



Long-Term Impact of a Comprehensive Care Coordination Program on Medicaid Expenditures Among Children and Young Adults with Chronic Diseases

HSD131

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BACKGROUND

- ❖ The **Coordinated Healthcare for Complex Kids (CHECK)** program at the University of Illinois Health and Health Sciences System is a comprehensive care program that provided care coordination and behavioral health services to children, adolescents and young adults with ≥ 1 chronic medical conditions.
- ❖ The program was funded by an Innovation grant from the Centers for Medicare and Medicaid services and offered to participants enrolled in the Illinois Medicaid program or a Medicaid managed care organization (MCO). After grant funding ended, the cooperating MCO signed a contract to enable patients to stay in the CHECK program.
- ❖ The main goal of the CHECK program was to reduce unnecessary emergency department (ED) visits and hospitalizations, thereby decreasing Medicaid expenditures.
- ❖ The comparator group comprised of patients enrolled in the MCO and received usual care (UC). They were granted admission into CHECK after December 31st, 2016. No significant differences in expenditures were found between CHECK and UC groups at one year post-CHECK implementation.

OBJECTIVE

To describe the 58-month impact of the CHECK program on Medicaid expenditures, compared to usual care

METHODS

- ❖ Medicaid paid claims were analyzed, including monthly inpatient and outpatient medical, emergency, and prescription claims, from June 1st, 2014 to October 31st, 2019
- ❖ For analyzing trends, an interrupted time series, segmented regression analysis was conducted for three time periods: pre-enrollment, grant-funded and self-funded
- ❖ Total costs by month for each group were fit using OLS regression to an a priori specified model

$$\text{mean cost} = \beta_0 + \beta_1 * \text{time} + \beta_2 * \text{int}_1 + \beta_3 * \text{time after int}_1 + \beta_4 * \text{int}_2 + \beta_5 * \text{time after int}_2$$

int_1 = intercept between segments at the start of the grant-funded period

int_2 = intercept between segments at the start of self-funded period

β_0 = intercept at start of study

β_1 = trend in monthly costs with time

β_3 and β_5 = trend changes compared with the preceding segment

β_2 and β_4 = trend changes compared with that of the preceding segment

- ❖ Changes in model results due to autocorrelation related to seasonal effects, and potential outliers, were evaluated

RESULTS

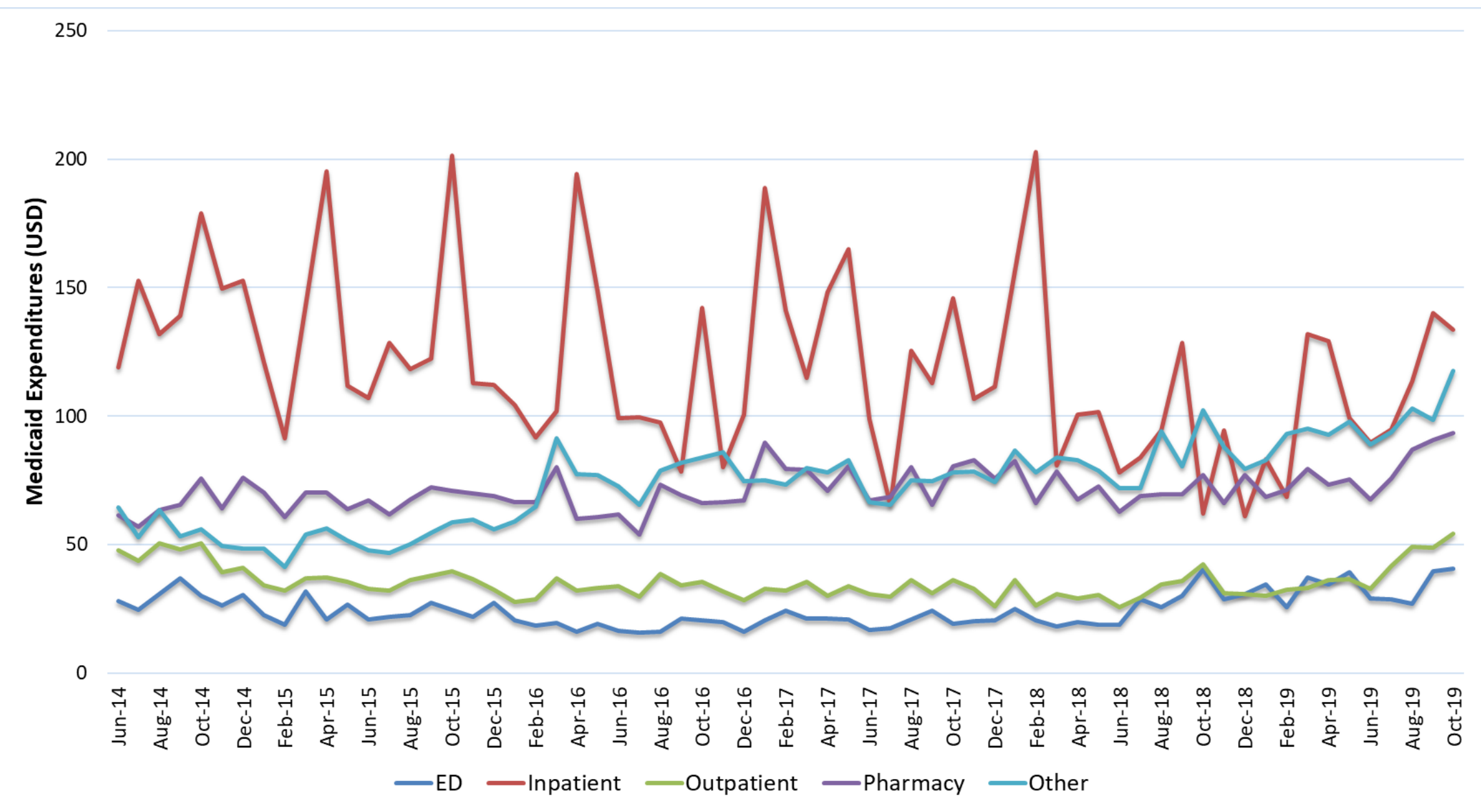
The analysis included 5,234 CHECK and 2,677 UC participants

The groups were similar in terms of proportion of individuals with asthma, diabetes, epilepsy, prematurity, brain injury and sickle cell disease. The CHECK group had a higher proportion of patients with sickle cell disease (2.9%) compared to UC (0.8%)

Table I: Patient demographics

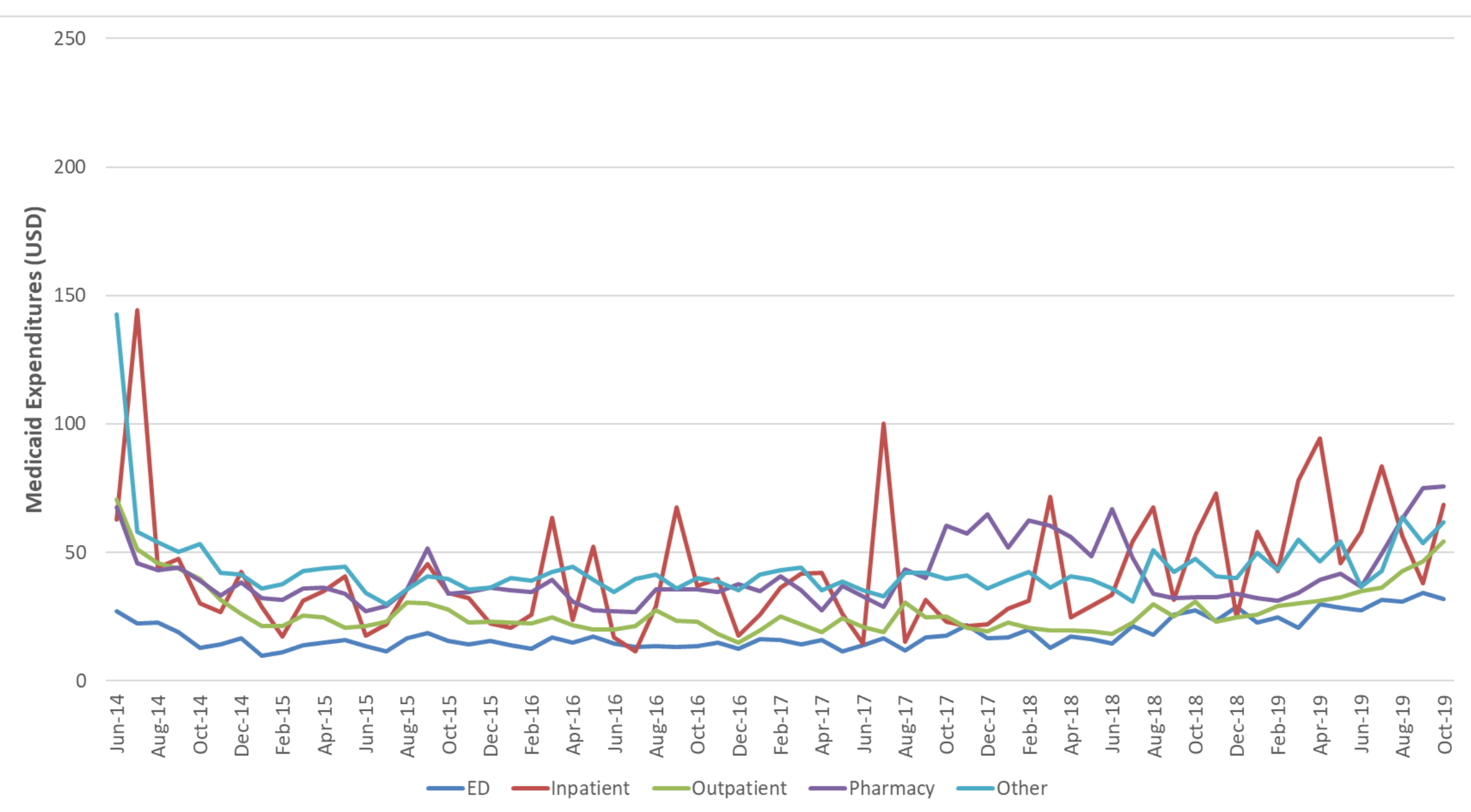
Characteristic	CHECK group (N = 5,234)	UC group (N = 2,677)
Female, n (%)	2,456 (47.1)	1,255 (46.9)
Age in years, mean (SD)	10.6 (6.1)	11.3 (6.2)
Program risk, n (%)		
Low	2,450 (46.8)	1,695 (63.3)
Medium	2,503 (47.8)	886 (33.1)
High	281 (5.4)	96 (3.6)

Figure I: Monthly expenditures for CHECK-enrolled participants



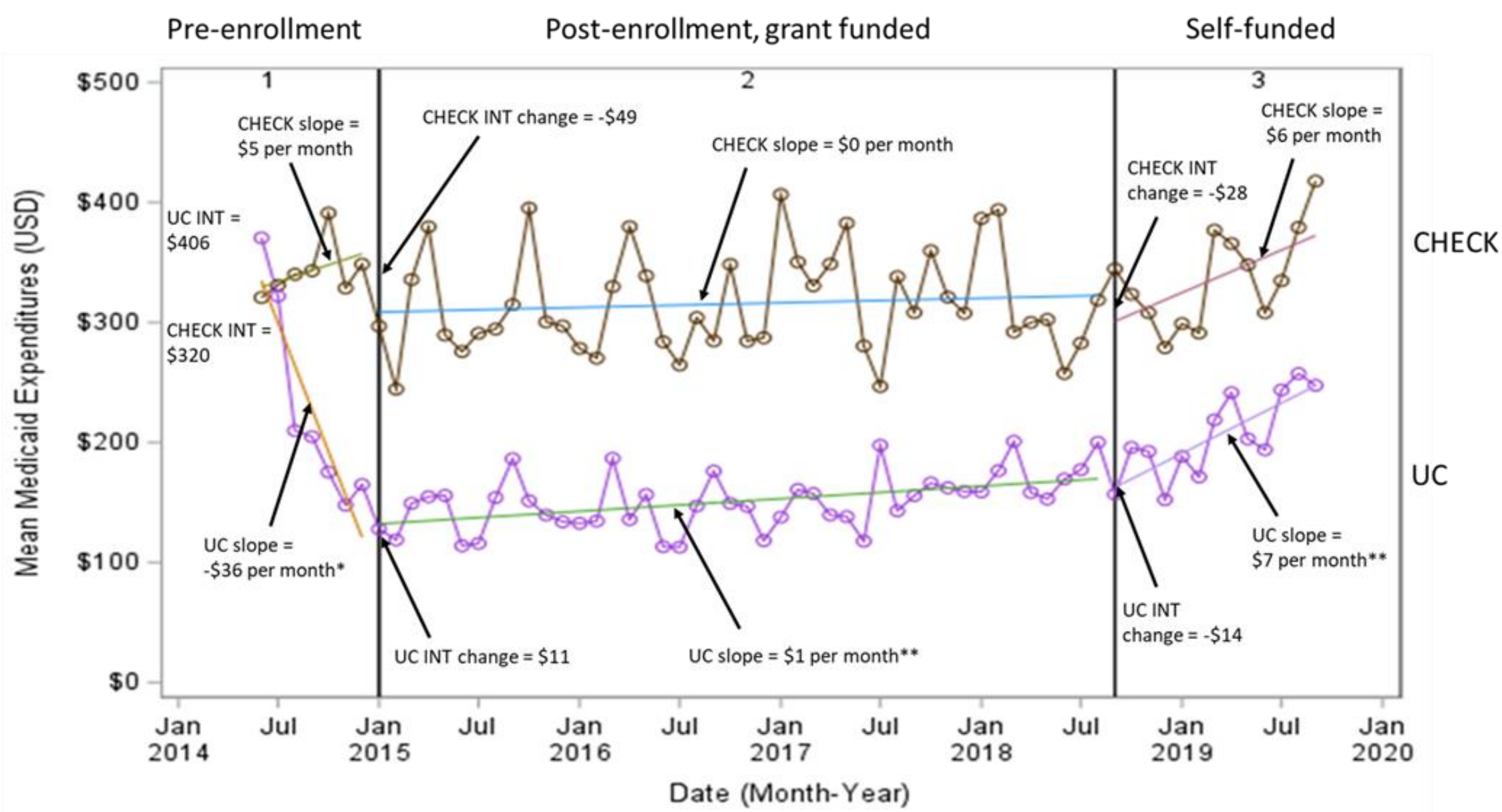
Time period	Average monthly expenditure (\$)
Pre-enrollment	343
CHECK, grant-funded	315
CHECK, self-funded	345

Figure II: Monthly expenditures for the UC group



Time period	Average monthly expenditure (\$)
Pre-enrollment	228
CHECK, grant-funded	151
CHECK, self-funded	214

Figure III: Trends in total monthly expenditures for CHECK and UC participants in pre-enrollment, CHECK grant-funded, and CHECK self-funded periods



DISCUSSION

- ❖ CHECK participants had higher average costs compared to UC group, possibly due to having a greater proportion of higher risk individuals.
- ❖ Trends in expenditures were similar across groups. This may be due to natural regression to the mean after a high-expenditure pre-enrollment year, potential enrollment of UC patients in CHECK after December 31st, 2016, and the impact of implementation of Medicaid managed care in Illinois during the early enrollment period, which resulted in cost control.
- ❖ Future interventions with more targeted strategies and in less diverse groups may help to better characterize the probable factors that lead to cost savings in comprehensive care management.
- ❖ Key limitations of the study include a comparator group with unequal baseline expenditure levels, influence of changing healthcare policies, variations in services provided within the program, potential enrollment changes, and inaccuracies within administrative claims data.

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