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The Comparison of CSSDs Section Performance in Tabriz-Iran Hospitals in 1997 and 2007

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Abstract: Nosocomial infections are increasing in all of the world rapidly. In recent years spread of diseases such as Aids and hepatitis B and C has increased the need for attention to infection prevention and control in our country. Evaluation of a NI in Central Supply Sterile Device (CSSD) departments as part of infection control program includes organization, practice and outcome is a major criterion for hospital accreditation. Objectives of these two study was to determine the performance of CSSD in Tabriz, Iran hospitals. In these descriptive studies, all of the public and privet hospitals which count to 21 in the first and 10 hospitals in the second as a sample survived. The following issues were taken into consideration: Physical designing, preparation of medical supplies for sterilization, maintenance and distribution, work circulation and methods of sterilization and the monitoring system. The research tool was questioner and checklist. Physically, the design of the rooms was 39% in the last study and 49.6% in the recent, with acceptable standards. In the work circulation it was 55.4% in first study and 66.8% in last study. In relation to preparation of medical supplies for sterilization both surveys lower than 40% standards were acceptable. Lack of biological (spore tests) indicator for monitoring the sterilization process caused the whole process in question. Comparison finding two studies during 10 years indicates no attention to the optimization of CSSD in hospitals. So policy makers and senior managers of Tabriz medical university should be notice for promotion of infection control practice in hospitals.

Key words: CSSD, infection control, hospital, performance, sterilization

INTRODUCTION

Health care-associated infections affect hundreds of millions of patients worldwide every year. These Infections in health-care settings are among the major causes of death and increased morbidity in hospitalized patients (World Health Organization, 2002). These infections rank as major killers of patients of all ages, particularly among the most vulnerable members of the population. The more sick the patient, the higher the risk of acquiring a health care-associated infection and dying from it World Health Organization (2005). Nosocomial infections are usually considered to be a problem of hospitals (Jabbari, 1997). Because they increasing cost, mortality, excess length of stay and utilization of health care resources (Yosefshahy, 2007). Evidences show that, the most common way to transmission and dissemination of infection are medical equipments and health care personnel. Development of effective solutions to improve patient safety and reduce risk of infections is also possible. Tools are available, but they should be tested, adapted and implemented worldwide with a sense of equity and solidarity (CDC, 2000).

The incidence of health-care-associated infections and pseudo-outbreaks can be minimized by:

- Appropriate use of cleaners and disinfectants.
- Appropriate maintenance of medical equipment.
- Adherence to water-quality standards for hem dialysis and to ventilation standards for specialized care environments.
- Prompt management of water intrusion into the facility (CDC, 2000).

Since, the emergence of AIDS epidemic, progressive regulatory strategies have been aimed at decreasing the

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risk of blood borne pathogen exposures in health care workers (Bakhshian and Khoshbaten, 2000). In recent years, spread of diseases such as Aids and Hepatitis B and C has increased the need for attention to infection prevention and control in our country.

Evaluation of a NI in Central Supply Sterile Device (CSSD) departments as part of infection control program includes organization, practice and outcome is a major criterion for hospital accreditation (Sangthong *et al*., 2005). The assessment of the condition of sterilization of medical supplies in health care settings including preparation of medical supplies for sterilization, methods, used apparatus and the control systems for monitoring the quality of sterilization process were objectives of these two study in Tabriz (Northwest of Iran) hospitals in 1997 and 2007.

MATERIALS AND METHODS

The study was descriptive and cross-sectional. Community of research were Tabriz hospitals that taken up (21 hospitals = all hospitals) in the first study and (10 hospitals) as a sample in the second study. The related tolls were questionnaire, checklist made by the researcher that its validity and reliability was accordance with technical assessment along with Pierson correlation and has been used in 4 studies in Iran.

In order to scaling of the performance of CSSD sectors in hospitals, according experts ideas in general the less units (low than 50%) was not acceptable and scores 50-70% were acceptable. But from 75-90% were good and higher than 90% were superior.

RESULTS AND DISCUSSION

In the first study, 13 hospital (65%) were educational and the second 50%. The literacy degree off CSSD heads in the first was 28.5% under High school, 42%high school and 28.5%had university degree. In the other hand, in the second study 10, 20 and 70%, respectively. In the first study none of these heads and personals participated in educational programs. But in the recent study, 20% of the personnel were participated in the related educational programs. In both studies, personnel often learned their duties through collogues.

In relating to space designing in the first study 39% and in the last 49.6% were accordance with accepted standards. In the work process and circulation of activities include separation, cleaning, washing, preparing to pack, sterilization, maintenance and distribution 55.4% in the last study and 66.8% in resent study were accordance standards. Monitoring and assessing of sterilization process were lower than 40% in both studies. The lack of usage biological indicators caused the whole process of CSSD. In maintenance, distribution of the sterile packs and instruments were 48.6 and 48.8% standards respectively.

In both studies, non-educational hospitals were acted better than educational hospitals ($p<0/001$). In the first study, the total performance score of hospitals show that 75% were unacceptable. But in the second study 50% were unacceptable. Table 1 shows the percents of some working standards in Tabriz hospital CSSDs.

In both studies, continuous education for CSSD personnel were neglected and basically such courses is not designing. Accordance with physical designing, the most important problems were related to the dividing CSSD into three zones include dirty, clean and sterile as well as establishing washer and sterilization machines were not correctly. These finding were similar with Poland hospitals situation (Jakimiak and Rodowald, 1997). In addition most hospitals were not equipped with air-pressure regulations in CSSD.

The existence of fire controls, washable floor and walls establishment next to the operating rooms was advantage of this process but there was no changes during 10 years ago. Working process and circulations of activities were not structured in both studies and it was

Table 1: Percents of some working standards in Tabriz hospital CSSDs

	Year	
Option	1997	2007
Determining dirty, clean, sterile zones in CSSD	24	40
Establishing the washing and sterilization machines in Correct forms	24	60
Designing correct work process from entrance, Washing to sterile	4/8	30
Operating washing and packing process in centralized model	19	30
Monitor and control on selection ,preparing ,using of disinfections and antiseptics	19	40
Controlling the performance of sterilizations due to the Pressure, vacuum and temperature by medical equipments engineers	14/3	30
Evaluation all materials especially all parts of jointed items and lubricating as a routine	71/4	75
Using biological spore tests for controlling sterilization process	-	-
Using chemical indicators for controlling sterilization process	4/8	10
Correct sterilization of plastic materials	27/2	40
Correct disinfection of CSSD department and operating rooms	38	40
Considering safety precautions for health of personnel	50	60

mostly acted subjectively (Enbary and Abotalebi, 2007). Washing process did by hands and without machines. Instrument preparing and packing of them doing partly in wards, others in operating rooms and in CSSD.

Quality control of sterilizations (autoclaves and hot ovens) and disinfection solutions with biological tests were neglected. There was no usage of biological indicators in hospitals that is equal with Tabriz outpatient clinics study. In Mexico in spite of using biological indicators about 7/4% sterilization processes were failed (Enrique *et al*., 2002). In UK the performance of autoclaves was seen just in 19%of personnel and 6% as failed (Coulter *et al*., 1988). The Poland studies showed that, there was shortage in performance of sterilization departments during 7 years (Rodowald and Jakimiak, 2004). The performance of sterile departments in maintaining surgical instruments, there was no changing in 10 years.

CONCLUSION

Comparison finding two studies during 10 years indicates no attention to the optimization of CSSD in hospitals. So policy makers and senior managers of Tabriz University of Medical Sciences should be notice for promotion of infection control practice in hospitals. Following steps must be taken immediately in order to decreasing health care association infections:

- Desighning specific continues course for CSSD personnel's
- Planning for monitor and check different apparatus in CSSD by medical device technologist.
- Preparing and force to use biological, chemical indicators in hospital.
- Developing the use of disposables devises in care process
- Desighning national standards for CSSD in hospitals

REFERENCES

Bakhshian, F. and M. Khoshbaten, 2000. Monitoring infection control disciplines in health units in Tabriz. Tabriz University of Medical Sciences, presented in Shiraz infection control congress, pp: 38.

CDC (Center for Diseases Control and Prevention), 2000. Monitoring Hospital-Acquired Infection to Promote safety U.S.A 1990-1999 MMWR., pp: 151-153.

Coulter, C., C. Chew-Graham, A. Cheung and F. Burke, 1988. Autoclave performance and operator autoclave use knowledge of auin primary care: A survey of UK practices. J. Hospital Infect., 11: 406-410.

Enbary, Z. and A. Abotalebi, 2007. Survey on Performance of Central Sterilization Rooms in Hospitals of Esfahan city of Iran 2006. Ann. Cong. Health Administration Students of Iran, Tabriz, pp: 189.

Enrique, A., M. Victor Hugo, H. Aurelio Leonor and P. Sanchez, 2002. Biologic monitoring of dental office sterilizers in Mexico.AJIC., 30: 153-157.

Jabbari, H., 1997. Survey on Performance of Central Sterilization Rooms in Tabriz Hospitals. MS dissertation in Health administration. Iran University of Medical Sciences.

Jakimiak, B. and Rohm-Rodowald, 1997. Evaluation of medical supplies sterilization at health care institutions in Poland. J. Przegl Epidemiol., 51: 247-254.

Rodowald, R. and B. Jakimiak, 2004. Assessment of the sterilization of medical devices—an important to health care in Poland. J. Przegl Epidemiol., 58: 501-510.

Sangthong, K. *et al*., 2005. Development of quality indicators of the central sterile supply department. J. Med. Assoc. Thai., 88: 128-132.

World Health Organization, 2002. Prevention of hospital acquired infections, 2NE.ED.WHO/CDC/CSR/ EPH: 1-3.

World Health Organization, 2005. WHO Guidelines on hand hygiene in health care: A Summary. Website at www.who.int/patient safety.

Yosefshahy, F., 2007. Disinfections and sterilization in hospitals. International congress of infection control www.icoic.com.