

# **Contaminations of patient's files in surgical ward and ICU: impact on nosocomial infections.**

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摘要

## **Abstract**

### Background

The extent to which bedside patients' files become contaminated and the range of bacterial flora attributable to contamination in high-risk areas of the hospital are not known with certainty. The aim of the present study was to determine the degree of contamination of the patient's files and also to analyze and compare the spectrum of contaminant bacterial flora between the intensive care unit (ICU) and surgical wards, the 2 most high-risk areas for nosocomial transmission of infection.

### Methods

Microbiologic samples were collected from the exposed outer surface of the patients' files kept bedside in the ICU and surgical wards with sterile swabs moistened with sterile normal saline. Swabs were cultured within an hour of collection on blood agar and MacConkey's agar plates, which were incubated at 37°C for 48 hours. Gram-negative bacilli were identified by Gram's stain, catalase, oxidase tests, and API 20E and API 20NE. Staphylococcus species were identified by Gram's stain, catalase test, and tube coagulase test. Antibiotic susceptibility of the isolated bacteria was determined by the disk diffusion technique according to the criteria of National Committee for Clinical Laboratory Standards (NCCLS).

### Results

In ICU, 85.2% (87/102) and, in surgical wards, 24.7% (22/89) of patient's files were found to be contaminated with pathogenic and potentially pathogenic bacteria (OR, 17.664; 95% CI: 8.050-39.423;  $P < .0001$ ). *Pseudomonas aeruginosa* was the most commonly isolated bacteria (32.3%, 33/102) in ICUs, whereas *Staphylococcus aureus* was the peak contaminant (11.2%, 10/89) of the files in surgical wards. Methicillin-resistant *Staphylococcus aureus* (MRSA) was isolated from 6.8% (7/102) of ICU patient's files, whereas only 1.1% (1/89) of patient's files in surgical wards were contaminated with MRSA (OR, 6.484; 95% CI: 3.215-13.463;  $P < .0001$ ). The multidrug-resistant *P. aeruginosa*, *Acinetobacter baumannii*, *Klebsiella pneumoniae*, and *Serratia marcescens* isolated from the patient's files had the same antibiotic resistance pattern as of these bacteria isolated from the patients.

### Conclusion

The majority of the patient's files in ICUs were contaminated often with multidrug-resistant bacteria and even MRSA. Contaminated files could be a source of transmission of infection. To prevent this, handwashing practice should be strictly followed after attending the patient and before entering the case notes in the patient's file. The maintenance of good hand hygiene by the health care workers (HCWs) after handling contaminated files should perhaps be the most prudent approach to prevent patient-patient transmission of infection in high-risk areas including ICU and surgical wards.

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