Clean Hands Count

Dr. Pallavi Sayal,1,* and Dr. Surinder Kumar2

1Senior Resident, Department of Microbiology, BPS, GMC (W), Khanpur Kalan, Sonepat, Haryana, India
2Professor & Head of Department, Department of Microbiology, BPS, GMC (W), Khanpur Kalan, Sonepat, Haryana, India

ABSTRACT

“To err is human”

Health care associated infections (HCAIs) are second to medication errors as a cause of adverse events among hospitalized patients. Patient safety has become the touchstone of medical care. Failure to perform appropriate hand hygiene is considered to be the leading cause of HCAI and the spread of multi-resistant organisms. World Health Organization (WHO) First global safety challenge launched in 2005, Clean Care is Safer Care pledged to handle problem of HCAIs. Final version of WHO guidelines issued in 2009 include recommendations for indications, techniques and products for hand hygiene. In this article, we are stressing on the need to increase the pace for improved compliance, implementation strategies and tools recommended by WHO.

INTRODUCTION

The complexity of care in hospital setting increases the risk of health-care associate infection (HAI). The emergence of multidrug-resistant organisms (MDROs) has mainly been caused by an inappropriate use of broad spectrum antibiotics. Spread of MDROs in health-care settings is common and occurs mostly via health-care workers’ (HCWs) contaminated hands, contaminated items/equipment and environment often leading to outbreaks and serious infections especially in critically-ill patients.1

Definition

Two major group of microorganisms found on skin-resident flora and contaminants (transient flora). Resident flora consist mostly of bacteria that reside long term under superficial cells of skin (stratum corneum) and on the surface of the skin. Microorganisms that are part of the transient flora are most commonly associated with HAI and are readily removed during routine hand hygiene procedures.2

Hand Hygiene Agents

Plethora of products available in the different countries and variation in efficacy depending upon test conditions (such as concentration, temperature, presence of organic material and lack of universally applied testing methodology) made comparison of available products difficult. WHO recommends two alcohol-based hand rub formulations that can be produced locally (Table 1).3

HAND HYGIENE: HOW AND WHEN?

The purpose of hand hygiene is to prevent colonization and infection in the patients, health-care workers and contamination of environment. Therefore, an opportunity for hand hygiene arises every time when there is a possibility to transfer microorganisms from skin or inanimate surface to other. This simple concept that encompasses the different activities can be summarized as follows (Figs. 1, 2).

Perceived Barriers to Hand Hygiene

Reasons reported for the lack of adherence with recommendations include skin irritation, inaccessible supplies, interference with worker–patient relation, patient needs perceived as priority, wearing gloves, forgetfulness, ignorance of guidelines, insufficient time, high workload and understaffing, and the lack of scientific information demonstrating the impact of improved hand hygiene on hospital infection rates.3

Strategies for Improvement

Improvement in infection control practices requires questioning basic beliefs, continuous assessment of the stage of behavioral change, interventions with an appropriate process of change, and supporting individual and group creativity. Because of the complexity of the process of change, single interventions often fail, and a multimodal, multidisciplinary strategy is necessary.4

Although it is well accepted that hand hygiene is a critical patient safety practice and considerable progress has been made to reduce HAI by adherence to hand hygiene recommendations.

*Address reprint requests to: Dr. Pallavi Sayal, Senior Resident, Department of Microbiology, BPS, GMC (W), Khanpur Kalan, Sonepat, Haryana, India.
Email: petalz03@gmail.com

KEYWORDS healthcare associated infections, hand hygiene, WHO, hand rubs, sanitizers
Table 1 WHO recommended formulations.

<table>
<thead>
<tr>
<th>Formulation 1</th>
<th>Formulation 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Final concentration</strong></td>
<td><strong>Final concentration</strong></td>
</tr>
<tr>
<td>Ethanol—80% v/v, glycerol 1.45% v/v, Hydrogen peroxide 0.125% v/v</td>
<td>Isopropyl alcohol—75% v/v, glycerol 1.45% v/v, Hydrogen peroxide 0.125% v/v</td>
</tr>
<tr>
<td>Pour into a 1000-ml graduated flask</td>
<td>Pour into a 1000-ml graduated flask</td>
</tr>
<tr>
<td>Ethanol 96% v/v—833.3 ml</td>
<td>Isopropyl alcohol 75% v/v—751.5 ml</td>
</tr>
<tr>
<td>$\text{H}_2\text{O}_2$—3%—41.7 ml</td>
<td>$\text{H}_2\text{O}_2$—3%—41.7 ml</td>
</tr>
<tr>
<td>Glycerol 98%—14.5 ml</td>
<td>Glycerol 98%—14.5 ml</td>
</tr>
<tr>
<td>Top up the flask to 1000 ml with distilled water, shake the flask gently to mix</td>
<td>Top up the flask to 1000 ml with distilled water, shake the flask gently to mix</td>
</tr>
</tbody>
</table>

Fig. 1  Illustration of the recommended technique for hand rubbing using alcohol-based formulations/soap and water.¹

Fig. 2  Illustration of Five moment approach¹.
Changes in muscle biopsies of myasthenia gravis

Measuring compliance with hand hygiene is essential to understand the current situation, to facilitate change and to measure the impact of interventions.

Thus, hand hygiene is the simplest, most effective measure for preventing nosocomial infections. Despite advances in infection control and hospital epidemiology, Semmelweis’ message is not consistently translated into clinical practice.

REFERENCES