Trends in Adult Emergency Department Visits in California by Insurance Status, 2005-2010

Emergency department (ED) use has been affected by insurance patterns over time and will likely be further affected by expansions of coverage from health care reform. Because of their disproportionate ED use, uninsured patients are often described as high (and frequently inappropriate) ED users. However, insured patients can be more frequent ED users than uninsured patients, particularly those with Medicaid coverage, which still leaves them with difficulties in accessing primary care.

We investigated recent trends in the association between insurance coverage and ED use in California for adults (age <65 years), who have experienced the greatest changes in insurance coverage in recent years and are likely to see the biggest shifts as a result of health care reform. Previous studies have considered trends in ED use, but predate the recent economic downturn and related insurance changes.

Methods | We conducted a retrospective analysis of California ED visits by adults aged 19 to 64 years from 2005-2010 using the nonpublic versions of the California Office of Statewide Health Planning and Development’s Emergency Discharge Data and Patient Discharge Data. We excluded visits with missing sex (0.06%), admissions not from the ED (20%), scheduled admissions (0.05%), and Medicare patients (7.9%) because Medicare beneficiaries younger than 65 years are severely ill and disabled and not comparable with our remaining sample.

We compared the distributions of visits and visit rates per population by payer across years using χ² tests. We tested for differences in trends in visit rates by payer using an ordinary least squares regression that allowed for payer-specific linear trends in rates. Statistical significance was assessed using 2-sided tests with a critical value of .05; Stata version 11 (StataCorp) was used for all analyses. The study was approved by the University of California, San Francisco, committee on human research.

Results | Between 2005 and 2010, the number of visits to California EDs by adults increased by 13.2% from 5.4 to 6.1 million per year (Table). The largest increase in visits occurred in...
2009 (383,000 visits; 6.7%). The share of total visits attributable to adults with Medicaid coverage and uninsured adults increased during 2005-2010, whereas the share attributable to adults with private insurance declined.

Total visits per 1000 adults living in California increased by 8.3% from 252 to 274 between 2005 and 2010. Visit rates to the ED among adult Medicaid beneficiaries were significantly higher than uninsured and privately insured patients (Figure). Visits rates to the ED per population increased significantly for all payer groups. Visit rates to the ED among Medicaid beneficiaries increased by 13.9% from 572 to 651 visits per 1000 population, which was significantly higher than privately insured (158 to 164 per 1000 population) or uninsured (242 to 259 per 1000 population) patients.

In addition, Medicaid patients consistently had the highest rate of visits for ACSCs (54.76 per 1000 population on average) compared with privately insured (10.93 per 1000 population) and uninsured (16.60 per 1000 population) patients (Figure). Rates of ED use for ACSCs increased from 2005-2010 among Medicaid beneficiaries (6.8%) and uninsured patients (6.2%), but declined among privately insured patients (−0.7%).

**Discussion** | Visit rates to the ED by adults younger than 65 years increased in California from 2005-2010, particularly among Medicaid patients. Increasing ED use by Medicaid beneficiaries could reflect decreasing access to primary care, which is supported by our findings of high and increasing rates of ED use for ACSCs by Medicaid patients. The increase in ED visits was highest in 2009, likely due to the H1N1 pandemic and the influence of the economic downturn on coverage transitions and access to care.

Our analysis is limited in that it uses administrative data and is only generalizable to California. As major changes in insurance coverage approach with the implementation of health care reform, continued monitoring of changes in ED use is needed.

**Figure. Overall Emergency Department Visit Rates and Visit Rates for Ambulatory Care Sensitive Conditions From 2005-2010 Among Adults Aged 19 to 64 Years by Insurance Status**

The χ² test was used to assess differences in the rates of use per population by insurance status within years and to test for differences in rates of use by year within insurance status; all of which were statistically significant (P < .001). In addition, an analysis of linear trend was conducted to compare changes in rates over time by insurance status; all of which were statistically significant (P < .001).

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Early Parenteral Nutrition in Critical Illness

To the Editor The randomized controlled trial of early parenteral nutrition in patients with critical illness targeted calories, but the nutrient that is most lacking in critical illness and whose provision is most likely to be of benefit is protein. When hydrated, free amino acid mixtures provide 17% less protein substrate than formed dietary proteins. It can be calculated from Figure 2C in the article and by using the supplementary data that protein provision in the intervention group barely reached 47 g/d on days 4 through 7 of therapy. This is less than half the current recommendation of 1.5 g/kg/d for critically ill patients, and less than the 56 g/d (0.8 g/kg) required by a healthy person without catabolism weighing 70 kg.

The hypothesis tested by this trial was that critically ill patients urgently need more calories, but not much protein, when in fact nearly all the participants had adequate fat reserves, and most of them were overweight or obese. In contrast, extensive metabolic data (and some clinical trial evidence) suggest that early provision of 1.5 to 2.5 g of protein/kg/d could improve both short-term and long-term outcomes in patients with critical illness. Even as little as approximately 84 g/d of protein (1.2 g/kg) might be enough to improve some clinical outcome parameters.

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