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Promotion of hand hygiene strengthening initiative in a Nigerian teaching hospital: implication for improved patient safety in low-income health facilities

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ABSTRACT

Background: Health care-associated infection remains a significant hazard for hospitalized patients. Hand hygiene is a fundamental action for ensuring patient safety.

Objective: To promote adoption of World Health Organization Hand Hygiene Guidelines to enhance compliance among doctors and nurses and improve patient safety.

Methods: The study design was a cross sectional intervention in a Federal Teaching Hospital South-eastern Nigeria. Interventions involved training/education; introduction of hand rub; and hand hygiene reminders. The impact of interventions and hand hygiene compliance were evaluated using World Health Organization direct observation technique.

Results: The post-intervention hand hygiene compliance rate was 65.3%. Hand hygiene indications showed highest compliance rate 'after body fluid exposure' (75.3%) and 'after touching a patient' (73.6%) while the least compliance rate was recorded 'before touching a patient' (58.0%). Hand hygiene compliance rate was significantly higher among nurses (72.9%) compared to doctors (59.7%) ($\chi^2 = 23.8$, $p < 0.05$). Hand hygiene indication with significantly higher compliance rate was "before clean/aseptic procedure" (84.4%) ($\chi^2 = 80.74$, $p < 0.05$). Out of the 815 hand hygiene practices recorded 550 (67.5%) were hand rub action.

Conclusions: hand hygiene campaigns using the World Health Organization tools and methodology can be successfully executed in a tertiary health facility of a low-income setting with far reaching improvements in compliance.

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Introduction

Health care-associated infection (HCAI) transmission in the hospital environment remains a significant hazard for hospitalized patients and health-care workers are potential source of these infections.¹⁻³ According to World Health Organization (WHO) an infection is considered a HCAI if it is occurring in a patient during the process of care in a hospital or other health-care facility which was not present or incubating at the time of admission, this includes infections acquired in the hospital but appearing after discharge, and also occupational infections among staff of the facility.³ It is estimated that at any one time, more than 1.4 million people worldwide are suffering from infections acquired in hospitals.²⁻⁴ Since most HCAIs can be transmitted from patient to patient via the hands of health-care workers, hand hygiene is the simplest proven method to reduce the incidence of health care-associated infections. This is the rationale behind the time-honoured advice for all to wash their hands before and after seeing each patient because there is substantial evidence that hand antisepsis reduces the incidence of HCAI.⁵ Hand hygiene is therefore a fundamental action for ensuring patient safety, which should occur in a timely and effective manner in the process of care.⁶ However, despite the fact that compliance with hand hygiene among all types of health-care workers remains poor,⁷ identifying effective methods to improve the practice of hand hygiene would greatly enhance patient safety and result in a significant decrease in HCAIs.

The WHO noted that successful and sustained hand hygiene improvement is achieved by implementing multiple actions to tackle different obstacles and behavioural barriers.³ Based on the evidence and recommendations from the WHO Guidelines on Hand Hygiene in Health Care,^{3,8} the following components make up an effective multimodal strategy for hand hygiene; (i) System change; (ii) Training/Education; (iii) Evaluation and feedback; (iv) Reminders in the workplace; and (v) Institutional safety climate.

Nigeria is one of the countries with high burden of HCAIs,^{9,10} yet the hand hygiene campaign is not commonly promoted in many health care facilities in the country. To the best of our knowledge there is currently no systematic study on hand hygiene promotion and evaluation in health facilities in Nigeria. The absence of such information hampers the development of effective policies on hand hygiene both at national and local levels. There is sufficient evidence from published research which suggests that multimodal, multidisciplinary strategies that focus on system change, training and monitoring have a great potential of success in terms of hand hygiene improvement, and reduction of HCAI.¹¹⁻¹³

The specific objectives of the study were as follows: to identify the factors associated with non-compliance with hand hygiene among medical doctors and nurses; to promote the adoption of the recommendations of the WHO Guidelines on Hand Hygiene in Health Care,^{3,8} in particular the implementation of two of the components (Training/Education and Reminders in the workplace) of the multidisciplinary, multimodal hand hygiene improvement strategies; and to evaluate hand hygiene compliance using the WHO evaluation and feedback methodology.

Materials and methods

Setting

The study took place from January 2010 to April 2011 at The Federal Teaching Hospital Abakaliki (FETHA) (formerly Ebonyi State University Teaching Hospital and Federal Medical Centre) of Ebonyi State, Southeastern Nigeria. The study targeted physicians, nurses, and other health workers involved in direct patient contact. In this research both the institutional and international guidelines on research ethics were strictly adhered to in all aspects of the project. The study was approved by the Ethics Committee of the hospital and by Ethical Review Committee of WHO.

Study design

The research design was a cross sectional intervention. The study was divided into two phases: the intervention phase and evaluation phase.

The intervention phase

Consultation/advocacy meetings were held in January 2010 by the Research Team with the management and major stakeholders (Chief Resident Doctors and Heads of Nursing Services Department) of the Hospital. The purpose of the meeting was to canvass for their co-operation and support towards achieving the goals and objectives of the project.

The intervention phase lasted for seven months, from January 2010 to July 2010. The major activities were as follows:

- (a) *Initiation and execution of WHO recommended activities for implementation of Intervention:* This involved the implementation of strategies that promoted hand hygiene compliance as health care facility priority. Activities executed were training/education and use of reminders in the work place as recommended by WHO. The training/education sessions were conducted separately for nurses and doctors. Before the commencement of each training session, a questionnaire was administered. The questionnaire assessed the knowledge, attitudes, and practices (KAP) of the health workers on hand hygiene practices. The training was conducted by the Research Team at the Hospital's conference hall using Power-Point presentation, and training handouts given to each participant. The training on hand hygiene focused on: background to WHO Patient Safety and the First Global Patient Safety Challenge; definition, effect and burden of HCAI; major patterns of transmission of health care-associated pathogens, with a particular focus on hand transmission; prevention of HCAI and the critical role of hand hygiene; WHO Guidelines on Hand Hygiene in Health Care and their implementation strategy and tools, including why, when and how to perform hand hygiene in health care.^{3,8}

Each training session lasted for 2½–3½ h and also involved a focus group discussion (FGD) comprising of 5–10 doctors and 6–12 nurses per group. The FGD identified the factors

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