Results and lessons from the Camden Coalition’s randomized controlled trial

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January 2020
Summary

The Camden Core Model is the Camden Coalition of Healthcare Providers’ signature care management intervention. As a learning organization, we iterate on the model in light of the challenges we encounter and continually evaluate our impact. From 2014-2017, we partnered with researchers affiliated with J-PAL North America to conduct a randomized controlled trial that would help us learn more about how our model affects patients’ hospital readmissions.

The study found no difference between the treatment and control groups on hospital readmissions within 180 days, but did find a statistically significant rise in the number of participants receiving food assistance (SNAP benefits). The study also illuminated lessons for the Camden Coalition and the field of complex care, such as areas of future research, the value of identifying holistic outcome measures for complex care, and the necessity of increased upstream investment in the social determinants of health. This brief provides context for complex care and care delivery in Camden, NJ; the study itself; and implications for the Camden Coalition and other organizations.
Across the nation, the emerging field of complex care is learning how to best serve people with complex health and social needs.

Public health and other government agencies, health systems, medical and behavioral health providers, social service organizations, and others are working together to figure out which interventions work best for their communities.

The Camden Coalition of Healthcare Providers is one of these organizations. Over the past 15 years, we have worked with thousands of people in South Jersey facing the most complex medical and social challenges using a core set of practices emerging from the field of complex care. In addition to living with chronic medical conditions, many of our patients confront burdens resulting from a lifetime of racism and inequity. Their medical and behavioral health co-morbidities are often layered atop unemployment, poverty, homelessness, and incarceration, all of which threaten their health and well-being. Our patients experience stigma and lack of social support, and carry with them past trauma and negative interactions with systems and organizations. Institutions and agencies struggle to address these histories. Furthermore, the services our patients require, and the data collected about those services, are separated into disconnected systems. Individuals with complex needs encounter multiple fragmented and siloed systems resulting in uncoordinated, duplicative, and inefficient care from which they do not derive lasting benefit.1

Throughout the RCT study period of 2014 through 2017, and now, our understanding of patients’ desires and needs has deepened. As a result, the Camden Core Model has evolved. For example, we can now bridge patients’ medical, behavioral health, and social needs because of our more intense focus on strengthening services in our region. We have added a Housing First program and a Medical-Legal Partnership, advocated on behalf of easier access to medications for addiction treatment (MAT) for Medicaid beneficiaries,2 and supported a new addiction medicine clinic at Cooper University Health Care. We also ran the 7-Day Pledge from 2014-2019, which helped patients leaving the hospital see their primary care providers within seven days of discharge.3
The heart of our work is the Camden Core Model, our signature care management intervention. Following the principles of trauma-informed care and harm reduction, our goal is to empower patients with the skills and support they need to avoid preventable hospital use and improve their well-being.

We use real-time data to identify eligible patients, through the Camden Coalition Health Information Exchange, using criteria that identify significant medical and social complexity, such as extensiveness of past hospital use, presence of chronic medical illnesses, behavioral health comorbidities, and housing instability. Then, we meet patients in-person, usually at the hospital bedside, to invite them to enroll in the intervention.

An interprofessional team of nurses, social workers, and community health workers visits participants in the community after hospital discharge, helps reconcile their medications, accompanies them to doctor’s visits and other appointments, and links them to social and legal services. We co-construct a care plan with each patient and focus on helping them meet the goals that they set for themselves, which often leads to increased self-efficacy, stronger relationships with providers, and connection with a supportive social network.

About the Camden Core Model

The randomized controlled trial

In 2014, we embarked on a randomized controlled trial (RCT) with researchers affiliated with J-PAL North America, a research center based at the Massachusetts Institute of Technology, to evaluate the effect of the Camden Core Model in reducing patient readmissions.

While the model was still evolving to fully meet the needs of our patients, we had an opportunity to partner with a renowned research group and knew the results would contribute important
evidence to the growing body of research around complex care.

The research question we asked was: “At 180 days after a hospital discharge, do patients enrolled in the Camden Core Model experience a lower rate of hospital readmissions when compared to similar patients not enrolled in the intervention?”

Methods
Study recruitment took place at Cooper University Health Care and Lourdes Health System in Camden, New Jersey after patients eligible for the study were identified. In total, 800 individuals were enrolled in the study and half were randomized into the treatment group. To be eligible for the study, patients had to meet the following criteria:

- At least two inpatient admissions within the 6-month period inclusive of the hospital admission identified in the Camden Coalition Health Information Exchange;
- Two or more chronic medical conditions; and
- At least two of the following: five or more active outpatient medications, difficulty accessing services, lack of social support, a mental health comorbidity, active drug use, or homelessness.

Patients were excluded if they were uninsured, cognitively impaired, an oncology patient, or if their admission was for a surgical procedure for an acute problem, mental health care (with no comorbid physical health conditions), or complications of a progressive chronic disease with limited treatments.

J-PAL North America researchers conducted the analysis using hospital discharge data from a regional hospital claims database that the Camden Coalition’s data team developed. These data were supplemented with data from the Camden Coalition Health Information Exchange, Camden Coalition staff records, New Jersey state administrative data, and the National Death Index. After integrating these data sets, analysts performed multivariate, linear regression analysis to compare 180-day readmission rates for the intervention and control groups.

The study population
One-half of the patients included in the RCT were women; 40 percent were under age 55, and 30 percent were over age 65. Slightly more than half — 55 percent — were non-Hispanic African American, 30 percent were Hispanic, and 15 percent were non-Hispanic white. The patients in the study had high rates of hospital use, nearly twice the rate of patients in other care management and care transition programs that have been evaluated with RCTs. Moreover, in the six months prior to the study, the hospitalization rate for RCT patients was 18 times higher than the general adult population in Camden.

Our triage process led to the enrollment of a highly complex patient population, as shown by the following characteristics of the study population:

- Almost the entire population (95 percent) was not employed at time of enrollment;
- 40% were diagnosed with substance abuse during the index admission;
- Three out of four patients were single, divorced or widowed;
• One-half had less than a high school degree;
• About 60% reported needing help with mobility; and
• 48% had Medicare as their primary payer, and 45% had Medicaid as their primary payer.

Outcomes
When 180-day readmission rates were compared, J-PAL analysts found that patients enrolled in the control and intervention groups readmitted to the hospital at similar rates and concluded that the intervention had no significant impact on the 180-day readmission rate. The 180-day readmission rate was 61.7% in the control group and 62.3% in the intervention group.

J-PAL analysts also compared intervention and control patients on their participation in social services 6 months after hospital discharge using New Jersey state administrative data. The analysts found that while participation in TANF (i.e., Temporary Assistance for Needy Families) and General Assistance did not change significantly with the intervention, participation in SNAP (i.e., Supplemental Nutrition Assistance Program) was nine percent higher for patients enrolled in the intervention compared to patients in the control group. This finding lends evidence for the success of Camden Coalition staff in increasing patients’ access to community resources to support their health and well-being.

Limitations of the study
All research has limitations, and these must be considered before drawing conclusions from the results. As outlined in the study itself, the limitations for our evaluation include:
• The sample size was not large enough to analyze effects on specific sub-groups of patients, where there could be differential impacts. For example, patients housed through our Housing First program might have different outcomes than similar patients who were enrolled in the study but had not been placed in permanent housing during the study program;
• The data collected did not capture information that would allow for evaluation of potential non-tangible benefits of the intervention such as improved relationships with providers;
• The data collected do not allow comparison of participation in outpatient care; for example, whether patients in the intervention group see a primary care provider more regularly than patients in the control group;
• The study does not consider how a changing standard of care in Camden over the study period affected all patients in the region. For example, during the study period, multiple other care management programs emerged, and the Camden Coalition led a citywide campaign to connect Medicaid patients to primary care within 7 days of discharge. Similarly, the Affordable Care Act enabled Medicaid expansion in New Jersey during the study period, and the study does not take into account the changing insurance coverage landscape.
Implications for the Camden Coalition

In light of these limitations and the Camden Coalition’s dedication to continuous quality improvement, we are pursuing additional analyses with the RCT data set to learn more about our patients’ needs, and will continue to improve our model based on what we learn.

We are expanding our ongoing partnership with J-PAL to include the Rutgers Center for State Health Policy. This new collaboration will allow us to integrate Medicaid enrollment and claims data to study the effect of the Camden Core Model on non-hospital healthcare utilization outcomes among Medicaid patients enrolled in the RCT. We will compare intervention and control patients on outcomes including (but not limited to) utilization of primary and specialty care; participation in home-based services; medication prescription patterns; and stability of Medicaid enrollment.

Our internal data and quality improvement team is also analyzing the RCT data to understand how readmission outcomes varied by characteristics of the intervention (e.g., timing of enrollment, number of hours our care teams spent working with patients) and by clinical and demographic characteristics of patients (e.g., age, chronic disease profile, behavioral health co-morbidities). The results from this work will help us refine our triage criteria, intervention milestones, and our approach to working with specific subgroups of patients. Importantly, as we learn more about the intricacies of the barriers that our patients face, we will continue to build capacity in our community to address the multifaceted needs of the individuals and families we serve.
Implications for the field of complex care

Success in complex care will not be accomplished by a single health system, community-based organization, or social service agency.

Communities must come together to collectively build complex care ecosystems in which siloed and fragmented services and organizations collaborate deeply to address people’s needs. The need to iterate on our own model showed us the importance of being flexible, partnering across sectors, and rooting our intervention in our patients’ and community’s unique needs. In light of this, our National Center for Complex Health and Social Needs was established to inspire, connect, and support the evolving community of complex care practitioners and leaders.

To do the hard work of complex care, we have to think beyond traditional return on investment models, both in terms of the financial and the non-financial investments that our field should make and the returns that we should expect.

In the case of people with complex needs who are accessing multiple sectors, measures of success and the model for calculating return on investment needs to be complex and nuanced. The Camden Coalition remains deeply invested in improving the lives the vulnerable populations who rely on us to iterate on our work based on what we learn and co-designing interventions that address well-being.

Complex health and social needs are a consequence of systematic underinvestment in upstream solutions. Increased spending on education, mental health care, job training, and other preventive and protective civil society investments could support economic mobility and minimize significant trauma. While it is essential to serve people whose needs are not being met right now, investment in economic and social opportunity is key to preventing future complexity. These results send a powerful message to community and policymakers: short-term healthcare interventions alone cannot remedy lifetimes of complexity.
Acknowledgments

This study was possible through the hard work and dedication of many people. The Camden Coalition thanks each of the study participants for agreeing to be part of this research; Camden Coalition staff, especially Audrey Hendricks, Mary Pelak, and Marisol Velazquez; the study authors and researchers associated with J-PAL North America; Cooper University Health Care, Jefferson Health, and Virtua Health; the Camden Coalition Board of Trustees; and the Camden Coalition member organizations.

References


About the Camden Coalition

We are a multidisciplinary nonprofit working to improve care for people with complex health and social needs in Camden, NJ, and across the country. The Camden Coalition works to advance the field of complex care by implementing person-centered programs and piloting new models that address chronic illness and social barriers to health and wellbeing. Supported by a robust data infrastructure, cross-sector convening, and shared learning, our community-based programs deliver better care to the most vulnerable individuals in Camden and regionally.

Through our National Center for Complex Health and Social Needs (National Center), the Camden Coalition’s local work also informs our goal of building the field of complex care across the country. Launched in 2016, the National Center exists to inspire people to join the complex care community, connect complex care practitioners with each other, and support the field with tools and resources that move the field of complex care forward.