



CommonSpirit St. Joseph's Children Home Visiting Program: Preliminary Healthcare Utilization Outcomes

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Background

The majority of healthcare expenditures on American children (birth to 18 years old) are for children in the first year of life (Bui et al., 2017). Most of these costs are for inpatient care. The next two largest categories of healthcare costs are outpatient care and emergency department (ED) visits. Prior research has shown the potential for home visiting programs to prevent some of these healthcare encounters and thereby reduce the costs for families and communities (Kilburn & Cannon, 2017). Here, we test whether the CommonSpirit St. Joseph's Children (CS-SJC) home visiting program produces similar reductions in healthcare utilization in the first year of life for a sample of New Mexican families.

The CS-SJC Home Visiting Program Outcome Study

CS-SJC provides early childhood parenting education services to New Mexican families from pregnancy through their child's third birthday. Services are delivered weekly by paraprofessionals through in-person or virtual home visits. Families are eligible to enroll in the CS-SJC home visiting program if they are either pregnant with their first child or have given birth less than two months prior.

The Center for Applied Research and Analysis (CARA) at the University of New Mexico is conducting a randomized controlled trial to assess the outcomes for families who received the CS-SJC service compared to a control group that did not. We enrolled 376 participants from Bernalillo and Sandoval counties into the study between October 2016 and December 2019. One hundred eighty-eight of these study participants were randomly assigned to receive the CS-SJC service (the treatment group) and 188 were assigned to a control group. Following randomization, 24 participants in the control and 9 in the treatment dropped out of the study. Analysis of demographic characteristics for remaining study participants revealed that treatment and control groups were statistically indistinguishable at baseline. Therefore, the subsequent differences in outcomes between the two groups are attributable to the effects of the home visiting treatment.

We track outcomes for families in both study groups across multiple domains through time. To measure outcomes in the domain of child health, we collect data on healthcare utilization from SYNCRONYS, which is the Health Information Exchange (HIE) agent for the State of New Mexico, charged with collecting and collating medical records from hospitals, clinics, and other providers in a central database. Over 1,000 healthcare providers in New Mexico participate in SYNCRONYS, which captures an estimated 88% of all hospital admissions in the state. Using HIE data, we compared children who received CS-SJC home visiting with those who did not along three healthcare utilization outcomes in the first year of life: (1) average number of ED visits per child, (2) average number of days of inpatient care per child, and (3) average number of outpatient visits per child.

Results

We provided SYNCRONYS sufficient information on 173 study participants in the treatment group and 156 in the control group (n=329) for matching to their records. SYNCRONYS found medical records for 146 children in the treatment and 147 children in the control (n=293) for the period from October 2016 through November 2021. We assume the 36 unmatched children did not receive medical services. This is reasonable because all major hospitals in Bernalillo and Sandoval counties share data with SYNCRONYS and because there is little risk of bias from missing data as assignment to treatment or control should not affect which medical providers participants use.

Analyses revealed statistically significant reductions in all three categories of healthcare utilization between treatment and control. There was a 42% reduction in the average number of ED visits, from 0.27 visits in the treatment group, compared with 0.46 in the control ($t(275) = -2.11, p = 0.04, d = -0.24$) (Table 1). There was a 38% reduction in average number of days of inpatient stay, from 1.79 days in the treatment to 2.9 days in the control ($t(241) = -2.11, p = 0.04, d = -0.24$). There was a 35% reduction in the average number of outpatient visits, from 4.4 visits in the treatment to 6.8 in the control ($t(284) = -2.67, p = 0.008, d = -.30$). The

effect sizes for these observed reductions in healthcare utilization were small but meaningful, indicated by Cohen's d larger than magnitude 0.20.

Table 1.

Healthcare encounters in the first year of life for children in the CS-SJC program (n=173) vs. control (n=156).

	CS-SJC	Control	% reduction	p-value	Cohen's d
	Average (sd)	Average (sd)			
ED visits	0.27 (0.7)	0.46 (0.9)	42%	0.04*	-0.24
Days of inpatient care	1.79 (3.3)	2.90 (5.8)	38%	0.04*	-0.24
Outpatient visits	4.40 (6.8)	6.80 (9.2)	35%	0.008**	-0.30

Note: Significant p-values ($\alpha=0.05$) are indicated with asterisks (* $p<0.05$; ** $p<0.01$).

Discussion

Results show statistically significant reductions in the average number of ED visits, days of inpatient care, and outpatient visits between treatment and control, with small but meaningful effect sizes. This suggests the CS-SJC program may be effective at reducing healthcare utilization in the first year of life.

These results are preliminary. Additional analyses are needed to test and control for any baseline differences between treatment and control in the HIE matching sample. Future research should explore the causal processes that lead to healthcare utilization reductions and any family characteristics that moderate these effects.

While preliminary, these results are promising. Given the magnitude of the associated costs, preventative interventions that reduce encounters with the healthcare system in the first year of life could have significant positive impacts on New Mexican families and communities.

References

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