

# Complex/high-risk patient targeting case study

Impact of improved access to primary care and behavioural health services for high-risk patients.

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## Background

Many health systems globally are introducing new care models that purport to replace expensive, and often clinically unnecessary, acute inpatient care with more primary and community-based services. Many publications have proclaimed that better targeting of patients and treatment activities do provide opportunities for savings. In this article we discuss a clinic-based community intervention designed to improve access and quality of care for high-utilising, high-risk patients over the course of three years.

### PRE-OUTLINE SUMMARY

The Center for Medicare and Medicaid Innovation (CMMI) in the United States (US) awarded grants to 14 organisations to support primary care redesign efforts. CMMI awarded these grants in 2012 and typically evaluated implementation and outcomes for three years. Johns Hopkins University Community Health partnership programme is one such initiative funded by CMMI.

### SOURCE MATERIAL

The source material used is a programme report summarising the third annual assessment of the 14 awards granted to support primary care redesign. CMMI contracted with the National Opinion Research Center (NORC) at the University of Chicago to evaluate these primary care redesign programs. The evaluation team has published the third annual report and the applicable case study, 'Healthcare Innovations Awards (HCIA) Complex/High-Risk Patient Targeting.' Johns Hopkins University Community Health Partnership (J-CHiP) is sourced from this publication.<sup>1</sup>

## Introduction

Johns Hopkins University, in partnership with the Johns Hopkins Health System and other affiliates<sup>2</sup>, received an award to create a comprehensive and integrated programme, the Johns Hopkins Community Health Partnership (J-CHiP). J-CHiP is one of the most extensive and diverse programmes in the HCIA portfolio of awards that target complex, high-risk patients. The programme targets improved care coordination

across the continuum and comprises early risk screening, interdisciplinary care planning, enhanced medication management, patient/family education, provider communication, post-discharge support and home care services, including self-management coaching, and improved access to primary care. J-CHiP includes two arms:

1. An acute care and a transitional intervention (post-acute care [PAC] or hospital arm), including discharge to skilled nursing facilities (SNFs).
2. A clinic- and community-based intervention arm.

This case study focussed on the impact of community intervention on total cost of care, hospitalisation rates and emergency room (ER) visits, avoidable hospitalisation rates and member satisfaction rates.

## Programme design

The key goal of the community initiatives of the J-CHiP program was to reduce complications and increase access to care and use of primary care services.

The design of the program consisted of the following:

- Target dual eligible Medicare and Medicaid<sup>3</sup> beneficiaries and provide a 16-week intervention for those seniors who reported difficulty performing daily living activities.
- Home-based care: A registered nurse (RN) and an occupational therapist who conducted home visits to enrolled participants. This team worked closely with the enrolled consumers to identify goals, implement a care plan, navigate the healthcare system and facilitate access to resources.
- Care coordination/workforce training: Focussed on the nurses and the occupational therapists. Trainings were separated to ensure quality assurance and continuity.

The programme team included case managers, health behaviour specialists and community health workers (CHWs).

- Case managers assess, implement and coordinate care management services available to patients. Health behaviour specialists provide mental health and substance abuse services and case management as needed.

<sup>1</sup> The full report is available at <https://downloads.cms.gov/files/cmmi/hcia-chspt-thirdannualrpt.pdf>

<sup>2</sup> Other affiliates include hospitals, community clinics and other affiliates such as the Johns Hopkins Urban Health Institute, Priority Partners MCO, Baltimore Medical System (BMS Health Center) and local skilled nursing facilities.

<sup>3</sup> Medicare primarily covers beneficiaries aged 65 and over. Medicaid primarily covers low-income beneficiaries.

Community-based community health workers (CHWs) are focussed on addressing patients' barriers to care, often meeting patients at appointments in their homes.

- At the ambulatory clinics, patients identified for enrollment eligibility were contacted by a CHW who performed an assessment to identify barriers to care (e.g., transportation, housing, medical appointments).

Following the CHW assessment, the case was transferred to a case manager who assessed patient medical needs and worked with the patients to identify goals and care plans. Patients in need of behavioural services were referred to health behaviour specialists. The initiative also leveraged other community initiatives into the programme, e.g., access to a telephone triage service, 'Call Us First,' and the inclusion of two local community organisations to provide direct outreach and supportive services.

## High-risk patients

The patients included in the hospital intervention arm of the programme had the following characteristics at the pre-intervention stage:

- Age**
  - Average age of 57.2, with 32.7% of the population under the age of 65 and 9.7% of the population aged 85 or over
- Gender**
  - 52.6% female
- Mean count of Hierarchical Condition Categories (HCCs)**
  - 4.9
- Major diagnostic categories (MDCs)**
  - Circulatory (18.6%)
  - Respiratory (9.3%)
  - Nervous system (12.4%)
  - Musculoskeletal (11.3%)
  - Digestive (8.8%)
  - Other conditions (39.7%)

## Result

**FIGURE 1: DESCRIPTION OF REACH, POPULATION AND DATA**

LOCATION	BALTIMORE
REACH	80,257 BENEFICIARIES
POPULATIONS	ADULTS BEHAVIOURAL HEALTH/ SUBSTANCE ABUSE DUALY ELIGIBLE RACIAL/ ETHNIC MINORITIES URBAN
DATA AVAILABLE	MEDICARE CLAIMS MEDICAID CLAIMS PATIENT SURVEY / TELEPHONE INTERVIEWS

<sup>4</sup> ACS: Ambulatory care sensitive hospitalisations.

The data analysis compared the experience of J-CHIP enrollees with those of a matched group of comparators. It considered impact on utilisation, cost and quality of care over the enrolment period and during each quarter of enrolment. For the community-based intervention arm of the programme, a comparison was made between the programme impact for participants who had and did not have continuous contact with programme staff in each quarter, relative to a matched comparison group. The comparator and intervention groups were matched well and had few significant differences.

Figure 2 presents the average quarterly and aggregate impact results for Medicare and Medicaid beneficiaries relative to the comparator groups. The quarterly impact is the average quarterly difference-in-differences (DID) estimate per quarter of programme implementation. The aggregate impact is the total DID estimate for all programme participants across all quarters of programme implementation.

**FIGURE 2: IMPACT OF J-CHIP COMMUNITY PROGRAMME ON OUTCOMES**

AVERAGE QUARTERLY IMPACT OUTCOME MEASURES (NO PER 1000 BENEFICIARIES)	MEDICARE ADJUSTED ESTIMATES (90% CONFIDENCE INTERVAL)	MEDICAID ADJUSTED ESTIMATES (90% CONFIDENCE INTERVAL)
TOTAL COST OF CARE (\$)	-\$495 [-\$1,109, \$119]	-\$1,756 [-\$2,584, -\$928]**
HOSPITALISATIONS	-17[-27,-7]**	-31 [-39, -23]**
ED VISITS	-16 [-26, -6]*	-48 [-59, -37]**
READMISSIONS	-2 [-31, 27]	-36 [-64, -8]**
ASC HOSPITALIZATIONS	3 [-4, 10]	-7 [-11, -3]**
AGGREGATE IMPACT OUTCOME MEASURES (NO PER 1000 BENEFICIARIES)	MEDICARE ADJUSTED ESTIMATES (90% CONFIDENCE INTERVAL)	MEDICAID ADJUSTED ESTIMATES (90% CONFIDENCE INTERVAL)
TOTAL COST OF CARE (\$)	-\$4.9 MILLION [-\$10.9 MILLION; \$1.2 MILLION]	-\$24.7 MILLION [-\$36.4 MILLION; -\$13.1 MILLION]**
HOSPITALISATIONS	-163 [-262, -64]**	-434 [-547, -321]**
ED VISITS	-158 [-261, -55]**	-671 [-820, -522]**
READMISSIONS	-3 [-55, 49]	-55 [-97, -13]*
ASC HOSPITALISATIONS	27 [-38, 92]	-98, -156, -40]**

\*p<0.05, \*\*p<0.01

The results presented in Figure 2 have been obtained directly by NORC (at the University of Chicago) rather than being calculated or validated by us.

In the analysis of impact, the study reported total quarterly cost of care decreases for Medicaid but decreases that were not significant for Medicare. There were significant decreases in Medicare and Medicaid hospitalisations and ER visits, along with significantly fewer readmissions and potentially avoidable hospitalisations for Medicaid beneficiaries. There were many meaningful differences in cost and utilisation between beneficiaries managed by different teams or beneficiaries who had continuous contact, compared to those who did not.

## Future consideration

J-CHiP highlights the value of coordinated care in the community for high-risk groups. The group is due to publish combined results for all beneficiaries over the entire period of performance. That may help to more comprehensively understand the impact of the programme on total cost of care and utilisation. However, the current analysis supports positive financial and quality outcomes when primary care access and coordination is reinforced. The project demonstrates promise in institutional commitment and partnership with local community organisations, as the initiative reported reductions in cost and utilisation of avoidable admissions and ER visits for patients that were due to improved communication with providers, focussed education and engagement of members and care planning.

Complex and high-risk patients are not unique to the United States. The J-CHiP programme provides useful insights for organisations in international markets where access and integration issues exist. For these organisations, depending on

the available funding levers, reorganising primary care and providing coordinated community initiatives may prove to be financially beneficial. Where cost savings cannot be realised, such programmes may be attractive to new patients or increase patient loyalty. This is equally true for health systems and insurers.

Other useful insights from the J-CHiP programme are the nuances of programme design. J-CHiP focussed on dual eligible patients, which allowed them to focus their resources and efforts. When designing care coordination programmes, it is important to start with smaller groups of patients.

Organisational change can be difficult. Starting with a smaller subset of patients allows providers to realign their workflows and fully understand the incentives in the new programme. J-CHiP also made personal connections with the patients they were targeting. The use of care navigators and community health workers can increase adherence to the care management plans that an organisation creates. It also allows the organisation to connect with the patients when they are interacting with the health system, which is the best time to effect change on patient behaviour.



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