

**TITLE:** FINGER OXIMETERS CONTAMINATION IN HOSPITAL IN SOUTH BRAZIL

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**ABSTRACT:**

Finger oximeters in hospitals may pose risks to patients undergoing surgical recovery when contaminated with multiresistant bacteria. This research investigated the contamination of oximeters used by health professionals. In a hospital clinic in South Brazil were analyzed eight finger oximeters from nursing professionals. We collected external and internal samples with sterile swabs. Samples were seeded in blood agar and incubated at 37°C for 18 to 24 hours. Colonies with different morphological characteristics were isolated and transferred to blood agar medium and incubated. For Gram negative biochemical tests were performed on Simmons Citrate, TSI, SIM, VM and VP. For Gram positive the tests were catalase, oxidase, coagulase and mannitol fermentation and bile esculin, bacitracin (10 IU) and novobiocin (5 µg) and PYR tests. The antimicrobial susceptibility test was by disc diffusion in Muller-Hinton agar plate and incubated at 37°C for 18 hours. The antimicrobial agents were ampicillin + sulfobactam (5 µg), aztreonam (30 µg), azithromycin (15 µg), ceftazidime (30 µg), chloramphenicol (30 µg), amoxicillin + clavulanate (10 µg), ceftriaxone (30 µg), cefotaxime (30 µg), doxycycline (30 µg), imipenem (10 µg), norfloxacin (10 µg), tetracycline (30 µg), penicillin G (10 IU), rifampicin (30 µg), vancomycin (30 µg), ofloxacin (5 µg), clindamycin (2 µg) and erythromycin (15 µg). The guidelines of susceptibility test used was the CLSI (2015). They were considered multiresistant bacteria with three or more resistance classes. All external and internal oximeter surfaces were contaminated. Of the 53 colonies isolated, 12 colonies were *Staphylococcus epidermidis* (3 internal, 3 external), 3 *Staphylococcus saprophyticus* (3 internal), 5 *Staphylococcus aureus* (2 internal, 3 external), 3 *Streptococcus pyogenes* (2 internal, 1 external), 20 *Klebsiella pneumoniae* (10 internal, 10 external), 4 *Enterococcus faecalis* (3 internal, 1 external), 4 *Proteus mirabilis* (3 internal, 1 external), one *Gonococcus sp* (external), one *Providencia sp* (external) and one *Pseudomonas aeruginosa* (external). There were 21,6% multiresistant, 21,6% resistant to two classes, 35,2% was resistant to one class and 21,6% was susceptible. The study demonstrated the existence of real risks of dissemination of multiresistant bacteria among patients and nursing professionals.

**Keywords:** bacterial resistance, fomites, hand disinfection, community health nursing

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