



Hospital Acquired Complications

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Abstract

This audit compares the data on hospital acquired complications for four hospitals in Illinois (listed below). The research team selected five hospital acquired conditions that were reported by the Leapfrog Hospital Safety Grade website and compared the data between those hospitals. The categories that were selected are surgical wounds split open, C. Diff infections, dangerous bed sores, infections in the urinary tract, and collapsed lungs. The team then gathered information from the worst hospital scores and the best hospital scores in the United States and averaged them to determine the standard rate for the audited hospitals. It was found that two hospitals fell below the standard rate in at least one category. The team then researched ways to improve the scores for all audited areas to ensure that proper safety and precautions were in place to protect patients.

Hospitals

- Advocate BroMenn Medical Center Normal, Illinois
- OSF St. Joseph Medical Center Bloomington, Illinois
- Rush University Medical Center Chicago, Illinois
- Herrin Hospital Herrin, Illinois

References

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Introduction

Hospital-acquired conditions continue to cause excess healthcare spending and impact patient care outcomes. In 2016, more than 3,219 patient deaths and \$2 billion in excess spending resulted from avoidable hospital-acquired conditions (HACs). Despite guidelines and penalties from the Centers for Medicare and Medicaid Services (CMS), more than 48,700 HACs led to increased length of stays and higher mortality risk.

The American Medical Association's Journal of Internal Medicine estimates that the current rates of C. Diff infections add an additional \$1.5 billion annually to the cost of healthcare. Though the overall rate declined approximately 8 percent from 2014 to 2016, HACs are still prevalent in facilities across the U.S.

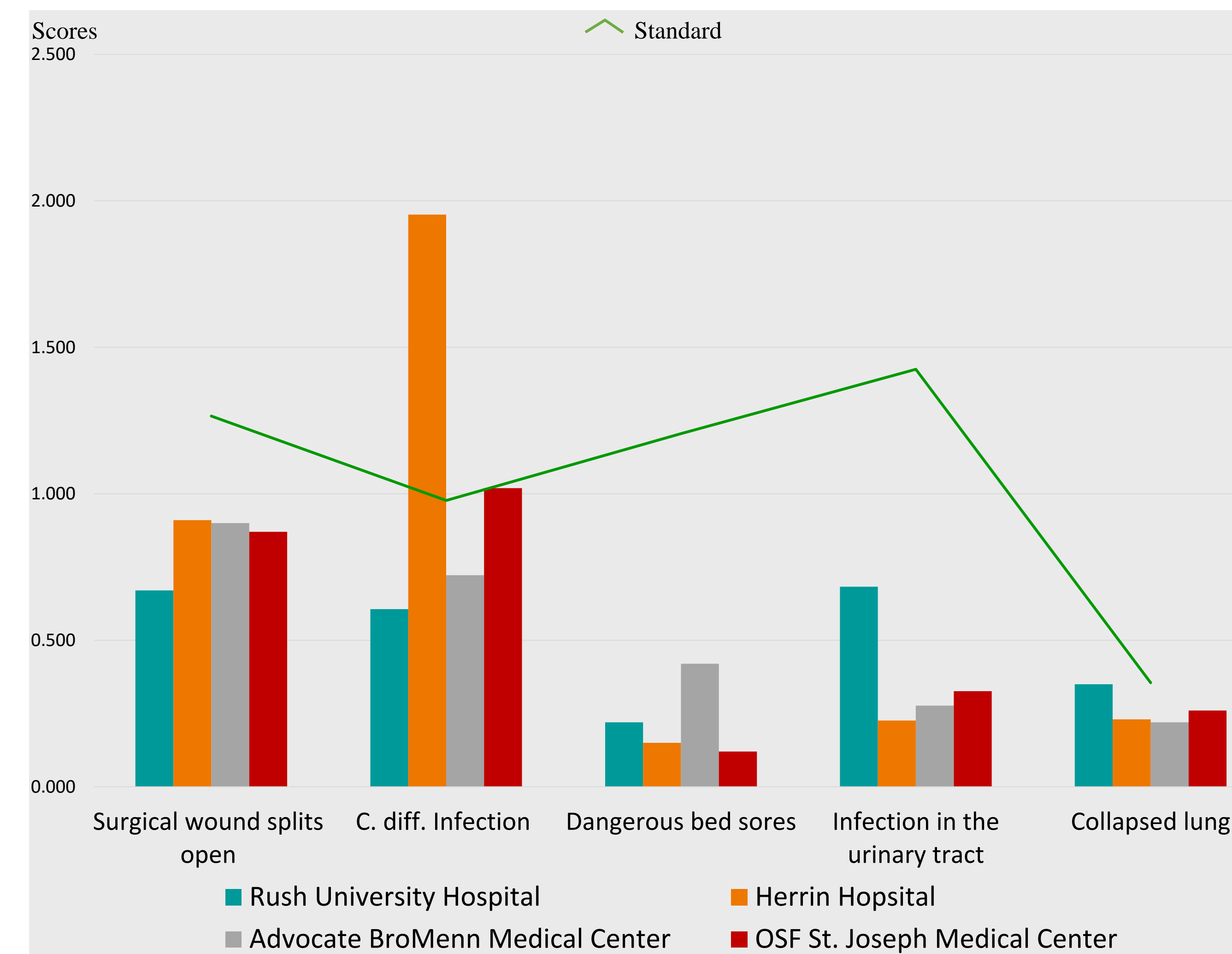
The team selected four hospitals expanding throughout Illinois to identify trends in hospital acquired complications. Research was conducted for quality measures used to reduce the risk of hospital acquired conditions in those five categories.

Standards

To audit these hospitals, five different hospital acquired complications were selected from Leapfrog Hospital Safety Grade website. The nation's best and worst hospital scores for each complication were then averaged. This average was then used for comparison of each hospital's score. Those that fell above the corresponding standard were said to not meet the required audit scoring. Below are the five areas of the audit and their standards.

1. Surgical wounds split open 1.265
2. C. diff infection 0.977
3. Dangerous bedsores 1.205
4. Infection in urinary tract 1.425
5. Collapsed lung 0.355

Measure	Rush University Hospital	Herrin Hospital	Advocate BroMenn Medical Center	OSF St. Joseph Medical Center	Standard
Surgical wound splits open	0.670	0.910	0.900	0.870	1.265
C. Diff. infection	0.606	1.953	0.722	1.019	0.977
Dangerous bed sores	0.220	0.150	0.420	0.120	1.205
Infection in the urinary tract	0.683	0.226	0.277	0.326	1.425
Collapsed lung	0.350	0.230	0.220	0.260	0.355



Recommendations

Surgical wounds split open (wound dehiscence)

To reduce dehiscence:

- Proper suture knot technique- Maintaining appropriate tension on the suture is vital to healing, so knots must be set properly to ensure stitches remain intact.
- Suture material - Multifilament materials are those that are made by braiding or twisting making the friction rate is high. As a result, knots hold well and remain tied as they are created. Synthetic polymeric monofilament suture materials have "memory" which means they tend to return to their original shape instead of lying flat, which is a desired quality in suturing. Heavier suture materials provide the best tension strength for holding wounds closed and require fewer and more secure knots. Lighter materials cause less tissue irritation and damage and glide through wounds more efficiently. But they need several knots for adequate closure.
- Not suturing wounds under tension- this is emphasized in most surgical skills and suturing courses. Excessive pressure may cause the suture to break and could cut tissue which leads to the wound reopening.

C.diff infections

To prevent and reduce spread:

- Create nurse-driven protocols to create rapid isolation of patients with suspected or confirmed C.diff.
- Place symptomatic patients on contact precautions, in a single-patient room with a dedicated toilet.
- When transferring patients: Notify receiving wards or facilities about the patient's C.diff status so contact precautions are maintained at the patient's new location.
- Create daily cleaning protocols and checklists for patient-care areas and equipment.
- To prevent C. Diff, perform daily cleaning of patient-care environment using a C. diff sporicidal agent.
- Assess the appropriateness of prescribing antibiotics that pose the highest risk for C.diff, especially fluoroquinolones and 3rd and 4th generation cephalosporins. Develop facility-specific treatment recommendations for common infections that include first- and second-line antibiotics. Ensure that patients receive the shortest effective duration of antibiotic therapy. Include inpatient antibiotic duration when determining post-discharge antibiotic duration.

Dangerous bed sores (pressure ulcers) in bedridden patients

To reduce the risk:

- Change positions frequently - When patients change positions often, there will be less pressure on the skin, reducing the risk of developing pressure ulcers. It is a good idea to reposition patients at least every two hours.
- Keep skin clean and dry - The cleaner and drier the patient's skin is, the less likely it will develop bed sores. Dip a wash rag in a bucket of warm water and mild soap and clean the patient's skin with it. Then, pat their skin dry with a towel. Rubbing too hard can lead to skin irritation.
- Use pillows - To prevent bed sores, place pillows between parts of the patient's body that press against each other. National Institutes of Health recommends placing a pillow under the patient's tailbone, shoulders, heels and elbows. If they are lying on their side, it is better to put the pillow between their knees and ankles.
- Exercise - Performing a few range of motion exercises in bed can help reduce the risk of bed sores. For example, start with an arm lift. Have the patient lift their arm up as high as they can and hold it there for 10 seconds. Repeat the exercise on the other arm.

Infection in the urinary tract (catheter associated UTI's)

To reduce the risk:

- Insert catheters only for appropriate indications and leave in place only if needed.
- Avoid use of urinary catheters in patients for management of incontinence.
- Use urinary catheters in operative patients only as necessary, rather than routinely.
- For operative patients who have an indication for an indwelling catheter, remove the catheter as soon as possible postoperatively, preferably within 24 hours, unless there are appropriate indications for continued use.

Collapsed lung (atelectasis)

To reduce the risk:

- One of the best ways to prevent atelectasis is to control pain so that it is not painful to breathe. This may mean that pain medication is necessary to lessen the pain that is present so that deep breathing is more natural.
- Coughing regularly, and certainly when the urge strikes, is also important. The action of both coughing and deep breathing is important to fully expand the lungs, which prevents atelectasis.
- Patients may be given cough and deep breathing exercises, which is exactly what it sounds like. The patient may be instructed to take ten slow and deep breaths, followed by a forceful cough.

Conclusion

To conclude, two of the hospitals had rates that were under the standard set rate in all categories and the other two hospitals had rates over the standard rate in only one category. Advocate BroMenn Medical Center had the best overall rates in all 5 categories. The lowest rate hospital was Herrin Hospital and that was due to the high C. Diff infection rate. It was surprising to see Rush University Medical Center had the highest rate in infection in the urinary tract, since it is a hospital that does kidney transplants. With Herrin Hospital being a rural hospital it was alarming to see such a high rate in C. Diff infections. In order to provide the highest quality patient care, all hospitals should improve their complication rates by incorporating the recommendations outlined..