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Identification of Cross-sector Service Utilization Patterns Among Urban Medicaid Expansion Enrollees

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Abstract

Background—The expansion of Medicaid as part of the Affordable Care Act opened new opportunities to provide health coverage to low-income adults who may be involved in other public sectors.

Objective—The main objective of this study was to describe cross-sector utilization patterns among urban Medicaid expansion enrollees.

Research Design—We merged data from 4 public sectors (health care, human services, housing, and criminal justice) for 98,282 Medicaid expansion enrollees in Hennepin County, MN. We fit a latent class model to indicators of cross-sector involvement.

Measures—Indicator variables described involvement levels within each sector from March 2011 through December 2014. Demographic and chronic condition indicators were included post hoc to characterize classes.

Results—We found 6 archetypes of cross-sector involvement: The “Low Contact” class (33.9%) had little involvement in any public sector; “Primary Care” (26.3%) had moderate, stable health care utilization; “Health and Human Services” (15.3%) had high rates of health care and cash assistance utilization; “Minimal Criminal History” (11.0%) had less serious criminal justice involvement; “Cross-sector” (7.8%) had elevated emergency department use, involvement in all 4 sectors, and the highest prevalence of behavioral health conditions; “Extensive Criminal History” (5.7%) had serious criminal justice involvement. The 3 most expensive classes (Health and Human Services, Cross-sector, and Extensive Criminal History) had the highest rates of behavioral health conditions. Together, they comprised 29% of enrollees and 70% of total public costs.

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Conclusions—Medicaid expansion enrollees with behavioral health conditions deserve focus due to the high cost-reduction potential across public sectors. Cross-sector collaboration is a plausible path to reduce costs and improve outcomes.

Keywords

Medicaid expansion; social determinants of health; latent class analysis; cost; behavioral health; housing; criminal justice

The Affordable Care Act (ACA) allowed states to expand Medicaid to low-income, childless adults. These newly covered adults are disproportionately involved in health and non-health public sectors (ie, human services, housing, and criminal justice).[1] In previous work, we found that urban Medicaid expansion enrollees in Hennepin County, MN visited the emergency department (ED) or were hospitalized 3 times more often than the national average and had extensive contact with housing [shelters and supportive housing (13% of enrollees)], criminal justice (34%), and human service sectors [food support, cash support and case management (68%).[1] Human services is the term used in Minnesota and several Midwestern states and, for the purposes of this paper, is synonymous with the term “social services” used in other jurisdictions]. Cross-sector approaches may offer an effective and efficient mechanism to improve health care outcomes and control costs among nonelderly adults enrolled in Medicaid. Given limited public sector resources, such partnerships would ideally prioritize subpopulations with the greatest need and highest costs.

Within health care, a small subset of patients account for the majority of service use and costs.[2] For this reason, research has focused on narrow population segments known to be high utilizers of health care, such as individuals with substance use disorders (SUDs),[3,4] homelessness,[5,6] mental illness (MI),[7–9] or multimorbidity.[10,11] High health care utilizers also incur higher costs in other sectors, suggesting that cost-drivers across public sectors may be similar.[12] For this reason, connections between public sectors have received increased attention (eg, health care costs and supportive housing,[13] health insurance and jail bookings,[14] multiple sectors[15]). Although some organizations now utilize integrated cross-sector data for evaluation, these data have not been extensively leveraged to explore the comprehensive network of public sector interactions for the Medicaid expansion population.[16,17] A more robust description and segmentation of service patterns among populations that consume a large portion of services across sectors, such as the Medicaid expansion population, would expand and improve on previous efforts to estimate cross-sector utilization. Specifically, it could provide further insight into the cross-sector involvement of health care high utilizers suggested in our previous work and help health care providers,[12] social services and criminal justice agencies understand the total public sector experience of people under their care to improve service delivery and interventions.

The objective of this study was to identify distinct, cross-sector service use patterns among Medicaid expansion enrollees and compare costs across groups. In order to provide a more concise and nuanced examination of cross-sector patterns than is available through descriptive statistics, we used latent class analysis (LCA) to identify cross-sector involvement patterns across 4 public sectors: (1) health care; (2) human services; (3)

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criminal justice; and (4) housing. We then compared public sector investment across subpopulations using total cross-sector costs.

METHODS

Study Cohort

The study cohort included all persons in Hennepin County who enrolled in Medicaid through the ACA's Medicaid expansion provisions any time from March 1, 2011 to December 31, 2014. Minnesota expanded Medicaid in 2011 to nondisabled adults aged 21–64 years with no dependent children and income up to 75% (138% since 2014) of the Federal Poverty Level (FPL).

Data Sources

We merged health care, human services, criminal justice, and housing (including supportive housing and shelter involvement) data from March 2011 to December 2014 using administrative records from state and county data systems in Minnesota (see Table 1, Supplemental Digital Content 1, http://links.lww.com/MLR/B646 for data sources). Health care, human services, and housing records were matched using unique identifiers maintained by the Minnesota Department of Human Services, whereas criminal justice data were matched on name and date of birth using probabilistic matching software (LinkPlus).[18] We included all Medicaid expansion enrollees, regardless of Medicaid enrollment duration. Further, while health care claims describe only enrolled months, other data comprehensively describe service use during the study period regardless of Medicaid enrollment. This study was approved by the Minneapolis Medical Research Foundation Institutional Review Board.

Indicator Variables

The indicator variables used in the LCA model reflected levels of involvement in each sector (Table 1). No demographic or diagnosis information was entered into the LCA model. We recoded continuous and count variables as ordinal and categorical variables to create clusters revelant to policymakers and practitioners.

We summarized health care utilization as rates of ED, primary care, and inpatient visits per 12 Minnesota Health Care Programs (MHCPs) enrollment months, each recoded as ordinal variables with 3 levels: ED (0, 1–2, or 3+ visits), hospitalization (0, 1, 2+), and primary care (0, 1–3, 4+). Cut points were chosen based on relevant literature[2] and practice definitions for cases worthy of extra attention at Hennepin County Medical Center; high primary care use was further based on having visits at least quarterly.

We coded human services enrollment using binary variables for whether an individual had any enrollment during the study period in: (1) the Supplemental Nutrition Assistance Program; (2) the Minnesota Family Investment Program (MFIP) (ie, Minnesota's administration of the federal Temporary Assistance for Needy Families cash assistance program); (3) General Assistance, a Minnesota cash assistance program for adults with disabilities not on Social Security; (4) Social Security or Medicare enrollment as determined

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by income, MHCP, and Medicaid waiver records; or (5) Hennepin County case management, that is, on a social worker's case load for adult behavioral health, child welfare, or disability.

We categorized public health insurance enrollment according to total cumulative time of MHCP enrollment, coded ordinally to reflect cutoffs at 6 months, 1 year, and 2 years (0–179; 180–364; 365–729 d; 730+ d). Medicaid expansion eligibility made up the majority of all MHCP enrollment months, although counts also included enrollment in other types of Medicaid, as well as programs such as MinnesotaCare (public health insurance for people with incomes just above Medicaid thresholds) and Institutions for Mental Diseases.

Housing consisted of 2 variables measuring time spent in supportive housing and emergency shelters. We measured days in supportive housing ordinally based on Hennepin County's focus on maintaining housing for at least 1 year (0, 1–365, or 365+ days). Following common practice in Hennepin County shelter analyses, we estimated shelter utilization from episodes of continuous or intermittent shelter stays, coded based on a 1-year equivalent (0, 1–365, or 365+ episode days).

We summarized criminal justice involvement based on 5 indicators summarizing pretrial detention, posttrial consequences, and convictions. We measured statewide detention bookings (ie, in county jails), coded ordinally (0, 1–2, 3+ bookings). For posttrial consequences, we created 3 nominal variables indicating consequences experienced during the study period: community supervision (including probation, parole, and community service); county incarceration (adult corrections facilities, typically for sentences <1 y); and state incarceration (prison, typically for sentences >1 y). For court convictions, we indicated whether someone was ever convicted during the study period of a felony or a gross misdemeanor/misdemeanor, and whether the offense was a crime against a person (eg, assault, robbery) or society (eg, forgery, drugs, theft) (see Glossary, Supplemental Digital Content 1, http://links.lww.com/MLR/B646 for definitions of terms used in this section).

Analysis

We conducted LCA using Latent Gold 5.1.[19] We determined the number of classes using Bayesian Information Criterion from out-of-sample testing on 10 random samples of 2000 enrollees with replacement. The large size of the study population would have resulted in high dimensionality and, as a result, far more classes than would be analytically interpretable. Among the 10 samples, 6 suggested a 6-class solution, with other solutions ranging from 5 to 8 classes (see Table 2, Supplemental Digital Content 1, http://links.lww.com/MLR/B646 for Bayesian Information Criterion loglikelihood results for 10 random samples with replacement). We applied the 6-class model to the entire data set to arrive at the final latent class results.

Descriptive Analysis

We used demographic and diagnosis variables to characterize each latent class in a descriptive analysis following the LCA. Demographic data came exclusively from MHCP administrative records and included sex, age, race/ethnicity, preferred language, and marital status. Physical chronic health, SUD, and MI diagnoses were categorized from International Classification of Diseases, Ninth Revision codes using Chronic Condition Indicator (CCI)

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categories from the Healthcare Cost and Utilization Project (HCUP).[20] Enrollees were classified as having an MI or SUD diagnosis if they had ≥ 1 diagnoses in their inpatient, outpatient, professional or skilled nursing facility claims during the study period.

Cost Estimation

We estimated public health care costs using available Minnesota Medicaid fee schedules, Centers for Medicare and Medicaid Services drug cost averages,[21,22] and HCUP State Inpatient Database Diagnosis-Related Group per diem averages for hospital stays.[23] Public health care cost estimates were not adjusted for MHCP enrollment. Emergency shelter, community supervision, jail, and county and state incarceration costs were calculated using per diem estimates from Minnesota state and local government agencies.[24] Human services costs, including food and cash support, as well as supportive housing costs, were calculated from observed payments. Case management costs were calculated from per minute averages for time Hennepin County staff spent on human services cases and observed service authorization amounts. Administrative costs for human services were calculated from Hennepin County and Minnesota state averages.[25] All costs represent 2014 dollar values (see Table 1, Supplemental Digital Content 1, http://links.lww.com/MLR/B646 for detailed cost estimation methods)

Missing Data

Missing data were limited. Race, preferred language, and marital status were missing in 8.9%, 3.2%, and 1.0% of cases, respectively, and reported as “unknown.” Detention bookings and case management events with missing end dates were imputed using the median length of stay and represented <1% of cases. Group Residential Housing data lacked end dates in 23% of cases, therefore we imputed missing end dates from monthly Group Residential Housing financial records. Costs for inpatient, outpatient, and professional claims without an available cost value were omitted from cost estimates and represented <10% of claims. We omitted these claim amounts rather than impute them because claim-level cost estimates were highly skewed, risking cost overestimation; we preferred more conservate cost estimates. Criminal justice facilities and case management events without corresponding per diem estimates were assigned average values for the facility or case type (<1% of cases).

RESULTS

Demographics

During the first 46 months of the Medicaid expansion, 98,282 Hennepin County residents enrolled in Medicaid via expansion eligibility, ~13% of the total nonelderly adult population in Hennepin County. Expansion enrollees were predominantly men, white or Black/African-American, English-speaking, and unmarried, with a median age of 37 (Table 2). MI and SUD diagnoses were common.

LCA

The LCA class solution produced 6 latent classes describing varying patterns of involvement across public sectors (Fig. 1). For ease of readability, we labelled each class with a name that

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typifies its cross-sector involvement pattern. The largest class, “Low Contact” (33,287 enrollees, 33.9% of the study cohort), had minimal involvement with any sector, although about one-third used food support (compared with almost two-thirds of all expansion enrollees). Another large class, “Primary Care” (25,837 enrollees, 26.3%) used primary care and some human services, but little else.

“Health and Human Services” and “Cross-sector,” shared high rates of overall health care utilization, but had differing rates of ED, housing, and criminal justice involvement. Health and Human Services (15,046 enrollees, 15.3%) had high rates of primary care utilization, were enrolled in public health care programs continually, and usually received cash assistance and food support. Health and Human Services had a moderate level of housing involvement, but criminal justice involvement was uncommon. Cross-sector (7685 enrollees, 7.8%) had higher levels of ED use and more extensive involvement with housing and criminal justice, including the largest share of housing-involved enrollees and the highest convicted gross misdemeanor/misdemeanor rate of any class.

The remaining 2 classes were primarily characterized by their criminal justice involvement. The “Minimal Criminal History” class (10,840 enrollees, 11.0%) had less serious criminal justice involvement (misdemeanors, community supervision, etc.), while the “Extensive Criminal History” class (5,587 enrollees, 5.7%) had more serious criminal justice involvement, with the highest rates of incarceration and felony conviction of any class. Neither class had high health care or housing involvement, though health and human services involvement were generally higher than Low Contact.

Descriptive Analysis

Demographic analyses following the LCA procedure revealed stark differences in demographics and health conditions between the classes (Table 3). Low Contact was disproportionately young (median age, 35 y), white (50.2%), and less medically complex (2.0% with SUD and MI diagnoses, 2.0 average body systems with a physical chronic condition diagnosis). Primary Care was more racially diverse (40.7%. white) and had more medical complexity than Low Contact (13.4% with SUD and MI diagnoses, average 3.2 body systems with a physical chronic condition) and was the only class with a majority women (51.2%). Low Contact and Primary Care classes also had the lowest percentages of enrollees who chose English as their preferred language (85.5% and 85.7%, respectively), suggesting that immigrants were disproportionately represented in these low cross-sector use patterns. Health and Human Services was the oldest class (median age, 50 y), and more racially diverse than Low Contact or Primary Care. Health and Human Services had high average physical morbidity (4.3 body systems with a physical chronic condition) and high rates of MI diagnosis (71.4%), though SUD rates were not as high as the Cross-sector and Extensive Criminal History classes (46.6% vs. 86.1% and 54.5%, respectively).

The Minimal Criminal History and Extensive Criminal History classes contained high proportions of young people (median age of 32 y for both), men (79.6% and 91.2%, respectively), and people of color (60.1% and 65.4%, respectively), especially African Americans (45.1% and 53.0%, respectively). Rates of MI diagnoses for these 2 justice-involved classes were lower than Health and Human Services and Cross-sector, but SUD

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diagnosis rates were above average. Most members of Cross-sector had a MI or SUD diagnosis (87.0% and 86.1%, respectively) and over 3 quarters had both (77.9%).

Cost Estimates

On a per person basis, Cross-sector incurred the highest public costs (Fig. 2). These enrollees had the highest per person medical, human services, and housing costs, as well as the second highest per person criminal justice costs. Among Cross-sector enrollees, public health insurance made up over half of all costs (53.7%), followed by criminal justice (18.6%), human services (15.3%), and housing (12.4%). Health and Human Services and Extensive Criminal History also incurred high total per person public costs, but in different ways. Health and Human Services incurred most costs through health care (61.3%), with the largest share going to housing of any class (14.1%). Although housing was not the main cost driver for Health and Human Services or Cross-sector, together these 2 classes accounted for almost all housing costs among Medicaid expansion enrollees (95.5%). Extensive Criminal History incurred most costs through criminal justice involvement (69.9%). Despite being the second smallest class, Cross-sector accumulated the largest total amount of annual non–health care costs ($74.7 million) and only trailed Health and Human Services in overall total annual public costs ($161.4 million vs. $189.8 million). Overall, Health and Human Services made up 31.0% of all public costs, followed by Cross-sector (26.4%), Primary Care (18.9%), Extensive Criminal History (12.2%), Minimal Criminal History (7.4%) and Low Contact (4.0%). Together, Health and Human Services, Cross-sector, and Extensive Criminal History represented 28.8% of enrollees and 69.6% of all public costs among Hennepin County Medicaid expansion enrollees.

DISCUSSION

In this cross-sector analysis of Medicaid expansion enrollees in Hennepin County, we identified 6 patterns of service involvement (classes) across 4 sectors known to generate high public costs—health care, human services, criminal justice, and housing. This LCA result builds on previous research examining latent classes using only clinical and health care data[26] by specifying groups' sector-specific and total costs rather than high health care utilizers alone.[12]

Substantial research on health care high utilizers has focused on populations that might fit into the Health and Human Services class—older enrollees with chronic conditions often complicated by housing and/or behavioral health issues.[10,27] However, our findings suggest that, within the Medicaid expansion, the situation is more complicated. The Health and Human Services, Primary Care, and Cross-sector classes all accounted for high overall health care costs themselves, but typified distinct patterns across sectors. In addition, classes could carry high total costs due to high per capita costs across sectors (eg, Class 5—Cross-sector), or high costs in 1 or 2 sectors (eg, Class 2—Primary Care).

The 6 classes identified in our LCAs raised different opportunities for cross-sector collaboration. For example, the Cross-sector class stood out due to the high prevalence of co-occurring behavioral health conditions. From previous literature, we expected Medicaid expansion enrollees to have higher rates of MI and SUD than other Medicaid populations,

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but it was surprising how closely behavioral health cooccurred with cross-sector utilization patterns.[28] This co-occurrence suggests that behavioral health and high cost cross-sector patterns are closely related. Locally and nationally, health care,[29,30] human services,[31,32] housing,[33] and criminal justice[34,35] sectors are struggling to respond to the needs of people with MI and SUD. This means that health care interventions targeted to people in this class may have downstream effects on other sectors that would not occur for other classes. This dynamic would also work in reverse, where criminal justice policy changes around behavioral health could affect health care utilization for Cross-sector (and likely Extensive Criminal History). For these reasons, the Cross-sector class's behavioral health and housing needs may require integrated community interventions that would be less relevant for other health or justice-involved enrollees.

Our finding of high costs in non–health care sectors underscores the importance of the role of social determinants of health. We reinforce previous observations about the high use of public services by homeless and unstably housed populations. Importantly, our findings also show that the criminal justice system was another important point of contact, aligning with other published literature underscoring the need to more deeply examine the health of those involved with the US criminal justice sector.[36,37] This finding is especially important since criminal justice involvement is much more common in the United States than in other developed nations—US prisons and jails house the largest inmate population in the world, with millions more under community supervision.[38] Additional research on the relationships between Medicaid expansion, criminal justice involvement, and access to other public sector resources (eg, housing, substance use treatment) are vital to ongoing debates related to Medicaid and social determinants of health.

Methodologically, LCA successfully added estimates of prevalence and intensity of service involvement across multiple public sectors to segment a large health care–enrolled population. This produced more nuanced classifications than are available through descriptive statistics and is thus more useful for identifying high cost subpopulations for adaptations to existing practice or the design of new research.

Limitations

We acknowledge multiple limitations. First, our analysis is cross-sectional and does not account for sequencing of cross-sector involvement over time. Second, some data were incomplete. For example, shelter data covered 75% of Hennepin County shelter beds, and supportive housing data did not cover all available units. Likewise, Medicare or private insurance data and health claims from care administered in another state or correctional facilities were unavailable. Third, probabilistic matching on name and date of birth for criminal justice records, which lacked any other common identifiers, meant that ~10% of criminal justice records went unmatched and unobserved. Fourth, health care costs were not adjusted for MHCP enrollment and thus may underestimate costs for enrollees with limited enrollment histories. Fifth, negotiated prices for health care claims were unavailable, requiring the use of fee schedules. Sources used for claims estimates are in line with similar, regional health care cost analyses. Sixth, for incarcerated persons, low health care use from claims did not necessarily indicate a lack of utilization—prisons and jails were the main

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source of health care during confinement, and these interactions were largely unobserved. Finally, while the underlying dynamics that govern our results are likely to exist in other urban areas in the United States, varying state and local policies may produce different results in other contexts.

Implications

Low-income adults enrolled in Medicaid have diverse patterns of involvement not only in health care, but across public sectors. Although high costs can arise from single sectors, the highest-cost class used multiple public sectors and had diagnoses of both SUD and MI. Overall, our findings suggest that siloed responses driven by single sectors are unlikely to meet the complex needs of the most costly low-income adults in Medicaid expansion. Health care delivery systems should partner with criminal justice, human service, and housing agencies to design integrated systems to support these complex patients.[39] Some of this work is happening in our area, for example, in specialized courts such as Mental Health and Veteran's Court, where clinical social workers act as court liaisons to help participants navigate health, human services, housing and criminal justice bureaucracies.[40,41] Improved health outcomes may depend on such shared approaches. With recent interest in social determinants of health, cost-containment, and population health improvement, targeted cross-sector collaboration offers a plausible path to improved health outcomes and reduced costs.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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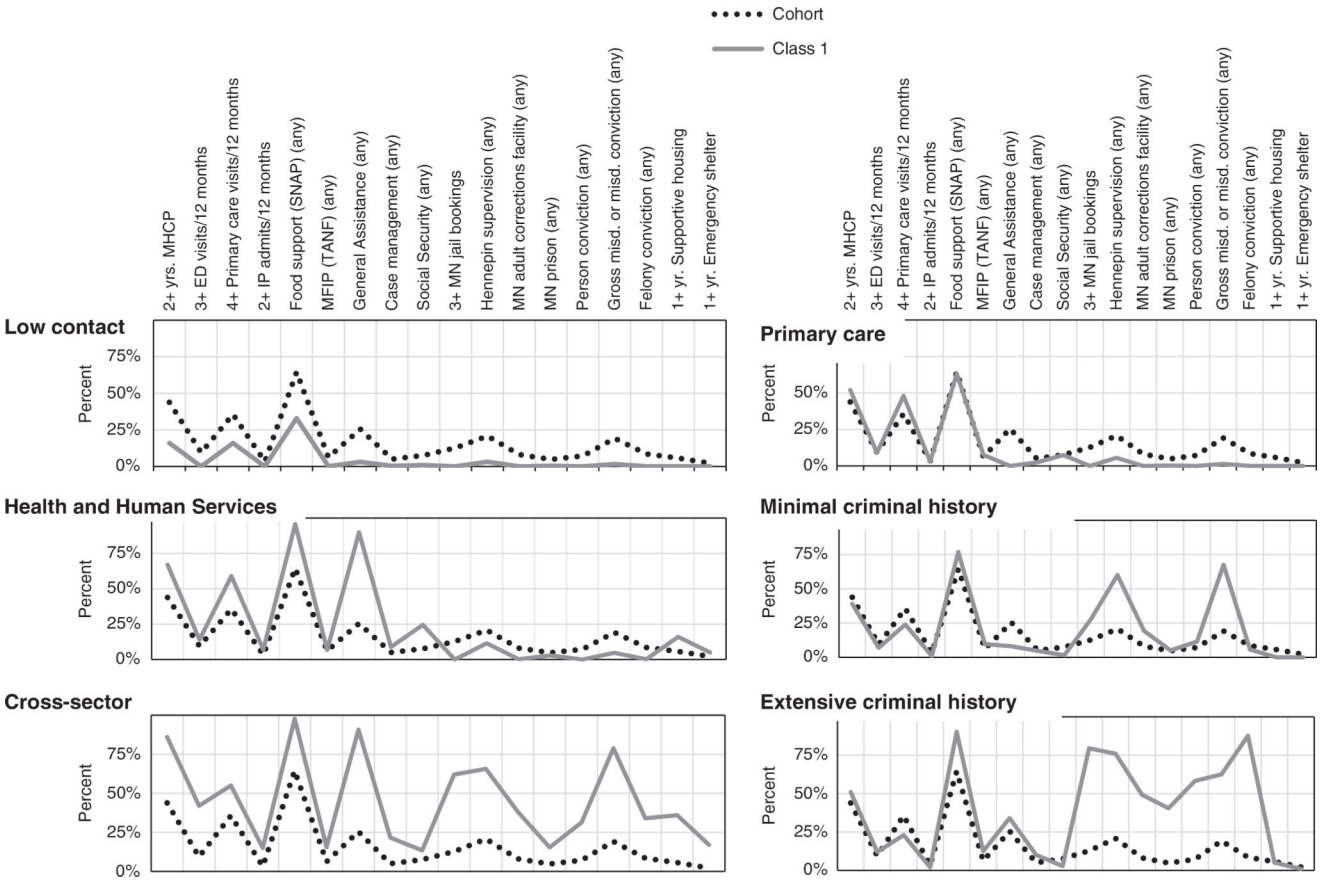

FIGURE 1.

Probability plot. ED indicates emergency department; MFIP, Minnesota Family Investment Program; MHCP, Minnesota Health Care Program; SNAP, Supplemental Nutrition Assistance Program; TANF, Temporary Assistance for Needy Families.

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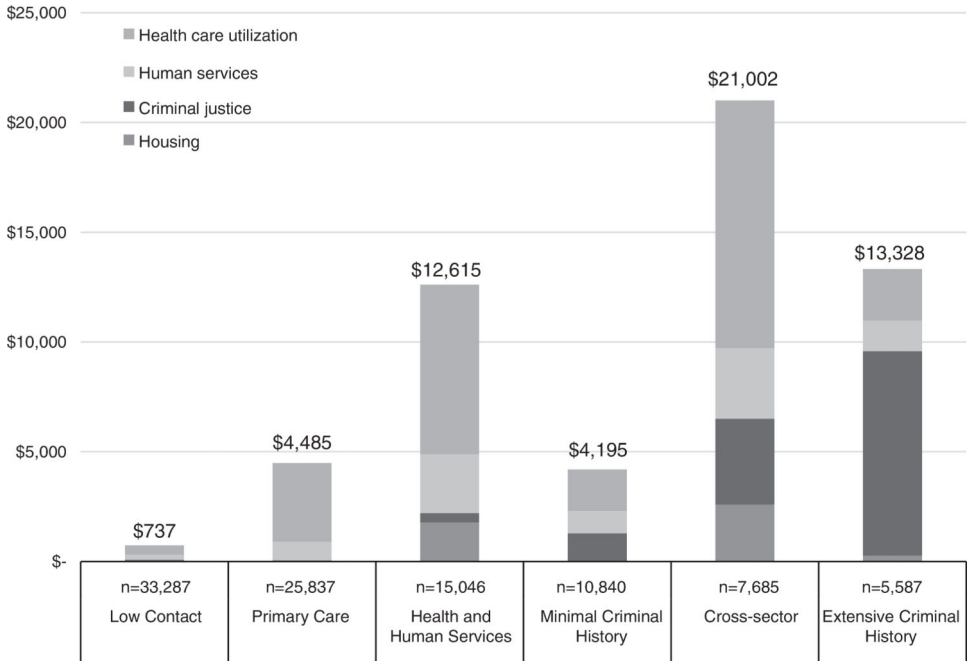

FIGURE 2.
Annualized per person costs by class.

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TABLE 1.

Indicator Variables

Indicators	Level	N (%)
Emergency department visits *	0	52,217 (53)
	1 or 2	36,801 (37)
	3+	9264 (9)
Primary care visits *	0	43,285 (44)
	1 to 3	19,929 (20)
	4+	35,068 (36)
Inpatient admissions *	0	80,647 (82)
	1	14,397 (15)
	2+	3238 (3)
Food and cash support	Food support (SNAP)	63,435 (65)
	MFIP (TANF)	6062 (6)
	General assistance	25,108 (26)
	Social Security or Medicare dual eligible	7458 (8)
MHCP † insurance (any type)	1–179	10,382 (11)
	180–364	17,766 (18)
	365–729	27,021 (27)
	730+	43,113 (44)
Case management	Any Hennepin County case management	4898 (5)
Supportive housing	0 d	88,535 (90)
	< 365 d total	4166 (4)
	≥ 365 d total	5581 (6)
Emergency shelter	0 d	91,453 (93)
	< 365 episode days	4691 (5)
	≥ 365 episode days	2138 (2)
Detention bookings	0	72,826 (74)
	1 or 2	12,943 (13)
	3+	12,513 (13)
Criminal justice consequences	Any Hennepin supervision	20,461 (21)
	Any county incarceration	7976 (8)
	Any state incarceration	4713 (5)
Court convictions	Gross misdemeanor or misdemeanor	18,855 (19)
	Felony	8335 (8)
	Person crime	7054 (7)

* Rate per 12 months of MHCP enrollment.

† MHCP, including Medicaid.

MFIP indicates Minnesota Family Investment Program; MHCP, Minnesota Health Care Programs; SNAP, Supplemental Nutrition Assistance Program; TANF, Temporary Assistance for Needy Families.

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TABLE 2.

Demographics of Hennepin Medicaid Expansion Enrollees

	Hennepin Medicaid Expansion (N = 98,282)
Sex (%)	
Women	39.0
Men	61.0
Race and ethnicity (%)	
White	42.0
Black/African-American	36.5
Asian/Pacific Islander	4.6
American Indian or Native American	3.4
Hispanic, any race	2.7
Multiracial	1.9
Unknown	8.9
Preferred spoken language (%)	
English	88.9
Other languages	7.9
Unknown	3.2
Marital status (%)	
Not married	90.1
Married	8.9
Unknown	1.0
Median age	37
Substance use disorder/mental illness diagnosis (%)	
Only MI diagnosis	20.8
Only SUD diagnosis	5.9
Both MI and SUD diagnoses	20.6
Average number of body systems affected by a chronic physical condition	3.2

MI indicates mental illness; SUD, substance use disorder.

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TABLE 3.

Demographic and Diagnosis Characteristics by Class

	Hennepin Medicaid Expansion (N = 98,282)	Low Contact (N = 33,287)	Primary Care (N = 25,837)	Health and Human Services (N = 15,046)	Minimal Criminal History (N = 10,840)	Cross-sector (N = 7685)	Extensive Criminal History (N = 5,587)
Sex (%)							
Women	39.0	42.4	51.2	41.9	20.4	25.4	8.8
Race and ethnicity (%)							
White	42.0	50.2	40.7	39.7	35.0	35.0	27.7
Black/African-American	36.5	25.2	37.5	44.1	45.1	43.0	53.0
Asian/Pacific Islander	4.6	7.1	4.9	3.1	2.7	0.7	1.8
American Indian or Native American	3.4	1.1	2.3	4.9	3.7	11.4	5.4
Hispanic	2.7	2.7	2.9	2.5	3.1	2.7	2.2
Multiracial	1.9	1.8	2.0	1.1	2.6	2.3	3.0
Unknown	8.9	11.8	9.7	4.6	7.8	4.9	6.9
Preferred spoken language (%)							
English	88.9	85.5	85.7	89.9	94.7	98.3	97.3
Other languages	7.9	8.8	11.1	9.6	3.2	1.4	1.5
Unknown	3.2	5.8	3.1	0.5	2.1	0.4	1.3
Marital status (%)							
Not married	90.1	86.1	86.9	94.6	95.5	97.4	96.9
Married	8.9	12.4	12.3	4.6	3.9	2.0	2.8
Unknown	1.0	1.5	0.8	0.8	0.6	0.6	0.3
Median age	37	35	36	50	32	38	32
Substance use disorder/mental illness diagnosis (%)							
Only MI diagnosis	20.8	14.0	31.3	31.2	15.2	9.1	12.4
Only SUD diagnosis	5.9	1.4	4.8	6.4	12.4	8.2	20.5
Both MI and SUD diagnoses	20.6	2.0	13.4	40.2	20.5	77.9	34.0
Average body systems affected by chronic physical conditions	3.2	2.0	3.2	4.3	2.3	4.0	2.2

MI indicates mental illness; SUD, substance use disorder.