Hospital-Acquired Infections
Sepsis and Pneumonia

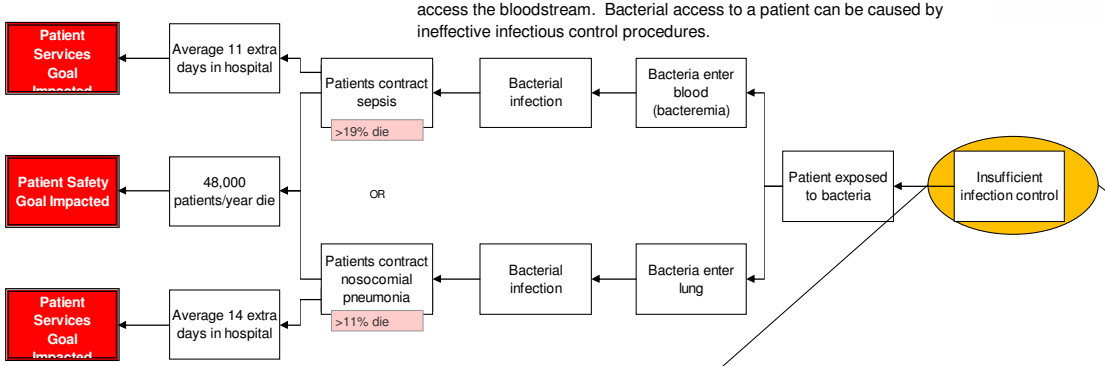
Infections of any kind acquired in a hospital are undesirable from the perspective of both the hospital and the patient. After all, patients go to a hospital to get better, not sicker. Until recently, the incidence of these sorts of infections has been difficult to determine, with inconsistent reporting requirements across the country and difficulty determining the sources of such infections. However, a recent study in the Archives of Internal Medicine has determined some staggering numbers related to two hospital-acquired infections, sepsis and pneumonia. Together, these two infections result in 48,000 deaths and $8.1 billion in additional costs per year. A total of 1.7 million patients contract infections at hospitals every year.

Sepsis is a bloodstream infection. The study found that nearly 20% of patients who contract sepsis after invasive surgery at a hospital will die from it. On average, a patient who contracts sepsis can expect 11 additional days at the hospital, at a cost of $32,900. Sepsis contracted in hospitals is generally a bacterial infection, caused by bacteria in the bloodstream (known as bacteremia). A patient must be exposed to bacteria in order for the bacteria to access the bloodstream. Bacterial access to a patient can be caused by ineffective infectious control procedures.

Problem Outline

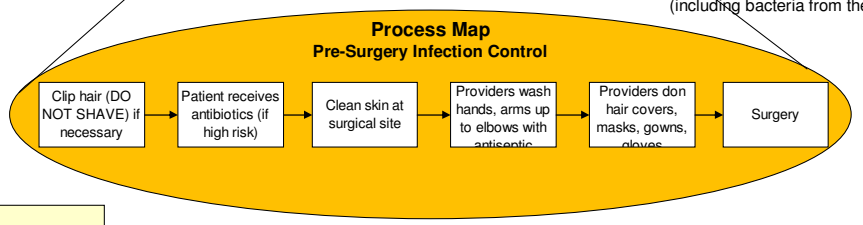
What	Problem(s)	Hospital-acquired infections (sepsis, nosocomial pneumonia)
When		Proactive
Where	Location	Acquired in hospital
	Process	After invasive surgery
Impact to the Goals		
Patient Safety		48,000 patients/year died
		(>19% of patients with sepsis died)
		(>11% of patients with pneumonia died)
Compliance / Organization		Infection acquired in hospital
Patient Services		Average 11 additional days in hospital (sepsis) $32,900
		Average 14 additional days in hospital (pneumonia) $46,400
	Frequency	1.7 million hospital-acquired infections/year
		Annualized Cost $8.1 B

Cause Map



Nosocomia (or hospital-acquired) pneumonia is an infection of the lungs. Like sepsis, in a hospital setting it is generally caused by a bacterial infection when bacteria enter the lungs. Also like sepsis, this requires bacterial access to the patient. More than 11% of patients who contract nosocomial pneumonia after invasive surgery will die. On average, a patient with nosocomial pneumonia will spend 14 extra days in the hospital, at a cost of $46,400.

To prevent these types of bacterial infections, every employee in a hospital must practice effective infectious disease control. Each hospital must develop infection control procedures to aid in preventing the spread of disease. As an example, here we'll look at the infection control procedure for pre-surgery. This extremely simple procedure was developed based on the CDC's Surgical Site Infection FAQs. If a patient has hair in the surgical area, it should be clipped, not shaved, to avoid infection. If a patient is high risk, he or she may receive antibiotics before the surgery. The patient's skin will be cleaned at the surgical site to avoid introducing the patient's skin bacteria into the surgical wound. Before the providers begin surgery, they will wash their hands and arms up to the elbows thoroughly and don protective wear. This helps prevent bacteria carried by the providers (including bacteria from the providers' previous



This is just one example of a process that demonstrates infection control to protect patients from hospital-acquired infections. More can be developed, based on a hospital's best practices. What's important is the focus on infection control to protect patients.

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Why?

Effect ← Cause

NOTE: Read the Cause Map from left to right with the phrase "Was Caused By" in place of each arrow.