalent, and disorganized/disoriented (34). Earliest relationships are understood through the transactional model (35). In this model, a child's behavior is viewed as resulting from transactions among the genotype (biological organization), phenotype personal organization) and

Table 5 Intervention plan template

FOCUS (circle target domain)	Objective (specific changes in pt. behavior in measurable and behavioral terms, w. target date for completion)	Child/family strengths/challenges (past accomplishments, current aspirations, motivations, personal attributes etc.)	Interventions (clinical activity/ treatment modality, provider of care, intended purpose or impact, as well as attention, incentives etc.)
1-Development			
2-Cognition, language			
3-Attention/executive			
4-Impulse control			
5-Anxiety			
6-Mood			
7-Relationships			
8-Self-regulation			

environtype (organization of experience in the child's own family and culture).

The PPCC will note how the child and parent relate, and obtain history about the child's relationships, whether deep and diverse, their empathy for others, or whether the child is avoidant, isolated, cruel or confrontational. The ability to form and to maintain relationships is affected by many mental health conditions. It is severely limited in autism spectrum disorder and CD, and it may be disrupted in children with impulse control disorders and mood disorders.

Self-regulation

The child learns to self-regulate attention, exuberance, impulses, fears, anger, and aggression through countless daily interactions. This depends on the intactness of the child nervous system and generally nurturing and consistent parenting. It is moderated by temperament (36).

Eating disorders exemplify a serious disruption of regulation, with a lifetime prevalence among 13–18 years old of 2.7%, and are 2.5 times more prevalent in girls (37). Asking how the child or adolescent feels about his/her weight, the PPCC will note verbal and non-verbal results. Screening questionnaires (38) may anchor symptoms. Management requires partnership between primary care and mental health.

Sleep is vital for children and their parents. Distinguishing between the wide range of parents' concerns about their child's sleep and the spectrum of sleep disturbances is a large topic, well reviewed by May and Splaingard (39). Sleep problems may be an indication of a medical disorder or a behavioral or psychiatric disorder, or they may be a sequel of poor development of self-regulation.

Gender and sexual development

Differences in gender identity and sexual orientation may render the child a target of discrimination or bullying. On the Dashboard, a strength is noted if the family supports and accepts the child's choice and wishes; risk is noted if there is distress in the child or family, or conflict about the issue.

Adolescent addiction: substance use and the internet

Adolescents should be formally screened for use of substances. Excessive internet use (e.g., 40 hours/week) that interferes with sleep or function is a topic of increasing concern.

Intervention planning

Table 5 presents an outline for intervention planning. From the domains of the Dashboard, areas of focus for intervention are identified. *Table 5* provides space for dated notes and links to a brief summary for intervention planning that identifies the target domain, the objective(s) for specific changes in the child's behavior in measurable and behavioral terms, the child and family strengths and challenges, and the specific intervention (clinical activity, treatment modality, provider of care, and intended purpose or impact). The Dashboard profile or pattern of domain strengths,

weaknesses, and the relationship between domain areas (e.g., relationship difficulties related to impulse control problems) can also be a tool for shared decision-making with the child and family to evaluate and map progress over time. The child's intervention plan tracks not only symptom reduction in a target domain, but also progression from marginal or expectable function to improved function in other domains. It allows seeing which aspects have improved after intervention, and which have not. For example, improved peer relationships following treatment of anxiety may be displayed, or child with a diagnosis of ADHD, who is also identified with a problem level for the domain of impulse control and anxiety, may show regaining of expectable function in impulse control after psychostimulant treatment, but a continuing problem with anxiety. This would indicate that additional intervention for the anxiety is indicated, or possibly that the medication has worsened the child's anxiety.

Children who don't fit in obvious categories

Finally, diagnostic approaches and diagnostic nosology must incorporate the common clinical wild card: pleomorphic symptoms following neglect, abuse and trauma. Stressful experiences mold the plastic neural connections in the young brain in persisting ways. This has important implications for establishing social-emotional function, resilience and psychopathology (40,41). Foster children, and children in other high-risk groups suffer a higher incidence and prevalence of psychiatric disorders associated with higher exposure to stressful events, and this is frequently compounded by insufficient parental buffering. The Dashboard is designed to capture elements of the child patient's life experiences and connections with caregivers and to place these in relationship to the symptom clusters that might be sequelae of early dysregulation.

Results

Putting the dashboard into practice

The Dashboard may be a particularly useful tool for training early career pediatricians, or for established practitioners seeking to improve their assessment of children's mental health, and for re-enforcing the team approach to care. Clinical vignettes for children in three age groups are presented, together with screening tools appropriate to the age and identified problem. For example in the preschool vignette, below, the screening tools used were the Edinburgh Depression Rating Scale (42) for mother, and for the child the Ages and Stages Questionnaire 3 (43), a standardized developmental screen for children 1–66 months screening communication, gross motor, fine motor, problem solving and personal-social areas. Two other vignettes for a school-age child and an adolescent are found in Appendix 2, with screening using the Strength and Difficulties Questionnaire (SDQ) (44), the CRAFFT, a screen for substance use (45), and the PHQ-A (46) for depression. Tables S8-S13 in the Appendix show the Dashboard profiles or patterns for these two cases, and their intervention plans.

Vignette #1: Maria

30-month girl Maria is brought by her 20-year-old mother for a first visit.

Social history

They have just moved to this area to live with Maria's maternal grandmother. Early stress included domestic violence associated with substance abuse by the father, currently incarcerated. When Maria was 14 months old, her mother fled with her to a shelter for battered women. Maria cried in prolonged terror "until she turned blue", and mother feared that this might kill her baby. Shelter staff referred mother to county mental health services for suicidal depression, and she was briefly hospitalized. Maria was placed in emergency foster care for four months, until mother was clinically stable and found a place to live. Mother now has no mental health follow-up and is on no medications. The maternal grandmother is a source of emotional support for mother and has a warm relationship with Maria, although she works about 50 hours a week.

Medical history

Reportedly numerous URIs, no hospitalizations. Previous medical records unavailable.

Developmental history

Milestones normal except for speech delay (mother estimates about 30 words).

Social-emotional

Maria has difficulty sleeping, fussy behavior, reckless or overactive tendencies, frequent crying, and oppositionality. With adults outside the family, she is excessively shy and at

times obviously frightened of men. Specific inquiry about trauma-related symptoms elicited a history of nightmares, and fear of men, but not other post-traumatic stress symptoms, such as repetitive or disorganized play, avoidant behavior or hyper-vigilance. A strength for Maria and her mother was their close relationship to buffer the stress they had undergone.

Screening

Screening was consistent with the history and clinical presentation, and also pointed to language delay. On the ASQ 3, Maria scored 55 for communication, (indication for referral is a score of 57). On the Edinburgh Depression rating scale Maria's mother's score was 13, in the range for possible depression, just below the threshold for likely depressive illness.

Observations

Maria's physical examination is normal. Mother appears thin and sad. Maria appears anxious and refuses to leave mother's lap for examination. Affectionate behavior was observed between mother and child, and mother was able to comfort Maria.

Questionnaires filled out by Maria's mother and the PPCC are shown In *Tables 6*,7. Drawing from that information, Maria's initial clinical profile on the Dashboard was constructed (*Table 8*).

Collaborative treatment planning

Maria's mother understood that Maria needed help in catching up with language and that, even though she had established better stability by coming to live with her own mother, Maria might need extra help to completely recover from the frightening experiences in her early life.

Intervention and referral

A referral was made to EI for a language evaluation and an Individualized Family Service Plan (IFSP). Maria's mother agreed to participate in a parent-toddler group based on the Incredible Years model (47) that also included other families who had experienced trauma. Maria's mother also acknowledged that she still felt depressed, and she agreed to call the county mental health program. Maria's intervention plan is shown on *Table 9*.

Follow-up

Follow-up after 3 months. Language evaluation documented delay. Maria's mother received specific guidance to stimulate Maria's language and vocabulary, with good results. As Maria became better able to express herself using words, she became less clingy and has begun to sleep in her own bed. Maria is "happier", but still has periods of low mood and is still wary around men. Maria's mother was evaluated by county mental health and assessed as not clinically impaired enough to qualify for public mental health services; however, she has made new friends and found part-time work, and reports that she feels "confident" and her mood is brighter on most days.

Maria's Dashboard on follow-up is shown on *Table 10*, depicting follow-up (T2) observations.

Discussion

Diagnosis in developmental and family context

Sometimes it is difficult for the PPCC to name what he/she knows, or a parent, may minimize problems (48). As recognized in the DSMPC (4) the threshold between behavioral or emotional complaints and actual psychiatric symptoms may be unclear, and the stigma of possible mental disorder may muffle important discussion on both sides of the clinical conversation. Children not meeting clinical thresholds for psychiatric disorders nevertheless may have significant symptoms (49), and impairment may predict both the need for and the response to treatment.

The PPCC may sense or recognize that the parent has a mental health or substance abuse disorder. Up to 20% of children live in such families, and are subject to individual, genetic, family, and environmental risks as a result (50). In the US, the 12-month prevalence of mental disorders is estimated to be 32.4% (51), and two-thirds of these individuals are parents (52). It is vital to recognize parental mental disorder, since 30–50% of children who have a parent with a mental disorder will exhibit or develop a psychiatric diagnosis.

As children can neither escape from nor fully master their environmental and relationship contexts, the Dashboard contains domains for the child's situation. This allows routine and explicit consideration of how observed behavior, emotions and development are moderated by family relationships, social context and life events. The Dashboard combines input from the parent or family with observations by the PPCC in a shared information base. Family engagement is thus operationalized, and planning for preventive intervention or treatment is collaborative, so the family can actively participate in implementing the intervention.

Table 6 Questionnaire parent form Maria (Vignette #1)

Domain	Parent response (trauma)	Circle the best response			Comment
		Never/0 (No)	Mild/1 (Yes—not a problem now)	Severe/2 (Yes, and still is a problem)	
My Child's experiences	Separations from parent	Never long	Longer than I month	Out of home placement	Maria saw her dad beat me. CPS took her for 4 months after we were in a homeless shelter.
	Parent stresses: specify	No	Mild	Serious	
	Parent with depression: Mother_X_ Father	No	Mild	Significant	Dad addicted to Meth We are living at my Mom's
	Parent with mental health or substance abuse concerns	No	Mild	Significant	
	Divorce or separation	No	Yes	Currently	
	Someone harmed my child	Never	A little bit	Seriously	
My Child's health	Illness or health problem	None	Mild or occasional	Severe or ongoing	Maria has lots of colds
	Asthma or respiratory condition	No	Mild or occasional	Severe or ongoing	
	Other medical problem	No	Mild or occasional	Severe or ongoing	
My Child's development	I have concerns about how my child is developing	No	Possibly	Yes	Maria only uses @ 30 words
	I am concerned whether my child is autistic	No	Possibly	Yes	
	I know where to get support for my child's development	Yes	Possibly	No	
My Child's feelings and behavior	Compared to other children, my child:				Maria is whiney and clingy. She can't settle down. She won't mind. She won't sleep by herself. She cries over nothing
	Has trouble learning or communicating	No	Somewhat	Yes	
	Is overactive	No	Somewhat	Yes	
	Has trouble paying attention	No	Somewhat	Yes	
	Is impulsive, or has risky behaviors	No	Somewhat	Yes	
	Has negative or aggressive behaviors	No	Somewhat	Yes	
	Is anxious/has fears	No	Somewhat	Yes	
	Is sometimes too sad or too happy	No	Somewhat	Yes	
	Has trouble getting along with others	No	Somewhat	Yes	
	Is shy or withdrawn	No	Somewhat	Yes	
	Has had traumatic experiences	No	Somewhat	Yes	
	Has trouble with sleep, eating, caring for him/herself	No	Somewhat	Yes	
My family & neighbors	I have someone to rely on in an emergency	Yes	Maybe	No	My mom, but she works 2 jobs

Table 7 Questionnaire provider form Vignette 1 Maria

Domain	Provider observation	0= strengths/no problem	1= Child has symptoms requiring time for advice etc.	2= Active problem requiring treatment	Comment
Child's life experiences	Trauma	No	At risk	Confirmed	Total: experience 9
	Separations from parent	Never for long	Longer than I month	Out of home placement	
	Parent stresses: specify	No	Mild	Serious	
	Parent with depression: Mother_X_Father	No	Suspected	Significant/confirmed	
	Parent with mental health concerns	No	Suspected	Significant/confirmed	
	Involvement of both parents in child's care	Yes	Somewhat	No	
	Abuse or neglect	No	Suspected	Confirmed	
Child's health	Child's overall health status	Ok	Significant problems in past	Ongoing problems	
	Child's use of health care services	Up to date	Episodic	Usual care is urgent care/ER	
	Medical vulnerability, e.g., Asthma	No	Mild or intermittent	Severe or ongoing	
	Child with special health care needs	No	Yes- with medical home	Yes- but no medical home	Total: health
Child's development	Developmental status	On track	Some delays	Global delay	Language: refer to EI; total: Development 3
	Assessment	No	Checklist	Standardized measure	
	Autism or PDD	No	Possible	Yes	
	Developmental support or resources	Not needed	Receives services (EI, MH, ECE etc.)	Needs but does not receive services	
Social emotional behavioral	Communication or Learning problem	No	Needs some extra support	Dx of LD	Maria seems to be reacting to Mom's stress—Mom seems depressed Total: Social-Emotional-Behavioral 12
	Hyperactivity	No	somewhat	ADHD Dx	
	Inattention	No	somewhat	ADHD Dx	
	Impulsive or risky behaviors	No	Upper bounds of normal	Active problem	
	Negativity, Aggression	No	somewhat	ODD, CD or DBD	
	Anxiety	No	Appropriate to age or experience	Significant, with functional impairment	
	Mood: sad, depressed, labile or manic	No	Appropriate to age or experience	Significant, with functional impairment	
	Shy or withdrawn	No	Occasional or in some situations	Limits age-appropriate experiences	

Table 7 (*continued*)

Table 7 (*continued*)

Domain	Provider observation	0= strengths/no problem	1= Child has symptoms requiring time for advice etc.	2= Active problem requiring treatment	Comment
	Relationship difficulties	No	Occasional or in some situations	Limits age-appropriate experiences	
	Traumatic exposure	No	Yes, but no trauma-specific symptoms	Yes, with ongoing symptoms	
	Regulatory problems: sleep, eating, self-care	No	Appropriate to age or experience	Significant, with functional impairment	
	Referral for mental health services	Not needed	Referred and receiving Rx	Needs, but not receiving RX	
	Psychotropic medication	Not needed	Receives and is responding	Needs, but not receiving or not responding	
Family resources and support	Adequate social support network	Yes	Maybe	No	

Table 8 Clinical silhouette Vignette 1 Maria (initial)

	Strength	Expectable situation	Risk/problem RED FLAG	Possible diagnosis
Domain				
Psychosocial environment			Isolated mom	
Traumatic experiences			Yes, 2ary to DV in past	
Primary support			Mother depressed	Maternal depression
Care-giving		OK		
Functional change			Recent move	
Environment		Currently stable		
Events			Intimate partner violence	
Health		OK		
Dashboard domain				
Developmental level		OK		
Cognition, language			Speech delay	R/0 DSM5 315.39, ICD 10 F 80-1
Attention, executive function			Possible	
Control of impulses		OK		
Anxiety			Fears of men	R/O PTSD
Mood			Possible	
Capacity for Relationships		OK		
Self-regulation			Sleep: night-mares	

Table 9 Maria's treatment plan

Focus (circle target domain)	Objective (specific changes in pt. behavior in measurable and behavioral terms, w. target date for completion)	Child/family strengths/ challenges (past accomplishments, current aspirations, motivations, personal attributes etc.)	Interventions (clinical activity/ treatment modality, provider of care, intended purpose or impact, as well as attention, incentives etc.)
1-Development 2-Cognition, language 3-Attention/executive 4-Impulse control 5-Anxiety 6-Mood 7-Relationships 8-Self-regulation	2 – stimulate language development 5, 8 – recover from early trauma, reduction of symptoms	Strong parent-child relationship, mother motivated to seek help for child	2 – language evaluation EI 5, 8 – trauma focused toddler-parent group

Table 10 Clinical Silhouette Maria (follow-up, Time 2)

	Strength	Expectable situation	Risk/problem, RED FLAG	Possible diagnosis
Domain				
Psychosocial environment		T2 mom w. friends	T1 isolated mom	
Traumatic experiences			Yes, 2ary to DV in past	
Primary support		T2 mom more confident	T1 mother depressed	R/0 ICD 10 CM Z63.9
Caregiving		OK		
Functional change		T2 more settled	T1 recent move	
Environment		Currently stable		
Events			Intimate partner violence	
Health		OK		
Dashboard domain				
Developmental level		OK		
Cognition, language			T1 Speech delay	R/O DSM 5 315.39, ICD-10F80.9
Attention, executive function		T2 less hypervigilant	T1 possible	
Control of impulses		OK		
Anxiety			Fears of men	R/O PTSD
Mood			T2 "happier"	
Capacity for Relationships		OK		
Self-regulation		T2 OK	T1 sleep: night-mares	

Comorbidity and complexity

Dimensional approaches, in contrast to categorical diagnostic systems (e.g., DSM-IV TR (3), or DSM-PC (4), have recently been invoked in order to extend diagnostic capacity for child psychopathology. This is because boundaries between types of emotions and behaviors are not always easily defined, especially for preschool children. This approach has been termed "breaking apart the phenotype" (53). It permits considering development,

adaptation, and social context, as well as emerging scientific findings. A dimensional approach enables recognizing sub-clinical conditions, and if the dimensions include protective factors, will direct selective prevention and identify options for EI. To some extent, the DSM-5 employs a dimensional approach, making it more relevant for primary and secondary psychiatric disorders (54). The Dashboard incorporates multiple problem domains, a situation commonly classified as comorbidity (co-occurrence of two or more psychological disorders) (55). Such co-occurrence has more recently been conceptualized as disorder patterns that are homotypic or heterotypic. Homotypic disorders are defined as those co-occurring in the externalizing spectrum of diagnoses (e.g., ODD plus ADHD) or in the internalizing spectrum, (e.g., anxiety and depressive disorders). Heterotypic disorders co-occur from externalizing and internalizing groups, (e.g., Conduct Disorder with Major Depression). Emerging findings about mechanisms of neurodevelopment begin to identify common genetic factors; these mechanisms influence both homotypic and heterotypic disorders accounting for the observation of overlapping symptoms observed in these disorders. For a summary, see Knapp & Mastergeorge (56).

Since the Dashboard presents an overview of the child and his or her context, this also permits observing clusters of problems rather than counting symptoms and using symptom cutoffs to meet DSM diagnostic specifications. This is consistent with the concepts of Latent Profiles Analysis (LPA) or Latent Class Analysis (LCA) (57).

From prevention to treatment: intervention and care management

The PPCC must treat the whole child, provide preventive anticipatory guidance, know when to pursue more rigorous diagnostic clarity and when to intervene. This is a tall order, and to do it all while deploying a large number of overly specific screening or diagnostic tools, and articulating with fragmented or insufficient mental health services, requires navigating unmarked, occasionally treacherous territory. The Dashboard is proposed as a tool that allows rapid focus on how the child is functioning overall (engine), incorporate screening tools as appropriate (gauges), note what progress he or she is making (speed, fuel level, odometer), and point to the direction for intervention (GPS). Of course, for a vehicle, the dashboard readings do not furnish all the information about how the engine is working or how other drivers behave. Likewise, the Mental Health Dashboard will not substitute for a full diagnostic evaluation or for evidence-based treatment. However, on a practical clinical level it can be a helpful tool for sharing information with and from the child patient and parent.

Implications for integration of primary care and mental health

The AAP has responded to the need for improved capacity and documentation to meet children's mental health needs in pediatric primary care (58,59). The AAP Mental Health Task Force (MHTF) has developed algorithms to guide recognition and assessment of mental disorders in children and adolescents, paralleling those for developmental disorders (11), as part of a logic model and domain-specific guidance for clinician decision support. Succinct clinical tools provide step-by-step decision support for management of common symptom clusters: anxiety, depression, disruptive behavior and aggression, inattention and impulsivity, as well as substance use, learning difficulties, and social-emotional problems in children 0-5, middle childhood and adolescence (60). Clinician decision support tools include algorithms to lead the practitioner from presenting complaints to diagnostic clusters, as well as guidance about use of screening tools and indications for referral. When a psychiatric diagnosis is evident, when specialty mental health services are either co-located or available, when insurance covers mental health conditions, and when the primary care provider obtains the family's agreement, these tools open the way for the child to receive care. However, identifying risks for disorders vis-a-vis the child's strengths is not captured by this model, which calls for a broader approach (60).

The Mental Health Dashboard complements the products of the AAP Mental Health Task Force(MHTF) (18).

Conclusions

A busy practitioner must be able to be both diagnostically nimble and efficient. It is not feasible to conduct extensive diagnostic assessments with multidisciplinary input in thick clinical traffic. The ideal clinical tool in such settings is analogous to a Swiss Army Knife; it has a blade for any necessary function but it fits in a pocket. Moreover, it should be family-friendly, consistent with evidence based standardized tools, interface with an electronic medical record, and allow demonstrating changes over time. It is recognized that adoption of web-based or interactive systems

is unlikely unless supported by improved payment and technical assistance (61). Yet troubled children and worried parents are daily clinical fare in the pediatric practice. While a majority of pediatricians agree that they should be responsible for identifying mental health issues in their patients (62), most report that their treatment, with the exception of ADHD, is beyond their scope of practice and should be referred to specialty mental health (63). Pediatricians and child psychiatrists agree (19) that mental health services are not readily available, and even if they were, the vignettes presented illustrate families who have difficulty qualifying for, accepting or affording specialized mental health treatment. Lacking the option of consultation or referral, the Dashboard and associated intervention planning provide the PPCC with a practical, economical approach to systematically identify problems and, collaboratively with parents, devise preventive interventions and track their effects.

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APPENDIX 1

Mental Health Dashboard questionnaire PARENT FORM Anchor points

		Circle the best response			Comment
MY CHILD'S EXPERIENCES	Trauma	never	mild	severe	
	Separations from parent	Never long	Longer than I month	Out of home placement	
	Parent Stresses: (specify)	no	mild	serious	
	Parent with depression Mother __ Father ___	no	mild	significant	
	Parent with mental health or substance abuse concerns	no	mild	significant	
	Divorce or separation	no	yes	currently	
	Someone harmed my child	never	A little bit	seriously	
MY CHILD'S HEALTH		0 No	1 Yes, but not a problem now	2 Yes, and still is a problem	
	Illness or health problem	none	Mild or occasional	Severe or ongoing	
	Asthma or respiratory condition	no	Mild or occasional	Severe or ongoing	
	Other medical problem	no	Mild or occasional	Severe or ongoing	
MY CHILD'S DEVELOPMENT	I have concerns about how my child is developing	no	possibly	yes	
	I am concerned whether my child is autistic	no	possibly	yes	
	I know where to get support for my child's development	yes	possibly	no	
MY CHILD'S FEELINGS AND BEHAVIOR	Compared to other children, my child:				
	Has trouble learning or communicating	no	somewhat	yes	
	Is overactive	no	somewhat	yes	
	Has trouble paying attention	no	somewhat	yes	
	Is impulsive, or has risky behaviors	no	somewhat	yes	
	Has negative or aggressive behaviors	no	somewhat	yes	
	Is anxious/ has fears	no	somewhat	yes	
	Is sometimes too sad or too happy	no	somewhat	yes	
	Has trouble getting along with others	no	somewhat	yes	
	Is shy or withdrawn	no	somewhat	yes	
	Has had traumatic experiences	no	somewhat	yes	
	Has trouble with sleep, eating, caring for him/herself	no	somewhat	yes	
MY FAMILY & NEIGHBORS	I have someone to rely on in an emergency	yes	maybe	no	

Adapted from Knapp, P, Laraque-Arena D, & Wissow LS. Iterative Mental Health Assessment IN Foy JM (Editor) Mental Health Care for Children and Adolescents – A guide for Primary Care Clinicians. Istaca (IL) American Academy of Pediatrics 2018. Pp 217-217.

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Mental Health Dashboard questionnaire PROVIDER FORM Anchor points

		0	1	2	Comment
CHILD'S LIFE EX-PERIENCES	Trauma	no	At risk	confirmed	
	Separations from parent	Never for long	Longer than I month	Out of home placement	
	Parent Stresses: (specify)	no	mild	serious	
	Parent with depression Mother __ Father ___	no	suspected	Significant/ confirmed	Total: experience
	Parent with mental health or substance abuse concerns	no	suspected	Significant/ confirmed	
	Involvement of both parents in child's care	yes	somewhat	no	
	Abuse or neglect	no	suspected	confirmed	
CHILD'S HEALTH	Child's overall health status	OK	Significant problems in past	Ongoing problems	
	Child's use of health care services	Up to date	Episodic	Usual care is urgent care/ER	
	Medical vulnerability, e.g. Asthma	no	Mild or intermittent	Severe or ongoing	
	Child with special health care needs	no	Yes- with medical home	Yes- but No medical home	Total: Health
CHILD'S DEVELOP-MENT	Developmental status	On track	Some delays	Global delay	
	Assessment	no	checklist	Standardized measure	Total: Development
	Autism or PDD	no	possible	yes	
	Developmental support or resources	Not needed	Receives services (EI, MH, ECE etc)	Needs but does not receive services	
SOCIAL EMOTIONAL BEHAVIORAL		0 = strengths/ no problem	1= Child has symptoms requiring time for advice etc	2 = Active problem receiving treatment	
	Communication or Learning problem	no	Needs some extra support	Dx of LD	
	Hyperactivity	no	somewhat	ADHD Dx	
	Inattention	no	somewhat	ADHD Dx	
	Impulsive or risky behaviors	no	Upper bounds of normal.	Active problem	
	Negativity, Aggression	no	somewhat	ODD, CD or DBD	
	Anxiety	no	Appropriate to age or experience	Significant, with functional impairment	Total: Social-Emotional-Behavioral
	Mood: sad, depressed, labile or manic	no	Appropriate to age or experience	Significant, with functional impairment	
	Shy or withdrawn	no	Occasional or in some situations	Limits age-appropriate experiences	
	Relationship difficulties	no	Occasional or in some situations	Limits age-appropriate experiences	
	Traumatic exposure	no	Yes, but no trauma–specific symptoms	Yes, with ongoing symptoms	
	Regulatory problems: sleep, eating, self-care	no	Appropriate to age or experience	Significant, with functional impairment	
	Referral for mental health services	Not needed	Referred and receiving Rx	Needs, but not receiving RX	
	Psychotropic medication	Not needed	Receives and is responding	Needs, but not receiving or not responding	
FAMILY RESOURCES/ SUPPORT	Adequate social support network	Yes	Maybe	No	

Adapted from Knapp, P, Laraque-Arena D, & Wissow LS. Iterative Mental Health Assessment IN Foy JM (Editor) Mental Health Care for Children and Adolescents – A guide for Primary Care Clinicians. Istaca (IL) American Academy of Pediatrics 2018. 218-219.

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APPENDIX 2

Vignette #2 Ricky

8-year old Ricky, an established patient, is seen acutely after a skateboard accident. He sustained bruises, abrasions and a right wrist sprain. His mother commented that he is struggling in third grade, especially reading and handwriting, and she has had to use access to his skateboard as reward for finishing his homework, so "when he finally gets outside, he tries to make up for lost time and takes too many risks."

Social History: Ricky is the middle of three children, with sisters one year younger and two years older. His older sister is in a talented and gifted school track, and his younger sister reads better than he does. Both parents work, and Ricky's after-school program is large and somewhat unstructured. Ricky's maternal grandmother has terminal breast cancer, and his mother spends much time on evenings and weekends taking care of her. His father's job requires frequent travel.

Medical History: surgical correction of pyloric stenosis in infancy, treated x 4 for otitis media, multiple allergies.

Developmental History: Slight delay in language acquisition.

Social-Emotional: Ricky has always been more active than his sisters, and his mother describes him as "loveable but demanding." He is eager to spend time with his father, and his mother says she has more difficulty managing his behavior when his father is away. It is most difficult to get him to go to bed and get to sleep on school nights. He had night terrors when he was younger, and still has occasional nightmares and very infrequent bed-wetting. His pediatrician previously identified that Ricky may have ADHD inattentive type, but his father is opposed to medication, and in the last couple of

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months, neither of his parents have been able to consistently help him with homework. His mother reports that his school has been responsive in making accommodations to his learning style. A student study team has conferred about his progress, but an Individualized Educational Plan (IEP) has not been developed.

Screening: On the Strengths and Difficulties Questionnaire (SDC) (42), Ricky previously scored 9 (abnormal range) on the Hyperactivity scale, but his overall difficulties score was in the normal range, as was the impact score. On an ADHD Parent Rating Scale, he previously scored in the abnormal range on the Predominantly Inattentive scale, with abnormal scores in academic performance.

Observations: Ricky is cooperative with the examination, talkative and eager to know if he can get out of doing written homework while he wears a wrist brace. When the pediatrician suggests he could do his work on a computer, he brightens briefly, but then confides that “I’m dumb anyway, so I’ll probably get way behind.”

Clinical presentation: Ricky’s pleasant, talkative demeanor is a strength, but it also helps him conceal his real struggles to learn. He knows he is “a hyper kid” and that he has to work harder than other kids at his homework. The school is aware of Ricky’s ADHD and possibly attributes his lack of academic progress to this. His mother is attempting to show firmness by requiring him to finish his homework before he can use his skateboard, but other demands on her make it difficult for her to help him, and his frustration propels him to increased risk-taking, already a feature of his ADHD.

This clinical information is consistent with findings on previous screening, but provides more detail about the current family stress, and the academic problem. Ricky’s initial Dashboard observations are shown on Table 8.

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INSERT Table 8 ABOUT HERE

Collaborative treatment planning. Ricky's mother recognized that she was less available but said she hadn't considered that the school should also be doing more to help him academically. She agreed that she should request academic testing and individualized educational plan (IEP).

Pediatric pre-referral intervention, referral: The PCC urged that Ricky's father bring him in for follow-up examination of the wrist so that he could also discuss Ricky's need for support from both parents both for ADHD and schoolwork, and possibly reconsider a trial of psychostimulant medication. They agreed that the PCC would send a note to the school endorsing the recommendation for academic testing and stating that his ADHD was mild and did not explain his reading difficulties. Ricky's intervention plan is shown on Table 9.

INSERT Table 9 ABOUT HERE

Follow-up: Four months later, Ricky's academic evaluation and Individualized Educational Plan (IEP) had been completed. A diagnosis of Dyslexia was identified and Ricky began receiving daily assistance in the school resource room. Ricky's father continued to be reluctant to consider medication for his son, but purchased a small computer for Ricky and had begun to help him do his homework on the computer, also emailing him and helping when he is on the road. Ricky's grandmother is in remission, and his mother is able to spend more time with him. Ricky is beginning to have more academic success and feels less frustrated.

Ricky's Dashboard at follow-up is shown on Table 10

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INSERT Table 10 ABOUT HERE

Vignette #3 John

14 year old John is seen for cough, fever and myalgia of 5 days duration, responding incompletely to NSAIDs, rest and fluids. He is accompanied by his mother, who hands the physician a note saying John's grades have dropped in the last 4 months, there has been a change in patterns of his friendships, and his behavior at home is withdrawn or irritable. She asks the physician to ask him if he is using drugs.

Social History: John is an established patient. He is the oldest of 3 children in an intact family. Mother currently working (RN), but father was laid off from work (engineer) and unable to find work for 6 months. John is in 8th grade with above-average academic skills and talent in guitar and piano.

Medical History: Tonsillectomy age 6. L radial fracture age 8. Mild asthma.

Developmental History: normal

Social-Emotional: Father has had history of alcohol abuse but now attends AA. Mother describes him as distant and relatively un-involved in raising the children. He spends most of his day on-line on the computer. Maternal grandfather committed suicide when John was an infant; maternal aunt and paternal uncle both have history of major depression.

Screening: on the Strengths and Difficulties Questionnaire (SDQ) (42) John's mother endorsed items totaling 8, in the normal range. On the CRAFFT screening tool (43), John endorsed that he uses marijuana to relax, and uses it when he is alone, for a score of 2.

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Observations: Physical examination was consistent with symptoms of a viral syndrome. Interviewed alone, John reports being "bummed" after he did not make the basketball team; he says he "can't shake it off." He worries because he hears his parents arguing at night and knows the family can't afford much. He is embarrassed because he wears "tacky clothes" and has acne, so "all the girls think I'm a geek". He doesn't see his best friends as much since they are more involved in sports. He admits to "smoking some weed with this new buddy of mine" on several occasions, and says it makes him feel calmer. When asked about thoughts of self-harm or suicidal thoughts, he seemed genuinely surprised and answered "Oh no, I'm not that bad off."

Clinical presentation: John's strengths are his intelligence and sensitivity. This may contribute to his vulnerability to worry about his family's situation, and his prolonged reaction to the disappointment of not making the team.

While screening with the SDQ, completed by his mother, did not identify concerns in the clinical range, the interview suggests otherwise. Typically, children and adolescents disclose more about internalizing problems than do their parents on standardized screening and assessment tools. Moreover, it is appropriate for adolescents themselves to complete screening tools. A tool such as the PHQ-A for depression (44), available in the public domain, would be more specific to this question.

The Dashboard pattern/profile for John is shown on Table 11

INSERT Table 11 ABOUT HERE

Collaborative intervention planning: Two issues require addressing: John's low mood and anxiety and his substance use. Maintaining confidentiality with an adolescent is necessary, but this need not lead to a breakdown of communication between the

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physician and the parent, if the youngster is given some control about the pacing and degree to which information is shared. John agreed to meet together with his parents and the pediatrician focusing on their shared concerns about how things were going for him in school. In this conversation, he disclosed but minimized his marijuana use and was able to communicate how worried and sad, and also how helpless he felt about the family's financial strain, and even to say he thought there was a connection with his trying out marijuana. His father was particularly sympathetic and said that he knew from his own experience how dark mood and substance abuse were connected.

Following this pre-referral intervention, the family discussed ways to improve John's situation. Referral for mental health services was not financially possible for them, but John's father said he wanted to spend more time with him and his parents said that as he was the oldest child, they would share more information with him about their plans to deal with their reduced income. The intervention plan for John is shown on Table 12.

INSERT Table 12 ABOUT HERE

Follow-up:

John met with the school counselor and developed a plan to catch up on his studies. He joined the swim team and began lifting weights with his father. His parents made themselves more available to him, particularly when his mood seemed low. He found opportunities to make his own money to buy some clothes by delivering papers and helping neighbors with yard work. He began to spend more time with his former friends. John's Dashboard at follow-up 2 months later is shown on Table 13:

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INSERT Table 13 ABOUT HERE

Table 8 Clinical Silhouette: Ricky – initial evaluation (time 1)

Domain	Strength	Expectable Situation	Risk/ Problem RED FLAG	Possible Diagnosis
Psychosocial environment		X		
Traumatic Experiences		X		
Primary support		X		
Care-giving		X		
Functional change			mom less available	
Environment			needs more school support?	
Events				
Health				

Dashboard Domain	Strength	Expectable Situation	Risk/ Problem RED FLAG	Possible Diagnosis
Developmental level		X	T1 behind in reading and writing	R/O Dys-lexia 315.00
Cognition, language			Established DX	ADHD 314.01
Attention, executive function				
Control of impulses		T1 consistent with ADHD		
Anxiety		X		
Mood		X		
Capacity for Relationships		X		
Self-regulation		X		

Table 9 Intervention Plan: Ricky

FOCUS (Circle target domain)	**OBJECTIVE** Specific changes in pt. behavior in measurable and behavioral terms, w. target date for completion.	**CHILD/FAMILY STRENGTHS/ CHALLENGES** Past accomplishments, current aspirations, motivations, personal attributes etc.	**INTERVENTIONS** Clinical activity/treatment modality, provider of care, intended purpose or impact, as well as attention, incentives etc
1-Development 2-Cognition, language 3-Attention/executive 4-Impulse control 5-Anxiety 6-Mood 7-Relationships	2- Ricky to achieve grade-level reading & writing skills by end of year. 3- Ricky to maintain current level of	2- Educated parents who are invested in child's progress 3- Ricky aware that he is "hyper" and	2- Academic testing and IEP. 3- Discuss ADHD treatment with father.

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8-Self-regulation (including, for adolescents: substance abuse	functional adaptation despite ADHD	that he has to work hard to focus etc.	

Table 10 Clinical Silhouette Ricky (time 2)

Domain	Strength	Expectable Situation	Risk/ Problem RED FLAG	Possible Diagnosis
Psychosocial environment		X		
Traumatic Experiences		X		
Primary support		X		
Care-giving		X		
Functional change		both parents more engaged		
Environment		adequate educational support		
Events		X		
Health		X		

Dashboard Domain	Strength	Expectable Situation	Risk/ Problem RED FLAG	Possible Diagnosis
Developmental level			Still behind in reading and writing	Dys-lexia 315.00
Cognition, language			Established DX	ADHD 314.01
Attention, executive function				
Control of impulses			consistent with ADHD	
Anxiety		X		
Mood		X		
Capacity for Relationships		X		
Self-regulation		X		

Table 11 Clinical Silhouette John Initial evaluation (Time 1)

Domain	Strength	Expectable Situation	Risk/ Problem RED FLAG	Possible Diagnosis
Psychosocial environment		X good		
Traumatic Experiences		X none		
Primary support			Father “distant”	
Care-giving		X adequate		
Functional change			Father depressed?	
Environment			Economic strain	

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Events		Disappointment re basketball team		
Health		x		

Dashboard Domain	Strength	Expectable Situation	Risk/ Problem RED FLAG	Possible Diagnosis
Developmental level				
Cognition, language		X		
Attention, executive function		X		
Control of impulses		X		
Anxiety			worries @ parent stresses	
Mood			low self esteem, withdrawn irritable	R/O Depression
Capacity for Relationships		x		
Self-regulation		x		
(For adolescents): Substance abuse			marijuana use with loss of function	R/O Substance use/abuse

Table 12 Treatment plan: John

FOCUS (Circle target domain)	OBJECTIVE Specific changes in pt. behavior in measurable and behavioral terms, w. target date for completion.	CHILD/FAMILY STRENGTHS/ CHALLENGES Past accomplishments, current aspirations, motivations, personal attributes etc.	INTERVENTIONS Clinical activity/treatment modality, provider of care, intended purpose or impact, as well as attention, incentives etc
1-Development 2-Cognition, language 3-Attention/executive 4-Impulse control 5-Anxiety 6-Mood 7-Relationships 8-Self-regulation (including, for adolescents: Substance abuse	5,6 John will receive more support when sad and anxious 8 John will not use marijuana to relieve anxiety or low mood.	5 Anxiety about finances shared with parents 6 Family history of depression – potential vulnerability 8 Father with past history of substance abuse	5, 6 family support school counselor exercise Monitor for recurrent episodes of depression

Table 13 Clinical Silhouette John Follow-up evaluation (Time 2)

Domain	Strength	Expectable Situation	Risk/ Problem RED FLAG	Possible Diagnosis
Psychosocial environment		X good		
Traumatic Experiences		X none		
Primary support		T2 closer to both parents	Father “distant”	
Care-giving		X adequate		

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Functional change			Father depressed?	
Environment			economic strain	
Events		T 2 Swim team		
Health		x		

Dashboard Domain	**Strength**	**Expectable Situation**	**Risk/ Problem RED FLAG**	**Possible Diagnosis**
Developmental level	T1 Bright, musical talent			
Cognition, language		X		
Attention, executive function		X		
Control of impulses		X		
Anxiety		aware of but coping with parent stresses		
Mood			At risk, but currently few symptoms	Monitor for MDD NOS 315.09
Capacity for Relationships		x		
Self-regulation		x		
(For adolescents): Substance abuse			T2 occasional marijuana use –no loss of function	

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