THE ACUTE CARE CONTINUUM IN CALIFORNIA

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SUMMARY

California's acute care system provides several essential services and compares favorably with other developed countries. For developing systems, a critical analysis of the California model suggests: (1) ambulatory patients require timely access to urgent and continuing primary care in communities to allow the ED to focus on more essential services; (2) outcomes from highly specialized care in California support the wider consensus that time-sensitive, life-threatening emergency conditions are best managed within regionalized systems of care; (3) ED-oriented care teams are well positioned to rapidly evaluate and treat patients with acute exacerbations of chronic conditions, reducing the need for more costly hospital admission or readmission; (4) frequent visitors to ED's due to poorly controlled behavioral health require their own urgent treatment pathways to preserve ED capacity.

Key words: Emergency departments, emergency care, prehospital, emergency health, emergency psychiatric services, patient centered care, continuity of patient care, delivery of health care, integrated.

ACUTE CARE CONTINUUM IN CALIFORNIA

If California were a country rather than the largest of the United States, its population would be slightly greater than Canada. The World Bank and California Department of Finance estimated that the state had the world's sixth largest gross domestic product in 2015. California has advanced systems for acute care, yet has lower per capita utilization of hospital-based emergency care than other US regions, as well as other developed countries. Wider understanding of the strengths and weaknesses of the acute care continuum in California may be useful in other population health settings.

DEMOGRAPHICS OF EMERGENCY CARE

Policy makers in most countries place a lower priority on acute care than primary care, health screening, or population surveillance. In many Commonwealth countries with universal health insurance programs, overall emergency department (ED) utilization remains higher than policy makers might desire (see Table 1). In 2015, utilization in Canada was 444 ED visits per thousand. In England, ED utilization was 420 visits per thousand. In 2013, the most recent year where federal data is available for all 50 states, ED utilization in the US was similar at 423 ED visits per thousand.

Global causes of high ED utilization include: inadequate access to unscheduled ambulatory care, inadequate primary care workforces, delays in specialized care due to insufficient providers or payments, and geographic barriers to care. Many developed countries also struggle with aging populations with multiple chronic conditions (MCC) (1,3). Acute care providers often face challenges

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to meet the needs of sub-populations with acquired or developmental disability, substance abuse and behavioral health disorders.

In 2015, ED utilization by Californians was notably lower at 364 per thousand. Without formal risk adjustment, some of the variation may be attributed to California's slightly younger population (35 v. 37.8-40.3). The population of California is also more diverse than the US overall: Hispanics (39%) now exceed white non-Hispanics (just under 38%). Asians are the third largest ethnic group in California (13%] and African Americans are the fourth (4). The US Census Bureau estimated the total population of California at 39144818 persons in 2015 (5).

Of interest, per capita ED utilization in California was lower before expansion of public and private health insurance under the Affordable Care Act (ACA) in 2014. This behavioral effect has been attributed to new beneficiaries of public and private coverage. By 2015 less than 10% of California residents lacked health insurance coverage (6), of whom 1.5 million were ineligible due to their immigration status (7).

OVERVIEW OF CALIFORNIA EMERGENCY CARE SYSTEM

In 2015, the Office of Statewide Health Planning and Development [OSHPD] reported there were 7558 treatment stations in 328 public and private hospitals with ED's (8). That year there were 12367716 visits to California's ED's who were discharged following treatment, and another 1885374 visits that required hospitalization statewide.

Prehospital Care Administration

The three-digit 911 standard was adopted by the US telephone industry in 1968. Public Safety Answering Points to coordinate police, fire, and emergency medical service (EMS) responses were widely implemented by local governments over the following decade. Funding for the 911 communications infrastructure is covered by surcharges on telephone users. Present-day residents of California have ubiquitous access to pre-hospital emergency medical services as a result. In 2013, the California Ambulance Association reported that 3600 ambulances were operating in California; 74% by 170 private companies and 26% by public agencies, primarily fire departments. The association estimated 2.7 million ambulance transports in California during 2013, almost 90% of which were for emergency medical response or interfacility transport requiring medical care (9).

Ambulance response to EMS dispatch is structured by local government agencies. Contracts areperiodically opened for competitive bidding between ambulance companies. Agencies typically include performance benchmarks for response times for Basic Life Support (BLS) and Advanced Life Support (ALS) calls and other quality indicators. In all cases, service agreements offer geographic exclusivity for single-incident calls to prevent unnecessary duplication of pre-hospital emergency transportation. Mutual aid agreements define disaster or mass-casualty situations when multiple ambulance service providers are needed. In metropolitan areas, paramedics are extensively trained above ALS level and are usually employed by fire departments. All fire personnel are typically certified at BLS level and act as first-responders to EMS calls. In some

TABLE 1. EMERGENCY DEPARTMENT VISITS AND UTILIZATION PER THOUSAND FOR CANADA, ENGLAND, UNITED STATES, AND CALIFORNIA - 2015

	POPULATION	MEDIAN AGE	ED VISITS	ED UTILIZATION PER 1000 PEOPLE
CANADA	35749600	40.5	15873016	444
ENGLAND	54000000	40	22659980	420
UNITED STATES	316500000	37.8	133600000	423
CALIFORNIA	39144818	35	14253090	364

Notes: Age, population estimates came from public data sets. For Canada, Statistics Canada. For England, the United Kingdom National Center for Statistics. For US and California, the US Census Bureau. The 2013 US population was used for this table because it was the most recent year that national data on ED visits was available from the American Hospital Association. ED utilization estimates for Canada were from the National Ambulatory Care Reporting System; for England, the House of Commons Library. California ED visits were from the Office of Statewide Health Planning and Development.