



Prevalence of Nosocomial Infection in a Private Hospital and Compliance Regarding Prevention

Dr. Afsana Begum
Associate Consultant
Department of Medicine
United Hospital Limited, Dhaka

Introduction

- Nosocomial infections or hospital acquired infection can be defined as those occurring within 48 hours of hospital admission, 3 days of discharge or 30 days of an operation.

Continued...

- Today in USA, over 2 million people acquire nosocomial infection each year causing about 90,000 deaths and costing US\$ 4 to 11 billion.
- Surveillance programs estimate the rate of this infection as 5–10% of hospital admissions all over the world.

Which Nosocomial Infections Are Emerging?

- In 1840s, grampositive cocci, streptococci and *Staphylococcus aureus*
- In 1970s, gram-negative bacilli, *Pseudomonas aeruginosa* and Enterobacteriaceae

Continued...

- In late 1980s and early 1990, methicillin-resistant *S. aureus* (MRSA) and vancomycin-resistant enterococci (VRE)
- Virus
- Fungus

Who are Affected by Emerging Nosocomial Pathogens?

- Immunocompromised because of age and underlying diseases.
- Increasingly aggressive medical and therapeutic intervention including implanted foreign bodies, organ transplantations, and xenotransplantations.



Is it preventable?

- 
- In 1985, the Centers for Disease Control and Prevention's (CDC's) Study on the Efficacy of Nosocomial Infection Control reported that hospitals with four key infection control components are:
 - an effective hospital epidemiologist
 - one infection control practitioner for every 250 beds
 - active surveillance mechanisms and
 - ongoing control efforts reduced nosocomial infection rates by approximately one third

Materials and Methods

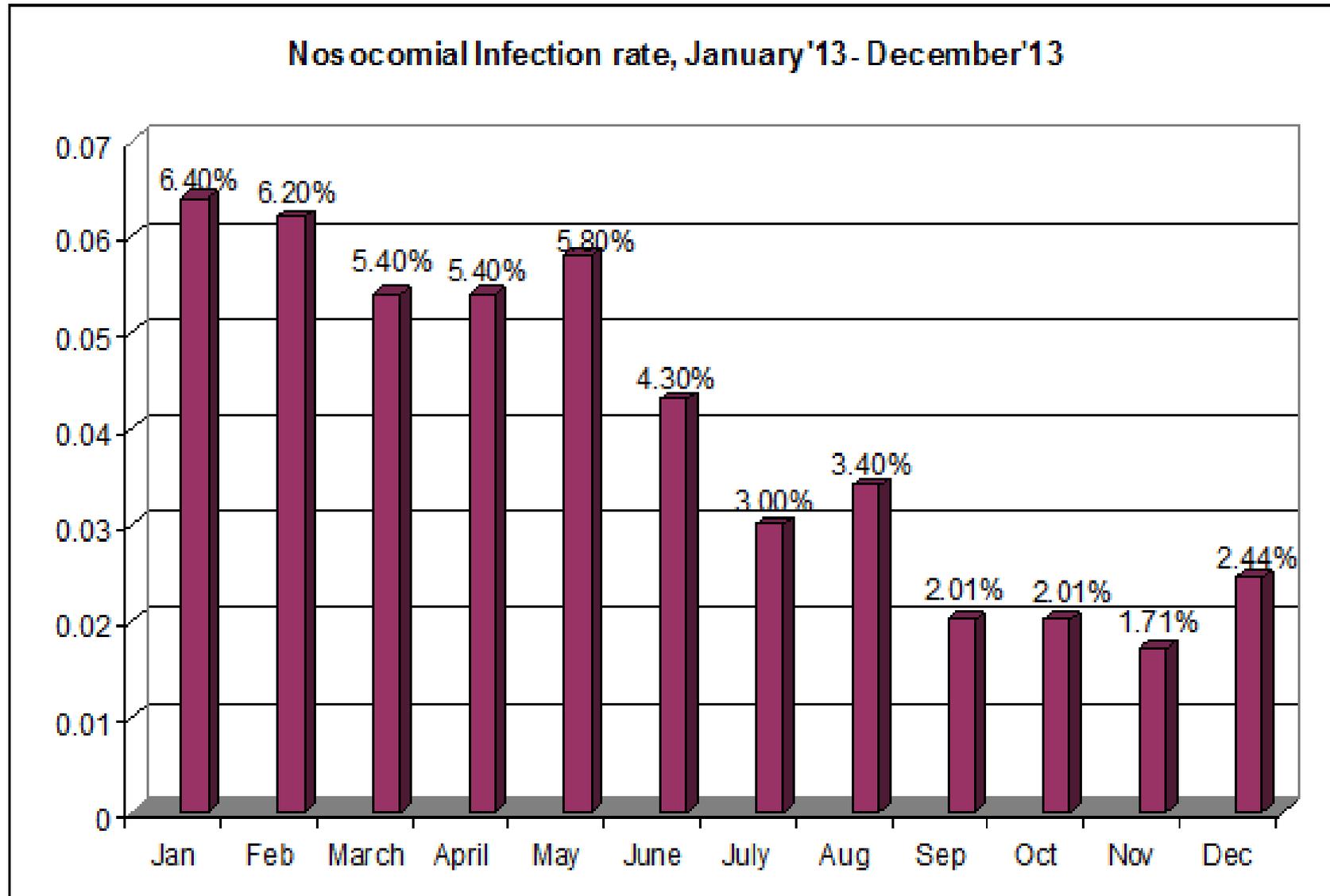
- This is an observational study done in United Hospital Limited, Dhaka from January 2013 to January 2014. All hospital admitted patients were included.
- Only culture positive cases were considered.
- An infection control team was formed which included an infection control doctor, an infection control nurse and to see the compliance a vigilance team was formed.

- 
- What measures we have taken?
 - To provide an antibiotic policy.
 - Implement of hand hygiene practice.

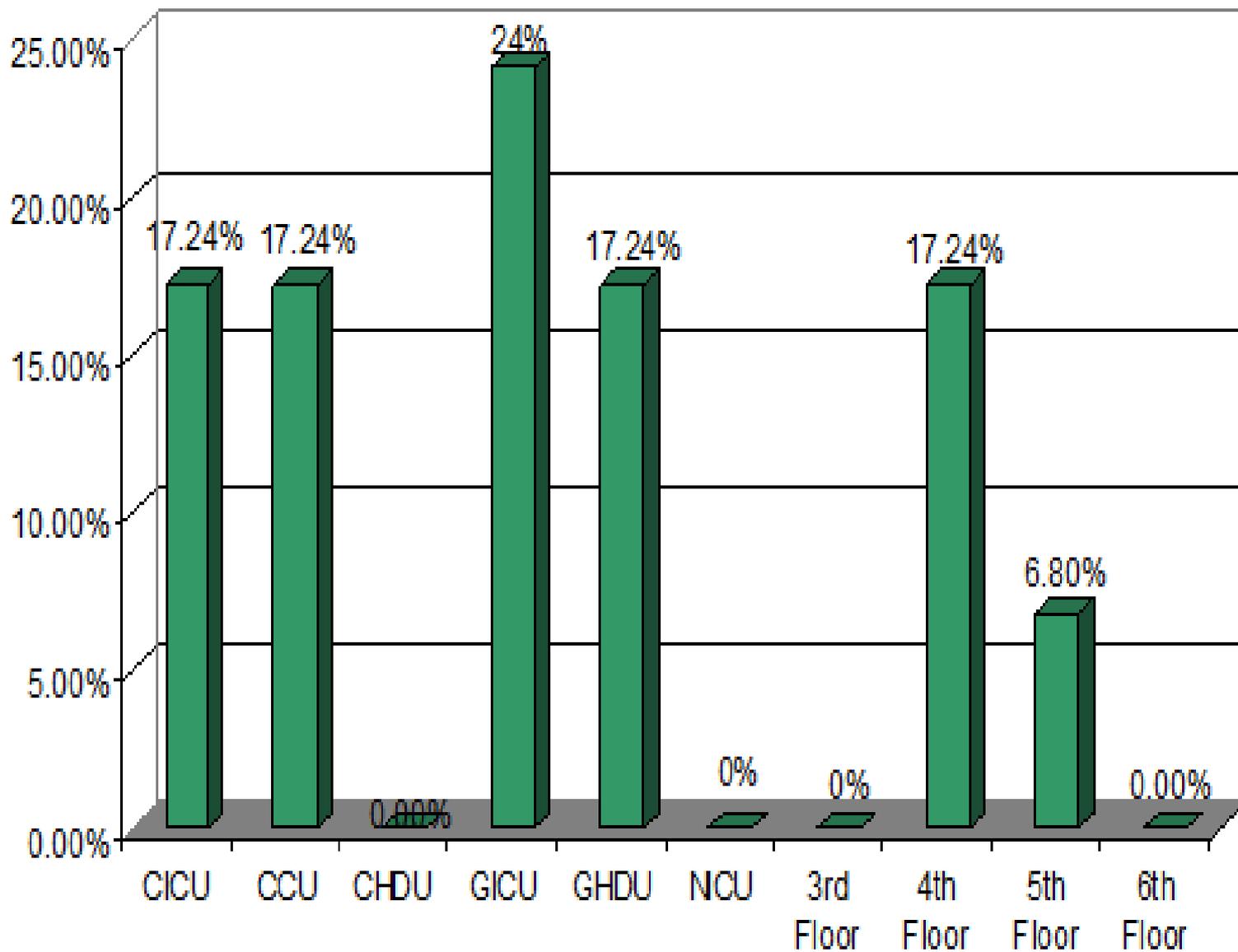
Results

- Total number of admitted patients were 15,845 during the study period.

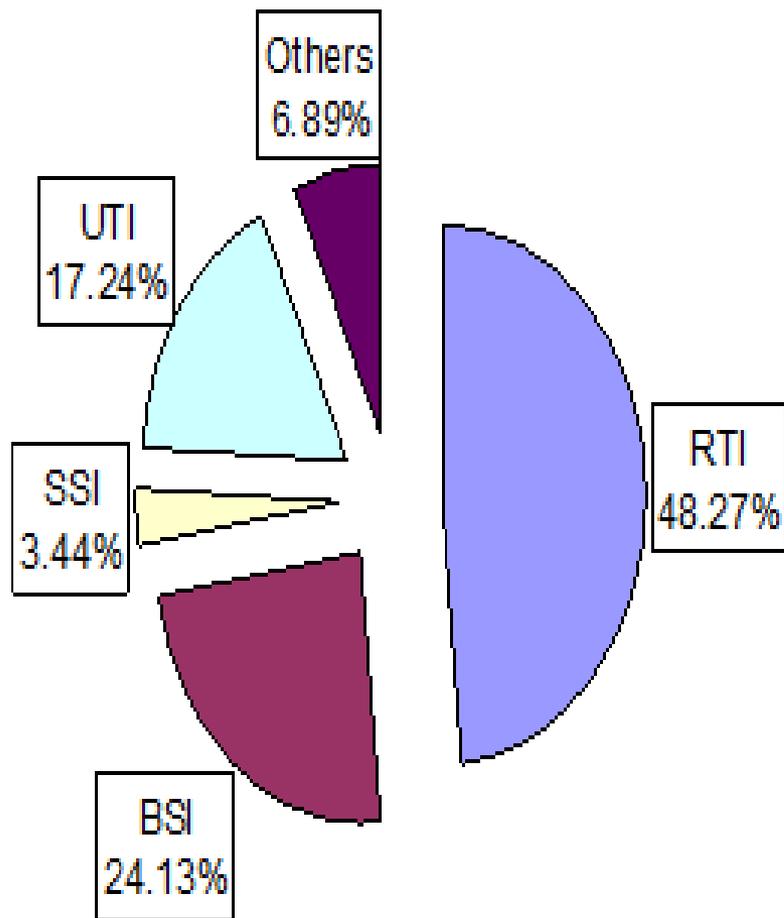
Burden of nosocomial infections from January to December, 2013



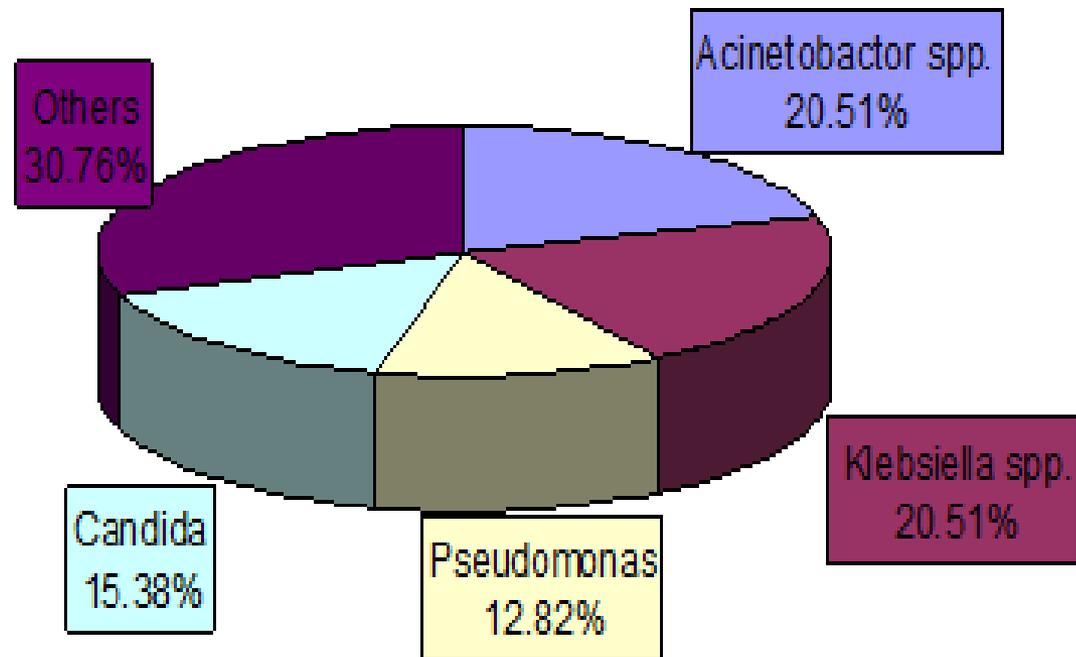
NI rate in different wards, December '13 (n=29)



Type of NI, December '13



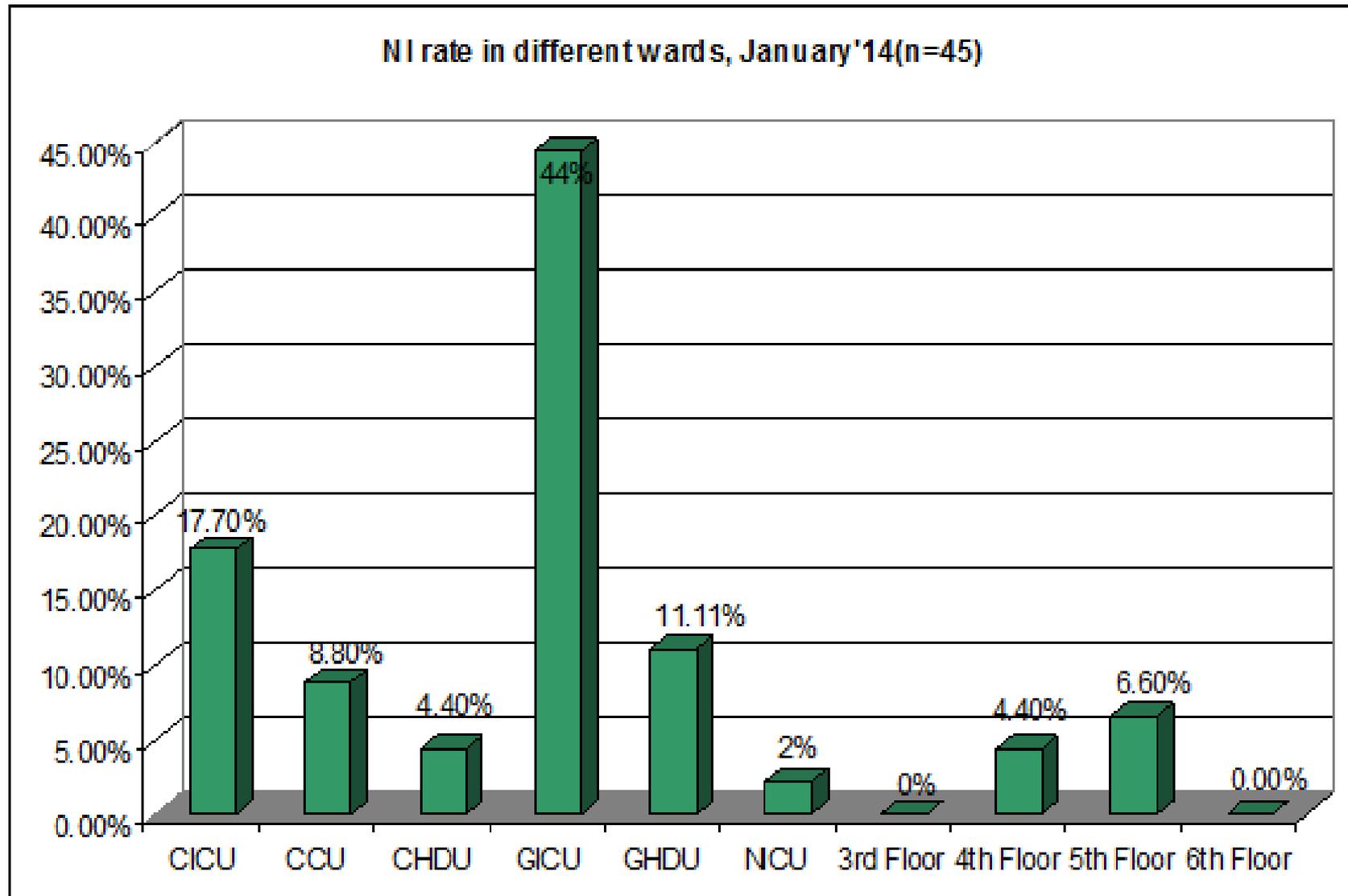
Organisms causing NI, December'13



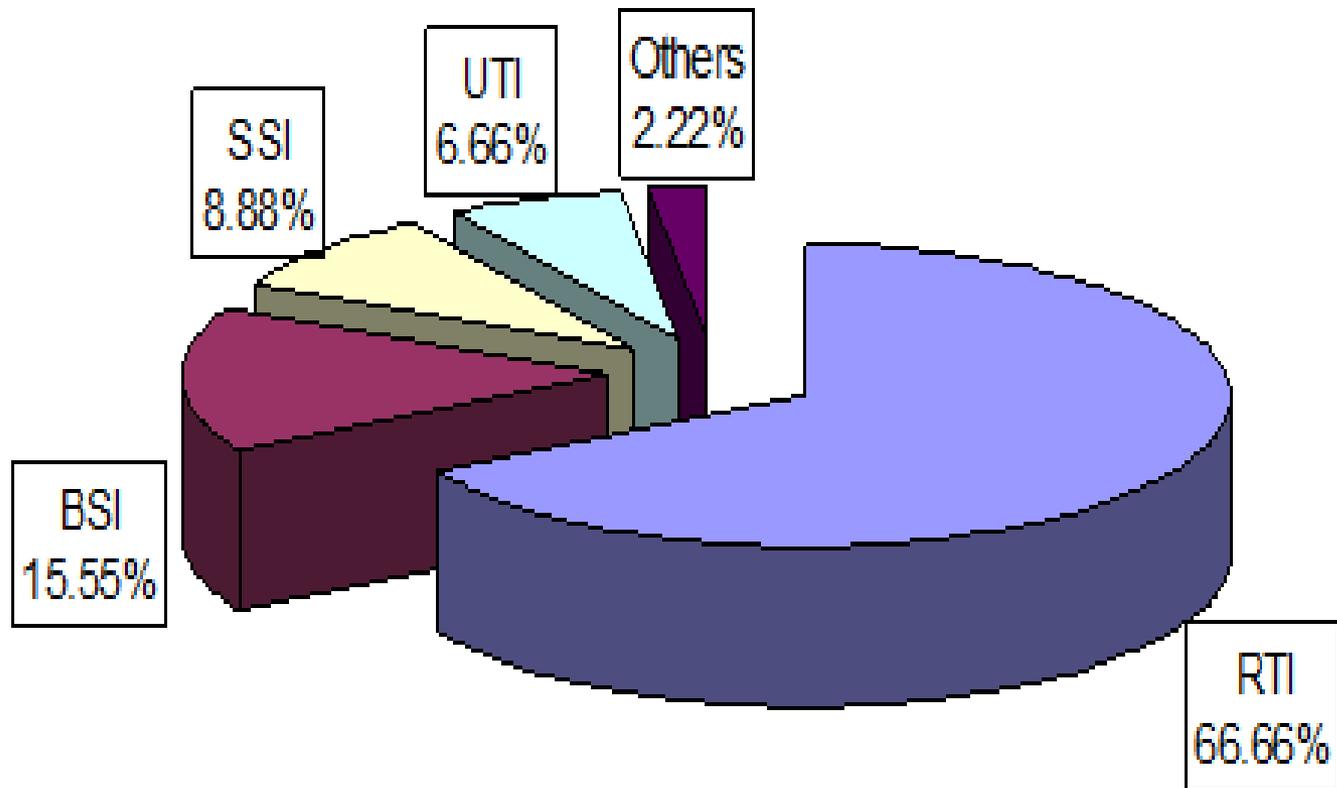
Total admitted patients in January'14: 1278

Total number of nosocomial infections in January'14: 45

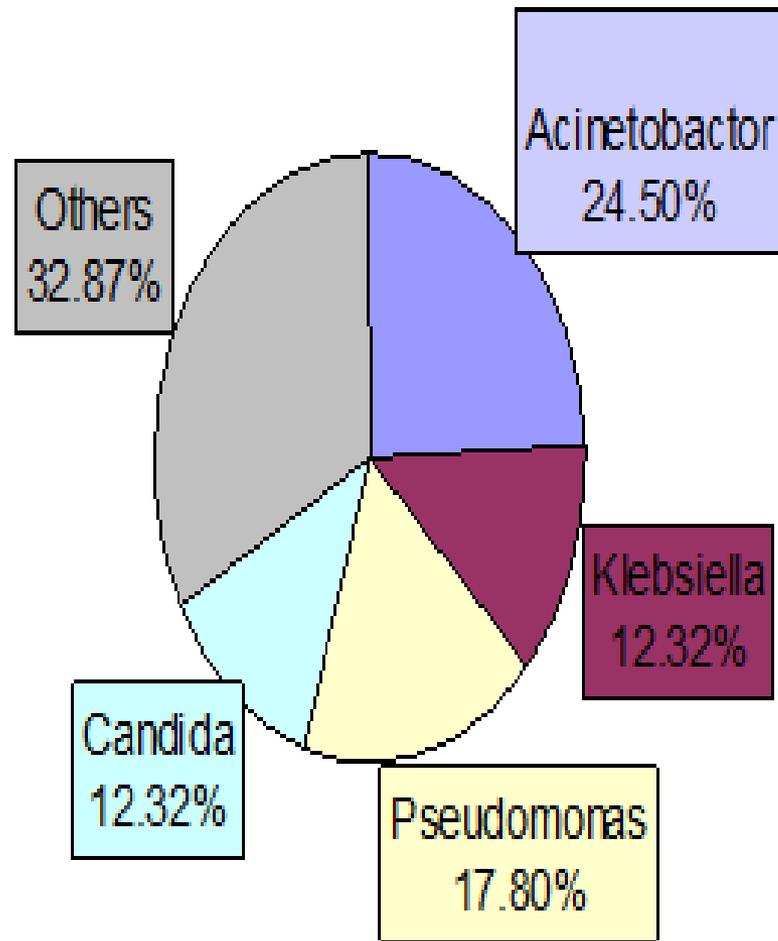
Nosocomial infection rate in January'14: 3.5%



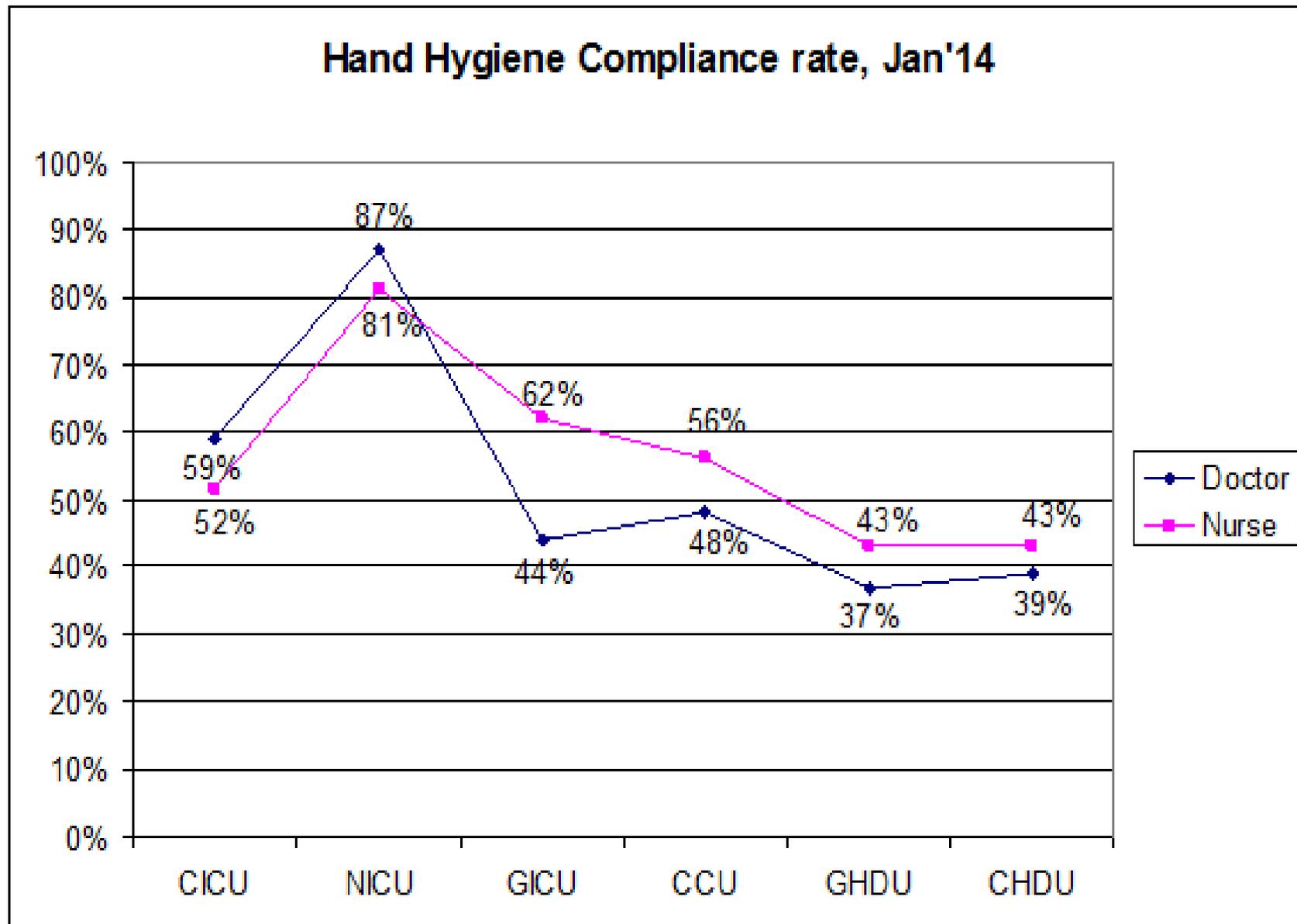
Type of NI, Jan'14



Organisms causing NI, Jan '14



Hand hygiene compliance rate in average: 60.15%



Discussion

- In Bangladesh, infection control program in hospitals has been recognized only in early 2000.
- Only few hospitals of the country have designated infection control programs and probably none has an antibiotic policy.

Continued...

- 1840, Ignaz Semmelweis, demonstrated the relationship between hand washing with chlorinated water and reduction of puerperal sepsis from over 8% to 2.3% .

Continued...

- Compliance with hand washing is frequently suboptimal.
- Lack of appropriate accessible equipment
- High staff-to-patient ratios
- Allergies to hand washing products
- Insufficient knowledge of staff
- Too long duration recommended for washing

Conclusion

- Hospital acquired infection is not only responsible for increased morbidity or mortality but also it exerts significant economic pressure on the national healthcare sector of all countries of the world .
- To decrease the burden of hospital cost due to nosocomial infection preventive measure has no alternative.

Continued...

- It is time to include infection control in our undergraduate and postgraduate curriculum.
- This will reduce patient morbidity and also reduce the use of antibiotics and health care costs of the country.



THANK YOU