Rates of Emergency Department Use for Ambulatory Sensitive Conditions in the Los Angeles Healthy Kids Program

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FIRST 5 LA
Champions For Our Children

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Abstract

The Los Angeles Healthy Kids program was created in 2003 to provide medical insurance to uninsured children ages 0–5 years in families with household income below 300 percent of the federal poverty level (FPL) who are ineligible for SCHIP or Medicaid. The frequency of emergency department (ED) visits due to ambulatory care sensitive conditions (ACSC) is often used to gauge health care access within insurance expansions or organizational changes within health care systems. These are health conditions that usually can be managed successfully outside of hospitals with high quality primary care. Specifically, ACSCs refer to medical conditions (such as asthma and dehydration) for which appropriate ambulatory care is expected to reduce the risk of hospitalization or emergency department use.

This brief shows the rates of ED visits associated with ACSC diagnoses in the first few years of the Los Angeles County Healthy Kids program (2005–06). Based on claims data, the low rates of ED use for ACSC suggest that high use is not a major problem in the population of children enrolled in Healthy Kids. The rate of ACSCs as a proportion of ED visits also did not decline over the two years observed. This suggests that while the Healthy Kids evaluation shows an impressive impact upon perceived access to care and affiliation with a primary care provider, the expansion may not have a significant impact upon relatively rare events, such as hospital stays and ED visits for children. In addition, these health care services can be influenced by health system and parent factors beyond the financial accessibility that a medical insurance program such as Healthy Kids offers.

These findings show that while the volume of ED use for ACSCs is relatively low, further progress can be made in reducing emergency department visits for ACSCs. Because an emergency department visit is not always avoidable at the time that it is needed, efforts to reduce such visits should focus on features of the health system that include accessibility of primary care during extended hours, quality of primary care for acute and chronic conditions, and parent factors that include health behaviors, preferences for care, and health literacy.

Acknowledgments

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Introduction

The Los Angeles Healthy Kids program was created in 2003 to provide medical insurance to uninsured children ages 0–5 years. A year later, the program was expanded to cover older children, ages 6 through 18, as well. The program covers children in families with household income below 300 percent of the federal poverty level who are ineligible for Healthy Families and Medi-Cal. First 5 LA funded Healthy Kids to improve health and well-being for young children. First 5 LA hoped to improve access to medical care for acute illnesses and chronic care as well as to quality preventive care. Primary care for children age 0–5 years provides important opportunities for reducing more costly forms of care that include emergency department (ED) visits and hospital stays. There is value in knowing the rates of use of these services for ambulatory sensitive conditions.

Background

The goal of Healthy Kids is to promote and improve children’s health and well-being. A common goal of a health insurance expansion is to reduce the need for accessible but expensive emergency department (ED) visits by improving access to primary care for acute or chronic health conditions. Use of ED visits is often used as a measure of primary care accessibility. However, an overall ED visit rate includes unavoidable visits (such as for appendicitis) with visits that might have been avoidable with good primary care. As a result, rather than the frequency of overall ED rates, the frequency of ED visits due to ambulatory care sensitive conditions (ACSC) is often used to gauge health care access. These are health conditions that usually can be managed successfully outside of hospitals with high quality primary care. ACSCs refer to medical conditions (such as asthma and dehydration) for which appropriate ambulatory care is expected to reduce the risk of hospitalization or emergency department use.

Creating a list of such conditions does not imply that any hospitalization or emergency department visit for the condition is preventable or inappropriate. However, they are useful in identifying the extent to which the system of care—which includes financing (health care coverage), availability of primary care, and quality of primary care—taken together is producing the most efficient use of limited resources. In addition, by comparing rates of ACSCs between locations or programs for which ACSC rates are available, it is possible to explore differences as well as monitor any progress in ACSC rates over time.

This brief shows the rates of ED visits associated with ACSC diagnoses in the first few years of the Los Angeles Healthy Kids program (2005–06).

Data and Methods

Data are from L.A. Care Health Plan administrative files. The data include emergency department visits billed to L.A. Care Health Plan on behalf of members. The sample included children ages 0–5 as well as children ages 6–18 years. The measures are from data in years 2005 and 2006. The study examines emergency department visits during the two calendar years when program eligibility was more stable. Enrollment in Healthy Kids increased substantially each month during the year of program eligibility for children ages 0–5 years (launched in July 2003) and children ages 6–18 years (launched in June 2004). Average monthly enrollment in Healthy
Kids for children ages 0–5 years was 7,605 for 2005 and 7,455 for 2006 and for children ages 6–18 years was 33,251 for 2005 and 34,051 for 2006.

Measures are based on the number and proportion of ED visits by children in Healthy Kids that are related to diagnoses that are considered sensitive to the quality of primary care provided to children. We examined the numbers and rates of these occurrences per 100 members. Rates are among Healthy Kids members enrolled for all 12 months of the calendar year, allowing no more than one 1-month break in coverage.

Inpatient stays are much less frequent and do not lend themselves to this analysis given the relatively small enrollment in Healthy Kids. According to L.A. Care Health plan data shortly after the Healthy Kids program was launched in 2004-05, the average number of hospital stays per quarter was about 15 stays per quarter for children 0–5 years and children 6–18 years combined.

The definition of ACSC includes the following conditions and associated International Classification of Diseases, 9th Revision (ICD-9) codes that record these diagnoses within medical claims databases. This definition was used by Parker et al. (2000) and Steiner et al. (2003) to study ACSC conditions: Asthma (493); Pneumonia (481, 483, 485, 486, 482.2, 482.3); Other upper airway conditions (381, 382, 460, 461, 462, 463, 465, 490, 472, 473, 474, 034.0, 079.9, 466.0) not including specific procedures (828, 823, 286, 200.1); Gastroenteritis and dehydration (558.9, 276.5, 008.8, 008.6); Cellulitis (680-684, 686, 289.3; and Seizures (345, 780.3). We defined an ED visit as associated with an ACSC if any of these listed codes appeared in the primary diagnosis category of the hospitalization record.

In our measure of ACSC, we omitted several conditions that are commonly included in studies of ambulatory care sensitive conditions for adults but are not appropriate for children. These include diagnoses that rarely occur in children (e.g., congestive heart failure). They also include conditions such as diabetes that can be avoidable in adults but are not as commonly avoidable in children, particularly for children newly diagnosed with Type 1 diabetes.

Findings

Exhibit 1 shows that upper respiratory conditions are the most common diagnosis associated with ED visits for ambulatory care sensitive conditions. The second most common diagnosis group is gastroenteritis/dehydration (15.6 percent), followed by cellulitis and asthma. Asthma is the primary diagnosis for 9.0 percent of ED visits.
Exhibit 1
Types of Ambulatory Care Sensitive Conditions
Los Angeles Healthy Kids (2005-06)

<table>
<thead>
<tr>
<th>Condition</th>
<th>0–5 yrs</th>
<th>6–18 yrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asthma</td>
<td>0.3</td>
<td>0.2</td>
</tr>
<tr>
<td>Cellulitis</td>
<td>0.2</td>
<td>0.1</td>
</tr>
<tr>
<td>Gastroenteritis and dehydration</td>
<td>1.0</td>
<td>0.5</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>0.6</td>
<td>0.0</td>
</tr>
<tr>
<td>Seizures</td>
<td>0.2</td>
<td>0.1</td>
</tr>
<tr>
<td>Upper airway condition</td>
<td>5.0</td>
<td>2.2</td>
</tr>
</tbody>
</table>

Sources: L.A. Care Health Plan (2007).

Exhibit 2 shows that the proportion of Healthy Kids members with an ED visit associated with an ACSC was low in 2005 as well as 2006 for both age groups. The proportion of children with an ED visit for several types of ambulatory sensitive conditions—particularly upper airway conditions—declined between 2005 and 2006.

Exhibit 2
Rates of Emergency Department Visits Associated with Ambulatory Care Sensitive Conditions, Among Children Continuously Enrolled in Healthy Kids for One Year, by Age
Los Angeles Healthy Kids (2005-06)

<table>
<thead>
<tr>
<th>Condition</th>
<th>0–5 yrs</th>
<th>6–18 yrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asthma</td>
<td>0.2</td>
<td>0.1</td>
</tr>
<tr>
<td>Cellulitis</td>
<td>0.1</td>
<td>0.0</td>
</tr>
<tr>
<td>Gastroenteritis and dehydration</td>
<td>0.2</td>
<td>0.1</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Seizures</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Upper airway condition</td>
<td>0.7</td>
<td>0.2</td>
</tr>
</tbody>
</table>

Sources: L.A. Care Health Plan (2007).
Notes: Rates show the frequency of ED visits for ACSC conditions among the Healthy Kids membership. The rate is the number of ED visits with the specific ACSC as the primary diagnosis per 100 Healthy Kids members who were enrolled for all 12 months of the calendar year and had no more than one 1-month break in coverage during that 12 month period. These rates are calculated for 3,629

**Exhibit 3** shows that ACSC are associated with a greater proportion of ED visits for young children ages 0–5 years (over one-third) than visits for older children ages 6–18 years (about one-quarter). This can be due to the greater proportion of hospitalizations among older children for reasons of injury and chronic pediatric conditions. It also shows that the annual rates of ACSCs as a proportion of all ED visits were similar for the years of 2005 and 2006, for each age group.

<table>
<thead>
<tr>
<th>Age</th>
<th>% of all ED visits associated with an ACSC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2005</td>
</tr>
<tr>
<td>0–5 years</td>
<td>38.5</td>
</tr>
<tr>
<td>6–18 years</td>
<td>22.6</td>
</tr>
<tr>
<td>0–18 years</td>
<td>27.0</td>
</tr>
</tbody>
</table>

Sources: L.A. Care Health Plan (2007).
Notes: Rates show the proportion of all ED visits for Healthy Kids members associated with a primary diagnosis of an ambulatory care sensitive condition (ACSC) in the years 2005 and 2006.

**Exhibit 4** shows how rates of ED visits for ambulatory care sensitive conditions as a proportion of all ED visits vary by month. This exhibit combines the results for the years of 2005 and 2006 given the similarity in patterns by month between the years. Rates of ACSC as a proportion of all ED visits are higher in the winter months for both age groups. This is expected since respiratory conditions have their greatest impact during these months.

A number of health care studies show that rates of hospital stays and emergency department visits for ambulatory care sensitive conditions can decline when health systems change, such as in transitions to managed care or use of federally qualified health centers rather than other health care settings for individuals in low-income households (Falik et al. 2001). Data for Healthy Kids show relatively low emergency department visit rates for ambulatory care sensitive conditions in the first two stable calendar years of the program. There is little evidence that these rates showed any decline over this time period.

Experience with Healthy Kids also shows that ED visits for ACSCs account for between one-quarter to one-third of reported ED visits. While this rate is higher than some other studies of the general population, it may not be surprising since children comprise the full population. In addition, availability of the California Children’s Services program for all children in Healthy Kids reduces both the hospitalizations and emergency department visits paid for by Healthy Kids for their members eligible for CCS.
Several other studies that observe declining rates of hospital visits for ambulatory care sensitive conditions at the same time of insurance expansions have concluded that insurance expansions can reduce use of hospital care for these conditions (Bermudez et al. 2005; Cousineau et al. 2007). These prior studies have examined hospital stays rather than ED use and in some cases examine patterns for all publicly insured children rather than only those directly enrolled in the expansion. As a result these results are not directly comparable to this analysis of Healthy Kids patterns.

Future study might compare use of ED visits based on administrative data with parent reports of ED use. In this study as in some others, a random sample of parents surveyed by telephone report higher ED visit rates than what administrative data suggest. For example, of parents surveyed in the latter half of 2005 about their child enrolled in Healthy Kids for one year, 21% reported at least one ED visit for the child in the previous 6 months. This rate declined somewhat to 17% for a recall period of the first half of 2006 (Howell et al, 2007). Possible reasons for this discrepancy between administrative data and parent report may be ED visits for Healthy Kids members that were not billed to the program. This could occur if a facility did not submit for reimbursement, did not charge through the ED, or charged to Emergency Medi-Cal. Qualitative studies suggest that this may take place due in part to complexity of health care delivery and public financing for children (Hill et al. 2008), although there are no quantitative data establishing the extent to which this happens for emergency department visits.
**Conclusion**

*ED use for ambulatory care sensitive conditions is not a large problem in Healthy Kids.*

The low rates of ED use for ACSC suggest that high use is not a major policy problem in the population of children enrolled in Healthy Kids. Most children are relatively healthy, and an evaluation suggests that relatively few joined the new insurance program because they had an acute or chronic health condition. A number of studies show that ED use is lowest among uninsured children when compared to privately and publicly insured children (e.g. Simpson et al. 2004). Lower ED use has been evident particularly among Latino children (Javier et al. 2007). This pattern of low use may have persisted as the child became insured through Healthy Kids. A number of studies have found limited impact of ED visit rates with overall insurance, financing or organizational changes (Szilagyi et al. 2004; Gadomski et al. 1998; Gadomski et al. 1995; Mauldon et al. 1994) suggesting that factors other than coverage play a role in patterns of emergency department use.

*Impressive access gains following coverage may not resolve underlying health care delivery problems that affect patterns of care.*

The Healthy Kids evaluation shows an impressive impact of the insurance expansion upon perceived access to care, affiliation with a usual source of care, and use of primary and preventive care (Howell et al. 2007). While these are important gains, the expansion may not have a significant impact upon relatively rare events, such as hospital stays and ED visits for children, if such events are shaped by health system and parent factors rather than by financial accessibility or by factors that are unique to a medical insurance program. Structural factors such as transportation, accessibility of urgent care options, and taking time from work are not unique to Healthy Kids or to even to insured versus uninsured children. Healthy Kids members are part of the same complicated delivery system as publicly insured children in Medi-Cal and Healthy Families as well as privately insured children.

*Further progress can be made in reducing emergency services for conditions that can be managed in primary care settings.*

While the volume of ED use for ACSCs is relatively low, the findings show that further progress could be made in reducing emergency department visits for ACSCs. Because an emergency department visit is not always avoidable at the time that it is needed, efforts to reduce such visits focus on features of the health system that include accessibility of primary care during extended hours, quality of primary care for acute and chronic conditions, and parent factors include health behaviors, preferences for care, and understanding of the condition (Falik et al. 2001; Flores et al. 2003). Parents and providers have reported filling and refilling medications, primary care follow-up, avoiding disease triggers, and better education of parents about conditions (Flores et al. 2003) as means of reducing hospitalizations due to ambulatory care sensitive conditions.

Several limitations apply to measuring and interpreting ACSC data. This study was not designed to compare ACSC use prior to and following enrollment in Healthy Kids. Classification by diagnosis relies upon accurate reporting of diagnosis information on submitted medical claims. While the quality of administrative claims data for ED use is substantially better than for primary and preventive care, given that ED claims are paid fee-for-service whereas most primary/preventive care is capitated and thus less likely to be reported to the health plan, there is potential for under-reporting of claims as well as under-counting of ED visits if any claims for
Healthy Kids members are submitted to Medi-Cal under the Emergency Medi-Cal provisions. The fact that parent questionnaires produce higher estimates of ED use than found in claims analyses suggests that under-counting is a concern, but lack of parent reports regarding ED visits for ACSCs specifically make it difficult to estimate the scope of possible under-counting.

Strategies for improving patterns of care include quality of care improvement efforts, availability of after-hours urgent care, and improvements in the overall delivery system rather than interventions that target only specific insurance/coverage programs.

In summary, care for ambulatory care sensitive conditions represent a small proportion of ED visits and are low in number, with little change over the two years observed. There is still potential for reducing potentially avoidable ED visits, and an improvement effort underway in California has shown an impact for children with asthma. Even though an emergency department visit may have not been avoidable at the time that it occurred, and in fact was appropriate given the child’s condition upon entry, there is always potential for improvements in primary care to reduce the need for emergency services. There are a range of longer-term strategies for the health system such as quality improvement efforts with primary care providers to improve regular asthma management, and the availability of after-hours urgent care options.

It is worth noting that some of these strategies are challenges for the broader health system rather than a characteristic of a specific medical insurance program such as Healthy Kids. Given that asthma quality and care management is currently a priority for L.A. Care and a targeted improvement area for a number of health plans throughout California, the asthma-specific rates may decline over time for children in Healthy Kids and in other public insurance programs in California. Another relevant statewide effort is the recent availability of regular information about asthma-related hospital and ED utilization rates for children. It is now possible to assess ED ACSC rates using statewide data from the California Office of Statewide Health Planning and Development (OSHPD), although rates cannot be distinguished for children in county Healthy Kids programs. The availability of statewide rates coupled with state and local efforts to improve asthma care among providers serving Healthy Kids members and other children should make it possible to achieve and track progress in these important access indicators.
References


