Chapter 7
Indirect and Direct Physician Support for Integrated Case Management in Children/Youth

> *"Good design is making something intelligible and memorable.*
> *Great design is making something memorable and meaningful."*
>
> —Dieter Rams

Chapter Objectives

- *To share the current status of management procedures available for children/youth.*
- *To discuss child/youth and family triage procedures.*
- *To describe what physicians need to know about the PICM-CAG, its anchor points, and the anchored PICM-CAG's relation to the development of care plans.*
- *To clarify primary care, behavioral health, specialty care, and insurance plan Medical Director practitioner roles and opportunities in working with low complexity, moderate complexity, and high complex children/youth when using PICM.*
- *To illustrate how PICM fits very well into pediatric-based patient-centered medical home programs.*

This chapter will build on the principles, definitions, and descriptions that are reviewed for adults in Chapter 6. The overall goal of this chapter is to assist physicians and other treating professionals interested in medical and BH care for children and youth to understand the application of case management, and specifically PICM, to this population. The intent is to help clinicians working with children/youth and their families maximize health improvement, create a therapeutic environment that maintains health stability, and, in so doing, reduce the need for use of healthcare services.

R.G. Kathol et al., *Physician's Guide*, DOI 10.1007/978-3-319-28959-5_7

Current Case Management Programs for Children/Youth: Care Coordination

Case management, as it applies to children/youth, is more complex compared to adults due to many factors. The first and most obvious relates to the number of people who are included in its delivery. Not only is there child/youth, but there are also the parents/guardians, teachers, and peers who implicitly and explicitly influence whether the care delivered will be effective and, if so, in what way. As was pointed out in Chapter 5, each of these stakeholders in the child/youth's health has his/her own issues that need addressing as evaluations are performed and treatments are given. Case management with children/youth is even more complex due to the necessary involvement of schools, daycare, community resources, and even the juvenile justice system. Finally, and perhaps most importantly, children are not independent agents. Decision-making is assumed or strongly influenced by the child/youth's parents/caregivers or other connected individuals depending on the age and situation of the child/youth.

Added to the complicated network of contributors to child/youth evaluation and treatment is the ambiguity of terms that accompanies existing case management programs and activities. Unlike for adults, the authors of this book have been unable to find a systematic approach to comprehensive case management for children/youth. Focal case management models are limited in children/youth, such as disease management [1] and discharge management [2], in the pediatric sector. Most assist and support programs for children/youth center on education about health issues related to adapting to a health condition or understanding the care process.

The most common, and most widely published, case management model used in pediatrics, often associated with pediatric medical homes, is called "care coordination" [3–7]. Care coordination is defined as the "deliberate organization of patient care activities between two or more participants (including the patient) involved in a patient's care to facilitate the appropriate delivery of healthcare services" [8]. It includes the components listed in Table 7.1 but has a wide variation in application, even in practices in which a dedicated care coordinator is present [6].

In a strict sense, care coordination in its broad description would be considered a form of case management. It is patient-centered and collaborative, assesses health aspects of children/youth, strives to build an effective care plan, coordinates care, and attempts to improve health and cost outcomes (see Table 1.2). Further, it includes core components of the case management process (see Table 1.3). However, most current care coordination programs focus on the "coordination" of care delivery, rather than additionally addressing barriers to improvement. They rely on the biomedical clinical evaluation by physicians to identify patient needs, as opposed to a comprehensive evaluation that also includes social and health system-related factors that may impact health even more than the biomedical aspects. The assistance procedures usually are invoked by the physicians directly involved in the child/youth's care who may have little time or expertise to conduct care coordination activities well [4]. While care coordination is commonly used for children with special healthcare needs (CSHCNs), in actuality studies suggest that the majority of those exposed do not have chronic conditions [4].

Table 7.1 Coordinated care

- Care is patient and family centered—patient's and family's needs and preferences are fully known and accommodated to the highest level possible
- Needed information is effectively gathered and shared across multiple sites of care, specialty providers, health systems, and community agencies
- Children/youth with special healthcare needs are reliably identified and encouraged to participate in the coordinated care program
- A care plan to link specialists, care services, and resources is created and updated on a regular basis
- Addresses all aspects of the child/youths' care needs—biophysical, behavioral health, social, and health system components
- There is a dedicated team of clinic staff members to provide coordinated care—physician, nursing, and administrative support personnel
- Proactively provides support, education, and assistance to families in connecting with needed services
- Has reliable communication and coordination policies and procedures in place
- A comprehensive list of community resources is created and updated on a regular basis
- Communicates and coordinates with a child/youth's educational, child care, and other systems and/or community agencies

In defined pediatric care coordination, the primary care physician, whether a pediatrician or family medicine doctor, working in the child/youth's medical home, takes on the role of the "case manager," although she/he works closely with her/his existing clinic-based team to facilitate needed connections on behalf to the children/youth served [4]. Ideally, a nurse or social worker may be added for dedicated care coordinator work within the PCMH, but PCMHs may be unable to support a professional dedicated to care coordination due to resource constraints, and in practice activities associated with her/his presence vary widely [6]. In most pediatric programs, care coordination does not require nor use nurses or social workers trained in case management nor does it necessarily address behavioral and non-clinical aspects of the child/youth or family situation that may be contributing to poor outcomes. Traditionally, pediatric care coordination is primarily about improving the communication and handoff process related to biomedical issues for identified children/youth, though a recent review suggests that value-added trends are evolving [6].

Care coordination has demonstrated value, especially for CSHCN [3, 4, 6, 9]. Further, it meets a major need within pediatric medical homes, i.e., having a way to ensure that communication among practitioners occurs and that transitions among providers and locations of care are smooth and coordinated. A recently published review of national care coordination programs in which dedicated care coordination staff were uniformly present indicates that a number of programs are moving beyond mere coordination activities and adding what are considered value-added "proactive" care procedures (Table 7.2). These proactive procedures are more consistent with activities found in PICM, but their presence is by no means uniform or necessarily encompassing of activities that could potentially bring value. Furthermore, PICM is unique in offering a systematic approach for comprehensively evaluating, identifying, and addressing barriers to improvement for children/youth and their families that may be implemented within programs seeking to provide value-added case management.

Table 7.2 Proactive procedures in evolving care coordination

1. Pre-visit phone calls to get updates, assess needs, and set visit agendas
2. Written care plans of health summaries
3. Preparing for complex patients by prior chart review or scheduling longer visits
4. Performing “huddles” among the care team to discuss the child/youth
5. Organizing family-oriented materials, e.g., care transition needs, special education

Data from Van Cleave J, Boudreau AA, McAllister J, Cooley WC, Maxwell A, Kuhlthau K. Care coordination over time in medical homes for children with special healthcare needs. Pediatrics. 2015;135(6):1018–1026

Case Management Triage for Child/Youth Complexity

As described in Chapter 3 (see Table 3.1), the Maternal and Child Health Bureau discretely defined Children with Special Healthcare Needs (CSHCNs) using the number, type, and impact of chronic illnesses experienced by a child/youth. Further, there are a number of studies that document the ease with which classification of children/youth into this category can be performed [10]. Based on prior studies, about 13–19 % of children/youth will be classified as CSHCNs depending upon the population from which assessments are performed [3, 10]. An alternative would be to use an ICD-9-based algorithm (see Table 3.2) to identify those with complexity using an administrative database approach, as suggested by the Center of Excellence on Quality of Care Measures for Children with Complex Needs (COE4CCN) [11]. Using this methodology, it should be possible to identify a subset of high need C-CD (see Table 3.2) patients of approximately 7 %. Regardless, identifying those with CSHCNs or C-CD is a good place to start in the triage process for children/youth with complexity since those identified in these categories will predictably have impaired outcomes and higher total healthcare cost.

Physician Understanding of PICM-CAG Anchoring and Its Relationship to Care Plan Development

Similar principles and practices for integrated case management described for adults are true for children/youth. The comprehensive multidomain assessment informs prioritization in the development of a care plan. The care plan for the child/youth and family is associated with iterative assistance and support by the case manager in collaboration with the child/youth and family, the child/youth’s clinicians, and the ancillary stakeholders in the child/youth’s outcomes. Outcomes are measured related to the care plan in real time, and approaches to assist and support services are adjusted until goals are attained, stabilization has occurred, or maximum benefit is achieved.

As with adult ICM, a pediatric PCIP informs clinical, functional, satisfaction, quality of life, and economic outcomes as management assistance is given, and it is periodically updated until the child/youth and family are ready for graduation. Unlike adult ICM, PICM includes documentation of goals from both the child/youth (presuming she/he is at an age that meaningful goals can be determined) and the parent/caregiver, in addition to those chosen by the case manager. This ensures that all participants have reasons to take active steps to improve health and function. As part of the PCIP, baseline PICM-CAG scores, satisfaction, quality of life, and economic indicators of interests are included.

Differences Between the ICM-CAG and the PICM-CAG

As with the ICM-CAG, the PICM-CAG leads to a color-coded assessment output in the form of a grid (see Tables 3.3, 3.7, and 3.8) that disentangles risk items contributing in varying degrees to poor health and cost outcomes. Consistent with the integrated case management approach, the PICM-CAG is divided into four domains (biological (“B”), psychological (“P”), social (“S”), and health system (“HS”)). Each domain contains historical (“H”), current (“C”), and vulnerability (“V”) items, but additional items are present in the pediatric grid to address risk content specifically pertinent to children/youth. For convenience, lettered notations, e.g., CS4 (current, social, 4th item), provide simple terminology for those using the PICM-CAG frequently to talk and write about individual complexity items. For instance, CS4 represents school and community participation in the pediatric grid.

Risk items are “anchored” (scored) on a “0”–“3” Likert scale based on the level of risk they pose to the child/youth. Low scores have little/no risk, and high scores indicate risk and need for action. Each number is associated with a traffic light-like color designation, i.e., “0” equals green, “1” yellow, “2” orange, and “3” red. Unlike the adult grid for which significant preliminary research has documented ICM-CAG construct validity and interrater reliability [12–19], the PICM-CAG has not been tested or validated. It was adapted from the conceptual framework and procedures used to make the adult grid with the addition of expertise from clinicians. The original 20 adult items were rewritten to make them pertinent to children/youth, and several risk areas were added reflecting aspects of life and healthcare that are specific to the pediatric population.

The PICM-CAG, thus, awaits validation studies to be certain that it is able to identify complexity with the same degree of consistency and pertinence that the adult complexity grid does. When the INTERMED complexity assessment technology was being transferred from its European home to the USA, it was apparent that without a pediatric equivalent to the ICM-CAG, many children/youth with health complexity would miss the opportunity to benefit from proactive uncovering and assistance with early life barriers to improvement. For this reason, a decision was made to create a child/youth grid using parallel development processes that would carry with it the potential for generalization from adult validation results to the pediatric grid. It is anticipated that the PICM-CAG will undergo comparable validation to the adult grid as it is used to assist children/youth. Adjustment in its content will then be made based on findings.

By introducing an unvalidated PICM-CAG built using validated ICM-CAG technology, it was reasoned that children/youth would not be denied potential benefit from its use while validation was performed. There is not an equivalent tool for children/youth in healthcare today that disaggregates actionable barriers to improvement and connects them to assistance and support procedures, even when including care coordination programs. The PICM-CAG offers an untested but theoretically helpful health enhancement process.

The PICM-CAG has the same practical usage characteristics as the ICM-CAG:

- A scripted family-centered interview is used to anchor PICM-CAG item scores.
- The individual items represent areas in need for action if they are scored “2” or “3.”
- The total PICM-CAG scores reflect health complexity in children/youth.
- Outcome documentation is core to the assist and support process.
- When goals are not being reached, iterative escalation in assistance and intervention procedures are expected.
- Graduation to independent family-based management associated with standard care is the ultimate goal.

As an example, if a child/youth is anchored with a score of “2” for CS4 (Table 7.3), this indicates that the child/youth is missing much schooling or has nonproductive school activities. Based on this anchored score, several actions would be considered by the PICM manager (Table 7.4).

As with adults, during the course of the PICM manager’s assessment dialogue with the child/youth and family, the score for CS4 also may be related to scores for other risk items that indicate a need for action such as CP2, untreated separation anxiety; HS2, inability to make and nurture peer relationships; and CHS1, no referral by the pediatrician for assistance from child/youth psychological services. Thus, as the PICM manager is creating the care plan, items CS4, CP2, HS2, and CHS1 may be associated with a goal of “productive school participation” and accompanied by assistance and support actions that address contributions from each of the connected risk items associated with the child/youth’s school participation, including encouraging referral to BH specialists for treatment of anxiety if indicated.

Table 7.3 PICM-CAG social: current state (CS4)
School and community participation—anchor points

0.	Attending school regularly, achieving and participating well, and actively engaging in extracurricular school or community activities, e.g., sports, clubs, hobbies, religious groups
1.	Average of 1 day of school missed/week and/or minor disruptions in achievement and behavior with few extracurricular activities
2.	Average of 2 days or more of school missed/week and/or moderate disruption in achievement or behavior with resistance to extracurricular activities
3.	Truant or school nonattendance with no extracurricular activities and no community connections

Table 7.4 PIM-CAG social: current state (CS4)
School and community participation—action

1. *Missing up to 1 day of school/week and few extracurricular activities*—explore interests, hobbies with the child/youth and encourage initiation of activity; involve caregiver/parent in assisting child/youth to attend school more regularly and develop peer activities
2. *Missing average of 2 or more days of school/week with resistance to extracurricular activities*—assess reasons for resistance with child/youth, caregiver, and school; clarify school's understanding of child/youth health needs; assess reasons for peer activity nonparticipation, including health of child/youth; share information with pediatrician; collaborate with caregiver, educators, child/youth, and care providers in developing a remedial plan
3. *School nonattendance with no extracurricular activities or community connections*—immediately perform actions under #1 and #2; include customized actions based on interview; explore alternative ways to interact with peers; consider case management conference with caregivers, school personnel, pediatrician, mental health professionals, others and work with them on potential solutions; follow-through on initiated activities

All historical items in the PICM-CAG are related to the child/youth's entire life, not the last 5 years as with adults, with the exception of "access to care" which targets the previous 6 months. All current items refer to the 30 days prior to the PICM assessment. Vulnerability variables refer to the 3–6-month period if PICM assistance and support were withdrawn.

Prior to starting the PICM process, children/youth, depending on age, and their family members may be prepared by reviewing the documents "Understanding 'Complexity Assessments'" (see Appendices K and L). These documents help patients and families understand the ultimate goal of the assessment process. The scripted interview contains the same seven content areas included in the adult scripted interview, but is segmented into questions for both the child/youth and parent/guardian, questions for the parent independent of the child/youth, and questions for the child/youth independent of the parent. Special attention to ages of majority for children/youth and confidentiality is necessary when working with adolescents, especially if the youth is an emancipated minor.

Since both the child/youth and family members will have a general understanding of the PICM assessment process based on the preliminary explanation, it is then possible to share the PICM-CAG grid with the child/youth and family after the assessment is complete to obtain their feedback and buy-in. This creates an atmosphere of collaboration, recognizing the important role that the child/youth and parents/guardians have in care planning for the child/youth.

Physician Understanding of the PICM Biological Domain

Unless children/youth come from populations with a focus on BH issues, the majority will have medical conditions for which assistance is needed, although there are exceptions since many children/youth with primary BH problems only seek care for

Table 7.5 PICM biological domain

- Chronicity (HB1—lifetime)
  - Risk—presence of chronic medical conditions
  - CM outcome objective—illness understanding and treatment engagement; consistent and coordinated care
- Diagnostic dilemma (HB2—lifetime)
  - Risk—inconsistent or inappropriate treatment
  - CM outcome objective—medical diagnosis clarification and targeted treatment
- Symptom severity/impairment (CB1—last 30 days)
  - Risk—uncontrolled illness or unnecessary impairment
  - CM outcome objective—stabilized illness and maximum function
- Diagnostic/therapeutic challenge (CB2—last 30 days)
  - Risk—complicated, invasive, costly, or painful tests or interventions; nonmedical contributions
  - CM outcome objective—least complicated, invasive, costly, and painful medical tests and interventions; nonmedical contribution reversal; stabilized health
- Complications and life threat (VB—next 3–6 months)
  - Risk—poor medical outcome for child/youth if CM withdrawn
  - CM outcome objective—stabilized physical illness; successful child/youth self-management

these problems in the medical setting. Table 7.5 summarizes the type of risks and PICM outcome objectives desired for each item within the biological domain. All items within this domain pertain only to medical conditions with the exception of diagnostic/therapeutic challenges (CB2). As with the adult grid, an anchored score of “3” indicates that something other than the physical illness is contributing to the poor “medical” health outcome.

High scores in the biological domain of the PICM-CAG, as in all other domains of the PICM, have attendant issues associated with them since it is not just the child/youth with the illness who reacts to the medical situation but also her/his parent/guardian. Thus, as the PICM manager documents scores, it is well to include notes or comments related to concerns about the child/youth or the parent/guardian, so that the direction of assistance on behalf of the child/youth for the care plan is better defined. For instance, the child/youth may be reluctant to engage in a treatment because it is embarrassing when administered during times of association with peers, such as pulmonary toilet for children/youth with cystic fibrosis who require treatments during the school day. In such situations, the parent may not see or understand the child/youth’s emotional reaction or may have communication challenges with the child/youth. In these cases, addressing issues related to both the child/youth and parent/guardian is critical in order for treatment adherence, and health, to improve.

At this point, readers should spend time reviewing the anchor points and associated actions for items in the biological domain for children/youth (see Appendices I and J).

Physician Understanding of the PICM Psychological Domain

All historical items in the PICM psychological domain specifically refer the child/youth's historical situation rather than the parent/guardian. Children too young to exhibit the type of coping skills, cognitive impairments, or mental health symptoms listed would receive a score of "0" on these items. However, even in infants, it is possible to know if there were pre- or perinatal adverse events. Further, risk factors for and symptoms of problematic caregiver attachment could be identified. Thus, scoring would be based on understanding of the child/youth's situation.

Table 7.6 summarizes the type of risks and PICM outcome objectives desired for each historical item within the psychological domain. This includes the two items added to the adult ICM-CAG that document cognitive function and adverse early life events, such as trauma. While adverse life events can be either physical or psychological, they are included in the psychological domain because the consequences of the events most often present as emotional, behavioral, or cognitive problems.

Like historical items in the PICM, mental health symptoms (CP2) exclusively relate to symptoms or illnesses experienced by the child/youth, the degree of impact of which is covered by the anchor points (Table 7.7). Treatment adherence (CP1), on the other hand, covers the attitude and actions of both the child/youth and the parents/guardians. Like items that address dual components, such as diagnosis and treatment (CB2), treatment adherence would be scored based on the contributor to adherence that most impairs treatment follow-through. Sometimes this is a parent/guardian who doesn't want her/his child/youth to take a medication that she/he finds objectionable. Other times this is an oppositional child/youth bent on doing the reverse of what she/he is told. Regardless whether it is the child/youth, the parent/guardian, or both, assistance and support would be directed at correcting poor adherence or the outcomes it creates.

Table 7.6 PICM psychological domain (historical)

- Coping with stress (HP1—lifetime)
  - Risk—nonproductive problem-solving capabilities or handling of stress
  - CM outcome objective—stress reduction; improved problem-solving strategies
- Mental health history (HP2—lifetime)
  - Risk—history of mental health symptoms associated with impaired function
  - CM outcome objective—mental health support and necessary follow-up
- Cognitive development (HP3—lifetime)
  - Risk—cognitive impairment interfering with ability to adapt/succeed
  - CM outcome objective—understanding of cognitive level with implementation of needed supports
- Adverse developmental events (HP4—lifetime)
  - Risk—perinatal or child/youth physical, sexual, or psychological traumas or injuries
  - CM outcome objective—mental health support and necessary follow-up

Table 7.7 PICM psychological domain (current and health system)

- Treatment adherence (CP1—last 30 days)
  - Risk—poor assessment and treatment adherence by either child/youth or parent/guardian
  - CM outcome objective—documented adherence with improved health
- Mental health symptoms (CP2—last 30 days)
  - Risk—presence of mental health symptoms/conditions in the child/youth
  - CM outcome objective—mental condition stabilization; appropriate level of care
- Mental health threat (VP—next 3–6 months)
  - Risk—poor coping, adherence, mental health outcomes if CM withdrawn
  - CM outcome objective—independent ability to handle stress and solve problems, adhere to treatment, and have stabilized mental health symptoms

As in the biological, social, and health system domains, psychological vulnerability (VP) is the indicator that the PICM manager uses to assess if the child/youth and her/his family are ready to be considered for return to standard care. A prime objective for all children/youth entering PICM is sufficient health stabilization so that they can graduate from case management, yet retain the gains they have achieved during PICM (self-maintenance). It should be noted that not all children/youth will be candidates for graduation due to ongoing vulnerability, i.e., VB, VP, VS, or VHS scores above "1." Two potential ways to handle this situation are as follows: (1) less frequent contact with the child/youth and family with close monitoring for change in their presentation or (2) acceptance that maximum benefit has occurred through PICM with discharge despite continued high vulnerability.

At this point, readers should spend time reviewing the anchor points and associated actions for items in the psychological domain for children/youth (see Appendices I and J).

Physician Understanding of the PICM Social Domain

It is in the social domain on the PICM-CAG that the most additions to the adult grid are made. This is where issues related to both the child/youth and the parent/guardian are of considerable importance. Table 7.8 summarizes historical items within the PICM-CAG. Only for school functioning (HS1), which assesses the child/youth's success in school, does the item specifically relate to only the child/youth as opposed to the youth/caregiver dyad. Family and social relations (HS2) address both the child/youth's socialization skills and the presence of family dysfunction, such as divorce or separation, parental neglect, etc. Caregiver/parent health and function (HS3), on the other hand, focuses on the health and function of the child/youth's family unit and the degree to which factors related to it may interfere with fulfilling child/youth needs and parenting capabilities.

Table 7.8 PICM social domain (historical and vulnerability)

- School functioning (HS1—lifetime)
  - Risk—impaired achievement, attendance, or behavior at school
  - CM outcome objective—school achievement consistent with ability; acceptable school behavior and attendance
- Family and social relationships (HS2—lifetime)
  - Risk—dysfunctional family; poor peer relationships
  - CM outcome objective—stabilized home; can form productive peer relationships
- Caregiver/parent health and function (HS3—lifetime)
  - Risk—unhealthy, disabled, or poorly coping parents/guardians
  - CM outcome objective—adequate support/treatment for parental health problems; parenting capabilities
- Family/school/social system vulnerability (VS—next 3–6 months)
  - Risk—poor child/youth support or nonproductive/unsafe family, home, and school environment if CM withdrawn
  - CM outcome objective—stable and safe living situation with effective parental support and productive school participation if CM withdrawn; self-management

Table 7.9 PICM social domain (current)

- Residential stability (CS1—last 30 days)
  - Risk—unsupervised, unstable, or unsafe living situation; poor nutrition
  - CM outcome objective—safe and stable nurturing living environment
- Child/youth support (CS2—last 30 days)
  - Risk—lack of child/youth support during times of need
  - CM outcome objective—accessible support system for child/youth
- Caregiver/family support (CS3—last 30 days)
  - Risk—lack of parent/guardian support during times of need
  - CM outcome objective—accessible support system for parent/guardian
- School and community participation (CS4—last 30 days)
  - Risk—school absences; absent/nonproductive extracurriculars
  - CM outcome objective—full school attendance; child/youth growth through extracurricular involvement

Three of the items in the current PICM social domain address the stability, safety, and nurturing aspects of child/youth's home environment (CS1), the support system available to the child/youth in time of need (CS2), and the degree to which the child/youth attends school and participates in extracurricular activities (CS4). All of these reflect on parent/guardian capabilities but are directed to measure what the child/youth actually experiences (Table 7.9). The fourth current item assesses the degree to which support is available to the parents/guardians related to meeting the needs of the child/youth (CS3).

Social vulnerability (VS) relates to the risk of adverse outcomes if individualized assistance associated with PICM is withdrawn from either/both the child/youth and the parent/guardians (Table 7.8). If risk factors for either the child/youth or family remain in the “2” or “3” range, gains could be lost if PICM is discontinued.

At this point, readers should spend time reviewing the anchor points and associated actions for items in the social domain for children/youth (see Appendices I and J).

Physician Understanding of the PICM Health System Domain

Access to care (HHS1) reflects the care that is fiscally, culturally, and geographically available to the child/youth (Table 7.10). Since a child/youth’s health insurance may be different than that of her/his parents/guardians (HHS1), it is necessary to clarify the specific carrier and benefits available to the child/youth through her/his plan. Further, having coverage is no guarantee that providers are available who accept the child/youth’s insurance type. This is where a level of understanding by the PICM manager about care availability based on benefits and/or information about this from her/his supervisor or Medical Director can be of importance. Without coverage accepted by geographically available providers, the child/youth may not receive indicated treatment. The same would be true for children/youth living in rural settings where specialty services, such as child psychiatry, or language-sensitive, such as Somali-speaking individuals, providers may not be available.

Treatment experience (HHS2) addresses both the child/youth’s and the parent/guardian’s experience with physicians and medical care. Regardless of whether it is the parent or the child/youth, physician mistrust, perceived physician disinterest, or

Table 7.10 PICM health system domain

- Access to care (HHS1—last 6 months)
  - Risk—poor system-based child/youth access to appropriate care
  - CM outcome objective—insurance coverage; access to needed providers
- Treatment experience (HHS2—lifetime)
  - Risk—child/youth/parent mistrust of doctors; adverse experience with care, e.g., drug reaction
  - CM outcome objective—resolved mistrust; identified acceptable providers
- Getting needed services (CHS1—last 30 days)
  - Risk—logistical inability to get needed services
  - CM outcome objective—money, transportation, referrals, etc., for health needs
- Coordination of care (CHS2—last 30 days)
  - Risk—noncommunication and collaboration of providers; iatrogenic worsening
  - CM outcome objective—provider communication; care coordination and transition
- Health system impediments (VHS—next 3–6 months)
  - Risk—poor access to and/or coordination of care if CM withdrawn
  - CM outcome objective—persistent access to and receipt of needed and coordinated services from acceptable providers

bad experiences in the health system are predictors of nonadherence and poor patient-provider communication.

Getting needed services (CHS1) and coordination of care (CHS2) both specifically address issues related to the child/youth and may present special areas of concern, especially if the child/youth has a complicated health situation, such as concurrent medical and BH difficulties. CHS1 pertains not only to the family's ability to get the child/youth to appointments and meet out of pocket expenses, but it also documents whether the child/youth is receiving outcome-changing specialty care, such as for BH conditions. When selected conditions are not improving and/or referrals for specialty care are not forthcoming, then the child/youth would not be "getting needed services."

A similar challenge arises for youth when they are nearing the need to move to "adult" services and care. Transition from pediatrics to adult physicians can be a daunting task for transitional age youth with complicated health conditions. Many adult providers are reluctant to accept new patients with health complexity, as they may have poorly paying or nonexistent insurance plans due to their complicated health history. This, of course, is changing with insurance packages that do not penalize for preexisting conditions, but in practicality, many of those insurance plans remain unaffordable since the benefit structure may transfer medical expenses from the plan to the young adult through copayments and deductibles.

Finally, CHS2 confirms that the providers for the child/youth are in communication with each other and are attempting to coordinate the services provided. Most challenges associated with this risk factor occur when children/youth have both medical and BH conditions since care delivery settings and medical records are often separate. It also becomes a challenge when a youth is transferring to adult care.

Physician Participation in PICM

PICM has standardized definitions and well-defined characteristics, processes, and operating principles. Confusion arises in how this program specifically compares to programs or services that include care coordinators, care managers, and complex case management. Each of these terms refers to activities that may be incorporated into the pediatric PCMH [20, 21]. Case management can potentially bring great benefit to the child/youth and family, but currently carries a level of confusion or ambiguity about who is in charge of and carries out the support activities [4, 6]. Program descriptions are also quite varied on what kinds of assessment and assist activities the terms include.

The following represents case examples of the types of physician involvement that might be expected based on the levels of case management activity. They may all be seen as part of usual care in a PCMH. These cases and their discussion emphasize how physicians may be involved. The case examples are intended to provide thoughtful reflection on establishing "best practice" within the readers' organizations.

Low-Intensity Case Management: Callie

Callie is a 13-year-old girl with severe asthma that is well controlled. She is on an asthma action plan that is updated every 6 months. She uses an inhaled corticosteroid, oral montelukast (Singulair), and has ready access to a rescue inhaler and oral antihistamine. She has received immunotherapy—allergy shots—supervised by her allergist. Recently omalizumab (Xolair) was added after prior authorization. Callie was adherent to her treatment regime and had no barriers to treatment. Well-controlled asthma allowed Callie to compete in her favorite sport—soccer.

One case manager, Joan, and one utilization manager, Sara, supported Callie's care. Joan was clinic based. She assisted 67 patients with severe asthma in her primary care pediatric office. Her duties included:

- *Tracking needed follow-up visits and the timeliness of asthma action plan reviews through the clinic's electronic patient registry*
- *Ensuring that specialists' reports and communications were tied to the patient's records*
- *Alerting clinicians if important changes occurred*
- *Coordinating specialty referrals*
- *Assisting with prior authorizations, such as for omalizumab*

Sara was commercial insurance company-based. She resolved benefit management questions, such as prior authorization procedures for omalizumab. Her job was to review clinical information and previous medication attempts and contact the patient or clinic, if needed, to ensure that optimal asthma management steps were in place before omalizumab approval. Interestingly, the insurance company called Sara a "case" manager.

Both Joan and Sara focused on targeted tasks. Joan attempted to assure health stability for an at-risk youth. Sara adjudicated approval of off-formulary medications. Callie had no issues related to adherence or resistance to treatment. Specialty care was coordinated. Even approval for Xolair turned out to be uneventful.

Physician interactions with Joan and Sara differ depending on the physician's position. The primary care physician is in direct communication with Joan. Depending on the stability of Callie's asthma, contact may vary from daily to rarely. The intent is for any problems to be identified early and dealt with effectively before complications arise. This would be considered a clinical enhancement since quality of care improves and adverse outcomes can be prevented compared with "usual care." Since Callie's asthma has been controlled and stable historically with little in the way of case management assistance, however, the risk for negative outcomes is low; thus, there is likely to be little in the way of cost savings.

Given Callie's presentation and history, Callie's allergist has had no interaction with Joan and does not even know that Joan is a part of the treatment team. Rather, Joan merely assures that the allergist's recommendations reach Callie's pediatrician and that adherence occurs in the absence of contraindication. Only if recommendations are unclear, adherence issues are present, or family concerns arise would the allergist hear from Joan, but most often only if delegated by her pediatrician.

A physician working as health plan Medical Director uses her/his background and expertise to review Callie's indications for approval of omalizumab. Criteria in today's world are generally well defined. This makes it possible for most determinations to be carried out by Sara from the paperwork submitted by Callie's pediatrician or occasionally telephonic clarification of information from clinic staff. Only if there is question of whether clinical criteria are met would the Medical Director become involved. If Medical Director involvement is needed, she/he usually applies her/his judgment, but occasionally there is a need to call the primary care clinician for additional information that would support or negate the medication request.

Physicians in each of the three described roles contribute in different ways to Callie's health outcome. The primary care physician directly supervises and works with Joan and only indirectly interacts with Sara by completing medication authorization paperwork. Occasionally, the primary care physician will be contacted by the health plan Medical Director when medication authorization requires additional information. The allergist will be unlikely to know of the existence of either Joan or Sara as a part of her/his evaluation of Callie. The health plan Medical Director will be in direct contact with Sara and virtually never with Joan since Joan is employed by the clinic. Joan would access her clinic's Medical Director for guidance for patients with complicated issues or treatment nonresponse as described in the next cases.

Moderate- to High-Intensity Case Management: Yolanda

Yolanda is a 13-year-old girl with moderate to severe asthma and goes to the same primary care clinic as Callie. Joan is also involved with Yolanda. Yolanda's situation is not nearly as favorable—or straightforward—as Callie's, which puts additional strain on Joan's time, efforts, and even patience. In addition to asthma, Yolanda also has oppositional defiance disorder, attention-deficit/hyperactivity disorder, and school performance issues. Yolanda's mother is a single parent with her own stresses. Tobacco cessation is something that her mother has tried numerous times with no success. Further, she reports that it is unsafe to leave her apartment to smoke. Secondhand smoke in Yolanda's apartment, unfortunately, is a strong asthma trigger.

Yolanda's mother has health insurance through her employer, but it has "bare bone" benefits with a narrow specialty network and strict referral requirements. The medication formulary options available to manage Yolanda's conditions just don't seem to work well. "Branded" products are too expensive but would likely be more effective and better tolerated by Yolanda. As it is, the current products cause unpleasant side effects and do not effectively manage her asthma and other conditions. Yolanda frequently uses the emergency department for asthma, out of control behavior, or a combination of the two.

As in many clinic settings, Joan is expected to perform her care coordination role in addition to her regular nursing activities including providing direct patient care, *such as immunizations and urgent telephone access for families. As a result, she has little time to effectively assist and support Yolanda in achieving better outcomes. Even if she had time, she knows of few BH resources to help Yolanda. Joan had always been a "medical" nurse and had little experience with BH issues. She did the best she could, but BH support for Yolanda was at best haphazard. Yolanda's pediatrician does the best he can at medication management, but he is fighting an uphill battle given Yolanda's living in a smoke-saturated environment and his limited knowledge about BH treatment. At the end of the day, Yolanda was unable to connect with specialty services, either on the medical side or the BH side.*

Yolanda, like Callie, has commercial insurance, but she is hampered in obtaining needed services because of the narrow provider network the plan supports and by physician shortages due to a recent expansion of covered patients in her state. Though BH care is part of Yolanda's coverage, BH specialists have 6-month waiting lists and are located across town from where Yolanda lives. Since Yolanda is using high levels of health services, she is also a candidate for health plan-based case management, but Yolanda's mother does not know what case management is nor that she can ask for help as a part of that program. Regardless, she is suspicious of the health system and usually avoids involvement even when it may be available.

In this scenario, Yolanda's pediatrician is aware of Yolanda's issues and encourages Joan to help as much as she can, but the operational clinic environment is not set up to effect change in Yolanda's health outcomes. Joan, while being tasked with assisting and supporting Yolanda, as case manager, does not have the time, the resources, or the knowledge to impact change. At the health plan level, the Medical Director and her/his case managers are unaware that Yolanda exists. Neither is involved in supporting her care, even though she has already been identified as a target for health plan-based case management. Health plan case management lists far exceed the ability of managers to initiate contact, so Yolanda and her mother never received a call. Thus, how could Yolanda's situation be improved?

This scenario is one in which a physician working with either a clinic or health plan case manager could intervene with improved outcomes, presuming that at least one of the case managers had dedicated time, assessment findings, and tools. On the clinic side, Joan would ideally be in a position to bring cases like Yolanda's to the physician's attention and then work through barriers to improvement. Health plan-based case management could also have worked for Yolanda.

With this case management environment, the care plan would include targeting asthma prevention and treatment from specialists within Yolanda's network of providers, obtaining approval for medications outside the health plan formulary as recommended by Yolanda's physicians, actively searching for and identifying willing behavioral health providers for Yolanda and her family, helping Yolanda's mother reduce her tobacco use within the house, and systematically following up on outcomes. Joan would also expand her assessment to uncover other clinical and non-clinical factors that may be contributing to Yolanda's persistent symptoms and high emergency room use. Finally, there may be community or school-based resources to benefit Yolanda's course.

In attempting to maximize Yolanda's health, it is possible that Yolanda's pediatrician could connect with the health plan Medical Director in seeking formulary exceptions or substitutions. During this process, a request could be made for alternative case management services through the health plan that are not possible for fiscal reasons in the pediatrician's clinic. Similar expectations for the health plan case manager would be anticipated as those described for Joan above. In fact, a health plan case manager may be able to identify geographically accessible BH providers who could be accessed quicker than might occur when going through usual clinical channels since she/he would have convenient lists of network providers.

Complex Integrated Case Management: Renaldo

Renaldo is a 9-year-old boy who has a long list of medical diagnoses. His medical diagnoses, however, pale in comparison to other considerations, all of which place him at risk for suboptimal health outcomes. He had a near-drowning event as a toddler when he wandered into an unsupervised swimming pool, sustaining a significant hypoxic injury before he could be pulled out and resuscitated. He has moderate cerebral palsy, mostly affecting his lower extremities, but it also interferes with fine motor control of his hands. Hypoxic injury also impacted his visual acuity, but vision evaluations have been sorely lacking. He has residual cognitive impairment and chronic lung disease resulting from that near-drowning incident. Lung problems are complicated by wheezing due to sensitivities to pollens, dust mites, and roaches. He also suffers from chronic sinusitis that exacerbates his migraine-type headaches.

As if medical problems were not enough, he also carries diagnoses of autism spectrum disorder and attention-deficit/hyperactivity disorder. Renaldo exhibits impulsivity, frequent outbursts of anger, and oppositionality that are challenging to de-escalate. Multiple medications have been tried for Renaldo's medical and behavioral problems. The only ones that seemed to produce benefit are now "off formulary" for Renaldo.

Renaldo's father sustained a workplace injury and is permanently disabled with additional medical costs of his own. Even though his mother works full time, his family's financial situation is strained. They are typically behind in their rent payments. Support for the family by other family members and friends is limited. Now that Renaldo is entering preadolescence and is becoming taller and heavier, no one wants to take care of him due to his behavioral challenges. He has three younger siblings—preterm triplets now 5 years old—who did not escape the medical complications of prematurity and the multiple gestation pregnancy.

In school Renaldo is in a mainstream classroom with typically developing children, but he needs more intensive one-to-one supervision as well as therapeutic services to address his specific disabilities that are lacking due to the school district's budget constraints. Renaldo's mother is too overwhelmed by all the stresses in her life to be an effective advocate within the school system to obtain additional services. Participation in after-hour school activities and community events is not *an option for Renaldo, though he would likely benefit by some sort of structured—and highly supervised—play time with other children.*

Health insurance presents the final hurdle for Renaldo. He is eligible for Medicaid, but this is not an easy system for the family to navigate or find ready access to primary care services. Specialty care, physical therapy, and occupational therapy have not been available due to restricted clinicians and services and a lack of someone to help the family access appropriate services and referrals.

Joan and a health plan case manager using traditional disease-oriented case management approaches would experience major challenges in assisting with the multidomain health risks found in Renaldo's situation. Either would need time, a complex case management assistance process with potential to bring value, and training in its use to effect change. This requires a new way of looking at the assistance and support process, the PICM way.

PICM: A Solution for Patients Such as Renaldo

With "usual care," Renaldo and his family fall between the health system cracks. Renaldo receives only episodic, urgent, and emergent care. To highlight the interventions and improvements in outcomes that are possible with integrated case management, opportunities for improved outcomes in patients like Renaldo are described below. To be successful, however, changes in how Renaldo is assessed and assisted are necessary.

The first requirement is that the delivery system or health plan adopts the pediatric integrated case management model. The sponsoring organization's leadership must consciously decide to commit the resources needed to supply full multidomain and cross-disciplinary assist and support services. Once completed, case management work processes would have the characteristics described below, and physicians would contribute to their development and implementation in several ways. Renaldo's example is idealized for the purposes of illustration, but the key points are applicable to similar children/youth presenting with need for complex integrated case management capabilities.

Complex Case Triage

Population triage is an important antecedent to the initiation of PICM. Renaldo has to "trigger" for entry into the queue. Depending on the organization, this can be driven by prioritizing algorithms informed by the total cost of care, qualifying diagnoses, hospital/emergency room admissions, number of physicians involved in the care, number of medications used, or a combination of the above. Direct referral for case management services could also be an entry option, but it would need to be limited to defined parameters understood by referring physicians. Physicians will usually have direct input about the criteria used to identify patients for PICM consideration. This process is known as "stratification."

The final step in the triage process is determining if the child/youth and family are willing and able to engage in the assistance and support process. If the family and/or child/youth cannot be contacted, if they exhibit active resistance to the PICM assessment process, or if they have costly and/or complicated health situations that would not be appreciably improved by PICM procedures, then they are not candidates for participation. Engagement by children/youth and families that can benefit from engagement is critical for maximizing value of the PICM program for patients and the system. This component of triage is called "prioritization."

Whether physicians are among those involved in developing triage criteria or those supporting PICM engagement from their practices, it is important for them to assure that the stratification and prioritization process will reasonably target those best suited for PICM in order to maximize the return on the PICM investment. It is also important that PICM managers are assigned the few most complex patients from the practice or health plan to allow them to focus on the outcome changing activities needed to reverse health and cost barriers for this resource-intensive population.

Physician Involvement After PICM Assessment

Once a child/youth and the family have agreed to participate in PICM, completion of the pediatric scripted dialogue that allows anchoring of the PICM-CAG is initiated. Regardless of the setting in which the assessment is completed or the sponsoring organization (clinic, hospital, ACO, health plan, case management vendor, government program), a full assessment of the biological, psychological, social/family situation, and health system factors needs to be conducted. Highlights for Renaldo's PICM-CAG (Table 7.11) in layperson's terms are summarized above and below the grid:

Biological Domain

- Cerebral palsy—untreated; interferes with mobility and fine hand motor control; will deteriorate without physical and occupational therapy
- Vision—inadequately assessed visual impairment; impacting development and school success
- Asthma—uncontrolled; immediate threat to life
- Allergies—unassessed; contribute to asthma control, likely chronic sinusitis and headaches
- Ineffectively treated medical conditions—exacerbation of behavioral symptoms and impaired participation in school

Psychological Domain

- Autism spectrum disorder—untreated; interferes with medical treatment, reaching developmental milestones, and academic achievement

Table 7.11 Renaldo's PICM-CAG at baseline

Baseline	HEALTH RISKS AND HEALTH NEEDS					
Renaldo	**HISTORICAL**		**CURRENT STATE**		**VULNERABILITY**	
Total Score = 64	Complexity Item	Score	Complexity Item	Score	Complexity Item	Score
Biological Domain	Chronicity **HB1**	3	Symptom Severity/Impairment **CB1**	3	Complications and Life Threat **VB**	3
	Diagnostic Dilemma **HB2**	3	Diagnostic/Therapeutic Challenge **CB2**	3		
Psychological Domain	Coping with Stress **HP1**	3	Treatment Adherence **CP1**	2	Learning and/or Mental Health Threat **VP**	3
	Mental Health History **HP2**	3	Mental Health Symptoms **CP2**	3		
	Cognitive Development **HP3**	3				
	Adverse Developmental Events **HP4**	3				
Social Domain	School Functioning **HS1**	3	Residential Stability **CS1**	2	Family/School/Social System Vulnerability **VS**	3
	Family & Social Relationships **HS2**	3	Child/Youth Support **CS2**	2		
	Caregiver/Parent Health and Function **HS3**	3	Caregiver/Family Support **CS3**	2		
			School & Community Participation **CS4**	2		
Health System Domain	Access to Care **HHS1**	2	Getting Needed Services **CHS1**	3	Health System Impediments **VHS**	2
	Treatment Experience **HHS2**	1	Coordination of Care **CHS2**	1		

- Cognitive impairment—unassisted; completed assessment is needed to understand assistance approach and future expectations
- Anger and oppositional behavior—untreated; interferes with school and peer socialization (may be exacerbated by sinus pain and headaches)
- ADHD—untreated; interferes with school and peer socialization

Social Domain

- Financial and housing insecurity—stable but inadequate family resources; behind on rent payment
- Parent support—limited social support for Renaldo's parents
- School services—qualifies for support services but only has a "babysitter" in class; no IEP (individualized education program)
- Interaction with peers—essentially none

Health System Domain

- Primary care clinician—none
- Designated specialists—no involvement
- Coordination of care and communication between providers—few providers involved to communicate
- Access to services—long waitlists for network provider if any are available at all
- Experience of care—limited to episodic urgent and emergent care

Location Specific Physician Participation in PICM Management

Health Plan, Case Management Vendor, or Government Program Medical Directors

After completion of the PICM-CAG, there are multiple points at which physicians may become involved on behalf of Renaldo in the PICM process. The nature of the contribution of physicians depends on their location of employment in relation to the PICM program. If a health plan, case management vendor, or government program is the sponsor of the PICM program, their non-clinic-based (offsite) PICM managers will assess and assist the child/youth and their family. When this is the case, organizational Medical Directors should actively collaborate with the PICM managers to assure that:

- Care plans contain appropriately developed goals and actions for active cases.
- Care plan goals are being accomplished on behalf of the children/youth and their families.
- Assistance and care delivery escalate when expected improvement is not occurring.
- Participating children/youth and families are deriving benefit (PCIP).
- Members of the active caseload are moving toward graduation.

In addition to working with the PICM managers to initiate the assistance process, organizational Medical Directors would also be tasked with communicating with the child/youth's clinicians as a clinical support expert in an attempt to ensure adequate progress. Not only do Medical Directors provide a sounding board for the clinicians about additional possibilities for the child/youth when progression is not occurring, they also may have information that the clinicians do not possess, such as network providers who might contribute to care, formulary medications that might be considered, or non-clinical assistance procedures that were picked up on the PICM-CAG but not available through the standard medical or behavioral assessment.

For clarification, Medical Directors who are part of case management programs, such as PICM, do not contact treating physicians to adjudicate benefits or establish medical necessity. Unfortunately, this is the most common interaction that primary care physicians have with Medical Directors at health plans, often with negative consequences. In PICM and similar case management programs, Medical Directors should be serving as professional resources to brainstorm about complicated patients who have often failed first- and second-line treatment. When Medical Directors participate in this way, they can often be of great value to primary care physicians and children/youth. They often possess information, such as the prioritized PICM-CAG and options that are not readily apparent to the primary care physician, such as flexing coverage benefits to include certain non-network providers or non-formulary medications.

Offsite case management programs differ in how they execute the case management process. One option is to have very direct and frequent interaction between a

Medical Director and a case manager. In that situation, a case manager would bring primarily cases with health complexity to the Medical Director. Together they would work through the different challenges and options, cocreating a care plan and documenting progress. Less desirable from the perspective of PICM, other offsite case management Medical Directors do not take active roles in the work processes of case managers, but rather serve as resources when managers feel a need for help. With less active collaboration, pertinent issues related to health improvement may be missed, potentially compromising outcomes and making the case management process less efficient.

Physicians Employed by Clinics, Health Systems, or ACOs

Physicians may be the front-line clinicians caring for complex patients and collaborating with PICM managers, regardless of who sponsors the PICM program (i.e., offsite or onsite in regard to patient care). The primary care physician who accepts Renaldo among her/his patient panel would first review Renaldo's PICM-CAG and the care plan (CP) created by the PICM manager and perform similar tasks to those listed above for Medical Directors. However, in the case of the primary care physician, she/he makes decisions related to health evaluations and the treatment of illness and remains "in control" of the overall management of Renaldo. The primary care physician's support of the family's engagement in PICM is crucial, as is ongoing review of the care plan and responsiveness to pertinent action items.

In very complex patients such as Renaldo, collaboration among physicians, the child/youth, family, and PICM manager is necessary to help prioritize case management actions. Critical items should be addressed first, such as control of potentially lethal asthma attacks, but important additional, less dangerous, items should eventually reach the level of action. Care is required, in cases such as Renaldo, that too much is not tried at once. Child/youth and family collaboration is also important particularly in these initial steps. It is also important to incorporate Renaldo's mother's clinical and functional goals into the PCIP to ensure engagement and participation in the care plan by Renaldo's family.

Actions related to less urgent priorities, such as partnering with the school system to develop and implement an effective IEP, initiating BH assessment and treatment, or connecting Renaldo and his family with community resources, can be initiated while initially addressing more pressing health-stabilizing activities. That is the beauty of the PICM-CAG: it highlights where goals and actions are needed while also supporting prioritization through scores and color codes. The PICM-CAG serves as an ongoing reference and guide as managers and families work together to address barriers to health.

As children/youth and families engaged in PICM near the point of graduation, preventive activities, increasingly assumed by Renaldo and his family, are reviewed and implemented. For instance, there may be community groups or school or faith-based organizations with programs that could provide normalizing opportunities to introduce Renaldo to peer-related play and interactions. Knowledge and consideration of these resources that are traditionally outside the healthcare system are important contributions provided by the PICM manager in coordination with Renaldo's primary care physician.

Renaldo will need a variety of consultations with specialists once the initiation of the care plan reaches the stage of full deployment. It is important for those who become involved with Renaldo to know that a PICM manager is involved in the case, to share the PICM-CAG assessment and its explanation, and to help them understand the value that a PICM manager can bring to Renaldo's clinical situation and perhaps life circumstances. By taking these steps, Renaldo's specialists, whether from medical subspecialties or behavioral health programs, become a part of the clinical team contributing to total health outcomes. This is important, especially since behavioral health specialists typically are disconnected from medical services. Communications may be limited by resource availability and/or privacy concerns. Inherent in the PICM work processes is cross-disciplinary support, including enhancing coordination and communication among all specialists, community resources, and the primary care physician.

Renaldo's BH issues are well beyond those that are generally addressed by primary care physicians. Likewise, even the BH specialists involved in his care will require a level of sophistication and robust understanding of child development, mental illness, and family dynamics. For this reason, the PICM managers will assist Renaldo, his family, and the primary care physician in accessing needed levels of psychiatric services. Not infrequently, this will need to be done via telepsychiatry due to the limited supply of child mental health specialists, and telehealth is covered in greater detail in Chapter 8. Also included in the PICM manager's charge would be documentation of BH outcomes along with medical outcomes for Renaldo.

For Renaldo, enrollment in a PCMH is an important initial step, either through a pediatric or family medicine primary care clinic. PCMHs can be effective in their management of patients like Renaldo, especially when they possess care coordination capabilities [4, 6]. If Renaldo's medical home has a mature case management program, preferably that incorporates PICM practices, it has significant potential for enhancing value for children/youth with health complexity.

Regardless of the sponsoring organization for PICM managers, the clinicians for participating children/youth and families will necessarily be involved whether they choose to collaborate or not. Sometimes the contact is minimal, in part, because of the lack of appreciation by the sponsoring organization for the value that clinicians bring to the PICM process and in part due to reluctance of clinicians to collaborate with programs about which they have little understanding or are not in control. It is helpful for families and the health system when clinicians treating participating children/youth and families actively collaborate in PICM management activities, even when the program does not emanate from the clinical setting in which they work. As long as the principles and practices of the manager are consistent with PICM, it does not matter who "owns" the program. What matters is how effectively it achieves improved health and cost outcomes for participating children/youth.

Physician Support for Measurement of Health and Cost Outcomes

To document the value of PICM for the sponsoring organization, the PICM process itself includes a record of outcomes associated with care plan successes (MP3) as well as clinical, functional, satisfaction, quality of life, and financial measures (ROM). The PICM manager updates these two documents repeatedly throughout the course of PICM assistance. After graduation, the final report on the follow-up PICM-CAG, outcome changes documented on the MP3, and the changes (improvement or worsening) noted on the ROM provide evidence for whether and how value has been given to Renaldo.

Renaldo's level of complexity is substantial. As a result, early in the course, his PICM manager and clinicians will recognize that change expectations are likely to be measured in terms of months, if not years. Renaldo and his family will likely need PICM assistance for some time before they can manage his care independently. Renaldo also has the anticipated problem of transitioning from pediatric to adult care within the coming years. Furthermore, each developmental phase will bring other health-, social-, and system-related challenges that need to be approached in a thoughtful and organized manner. Physicians have the dedicated education and experience to identify and anticipate these challenges and offer the expertise for identifying actions that may overcome barriers to achieve health.

Summary

Pediatric physicians have a very direct and important role in supporting integrated case management activities. The first task is to define very explicitly what level of case management is being considered by their healthcare organization. Care coordination carried out by a non-clinical (non-RN) support staff may be effective for patients with low to moderate case complexity in terms of health outcomes, patient costs, and patient and family satisfaction. However, the most complex patients, often with a combination of physical health, behavioral health, social situation, and health system challenges, benefit most from case managers trained to practice PICM. These patients and their families require support from case managers who are facile in addressing their clinical and health system challenges in an integrated way, without hand-offs or other interruptions in care. Physicians working with case managers in this process also need to be familiar with the PICM approach to best support the PICM managers and their patients.

Physicians can be active in the integrated case management process at the primary care level, the behavioral health or specialist level, and even the insurance plan level. Roles and levels of involvement will vary, but the general idea is for each to work directly or indirectly with PICM managers, to understand how to interpret the PICM-CAG, to assist PICM managers in maximizing the care plan, and to collaborate in monitoring progress toward established goals. Ultimately, successful graduation for patients and families is the desired outcome, although the time required to reach the level of health stability for graduation may vary.

Systematically tracking outcomes in five important areas, i.e., clinical, functional, satisfaction, quality of life, and fiscal, are built into PICM. Used properly and consistently, they will demonstrate the value of PICM to families, clinics, healthcare systems, and health plans that sponsor the PICM program.

Finally, PICM fits very well into the development and implementation of the pediatric PCMH. The pediatric PCMH was originally developed for CSHCN, and by definition these children exhibit health complexity as defined by PICM. It is well accepted that these children/youth and their families are not served well through the "usual care" model. Case management is an integral part of successful healthcare for this population, and PICM offers the added benefit of integrating general medical, behavioral, social, and health system factors that influence outcomes for CSHCN. Given the current focus on accountability for health outcomes, programs such as PICM that document success are important. PICM can be implemented at multiple levels of the health system, and as with the PCMH, it maintains the patient and family's experience at the heart of the organizing principles.

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