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Exploring patient perceptions of contact precautions

To the Editor:

Contact precautions (CPs) help to reduce the spread of health care–associated infections (HAIs).[1] Our institution begins CP by implementing provider personal protective equipment (PPE) and signs detailing level of CP on room doors. However, CPs may be adversely perceived by patients with higher levels of depression and anxiety.[2-4] One strategy to address these negative perceptions is the PPE Free Zone, a taped-off box measuring 3×3 feet placed in the threshold of a patient's doorway.[5] However, patient perceptions of CPs, in general, remain underexplored.

From November 2017 to January 2018, at a large university hospital, we interviewed 10 patients whose rooms did not have the PPE Free Zone as a control group and 10 patients whose rooms did have this feature as an experimental group. Most patients were under CPs owing to *Clostridium difficile* infection. Data were collected using in-person, semi-structured interviews with a mix of open-ended and 5-point Likert scale questions. We interviewed patients in their private hospital rooms with 2 trained study team members present—1 to conduct the interview and 1 to take notes. Before the interview, patients received a brief overview of the study and verbally confirmed their willingness to participate. We did not have access to medical records.

The interview guide was based on the domains identified by Abad et al[6]: psychological well-being, provider contact with patients, patient satisfaction, and patient safety. Questions were test piloted before the study began. All patients were asked demographic questions, including living arrangement, race, and education status. All were asked to rate the hospital from 1-10 based on their current stay. Each interview lasted approximately 10 minutes. Using an inductive approach to analysis, a research staff member manually generated a list of common themes. Both study team members discussed and agreed on the themes identified.

Commonalities included the 60% who rated their health as poor or fair, the 70% who were able to move about on their own, and the 75% who lived with their spouse and/or family. Education ranged from high school (35%) to a master's degree (10%) (Table 1). The most common length of stay was 3 days, and the average hospital rating was 8.75 of 10.

Of those interviewed, 70% identified the protective role gowns play in infection control. Patients also felt responsible for protecting others from acquiring their infection. As 1 patient explained, "I know it's necessary. I don't want to put others at risk." Of those interviewed, 30% expressed negative attitudes toward gowns and/or signs. Patients with unfavorable viewpoints described gowns as a waste of time and resources: "It's dumb, there's no proof, it's a waste of money to wash them, a waste of time, and they fall off anyway." Two patients thought gowns made interactions with health care staff impersonal, because gowns concealed name tags or made everyone look the same. One patient expressed concerns about signs and privacy invasion: "The signs are kind of impersonal, and they put your information out there. You feel kind of like 'what's wrong?' Wish I'd known about it before they put the sign up." Most patients, however, viewed gowns and signs neutrally or did not notice signs or have concerns about their presence. Some patients expressed negative feelings, such as stigmatization, distress, and confusion related to CPs. Emotions included feeling self-conscious, dirty, diseased, alienated, or like a burden to health care staff: "[Gowns make me feel] different, like 'He's got something,' not bad but self-conscious." Four patients did not grasp the importance of PPE. When we asked 1 patient why gowns are used, he responded, "I don't quite remember because I was talked to about this months ago. I don't remember quite what the reason is. I think the gowns are kinda weird. Are they for your protection or mine? Cuz I pass people all the time when I walk down the hall, so why use them in some places and not others? It's a waste of money."

Level of education about CPs varied among patients interviewed. Almost half of the patients revealed they had received little to no education on CPs or were not educated until they asked health care staff about the gowns or signs. Several patients reported feeling uneasy prior to education. As 1 patient stated, "It was scary. I did not know what to think. But my doctor explained to me it's not uncommon and that he's seen it before, so it inspired confidence." Two patients recalled receiving education about the posted signs. In general, interviewed patients com-

Table 1
Demographics of patients interviewed

Characteristics	No. of patients
Gender	
Female	12
Male	8
Race	
White	16
Hispanic	2
African American	1
Refused to answer	1
Education	
High school	7
Some college	7
College degree	4
Advanced degree	2
Are you able to move on your own?	
Yes	14
Yes, with some help	2
No	4
How would you describe your health in general?	
Poor	4
Fair	6
Good	3
Very good	3
Excellent	2

mended their interactions with staff. A majority described staff as friendly and helpful. However, patients also expressed concerns, such as poor physician visibility, unanswered questions, and, most frequently, lengthy response time. Six patients felt that health care staff took too long to respond to calls for assistance.

Our interviews explored patient perceptions of CPs and how these perceptions may impact overall patient care perceptions. We did not find a statistically significant difference in patient satisfaction between the experimental and control groups. It appeared that if patients received education on the why of CPs, they were more likely to view these measures positively. Hospital leaders should consider making patient education regarding PPE and CPs a standard part of care, performed when the patient is in a state to receive this information. Efforts like these will help mitigate the unintended yet deleterious effects that CPs have on patients.[7] Although being under CPs has been observed to have a protective factor for adverse events, our study found that patients' perceptions are still adversely affected.[8] CP education can assuage patients, decreasing negative psychological impact.[9] Patient education efforts, guided by adult learning theories, should be made up front, yet this is atypical.[10] Study limitations include interviewing only English language speakers, social desirability bias, a small and homogeneous sample, and no access to medical records, making illness history/notes on education received unknown. From our small study, we hypothesize that patient education, as a required part of care, may reduce anxiety or feelings of stress or stigma while simultaneously improving patient satisfaction. As resistant infection rates continue to rise, hospital leadership should consider training health care providers on how to educate patients on their isolation status.

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Conflicts of interest: None to report.
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Risk factors for infection in spine surgery: Nested case-control in tertiary hospital in France

To the Editor:

We read with interest the article by Gu et al,[1] "Incidence and Risk Factors for Infection in Spine Surgery: A Prospective Multicenter Study of 1764 Instrumented Spinal Procedures." In this prospective multicenter study, Gu et al[1] included patients ($\geq$18 years old) who had spinal diseases treated by instrumented surgery between January 2015 and February 2016. Their study showed that 58 patients (3.3% of the population) had developed a surgical site infection (SSI) and that the main risk factor for an SSI in this population was the reason for surgery (degenerative disease).

We conducted a similar study on the same subject but with a different methodology. We performed a single-center case-controlled study at Rouen University Hospital, a tertiary care hospital in North West France, to identify specific risk factors for SSI in spinal surgery. Patients aged 18 years and older who underwent spinal surgery between January 1, 2012, and June 30, 2014, were included in prospective SSI surveillance. Cancer surgery was excluded. Possible cases of SSI were validated by both the surgeons and the infection control team. Possible risk factors such as age, sex, obesity, diabetes, current smoking, medical history of spinal surgery, surgical approach, presence of fusion to pelvis, implant, presence of dural tear, reason for surgery (herniated disc, trauma, deformation or degeneration), intraoperative blood loss, American Society of Anesthesiologists Score, surgical sites (cervical, thoracolumbar, thoracic, lumbar), intraoperative transfusion, emergency versus scheduled surgery, multiple trauma, number of levels fused, and surgical antibiotic prophylaxis in accordance with guidelines were retrospectively collected in patients' files, and their association with SSI was assessed with a univariate analysis.

We observed 17 cases of SSI among 384 surgical procedures (incidence rate, 4.4%; 95% confidence interval [CI], 2.4-6.5). The reason for surgery was trauma in 8 cases, degenerative or deformation disease in 8 cases, and herniated disc in 1 case. All 17 procedures involving SSI were done in a posterior approach. Eight of the 17 patients with SSI had lumbar site surgery (47%). Thirteen of the 17 patients (76%) had an implant during their intervention.

Eighty-three control patients (approximately 5 per case) were randomly selected among listed operations, excluding patients with SSI and patients with cancer surgery. Risk factors identified in