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## Commentary

### Standard precautions: what is meant and what is not



Recent guidance for controlling carbapenemase-producing Enterobacteriaceae has brought a critical issue for infection prevention and control teams (IPCTs) to a head: there is an erroneous and dangerous assumption that IPCTs and healthcare workers (HCWs) have a common understanding of what is meant by, and included in, the term 'standard precautions'. Exactly what is meant by this term differs between recent guidance from the World Health Organization (WHO), the US Centers for Disease Control and Prevention (CDC), Health Protection Scotland and epic3.<sup>1–4</sup> This situation is unsafe because these differences can lead to misunderstandings and, potentially, to actual harm. The time has come for professional consensus on a single definition of the term 'standard precautions'.

#### Universal to standard: a succinct synopsis

In 1988, the CDC introduced the term 'universal precautions' with the aim of preventing occupational exposure of HCWs to bloodborne viruses (BBVs).<sup>5</sup> Universal precautions applied to blood and some, but not all, body fluids; the precautions were to be used for all patients regardless of their known infection status.<sup>5</sup> In 1996, the CDC replaced the term 'universal precautions' with 'standard precautions', which aimed to prevent nosocomial infection in patients as well as HCWs, and concerned other micro-organisms as well as BBVs.<sup>6</sup> The CDC updated the definition of standard precautions in 2007<sup>2</sup> to include new elements of respiratory hygiene as a consequence of lessons learned in the outbreak of severe acute respiratory syndrome, and safe injection practices as a result of the multiple outbreaks involving BBVs and other organisms that occurred principally from the re-use of needles and contaminated multi-dose vials.<sup>2</sup>

#### Modified in translation

Multiple healthcare agencies have now modified the CDC's standard precautions.

- The standard precautions from WHO contain a more limited number of actions compared with the CDC's standard precautions.<sup>1</sup>

- Standard infection control precautions published by Health Protection Scotland include both a policy and independent supplementary literature reviews to provide evidence for their required actions, similar to, but not overlapping with, the CDC model.<sup>3</sup>
- Standard principles within epic3 for England have been updated recently.<sup>4</sup> The epic3 account lacks some of the basics of the CDC's standard precautions, but includes critical information on several high-infection-risk device-associated procedures.
- The European Centre for Disease Control has also recommended and promoted the use of standard precautions, but has not specified what is included in the term.<sup>7</sup>

Some of the content variation of these documents can be explained by different national organizations having different jurisdictions, and by variation in mandates given to the authors; this has to be a problem that can be overcome. To the present author's knowledge, no standard precautions include actions that should be omitted; they all need to be done, all of the time.

#### Transmission-based precautions

Transmission-based precautions are used in addition to standard precautions when patients are at risk of having, or confirmed to have, any of a specified list of infections or micro-organisms. To decide if a person requires transmission-based precautions, there has to be an infection risk assessment at every patient admission. This infection risk assessment is, therefore, a critical standard precautions action. This assessment is where patients with diarrhoea, vomiting, infected wounds, symptoms suggestive of tuberculosis or at high-risk of carrying a multi-drug-resistant organism are identified as presenting an infection risk to others; as a consequence, transmission-based precautions commence in addition to standard precautions.

#### Continuous assessment of standard precautions

When new infection control challenges arise, such as that presented by carbapenemase-producing Enterobacteriaceae, guideline writers need to determine whether anything in standard precautions needs to change (e.g. hand hygiene materials or methods). If there is no evidence to change standard precautions, this should be stated explicitly in the new guidance. Emphasizing the importance of standard precautions with adjectives such as 'strict', 'effective', 'good', 'excellent' or 'robust' is unhelpful because it implies that one only needs to practice safely if an

infection risk is recognized, or it is acceptable not to undertake standard precautions all the time. This is not the case: standard precautions are the standard and they need to be undertaken for and by everyone in the care environment.

The concept is simple: standard precautions represent what needs to be done every time, and what needs to be present in all care environments all of the time, to minimize the risk of people acquiring infection. However, actually putting this down in clear, concise and caring language is difficult. The guidance released after the *Pseudomonas* spp. outbreaks in neonatal intensive care units involved actions such as not tipping body fluids into wash hand basins.<sup>8</sup> This action is relevant in all care settings all of the time; ergo it should be incorporated within standard precautions.

## Standard precautions continue to evolve

Over time, standard precautions have advanced from protecting HCWs from acquiring BBVs, to protecting HCWs and patients from exogenous organisms, to what is now evolving into protecting people in the care environment from infections of both exogenous and endogenous origin. The following definition is proposed in an attempt to present an easy-to-understand summary of standard precautions: standard precautions are designed to prevent cross-transmission and infection (including from BBV infection) when receiving care, delivering care or being present in the care environment. They are the minimum set of actions that are to be undertaken in every care environment and to be used for every care procedure, every time.

There are three action categories.

- Basics to ensure a safe environment: actions performed to inanimate objects such as equipment, environmental surfaces and linen. For example, a clean environment, decontaminated equipment ready for use by the next patient, safe disposal of waste and safe disposal of blood and body fluids (BBF).
- Basics for the safe care of people (i.e. that which is done by and with people). For example, hand hygiene, use of personal protective equipment, respiratory hygiene, assessment pre-patient placement and effective BBF exposure response.
- Basics for the safe care of people who require high-infection-risk procedures. Any procedure that involves an invasive device or access to a sterile body area presents a high risk of infection and should be avoided wherever possible. Where the procedures cannot be avoided, they should be practised in such a way as to minimize risks. Such procedures include safe invasive device procedures (including endoscopy) and safe injection practices (including intravenous drug preparation and lumbar puncture).

This is a novel summary but it presents a simple division of what needs to be done to inanimate objects in the healthcare setting and people to prevent infection. It also allows new actions to be slotted in on the basis of meeting the criteria for needing to be done for everyone, every time. By separating the invasive procedures into the third category, they can be named as what they present to patients: a high risk of infection. The first and second categories are uncluttered with instructions for procedures which may never be performed in some care settings.

## Call for action

This brief paper highlights that standard precautions are, at present, anything but standard. Furthermore, what is required to be part of standard precautions continues to evolve as understanding of infection risks in care settings changes. In order to prevent carbapenemase-producing Enterobacteriaceae from becoming endemic, agreed standard precautions must become standard. At present, a common language is not spoken with regard to standard precautions. National and international guidelines should not extol standard precautions unless and until they make explicit what they mean by the term. A case is made for gathering relevant experts, including clinicians and human factors experts, to agree what is and what is not meant by standard precautions. What it is and what it is not<sup>9</sup> – a familiar expression.

### Conflict of interest statement

None declared.

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