e-cigarettes are currently unregulated. Therefore, the tough restrictions on the sale of tobacco to minors do not exist for e-cigarettes. Also, the limitations on where people can smoke do not currently apply to e-cigarettes, with the result that the progress on changing social norms through smoking bans may be threatened. Finally, we simply do not know what potential harm e-cigarettes may cause to their users.

E-cigarettes should be regulated by the US Food and Drug Administration as a drug-delivery device. I agree with Grana and colleagues that sellers of e-cigarettes should not be able to advertise them as smoking cessation devices without sufficient evidence that they are effective for this indication.

Mitchell H. Katz, MD

Do Physicians Spend Less Time With Patients in Contact Isolation? A Time-Motion Study of Internal Medicine Interns

The use of contact isolation precautions for patients colonized or infected with drug-resistant or easily transmissible organisms is a widely accepted strategy for reducing transmission of hospital-associated infections. Although hospitals throughout the country have implemented these practices at great logistical and financial expense, there are few high-quality data to support their use.

Isolation precautions have unintended consequences, including a reduction in time spent with health care providers, lower patient satisfaction, and more preventable adverse events.1-3 Only a few small studies have measured the impact of contact isolation on time spent by health care providers with patients. Given recent advances in spatial tracking technology, we set out to measure differences in time spent by internal medicine interns with patients in contact isolation rooms compared with those in nonisolation rooms.

Methods | The study was approved by the University of California, Los Angeles institutional review board. Using tracking devices attached to hospital identification badges, we collected real-time data on the location of 15 internal medicine interns working in our hospital between October 1, 2012, and December 31, 2012. The devices work by emitting radio-frequency identification (RFID) signals to a network of receivers located throughout our hospital. Based on the strength of the signal relative to the receivers, the location of the asset can be mapped to within a 5-foot radius.

For each intern, the tracking system recorded exact start and end times for each specific location they entered in the hospital. By combining these data with data on the isolation status of each room on a ward where all patients have individual rooms, we were able to compare time spent in isolation vs nonisolation rooms. New patient admissions typically occur in the Emergency Department, and therefore the encounters on the selected ward were primarily patient follow-up visits. SAS software, version 9.3 (SAS Institute Inc), was used to create a mixed model, and individual interns were used as random effects in the model.

Results | There were 1156 encounters with isolated patients and 2467 encounters with nonisolated patients over 3 months of continuous observation. Interns visited isolated patients less often (2.3 visits per day compared with 2.5 visits per day) (P < .001) and spent less time per visit with isolated patients (2.2 minutes per visit compared with 2.8 minutes per visit) (P < .001) (Figure and Table). Thus, on average, interns spent 5.2 minutes per day with each of their isolated patients compared with 6.9 minutes per day with each of their nonisolated patients (P < .001).

Discussion | We were surprised to discover that interns spend little time in direct contact with their patients, and even less time with those patients in contact isolation. Interestingly, in the most recent time-motion study of intern work flow, Block et al4 found that interns spent an average of 7.7 minutes per follow-up visit per day, which is comparable to our average of 6.9 minutes per patient per day for nonisolation patients. Nevertheless, the fact that trainees spend less time with isolated patients might explain why these patients experience more adverse events and have lower overall satisfaction.3,5 particularly if senior residents and attending physicians exhibit the same behavior.

Our results support a growing body of literature suggesting that contact precautions may impede patient care. Infection prevention strategies that minimize the barrier between physicians and patients, including hand hygiene, antimicrobial stewardship, and, as has recently been suggested, universal decolonization,6 should continue to be investigated because these methods may be more effective at reducing the spread of resistant organisms and less disruptive to patients.

Figure. Average Time per Visit Spent by Interns to Isolation vs Nonisolation Rooms

Each data point represents 1 intern. Dashed line shows where values would be if time in isolation and nonisolation rooms were equal. Solid line shows the least-squares regression for the relationship between isolation room and nonisolation room time among interns (Pearson r = 0.65). There were 15 total observations.
Table. Mean Time Spent by Each Intern per Visit to Isolation vs Nonisolation Rooms

<table>
<thead>
<tr>
<th>Intern No.</th>
<th>Isolation</th>
<th>Nonisolation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Encounters, No.</td>
<td>Minutes per Encounter, Mean (SD)</td>
</tr>
<tr>
<td>1</td>
<td>70</td>
<td>2.44 (1.93)</td>
</tr>
<tr>
<td>2</td>
<td>90</td>
<td>1.67 (0.94)</td>
</tr>
<tr>
<td>3</td>
<td>150</td>
<td>2.33 (1.98)</td>
</tr>
<tr>
<td>4</td>
<td>116</td>
<td>1.83 (2.16)</td>
</tr>
<tr>
<td>5</td>
<td>51</td>
<td>2.51 (2.65)</td>
</tr>
<tr>
<td>6</td>
<td>52</td>
<td>1.75 (1.05)</td>
</tr>
<tr>
<td>7</td>
<td>81</td>
<td>2.19 (1.78)</td>
</tr>
<tr>
<td>8</td>
<td>92</td>
<td>1.96 (1.50)</td>
</tr>
<tr>
<td>9</td>
<td>146</td>
<td>2.29 (2.20)</td>
</tr>
<tr>
<td>10</td>
<td>59</td>
<td>2.05 (1.71)</td>
</tr>
<tr>
<td>11</td>
<td>17</td>
<td>1.65 (0.86)</td>
</tr>
<tr>
<td>12</td>
<td>35</td>
<td>3.06 (2.86)</td>
</tr>
<tr>
<td>13</td>
<td>49</td>
<td>2.41 (2.98)</td>
</tr>
<tr>
<td>14</td>
<td>68</td>
<td>1.75 (1.38)</td>
</tr>
<tr>
<td>15</td>
<td>80</td>
<td>3.55 (3.70)</td>
</tr>
</tbody>
</table>

Further research is needed, both to better define the patient population for whom the benefits of contact isolation outweigh the risks and to develop strategies to ameliorate those risks for those who must be placed into isolation.

Cody N. Dashiell-Earp, MD, MBA
Douglas S. Bell, MD, PhD
Alexis O. Ang, MD, MPH
Daniel Z. Uslan, MD, MS

Author Affiliations: Department of Internal Medicine, David Geffen School of Medicine at University of California, Los Angeles (Dashiell-Earp, Bell, Uslan); Biomedical Informatics Program at the Clinical and Translational Science Institute, University of California, Los Angeles (Bell); Division of Infectious Diseases, University of California, Los Angeles (Uslan).

Corresponding Author: Cody N. Dashiell-Earp, MD, MBA, Department of Internal Medicine, Ronald Reagan UCLA Medical Center, 757 Westwood Plaza, Ste 7501, Los Angeles, CA 90095-7417 (cdashiellearp@mednet.ucla.edu).

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Author Contributions: Dr Dashiell-Earp had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

Study concept and design: Dashiell-Earp, Uslan.

Acquisition of data: Dashiell-Earp, Bell, Uslan.

Analysis and interpretation of data: Dashiell-Earp, Bell, Ang, Uslan.

Drafting of the manuscript: Dashiell-Earp.

Critical revision of the manuscript for important intellectual content: Dashiell-Earp, Bell, Ang, Uslan.

Statistical analysis: Bell, Ang.

Administrative, technical, and material support: Dashiell-Earp, Bell.

Study supervision: Uslan.

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Predictors of Mortality and Major In-Hospital Adverse Events Associated With Electrophysiology Catheter Ablation

Catheter ablation has become an important strategy for the treatment of cardiac arrhythmias and is generally safe. Conflicting data have emerged on the mortality and complication rates in these procedures. This study examines the in-hospital outcomes for ablation for supraventricular and ventricular arrhythmias in the large Nationwide Inpatient Sample (NIS) Registry.

Methods | This study was granted an exemption from oversight by the Medical College of Wisconsin institutional review board. The NIS database includes 20% of hospital discharges in the United States. We queried in-hospital mortality associated with ablations performed for any indication (supraventricular and ventricular arrhythmias) between 1998 and 2009. For our analysis, we used survey commands in STATA 12.1 statistical software (StataCorp). The NIS database was queried for procedure codes that may indicate complications of ablation, including blood transfusions, cardiothoracic surgery, pericardiocenteses, and pacemaker implantation.

Results | During the 92 848 710 hospitalizations, 115 955 catheter ablations were performed. The mean (SD) patient age was 60.6 (17.8) years, 43.8% of patients were female, and 52.3% of procedures were elective. There were 708 in-hospital deaths reported in patients who underwent ablation during the index admission (0.6%). This is comparable to the overall mortality of all admissions during the same period of 2.2% (Figure 1). There was no difference in mortality (P = .53) for patients undergoing catheter ablation based on the year of the ablation. Ablation was listed as the primary procedure in 72.5% of cases. The total number of admissions and hospital admissions over the study period within the NIS database are shown in Figure 2.