



## Costs of Care for Medi-Cal Children After a Gap in Coverage

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## Introduction

Despite the many steps taken in California to achieve coverage stability for Medi-Cal children, churning (when children are disenrolled only to be re-enrolled after a short period of time) and gaps in coverage still occur. Our prior work showed that during a three-year period, slightly more than 20 percent of Medi-Cal children had a gap in coverage. Most disturbing was the fact that the gaps were short; most children were back in Medi-Cal after only a four-month gap.<sup>1</sup> Gaps this short almost certainly indicate a problem with renewal, rather than changes in income or other eligibility characteristics.

Gaps in coverage are important because they adversely affect health care. Children have fewer visits, delay care and report unmet needs when they are uninsured.<sup>2</sup> These delays and unmet needs may, in turn, translate into pent-up demand and higher costs after coverage resumes.<sup>3</sup> This study looks at costs for children in Medi-Cal before and after gaps in coverage.

## Many Children Have Gaps in Coverage, but Most Gaps are Short

We began the investigation of cost before and after a gap by describing numbers and characteristics of children with gaps during the three-year period between Jan. 1, 1999, and Dec. 31, 2001. Because we wanted to follow cost trends six months before and after a gap, we restricted the analysis to children who had been enrolled for that length of time or longer on both sides of a gap. We also restricted the analysis to children with gaps of at least three months, to allow the effect of a gap to manifest.

Approximately 4.4 million children 0-18 years of age had been enrolled in Medi-Cal at any point in the three-year period. One child in four

had been enrolled for the entire three years.<sup>4</sup> However, nearly 300,000 children had gaps of some length between at least six months of coverage – that is, they had Medi-Cal coverage for at least six months during the three year period, lost the coverage at some point, but subsequently regained it and then were insured for at least six months. The remaining children either: had enrollment periods of less than six months before or after the gap; transitioned in during the period and did not have a gap; or transitioned out during the period and did not have a gap.

Most of the gaps were short for this group of children, as shown in Fig. 1. Other work by the authors across states has shown this same result: that most gaps are short.<sup>5</sup> We found that 44 percent of the children with gaps were back on the program in less than three months. Another 28 percent were back in the program in three to five months and 20 percent returned in six to 11 months. The remaining 8 percent were not covered, at least by Medi-Cal, for 12 or more months.

Most of the children with gaps were Hispanic (66%), as shown in Table 1. This is particularly noteworthy because Hispanic children represent only 54 percent of those children continuously insured for the entire three years. Hence, Hispanic children experience a disproportionate amount of gaps. The proportions of Black and White children with gaps of three or more months were 10 percent and 19 percent respectively; the discrepancy in proportions of Black and White children with gaps was not as extreme as for Hispanic children. With respect to age, most children with gaps of three or more months are in the 4- to 8-year-old age range (40%).

<sup>1</sup> Fairbrother G, Cassidy A. Churning and Racial Disparities in Medi-Cal: Effect of Churning on Eligible Uninsured. Los Angeles: The California Endowment. October 2006. The three-year period of this study extended from January 2001 through December 2003.

<sup>2</sup> Olson LM, Tang SF, Newacheck PW. Children in the United States with discontinuous health insurance coverage. *New England Journal of Medicine*. 2005 Jul 28;353(4):382-91, and Schoen C and DesRoches C. Uninsured and unstably insured: the importance of continuous insurance coverage. *Health Services Research*. 2000 Apr;35(1 Pt 2):187-206, and Kogan MD, et al. The effect of gaps in health insurance on continuity of a regular source of care among preschool-aged children in the United States. *JAMA*. 1995 Nov 8;274(18):1429-35.

<sup>3</sup> We use reimbursement of Medi-Cal claims as the measure of cost. We use the term "cost" rather than reimbursement for simplicity.

<sup>4</sup> During this time there were 4,425,542 children covered at some point by Medi-Cal. Of these children, only 1,172,590 (26.5%) were covered continuously for the entire three years.

<sup>5</sup> Fairbrother G, Park H, Partridge L. How Stable is Medicaid Coverage for Children? *Health Affairs*. Accepted October 2006.

FIGURE 1: MOST GAPS ARE SHORT (N=292,014)

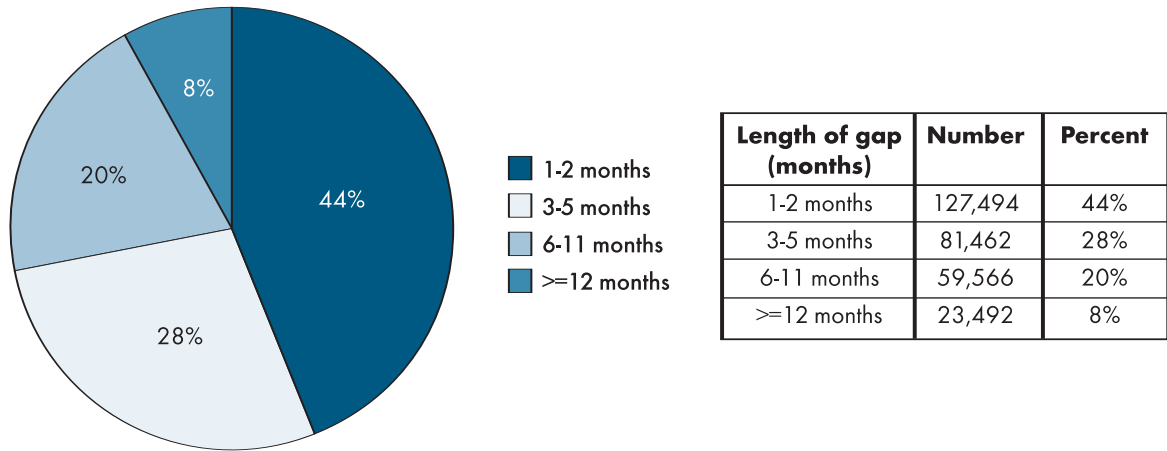


TABLE 1: DEMOGRAPHIC CHARACTERISTICS OF CHILDREN WITH GAPS OF THREE MONTHS OR MORE (N=164,520)

	Number	Percent
<b>Age</b>		
0-3 years	34,261	21
4-8 years	65,855	40
9-12 years	30,924	19
13-18 years	33,480	20
<b>Race</b>		
Hispanic	108,140	66
White	31,278	19
Black	16,078	10
Asian	4,353	3
Native Hawaiian/Pacific Islander	2,940	2
Unknown	932	1
American Indian/Alaskan Native	799	0
<b>Gender</b>		
Male	82,918	50

## Costs are Dramatically Higher After a Gap in Coverage

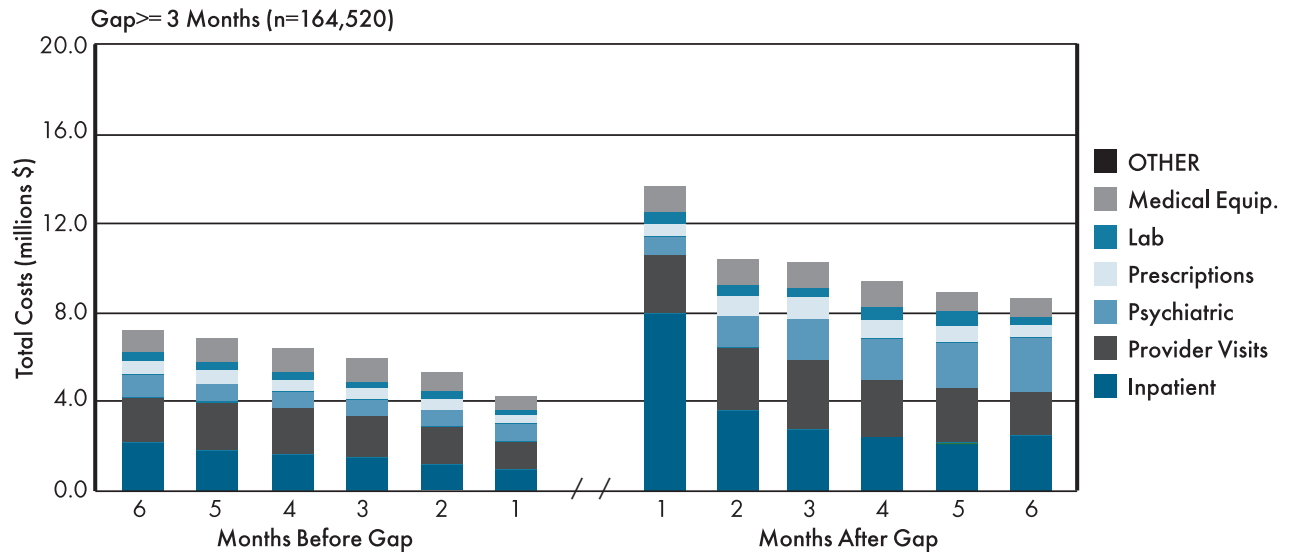
We compared Medi-Cal costs during the six months before and six months after a gap, using Medi-Cal claims (medical claims, institutional claims and pharmacy claims) for children. We compared costs in the six months before and after the gap for children with gaps of three or more months (164,520 children; see Figure 1), six or more months (83,058 children), and 12 or more months (23,492 children).<sup>6</sup>

For each of these three analyses, we then summed the costs for hospitalizations, health care providers, prescriptions, laboratory tests, medical equipment, psychiatric services and other costs for each of the six months prior

to the gap and each of the six months following the gap. In all cases, we followed the same children before and after the gap, and reported on the costs for entire population of children.

As shown in Figure 2, the costs in the six months prior to a gap are relatively low and actually decline before the gap. However, costs are dramatically higher in the first months after the gap, especially for hospitalizations. In the first graphic, showing costs for children with at least a three-month gap, total costs averaged \$5.9 million in the six months before the gap, but rose to approximately \$13.5 million in the first month after the gap and averaged \$10.1 million for the whole six months after.

FIGURE 2A: COSTS ARE HIGHER AFTER A GAP. THE LONGER THE GAP, THE HIGHER THE COST



<sup>6</sup> Children in the analysis of gaps of three months or more also included children who had gaps of six and 12 months.

FIGURE 2B

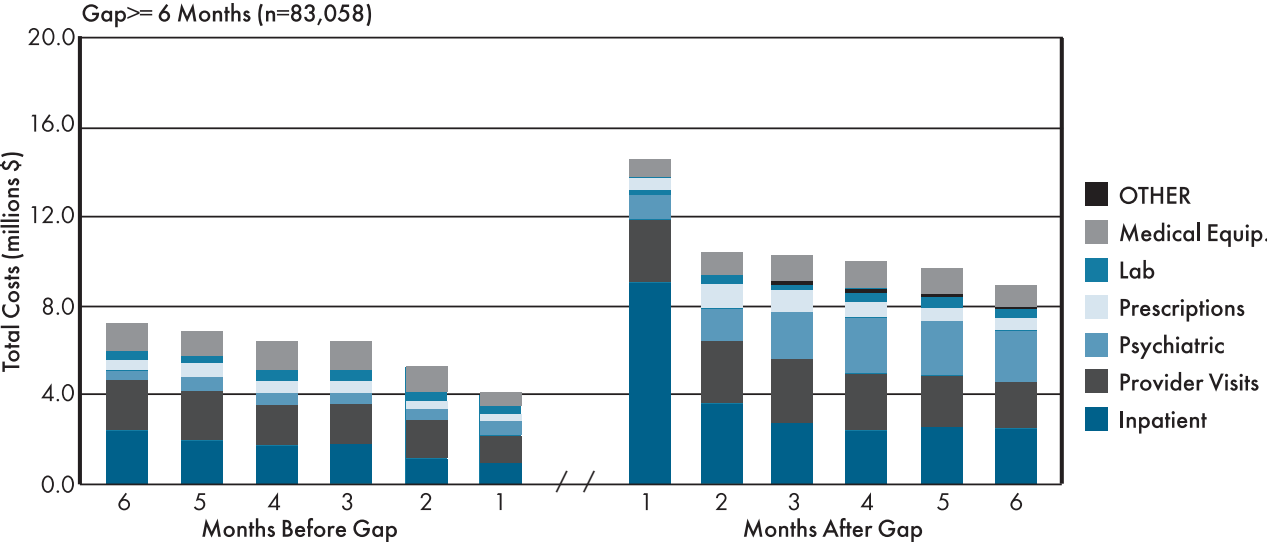
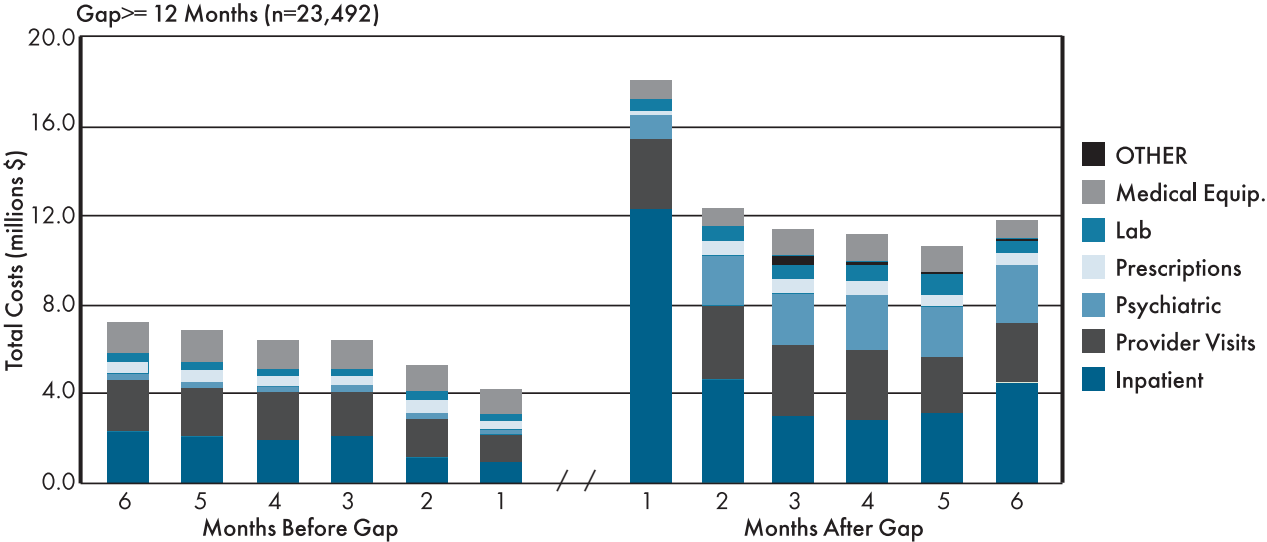


FIGURE 2C



Costs for in-patient hospitalizations were responsible for much of the increase. These rose from an average of \$1.5 million six months before, to \$8 million in the first month after the gap. Costs for inpatient hospitalizations were highest in the first month following the gap, but remained significantly higher in the six months following the gap, at an average of \$3.5 million, than they had been in the six months before the gap.

Costs for health care provider visits averaged \$1.8 million for this population of children in the six months before the gap, and rose to an average of \$2.6 million after the gap. Use of psychiatric services also increased after the gap and continued to rise.

The second and third graphics in Figure 2 show that longer gaps yield higher costs following the gap. Not surprisingly, costs before the gap look similar in all three graphics. For most services, there is at least a doubling in costs after a gap of three months or more. After gaps of three, six and 12 months, we see total cost increases of 1.7, 1.9 and 2.1 times the amount prior to the gap. This is considering the average of all costs six months before and after. When

looking at individual services and time periods, the effect is even greater. For example, the total cost of inpatient services after a 12-month gap was triple the amount spent prior to the gap and for provider visits there was nearly a seven-fold increase.

### Fee-for-Service Claims Pay for Most of the Increased Cost

When children who experience a gap come back on the Medi-Cal rolls, they are in fee-for-service Medi-Cal, at least temporarily, until they can re-enroll in a managed care plan. The process of re-enrolling in managed care can take up to four months. Thus, the higher costs for the first several months after a gap are borne by fee-for-service, with managed care capitation payments kicking in gradually for the population over the six months.

Fig. 3 shows that in the six months before the gap, most of the costs are borne by capitated managed care payments. The spike in services after the gap is mostly borne by fee-for-service claims, with capitated managed care payments gradually picking up the costs over the six months after the gap.

TABLE 2: AVERAGE COSTS SIX MONTHS BEFORE AND AFTER A GAP

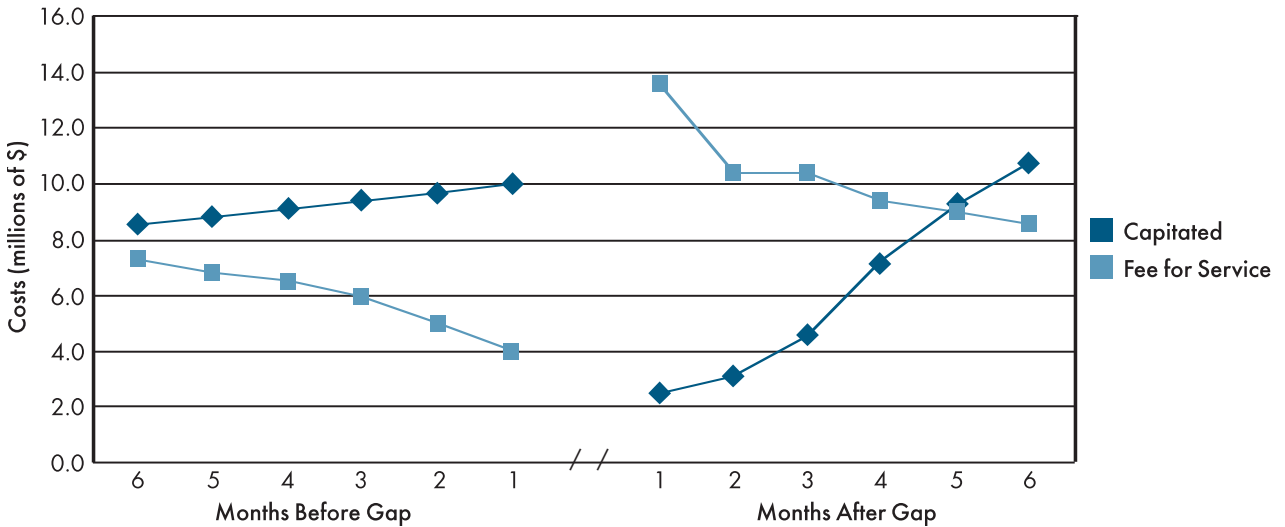
	Gap ≥ 3 months		Gap ≥ 6 months		Gap ≥ 12 months	
	6M Before	6M After	6M Before	6M After	6M Before	6M After
Inpatient	1.5	3.5	1.6	3.9	1.9	5.0
Provider Visits	1.8	2.6	1.7	2.7	1.8	3.0
Psychiatric	0.7	1.8	0.5	1.8	0.3	2.1
Prescriptions	0.5	0.6	0.5	0.6	0.5	0.6
Lab	0.1	0.5	0.1	0.5	0.1	0.7
Medical Equip	0.1	0.2	0.1	0.2	0.1	0.2
Other	1.1	1.0	1.1	1.0	1.3	1.0
<b>TOTAL</b>	<b>5.9</b>	<b>10.1</b>	<b>5.7</b>	<b>10.6</b>	<b>6.1</b>	<b>12.6</b>

· Costs are total costs in millions of dollars



FIGURE 3: AFTER A GAP, FEE-FOR-SERVICE PAYS THE BULK OF THE COSTS

Month	6	5	4	3	2	1		1	2	3	4	5	6
Capitated	8.7	9.0	9.3	9.6	9.9	10.0		2.4	2.9	4.5	7.1	9.5	10.7
Fee for Service	7.2	6.7	6.3	5.9	4.9	4.2		13.5	10.2	10.2	9.5	8.8	8.5



### Services Before and After the Gap

**Hospitalizations.** Most of the cost after the gap was represented by inpatient hospitalizations. These hospitalizations account for \$8 million out of the total \$13.5 million in costs the first month after the gap. In order to examine more closely the type of hospitalizations responsible for the high costs after a gap, we reviewed the diagnoses of the children whose first type of service after the gap was a hospitalization. Table 3 displays the 20 most prevalent inpatient diagnoses after the gap. More than 2,500 children had a hospitalization as their first service after a gap. Several acute conditions, such as appendicitis, fracture and pneumonia – which may have occurred even if the children had not experienced a gap in coverage – were common. However, asthma, depression/bipolar disorder and diabetes were also in the top 20 most frequent reasons for hospitalizations. These conditions are treatable and represent potentially avoidable hospitalizations. Given this fact, it is particularly worrisome that 23 of the 144 children hospitalized for asthma were in status asthmaticus, a life threatening condition. It may be that these preventable hospitalizations – and the attendant costs – could have been avoided had the children not had gaps in coverage.

**Health care provider visits:** There was also an increase in cost for health care provider visits after a gap. The increase for provider visits was not as dramatic as the increase in cost for hospitalizations, but office visits are less expensive than hospitalizations. In terms of sheer numbers, the cost of office visits doubled from \$1.3 million during the month prior to the gap to \$2.5 million during the first month after the gap. It is clear, then, newly re-enrolled children have some pent-up health care needs that were not addressed during the time without coverage. In order to learn more about the first service after the gap, we examined places, types of service and reasons for the first service after the gap.

The most common *places* for the first service after a gap was: in a provider’s office (45%), other/unknown (20%) or in an emergency room (14%).

The four most common *types* of service immediately after a gap were: physician visit (27%), prescriptions (16%), other services (13%) and dental visit (12%).

**TABLE 3: TOP 20 DIAGNOSES FOR HOSPITALIZATIONS AFTER A GAP**

	Number	Percent
Appendicitis	207	8.2
Asthma	144	5.7
Fracture of Humerus	142	5.7
Pneumonia	101	4.0
General Symptoms	87	3.5
Symptoms of Pelvis	75	3.0
Fluid/Electrolyte Disturbance	64	2.5
Depression and Bipolar Disorder	59	2.4
Cellulitis	55	2.2
Noninfectious Gastroenteritis	49	2.0
Acute Bronchiolitis	48	1.9
Pregnancy	40	1.6
Acute Upper Respiratory Infection	35	1.4
E Coli	33	1.3
Premature Labor	27	1.1
Diabetes	23	0.9
Croup	23	0.9
Urinary Tract Infection	23	0.9
Neck Injury	22	0.9
Hemorrhagic Conditions	19	0.8

• The numbers reflect actual number of visits and the percent is the proportion of all hospitalizations. Other smaller categories comprised 50% of the visits.

In order to understand changes in the frequency of visits, we compared the type of service for the first visit after the gap with the number of visits for different services in the six months before the gap. We categorized visit purposes as follows:

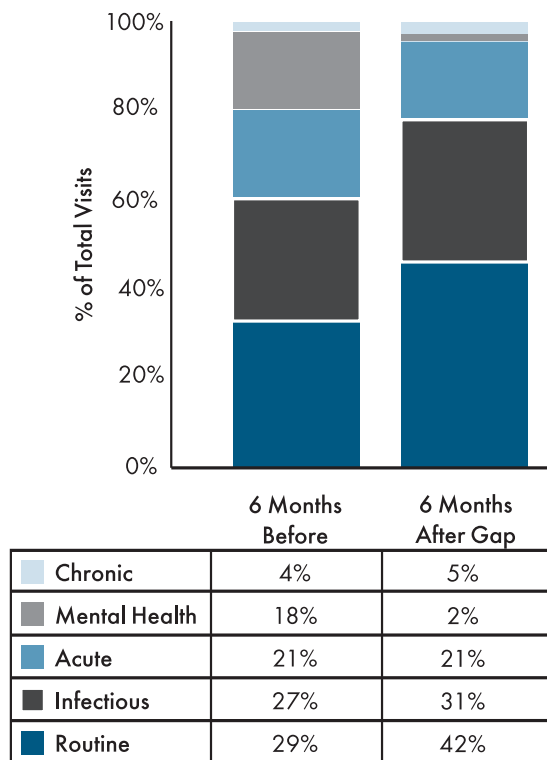
- Routine (includes child health exam, dental, eye or vision exam)
- Infectious (included upper respiratory infection, bronchitis, urinary tract infection)
- Acute (includes ear infection, fever, dermatitis)
- Mental health (includes depression, adjustment reaction, attention deficit disorder)
- Chronic (includes asthma anemia, allergy)

The most common *reason* for a visit after the gap was for routine care, such as medical examinations, or speech and vision

examinations (Figure 4). This finding is somewhat surprising; it is not generally thought that the need for routine care would be strong enough motivation to bring children back into the Medi-Cal program. The conventional wisdom on this topic may be wrong or it may be that once back in the program, parents take advantage of routine care available to their children.

Visits treating an infectious condition were the second most frequent type after the gap. It appears that mental health needs are not addressed immediately after re-entry into

**FIGURE 4. MOST VISITS IMMEDIATELY AFTER A GAP ARE FOR ROUTINE CONDITIONS; MENTAL HEALTH SERVICES ARE POSTPONED**



Medi-Cal. Mental health visits account for 18 percent of visits before the gap, but less than 2 percent of the first visits after the gap.

## Conclusions

Many children have gaps in coverage, but most of the gaps are short. When children have gaps in coverage, care is delayed and needs build up so that when coverage is resumed, there is pent-up demand. This pent-up demand is reflected in more care and higher costs after a gap. Costs for inpatient hospitalizations rise dramatically, and the longer the gap, the higher the inpatient hospitalization costs. Fee-for-service Medi-Cal pays for most of these initial high costs, even for children in managed care, because it takes time to re-enroll in a managed care plan.

There are important differences between the frequency of visits and costs incurred. For example, although the proportion of visits for psychiatric conditions decreased immediately after a gap, the total costs in the first month and six months after increased. This suggests that the certain conditions may be exacerbated as a result of a gap. However, it is difficult to draw conclusions as only the first visit after a gap was considered when examining visit frequency, whereas costs were calculated from all visits in the six months after.

There is surprising demand for office visits and for checkups and routine care immediately after a gap. Therefore, not surprisingly, the total costs for these services increased following the gap.

This exploration of costs shows another adverse consequence of gaps in coverage. If care is continuous, health problems can be addressed as they arise. Discontinuities in coverage give rise to spikes in cost when care is resumed. It may be cost-effective to promote continuous coverage, or it may be that Medi-Cal costs not incurred during the gap may be greater than costs incurred after the gap. This question was beyond the scope of this study. However, regardless of the effect of gaps on overall expenditures, it is clear that they are not conducive to optimal care.



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