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Second Report of the California Hospital Outcomes Project (1996): Acute Myocardial Infarction Volume Two: Technical Appendix-chapter005

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CHAPTER FIVE: DEFINITION OF OUTCOME VARIABLE

Different outcomes are appropriate for different conditions. In selecting the specific outcomes for analysis, a variety of statistical and clinical issues were considered. For example, death is an important and rather frequent outcome of AMI hospitalizations. Medical interventions, such as prompt administration of intravenous thrombolytics, can reduce the risk of early death following an AMI. In addition, OSHPD's 1988 reabstraction study and other studies of administrative data have shown that death is reported reliably. These characteristics make it a useful outcome for analysis.

ACUTE MYOCARDIAL INFARCTION: DEATH

For acute myocardial infarction patients, only one outcome was studied: in-hospital death within 30 days of admission. Deaths after discharge from the hospital could not be identified from existing data. In-hospital deaths beyond 30 days were not counted because these late deaths may have resulted from social problems or unrelated illnesses. Not counting late deaths made the outcome comparisons across hospitals more valid. Other cutoffs were considered but the 30-day limit was adopted because it is consistent with previous research in the field.

Because 19.5% of AMI patients were transferred from the hospital where they were initially admitted to another acute care facility, it was important to define an "episode of care" to include all inpatient treatment for a particular AMI. Transfer rates vary markedly across hospitals, so it would be unfair to compare hospital mortality rates without linking serial hospitalizations that comprise a single episode of care. These linkages could be made because social security numbers were added to OSHPD's patient discharged database in July 1990. This identifier made it possible to link transferred cases and determine the total number of patients at each hospital who died before discharge, regardless of where the death occurred. Chapter Four describes the linkage methods.

Linking serial hospitalizations and attributing outcomes to the first facilities providing care were important strengths of this study. Without these enhancements, hospitals that transfer a large proportion of their AMI patients to other facilities would have demonstrated relatively low risk-adjusted mortality because some of their patients would have died elsewhere. Conversely, large hospitals that neither transfer their own patients elsewhere

nor accept transfers would have demonstrated relatively high risk -adjusted mortality. These biases were avoided by attributing linked outcomes to the original hospital. In addition, the risk of death is highest during the first 24 hours after an AMI and most of the key decisions that affect short -term mortality are made during this period.

It appears that patients were transferred most often for further diagnostic evaluation or coronary revascularization. Of the patients admitted between July 31, 1990 and May 31, 1991, and then transferred elsewhere, 25% underwent coronary bypass grafting, 31% underwent coronary angioplasty, and 66% underwent cardiac catheterization at a subsequent hospital. Although some post-transfer deaths may be attributable to complications of surgery rather than complications of the initial AMI, these two types of complications cannot be distinguished using administrative data.

In the sample of AMI patients used for this outcomes study, the statewide 30-day, in-hospital death rate was 13.0%.