



Healthcare Quality Reporting Program

HOSPITAL-ACQUIRED PRESSURE ULCERS

Methods

Hospital-acquired, or incident, pressure ulcers (sometimes called pressure sores or bed sores) are [reported on the Department of Health's \(HEALTH's\) Web site](#) as part of the public reporting program's hospital reporting work. The information on this page provides additional details about the information reported, including its data source, how scores and diamonds are calculated, and why it is important.

Measure Information (adapted from the Agency for Healthcare Research and Quality)

Measure	Why is this information important?
Pressure Ulcer Incidence	<p>This measures hospital-acquired, or incident, pressure ulcers in patients aged 18 and older who were hospitalized for five days or more. Pressure ulcers, sometimes called bed sores or pressure sores, are skin wounds that can be painful, take a long time to heal, and cause other complications, such as skin and bone infections.</p> <p>There are several things that hospitals can do to prevent pressure ulcers, such as frequently changing the patient's position, ensuring proper nutrition, and using soft padding to reduce pressure on the skin. However, some patients may get pressure ulcers even when the hospital provides good preventive care.</p> <p>For the pressure ulcer SIR, which compares actual incidence to what is "expected," <i>lower</i> scores are better. A SIR score less than 1.0 means the incidence is better than expected.</p>

Definitions (adapted from the Pressure Ulcer Advisory Panel)

Word or Phrase	What does this mean?
Pressure Ulcer	<p>Pressure ulcers, sometimes called bed sores or pressure sores, are skin wounds that can be painful, take a long time to heal, and cause other complications, such as skin and bone infections. Pressure ulcers are "staged" I-IV according to their depth. Only Stage III, Stage IV, and unstageable pressure ulcers are included in the public report.</p> <p>There are several things that hospitals can do to prevent pressure ulcers, such as frequently changing the patient's position, ensuring proper nutrition, and using soft padding to reduce pressure on the skin. However, some patients may get pressure ulcers even when the hospital provides good preventive care.</p>
Rate	A score that reflects new (hospital-acquired) pressure ulcers over a period of time; for pressure ulcer incidence, three months.
Stage III Pressure Ulcer	Stage III pressure ulcers are deep enough to go through the skin, and may expose the fat that is under the skin. However, bone, tendon, and muscle are not exposed.
Stage IV Pressure Ulcer	Stage IV pressure ulcers are deep enough to go through the skin <u>and</u> expose bone, tendon, or muscle.

Word or Phrase	What does this mean?
Unstageable Pressure Ulcer	Unstageable pressure ulcers are deep enough to go through the skin, but are covered by debris so it is not possible to determine whether or not bone, tendon, or muscle are exposed.
Present on admission	A pressure ulcer is already there when a patient enters the hospital; these do NOT count as new, hospital-acquired pressure ulcers and are not counted on this report.

Data Source

Rhode Island hospitals submit patient-level information to the Department of Health as part of the Hospital Discharge Data Set (HDDS). The HDDS includes patient information, including patients' diagnoses, how long they were hospitalized, and what care the hospital provided. The Department of Health uses these data to report hospital-acquired pressure ulcers. For pressure ulcers, *lower* numbers are better.

Measure Calculation

The information in this section is for people who want details about the data calculations. For each hospital, two numbers are calculated: (1) pressure ulcer incidence, and (2) a Standardized Incidence Ratio (SIR). Only the SIR is included in the public report, but incidence is needed to calculate each hospital's SIR.

1. **Pressure ulcer incidence** is calculated as follows:

$$\text{Rate} = \frac{\text{(patients who develop a pressure ulcer)}}{\text{(number of patients aged 18 years and older who were hospitalized 5+ days)}}$$

The number of patients who develop an advanced pressure ulcer (Stage III, Stage IV, or their clinical equivalent among unstageable pressure ulcers) that is NOT present when patient is admitted is the **numerator**. The number of patients aged 18 years and older who were hospitalized five or more days is the **denominator**. The denominator also excludes some patients; these details are below, under "Measure Exclusions." The **incidence rate** is the numerator divided by the denominator multiplied by 1,000. Each hospital's rate is compared to the rates of other hospitals in Rhode Island using SIRs (below and p. 3).

2. Incidence rates are used to calculate **SIRs**, which are:

$$\text{SIR} = \frac{\text{(observed cases)}}{\text{(expected cases)}}$$

The **observed cases** are the number of hospital-acquired pressure ulcers (incidence rate numerator) and the **expected cases** are the number we expect to see if the average Rhode Island pressure ulcer incidence rate is applied to each hospital's patient population (the incidence rate's denominator). *Lower* scores are better. A SIR score less than 1.0 means the incidence is better than expected.

Each hospital's SIR helps to determine its diamond category (see p. 3) and is included in this file (p. 4).

Measure Exclusions

The information in this section is for people, often clinicians, who want detailed information about which patients are excluded from the data. The incidence rate denominator excludes certain patients, such as those:

- Hospitalized fewer than five days
- Who already had a pressure ulcer when admitted to the hospital
- MDC 9 (Skin, Subcutaneous Tissue, and Breast)
- MDC 14 (pregnancy, childbirth, and puerperium)
- With any diagnosis of hemiplegia, paraplegia, or quadriplegia

- With ICD-9-CM code of spina bifida or anoxic brain damage
- With an ICD-9-CM procedure code for debridement or pedicle graft before or on the same day as the major operating room procedure (surgical cases only)
- Admitted from a long-term care facility (SID Admission Source=3)
- Transferred from an acute-care facility (SID Admission Source=2)

The number of patients who meet these criteria is listed on the public report.

Diamond Categories

The diamond categories help you understand how each hospital's incidence (SIR score) compares to its expected incidence (which is determined based on the average performance of Rhode Island hospitals):

- Worse than expected
- About the same as expected
- Better than expected

These categories are determined mathematically to ensure that the differences are meaningful. In detailed terms, this means that hospitals with either one diamond (—) or three diamonds (—) have pressure ulcer incidence rates that are “statistically significantly different” from their expected rates.

Diamond Calculation

The information in this section is for people who want statistical details about the diamond calculations. The diamond categories are determined based on hospitals' SIRs (see p. 2). An SIR less than 1.0 means the hospital's rate is lower (better) than expected; an SIR greater than 1.0 is higher (worse) than expected. The margin of error, or “90% confidence interval,” determines whether each SIR is meaningfully different from 1.0. Diamonds are assigned as follows:

- One diamond (—): If the SIR falls above 1.0 (is worse than expected) AND its margin of error, or “90% confidence interval,” does not include 1.0, then the hospital has one diamond.
- Two diamonds (—): If the 90% confidence interval for the score includes the Rhode Island average, then the hospital's score is not accurate enough to categorize it as better or worse than other hospitals. The hospital has two diamonds.
- Three diamonds (—): If the SIR falls below 1.0 (is better than expected) AND its margin of error, or “90% confidence interval,” does not include 1.0, then the hospital has three diamonds. **Note:** The exception is when the hospital does not have any hospital-acquired pressure ulcers (where 0 is the best performance). When this occurs, a hospital is automatically given three diamonds.

Data Table, January-December 2010

The data table below provides additional details which are not presented in the Data Report, including:

- Number of hospital-acquired pressure ulcers
- Number of patients (who meet the eligibility criteria)
- Pressure ulcer rate per 1,000 patients
- SIR, based on the statewide benchmark
- 90% CI range

Hospital (Alphabetical by Name)	Number of Hospital- Acquired Pressure Ulcers	Number of Patients	Pressure Ulcer Rate per 1,000 Patients	SIR	90% CI		Diamonds
					Lower Limit	Upper Limit	
Kent County Memorial Hospital	3	4,653	0.64	1.519	0.410	3.923	---
Landmark Medical Center	0	2,860	0.00	0.000	-	-	---
Memorial Hospital	1	1,754	0.57	1.344	0.053	6.353	---
Miriam Hospital	3	4,259	0.70	1.660	0.448	4.286	---
Newport Hospital	0	1,497	0.00	0.000	-	-	---
Our Lady of Fatima Hospital	0	3,955	0.00	0.000	-	-	---
Rhode Island Hospital	8	9,799	0.82	1.924	0.957	3.471	---
Roger Williams Medical Center	2	2,000	1.00	2.357	0.407	7.405	---
South County Hospital	0	1,146	0.00	0.000	-	-	---
Westerly Hospital	1	1,073	0.93	2.196	0.087	10.385	---
Women and Infants Hospital	0	1,318	0.00	0.000	-	-	---
<i>State Average</i>			0.42				

- Confidence intervals are not applicable when the SIR equals 0.000; these facilities automatically receive three diamonds.

-- Not applicable