

This study demonstrates that patient characteristics and procedural interventions are important predictors of the occurrence of 6 of the 8 hospital-acquired conditions analyzed.



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In 2008, the Centers for Medicare & Medicaid Services (CMS) began to deny payment for costs associated with treatment of certain complications of hospital care including several common types of infection. Some commercial insurers followed suit. Calling these complications **hospital-acquired conditions**, the CMS implies that all these complications stem from preventable clinical errors. A recent study by Fry et al. published in *Archives of Surgery*, challenges hospital-acquired conditions assumptions.

Using the Healthcare Costs and Utilization Project (HCUP) Nationwide Inpatient Sample, researchers examined claims data from nearly 900,000 adult patients (age 18 and older) coronary artery bypass grafting (CABG), total hip replacement, abdominal hysterectomy, and aortofemoral bypass.

Complications and Odds Ratios with Pre-existing Malnutrition/Weight Loss

Clostridium difficile enterocolitis	3.0
Methicillin-resistant Staphylococcus aureus infection	2.9
Mediastinitis after CABG surgery	5.3
Surgical site infection	2.5
Post-operative pneumonia	2.8
Intravascular device infections	16.4
Catheter-associated urinary tract infection	5.1
Pressure (decubitus) ulcer	3.8



The researchers evaluated selected patient characteristics, such as pre-existing malnutrition/weight loss, and recorded the occurrence of hospital-acquired conditions (see table on previous page). The study results showed that patient characteristics and procedural interventions are important predictors of certain (6 of 8) hospital-acquired conditions analyzed. For example, pre-existing malnutrition/weight loss increased the odds of developing a pressure ulcer (decubitus ulcer) 3.8 times and mediastinitis after CABG surgery 5.3 times.

In addition to malnutrition/weight loss, the researchers determined that several patient characteristics were also associated with a substantially increased risk for a hospital-acquired condition, including the following:

- Age
- Diabetes complications
- Chronic kidney failure

The study also showed that certain procedures such as colon resection and aortofemoral bypass were associated with increased risk for surgical site infection, decubitus ulcers, and other complications. Thus, the research demonstrated that factors other than below-standard care adversely affect surgical outcomes.



Pre-existing malnutrition/weight loss increased the odds of developing a pressure ulcer 3.8 times.

Conclusion

Malnutrition and weight loss are common and serious conditions in hospital patients that can increase the risk of complications and hospital-acquired conditions. Therefore, aggressive nutrition intervention before and after surgery may help to reduce risks and costs.

Reference: Fry DE et al. *Arch Surg* 2010; 145: 148-151. OR=odds ratio (assesses risk of a particular outcome)

