

THE EFFECTIVENESS OF ASEPTIC NON-TOUCH TECHNIQUE AUDIT CYCLE IMPLEMENTATION ON REDUCING THE SURGICAL SITE INFECTION AT EMC GROUP HOSPITAL

INTRODUCTION

Healthcare infections, known as Healthcare-associated infections (HAIs), are an undesirable effect in every health service, and the risk of their occurrence is still increasing. Several studies conducted in Italy reported that the incidence of HAIs is 5-10%, with mortality rates reaching 20-30% (Mancini et al., 2016; Messineo and Marsella, 2015). In Europe, approximately 3.2 million patients are affected by HAIs annually, and approximately 37,000 die due to a direct consequence of HAIs and the increasing multi-drug resistance of pathogens associated with HAIs (Allegranzi et al., 2011). In addition, the incidence of HAIs in Indonesia reaches 15.74%, which is much more than that in developed countries, which range from 4.8-15.5% (Gusty, 2018). The surveillance results conducted by EMC Hospital showed that the incidence of infection in hospitals in 2023 (EMC HAIs data) was SSI = 0.3%. The above data still shows a higher incidence of SSI, which also increases the length of stay by 11 days and the cost of care by 254% - 696%.

The aseptic technique aims to protect patients from infection during invasive procedures and is achieved by minimizing the presence of pathogenic micro-organisms to a minimum (Rowley et al., 2010). However, in practice, the aseptic technique is not performed properly, resulting in an increasing number of infections or HAIs. ANTT is a quality-assured aseptic technique that provides standardized, peer-reviewed, and clinical guidelines that are implemented, monitored, and evaluated by a standards implementation process. ANTT comprehensively explains, through a series of simple rules, how the various elements of the aseptic technique relate and integrate with each other to enable healthcare workers to practice safe and efficient ANTT (Rowley & Clare, 2020). The implementation of the ANTT program at Saint Thomas Midtown Hospital in Nashville, Tennessee, could reduce the increased hospitalization costs, shorten the length of stay, and reduce \$600,000 compensation costs in 2017 (Raeissi et al., 2015). The hospital reported a positive correlation between ANTT implementation, which showed a reduction in antimicrobial resistance, increased event reporting, improved employee morale, and increased aseptic compliance (Sonoiki et al., 2020). Finally, several hospitals experienced major changes after implementing ANTT; for example, the incidence of HAIs obtained valid results after monitoring using regular audits (Rowley & Clare, 2020).

AIM

This research investigated the effectiveness of implementing the ANTT method in reducing the number of SSI events in postoperative patients.

METHOD

This study employed a pragmatic evaluation method with a mixed methods approach. The implementation of the ANTT method used five stages, including planning, launching, educating, assessing, and monitoring (Table 1). The sampling technique in the study was the total sampling technique, and the sample size was 138 nurses from three hospitals. The research site at EMC Hospital has the same category of hospital types, service types, accreditation, and regulations. Instrument validity and reliability have been carried out in different hospitals. The reliability test results and the obtained results show that all questionnaire questions are declared valid. The data were collected using the pre-post questionnaire, structured interview, and audit observation through Electronic Audit.

Table 1. ASEPTIC NON-TOUCH TECHNIQUE AUDIT CYCLE OF THE TABLE

STEP	Description
STEP 1 Planning	1. Planning ANTT policy 2. Conducting a pre-audit before the implementation of education using a web-based system by distributing a quantitative observational (questionnaire) of 16 questions 3. Standardizing equipment
STEP 2 Launch	1. Conducting barrier discovery and a situation analysis 2. Socializing ANTT to division heads using media and a reminder at the work area using various media 3. Installing the ANTT 4 reminder on all server screens in the work area
STEP 3 Education	1. Conducting education on ANTT guidelines 2. Conducting ANTT training
STEP 4 Assessment	Improving competency using a structured interview through the ANTT competency assessment tool (CAT) with two components (pre-procedure and inter-procedure) with a total of 14 questions
STEP 5 Monitoring	Conducting the ANTT post-audit tool by IPLCN using the website system after education and assessment

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RESULT

Table 2. Findings of barriers and situation analysis of SSI incidence rates in hospitals

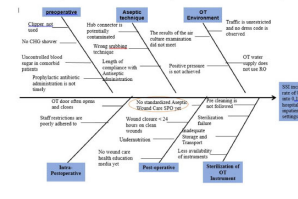


Table 3. Compliance of SSI Bundle Implementation in Hospitals

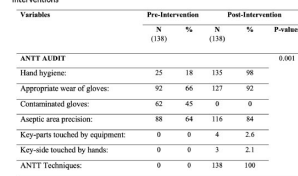


Table 4. Frequency Distribution of Audit Aseptic Non-Touch Technique Pre and Post-Intervention

Variables	Pre-Intervention (138)	Post-Intervention (138)	P-values	
ANTT AUDIT			0.001	
Hand hygiene:	25	18	133	98
Appropriate wear of gloves:	92	66	127	92
Contaminated gloves:	62	45	0	0
Aseptic area preparation:	88	64	116	84
Key-parts touched by equipment:	0	0	4	2.6
Key-side touched by hands:	0	0	3	2.1
ANTT Techniques:	0	0	138	100

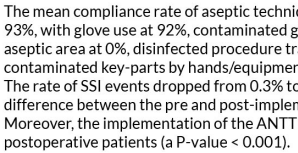


Table 5. Independent T-Test Results on the Effectiveness of the Aseptic Non-Touch Technique of Audit Intervention on SSI Reduction

Variables	Mean	Signif Mean	P-values
Intervention Groups			
Pre-intervention	32.61	7.39	0.00
Post-intervention	25.22		

CONCLUSION

The implementation of ANTT improved compliance with safe and effective aseptic techniques. The ANTT compliance audit results reflect a reduction in the incidence of SSIs, thereby reducing costs and LOS in postoperative patients. The program will be expanded to the other five hospitals in the group.

ACKNOWLEDGEMENT

- EMC Healthcare Board of Directors and Excom members for supporting the ANTT program and research.
- Simon David Clare, MRes, BA, RGN (Research and Practice Development Director ANTT), for all his support and guidance.

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