



Outbreak of invasive group A streptococcus infection: contaminated patient curtains and cross-infection on an ear, nose and throat ward

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SUMMARY

Background: Outbreaks of group A streptococcus (GAS) infections may occur in healthcare settings and have been documented in surgical, obstetrics and gynaecology, and burns units. The environment may serve as a reservoir and facilitate transmission via contaminated equipment.

Aim: To describe the investigation and control of an outbreak of healthcare-associated GAS infection on an ear, nose and throat (ENT) ward in a tertiary referral centre.

Methods: Two patients with laryngeal cancer developed invasive GAS infection (bacteremia) with associated tracheostomy wound cellulitis within a 48 h period. The outbreak team undertook an investigation involving a retrospective review of GAS cases, prospective case finding, healthcare worker screening and sampling of patient curtains. Immediate control measures included source isolation, a thorough rolling clean with a chlorine-based disinfectant and hydrogen peroxide decontamination of patient equipment.

Findings: Prospective patient screening identified one additional patient with carriage of GAS from a tracheostomy wound swab. Staff screening identified one healthcare worker who acquired GAS during the outbreak and who subsequently developed pharyngitis. Environmental sampling demonstrated that 10 out of 34 patient curtains on the ward were contaminated with GAS and all isolates were typed as emm-1.

Conclusion: This is the first outbreak report to demonstrate patient curtains as potential source for GAS cross-transmission, with implications in relation to hand hygiene and frequency of laundering. Based on this report we recommend that during an outbreak of GAS infection all patient curtains should be changed as part of the enhanced decontamination procedures.

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Introduction

Group A streptococcus (GAS) is the main aetiological agent of bacterial pharyngitis as well as more invasive infections including septicaemia and necrotizing fasciitis. Outbreaks of GAS infections may occur in healthcare settings and have been widely documented in surgical, obstetrics and gynaecology, and burns units.^{1–4} Transmission is through respiratory droplets

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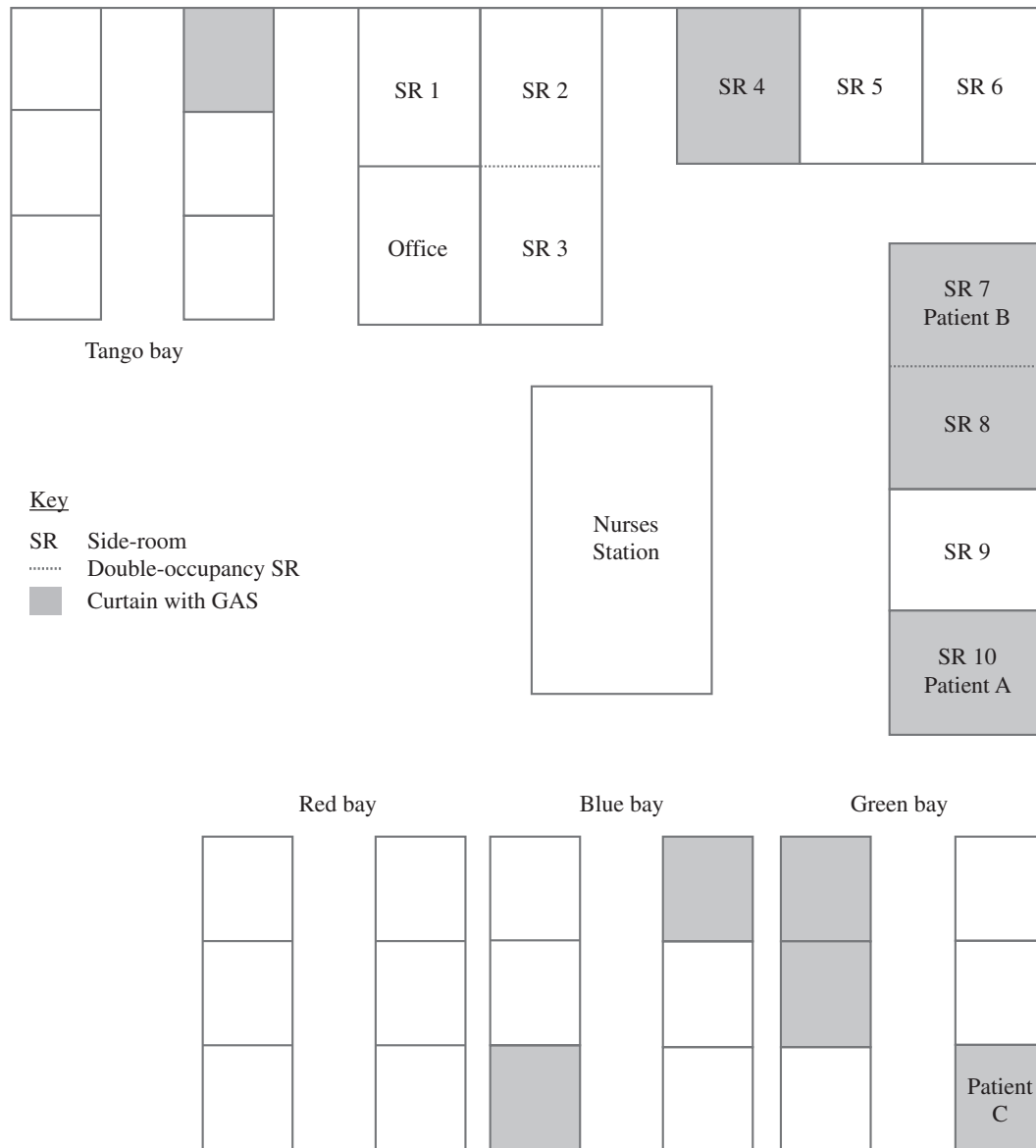


Figure 1. Layout of ear, nose and throat ward showing locations of infected patients and curtains contaminated with group A streptococcus (GAS).

and direct contact between patients and healthcare workers (HCWs).¹ Throat colonization is the most frequent source for onward spread but colonization of HCWs with active skin conditions such as dermatitis also occurs.^{4,5}

The environment serves as a reservoir and facilitates transmission through contaminated equipment such as showers and bidets, particularly in maternity units.^{6–8} There have also been reports of GAS surviving in dust and on fomites which serve as touch points, contributing to further spread via the hands of HCWs.^{1,9}

A healthcare-associated GAS infection is acquired in a healthcare setting and typically develops more than 48 h following admission.¹ Based on recent UK guidelines all healthcare-associated GAS infections should be investigated, and, if there are two or more cases related in person and place, an outbreak control team should be set up.¹

Methods

Description of the outbreak

Two patients with laryngeal cancer on an ear, nose and throat (ENT) ward in a tertiary referral centre developed invasive GAS (iGAS) infection (bacteraemia) with associated tracheostomy wound cellulitis within a 48 h period. Patient A was an 82-year-old man with cognitive impairment who had undergone tracheostomy formation in a day-case theatre 27 days previously and who had remained an inpatient in a side-room receiving oncological treatment. Patient B was a 73-year-old man on the same ward in a different side-room who had undergone urgent tracheostomy formation on the ward 16 days previously and who had remained in hospital awaiting further investigations and treatment planning. The ward was a

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