HEALTH facts

Readmissions to California Hospitals, 2005 to 2006

SPRING 2010

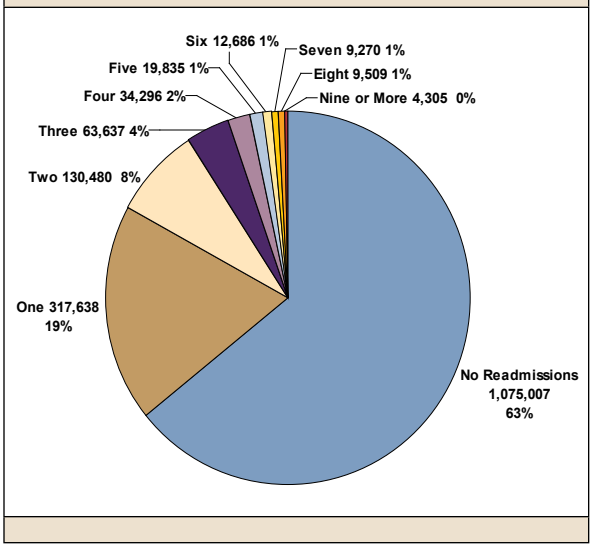
This issue of Health Facts examines which patients are more likely to be readmitted to the hospital, how many times they return, and how much time passes between being discharged and then admitted for a new stay. This report will also show how much readmissions add to the cost of care and which types of healthcare coverage are most affected.

Background

The term "readmission" refers to a patient being admitted to the hospital again after previously being discharged. For the purpose of this report, the time interval can be as short as one day or up to one year after discharge. Some readmissions are related to the quality of hospital care and some are related to discharge planning or coordination of patient care after discharge. On the other hand, some readmissions are a normal part of care, such as return visits for physical therapy; some are due to entirely new health problems; and some are simply due to worsening of the disease process.

Readmissions are an important issue because they are expensive, can involve additional difficulties for patients and caregivers, and often are preventable. The costs added by readmissions have launched a national debate about how—and how much—doctors and hospitals are paid, which may lead to significant changes in how patient care is reimbursed. Studies are being done to find the best way to measure readmission rates and to identify which specific conditions or types of patients should—or should not—be reimbursed. Additionally, research is underway to identify how, within our complex healthcare system, to effectively lower rates of readmission. Should the focus be on changes in direct patient care, discharge planning, or case management? How important is it to involve both the hospitals and community care providers?

Figure 1. Number of Readmissions Within One Year — California Hospital Patients with Initial Admission in 2005



In this analysis we found that the number of times a patient was readmitted during a one-year period was higher for patients with such conditions as heart or kidney failure, emphysema, or psychosis, but varied considerably among hospitals and across the regions of the state. These readmissions accounted for half of the amount of money charged to Medicare and Medicaid (in California, the Medi-Cal program) and a third of charges to private insurance.

Overall, about one-third of California hospital patients were readmitted at least once within a year. The percentage readmitted within the shorter period of 30 days was 18.4% for Medicare patients, 15% for Medi-Cal, and 10% for patients with other kinds of medical insurance.

The National Picture

About one-fifth of U.S. Medicare patients are readmitted to the hospital within 30 days, at an additional cost of $17.4 billion[1] for unplanned admissions. National 30-day readmission rates for heart attack, heart failure, and pneumonia are 24.5%, 19.9%, and 18.2% respectively.[2]

There is growing interest in readmissions because recent research shows that hospitals can reduce the number of readmissions with better quality of care and better coordination of care both before and after patient discharge.[3] The federal Centers for Medicare & Medicaid Services (CMS)[4] has already added hospital readmission rates for pneumonia, heart attack, and heart failure to their public reporting Web site for hospital quality[5] (http://www.hospitalcompare.hhs.gov). Its goal[6] is to provide this information to patients and payers as they make healthcare decisions and to ensure that hospitals are aware of their rates. In addition, CMS has stated plans to align Medicare reimbursement rules with the goal of reducing readmissions. One strategy they are considering is to "bundle" payment for all the services related to the same episode of care and reduce Medicare payments to hospitals with higher readmission rates (above the nationwide 75th percentile). Medicaid and other payers may follow this lead.

oshpd

It is the mission of the Office of Statewide Health Planning and Development (OSHPD) to provide useful information about the quality and safety of healthcare in California. As part of this mission, OSHPD presents this Health Facts addressing key information about the occurrence of Readmission to California Hospitals from 2005 to 2006.

The California Picture

For this report we used the California hospital patient discharge data[7] to study hospital readmissions. We selected the first hospitalization for each patient in 2005 and linked it to any additional hospitalizations experienced by the patient for the next 365 days (into 2006 if needed). These additional hospitalizations are counted as "readmissions" in this report.

A total of 1,676,663 individual patients received inpatient hospital care during 2005. More than one-third (36%, 601,656 patients) had at least one readmission within the next 365 days. The remaining 1,075,007 patients had just a one-time hospitalization during 2005.

Type of Care at First Admission. Among patients that had at least one readmission, 93% were initially admitted for general acute care, 7% for psychiatric services, and less than 1% for another service (skilled nursing, chemical dependency recovery, or physical rehabilitation).

Days from Discharge to Readmission. The first readmission after discharge from the initial hospital visit occurred within seven days for 13% of the patients, in the next week for 9%, and in weeks 3 or 4 for 11%. For two-fifths of the patients, readmission occurred more than 90 days after discharge. Cumulatively, 25% of first readmissions occurred by day 20 (about 3 weeks after the initial discharge), 50% by day 73 (about 10 weeks after), and 75% by day 182 (about 6 months after the initial discharge).

Type of Diagnosis. Among patients admitted for removal of the appendix or for hysterectomy, almost all had just a single admission, with no readmissions within a year. However, among patients initially admitted for such medical conditions as heart failure, emphysema, or kidney failure, more than half required one or more readmissions within a year.

Age. The likelihood of having at least one readmission was lowest for children ages 1-5 years (19%) and increased with age, reaching 47% for seniors 85 years and older. However, the likelihood of having a large number of readmissions was different. Adults ages 18-34 years and 35-54 years had the largest average number (2.3) of readmissions per patient per year, while seniors 85 years and older had the lowest average number (1.9) of readmissions per patient per year.

Race/Ethnicity. Black patients were more likely than any other group to have at least one readmission (42%) and on average had a larger number (2.5) of readmissions per patient per year. Hispanic patients were least likely (34%) to have at least one readmission. White patients had the lowest average number (2.01) of readmissions per patient per year.

Payment Source. Almost half (46%) of patients whose hospital care was paid primarily by Medicare and a third (38%) of Medi-Cal patients had at least one readmission within a year. In contrast, only 25% of privately insured patients and 24% of self-pay patients had any readmissions within one year after their first hospitalization. The average number of readmissions was highest (2.5 per year) for Medi-Cal patients and lowest for those with private medical insurance (1.9 per year).

Type of Payment Plan. On average, only 28% of managed care patients had one or more readmissions, compared with 43% of

Figure 2. Type of Care at First Hospitalization — California Patients with Initial Hospitalization in 2005 and Readmission Within One Year

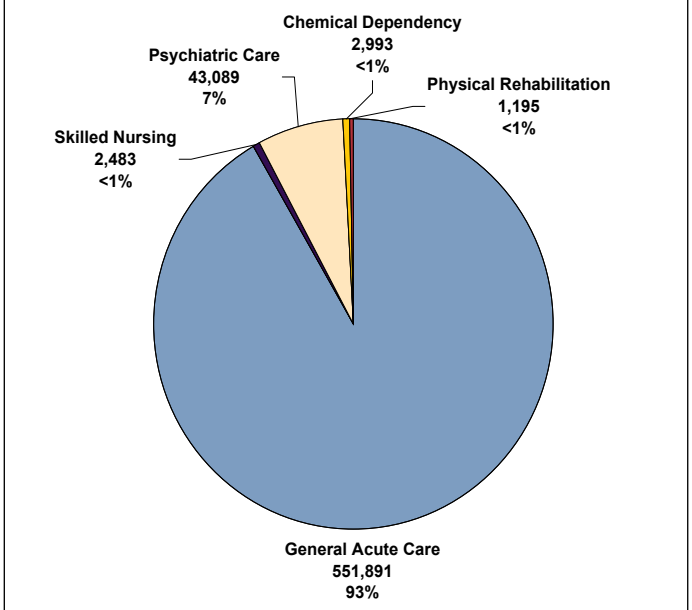


Figure 3. Days from Initial Discharge to First Readmission – California Hospital Patients with At Least One Readmission

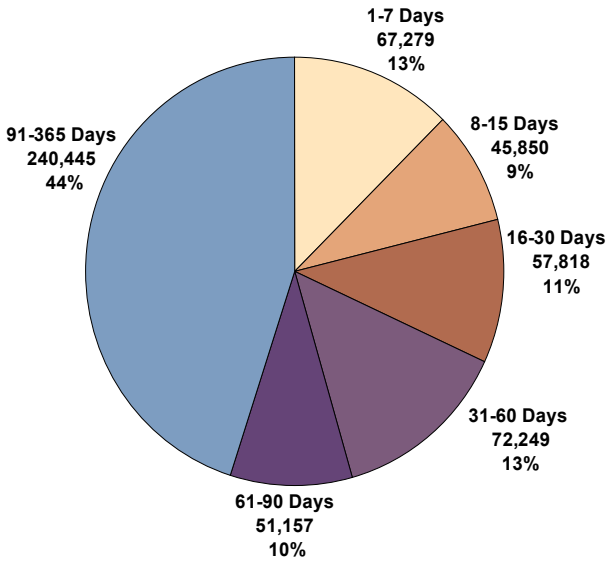


Figure 4. Days from Initial Discharge to First Readmission (Cumulative) Within One Year — California Hospital Patients with Initial Admission in 2005

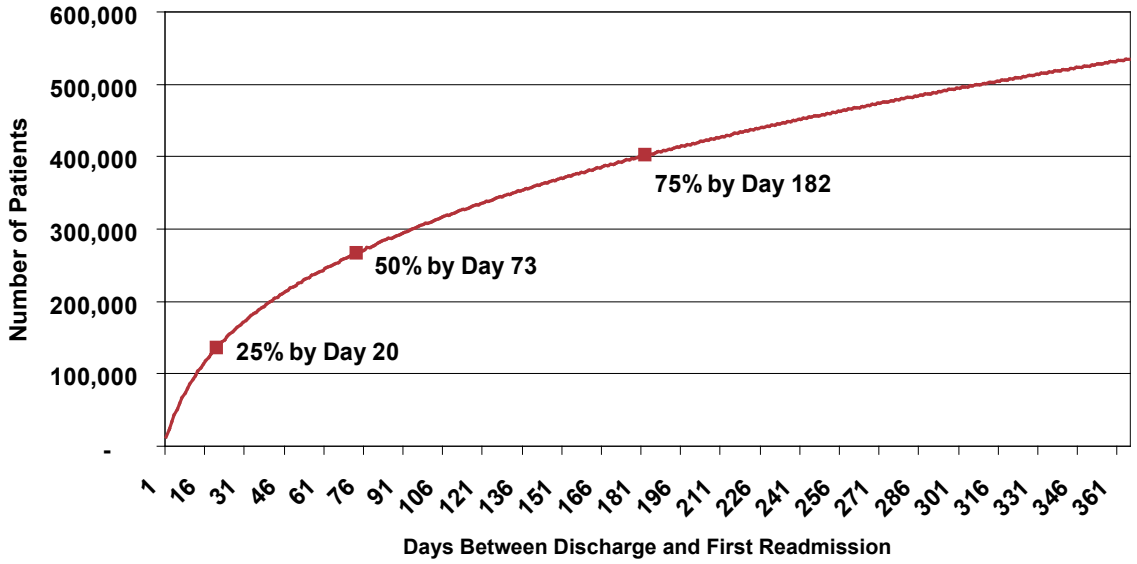


Table 1. One-Year Readmission Rates for 20 Common Diagnoses and Treatments — California Hospital Patients With Initial Hospitalization in 2005

Diagnosis Related Group (DRG)	% of Patients With a Readmission Within One Year	% of All Readmissions
Heart Failure*	61.4	4.2
Emphysema (COPD)	55.4	2.5
Failure of the Kidneys	53.6	1.3
Psychoses	47.8	6.1
Infection of Kidney, Urinary Tract, with Complications (Adult)	47.5	1.5
Pneumonia (Adult)*	47.2	3.8
Lung Inflammation, Infection, Adult	45.9	0.8
Illness of Stomach, Esophagus, Adult	44.6	1.9
Bleeding in Stomach with Complications	44.1	1.8
Diabetes (Adult and Pediatric)	43.2	1.2
Heart Attack*	43.2	1.7
Rehabilitation	40.4	0.3
Septicemia, Adult	39.8	1.6
Heart Artery X-ray (PTCA) Inserting a Stent, without Heart Attack	37.7	1.4
Alcohol / Drug Dependency	37.4	1.3
Stroke	36.8	2.0
Hip, Knee, Ankle, and Foot Joint Replacements	28.0	3.0
Chest Pain	28.0	2.4
Hysterectomy and Related Surgeries, not for Cancer	7.9	0.5
Appendectomy without Complications	5.6	0.2
Patients with 20 Common Diagnoses and Treatments	**39.2**	**39.4**
All Patients	**35.9**	**100.0**

Blue: Medical DRGs

Cream: Surgical DRGs

* A condition targeted by Medicare for reducing readmission rates.

patients covered by traditional fee-for-service insurance (including Medicare and Medi-Cal fee-for-service patients). Managed care patients also had a lower average number of readmissions (1.9) compared with patients covered by fee-for-service payment plans (2.2).

Total Charges. Readmissions accounted for $31 billion of Medicare charges for California hospital services, or 50% of the total Medicare charges for the state. Similarly, readmissions added almost $10 billion to California's Medi-Cal bill, or 49% of the Medi-Cal total. They also accounted for $11 billion (36% of the total) in charges to private insurance companies and more than $1 billion (38% of the total) in charges to patients who paid for their own care. As noted earlier, some readmissions may have been preventable, while some were a normal part of medical care, such as planned return visits for cancer chemotherapy.

Comparing the main payer types, the average charges billed to Medicare were highest ($43 thousand to $45 thousand), followed in order by Medi-Cal, private insurance, and self-paid coverage. There was one exception: the average charge for an initial admission was higher for Medi-Cal ($50 thousand) than for other payers.

Comparing Patient Characteristics In Early and Later Readmissions. Among general acute care (GAC) patients with just one hospital visit (no readmissions), 56% were admitted for medical rather than surgical care, compared with 70% of patients who had one or more readmissions. With each new readmission the percentage of patients needing medical rather than surgical care increased from 76% to 91% from the 1st to the 9th readmission.

Admission via the emergency department was slightly more common for the first admission of patients that had at least one re-hospitalization afterward (65%), but was about the same across all the subsequent readmissions (60% - 63%).

The average length of stay (LOS) for a one-time hospital visit (3.9 days) was shorter than the average LOS for the initial visit of a patient that did have one or more readmission (5.2 days). From the 1st to the 9th readmission the average LOS increased from 5.8 to 7.7 days.

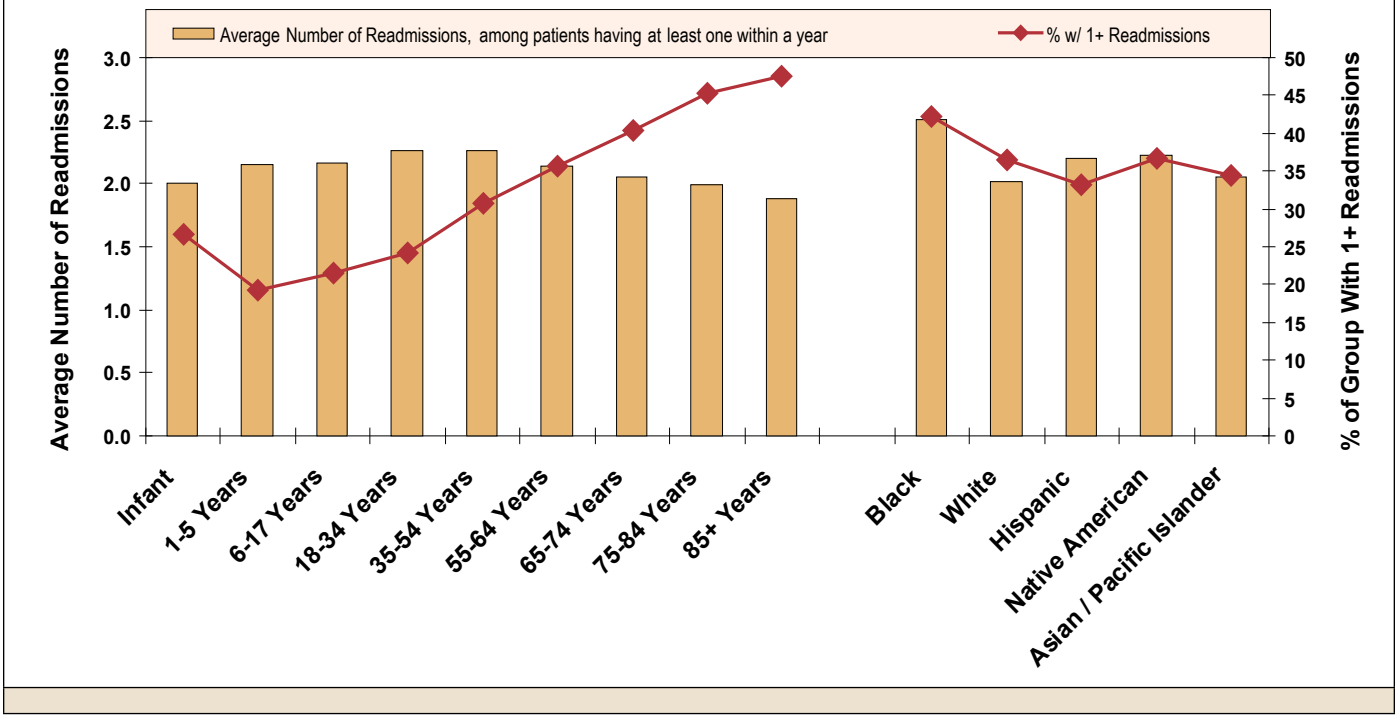
In-hospital death was the outcome for 3.6% of the one-time hospitalizations (no readmission). Among patients with one or more readmissions, the percent dying in-hospital rose from 3.5% of those with one readmission to 5.6% of those with four readmissions and fell to 5% of those with eight or more readmissions.

Geographic Region. Among patients with at least one readmission, the average number of repeat hospitalizations was highest in Los Angeles County (1.7 per person per year), followed by the Inland Empire/San Diego, Bay Area, and San Joaquin Valley (1.6), and lowest for patients receiving care in the Sacramento Valley and northern mountain counties (1.5).[8]

Comparing Readmission Rates across Hospitals

Across all hospitals, the average (median) percent of patients that had at least one readmission was 36%, with a range between the 25th and 75th percentiles of 33% to 40%. The readmission rates were highest for in-hospital psychiatric services (44.4%), followed by skilled nursing services (41%), general acute care (34.7%), chemical dependency treatment (34.3%), and physical rehabilitation (30.5%).

Figure 5. Percent of Patients Within One Year and Average Number of Readmissions, by Age and Race/Ethnicity — California Hospital Patients with Initial Admission in 2005



Limitations

This analysis does not distinguish between readmissions that may have a plausible clinical relationship to the initial hospital visit and those that may not, and it includes both scheduled (elective) and unscheduled visits. In addition, the readmission rates reported here are not adjusted for patient severity.

The linkage of patient data records that enabled the analysis for this report was performed using only a record linkage number, which OSHPD creates based on patient social security number. Patient records lacking this linkage number were omitted from this analysis (23% of the records). These excluded patients may have different characteristics compared with those who were included. For example, they may have been more likely to lack health insurance.

Summary

It is important to consider how the measure of "readmissions" is defined. Factors related to having at least one readmission were not necessarily the same factors related to having a large number of readmissions. Also, the patient mix appears to change from the first to the ninth readmission; as the number of readmissions increased, more of the patients had chronic medical conditions, the length of stay grew longer, and risk of death increased. However, with larger numbers of readmissions patients were not necessarily older or more likely to be covered by Medicare.

Other publications have considered readmissions as related mainly to problems with discharge planning and care coordination after discharge. In this analysis it appears that patients that have

Figure 6. Percent of Patients Readmitted Within One Year and Average Number of Readmissions, by Payer — California Hospital Patients With Initial Hospitalization in 2005

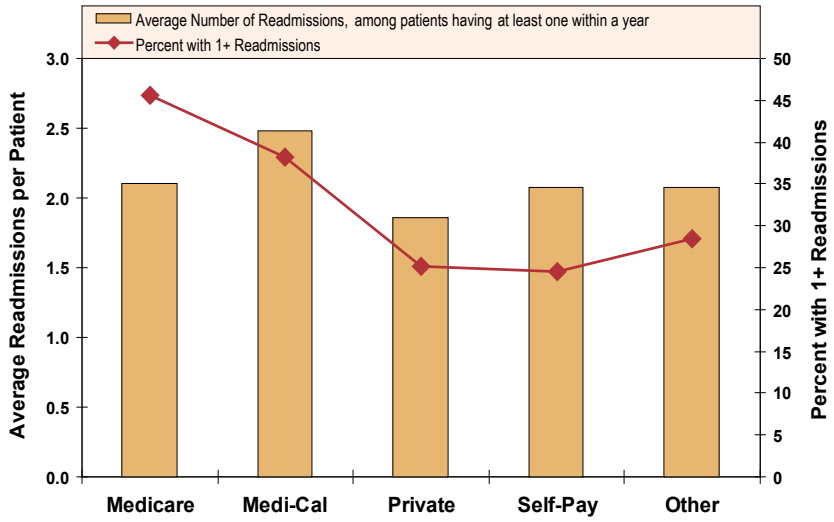


Table 2. Total Charges For Hospitalizations During One Year — California Hospital Patients With Initial Hospitalization in 2005

Type of Payer	Patients With No Readmissions Within One Year	Patients With One or More Readmissions Within One Year		Readmissions as % of All Charges
	One-Time Admission	Initial Admission	All Readmissions	
Total Charges				
Medicare	$17.1 billion	$14.1 billion	$31.3 billion	50.0
Medi-Cal	$5.9 billion	$4.3 billion	$9.7 billion	48.6
Private Insurance	$13.7 billion	$5.9 billion	$10.9 billion	35.7
Self-Pay	$1.5 billion	$.5 billion	$1.3 billion	38.1
Average Charge per Hospitalization				
Medicare	$43.7 thousand	$43.0 thousand	$45.3 thousand	
Medi-Cal	$42.3 thousand	$50.1 thousand	$45.2 thousand	
Private Insurance	$32.9 thousand	$42.1 thousand	$42.0 thousand	
Self-Pay	$30.7 thousand	$33.7 thousand	$38.1 thousand	

Table 3. Median One-Year Readmission Rates, by Type of In-Hospital Care in California Hospitals, 2005

Type of Care	Number of Hospitals Reporting the Service	Readmission Rate				
		5th Percentile	25th Percentile	50th Percentile	75th Percentile	95th Percentile
General Acute Care	387	21.7	31.6	34.7	38.7	51.8
Skilled Nursing/Intermediate Care	180	15.2	33.3	40.8	50.0	60.4
Psychiatric Care	151	23.7	39.0	44.4	54.3	64.6
Chemical Dependency	36	0.0	26.4	34.3	43.0	100.0
Physical Rehabilitation	97	5.3	26.0	30.5	35.8	44.8

Figure 7. Patient Characteristics at Initial Hospitalization and Each Follow-up Readmission During One Year — General Acute Care Patients in California Hospitals, with Initial Hospitalization in 2005

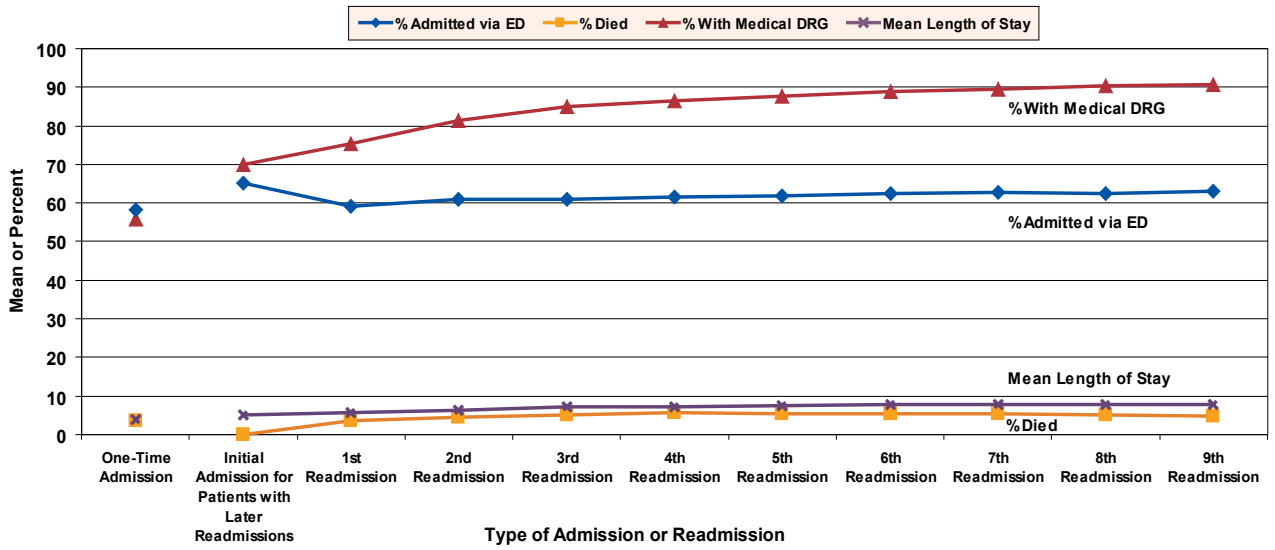
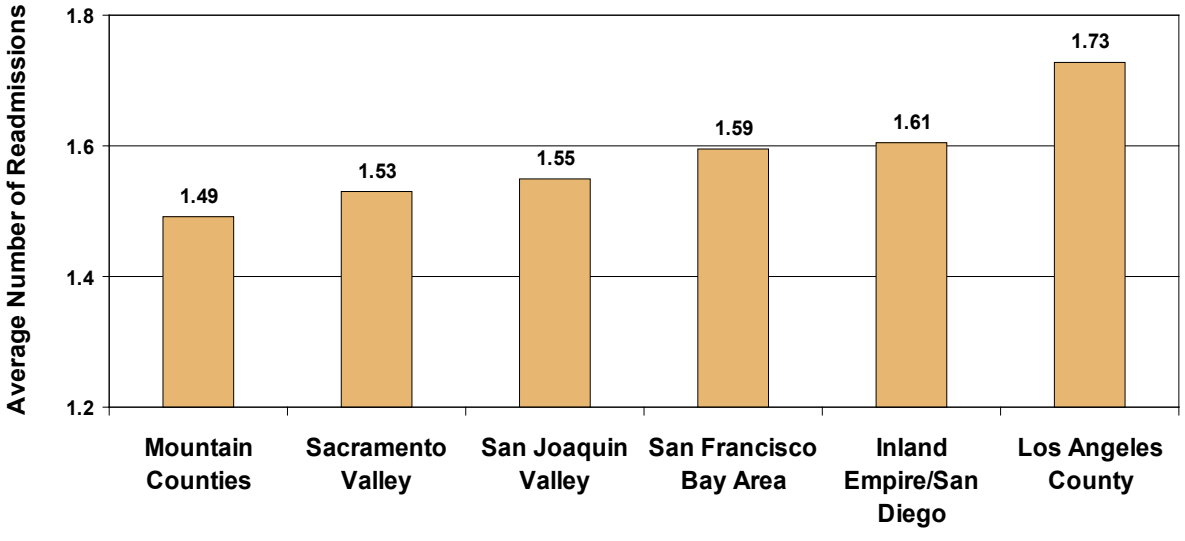


Figure 8. Average Number of Readmissions Within One Year for Patients With at Least One Readmission, by Region — California Hospital Patients Initially Hospitalized in 2005



readmissions may already be "sicker" at their first visit. These patients had a longer length of stay at their first visit, were more likely to have a medical rather than a surgical condition, and were more likely to be admitted via the emergency room than the patients with just a single visit.

The likelihood of having at least one readmission increased with age, but the average number of readmissions was greater for younger adults. Cost-containment efforts that focus on the older age groups might miss younger high-risk adults. Psychiatric patients had the highest readmission rates.

The source of payment for medical care is another important consideration. Readmission rates were higher if the source of payment was a government program (Medicare or Medi-Cal), rather than private insurance or self pay. Rates were considerably lower if the type of payment plan was managed care, rather than traditional fee-for-service payments. This has implications for aligning payment strategies with the goal of reducing readmission rates.

Black patients had the highest risk of readmission; they were more likely than any other group of patients to have at least one readmission, and among those with readmissions they had the highest average number of return hospitalizations.

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References

[1] Jencks SF, Williams MV, Coleman EA. "Rehospitalizations among patients in the Medicare fee-for-service program." N Engl J Med. April 2, 2009. 360(14):1418-28.

[2] CMS Office of Public Affairs, press release July 09, 2009.

[3] MEDPAC Report to the Congress: Promoting greater efficiency in Medicare, June 2007, page 103. Note: Medicare is the federal health insurance program that covers seniors 65 years and older, plus younger adults with disabilities. It is administered by the federal Centers for Medicare and Medicaid Services, CMS.

[4] In California, the Medicaid program is implemented as Medi-Cal, supported by both federal and state funding.

[5] HospitalCompare evaluations of hospitals are available online at http://www.hospitalcompare.hhs.gov.

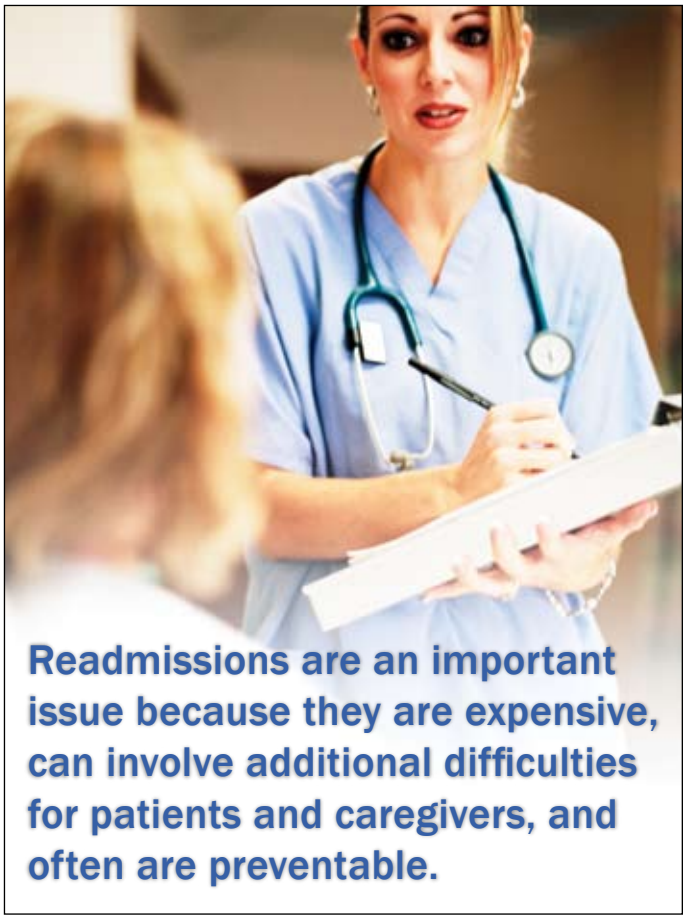
[6] Congressional Budget Office. CBO Budget Options: Health Care, Dec. 2008. Vol. 1, Chapter 5, pp 61-67. Congress of the United States.

[7] The data source for this analysis was the Patient Discharge Data collected by the California Office of Statewide Health Planning and Development. Datasets for 2005 and 2006 were utilized and the base cohort consisted of patients with a hospital discharge in 2005. In the analysis all readmissions for the patient that occurred within 365 days of that first discharge, including hospitalizations in 2006, were linked to the first hospitalization to form a full patient record extending 365 days out from the initial discharge. Analyses were done using SAS, version 9.1.

The following were excluded: (1) any admission for Major Diagnostic Category MDC 14 (pregnancy, childbirth, and puerperium) or MDC 15 (newborns and other neonates) (12% of records); (2) any patient record lacking the Record Linkage Number (23% of records); and (3) any new admission occurring more than 365 days from the initial discharge.

Any admission that occurred on the same day as the prior discharge was considered a transfer and not counted as a readmission. Upon further analysis it was found that these accounted for only 7.7% of first readmissions (44, 576 out of 580,453) and were less likely to be returns to the same hospital (48%) than were readmissions that occurred after a longer time interval (68%). Most commonly, the same-day readmissions were for rehabilitation and aftercare.

[8] These averages are all significantly different from each other except for the Bay Area and the Inland Empire.



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