



Technical Guide: Volume & Mortality Data

The data used for these reports are extracts from administrative databases storing hospital inpatient discharge data primarily used for billing purposes. These records consist of patient demographics, diagnoses, and procedures, and additional medical information. Administrative data provide a convenient, inexpensive, rich source of data that can provide valuable information. However, it is important to note that there are limitations associated with administrative data, including coding differences among hospitals, ambiguity about when a condition occurs, and limitations to coding methodologies.

Indicator Definitions

Inpatient Quality Indicators are run on a calendar year of inpatient discharge data. Indicators include **volume** and **mortality**. For more information, see [Supporting Information](#) for the indicators presented in this report, including thresholds and the supporting literature, as well as complete technical specifications for each indicator.

Volume indicators are measured as counts of admissions for any given procedure. There is evidence that a higher volume of these procedures is associated with lower mortality. Research literature suggests threshold volumes that may be associated with better outcomes. Threshold volumes are procedure specific. The lowest volume suggested in the literature (Threshold 1) and the highest volumes suggested in the literature (Threshold 2) are provided for each procedure.

Mortality rates have several components:

- Numerator - The number of people who underwent a procedure at a hospital and who died in the same hospital.
- Denominator - The total number of patients admitted for a procedure (does not include patients who were transferred to another hospital or who have unknown discharge information).
- **Observed mortality rate** - The numerator divided by the denominator.

Because many factors influence mortality such as patients' age, sex, and severity of condition (co-morbidities), a **risk-adjusted mortality rate** is also reported. Risk adjustment "levels the playing field" among hospitals by adjusting for differences in patients treated at each hospital. This rate is needed for making hospital-to-hospital comparisons.

For more on the risk adjustment method used here, see the [Oregon Hospital Quality Indicator Project, 2004 Risk Adjustment Brief](#).

All analyses used AHRQ's QI Windows Application (Software Documentation, Version 3.2a; March 2008). For more information, see [AHRQ's Inpatient Quality Indicators](#), which includes the user guide, technical manual, and software documentation.