

Enhanced Care Management

Policy Brief

December 2025



UCLA
CTSI
Grant #UL1TR001881

SUMMARY: Enhanced Care Management (ECM) is a statewide benefit designed to provide longitudinal, comprehensive care management to high-risk, high-need Medi-Cal patients. This evaluation aims to understand the demographic and clinical characteristics, enrollment patterns, and acute and primary care utilization among ECM eligible patients empaneled to Los Angeles County Department of Health Services (DHS) 3 years after its implementation. From January 2022 to January 2025, DHS enrolled a total of 9788 patients into ECM. Compared to eligible patients who enrolled in ECM (ECM Enrollees), those who did not enroll (Unsuccessful Enrollment) were more likely to be Black and more likely to have schizophrenia. Among ECM Enrollees, the mean duration of enrollment was 405 days for those who were Currently Enrolled at the time of the analysis, 242 days for those who Disengaged before graduation, and 322 days for those who Graduated from ECM. ECM Enrollees had higher rates of primary care visits prior to enrollment and were more likely to maintain primary care engagement compared to those with Unsuccessful Enrollment. Disengaged patients had a lower prevalence of chronic conditions compared to those who were Currently Enrolled or Graduated. While there were modest reductions in acute care utilization for all ECM groups (ECM Enrollees and Unsuccessful Enrollment), this includes those who were unable to be engaged and may not reflect the full impact of the program. This finding is consistent with other studies of large-scale care coordination programs not showing significant reductions in acute care utilization. While this evaluation did not include a cost analysis, future work should examine the sustainability of ECM or resource-intensive care management programs.

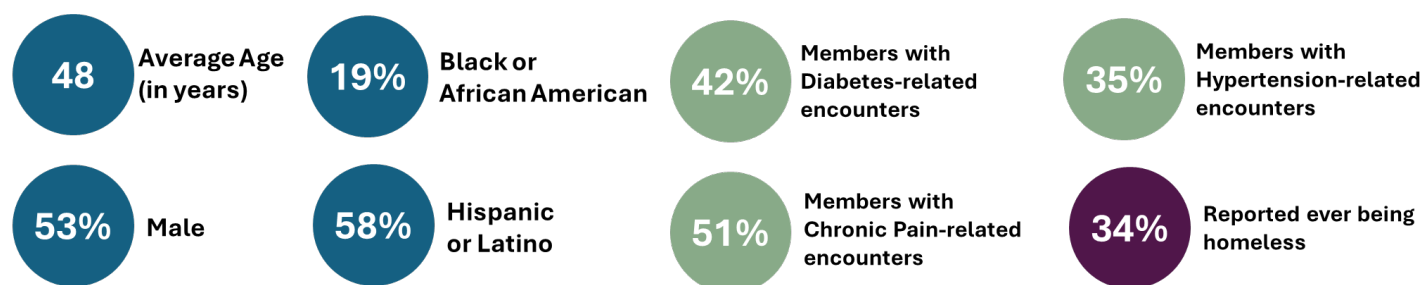
Key Findings:

- Patient with Unsuccessful Enrollment were younger, more likely to be male and Black and had higher rates of schizophrenia and psychotic disorders compared to ECM Enrollees, underscoring the need for tailored approaches for hard-to-engage patients.
- ECM Enrollees had more primary care visits prior to enrollment than patients with Unsuccessful Enrollment, suggesting that patients with Unsuccessful Enrollment may experience more barriers to engaging with both primary care and ECM.
- Among those screened, patient with Unsuccessful Enrollment had higher rates of depression and risky substance use.

Background & Purpose:

Enhanced Care Management (ECM) was initiated in 2022 as part of the California Advancing and Innovating Medi-Cal (CalAIM) program within the 1115 Medicaid Waiver. ECM builds upon previous waiver programs, including Whole Person Care and the Health Homes Program, and is now a statewide benefit designed to provide longitudinal, comprehensive care management to high-risk, high-need Medi-Cal patients who meet one of ECM Populations of Focus (PoF) criteria, including those with high acute care utilization, experiencing homelessness, serious mental illness, substance use disorder, justice-involved, or at-risk patients in the prenatal or perinatal period. The ECM care delivery model includes a single lead care manager who work with team members across disciplines and systems. DHS contracts with three managed care plans to be the ECM provider for DHS-empaneled patients who are eligible for ECM. All ECM-eligible empaneled patients receive services regardless of insurance status.

ECM Member Characteristics:



ECM Implementation:

ECM-eligible patients are identified through various methods including point-of-care referrals or with an algorithm built into the electronic medical record. Patients identified as eligible are assigned a care manager and a care team. The care manager or team member then conducts 5 outreach attempts over 90 days utilizing different modalities (phone, letter, field visit). Once reached, patients decide whether to participate in ECM. During the longitudinal episode of care management, patients can graduate when their Care Plan goals are met, withdraw earlier, or become lost-to-follow-up.

Care management staff are trained to support the patients as whole persons and enable them to navigate complex medical and social systems and resources. Staff undergo standardized training in engaging diverse populations, comprehensive needs assessments, person-centered planning, special needs, and cultural competency to help them reflect upon and actively address their own biases to ensure equitable and effective support for all patients.

Glossary:

DHS-empaneled - Patients for whom DHS is responsible for providing comprehensive care. This includes patients assigned by the Managed Care MediCal health plans and others.

ECM-eligible - DHS-empaneled patients meeting the clinical inclusion criteria for ECM.

Unsuccessful Enrollment - ECM-eligible patients who did not enroll because they 1) declined participation or 2) could not be engaged through the standard outreach protocol

Currently Enrolled - ECM participants who were enrolled at the time of analysis, including those who re-enrolled

Disengaged - ECM participants who enrolled, but did not graduate because they 1) decided no longer to participate, or 2) became lost-to-follow-up

Graduated - ECM participants who enrolled, completed their Care Plan goals, and graduated.

ECM Enrollee - Any ECM participant, including Currently Enrolled, Disengaged, and Graduated. This excludes Unsuccessful Enrollment.

Not Care Managed - DHS-empaneled patients not in care management programs because they did not meet the inclusion criteria.

Acute Care - Emergency Room Visits or Inpatient Hospital Admissions. This excludes Urgent Care visits

Primary Care - Visits with any team member of the primary care medical team.

Program Enrollment:

ECM began in January 2022 and has had 2,500-3,000 actively enrolled patients each month since 2023. The ECM patients included in this evaluation included 355,176 patients empaneled to DHS from January 2022 to January 2025. During this period, a total of 9788 patients were enrolled in ECM, including 3,106 who were actively enrolled or re-enrolled at the time of the analysis, 3,818 who were disengaged, and 2,864 who graduated from the program. Another 11,203 ECM-eligible patients who received outreach did not enroll (Unsuccessful Enrollment).

ECM Enrollee Characteristics:

ECM enrollees had a mean age of 48 years, 53% were male, and 58% were Hispanic or Latino, 19% Black or African American, 4% White, and 4% Asian. Enrollees had high rates of chronic conditions including chronic pain, diabetes, high blood pressure, mental health conditions, and chronic lung disease (Table 1).

Table 1. Characteristics of ECM Enrollees and patients with Unsuccessful Enrollment

	ECM Enrollee N = 9,788	Unsuccessful Enrollment N = 11,203	Not Care Managed N = 312,655
Age, years	47.8	37.3†	38.6
Female, %	46.6%	38.7%†	47.1%
Race & Ethnicity, %			
Latino	58.1%	50.9%†	54.6%
Black	18.9%	19.7%†	10.8%
White	3.9%	7.3%†	9.4%
Asian	3.8%	2.1%†	6.7%
American Indian/Alaska Native	0.4%	0.3%†	0.2%
Native Hawaiian/Pacific Islander	0.1%	0.2%†	0.2%
Other	12.6%	14.7%†	11.0%
Unknown/Declined	2.2%	4.9%†	7.1%
Health Conditions			
Diabetes	42.0%	12.6%†	9.1%
Chronic pain	51.0%	29.7%†	15.9%
Hypertension	35.0%	13.2%†	8.8%
Mental Health Condition	22.8%	16.6%†	4.1%
Chronic lung disease	12.1%	6.3%†	2.5%
Kidney disease	8.8%	2.5%†	0.8%
Asthma	10.1%	5.2%†	2.0%
Congestive heart failure	8.6%	2.7%†	0.8%
Anxiety	11.6%	7.3%†	3.0%
Hyperlipidemia	8.0%	3.8%†	5.2%
Depression	8.8%	3.8%†	0.8%
Obesity	6.0%	2.9%†	2.3%
Liver disease	5.4%	2.6%†	1.1%
HIV	7.0%	2.9%†	0.7%
Substance abuse	5.2%	4.9%†	0.5%
Schizophrenia/Psychosis	4.1%	6.2%†	0.3%

†Unsuccessful enrollment group significantly different from ECM group

Demographics and Chronic Diseases

- Comparing ECM Enrollees to patients with Unsuccessful Enrollment revealed key differences between the two groups: Patients with Unsuccessful Enrollment were younger, more likely to be male and Black and had lower rates of medical comorbidities compared to ECM Enrolled patients, except schizophrenia and psychotic disorders, which were more common among patients with Unsuccessful Enrollment (Table 1).
- There were also significant differences between the ECM Currently Enrolled, Disengaged and Graduated groups: Disengaged patients were more likely to be Black compared to Currently Enrolled and Graduated patients. Graduated patients were more likely to have chronic medical conditions and were less likely to have mental health conditions, compared to Currently Enrolled patients (Table 2)

Primary Care (PC) Engagement:

- Compared to patients with Unsuccessful Enrollment, ECM Enrollees had more PC visits in the 12 months prior to ECM enrollment (Table 3).
- Among ECM Enrollees, Graduated patients had a higher number of PC visits prior to enrollment compared to patients who were Currently Enrolled or Disengaged. Both Disengaged and Graduated patients had a smaller decline in PC visits than Currently Enrolled patients (Table 4).

Table 2. Characteristics of ECM Enrollees

	Currently Enrolled N = 3,106	Disengaged N = 3,818	Graduated N = 2,864
Age, years	45.5	46.3	52.1 **
Female, %	46.2%	42.5%*	52.5%**
Race & Ethnicity, %			
Latino	66.8%	48.3%*	61.6%**
Black	14.0%	24.4%*	16.8%**
White	2.6%	5.1%*	3.6%**
Asian	2.8%	2.8%*	6.3%**
American Indian/Alaska Native	0.4%	0.4%*	0.5%**
Native Hawaiian/Pacific Islander	0.1%	0.1%*	0.1%**
Other	11.1%	15.6%*	10.1%**
Unknown/Declined	2.2%	3.2%*	1.0%**
Length of enrollment in ECM			
Mean	405.0	242.4*	322.2*†
0m-1m	5.4%	9.8%*	2.5%**
1m-2m	7.4%	6.6%*	3.0%**
2m-3m	7.8%	4.8%*	3.2%**
3m-6m	14.6%	39.7%*	34.9%**
6m-1yr	26.5%	21.4%*	28.0%**
1yr-2yr	18.6%	11.4%*	18.0%**
2yr-3yr	6.7%	4.8%*	8.6%**
3yr-4yr	13.0%	1.5%*	1.9%**
Health Conditions			
Diabetes	36.8%	33.1%*	59.4%**
Chronic pain	51.8%	46.2%*	56.4%**
Hypertension	29.6%	29.5%	48.2%**
Mental Health Condition	25.5%	22.7%*	20.1%*
Chronic lung disease	11.6%	10.9%	14.2%**
Kidney disease	7.7%	6.2%	13.3%**
Asthma	9.6%	9.3%	11.8%**
Congestive heart failure	7.7%	7.3%	11.3%**
Anxiety	13.5%	10.7%*	10.9%*
Hyperlipidemia	6.7%	7.0%	10.7%**
Depression	11.1%	6.2%*	9.6%†
Obesity	6.0%	4.9%	7.6%†
Liver disease	5.3%	4.8%	6.2%
HIV	8.7%	6.3%*	6.1%*
Substance abuse	5.9%	6.3%	2.8%**
Schizophrenia/Psychosis	3.7%	5.9%*	2.0%**

* Significantly different (p<0.01) from currently enrolled patients by pairwise comparisons using Chi-square test for categorical variables or T-test for numerical variables.

† Graduated group different (p<0.01) from disengaged group using Chi-square test for categorical variables or T-test for numerical variables.

Acute Care Utilization:

All groups demonstrated a drop in acute care utilization (defined as emergency department [ED] visits or hospitalization) after ECM Enrollment or Unsuccessful Enrollment (Tables 3 and 4).

- Patients with Unsuccessful Enrollment had a larger decrease in ED visits between 12 months prior to and after proxy enrollment (defined as the first outreach date where they had the opportunity to enroll) compared to ECM Enrollees patients (Table 3).
- ECM Disengaged and Graduated patients had a smaller decline in hospitalizations and ED visits compared with ECM currently enrolled patients. (Table 4)

Table 3. Healthcare Utilization 12 Months Pre- and Post - Enrollment for ECM Enrollees and Patients with Unsuccessful Enrollment

Encounter Type	ECM Enrollee N = 9788			Unsuccessful Enrollment N = 11,203			Not Care Managed N = 312,655
	Pre Mean	Post Mean	Change Mean	Pre Mean	Post Mean	Change Mean	Mean
Any Encounter	23.17	18.54	-4.63	12.12*	6.35	-5.77 [†]	6.68 §
Primary Care Visits	5.32	4.35	-0.97	1.59*	0.55	-1.04	1.73 §
Acute Care	2.07	1.29	-0.78	1.95	0.81	-1.14 [†]	0.49 §
Hospitalizations	0.57	0.33	-0.24	0.33*	0.11	-0.22	0.07 §
ED Visits	1.50	0.96	-0.54	1.62	0.70	-0.92 [†]	0.42 §

See Appendix Table for complete data

* Pre-enrollment healthcare utilization different (p<0.01) between Enrollee and Unsuccessful Enrollment by pairwise comparisons using T-test

§ Pre-enrollment healthcare utilization different (p<0.01) for patients not in CM program from ECM Eligible (ECM Enrollee and Unsuccessful Enrollment) by pairwise comparisons using T-test

[†]Change in healthcare utilization different (p<0.01) between Unsuccessful Enrollment and ECM Enrollee

Table 4. Healthcare Utilization 12 Months Pre- and Post- Enrollment for ECM Enrollees

Encounter type	Currently Enrolled N = 3106			Disengaged N = 3,818			Graduated N = 2,864		
	Pre Mean	Post Mean	Change Mean	Pre Mean	Post Mean	Change Mean	Pre Mean	Post Mean	Change Mean
Any Encounter	24.63	16.99	-7.64	19.23*	15.43	-3.80 [†]	26.84*§	24.36	-2.48 ^{†‡}
Primary Care Visits	4.67	3.37	-1.30	4.46	3.65*	-0.81 [†]	7.17* §	6.33	-0.84 [†]
Acute Care	2.41	1.22	-1.19	2.05*	1.41	-0.64 [†]	1.73* §	1.22	-0.51 [†]
Hospitalizations	0.69	0.33	-0.36	0.50*	0.32	-0.18 [†]	0.55*	0.34	-0.21 [†]
ED Visits	1.72	0.89	-0.83	1.55	1.09	-0.46 [†]	1.18* §	0.88	-0.30 [†]

See Appendix Table for complete data

* Pre-enrollment healthcare utilization different (p<0.01) from Currently Enrolled group by pairwise comparisons using T-test

§ Pre-enrollment healthcare utilization different for ECM graduated (p<0.01) from disengaged groups by pairwise comparisons using T-test

[†]Change in healthcare utilization different (p<0.01) from Currently Enrolled group by pairwise comparisons using T-test.

[‡]Change in healthcare utilization different for ECM graduated (p<0.01) from disengaged group by pairwise comparisons using T-test.

Screening:

- Compared to ECM enrollees, patients with Unsuccessful Enrollment underwent less screening for depression, homelessness, food insecurity, and substance use disorder (Table 5). This may be attributable to lower rates of PC visits among patients with Unsuccessful Enrollment.
- Among those screened, patients with Unsuccessful Enrollment had higher rates of severe depression, risky substance use, and lower rates of food insecurity compared to ECM enrollees (Table 5).

Table 5. Evidence-based Screening for ECM Enrollees and Patients with Unsuccessful Enrollment

	ECM Enrollee N = 9,788	Unsuccessful Enrollment N = 11,203	Not Care Managed N = 312,655
Screened: Depression	84.5%	49.7%†	34.6%
PHQ-9			
None-Minimal	64.1%	60.7%†	80.4%
Mild	13.1%	13.1%†	8.4%
Moderate	9.7%	11.2%†	5.6%
Moderately Severe	8.2%	8.4%†	3.7%
Severe Depression	4.9%	6.6%†	1.9%
Screened: Homelessness	99.1%	88.5%†	64.4%
Ever screened positive for homelessness	34.6%	34.2%	7.9%
Screened: food insecurity	78.5%	49.8%†	39.4%
Ever screened positive for food insecurity	10.8%	7.9%†	3.6%
Screened: Alcohol use	67.8%	44.6%†	34.3%
Frequency of binge drinking			
Never or Once or Twice	87.9%	84.2%†	88.8%
Monthly or Weekly	7.8%	10.1%†	9.5%
Daily or Almost Daily	4.3%	5.7%†	1.7%
Screened: Illicit drug use	56.3%	32.5%†	26.0%
Frequency of illicit drug use			
Never/Once or Twice	94.5%	91.1%†	98.1%
Monthly or Weekly	2.6%	3.5%†	0.9%
Daily	2.9%	5.4%†	1.1%
Screened: Non-medical prescription drug use	61.3%	39.1%	30.7%
Frequency of non-medical prescription drug use			
Never/Once or Twice	96.5%	93.8%†	98.3%
Monthly or Weekly	1.4%	2.6%†	0.7%
Daily	2.1%	3.6%†	1.1%
Screened: Cannabis use	51.5%	30.2%†	22.8%
Frequency of Cannabis use			
Never or Once or Twice	88.8%	81.9%†	91.9%
Monthly or Weekly	4.1%	7.0%†	3.4%
Daily	7.1%	11.2%†	4.7%

†Unsuccessful Enrollment group significantly different from All ECM Patients

- Among ECM enrollees, Graduated patients had higher screening rates for depression, food insecurity, and illicit drug use compared to Currently Enrolled and Disengaged patients (Table 6). This may be attributable to higher rates of PC visits among Graduated patients.
- Among those screened, Graduated patients had lower rates of severe depression and risky substance use compared to Currently Enrolled and Disengaged patients (Table 6).

Table 6. Evidence-based Screening among ECM Enrollees

	Currently Enrolled N = 3,106	Disengaged N = 3,818	Graduated N = 2,864
Screened: Depression	87.0%	77.6%*	91.2%*†
PHQ-9			
None-Minimal	57.8%	61.9%	73.0%*†
Mild	15.3%	13.9%	10.1%*†
Moderate	11.1%	9.7%	8.2%*†
Moderately Severe	9.8%	9.1%	5.5%*†
Severe Depression	5.9%	5.4%	3.3%*†
Screened: Homelessness	100.0%	97.7%	100.0%
Ever screened positive for homelessness	38.8%	37.5%	26.3%*†
Screened: food insecurity	79.2%	70.8%*	88.1%*†
Ever screened positive for food insecurity	10.9%	11.3%	10.2%
Screened: Alcohol use	72.5%	58.7%*	74.8%†
Frequency of binge drinking			
Never or Once or Twice	87.9%	82.7%	93.0%*†
Monthly or Weekly	6.8%	11.2%	5.6%*†
Daily or Almost Daily	5.3%	6.1%	1.4%*†
Screened: Illicit drug use	60.1%	46.6%*	64.9%*†
Frequency of illicit drug use			
Never/Once or Twice	94.0%	91.6%*	97.8%*†
Monthly or Weekly	2.5%	4.4%*	0.9%*†
Daily	3.5%	4.0%*	1.2%*†
Screened: Non-medical prescription drug use	66.2%	51.5%*	69.0%†
Frequency of non-medical prescription drug use			
Never/Once or Twice	96.3%	95.3%	98.0%*†
Monthly or Weekly	1.4%	1.9%	1.0%*†
Daily	2.4%	2.8%	1.0%*†
Screened: Cannabis use	55.2%	42.5%*	59.6%*†
Frequency of Cannabis use			
Never or Once or Twice	88.8%	83.4%*	93.9%*†
Monthly or Weekly	3.9%	6.0%*	2.5%*†
Daily	7.3%	10.5%*	3.6%*†

* Significantly different ($p < 0.01$) from currently enrolled patients by pairwise comparisons using Chi-square test for categorical variables or T-test for numerical variables.

†ECM graduated group different ($p < 0.01$) from ECM disengaged group using Chi-square test for categorical variables or T-test for numerical variables.

Discussion:

In this initial evaluation of ECM since its implementation in 2022, we examined whether ECM had a positive impact on enrolled patients. We also identified characteristics of the various ECM subgroups that may inform future outreach, training, and implementation approaches.

Key Findings:

1. **Outreach** – One of the most interesting findings was that patients with Unsuccessful Enrollment were younger, more likely to be male and Black and had higher rates of schizophrenia and psychotic disorders compared to ECM Enrollees. During ECM implementation, we did not know which patients would be more challenging to engage other than those missing contact information. These findings may underscore the need for more tailored approaches for hard-to-engage patients, particularly those with severe mental health illnesses.
2. **Primary Care Utilization** – ECM Enrollees had more primary care engagement prior to enrollment than patients with Unsuccessful Enrollment, suggesting that an existing trusting relationship with a primary care clinic increases the likelihood of successful enrollment. Conversely, lower primary care engagement among ECM Unsuccessful Enrollment patients may be attributable to higher rates of serious mental illness, which may contribute to greater challenges engaging with members of the primary care team, including care managers. Among ECM enrollees, ECM Graduated group had higher rates of primary care utilization prior to and after ECM enrollment compared to the ECM Disengaged group.
3. **Acute Care Utilization** – In contrast to our expectations, patients with Unsuccessful Enrollment had greater declines in acute care after proxy enrollment compared to ECM Enrollees. This finding is hard to interpret because Unsuccessful Enrollment patients did not receive the ECM program intervention because they either 1) declined to participate or 2) were never able to be engaged during the outreach process, which decreases the likelihood that engagement alone might have reduced acute care utilization. Similarly, multiple other studies of large-scale care coordination programs do not show significant reductions in acute care utilization.^{1,2} Among ECM Enrollees, those currently enrolled had larger reductions in acute care compared to ECM Disengaged and Graduated patients.
4. **Screening** - since health-related social need Screening is visit-based, those with fewer visits may have had fewer opportunities to receive recommended screening. Among those screened, Unsuccessful Enrollment patients had higher rates of self-reported depression and risky substance use. Notably, among those screened, over one-third of ECM Enrollees and patients with Unsuccessful Enrollment screened positive for homelessness. Finally, among those screened, only 11% of ECM enrollees and 7.9% of Unsuccessful Enrollment patients screened positive for food insecurity, which is lower than the national rate of 13.5% in 2023.³ This lower than expected prevalence may be related to a patient's reluctance to share this information during the intake process.

Policy Recommendations

- While some of the findings above are promising, there are mitigating factors to consider. First, are we selecting the right patients who will benefit from the intervention? ECM selected for the top 3-5% of the highest-risk patients. However, high-risk patients are likely to have average outcomes in the absence of any intervention (“regression to the mean”),⁴ and predicting patients who will continue to be high-risk remains challenging.^{5,6} In addition, there is increasing interest in “rising risk” patients who are not yet high-risk, but are on the trajectory of becoming high-risk in the future;⁷ these patients may be more likely to benefit from the intervention. Although health plans and health systems may not be incentivized to invest in primary prevention programs for rising risk patients because patients do not always stay in the same health ecosystem long-term, it would be meaningful to do those studies and analyze whether the impact of this care management program could be amplified if the focus were on rising risk patients.
- Second, although the care management program intervention can be tailored to meet the needs of the patient and their population of focus, should the outreach and retention strategies also be tailored? Our findings showed different demographic, mental health, and healthcare utilization characteristics associated with successful enrollment and engagement in ECM. Tailoring the outreach and retention strategies to better address patients’ needs and health conditions may result in more impact.⁸
- Third, we looked at healthcare outcomes over 12 months after enrollment but did not collect patient-centered outcomes data such as trust in health care, self-efficacy, and self-reported health status, which may better reflect benefits of this intervention and lead to improved health care outcomes over the long-term.
- Fourth, the sustainability of care management programs like ECM should be considered carefully. In the LA DHS experience, we invested significant resources into staffing, IT infrastructure, training, and implementation. At this time, we have not recovered the costs of these investments nor has the revenue covered the annual operating costs from the program. Taken together, it is difficult to determine if there was, or will be, an overall small return on investment.

Authors

Sae Takada, MD, PhD; Jessica Jara, MPH; David Huang, PhD; Daniel Hanaya, MPP; Jennifer Antonio, RN; Stefanie Vassar, MS; Nina Park, MD; Arleen Brown, MD, PhD, Belinda Waltman, MD.

Acknowledgments

The Los Angeles County Department of Health Services and the University of California, Los Angeles Clinical and Translational Science Institute provided immense support as well as funding for the production of this policy brief.

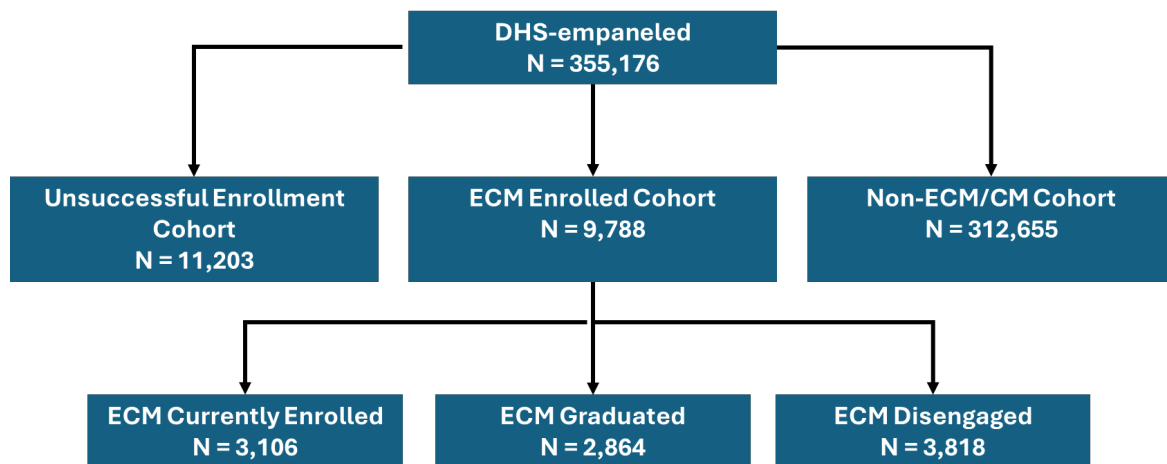
Data and Methodology

LA DHS was a contracted ECM provider from Jan 2022 through November 2025. Medical records from LAC DHS from January 2020 to April 2025 were extracted for LAC DHS empaneled patients. Data were analyzed in statistical software to provide comparisons of demographics, comorbidities, ECM program status, receipt of screening, and pre/post enrollment healthcare utilization rates between those who enrolled in ECM and those who were unsuccessfully enrolled and among patients in ECM who are actively enrolled, dropped out, and graduated.

References

1. Peikes D, Chen A, Schore J, Brown R. Effects of care coordination on hospitalization, quality of care, and health care expenditures among Medicare beneficiaries: 15 randomized trials. *Jama*. Feb 11 2009;301(6):603-18.
2. Yoon J, Chang E, Rubenstein LV, et al. Impact of Primary Care Intensive Management on High-Risk Veterans' Costs and Utilization: A Randomized Quality Improvement Trial. *Ann Intern Med*. Jun 19 2018;168(12):846-854.
3. Rabbitt MH, LJ; Reed-Jones, M. Food Security in the U.S. - Key Statistics & Graphics. Accessed August 26, 2025, <https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/key-statistics-graphics#foodsecure>
4. Linden A. Assessing regression to the mean effects in health care initiatives. *BMC Medical Research Methodology*. 2013/09/28 2013;13(1):119.
5. Ng SHX, Rahman N, Ang IYH, et al. Characterising and predicting persistent high-cost utilisers in healthcare: a retrospective cohort study in Singapore. *BMJ Open*. Jan 6 2020;10(1):e031622.
6. Johnson TL, Rinehart DJ, Durfee J, et al. For many patients who use large amounts of health care services, the need is intense yet temporary. *Health Aff (Millwood)*. Aug 2015;34(8):1312-9.
7. Center for Health Care Strategies. Identifying “Rising Risk” Populations: Early Lessons from the Complex Care Innovation Lab. <https://www.chcs.org/identifying-rising-risk-populations-early-lessons-from-the-complex-care-innovation-lab/>
8. Bryk J. High-Need, High-Cost Interventions—One Size Does Not Fit All. *JAMA Network Open*. 2025;8(6):e2511813-e2511813.

Appendix Figure: ECM Study Sample



Appendix Tables:

Appendix Table 3. Healthcare utilization 12 months pre and post enrollment between patients enrolled in ECM and patients who were Unsuccessfully Enrolled (Complete Version)

Encounter Type	ECM Enrollee N = 9788			Unsuccessful Enrollment N = 11,203			Not Care Managed N = 312,655
	Pre	Post	Change	Pre	Post	Change	
Clinical encounters							
Mean (SD)	23.2 (18.7)	18.5 (18.0)	-4.6 (16.7)	12.1 (16.2)*	6.4 (11.0)	-5.8 (13.6) [†]	6.7 (9.9) §
Any clinical encounters N (%)	9605 (98.1%)	8729 (89.2%)	-	9777 (87.3%)*	8523 (76.1%)	-	197354 (63.1%)§
Primary Care Visits							
Mean (SD)	5.3 (5.1)	4.3 (5.4)	-1.0 (5.2)	1.6 (3.0)*	0.5 (1.8)	-1.0 (2.8)	1.7 (2.8) §
Any PC visits N (%)	7975 (81.5%)	6347 (64.8%)	-	4767 (48.8%)*	1872(16.7%)	-	132494 (67.1%)§
Acute Care Utilization							
Mean (SD)	2.1 (3.9)	1.3 (3.1)	-0.8 (3.4)	2.0 (5.1)	0.8 (3.9)	-1.1 (3.7) [†]	0.5 (1.2)§
Any Acute care Utilization N (%)	5414 (55.3%)	3871 (39.5%)	-	5933 (53.0%)*	2671 (23.8%)	-	80005 (25.6%)§
Hospitalizations							
Mean (SD)	0.6 (1.5)	0.3 (1.2)	-0.2 (1.5)	0.3 (1.0) *	0.1 (0.6)	-0.2 (1.0)	0.1 (0.4) §
Any Hospitalizations N (%)	2371 (24.2%)	1476 (15.1%)	-	1818 (16.2%)*	694 (6.2%)	-	14158 (4.5%)§
ED Visits							
Mean (SD)	1.5 (3.2)	1.0 (2.6)	-0.5 (2.9)	1.6 (4.8)	0.7 (3.7)	-0.9 (3.4) [†]	0.4 (1.1) §
Any ED visits N (%)	4584 (46.8%)	3325 (34.0%)	-	5333 (47.6%)*	2410 (21.5%)	-	73125 (23.4%)§

* Pre-enrollment healthcare utilization different (p<0.01) between Enrollee and Unsuccessful Enrollment by pairwise comparisons using T-test or Chi-square test

§ Pre-enrollment healthcare utilization different (p<0.01) for patients not in CM program from ECM Eligible (ECM Enrollee and Unsuccessful Enrollment) by pairwise comparisons using T-test or Chi-square test

[†]Change in healthcare utilization different (p<0.01) between Unsuccessful Enrollment and ECM Enrollee

Appendix Table 4. Healthcare utilization 12 months pre- and post- enrollment among patients who are currently enrolled in, disengaged from, and graduated from ECM (complete version)

Encounter type	Currently Enrolled N = 3106			Disengaged N = 3,818			Graduated N = 2,864		
	Pre	Post	Change	Pre	Post	Change	Pre	Post	Change
Any Clinical Encounter									
Mean (SD)	24.6 (18.7)	17.0 (18.8)	-7.6 (19.2)	19.2 (19.1)*	15.4 (16.6)	-3.8 (15.1) †	26.8 (17.4)* §	24.4 (17.4)	-2.5 (15.2) †‡
Any clinical encounters N (%)	3057 (98.4%)	2378 (76.6%)	-	3707 (97.1%)*	3514 (92.0%)	-	2841 (99.2%)*	2837 (99.1%)	-
Primary Care Visits									
Mean (SD)	4.7 (5.1)	3.4 (5.8)	-1.3 (5.4)	4.5 (4.9)	3.7* (4.9)	-0.8 (4.7) †	7.2 (4.9)* §	6.3 (5.2)	-0.8 (5.5) †
Any PC visits N (%)	2436 (78.4%)	1281 (41.2%)	-	2821 (73.9%)*	2460 (64.4%)	-	2718 (94.9%)*§	2606 (91.0%)	-
Acute Care Utilization									
Mean (SD)	2.4 (4.2)	1.2 (3.5)	-1.2 (3.7)	2.1 (4.0)*	1.4 (3.2)	-0.6 (3.4) †	1.7 (3.3)* §	1.2 (2.6)	-0.5 (3.1) †
Any Acute care Utilization N (%)	1846 (59.4%)	1057 (34.0%)	-	2068 (54.2%)*	1591 (41.7%)	-	1500 (52.4%)*	1223 (42.7%)	-
Hospitalizations									
Mean (SD)	0.7 (1.7)	0.3 (1.2)	-0.4 (1.6)	0.5 (1.4)*	0.3 (1.1)	-0.2 (1.4) †	0.5 (1.4)*	0.3 (1.2)	-0.2 (1.4) †
Any Hospitalizations N (%)	833 (26.8%)	460 (14.8%)	-	839 (22.0%)*	552 (14.5%)	-	699 (24.4%)	464 (16.2%)	-
ED Visits									
Mean (SD)	1.7 (3.4)	0.9 (2.9)	-0.8 (3.1)	1.6 (3.4)	1.1 (2.6)	-0.5 (2.9) †	1.2 (2.6)* §	0.9 (2.1)	-0.3 (2.6) †
Any ED visits N (%)	1579 (50.8%)	894 (28.8%)	-	1791 (46.9%)*	1409 (36.9%)	-	1214 (42.4%)*§	1022 (35.7%)	-

See Appendix Table for complete data

* Pre-enrollment healthcare utilization different (p<0.01) from Currently Enrolled group by pairwise comparisons using T-test

§ Pre-enrollment healthcare utilization different for ECM graduated (p<0.01) from disengaged groups by pairwise comparisons using T-test

†Change in healthcare utilization different (p<0.01) from Currently Enrolled group by pairwise comparisons using T-test.

‡Change in healthcare utilization different for ECM graduated (p<0.01) from disengaged group by pairwise comparisons using T-test.