High-Need, High-Cost Patients and Social Determinants of Health

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INTRODUCTION

High-need high-cost patients (HNHC), previously referred to as super utilizers or frequent fliers, account for a disproportionate share of the nation's spending on health care. Their rising numbers, and overwhelming economic impact on the U.S. health care system, have driven health care organizations, practitioners, and researchers to develop innovative models that improve delivery and coordination of care for these patients.

Multiple factors determine both the health of an individual and the health of a community. According to the Centers for Disease Control, these factors comprise five categories: genetics, behavior, environmental and physical influences, medical care, and social factors.

These factors are interdependent, but this discussion will focus attention on the social factors. Disparities in health care will persist unless we pursue robust initiatives to address social determinants of health. Health equity occurs "when everyone has the opportunity to attain their full health potential" and no one is "disadvantaged from achieving this potential because of their social position or other socially determined circumstance."[1]

Penn Medicine Lancaster General Health is committed to developing models for care that address social determinants within its local and regional service areas. These include Care Connections, Ambulatory Collaborative Care Team (ACCT), and Social Service Hubs.

BACKGROUND

HNHC individuals are defined as those with more than three chronic health conditions, as well as functional limitations in their ability to care for themselves or to perform daily tasks. Their care is further complicated by behavioral health concerns.

In the United States, HNHC individuals represent only 5% of those utilizing health care services, but they account for approximately 50% of health care spending. Put another way, HNHC adults represent 37% of adults in the top 10% of health care spending and 47% of those in the top 5%. The average annual per-person health care expense for HNHC patients is $21,000, which is three times the average expense for adults with multiple chronic conditions who have no functional limitations. HNHC patients are more likely to depend on a caregiver or a family member, community supports, and social services[2] (Fig. 1).

HNHC patients visit the ER at 2X the rate of adults with multiple chronic conditions, are 3X more likely to be admitted from the ER,[3] and have longer hospital stays than patients with less complex medical and social needs.[4] These dynamics make it imperative that HNHC patients receive coordinated services, not only to optimize their quality of life by improving their health outcomes and well-being, but also to reduce the economic burden of their care. To accomplish all these objectives, a different model of care is required, one that provides strategies and interventions based on a clear understanding of the HNHC as an individual with their own particular barriers to care.

SOCIAL DETERMINANTS OF HEALTH

According to the World Health Organization, "social determinants of health are the conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life." [5]

It is imperative that the health care community takes steps to further understand and address the major social determinants of health. Implementation of targeted initiatives improves the health and well-being of the patient and the community, and ultimately reduces health care spending.

Every ten years, the U.S. government publishes "Healthy People," an agenda for building a healthier

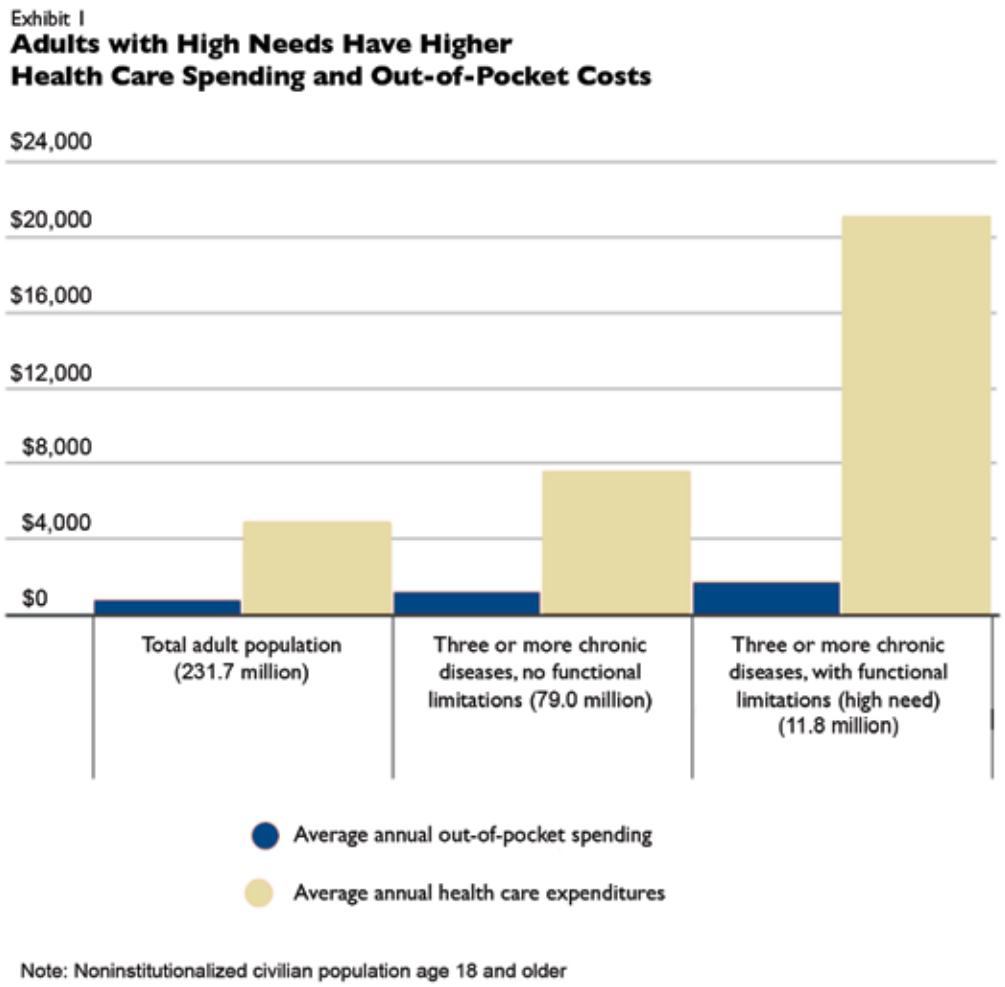


Fig. 1. Data 2009-2011 Medical Expenditure Panel Survey (MEPS). Analysis by C.A. Salzberg. Johns Hopkins University.

nation. Healthy People 2020 focuses on the importance of addressing the social determinants of health. One of the four goals for the decade is to "create social and physical environments that promote good health for all." [6]

The goals of Healthy People 2030 build upon the previous goals of Healthy People 2020, including:

- Eliminating health disparities, achieving health equity, and attaining health literacy to improve the health well-being of all, and
- Creating social, physical, and economic environments that promote attaining full potential for health and well-being for all.

Examples of social determinants as outlined by Healthy People 2020 include:

- Availability of resources to meet daily needs, such as safe housing and local food markets;
- Access to educational, economic, and job opportunities;
- Access to health care services;
- Quality of education and job training;
- Availability of community-based resources in support of community living and opportunities for recreational and leisure-time activities;
- Transportation options;
- Public safety;
- Social support;
- Social norms and attitudes (e.g., discrimination, racism, and distrust of government);
- Exposure to crime, violence, and social disorder (e.g., presence of trash and lack of cooperation in a community);
- Socioeconomic conditions (e.g., concentrated poverty and the stressful conditions that accompany it);
- Residential segregation;
- Language/Literacy;
- Access to mass media and emerging technologies (e.g., cell phones, the Internet, and social media);
- Culture;

Examples of physical determinants include:

- Natural environment, such as green space (trees

and grass) or weather and climate change;

- Built environment, such as buildings, sidewalks, bike lanes, and roads;
- Worksites, schools, and recreational settings;
- Housing and community design;
- Exposure to toxic substances and other physical hazards;
- Physical barriers, especially for people with disabilities;
- Aesthetic elements such as good lighting, trees, and benches;

Health care providers are compelled to assess and respond to the needs and challenges of the community they serve so that all patients have equal potential to achieve maximum health and well-being (Fig. 2).

CARE CONNECTIONS

In 2010, Lancaster General Health embarked on a journey to develop the best population health model for the HNHC patients in its health system. A pilot program was begun in the Lancaster General Family Medicine Residency Program based on input from a consortium of family medicine residency programs (primarily in the Northeast), and lessons from the pioneering work of Jeffrey Brenner, MD, of the Camden Coalition about "hot spotting" the needs of HNHC individuals.[7] With help from the LG Health Research Institute, and a grant from the Lancaster General Health Foundation for a care navigator, 55 patients were enrolled in an interprofessional team-based program that included social work, behavioral health, registered nurse care management, pharmacy, and home-based assessment and intervention.

Over the following two years, the pilot demonstrated that intensive care management services that addressed all aspects of a patient's physical and psychosocial care led to fewer inpatient and emergency department utilizations, and reduced cost. More importantly, the individuals in the program benefited from improved care coordination.

The managers and staff of the pilot program engaged leaders in the Pennsylvania Department of Human Services to educate and advocate for this unique population, and to seek funding for this new care delivery model. At the same time, the health system's partners met to explore clinical, process, and workforce development issues to make these types of programs successful. The major health systems in the region joined to establish the Southeast Pennsylvania High Utilizer Collaborative, which continues to meet to this day.

Based on what it had learned from the pilot program, Lancaster General Health developed and launched Care Connections in August of 2013 to serve the HNHC patients within Lancaster County. These patients are enrolled in high intensity, traditional primary care, coordinated by an interprofessional team that includes patient care navigators, nurse case managers, clinicians, a pharmacist, a lawyer, social workers, a chaplain, and clinical support specialists. This program has served over 730 patients in the intervening years. The Care Connections team approach includes home visits, thorough psychosocial assessments, and identification and communication of patient needs (Fig. 3).

The Care Connection model creates enhanced access and engagement by transitioning care of patients from their primary care clinician to Care Connections clinicians who work in an interprofessional team that is networked with Lancaster County community service agencies.

LG Health patients who meet criteria for entry into the Care Connections program are identified using Red Cap, an electronic program that reviews specific data from EPIC, the electronic medical record, and creates a daily list of patients who are appropriate for Care Connections. Patients can also be referred to the Care Connections program by the patient's LG Health primary care clinician, or during a patient's hospitalization.

The Care Connections patient access coordinator reviews the Red Cap list daily and engages patients who meet the criteria to assess their interest in the program. If they are willing to participate, they are scheduled for enrollment with a patient care navigator. Enrollment into the program includes a thorough psychosocial assessment,

Fig. 2. Adapted from Healthy People 2020

including social determinants of health, conducted by a social worker, and a medication review by the clinical pharmacist. Their findings and recommendations are shared with the team during daily team huddles.

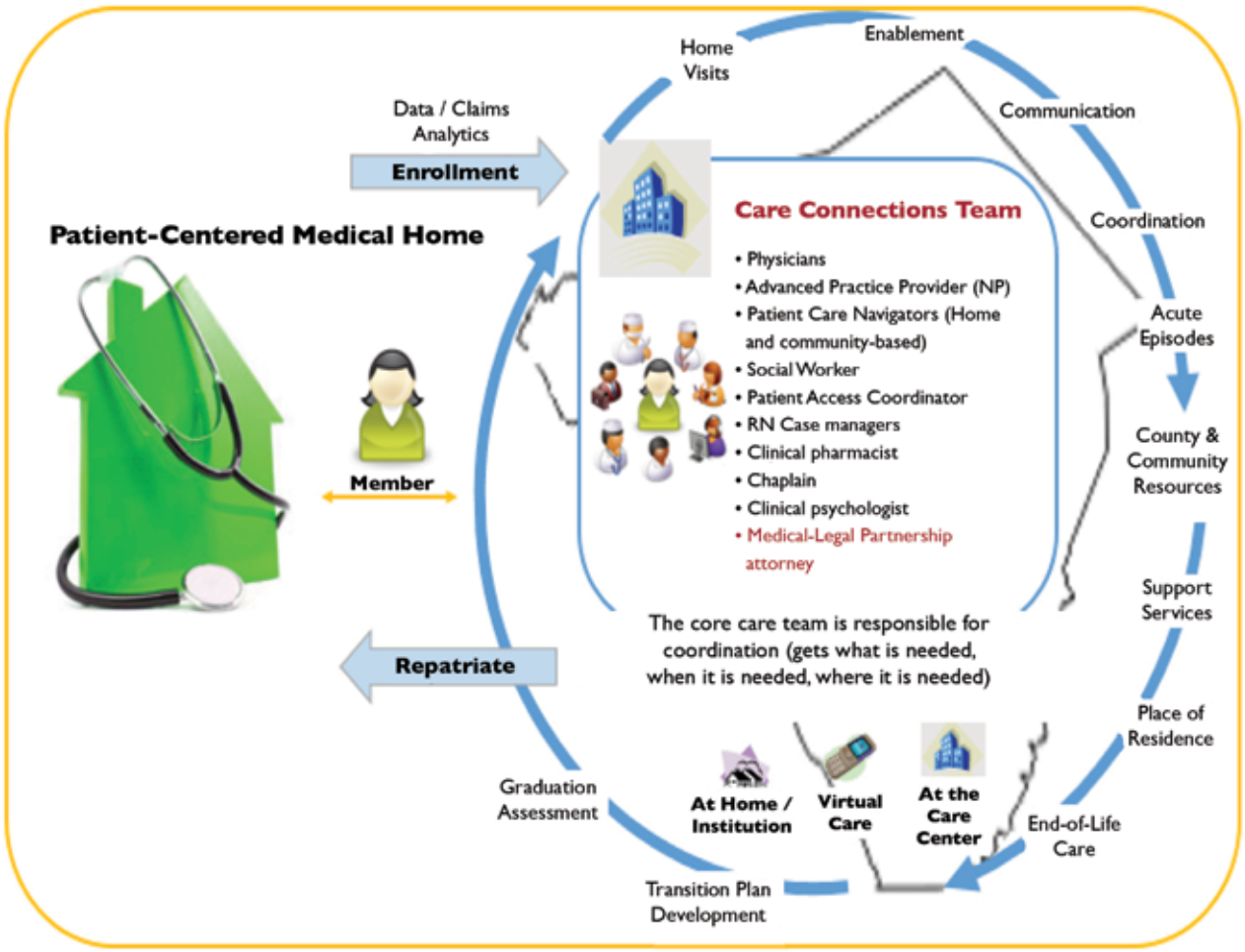
The Care Connections team recognizes the impact of psychosocial factors on the health and well-being of individuals and populations, because these factors often present barriers to health care. Various tools are used to identify barriers that place patients and communities at higher risk for illness and poor health outcomes. The Lancaster General Risk Assessment Matrix (RAM) tool screens for the following potential barriers:

1. Cost: housing, utilities, medications, and medical care;
2. Access: Food, transportation, and telephone.

Among Care Connections patients, cost of medications was the most frequently reported barrier to care. Except for phone access, about 1 in 4 patients have struggled with each of these barriers at some point. More than half of Care Connections patients who have been screened utilizing the RAM tool have identified at least one of these barriers to care (Fig. 4).

The RAM tool not only identifies barriers but also guides appropriate health care programming and resource

Fig. 3. **Development of the Care Connections High Risk Team**



Care Connections

Criteria

- 18 years or older
- LGHP primary care provider, no PCP, or Lancaster Health Center (FQHC) patient
- Health care utilization in 6 months:
  - ≥ 2 hospital inpatient admissions OR
  - 1 admission and 2 OBS stays OR
  - 1 admission and 5 ED visits
- Recent utilization due to chronic medical conditions *(including but not limited to CHF, diabetes, COPD, ESRD)*
- Psychosocial barriers to care, such as language barrier, financial or transportation difficulties, housing or food insecurity, behavioral health concerns, or history of medication non-adherence

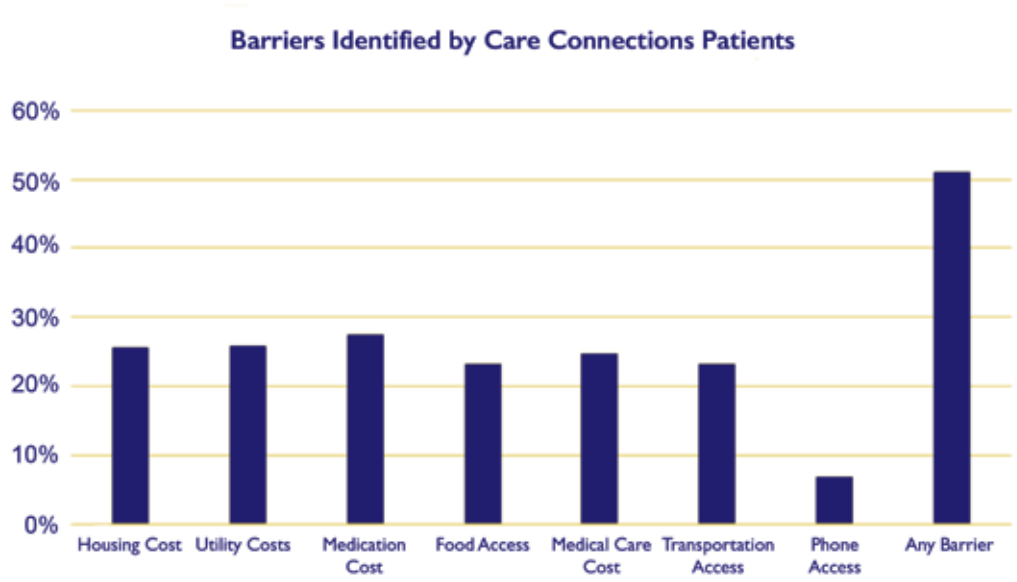


Fig. 4. SDOH Barriers Idenified by Care Connections Patients: Percentage of patients screened ever reporting the barrier.

allocation to maximize the health of the population it serves. Key aspects of working with Care Connections patients are assessing their motivation to change their current health care patterns, and evaluating their health literacy, which is their ability to understand their health and the care that it requires. The team completes these assessments during the intake process. All interactions by the team during their Care Connections episode, typically lasting six to nine months, are geared toward meeting the patients where they are in their ability to understand and make changes in their health care.

The Care Connections team works with the patients to teach them appropriate skills and to provide them with tools to navigate the health care environment. Once the patients have demonstrated that they can utilize the skills and tools they have learned during their time in Care Connections, they are ready to transition back to their prior primary care clinician. Upon transition, the patient care navigator accompanies the patient back to their primary care clinician during a "warm hand back" visit, providing the primary care clinician with a transition summary of the work by the Care Connections team with the patient during their time in Care Connections.

AMBULATORY COLLABORATIVE CARE TEAM

The Ambulatory Collaborative Care Team (ACCT) was created in 2016 as a transitional care model for intermediate and rising risk patients. When a patient assessed at medium risk, particularly in terms of historical health care utilization, transitions from Care Connections back to the primary care clinician, the patient is referred to an ACCT. In this model, the patients engage with members of the ACCT team while remaining in their primary care setting. Part of the overall population health strategy is to make the lessons and care coordination efforts of the Care Connections model more widely available as an extra layer of assessment and team-based support within LG Health primary care practices.

Each regional ACCT team consists of a registered nurse case manager, a social work case manager, and two community health workers. Five community pharmacists support the seven regional teams. Together, these cross-functional teams work to help patients navigate and overcome barriers to their health care. The goal of the ACCT is to assist the patient to become as self-sufficient as possible within the health care environment.

SOCIAL SERVICE HUBS

To meet the needs of the low risk patients within the Lancaster Community, LG Health has been working with Social Service organizations and Lancaster County 211. These local community organizations have been joining to create "hubs" to address concerns about health, poverty, education, and access to care in their communities. Lancaster General Health primary care practices screen patients' needs, as they utilize the standard questions about social and behavioral determinants of health in EPIC. When patients are identified as having an unmet need in a particular social determinant of health, they can be referred to the appropriate social service organizations

within their community. Currently, the United Way funds some of these hubs in the Lancaster County community, but others are funded through churches and community donations. This project began in 2017, and outcomes are currently being evaluated to determine next steps.

CONCLUSIONS

The HNHC patient population has multiple unmet medical and social needs that predispose it to higher utilization of health care resources, as well as increased morbidity and mortality. Lancaster General Health has been proactive in identifying and addressing these needs and barriers to care by developing innovative programs across the outpatient care service line. Care Connections, ACCT, and the Social Service Hubs seek to provide patients who are experiencing barriers to care with improved access to care, and ultimately, improved health and well-being.

ACKNOWLEDGEMENTS

- Wendell Kellum, MD, Physician Extensivist, Penn Medicine Lancaster General Health Care Connections
- Mary LaVasseur, NCTTP, NBC-HWC, Health Promotions Specialist, LG Health
- Jeff Martin, MD, FAAFP, Chair, Department of Family and Community Medicine, LG Health
- Lydia Wolfe MSN, RN, ACM, Case Manager, Care Connections
- The Care Connections Team
- John Wood MD, MBA, FAAFP, Medical Director, Lancaster Health Physicians, and Medical Director, LG Health Community Care Collaborative

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