all 4 cases in this outbreak showed nonsusceptibility to ciprofloxacin and additional resistance to typical first-line antibiotics. However, without Clinical and Laboratory Standards Institute guidelines for azithromycin susceptibility interpretation, testing for azithromycin is not routine and inconsistently reported.

Transmission to 2 healthcare workers, despite appropriate contact precautions, highlights the increased risk from explosive diarrhea due to shigellosis. Contact precautions are the recommended standard but droplet precautions, including foot coverings, masks, and goggles, may be more appropriate for managing a patient with uncontrolled diarrhea.[6] Soap and water hand hygiene may be more effective than alcohol-based hand rub in removing gross contamination on hands and forearms.[7,8]

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Michelle Murti, MD, MPH, FRCPC;[1]
Ken Louie, EHO;[1]
Mark Bigham, MD, FRCPC;[1]
Linda M. N. Hoang, MD, FRCPC[2]

Affiliation: 1. Fraser Health Authority, Surrey, British Columbia; 2. British Columbia Public Health Microbiology and Reference Laboratory, Vancouver, British Columbia.

Address correspondence to Michelle Murti, MD, MPH, FRCPC, 400-13450 102 Ave, Surrey, BC, Canada, V3T0H1 (michelle.murti@fraserhealth.ca).

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Paper Records of Patients in Isolation for Colonization or Infection With Special Organisms: A Potential Fomite?

To the Editor—The fear of paper records or order sheets as a potential fomite for the spread of organisms in healthcare facilities is not new[1] but studies have revealed different findings based on the level of contamination in various settings.[1–4] Therefore we wanted to assess the degree of contamination of paper records from patients who were placed in single-room isolation precautions for colonization or infection with special organisms. Medical charts of clinical ward patients who were placed in isolation for more than 2 weeks, according to the hospital policy of a 696-bed tertiary care center, were included. No institutional review board approval was needed for this non–patient care study, and access to infection control surveillance data by staff is mandated by German federal infection law (IfsG). Descriptive data were analyzed by *t* test; $P < .05$ was considered significant.

From October 1, 2014, through March 1, 2015, eligible records were identified by infection control staff and examined upon patient discharge from the isolation room. Medical charts are kept outside of the room. Per hospital policy, healthcare workers should disinfect their hands after removal of personal protective equipment and before writing notes; however, adherence to this practice was not specifically monitored.

Paper records consist of a plastic cover (1 sample taken) and a paper insert (front page and 1 random page sampled). RODAC (replicate organism detection and counting) plates or appropriate special media were used according to the patients' known organisms and the Microbiology Procedures Quality Standards.[5] Samples were cultivated for up to 8 weeks.

Fifteen paper records were identified and sampled. Figure 1 shows the distribution of organisms, with methicillin-resistant

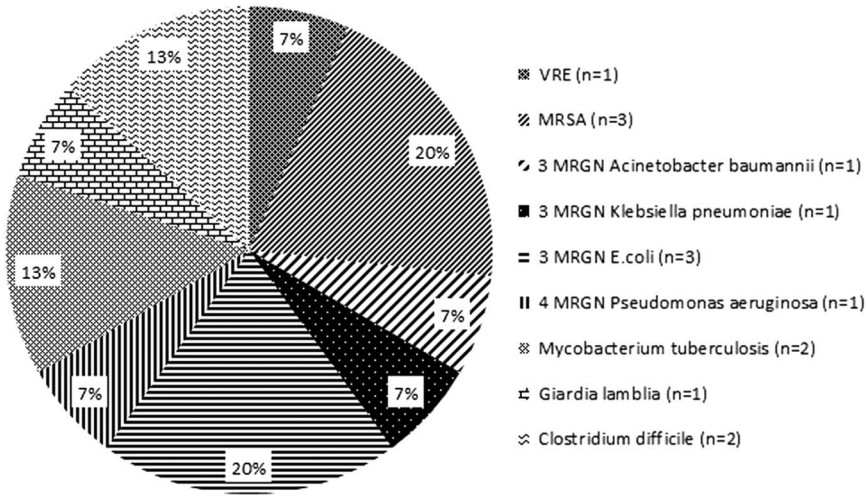

FIGURE 1. Distribution of special organisms in 15 patients with stay in single-room isolation for more than 2 weeks. Percentages do not add to 100 because of rounding. MDR, multidrug-resistant; MRSA, methicillin-resistant *Staphylococcus aureus*; VRE, vancomycin-resistant *Enterococcus*.

Staphylococcus aureus and multidrug-resistant *Escherichia coli* being the predominant species.

On the plastic cover, we found a mean (range) of 10 (0–48) colony-forming units (CFU) of coagulase-negative staphylococci, 8 (0–27) CFU of micrococci, and 1 (0–4) anaerobic bacillus. On the paper sheets, we found a mean (range) of 5 (0–31) CFU of coagulase-negative staphylococci, 3 (0–15) CFU of micrococci, and 0.3 (0–2) CFU of anaerobic bacilli, which was significantly less than on the plastic cover ($P < .001$). No specific organisms from the patients were identified. Records from the 2 patients with tuberculosis who were under airborne precautions showed no growth of coagulase-negative staphylococci and only 1 CFU of *Micrococcus* on the plastic cover.

A limitation of our study was the small number of patients; many were excluded because they were in isolation for less than 2 weeks. Our definition for study inclusion was chosen to assure that multiple opportunities for chart contamination occurred.

Despite those multiple opportunities for contamination of medical charts in patients with special organisms placed under long-term isolation, we could not demonstrate transfer of these organisms onto their paper records. This result suggests that existing adherence to isolation precautions in our cases, although not formally observed and recorded, was sufficient to limit contamination. Only normal environmental bacteria in moderate or low numbers were found, with the plastic cover being more prone to contamination than the paper record itself.

To put these findings into perspective, studies of nonhospital environmental contamination, using culture of circulating bank notes and coins as an example, have yielded very different results. In those studies, coagulase-negative staphylococci (43.6% of the total bacterial count), including *Staphylococcus saprophyticus*, *S. epidermidis*, and *S. hominis*, and *Enterococcus* spp. (30.8% of the total bacterial count), including *E. faecalis*, *E. faecium*, and *E. durans*, were the most numerous causes of bacterial contamination. *Penicillium* spp. and *Aspergillus* spp. were the most frequently detected molds, whereas *Candida* spp. was the most frequent yeast isolated from currency. A marked inverse correlation between smaller banknote denomination and the physical condition of the paper currency and larger numbers of bacteria and fungi was found. The overall number of bacteria isolated from currency was a thousand-fold higher than that of fungal isolates. The total amount of bacteria and fungi recovered from coins was approximately 2.7-fold lower than that isolated from the notes. In this study by Kalita et al,[6] Polish currency notes were found to be contaminated mainly with commensal bacteria and fungi, whereas opportunistic pathogenic microorganisms *Escherichia coli*, *Pseudomonas stutzeri*, and *Candida albicans* were detected at a low frequency. The mean numbers of total viable bacteria recovered in this study were 1.6×10^4 CFU per a 20-Zloty note, 1.8×10^4 CFU per 10-Zloty note, and 6.5×10^3 CFU per coin, which were much higher than our CFU counts.

We therefore agree with the recommendation of Panhotra et al[7] that the emphasis on hand hygiene after caring for the patient and before entering case notes in records for patients in isolation for special organisms is a good practice that needs to be followed. In contrast, special precautions for handling records of patients under isolation after discharge is not necessary, and they pose no risk to healthcare workers or administrative staff handling those files.

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Sebastian Schulz-Stübner, MD, PhD;[1]
Petra Zimmer, RN;[2]
Peter Leonards, RN[2]

Affiliation: 1. Deutsches Beratungszentrum für Hygiene (BZH), Freiburg im Breisgau, Germany; 2. Klinikum Mutterhaus der Borromäerinnen, Trier; Germany

Address correspondence to Sebastian Schulz-Stübner, MD, PhD, Deutsches Beratungszentrum für Hygiene (BZH), Schnewlinstr. 10, 79098 Freiburg im Breisgau, Germany (Schulz-stuebner@bzh-freiburg.de).

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Infection Control in Therapeutic Hyperbaric Chambers: Practical Inventory in France

To the Editor—Hyperbaric oxygen therapy (HBOT) is a non-invasive treatment that involves breathing pure oxygen in a pressurized room or tube.[1] HBOT can be used for chronic wound-healing problems, soft-tissue infections, gas gangrene,[2] and as an emergency treatment for diving decompression sickness[3] or carbon monoxide poisoning.[4] Multiplace hyperbaric therapeutic chambers can accommodate several patients at once, allowing contact among patients who may be infected or colonized.

Prevention of cross infection is mainly based on hand hygiene and on the use of alcohol-based hand rubs (ABHRs), which have proven effective in reducing nosocomial infections.[5] However, in hyperbaric conditions, fire is the main danger and the most feared risk[6,7] because people cannot quickly leave the chamber during a session. Flash fire associated with the use of alcohol-based antiseptic agent has already been described.[8] Thus, the use of ABHR during HBOT sessions is not recommended. The alternative to hand rubbing is simple hand washing with mild soap, but these soaps generally contain flammable substances (such as glycerin) that should also be avoided inside the chamber.[9]

There are no specific recommendations for preventing infection in hyperbaric chambers. Moreover, safety measures reinforce the difficulty of implementing infection prevention recommendations in daily practice. To address these issues, we made an inventory of infection control practices in French HBOT chambers.

We sent a questionnaire to 18 hyperbaric medicine units in France. This survey concerned environmental and medical equipment cleaning (ie, frequency and products used for the cleaning of surfaces and disinfection of breathing circuit components) and infection control precautions. The last part of the survey concerned additional precautions in place according to the patient profile (eg, tracheotomy, carrying multidrug-resistant bacteria, or immunosuppressed) and the existence of specific procedures in the unit for patients requiring additional precautions (ie, contact or airborne precautions).

Between September 2014 and February 2015, we collected 16 completed questionnaires (89% response rate). Environmental disinfection management among HBOT units was quite variable (Table 1); there was heterogeneity in the maintenance frequencies of the different surfaces of the chamber although the products used for cleaning were generally the same. Overall, 87% of units declared they used a cleaner combined with a disinfectant. These cleaning products were not always appropriate to the hygiene recommendations (eg, disinfection products for medical devices were used for the maintenance of soil and surfaces) or to safety instructions related to the hyperbaric conditions (eg, products containing alcohol were used for the disinfection of surfaces).

Most chambers (63%) were equipped with a sink. In these chambers, hand hygiene was achieved by simple hand washing using mild soap (30%), using ABHR (30%), using either of these two techniques (30%), or by washing hands with an antiseptic soap (10%). For those without sinks, hand hygiene was performed using ABHR or by simple washing outside the box, and in some cases professionals wore gloves. Practitioners wore professional attire, and in 56% of cases, specific recommendations were given to patients regarding their dress. In 75% of the HBOT units responding, cotton outfits were recommended, and synthetic fabrics and makeup (fats) were disapproved. Disinfection of oxygen masks was performed by soaking the mask in a disinfection solution in 94% of units, but the frequencies of disinfection varied among facilities: every