

Analysis of Hospital Personnel Infection Control Procedures at Delivery Room

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Abstract Nosocomial infection control within a health care facility reduces morbidity and mortality and can be achieved with limited resources. **Aim of the study:** Assess knowledge and standard practices of infection control among health care personnel's during normal vaginal delivery (NVD). **Subjects and Method:** Descriptive study conducted at site of delivery rooms in three governmental hospitals. During interview all physicians 22 and nurses 74 working at these units were included in the study. Their infection control knowledge evaluated by questionnaire and performance evaluated by observation checklist. **Results:** Physicians < 5 years' experience showed higher knowledge and performance than physicians working > 5 years significantly; except in insertion of urinary catheter steps were higher significantly in physicians > 5 years' experience. Nurses have Bachelor of Science in nursing and those having <5 years' experience had significant higher score of knowledge about universal precautions of infection control significantly than other nurses. Significant higher performance score for nurses with Bachelor of Science in nursing when compared with other nurses and years of nurses experiences positively correlated with hand washing, wearing and changing gloves and care of patient's equipment and sterilization of equipment. Although 43.2 % nurses stated that they attended on job training program about infection control; there were no impact of training on knowledge and performance of trained nurses. **Conclusion:** Health care personnel knowledge need to be updated, as well as to reinforce proper practices related to infection control through provision of continuing education programs on regular basis.

Keywords: universal precautions, infection control, normal vaginal delivery, nosocomial infection, health care personnel's

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1. Introduction

Health care associated infection or nosocomial infection are the most frequent and serious adverse event in health care delivery worldwide; as it carry the dangers of spreading of microorganisms from person to person and from place to place [1]. Nosocomial infection could be acquired in maternal and child health care unit; but there must be no evidence that infection is present or incubating at the time of admission [2]. Maternal sepsis include various obstetric and genito-urinary tract infections introduced into the mother at maternal health care unit. Maternal sepsis is the sixth leading cause of disease burden for women aged 15-44 years, after depression, HIV/AIDs, tuberculosis, abortion and schizophrenia. As 5.2 million maternal sepsis cases occurring annually with an estimated 62,000 maternal deaths from maternal sepsis [3]. Globally; during 2003-2009 maternal sepsis accounted for 10.7% maternal death [4] and in Egypt; during 2000, 2012 maternal sepsis accounted for 7.8% and 5.6% of

maternal deaths respectively [5]. One of the risk factor of maternal sepsis is development of infection through surgical site infections (SSIs) or surgical episiotomy during Normal Vaginal Delivery (NVD); which in turn depend on host factors, preoperative preparations, wound hygiene and duration of surgical episiotomy [6]. Prevention of NVD site infections is a concern to health care personnel and applying infection control to women in delivery room is vital for her health, her baby and health of health care personnel [7].

Infection control universal precautions are the basic precautions that used as a minimum in health care provision; which include certain measures such as performing hand washing after touching patients or coming in contact with vomits; fluids and secretions from patients, wearing personal protective clothes, respiratory hygiene and cough etiquette, sharps safety, equipment safety, waste management and environmental cleaning [8]. Meanwhile; all health care personnel are expected to take precautions to prevent injuries caused by needles, scalpels and other sharp instruments by using protective barriers (gloves, gowns, masks and

protective eye wear) and applying universal infection control precautions to reduce the risk of exposure to blood and body fluids containing visible blood. In addition; immunization with HBV vaccine is recommended for health care personnel exposed to blood [9]. Most infections are acquired by contact between a susceptible site, such as a wound and potentially pathogenic microorganisms present on equipment, instruments, environmental surfaces and the hands of health care personnel. Infection control measures include sterilization of surgical equipment, disinfection of the skin, use of prophylactic antibiotics and expeditious operation [10]. Infection control measures prevent spread of infection either to women or attendance during delivery from health care personnel or visitors and it is an important in every action the health care personnel performs [6]. Infection control measures are simple and of low-cost, but require staff education, accountability and behavioral changes, in addition to; integration in quality and accreditation programs of medical settings as in Egypt [8].

Health care personnel are the first line of defense against disease transmission and prevention of infection by careful attentions to personal hygiene and following guidelines that reduce technical risks associated with patient care [7]. Health care personnel have responsibilities to make sure that their knowledge, skills and practices regarding infection control are up-to-date, safe and competent. They have to do all efforts to minimize spread of infection based on sound and effective aseptic technique and provide patient safe environment [11]. Health care personnel and infection control committee play a critical role in controlling infection through early detection of infection, assessment of the hospital infection rate, surveillance of nosocomial infections; identification of problems related to infection and reports to higher level, so effective training is essential to ensure that these concepts are understood and put into practice wherever health care is provided [12].

1.1. Rationalization and Aim of the Study

Knowledge related to infection control universal precautions could play a pivotal role in the reduction of exposure to infections among health care personnel. Deterioration of infection control practices, resulting in an increased risk of institutionally acquired infections and maternal sepsis. In addition; education of health care personnel's about risk of transmission of infectious diseases and proper practices of infection control is imperative and effective in infection control. The aim of the study was to assess infection control standards knowledge and practices among health care personnel (physicians and nurses) working at maternity health care units in Governmental hospital during NVD as a guide for the need of infection control training programs.

2. Subjects and Methods

2.1. Research Design and Setting

Descriptive research design was carried out at delivery room of three non-randomly chosen governmental hospitals in Cairo and Suez governorate namely (Dar

El-shefaa and MenshiatEl.Bakery in Cairo and Suez General Hospital).

2.2. Type of Sampling

Convenient sampling method, where the delivery room unit chosen met the criteria of higher number of working personnel and higher number of patient's attendance to the unit.

2.3. Subjects

During interview sessions; all physicians (22) and nurses (74) working at the delivery room were included in the study.

2.4. Tools of Data Collection

A- Personal data: Physicians years of working experiences, nurse's qualification, years of working experiences and attendance to on job infection control training program. Physicians' attendance to on job infection control training program was omitted from analysis as few received this training.

B- Infection control interview questionnaire: Interview questionnaire developed by researchers after reviewing of related literature [13,14] to collect data related to physicians and nurses' knowledge about infection control universal precautions and infection control measures during NVD. It consisted of (43) questions in the form of right or wrong. Questions covered the following items: Definition of infection, types and principles of infection, hand washing, wearing and removing sterile gloves, wearing mask and gown, safe injection for health care personnel and recipient, cleaning and disinfection, sterilization and its types and infection control universal precautions in delivery room.

C- Observation checklist for physicians and nurses' practices to infection control: Consist of (100) steps. This checklist was developed by the researchers with guide of Geberemariam and CDC [14,15] in order to collect data related to physicians and nurses' performance as regard application of infection control measures during NVD, it includes: hand washing, wearing and removing sterile gloves, wearing mask and apron, I.V cannulation and collection of blood specimens, insertion of urinary catheter, changing gloves, cleaning, disinfection and sterilization of instruments. Both questionnaire and observation checklist were in Arabic language.

2.5. Study Duration and Steps

The study duration was one year during 2019 as follow:

1. Preparatory phase: a review of the current and past available literature, textbooks, articles and magazines about infection control standards. Then; the tools (questionnaire and observation checklist) constructed by the researchers and revised by experts in the field of the research.

Validity

Validity was tested for content validity by experts in the field of obstetrics' and community health specialty to ascertain relevance, completeness and content for the questionnaire ($r = 0.89$). Their comments were reviewed and necessary modifications were done.

Reliability

Reliability was applied by the researchers for testing internal consistency of the tool, by administration of the same tools to the same subjects under similar conditions two times 15 days apart. Cronbach's Alpha reliability was 0.85.

2. Pilot study: After developing the tools, a pilot study was conducted on 10 nurses' and 5 physicians working at delivery rooms and included in the study. A pilot study was conducted to test clarity, completeness and to determine the required time. According to the results of pilot; some details that not required were omitted.

3. Data Collection: Every physician and nurse met in the morning and afternoon shifts to assess their knowledge and performance. Observation was done during routine work of the units.

4. Scoring system: A score of one was given for correct answer and zero for wrong answer to interview questionnaire and check list: then the mean score of each item of physicians and nurses infection control knowledge or practice was calculated.

Ethical Consideration

Before starting this study permission from infection control authorities was obtained and approval from ethical committees of Suez faculty of medicine. In addition; a verbal informed consent was obtained from physicians and nurses before being involved in the study. The nature and purpose of the study were explained. The researchers informed them that there is no risk or cost for participation and the participation is voluntary and they assured them of confidentiality of information for them and for their patients.

5. Statistical Analysis: Statistically analysis was done using SPSS-20 statistical software package after data entry. The content of each tool was categorized, then coded and analyzed. For quantitative variables; data presented as

means and standard deviations. For comparing between 2 groups independent t test used and for multiple groups comparison F-test or (ANOVA) was used. Pearson correlation analysis used in assessment of relationships between nurses' experience and infection control standards practices. Statistical significance at P value <0.05 or <0.001.

3. Results

This study included 22 physicians and 74 nurses working at delivery units. The majority of nurses 55 "74.3 %" having secondary nursing diploma education and 33 of nurses "44.6%" have work experience from 5 to 10 years.

Table 1 depicts significant higher knowledge and practices of infection control measures in physicians < 5 years' working experience than over 5 years' experience, except insertion of urinary catheter infection control measures was higher significantly (P= 0.02) among physicians with higher work experience years.

In Table 2 and Table 3 illustrates higher mean score of nurses infection control universal precautions knowledge in those having Bachelor of science and nurses' have work experience < 5 years with statistical significance (P= 0.01, 0.04). Also; nurses with Bachelor of sciences and Technical institute of nursing were more likely to follow infection control standard practices than nurses with secondary nursing diploma with high significant difference (P< 0.001).

There was significant positive correlation between nurses years of working experience and: hand washing (P = 0.009); wearing and changing sterile gloves (P = 0.003, 0.037) respectively; care of women equipment (P = 0.004); and sterilization of equipment (0.03).

Table 1. Infection control standard knowledge and practices of physicians' during NVD according to their years of working experience

Physicians infection control knowledge N= 21	Years of working experience		t test	P. value
	< 5 years (n=13)	> 5 years (n=9)		
	(X̄ ± SD)			
Definition of infection	9.7±0.2	9.4±0.16	2	0.052
Cleaning and disinfection	7.3±0.31	7.1±0.8	1.2	0.23
Sterilization	4.8±0.23	4.6±0.31	0.65	0.52
Infection control universal precaution	4.8±0.29	4.4±0.27	3	0.007*
Hand washing, wearing and removing gloves, changing gloves, wearing mask and gown	5.2±0.28	4.9±0.22	2.2	0.03*
Total scores of knowledge and %	31.8±0.3 (73.95%)	30.4±0.4 (70.7%)	3.1	0.002*
Physicians' infection control practices				
Hand washing	9 ±0.6	8.8 ±0.7	0.66	0.52
Wearing sterile gloves	8.1 ±0.8	7.5 ±0.7	2.3	0.01*
Changing gloves	7.4 ±0.4	6.8 ±0.5	2.4	0.01*
Removing gloves	6.3 ±0.4	5.4 ±0.3	4.7	<0.001**
Wearing mask and gown	7.1 ±0.2	6.3 ±0.4	4.2	0.002*
Care of patient equipment's	13.97 ±0.6	14.1 ±0.5	-0.3	0.08
Sterilization	5.4 ±0.5	5.2 ±0.5	1.03	0.31
IV cannulation and blood sample extraction	9.2 ±0.1	8.6 ±0.6	1.5	0.13
Insertion of urinary catheter	5.8 ±0.6	6.3 ±0.7	-2.5	0.02*
Total scores of physicians' performance & (%)	72.3±0.5 (72.3%)	69±0.6 (69%)	3.4	0.002*

**= Highly Significant * = Significant.

Table 2. Infection control standard knowledge and practices of nurses during NVD according to their qualification

Nurses infection control knowledge N = 74	Nurses Qualifications			F. test	P. value
	Bachelor of Science in Nursing n= 10	Technical Institute of Nursing Diploma n=9	Secondary Nursing Diploma n= 55		
	(X̄ ± SD)				
Definition of infection	8.8 ± 0.3	8.6 ± 0.6	8.5 ± 0.7	0.8	0.45
Cleaning and disinfection	5.1 ± 0.8	4.8 ± 1.1	4.7 ± 1.2	0.3	0.76
Sterilization	5.0 ± 0.1	4.3 ± 0.6	4.1 ± 0.9	1.3	0.27
Infection control universal precautions	5.3 ± 1.1	4.6 ± 0.9	4.1 ± 1.2	4.6	0.01*
Hand washing, wearing and removing gloves, changing gloves, wearing mask, gown	5.2 ± 0.7	5 ± 1	4.9 ± 1.1	1.9	0.16
Total scores of nurses' knowledge and %	29.4 ± 0.6 (68.4%)	27.3 ± 0.8 (63.5%)	26.3 ± 1.1 (61.2%)	1.4	0.002*
Nurses' infection control practices					
Hand washing	8.8 ± 0.6	8.6 ± 0.9	8.3 ± 1.1	1.5	0.23
Wearing sterile gloves	6.6 ± 1.3	6.5 ± 1.3	6.8 ± 1.2	1.2	0.31
Changing gloves	8.6 ± 0.9	7.3 ± 1.4	6.6 ± 1.4	4.0	0.023*
Removing gloves	6.3 ± 0.5	5.7 ± 1.1	4.1 ± 1.6	8.9	<.001**
Wearing mask and gown	6.9 ± 0.4	5.8 ± 0.9	5.6 ± 0.7	3.6	0.03*
Care of patient equipment	14.6 ± 1.1	13.8 ± 1.6	12.7 ± 1.9	3.9	0.03*
Sterilization	5.1 ± 1.1	5.5 ± 1.2	5.8 ± 1.5	0.8	0.43
IV cannulation & blood sample extraction	7.7 ± 0.2	7.3 ± 0.5	7.2 ± 0.4	1.5	0.23
Cleaning of instruments	2 ± 0	2 ± 0	2 ± 0	0	0
Total scores of nurses' practices and %	66.6 ± 0.7	62.5 ± 1.1	59.1 ± 1.1	7.2	<.001**

**= Highly Significant *= Significant.

Table 3. Knowledge of nurses' about infection control standards during NVD according to their years of working experience

Nurses infection control knowledge N = 74	Nurses years of working experience			F. test	P. value
	< 5 years n= 20	5 - 10 years n= 33	10 - > 10 years n= 21		
	(X̄ ± SD)				
Definition of infection	8.2 ± 1.8	9.7 ± 0.5	8.1 ± 1.7	1.66	0.2
Cleaning and disinfection	5.5 ± 0.3	6.2 ± 0.9	5.7 ± 0.7	1.73	0.18
Sterilization	4.4 ± 0.8	4 ± 0.8	4.7 ± 0.5	0.93	0.39
Infection control universal precaution	4.9 ± 1.3	4 ± 0.5	3.4 ± 1.6	3.30	0.04*
Hand washing, wearing and removing gloves, changing gloves, wearing mask, gown	4.7 ± 0.2	5.1 ± 0.1	4.4 ± 1.3	1.75	0.18
Total scores of nurses' knowledge	27.7 ± 0.8	29 ± 0.5	26.3 ± 1.3	3.56	0.04*

*= Significant.

Table 4. Infection control standards knowledge and practices of Nurses' during NVD according to training courses attended

Nurses' infection control knowledge	Trained (n=32)	Not trained (n= 42)	t. test	P. value
	(X̄ ± SD)			
Definition of infection	8.6 ± 1.3	8.5 ± 1.5	0.47	0.46
Cleaning and disinfection	4.9 ± 1.4	4.8 ± 1.6	0.23	0.81
Sterilization	4.4 ± 1.5	4.5 ± 1.3	0.57	0.56
Infection control universal precautions	5 ± 1.6	4.9 ± 1.8	.037	0.71
Hand washing, wearing and removing gloves, changing gloves, wearing mask, gown and eye protection	4.5 ± 1.5	4.6 ± 1.6	- 0.36	0.72
Total scores of nurses' knowledge	27.6 ± 1.5	27.5 ± 1.6	0.25	0.80
Nurses' infection control practices				
Hand washing steps	8.9 ± 1.2	8.7 ± 1.2	0.7	0.47
Wearing sterile gloves steps	6.8 ± 0.9	6.6 ± 0.7	0.7	0.46
Changing gloves steps	7.7 ± 1.2	7.5 ± 1.3	0.55	0.59
Removing gloves steps	5.3 ± 1.1	5.2 ± 1	0.42	0.66
Wearing mask and gown steps	6.2 ± 1.3	6.1 ± 1.4	0.24	0.80
Care of patient's equipment	13.5 ± 1.5	13.6 ± 1.7	-0.24	0.81
Blood sample extraction & IV cannulation	7.5 ± 1.4	7.4 ± 1	.33	0.74
Cleaning of instruments after operation	2 ± 0	2 ± 0	0.46	0.64
Sterilization steps of equipment and instruments	5.4 ± 1.5	5.3 ± 1.4	0.22	0.82
Total scores of nurses' practices	63.1 ± 2.6	62.2 ± 2.4	1.8	0.06

In Table 1, Table 2 and Table 3: Comparing total physicians infection control knowledge scores (72.3%) with nurses knowledge score (64.3%); it was highly significant ($P < 0.001$). Also; when comparing total physicians infection control practice scores (70.6 %) with nurses practice scores (62.7%); it was highly significant ($P < 0.001$).

Table 4 shows that 32 (43.2%) nurses received training on infection control and there is no impact of the training they received, as no significant difference of infection control standard knowledge and practices of nurses' whether they attended or not attended infection control training courses.

4. Discussion

In developing countries, standard precautions (SP) of infection control incompletely practiced with limited and suboptimal compliance due to lack of knowledge, and/or experience, lack of institutional guidelines and training, lack of resources and excessive workload were the major factors preventing health care workers (HCWs) from practicing SPs [16]. In this current study; the mean percentage of physicians infection control knowledge (72.3%) were higher than in Saudi Arabia HCWs knowledge of infection control measures at a primary health care (PHC) level, as only 44.4% of HCWs at PHC identified standard precautions (SP) of infection. In Saudi lack of knowledge of basic procedures involving: routine tasks, hand hygiene, environmental cleaning and sharps management [17]. In this study; mean percentage of physicians (72.3%) and nurse's infection control knowledge (64.3%) was higher than knowledge of the physician and nurses in PHC settings in a study done in Menoufia governorate (Egypt); whereas only 32.5% health care workers had a good knowledge score [18]. In this study; physicians had a higher significant practice score of infection control standard practices compared to nurses, this finding come in accordance with Abd El Aziz study who reported that doctor's had higher compliances 37.5% to hand washing than nurses 36.4% and housekeepers 22.6% [19] and with Alkubati study were physicians had higher compliance than nurses in practices related to central venous catheter infection control, clothes protection as wearing gloves and gown and skin antisepsis [20]. But the previous studies differ from Abu Salam study; where nurses were more compliant than physicians in hand washing and wearing protective gloves before and during dealing with patients by 94.3%, and 96.5% respectively, compared with 90.9%, 65.2% among physicians who wash hands or use gloves before or during patient's care [18]. Apparently in this study physicians showed moderate compliances with SPs of infection control. Junior physicians showed more commitment with infection control practices than senior ones in hand washing, wearing sterile gloves, changing and removing gloves and wearing mask, which in contrast to Nigerian study as there was association between hand washing and use of personal protective materials such as gloves, gown or plastic apron with years of working experience [21]. The study finding is also not concord with another study in Nigeria where no significant difference between

doctor's years of work experience and infection control measures [22]. The present study different from Saudi study in degree of compliance with infection control practices where it was lower in Saudi than this study; as only 8.4% of HCWs participants reported compliance with SPs in Saudi; and infection control compliance was associated with knowledge and work experience in years [17].

Regarding nurse's qualification, the current study found that the majority of them had nursing diploma and most of them their working experiences from 5 – 10 years. These results in line with Moussa and Shahin (Port Said; Egypt) in which 70% of nurses have diploma nursing degree [23] and come in accordance with the study done by Maheswari & Muthamilselvi; as they found that most of the nurses 64% have work experience near 5 - 6 years when assessing the effectiveness of teaching program on infection control universal precautions in India [24]. The present study revealed that Bachelor of Science nurses as well as; nurses from 5 years – 10 working experience had significant higher knowledge in infection control measures than other nurse's. The current study finding agrees with Abolwafa results in which nurses with Bachelor of Science degree and nurses working experience (from 5-10 years) show significant better knowledge than other nurses, this might be due to nurses' maturity which plays a role in gaining and integrating knowledge. Moreover; nurses' who have more experience will be responsible for administrative and managerial activities, while younger ones have more practical work in direct with patient care [25]. The study findings not concordant with Iliyasu, or Teshager, as Iliyasu in Nigeria states that no statistically significant difference in infection control knowledge and practices among nurses and years of working experience whether ≥ 10 years or ≤ 10 years [22]. Teshager reported that senior nurses more knowledgeable and efficiently practice prevention of surgical site infection twice than junior nurses who served less than 5 years (OR = 1.81, 95% CI: 1.12-2.94, OR = 1.79, 95% CI: 1.08-2.97) respectively. Also; they explored that secondary diploma nurse's practice successfully prevention of surgical site infection activities more 2 times than nurses have Bachelor of Science degree or higher (OR = 2.26, 95% CI: 1.08-4.76) [26].

The World Health Organization (WHO) highlight importance of hand washing in reduction of the prevalence of health facilities associated infections [27]. Hand washing performance considered good among the studied nurses during NVD. In line with a Nigerian study 76% of nurses always practice hand hygiene before and after glove use and in between patient care [22]. In Indian study health care worker had good knowledge about hand washing 86.5%, but nearly half of them 50% who actually practice hand washing [28]. Contrary to previous study Chudleigha found that performance of hand washing not achieved before and after delivery of care to women undergoing delivery. It's found in this study that minority of nurses changing and removing gloves [29]. Also; in Moussa and Shahin nurses practices of using and removing gloves were low [23]. CDC guideline necessitates changing gloves during the care of a single patient to prevent cross-contamination of body sites; if the patient interaction involves touching any surrounding

surfaces or when moving from a contaminated site to a clean site. Discarding gloves between patients is necessary to prevent transmission of infectious material [15]. Pessoa-Silva found that use of gloves doesn't replace hand washing. Gloves become easily contaminated and hands are then contaminated during removal of gloves [30]. In this study most of the studied nurse's had low score of wearing mask and gown, this come in accordance with Easton who reported that nurses used to wear gown, wear mask and wear protective eye wear at a low rate [31], and also goes with Indian studies were Less than half of the study group (doctors and nurses) using protective clothes such as cap, mask and gown, and even nurses using these protection significantly less in comparison to doctors [28]. The present study revealed that most of the nurses did not practice cleaning and decontamination of instrument correctly. This result goes with a study done in Nepal, in which a total of 72% of nurses don't follow universal infection precautions in cleaning and decontamination of instruments and equipment [32]. Cleaning of instrument is the first step in decontamination which is required to lower the burden before they are subjected to disinfection or sterilization [33].

Regarding to previous training programs about infection control, the present study shows that majority of physicians didn't attend on job training about infection control as they stated, which in contrast to AbuSalam study; where 65.9% of family health units physicians had knowledge about infection control standards from attendance to training courses, in comparison with 51.1% of the nurses who reported attending training courses about infection control standards [18]. In this study; less than half of nurses (43.2%) attended training courses about infection control, which may be attributed to shorting in the staff, so managers of maternity department can't let them attend any training courses to prevent interruption of work due to their absenteeism. Tirivanhu; in Zimbabwe found that 68 % of nurses hadn't attended any education on infection control topic, while 32 % had been educated and there was poor conduction of these courses [34]. In agreement of this study; many surveys revealed that health care workers such as nurses, physicians, medical and nursing students receive incomplete and variable training on infection control and insufficient standard infection control precautions education with the urgent need for more training [35]. The present study revealed that total scores of knowledge and practices of nurses who had attended training courses about infection control didn't differ from those who didn't attend training courses about infection control. This finding is not in accordance with the results of two Egyptian studies: Abolwafa study and Moussa and Shahin study as both showed significant progress in nurses' knowledge and practices after infection control education program [11,23].

5. Conclusion

It concluded that the scores of nurses' infection control universal precautions knowledge and performance during NVD were significantly higher in nursing having Bachelor of Science and less than 5 years' working experience than

other nurses. While knowledge and clinical practices regarding infection control standards were higher in physicians less than 5 years working experiences than ones with more than 5 years working; except in insertion of urinary catheter steps.

6. Recommendations

It's recommended: To assess knowledge and follow up universal infection control precautions performances among health care personnel to minimize infection risk, to provide periodic efficient infection control training courses to update physicians and nurse's knowledge and evaluation of materials and content of infection control training program; as well as evaluation of trainees knowledge and practices gained. To reinforce proper infection control practices, to hold on job training to avoid health care units work disruption; which may be reflected on patient care and to provide adequate resources and facilities needed for infection control such as; protective barriers, soap, towels in the health care settings. Finally; Health care Personnel's malpractices result in transmission of infection as blood born pathoges (AID's/HBV) should subjected to legal reimbursement.

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