Staff Uniforms and Uniform Policy

Abstract
Personnel in contact with patients or equipment and textiles should always use the hospital’s work attire. It includes anyone handling food, medicines, textile, waste or cleaning tools. By caring, treating, examining and transporting patients, there will be direct contact between own work clothes and the patient’s cloths/bedding or skin. The same is true when working with used patient equipment such as bedpans, toilet chairs, beds and other aids and working in patient rooms, toilets and bathrooms or when handling bedding and bandages, giving physiotherapy, etc. The work uniform is particularly exposed to organic matter and microbes, for example, in ambulances, in emergency services, in restless and anxious patients and children, during sampling and examination/treatment, etc. In acute wards, the staff is often exposed to splashes from patients, especially blood but also vomit, sputum, pus, faeces and urine. This chapter is focused on practical measures to prevent transmission of infections via contaminated staff uniforms.

Keywords
Staff uniforms · White coats · Gowns · Healthcare worker’s uniforms · Attire · Transmission of microbes · Contamination · Infection control · Hygiene

6.1 Purpose
Healthcare worker’s uniforms protect them against the spread of infections. The hospital uniform signifies a professional identity that ensures professional patient safety and infection protection.
6.2 Comprise

All employees who are in contact with patients, equipment, textiles, medicines and food (food, water, beverages) or who treat contaminants and waste [1–7].

6.3 Responsibility

The hospital management should ensure conditions and resources where all employees receive adapted uniforms, training and follow-up with regard to personal hygiene and the use of the hospital’s uniform. This includes good and clean wardrobe conditions.

Department management should ensure training, information and control of all employees, including temporary workers and extra help, and that they follow the hospital’s procedures with regard to the work attire. All staff should have lockers for private clothes and shoes in clean and well-kept wardrobes.

All employees have a personal responsibility to follow hospital policy with regard to the use of work attire and for personal hygiene and infection control.

6.4 Practical Measures

• The hospital work uniform and attire replaces the use of private clothes [1–7].
• The hospital work clothing should only be used in hospital or in service.
• Shift work suit daily or by local codes [8, 9].
• In direct contact with the patient, clean or unclean equipment or textiles in the health care; change work uniform daily or more often if contaminated. This also applies to work with psychiatric patients.
• Hospital shoes, for own use, are used only in the hospital. Change to hospital shoes and place private one in the locker when arriving the hospital.
• Use the hospital’s socks, especially if not shoe cover heel and toe.
• It is not allowed to use jewellery at all work with patients or equipment (finger rings, bracelets, necklaces, all kinds of earrings and all other jewellery). Piercing is not allowed. Jewellery leads to increased bacterial growth [10, 11].
• It is not allowed to use the wristwatch at point of care or work with equipment as it increases the bacterial load on the hands [12].
• Nails should be short and clean. Artificial nails are not allowed [10, 11].
• Long hair is collected and secured. There can often be large amounts of bacteria in the hair.
• If covering the hair for religious reasons: use the hospital fabrics (hijab). The use of own hijab or headscarf is not allowed. The head restraints are changed daily and connected in such a way that the “snaps” do not hang down the front of the uniform and contaminate.
• Shift work clothes if contaminated with biological material.
• Surgical personnel and anaesthesiologists have a particular responsibility to follow the hospital’s uniform routines—see the surgical department.
• Work clothes should be of sturdy yet dense material resistant to washing at 85 °C for at least 10 min and to disinfectants and frequent washing. All washing of outfits and other fabrics must be done in approved laundries for hospital textiles.
• Work attire should not be taken home and washed there because of the risk of spreading disease.
• Work attire should be comfortable and not trigger allergies.
• By care of patients, use care coat with long sleeves and cuff. These may be used in a blue or other specific colour and be patient bound.
• Use cover coat or disposable plastic aprons at work where there is danger of soiling of the ordinary work clothes.
• By care of infectious isolated patients, use yellow infection coats with long sleeves, cuffs at the wrist without pockets and with closing behind.
• Infection coats and care coats must be replaced daily or immediately if visible soiling or soaking. An advantage in work with infectious cases is the use of yellow, disposable coats changed after each use.
• Clean work clothes to prevent the spread of infection and to reduce bacterial load on the hands [13].

6.5  Background Information

In hospitals, there is an accumulation of infectious agents. Bacteria are often more antibiotic resistant than those detected outside hospitals. Contaminated work clothes pose a high risk of infection in a hospital environment [14–24].

Personnel with direct contact with patients or with clean and unclean equipment and textiles should always use the hospital’s work attire. It includes anyone handling food, medicines, textiles, waste or cleaning tools. By caring, treating, examining and transporting patients, there will be direct contact between your own work clothes and the patient’s cloths/bedding or skin. The same is true when working with used patient equipment such as bedpans, toilet chairs, beds and other aids and working in patient rooms, toilets and bathrooms or when handling bedding and bandages, giving physiotherapy, etc.

The work uniform is particularly exposed to organic matter and microbes, for example, in ambulances, in emergency services, in restless and anxious patients and children, during sampling and examination/treatment, etc. In acute wards, the staff is often exposed to splashes from patients, especially blood but also vomit, sputum, pus, faeces and urine [25].

In hospitals, the workout will be an alternating exposure for the work uniform to contaminated and clean material, for example, to go from nursing of a patient to storage rooms for sterile equipment or clean textiles. Competence and knowledge in infection control reduce the cross-contamination to other patients and the environment.
Change of attire daily. An additional certainty is that the outfit is changed daily or more often when needed. Bacteria, viruses and fungi live on textiles for up to several days and can pose a significant risk of infection [26–29]. During the SARS outbreak in 2003, a laundry employee in Taiwan was infected and caused a large outbreak through the washed and contaminated laundry sent out to the departments.

The work wear quickly becomes contaminated already after 8 h, partly from own skin and microbes, and partly from patients, personnel and the environment [30, 31]. Up to 60% of uniforms may be colonized with pathogenic microbes [15, 24]. In endemic areas of MRSA, the uniform may be contaminated with MRSA in 30–80% of cases [16, 32]. The bacteria are sitting for long periods on the sleeves and pockets and are risk to patients and other employees, particularly when hands are contaminated by own working clothes [32]. The more contaminated the outfit is, the more microbes are detected on the hands. From there, the road is not long to the mouth and to other parts of the face [13, 33]. The use of stethoscope, tourniquet, telephone, intercom systems, etc. in the coat pocket or around your neck increases the burden of microbes on the uniform, especially if the stethoscope and hands are not disinfected between patients and activities [34].

Good housekeeping in a department contributes to reduced infection pressure on the hands and the work wear [35]. Handwash must be carried out in such a way that the uniform is not contaminated with splashes and bacteria from the washbasin [36].

Do not wash the work wear at home. The washing of work clothes transferred to the user is justified by the fact that “home washing is as good as professional washing with regard to the cleanliness of the laundry” [8, 37]. This is not recommended and not true. Hospital-associated microbes should not be introduced to the home environment [9]. Both the Norwegian and the European occupation health and safety (2000/54/EU) highlight that workers like healthcare professionals and their families should not be subjected to unnecessary infection [7].

The patient’s view on uniforms. Patients feel greater security and communicate more easily with personnel and special doctors, formally dressed in the institution’s attire [38]. Doctors of “white coats” are perceived as being more hygienic, professional, authoritative and skilled [38]. Medical student’s white coats show high bacterial contamination on the sleeves and pockets [20, 39]. Similar observation is done among 100 doctors at a hospital in England where the white coat was changed once a week [19]. Staphylococci (S. aureus) were isolated from one of four coats and more frequent from surgeons than from internists [19].

Wardrobes and storeroom for uniforms must have a high standard with regard to cleaning and maintenance to eliminate the risk of cross-contamination. The wardrobe should have a handwash and hand disinfectant. The textile store must be clean and always have the door closed. If the door is open, clean clothes are usually contaminated by air currents from the corridor [23].

Laundries should be approved, accredited and quality assured [1–3, 6]. Laundering of textiles may be a weak link in the treatment of hospital textiles which may contain pathogenic bacteria [40, 41].
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