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Article

Addressing the Educational Concerns of Students with Complex and Chronic Conditions: Recommendations and Guidelines for States, Districts, Administrators, and Teachers

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Abstract: *As medical advances increase, the number of students with complex and chronic conditions (CCC) served in public schools, educational concerns arise as schools struggle to meet their unique academic and healthcare needs. With limited federal and state policies and guidelines related to the education of students with CCC, how their needs are met varies widely across the United States. This article describes the major educational concerns of students with CCC, including chronic absenteeism, academic difficulties, social-emotional difficulties, inadequate healthcare at school, homebound instruction, and school withdrawal. Recommendations and further considerations are provided for states and districts concerning guidelines, training, and suggestions for administrators and teachers working with students with CCC. Additional resources are also provided for specific areas of concern addressed within the article.*

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Addressing the Educational Concerns of Students with Complex and Chronic Conditions: Recommendations and Guidelines for States, Districts, Administrators, and Teachers

Lisa was diagnosed with cystic fibrosis (CF) as a child and survived into her early 20s. Lisa's instructional time in school was frequently interrupted because of hospitalizations and doctors' appointments. During extended absences and upon school reentry, resources were scarce to support what she had missed academically. Lisa's parents knew little about her academic progress, her Individualized Education Program (IEP), or how best to share their academic and medical concerns with the school and teachers. While Lisa's teachers tried to understand the situation, they were unsure who was responsible for her curriculum and academic progress when she was absent for extended periods.

Children with complex and chronic conditions (CCC), like Lisa, face both medical and academic challenges associated with their condition. According to the National Center for Chronic Disease Prevention and Health Promotion, “chronic diseases are defined broadly as conditions that last one year or more and require ongoing medical attention or limit the activities of daily living or both” (Centers for Disease Control and Prevention [CDC], 2021). With over 40% of school-aged children and adolescents diagnosed with at least one chronic health condition (CDC, 2021), schools can experience challenges addressing both the educational and medical needs of students with CCC.

Special Education Eligibility

Of the 6.3 million students served under the Individuals with Disabilities Education Act (IDEA), 16.8% receive services for health-related educational difficulties (U.S. Department of Education, 2021). However, the number of students with CCC receiving services through IDEA should represent the population in need because students with CCC are often deemed ineligible under the current federal eligibility standards. Students with CCC qualify for special education services under the disability category of Other Health Impairments (OHI; Morgan et al., 2015). According to the IDEA (2004), “Other health impairment means having limited strength, vitality, or alertness, including a heightened alertness to environmental stimuli, that results in limited alertness with respect to the educational environment” (Sec. 300.8 (c) (9)). One major restriction to using this definition of OHI to determine special education eligibility is that students must be actively experiencing limited strength, vitality, and alertness, impacting their educational performance. For children with CCC, the academic issues associated with their condition may be rooted in concerns not related to their vitality (Irwin & Elam, 2011). In other words, some students encounter academic difficulties unrelated to fatigue or a lack of alertness but instead related to risk factors associated with their illness, such as short and long-term cognitive effects and social and emotional challenges (Stuber, 1996).

When students with CCC are ineligible for special education services under IDEA, which provides additional funding for students receiving special education services, they may be eligible for accommodations and related services under Section 504, a civil rights statute that does not provide additional funding for special education and related services (deBettencourt, 2002). As deBettencourt (2002) discusses in an article outlining the differences between IDEA

and Section 504, which was unchanged with the reauthorization of the IDEA in 2004, the difficulty is whether the student's illness adversely impacts educational performance. If evaluations show a student's CCC negatively affects their educational success, they are entitled to special education services as outlined in an IEP.

Suppose evaluations do not show an adverse effect on educational performance. In that case, students with CCC are eligible for a 504 Plan under Section 504, designed to provide students with specialized or general instruction, classroom accommodations, and health-related services (Boundy & Cortiella, 2018). While 504 Plans can offer comparable services to an IEP, 504 plan implementation can vary by state and district since no federal law requires a written formalized 504 Plan. IEPs, however, are held to federal standards governed by the IDEA but are accompanied by funds to assist schools in meeting the needs of students who qualify (Steinburg, 2017). Funding for students with IEPs provides support services such as speech and language therapy, physical therapy, occupational therapy, counseling services, psychological services, and transportation. However, they are provided at cost to the district under Section 504 if deemed necessary (deBettencourt, 2002). Since students with CCC can potentially qualify for services under IDEA or Section 504, educators and parents are left to determine whether an IEP or 504 Plan best meets the needs of the student based on the results of evaluations and what services they qualify for with the current policies.

Prevalence and Needs of Students with Complex and Chronic Conditions

Advances in medicine have increased the number of students with CCC entering public schools over the past several decades (Irwin et al., 2018). More children are now living with CCC because of advances in pediatric medicine, changing students with CCC into a rapidly growing population (Irwin et al., 2018). According to the CDC (2021), the most common chronic health conditions seen in school-aged children are asthma, diabetes, epilepsy, food allergies, obesity, and oral health. While varying approaches have been used to quantify the prevalence of students with CCC, it is estimated between 10% and 30% of children have conditions that negatively influence their academic success (Lum et al., 2017). Many school districts, however, are underprepared to serve students with CCC because the field of education has been unable to keep up with a rapidly changing population (Irwin et al., 2018). Lum et al. (2017) noted students with CCC face challenges far beyond their medical needs, such as prolonged/chronic absences, poor peer and teacher relationships, a lack of motivation, engagement, and academic achievement, and higher rates of social isolation and grade retention. Despite the challenges, evidence suggests that students with CCC should do as well in school as their healthy peers given the proper medical, academic, and social-emotional support (Lum et al., 2017). The remainder of this article describes the major educational concerns of students with CCC. It provides recommendations for states and districts concerning guidelines and training and suggestions for administrators and teachers working with students with CCC.

Educational Concerns

Over 20 years ago, in a seminal article, Thies (1999) addressed the educational barriers experienced by students with CCC, citing a lack of learning opportunities, access to instruction, socialization, engagement, and motivation as variables impacting achievement. As Perfect and Moore (2019) poignantly address, these same challenges persist more than two decades later,

with limited empirical research on students with CCC. Current educational concerns for students with CCC include (a) chronic absenteeism, (b) academic difficulties, (c) social and emotional difficulties in school experiences, (d) insufficient homebound instruction, and (e) school withdrawal. These concerns are discussed in greater detail below.

Chronic Absenteeism

One primary educational concern for children with CCC is chronic absenteeism, with evidence revealing higher rates of absenteeism in children with CCC compared to healthy peers (Lum et al., 2017). While the definition and percentage of missing days varies from state to state, many states consider absenteeism chronic when students miss 10% or more of the total number of school days for any reason, including excused and unexcused absences (National Center on Educational Outcomes [NCEO], 2018). Logan et al. (2017) suggests that students with complex and chronic pain disorders were frequently absent over a 3-month period using the NCEO definition. They found that students with CCC missed an average of 11.87 days, while students without CCC missed an average of 1.13 days. Richardson et al. (2018) found similar comparisons for children with chronic kidney disease (CKD), as 17.3% of students with CKD were chronically absent, as opposed to only 2.7% without CKD.

The number of absences for students with CCC is strongly correlated with socioeconomic status, ethnicity, condition severity, frequency of planned or unplanned hospitalizations, adherence to a medication regimen, number of invasive procedures, periods of recovery and recurrence, and anxiety related to keeping up with academics upon returning to school (Lum et al., 2017). Logan et al. (2017) found students with acute conditions resulting in chronic pain reported significantly lower school self-concept, school attendance, and self-efficacy when compared to their healthy peers or those with less severe conditions. As student absences accumulate and become chronic, they can lead to academic difficulties, feelings of loneliness, confusion, increased stress, decreased self-esteem, and long-term social difficulties (Boles, 2017). While analyzing the evidence on chronic absenteeism for children with CCC, Leroy et al. (2017) found positive trends in attendance when students had access to direct clinical services while at school, suggesting that increased medical services during regular school hours reduce chronic absenteeism for students with CCC. Thus, how schools address the chronic absences of students with CCC should depend on the student's individual needs and their condition.

Academic Difficulties

Thies (1999) found that students with CCC reported failing grades and falling behind in their studies, a concern still relevant years later when Lum et al. (2017) analyzed 63 studies on chronic conditions and academic achievement. Evidence from almost half of these studies indicated decreased educational outcomes for children with CCC, with several articles reporting correlations between lower achievement and disease severity, earlier age of diagnosis, school absenteeism, and treatment side effects. For example, treatments for conditions such as cancer, chronic kidney disease, and cranial radiation impact cognitive functioning and are regularly associated with poorer academic achievement compared to CCC with no cognitive impact (e.g., asthma; Lum et al., 2017). Increased disease severity with decreased academic achievement were also evident in a study conducted by Crosby et al. (2015) analyzing adolescents' school performance with sickle cell disease (SCD). Over half of students (60%) reported SCD impacted

their academic success, with 75% of students who were hospitalized at least once during the school year reporting decreased achievement versus 25% of students with SCD who were not hospitalized.

Decreased academic achievement is attributed to multiple factors, including cognitive and emotional impairments, stress and anxiety, and treatment side effects. Some treatment and condition side effects can cause neurocognitive deficits that contribute to long-term educational and occupational difficulties that reduce the quality of life for children and their families (Compas et al., 2017). When reviewing the neurocognitive effects of well-documented pediatric CCC (e.g., leukemia, brain tumors, congenital heart disease, SCD, Type 1 diabetes, traumatic brain injury), Compas et al. (2017) found students with CCC lost between 2 to 13 or more IQ points because of their condition. For students experiencing neurocognitive functioning difficulties, proper accommodations, services, and medical treatment are needed based on the precise nature and severity of the condition. Basic accommodations (e.g., extra time, preferential seating) may not be suitable for conditions at greater risk for neurocognitive deficits (e.g., traumatic brain injury). They may require specialized accommodations or services (Compas et al., 2017), such as establishing non-verbal cueing systems, written or visual schedules, checklists, step-by-step instructions, routines, and positive interactions (Massachusetts Rehabilitation Commission, n.d.).

Social-Emotional Difficulties in Schools

Children with CCC struggle with the social-emotional aspects of the school environment resulting from stressors less prevalent in healthy peers (Runions et al., 2020). With prolonged absences and the stigma sometimes associated with medical conditions, students with CCC find it challenging to form and maintain interpersonal relationships in school (Runions et al., 2020). Lum et al. (2017) found that students with CCC report being bullied about their physical appearance, physical abilities, and academic achievement and expressed concerns about seeming different, keeping up, and being understood by others. While Lum et al. (2017) found a link between greater social support at school and better school relationships, the researchers noted that even teachers display negative attitudes and behaviors (e.g., inflexible, unconcerned) towards students. Although students with CCC report an eagerness to attend school because it fosters a sense of normalcy, being treated differently by teachers and peers can lead to poor social school experiences, a reduced desire to attend school, and poor academic achievement (Lum et al., 2017).

Poor social and emotional experiences in school also stem from a need for more communication, information, and teacher training about how to meet the needs of students with CCC. In a review of 58 studies, Hinton and Kirk (2015) found that many teachers used the internet, leaflets, personal experiences, and conversations with parents to gain information about their students' conditions, even though teachers reported a preference for being informed about long-term conditions from medical professionals. These various sources of information can lead to misconceptions, inaccurate beliefs, and stigmatizations about the student's conditions that go unchallenged. Hinton and Kirk (2015) also found that teachers are hesitant to communicate with students and parents during prolonged absences because they are unsure who is responsible for the child's education during this time. Additional findings include a lack of formal training or support for teachers when meeting the needs of students with CCC. A lack of coordinated and

consistent resources and guidelines for teachers can leave them to withhold well-established best practices as they maintain the same expectations for students with CCC as they do for healthy children (Irwin & Elam, 2011). Without proper information and training, teachers could fail to be flexible in their instruction and treatment of students with CCC because they do not understand how the condition impacts the student's learning and behavior or how to communicate effectively with families about their child's needs.

Inadequate Healthcare at School

The National Association of School Nurses (NASN; 2023) outlines the role of school nurses to include providing medical assessments and interventions to meet students' physical, mental, and social-emotional health needs. School nurses manage the input and output of the school's clinic, ensuring a record of the student's concerns and their impact on the classroom, which is then shared with the appropriate staff members and guardians (McIntosh et al., 2023). During the height of the COVID-19 pandemic, school nurses also became responsible for tracking vaccination records and learning to distinguish between other viruses like influenza (McIntosh et al., 2023).

For students with CCC, school nurses provide services beyond addressing flu-like symptoms and minor cuts or bruises. A registered school nurse is certified to provide more advanced services to students, such as checking blood glucose levels, administering medication, providing treatments, and determining whether students are healthy enough to return to class (Maughan, 2021). The school nurse may also be part of a multidisciplinary IEP team that coordinates the student's holistic care, including their academic, health, mental, and social-emotional needs (Petit & Patterson, 2014). Unfortunately, 18.1% of schools in the country do not employ a registered nurse, and among full-time school nurses, 55% are responsible for more than one school (Willgerodt et al., 2018). These numbers will likely decline further as the CDC found in 2017 that the number of districts with policies requiring newly hired school nurses to be registered decreased by 16.6% in the past 16 years. For students with CCC, the reduction in hiring registered nurses is cause for concern because access to a licensed school nurse can reduce chronic absenteeism. Pennington and Delaney (2008) found students were more likely to return to class versus being sent home when they were seen by a school nurse instead of a non-licensed healthcare professional. According to the National Center for Education Statistics (2024), the average student-to-nurse ratio is 0.83:1, or one nurse per 699 students. While the national ratio falls below the Federal Department of Health and Human Services recommendation of one full-time nurse for every 750 students (Florida Department of Health, 2024), the ratio should decrease to 1:400 when students with individual healthcare needs (e.g., asthma, diabetes, and anxiety) are part of the student population (Hobbs, 2022).

Homebound Instruction

Homebound instruction, also called hospital homebound (HHB), is a common tool school systems use to compensate for the academic instruction missed by students with CCC. Homebound instruction is an alternative educational placement that offers students access to educational services during extended absences. While homebound instruction primarily occurs at the student's home, instruction can also be provided in the hospital or a neutral location such as a public library (Petit & Patterson, 2014). Even though hospital homebound is a legally recognized

alternative educational placement, no federal guidelines outline instructional policies such as qualification requirements, number of hours provided, and delivery practices. Therefore, states and districts establish their own homebound instructional policies, resulting in a wide range of placement and delivery practices (Petit & Patterson, 2014). When members of the Legislative Alliance for Students with Health Conditions (LASHC), an organization that facilitates homebound instruction and advocates for policy reform, was surveyed, 66% believed homebound instruction to be the area most in need of reform, 70% felt a minimum number of hours should be established nationwide, and 75% reported needing clear guidelines for ensuring students with CCC are guaranteed homebound instruction (LASHC, 2017).

With no clear federal guidelines, homebound educational experiences vary for both students and teachers. In a study conducted by Petit and Patterson (2014), 33% of the teachers surveyed stated they saw each student only twice per week, with 76% stating each session lasted 89 minutes or less. Additionally, 75 to 80% of the teachers did not receive training for the delivery of homebound instruction, even though those who were trained reported higher perceptions of their effectiveness as a homebound teacher. Petit and Patterson (2014) also found that while school districts may have expectations for hospital homebound delivery, many are informal and are only expressed to the teachers either verbally or through email.

Studies such as those conducted by Petit and Patterson (2014) and the LASHC (2017) provide evidence that students with CCC are denied their right to a free appropriate public education (FAPE). While the IDEA does not require students to receive instruction in the general education classroom, it does require students who cannot participate in a traditional school setting to receive general curriculum instruction to the maximum extent appropriate to meet their individual needs (Crockett & Yell, 2013). Unfortunately, homebound instruction is one of the most restrictive environments for students, with minimal access to the general education curriculum because of limited peer and teacher interactions (Petit & Patterson, 2014).

An additional concern is the nature of the qualifications of homebound instructors. Many teachers, particularly those at the secondary level, are not certified or experienced in teaching more complex subjects that extend beyond their areas of expertise (Irwin & Elam, 2011). Each of these concerns (limited instructional time, lack of teacher expertise, minimal guidelines) brings into question the appropriateness of homebound instruction as a replacement for regular school attendance for students with CCC. For students to receive FAPE during HHB instruction, district guidelines should be carefully crafted and shared with instructors during training.

School Withdrawal

Given that students with CCC experience periods of greater absences due to their conditions, districts often formally withdraw students during extended periods of nonattendance (LASHC, 2017). A student's withdrawal can occur because some state and federal funds are determined by the district-level attendance rates, student participation in assessments, and standardized assessment results. Children with CCC can impact these performance metrics because of their reduced or inconsistent attendance and inability to participate in state-mandated standardized assessments (LASHC, 2017). Additionally, if districts withdraw students, they are relieved of the responsibility of providing instruction that meets their individual needs including the ability to earn homebound instruction and receive assignments and materials from their teachers. As a

result, students are rejected by the schools they are entitled to attend, forcing many parents to homeschool or find other schools (e.g., charter, private) to educate their children (LASHC, 2017). A school district's withdrawal of a student with CCC can also be viewed as denying that student FAPE since they may not receive educational services under the IDEA (Irwin & Elam, 2011).

Recommendations

As medical advancements progress, the population of children with CCC served in public schools will continue to grow, requiring improvements in how the needs of these students are met. At the forefront of recommendations is the need for policy reforms and improvements in the knowledge, skills, and dispositions of teachers, as well as programs for children, youth, and young adults with CCC.

Multidisciplinary IEP Teams

Students with CCC should have IEPs that clearly outline the student's unique needs and the services provided to support their goals (Lum et al., 2017). When developing an IEP for students with CCC, multidisciplinary IEP teams should be developed to integrate the educational and healthcare needs of the students (Petit & Patterson, 2014). Multidisciplinary IEP teams can include medical personnel, psychologists, teachers, parents, and administrative staff to address the medical, educational, and social-emotional needs of students with CCC. Medical personnel, including the school nurse and a psychologist, should participate to ensure academic programs and placements also meet the child's medical, social, emotional, and psychological needs. A registered school nurse familiar with the child's medical needs while on campus should also be present and can act as a hospital-school liaison. As Thompson et al. (2015) recommended, a hospital-school liaison within the multidisciplinary IEP team should be appointed to support communication between medical and academic team members. The hospital-school liaison should be well-versed in the medical and educational systems and can provide additional support, including guidance and resources for parents and teachers and teacher professional development (Thompson et al., 2015). In general, the IEP team should maintain a supportive and collaborative approach that extends beyond academic outcomes to consider all strengths, needs, and concerns of students and their families (Lum et al., 2017). Further recommendations and considerations for multidisciplinary IEP teams are found in Tables 1 and 2. Table 3 provides online resources by topic of concern.

Table 1
Recommendations and Further Considerations for States and Districts

Recommendations	Further Considerations
Create guidelines for HHB instruction	<ul style="list-style-type: none"> ● Set a minimum number of instructional hours. <ul style="list-style-type: none"> ● Consider each core subject (reading, math, science, social studies) separately. How much instructional time is needed for each subject? ● Consider the instructional needs of each grade level separately. ● Ensure HHB instructors are certified and experienced in the subjects they will be teaching. ● Ensure evidence-based practices are being used during instruction.
Provide training to both general education and HHB teachers regarding the needs of students with CCC	<ul style="list-style-type: none"> ● Training should include: <ul style="list-style-type: none"> ● Adapting evidence-based practices to meet the needs individual students ● Communicating with parents and medical personnel ● Helping students readjust to the classroom after an extended medical absence ● Learning about educational rights of students with CCC according to the IDEA and individual states ● Fostering an environment of social support at the classroom level
Include healthcare professionals in teacher training for children with CCC	<ul style="list-style-type: none"> ● Healthcare professionals (including the registered school nurse) should address the following: <ul style="list-style-type: none"> ● General health needs and difficulties facing students with CCC ● Specific health needs of each condition experienced by the students of the teachers in attendance ● The cognitive difficulties associated with CCC ● Strategies for addressing the planned and emergency medical needs of students with CCC
Support the creation of multidisciplinary IEP teams	<ul style="list-style-type: none"> ● Set guidelines for teams to include the school nurse, other medical personnel, psychologists, teachers, parents, and administrative staff. ● Set guidelines for teams to consider the educational, health, and social-emotional needs of students when setting goals.
Provide medical services during regular school hours	<ul style="list-style-type: none"> ● Services should be provided by medical personnel (e.g., physical therapist, occupational therapist, speech, and language pathologist). ● Provide student s access to a full-time registered nurse while on school grounds or participating in school-sanctioned activities off campus. ● Reevaluate or set student-to-nurse ratios. <ul style="list-style-type: none"> ○ One registered nurse per 700 students ○ One registered nurse per 400 students when students with CCC are included in the population

Note. IEP = Individualized Education Program; HHB = hospital homebound; CCC= complex and chronic conditions. Based on the collective findings and recommendations of Boundy and Cortiella (2018), Hobbs (2022), Irwin and Elam (2011), LASHC (2017), Lum et al. (2017), NASN (2016), and Petit & Patterson (2014).

Table 2*Recommendations and Further Considerations for Teachers and Administrators*

Recommendations	Further Considerations
Seek PD opportunities on meeting the needs of students with CCC	<ul style="list-style-type: none"> ● Request or provide training about specially designed, instruction, evidence-based practices, interventions, and explicit instruction for SWD. ● Contact your district, state, and local university for PD opportunities available to educators. ● Visit exceptionalchildren.org for PD opportunities offered through the Council for Exceptional Children (CEC).
Communicate regularly with HHB instructors	<ul style="list-style-type: none"> ● Discuss learning objectives and instructional goals. ● Provide meaningful activities realistic to the timeframe HHB instructors have with students. ● Agree upon an effective form of communication and exchange of resources (e.g., books, assignments, notes). ● Foster communication between the members of the multidisciplinary IEP team.
Communicate regularly with parents and students	<ul style="list-style-type: none"> ● Identify a preferred and efficient communication method (e.g., email, phone, text message, video conferencing, face-to-face) with members of the multidisciplinary IEP team. ● Discuss the student's medical needs and concerns pertaining to school success. ● Discuss HHB instruction, activities, and goals.
Support the creation of a multidisciplinary IEP team and communicate regularly with members	<ul style="list-style-type: none"> ● Encourage the additional participation of medical personnel (including the school nurse), psychologists, and administrative staff. ● Appoint a hospital-school liaison familiar with both systems. ● Discuss medical and social-emotional concerns pertaining to school success.
Create an environment of inclusivity in the school and classroom	<ul style="list-style-type: none"> ● Foster an environment of anti-bullying using age-appropriate methods (e.g., children's books, novels, journaling). ● Be realistic when grading students with CCC; consider their medical limitations and time constraints.

Note. IEP = Individualized Education Program; HHB = hospital homebound; CCC= complex and chronic conditions. Based on the collective findings and recommendations of Hinton and Kirk (2015), Irwin and Elam (2011), LASHC (2017), and Thompson et al. (2015).

Table 3
Additional Resources by Topic of Concern

Topic of Concern	Resource	Description	Link
Multidisciplinary IEP Teams	The IRIS Center Peabody College Vanderbilt University	Provides the IDEA requirements for children ages birth to 3 and students ages 3 to 21	https://iris.peabody.vanderbilt.edu/module/asd/cresource/q2/p04/
Health Care Transition Planning	Got Transition	A federally funded national resource center outlining the Six Core Elements to HCT and resources for children, parents, and caregivers	https://www.gottransition.org/
Strategies for Schools and Districts on addressing the needs of students with CCC	CDC Research Brief	Provides strategies and activities to address the needs of students with CCC	https://www.cdc.gov/healthyschools/chronic_conditions/pdfs/2017_02_15-How-Schools-Can-Students-with-CHC_Final_508.pdf
Section 504	Parent and Teacher Guide to Section 504: Frequently Asked Questions	Provides answers related to identification, accommodations, teacher's roles, and the difference between IDEA and Section 504	https://www.fldoe.org/core/fileparse.php/7690/urlt/0070055-504bro.pdf
IDEA	U.S. Department of Education: IDEA Statute and Regulations	Provides the statutes and regulations in the IDEA (2004)	https://sites.ed.gov/idea/statuteregulations/
Evidenced-Based Practices	What Works Clearing House (Institute of Education Science within the U.S. Department of Education)	Provides evidence-based practices by content area and areas of research within education (e.g., behavior, charter schools, teacher excellence)	https://ies.ed.gov/ncee/wc/

Note. HHB = hospital homebound. IDEA = Individuals with Disabilities Education Act. CCC = complex and chronic conditions. HCT = healthcare transition.

Professional Preparation

The most pressing need for improving the academic and social-emotional outcomes of students with CCC may be in teacher preparation and teacher professional development (PD). States, districts, and administrators should ensure medical professionals are involved in the training of teachers who serve students with CCC, as recommended by Lum et al. (2017) and should provide information about the specific medical needs of students with CCC. Teachers should also receive information about strategies for communicating with families about the student's medical needs, the special education referral, evaluation, and eligibility process, as well as accommodations and modifications appropriate for students with CCC (Boundy & Cortiella, 2018). Moreover, instruction on evidence-based best practices for students with CCC should be included in teacher preparation and PD programs (LASHC, 2017). Since teacher attitudes, behaviors, and instructional methods impact school success, training specific to students with CCC should be provided to pre-service (LASHC, 2017) and in-service (Hinton & Kirk, 2015) teachers. Further recommendations and considerations for teachers and guidelines about training are provided in Tables 1 and 2.

Policy Reform

There is also a great need for policy reform to meet the unique needs of students with CCC. For instance, even though children with CCC can receive special education services through the IDEA or Section 504, many students still need to qualify for certain services based on legislation allowing districts to limit their services. Thus, the IDEA's definition of OHI needs further clarification to prevent the disqualification of students with CCC from special education eligibility based on attendance, treatment side effects, and issues from their conditions unrelated to vitality (LASHC, 2017). Section 504 should also be revised to provide further guidelines for developing and implementing 504 plans. If students receive special education-related services, their IEPs should be required to consider the whole child by addressing their medical, social-emotional, and academic needs (Lum et al., 2017; Runions et al., 2020). The child's healthcare needs should be considered when determining attendance goals when it comes to substantial absences because of a chronic condition. Informal policies that result in students withdrawing from school because of medical absences should not be in place (Boundy & Cortiella, 2018) but should hold districts accountable for providing FAPE to all students (Irwin & Elam, 2011).

Policies on student-to-nurse ratios should also be reevaluated, given that students with CCC are more common in schools. While the NASN recommends each school have a full-time nurse with a bachelor's degree in nursing (NASN, 2023), this does not address recommended student-to-nurse ratios. A ratio of 1 registered nurse for every 400 students should be provided when students with CCC are represented in the school's population (Hobbs, 2022). Thus, one registered nurse per school, or shared between schools, will not suffice for schools with larger populations, including students with CCC.

As LASHC (2017) suggests, a lack of proper nursing care could lead to unsafe and negligent situations and detrimental student outcomes. Evidence of negligence can also occur at the federal and state levels without guidelines for homebound instruction. Thus, policies should also include guidelines for homebound instruction eligibility, minimum instructional time requirements, teacher qualifications, and quality of instruction (LASHC, 2017). With few guidelines in place,

school districts are left to their own devices when determining how to meet the needs of their chronically ill students. Further recommendations for policy guidelines are provided in Table 1.

Conclusion

As the population of students with CCC served in public schools continues to expand, the system must adapt to better meet the unique needs of these students. Children like Lisa, challenged with CCC, should not face additional opposition from the system responsible for their education and well-being while at school. Ensuring that students with CCC thrive in educational environments is essential for their success now and in the future.

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