PERSPECTIVES

The Intersection of Complex Care and Hospital Medicine: Opportunities to Advance Health for Chronically Ill Populations

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Children with medical complexity (CMC) are a high-need, high-cost population representing 1% of all children yet accounting for nearly one-third of all child health-related costs.[1] Nearly half of health costs for CMC are attributable to hospital care[2]; 30-day readmission rates for CMC are 4 times higher than that for non-CMC,[3] and 26% of hospital days and 43% of in-hospital deaths are attributable to CMC.[4] High hospital use by CMC is a consequence of multiple chronic conditions, severe functional limitations, reliance on long-term medical technology for daily living (eg, feeding tube in a child with severe neurologic impairment), and high-intensity care needs supported by multispecialty care and home-based services (eg, home nursing) that are typical for this patient population.[1] Parents of CMC take responsibility for the vast majority of caregiving and face many challenges, including inadequate insurance, lack of a patient-centered medical home, and insufficient hours of coverage for home health care workers.[5] As a result of intense financial and emotional stress, caregivers themselves experience physical and mental health problems that can compromise their ability to effectively perform caregiving tasks.[6] Additionally, direct clinical encounters for CMC in health care settings are often inefficient and poorly coordinated.[5]

Because the traditional health care delivery system often fails to meet the needs of CMC and their families, because CMC frequently receive acute hospital care, and because care of CMC is a core competency of pediatric hospital medicine (PHM), pediatric hospitalists have an essential role to play in the development of innovative solutions to improve care for CMC.[7] In response, hospitalists have been integral in refining and studying structured complex care programs for CMC.[8,9] These programs are frequently focused on comprehensive care coordination, interdisciplinary collaboration, improved access to care, facilitated communication between providers and parents, and enhanced support during transitions of care. Early evaluations of complex care programs have demonstrated reductions in health care use, lower costs for many participants, and a better patient and family experience.[8,10] Complex care program efforts to improve care for CMC are well aligned with broader shifts toward high-value care at the population level (ie, better health outcomes and a better experience for children and families and providers at lower cost). As health systems face increasing pressure to shift care to lower-cost settings and strengthen transitions between sites of care, hospitalists have a key role in the ambitious aim to deliver value-based care and advance health for the most complex and challenging pediatric patient populations.

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LIMITATIONS OF CURRENT COMPLEX CARE PROGRAMS

Despite promising findings from studies of complex care programs, critical gaps remain. There are up to 3 million CMC in the United States,[11] yet only a fraction of the national CMC population has been reached by existing complex care programs. Most program implementation to date has been focused on small, narrowly defined groups of eligible CMC, with care centered around academic medical centers. Yet, most CMC supported by complex care programs live >60 miles away from tertiary care centers[12]; thus, improved coordination of care across long distances is central to expanding access to comprehensive complex care services.

Despite its primary goals of coordination, complex care for CMC is frequently fragmented or incompletely integrated with the entirety of the care landscape. In addition to patient-level care fragmentation, complex care programs themselves can be isolated. Efforts in the hospital, outpatient, and community settings often involve separate, nonoverlapping clinical staff, leadership, and strategies; the separate siloes of inpatient care and clinic-based outpatient care impede necessary collaboration to deliver seamless coordination across the full care continuum. Approaches to bridge this inpatient-outpatient divide have yet to be broadly disseminated and implemented at the scale needed to reach all CMC.

THE CASE FOR A POPULATION HEALTH APPROACH BY HOSPITALISTS FOR THE CARE OF CMC

Although achieving cohesive integration of care across the inpatient-outpatient continuum can be a daunting, so-called "wicked problem"[13] (a term describing problems without straightforward solutions) existing frameworks can be leveraged to contribute to solutions. A population health framework's (Fig 1)[14] focus on the health outcomes of groups of individuals, on policies and programs at patient and social levels, and on whole life span patterns of health determinants is an ideal approach for tackling the challenges of caring for CMC. Similar to other adult and pediatric populations for whom social determinants have an outsized impact on overall health, health for CMC is not solely a product of the health care system; rather, a healthy life also hinges on the accumulation of better outcomes across multiple domains and sectors outside the traditional health care system (eg, community-based services and education).[15] As a result, integrated care (seamlessly coordinated care not only within the health care sector [vertical care integration] but also between medical and nonmedical sectors involved in each child's care [horizontal or cross-sector care integration]) is increasingly recognized as a promising approach to translate population health principles into real-world systems of comprehensive care for children.[16]

As shifts toward integrated care and population health for CMC continue, it is reasonable to wonder how prominent of a role, if any, pediatric hospitalists should play. The hospital medicine specialty has successfully established itself as the leader in inpatient care. However, resting on our successes would be limiting because hospitalists are well equipped to provide integrated care for CMC. At a high level, the broad health care landscape continues to rapidly change, and hospitalists' continued involvement will be essential for care innovations for CMC. At the opposite end, hospitalist engagement at the clinical frontlines in comprehensive population health models is equally critical, particularly when medical and nonmedical drivers of health intersect during acute hospitalizations. For example, pediatric hospitalists often manage challenging cases of CMC who are medically ready to return home but lack access to systems of support (eg, home health, home nursing, and transportation); these gaps lead to prolonged hospitalization with risks for hospital-acquired complications that can threaten the child's health and safety on the return home.

Hospitalists and other inpatient clinicians who often care for CMC (eg, intensivists) sit at the crux of the most costly phase of health care (ie, acute hospitalization) and the most vulnerable moment along the health trajectory of CMC (ie, exacerbation of chronic illnesses severe enough to warrant hospitalization). Delivering better care and better outcomes for CMC during and beyond acute hospitalizations will require hospitalists to think broadly and champion population health solutions that extend beyond hospital walls.[17] Problem-solving for such an expansive challenge will require the efforts of the entire PHM community, including frontline clinicians, innovators, and leaders.

Considerations for PHM Frontline Clinicians

Successfully shifting to integrated care and population health models for CMC will not be possible without engagement from hospitalists on the clinical frontlines. Hospitalist insights are essential to improve tools for the inpatient setting that facilitate understanding of the multifaceted root causes that bring CMC into the hospital, keep them there, and support them getting home in as close to a state of health as possible. Practical steps that hospitalists can take include implementing new tools in the hospital (eg, shared plans of care),[18] leading efforts to strengthen transitions of care between home and hospital, integration with outpatient complex care, community and specialty providers, and advocacy for interdisciplinary inpatient care models.[9] The traditional inpatient care system was not designed to optimize health for CMC; however, practicing hospitalists are changemakers well positioned to adapt processes to better meet their unique needs across their life course.

Advancing population health for CMC also may generate new clinical opportunities for hospitalists beyond traditional inpatient rounding. Recent examples of clinical roles that highlight the capacity for hospitalists to innovate as health systems evolve include comprehensive care physicians who manage patients in and out of hospitalizations,[19] pediatric medical or surgical comanagement,[20] and dedicated pediatric complex care inpatient services.[9]

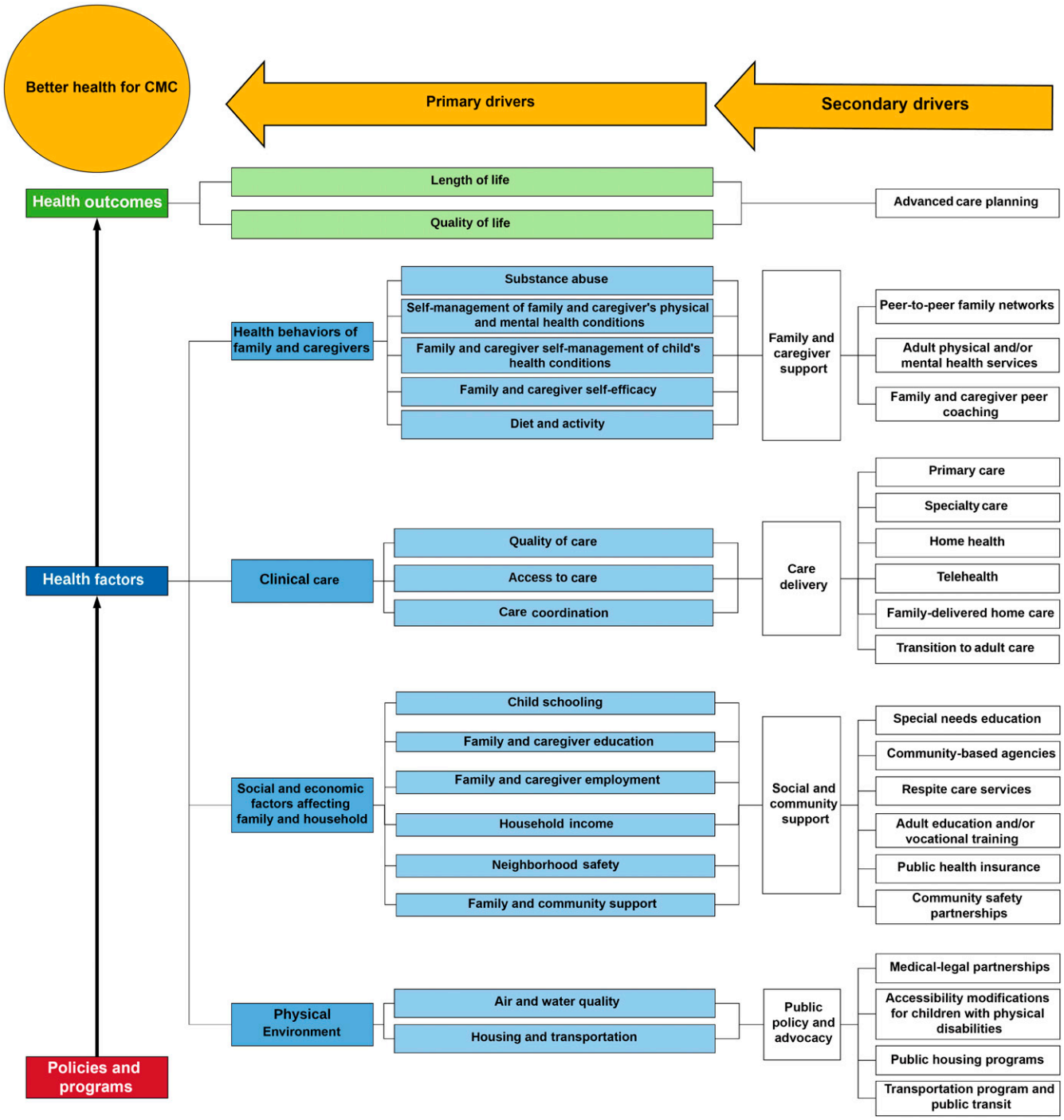

FIGURE 1 Adaptation to the County Health Rankings model for the CMC population. Adapted with permission from Remington PL, Catlin BB, Gennuso KP. The county health rankings: rationale and methods. *Popul Health Metr*. 2015;13:11.

Considerations for PHM Innovators and Leaders

With growing recognition of the need to integrate health care with other drivers of a complex patient's well-being (eg, social determinants and parent or caregiver health; Fig 1), the expanding focus of PHM from the hospital to the broader health ecosystem, although paradoxical, has become necessary. Hospitalist innovators and leaders are, fortunately, well positioned to address this conundrum. PHM's expertise in the care of children who are acutely and chronically ill, leadership in systems thinking, focus on family-centered care,

and culture that embraces change and continuous improvement are critical assets to facilitate application of complex care principles to broader populations of CMC in community settings beyond tertiary care centers. Additionally, pediatric hospitalists' experience leading hospital initiatives that leverage scientific areas of relevance for CMC population health (eg, data science, improvement science, and implementation science) will facilitate adaptation, implementation, and rigorous real-world evaluation of integrated care models for CMC. Finally, PHM innovators and leaders will need to translate these learnings into policy advocacy. For example, the recent passage of the bipartisan federal Advancing Care for Exceptional Kids Act to enhance access to coordinated care across providers, services, and state lines for CMC highlights the tremendous potential for hospitals, health systems, providers, and patients and families to improve health together for CMC.

CONCLUSIONS

Caring for CMC will always be central to PHM, and ample opportunities exist to advance the work that has been started. Regardless of one's interests (clinical, innovation, leadership, policy, or research), this is an exciting time to push traditional hospitalist boundaries to advance health for the CMC population.

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