

# **An Assessment of the Effectiveness of Selected Commercially Available Hand Hygiene Products in the Nigerian market**

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## **Abstract**

**Background:** The CDC and WHO recommend the use of effective hand-hygiene products to reduce the spread of infections.

**Objective:** The purpose of this study was to investigate the effectiveness of commonly available hand hygiene products in the Nigerian market.

**Methods:** The finger-tip plating method on blood agar was employed in isolating bacteria from apparently health volunteers at 0 minute and at 1, 5, 15 and 25 minutes following swabbing of products on the finger tips. Isolates were identified by morphological and biochemical characteristics. Antimicrobial susceptibilities were determined by the disk-diffusion technique.

**Results:** All the fingers of volunteers were contaminated. Bacterial loads varied from 19.4 to 69.8 cfu/finger. Only 2 out of twelve products (16.7%) could eradicate all organisms by 5 minutes. Rate of killing of contaminants reduced as follows: Sterlink>Savlon>Dettol hand sanitizer>Lovillea>Dettol>Liby hand wash>Mama lemon>Morning fresh>Honey>Milk and Honey>Septol>Cetrimide. Isolates were *Staphylococcus epidemidis*, *S. haemolyticus*, *S. warneri*, *S. sonni*, *S. hominis*, *Proteus vulgaris*, *Salmonella enterica* var *typhii*, *Klebsiella pneumonia*, *E. coli* and *Bacillus* spp. Antibiotic resistance rates were as follows: imipenem (0%); gentamicin, chloramphenicol and erythromycin (50-85%); amoxicillin, tetracycline, cloxacillin and cotrimoxazole (>90%).

**Conclusion:** The study confirmed the need for regular hand hygiene in the community as bacterial contaminants in the hand include known pathogens. Care should be taken in the choice of hand hygiene products if the aim of hand antisepsis will not be defeated. Imipenem is the most effective antibiotics for treating infections caused by these organisms.

**Keywords:** hand hygiene products, community, infections, imipenem, Nigeria