Comparing rates of hospital – acquired infections in the United States v. Ecuador

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1. Introduction

-Upon traveling to Quito, Ecuador, in June 2012 and rotating in the Military Hospital, the sanitation measures and protocols observed were very different from those employed in the United States. Research is being performed to study the emergence rates of nosocomial, or hospital-acquired infections, to see if the differences in sanitation have a significant effect on emergence rates.

3. Methods/Observations

-In the E.D. and the Departments of Pediatrics and Neonatology, minimal hand-washing was observed. In addition multiple patients used the same bed sheets and there was a lack of glove-wearing.

-Instruments such as stethoscopes and thermometers were not sterilized between patients.

-In the E.D., there were no curtains separating patients and catheters were often replaced without the use of gloves

Cristina DeCesaris and Liz Shteyn with Dr. Patricio Leoro, Pediatrics and Neonatology specialist in the Military Hospital, Quito, Ecuador.

2. Background

- Whether in the United States or abroad, nosocomial infection remains one of the leading causes of mortality and morbidity in hospitals everywhere. The various modes of transmission include, but are not limited to direct person-person contact, droplet, and airborne transmission, as well as coming into contact with contaminated objects.

- Most hospitals have sanitation protocols in place to prevent the spread of infection, including procedures such as hand-washing, gloving, isolation, sterilization, and surface sanitation.

- In the United States, according to the CDC, in 2002 there were an estimated 1.7 million hospital acquired infections resulting in 99,000 deaths.

4. Results

- Currently, the CDC measures the emergence as percentage/patient days.

- The overall rate of emergence in Ecuador is approximately 36/1000 patient days

-The overall rate of emergence in the United States is 22.48/1000 patient days; data is presented in Table 1.

Table 1. Rates of healthcare-associated infections in newborns and adults and children by site of infection, National Nosocomial Infections Surveillance (NNIS) system

	Well-baby nursery[a]	High-risk nursery[b]	Intensive care unit[b] (adults and children)
Patient-days[c]	7,436,520	4,835,702	30,236,811
Major site of infection	Rate of infection per 1,000 patient-days		
Urinary tract	0.19	0.5	3.38
Bloodstream	0.76	3.06	2.71
Pneumonia	0.24	0.91	3.33
Surgical site	0.003	0.2	0.95
Other	1.37	2.21	2.67
Total	2.56	6.88	13.04

[a]From NNIS hospital-wide surveillance, 1990–1995
[b]From NNIS surveillance 2002, high-risk nursery and ICU component
[c]From the National Hospital Discharge Survey (NHDS) for the U.S. population in non-federal hospitals

TABLE 1: CDC report of the frequency of hospital acquired infections/patient days in the United States, 2002.

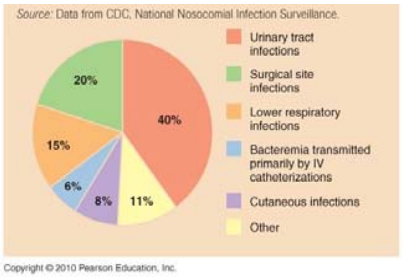

TABLE 2: Breakdown of the most common types of hospital acquired infections in the United States.

Anita Bhamidipati and Cristina DeCesaris at Lake Como, Ecuador

5. Summary

- Based on the preliminary data, there appears to be a higher rate of emergence of hospital acquired/nosocomial infections in Ecuador, along with other Latin American countries.

- This is an interesting observation, because many nosocomial infections have been thought to be correlated with technological advances and frequent use of related equipment.

- Based on our original observations, we believe that focusing attention on more stringent sanitation protocols may reduce the emergence rates of hospital-acquired infections.

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Tables 1 & 2 courtesy of The Center for Disease Control.