

PSI 39: Failure to Rescue	
Origin: Review of an AHRQ PSI (3)	
Dimension	Description
Description of Specific Aspects of Patient Safety	Complications might occur in any care process – though good hospitals identify such complications quickly and treat them aggressively to avoid further complications and deaths.
Aim of the PSI	The PSI aims at surveillance of patients who die following the development of a complication.
Level of Determination of Patient Safety	Safety can be assessed at the individual and the aggregated patient level.
Source(s)	This indicator was originally proposed by Silber et al. as a more powerful tool than the risk-adjusted mortality rate. The Indicator is intended to detect true differences in patient outcomes across hospitals. The underlying premise was that better hospitals are distinguished not by having fewer adverse occurrences but by more successfully treatment of patients who experience complications.
Extent of Clinically Testing	<p>The project team developing the AHRQ PSI conducted extensive empirical analyses on this PSI. The team concluded that this PSI generally performs well on several different dimensions, including reliability, bias, relatedness of indicators, and persistence over time. AHRQ-Panellists noted that 1) this PSI is fundamentally different than other AHRQ PSIs, as it reflects effectiveness in rescuing a patient from a complication versus preventing a complication and 2) several adverse incentives may be introduced by implementing this indicator. In particular, since some type of adjustment may be desirable, this indicator may encourage the up coding of complications and co-morbidities to inflate the denominator or manipulate risk adjustment. Others noted that this indicator could encourage irresponsible resource use and allocation, although this is likely to be a controversial idea. Finally, panellists emphasised that this indicator should be used internally by hospitals, as it is not validated for public reporting. (3).</p> <p>The AHRQ PSI software was applied to Veteran Affairs (VA) administrative data to identify potential instances of compromised patient safety; determine occurrence rates of PSI events in the VA; and examine the construct validity of the PSIs. The study population was 97% male, with a mean age of 65 years, 54% were age 65 and older. All together 11411 PSI events were identified, 46% of PSI events occurred in surgical hospitalisation and 54% in medical hospitalisation. The observed PSI rate per 1000 discharges was 155.55 for failure to rescue, the highest rate observed among all AHRQ PSIs. This PSI was significantly associated with the AHRQ PSIs for Death in low-mortality DRGs, postoperative pulmonary embolism or deep</p>

	<p>vein thrombosis, technical difficulties with procedure and decubitus ulcer. Significant differences were found for hospitalisations with PSI and those without PSI events for longer lengths of stay and higher costs (4).</p> <p>The performance of the AHRQ PSIs was analysed to: 1) provide a descriptive analysis of the incidence of PSI events from 2001 to 2004 in the VA; 2) examine trends in national PSI rates at the hospital discharge level over time; and 3) assess whether hospital characteristics (teaching status, number of beds, and degree of quality improvement implementation) and baseline safety-related hospital performance predict future hospital safety-related performance. Risk-adjusted rates of the PSI for iatrogenic pneumothorax and failure to rescue demonstrated a significant trend for a decreasing rate over time. After accounting for patient and hospital characteristics, hospitals' baseline risk-adjusted PSI rates were the most important predictors of the 2004 risk-adjusted rates for failure to rescue among seven other PSIs. It was concluded, that this PSI is a useful tools for tracking and monitoring patient safety events. Future research should investigate whether trends reflect better or worse care or increased attention to documenting patient safety events (5).</p> <p>The Agency for Healthcare Research and Quality PSI algorithms were applied to administrative data across four years of 1.92 million discharges from children's hospitals. The mean risk-adjusted rates of PSI events ranged from 0.1 events per 1000 discharges for a foreign body left in during a procedure to 140 events per 1000 discharges for failure to rescue. The researchers concluded: "PSIs derived from administrative data are indicators of patient safety concerns and can be relevant as screening tools for children's hospitals; however, cases identified by these indicators do not always represent preventable events. Some, such as a foreign body left in during a procedure, iatrogenic pneumothorax, infection attributable to medical care, decubitus ulcer, and venous thrombosis, seem to be appropriate for paediatric care and may be directly amenable to system changes. In their present form, two of the indicators, namely, failure to rescue and death in low-mortality DRGs, are inaccurate for the paediatric population, do not represent preventable errors in the majority of paediatric cases, and should not be used to estimate quality of care or preventable deaths in children's hospitals"(6).</p> <p>AHRQ is determining the feasibility and practicality in a project concerning validation of selected AHRQ Quality Indicators (8).</p> <p>The results suggest that this PSI may be useful as a measure of patient safety – Though special thoughts should be given to application of this PSI to the paediatric population. (3-6).</p>
<p>Evidence of Clinically use of Standards</p>	<p>No evidence of clinically use of standards was found.</p>

PSI category	Diagnose Specific as well as other Specific PSIs.
Data definitions	Number of deaths per 1000 patients having developed specified complications of care during hospitalisation.
Numerator Description	Number of in-hospital deaths. (Discharges with a disposition of “deceased”).
Denominator Description	<p>Number of in-hospital deaths (Discharges with a disposition of “deceased”) plus discharges 18 years and older with potential complications of care listed in failure to rescue definition (i.e., pneumonia, DVT/PE, sepsis, acute renal failure, shock/cardiac arrest, or GI hemorrhage/acute ulcer).</p> <p>Exclude cases:</p> <ul style="list-style-type: none"> – age 75 years and older – neonatal patients in MDC 15 – transferred to an acute care facility (Discharge Disposition = 2) – transferred from an acute care facility (Admission Source = 2) – admitted from a long-term care facility (Admission Source=3) <p>Additional exclusion criteria specific to each diagnosis.</p>
Data Source	Administrative data.
Identifying the institutional context	This PSI is relevant to quality improvement.
Care Setting	The PSI applies for high quality health care.
Professionals Responsible for Health Care	Health care workers.
Lowest Level of Health Care Delivery Addressed	Individual clinical units or departments.
Allowance for Patient Factors	Risk adjustment for age, sex, DRG, comorbidity categories.
Stratification by Vulnerable Populations	No stratification.
Standard of Comparison	No specific standards given.
Scoring	AHRQ has PSI software for scoring.