

A Profile in Population Health Management: The Sandra Eskenazi Center for Brain Care Innovation

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This care model emphasizes social, behavioral, and environmental determinants of health when treating dementia.

Alzheimer's disease and related dementias (ADRD) impose significant challenges upon older adults and their caregivers (Friedman et al. 2015; Alzheimer's Association, 2017), who often provide unpaid care. Most physicians providing treatment know that effective care for ADRD and supporting unpaid caregivers requires a more sophisticated framework than is offered by the traditional primary care model. Such a framework values biomedical aspects of health, but places as much emphasis on social, behavioral, and environmental determinants of health, recognizing them as major players in the health of individuals and the population as a whole (Taylor et al., 2016).

Social, behavioral, and environmental determinants influence health directly and indirectly, manifesting as individual behaviors and habits, but also as disparities in access to care (Galea et al., 2011). Through targeted efforts, beginning

in 2007, to improve ADRD care for underserved populations in central Indiana, we established the Sandra Eskenazi Center for Brain Care Innovation (SECBCI)—which is affiliated with Indiana University in Indianapolis—in collaboration with Eskenazi Health and community-based organizations such as the Central Indiana Council on Aging Area Agency on Aging and the Greater Indianapolis Chapter of the Alzheimer's Association. This article describes how key aspects of our care model can inform the development of new models of population health management.

Creating a Successful Population Health Management Model

The Eskenazi Health System is a safety-net healthcare system serving a diverse, low-income population in Marion County, Indianapolis. In 2007, SECBCI used strategies that would ultimately become the Agile Implementation model

→ABSTRACT This article describes how key aspects of the Sandra Eskenazi Center for Brain Care Innovation's (SECBCI) care model can inform other entities on the development of new models of population health management, through a framework that emphasizes social, behavioral, and environmental determinants of health, as well as biomedical aspects. The SECBCI is a collaboration with Eskenazi Health and community-based organizations such as the Central Indiana Council on Aging Area Agency on Aging and the Greater Indianapolis Chapter of the Alzheimer's Association in Central Indiana. | **key words:** Sandra Eskenazi Center for Brain Care Innovation, Alzheimer's, dementia, social determinants of health

(Boustani, Alder, and Solid, 2018) to identify and implement evidence-based solutions for managing ADRD. The model's minimum specifications were patient and unpaid caregiver education and support, regular biopsychosocial needs assessment, prevention and treatment of comorbid conditions, medication management, and care coordination among clinical providers and community resources.

During SECBCI's decade-plus existence, we have witnessed first-hand how these specifications allow for more personalized and more effective individual and whole population care. A key factor in the SECBCI's success is that our care for ADRD extends beyond that which is given in the primary care setting, acknowledg-

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ing and addressing the influence of social determinants in the health and wellness of those with ADRD and their unpaid caregivers. In short, the model has improved care for people with ADRD because of its wider view of care for a defined population.

To expand these lessons to other populations, Eskenazi Health leadership recently convened an interdisciplinary team to discuss elements of a successful population health management model with the following four priorities: an accountable health community; an interdisciplinary, diverse, and scalable workforce; evidence-based care protocols; and a data warehouse with a comprehensive performance feedback loop at the individual and the population levels.

Definitions of these elements and how they work together are as follows:

The accountable health community is a fully integrated (i.e., owned by the same entity or connected through a joint venture) system of community-based and healthcare delivery organizations in a defined community that informs

the size and scope of subsequent elements needed to fully support its members.

The interdisciplinary, diverse, and scalable workforce is a team-based approach involving providers and community partners outside the healthcare system. In addition to primary and specialty care clinicians, other critical team members include counselors and health coaches, care coordinators, community health workers and resource navigators, administrators, business developers, and researchers. The diverse skill sets and collaboration with community partners emphasize the importance of social determinants of health. It is a more affordable, scalable, and sustainable approach than clinician-only models. These partnerships between health systems and community services reduce costs by reducing duplicative or unnecessary care, or connecting people with appropriate community services, which may reduce the need for subsequent interventions or hospitalizations, without sacrificing quality.

Evidence-based care protocols ensure the highest quality of care and incorporate multiple determinants of health, including those related to cognitive, physical, medical, genetics, and behavior, as well as non-clinical aspects related to communication and documentation, and social circumstances.

The data warehouse with a comprehensive performance feedback loop requires several characteristics. The first is a reliable and valid sensor, i.e., a means for collecting, monitoring, and alerting about modifiable (e.g., substance abuse, weight, employment) and non-modifiable (e.g., age, sex, race) biopsychosocial information about each population member. The sensor is a set of algorithms that automatically identifies when certain events occur (e.g., a health encounter) or when there are certain combinations of data elements indicating that a person may require additional attention or may be at increased risk for other conditions or adverse events. For example, if a person living alone is diagnosed with cognitive impairment and

receives a prescription for medication, the sensor would note that the person may be less likely to adhere to their medication schedule. Then provider(s) can be informed of this in real time.

The sensor may encompass multiple data collection methods, such as specific fields in the electronic health record and-or specific information from administrative and claims databases. It is important that the sensor can collect data on social determinants of health, as well as information related to a person's physical and cognitive functioning. Additionally, the sensor should collect healthcare use and cost data as a way to track care and provide feedback regarding the model's effectiveness.

As mentioned, in addition to collecting these data, the sensor would identify when certain combinations of values indicate that a population member has experienced a significant event or has an increased risk for an adverse outcome. Although the data need to be accessible to providers and those coordinating care, it is crucial that the data also are secure and confidential.

Finally, the data require a specialty unit of qualified individuals to oversee the entire accountable healthcare system and provide a centralized mechanism to coordinate care, which we refer to as the Mission Care Coordination Center, or MC3. This specialty unit of individuals involved in running the MC3 includes an interdisciplinary team involving, at a minimum, a nurse, a social worker, an analyst, and a healthcare administrator to carry out necessary tasks. The MC3 dynamically categorizes and triages the biopsychosocial needs of the population and optimally dispatches the diverse workforce accordingly, while providing timely feedback to that workforce at both the individual case management and population levels. The MC3 is supported by patient-, clinician-, and dual-facing technologies that collect and visualize information and support better decision-making.

The MC3 model reflects recommendations made by the American College of Physicians to

routinely screen for and respond to social determinants of health, and account for complexity and variation in how social determinants link to outcomes in different conditions (Daniel, Bornstein, and Kane, 2018).

The advanced track of the Accountable Health Communities model includes a “backbone” organization to “facilitate data collec-

The team-based approach involves providers and community partners outside the healthcare system.

tion and sharing among all partners to enhance service capacity” (Alley et al., 2016). As specified in the Accountable Health Communities model, the organization would operate independently from the accountable health community and may not have the ability to determine where the resources are needed the most, or have the authority to get them to the right people, at the right time.

The MC3, in contrast, is an integrated, centralized unit. We believe such a centralized method of care coordination is not only more efficient, but also leads to greater equity within populations, as well as more support for the healthcare providers who care for the most socially complex individuals.

How the Model Functions

To provide an example of how these four proposed elements of a population health model function in practice, consider the fictional case of Mr. Smith, a 72-year-old man who lives with his wife. Mr. Smith presents to the emergency department with a chronic obstructive pulmonary disease (COPD) exacerbation after running out of his scheduled inhalers. He is known to the SECBCI and the larger accountable health community through previous encounters. In addition to cognitive impairment, his past medical history includes Type 2 diabetes, with retinopathy and major depressive disorder.

The four elements of the system work in concert to provide Mr. Smith the best possible care, as follows:

Upon Mr. Smith's arrival at the emergency department, the electronic health record system (the sensor) alerts the MC3, which notifies an interdisciplinary healthcare team (diverse workforce), including his primary care geriatrician, pharmacist, nurse, and social worker.

The emergency department physician stabilizes Mr. Smith with prednisone and inhalers (evidence-based care), the social worker identifies that Mr. Smith is no longer driving due to his cognitive impairment and notes that his wife is in the hospital for pneumonia (social determinants of care collected by the sensor and stored in the data warehouse).

The pharmacist arranges for Mr. Smith to have automated mail refills of inhalers, ensures proper inhaler technique, and adjusts his dia-

We believe such a centralized method of care coordination leads to greater equity within populations.

betes medication while on prednisone. Additionally, the pharmacist is informed of Mr. Smith's cognitive impairment and understands the challenges this poses for medication adherence. Thus, the pharmacist checks with a social worker about the current plan to ensure Mr. Smith has the necessary help with his medications, and provides additional instructions regarding the prescription changes.

The social worker also coordinates Mr. Smith's transportation for a follow-up appointment with his geriatrician, evaluates and addresses any safety concerns regarding his safety at home alone, and arranges for Meals on Wheels to ensure he has access to food while his wife is absent.

As part of the population health registry for people with COPD, diabetes, and a recent emergency department visit, Mr. Smith is sched-

uled to receive a follow-up call by a nurse. The nurse checks on his breathing, daily blood sugars, and nutrition, and knows he is being supplied with Meals on Wheels and that no meal adjustments need to be made for his diabetes. However, through the SECBCI-provided care management, he already receives regular follow-ups in person and over the phone that the MC3 schedules and tracks. Instead of separate, unre-

The MC3 tracks the percentage of patients with one or more emergency department visits in the past ninety days.

lated follow-ups for individual conditions, the information from the emergency department visit is relayed to the nurse following up from the SECBCI, and inquiries regarding all conditions are made during a single follow-up call in the next week. Further, additional follow up is scheduled to evaluate his wife's condition upon her discharge to determine whether her ability to care for her husband has diminished, and if so what additional services are required.


The MC3 tracks the percentage of patients with one or more emergency department visits in the past ninety days, and therefore the emergency department visit represents a significant event in his care. Through review of Mr. Smith's ongoing care use and costs, the MC3 analyst team is able to assess his care's effectiveness, and strategize with the nurse and social worker regarding any additional care needed.

The MC3 team can review whether or not Mr. Smith fills his prescriptions, if he routinely misses appointments, or if he has repeated emergency department visits—patterns of care use that warrant consideration of further cognitive decline, relapse of depression, or inadequate social support. If any of these were present, the MC3 nurse would contact the geriatrician to ensure the issues have been identified and there

is a plan to address them. If necessary, the geriatrician can draw upon the interdisciplinary team for assistance and specialized care. In this continuous cycle, all elements remain dynamic and adjust appropriately to changes in Mr. Smith's social and medical determinants of health, the population's needs as a whole, the available workforce, and evidence-based healthcare protocols.

Conclusion

Whether caring for people suffering from chronic conditions such as ADRD or designing a larger population health management model, we can effectively and efficiently incorporate information on social determinants of health into better care for all patients in the system. Understanding how the key components function in concert with one another can allow administra-

tors and providers to fully appreciate their roles and the roles of others within the continuum of care, with the goal of improving overall population health. 

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