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.

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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, pericardiocentesis, 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 ablations and hospital admissions over the study period within the NIS database are shown in Figure 2.
Catheter ablation may have been associated with 17,628 potential major in-hospital complications, reaching an overall risk of complications of 15.2%. There were 80 emergent cardiac surgical procedures (0.1%), 255 pericardiocenteses (0.2%), 2,304 blood transfusions (2.0%), and 14,989 implantations (12.9%) of a permanent pacemaker during the index hospitalization.

Discussion | Previously reported mortality rates for catheter ablation have ranged from 0.1% to 0.3%.\(^1\)–\(^3\) This study demonstrates that the in-hospital mortality on admissions where ablation was performed was 0.6%. This likely overestimates the mortality of ablation because this includes all deaths during the index hospitalization, regardless of the association with the ablation. No significant trend was demonstrated in ablation-related mortality over the 11-year period and was lower than the mean mortality rate of all NIS admissions.

This study identified an overall potential rate of periprocedural complications of 15.2%. The most common complications were blood transfusions and implantation of a permanent pacemaker. It is not possible to discern from the NIS database if the ablation procedure caused these potential complications or if they arose for other unrelated reasons; 15.2% should represent the upper bound of the true complication rate.

There are several important limitations related to the use of an administrative in-hospital database. Discharge data captures only events that occur during an index hospitalization, and as such, mortality or complications that occur outside of the hospital are not counted. Mortality, as well as complications such as transfusions, are not known to be caused by the catheter ablation. The actual mortality associated with ablation should be no higher than these data demonstrate and is likely lower. Only in-hospital ablations are considered, so the actual mortality of all ablations (including lower-risk procedures performed on an outpatient basis) may be lower. The NIS database element of elective status was reported in the Results section to attempt to account for this. In addition, ablations are heterogeneous; thus the overall complication rate is sensitive to the mix of procedures.

In conclusion, there is a 0.6% risk of in-hospital mortality and as high as a 15% risk of complications associated with catheter ablation. Because the causes of mortality and potential complications are unknown, these rates represent the upper bounds of ablation-related mortality and morbidity. These results should inform discussions of potential procedural risk between an electrophysiologist and a patient considering ablation procedures.

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Statistical analysis: Curley, Rubenstein. Administrative, technical, or material support: Curley, Roth, Benjamin, Rubenstein.
Study supervision: Berger, Rubenstein.
Conflict of Interest Disclosures: None reported.
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Medical Conspiracy Theories and Health Behaviors in the United States
Over the past 50 years, numerous conspiracy theories have materialized around public health matters such as water fluoridation, vaccines, cell phones, and alternative medicine. What remains unclear is whether the American public supports these conspiracy theories or whether they correlate with actual health behaviors.

Methods | To determine the extent of “medical conspiracism” in the American public, a nationally representative, online-survey sample of 1351 adults was collected in August and September of 2013 by Internet market research company YouGov. The survey results were then weighted to provide a representative sample of the population and have the same degree of accuracy as in-person or telephone surveys. This research was approved by the institutional review board of the University of Chicago. Respondents who took part in the survey gave their written consent.

Results | Table 1 lists the proportions of Americans who report having heard of 6 popular medical conspiracy theories (the full wording is in the table) and their levels of agreement with each. Conspiracy theories about cancer cures, vaccines, and cell phones are familiar to at least half of the sample. These theories also enjoy relatively large levels of support: 37% of the sample agreed that the Food and Drug Administration is intentionally suppressing natural cures for cancer because of drug company pressure; 20% agreed either that corporations were preventing public health officials from releasing data linking cell phones to cancer or that physicians still want to vaccinate children even though they know such vaccines to be dangerous. Conspiracy theories about water fluoridation, genetically modified foods, and the link between the human immunodeficiency virus and the US Central Intelligence Agency were less well known: less than one-third of the sample said that they had heard of these conspiracy narratives and only 12% of respondents agreed with each. In sum, 49% of Americans agree with at least 1 medical conspiracy theory and 18% agree with 3 or more. These percentages are largely consistent with those found by surveys about political conspiracy theories.

These conspiracist beliefs, in turn, are correlated with a variety of health behaviors. Table 2 lists the proportion of respondents engaging in various health activities by the number of medical conspiracies they believe in, either none, 1 or 2 (“low conspiracists”), or 3 or more (“high conspiracists”). The survey indicates that conspiracism correlates with greater use of alternative medicine and the avoidance of traditional medicine. High conspiracists were more likely to buy farm stand or organic foods and use herbal supplements; conversely, they were less likely to use sunscreen or get influenza shots or annual checkups. For example, whereas 20% of the total sample reported using herbal supplements, 35% of high conspiracists do. And whereas 45% of the total sample reported getting annual physical examinations, only 37% of the high conspiracists do. Subsequent multivariate analysis that controls for socioeconomic status, paranoia, and general social estrangement indicates that medical conspiracism remains a robust predictor of these health behaviors.

Discussion | Although it is common to disparage adherents of conspiracy theories as a delusional fringe of paranoid cranks, our data suggest that medical conspiracy theories are widely known, broadly endorsed, and highly predictive of many common health behaviors. Rather than viewing medical conspiracism as indicative of a psychopathological condition, we can...

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Table 1. Americans Agreeing With Various Medical Conspiracy Theories, 2013

<table>
<thead>
<tr>
<th>Medical Conspiracy Narrative</th>
<th>Respondents, % (N = 1351)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Heared Before</td>
</tr>
<tr>
<td>The Food and Drug Administration is deliberately preventing the public from getting natural cures for cancer and other diseases because of pressure from drug companies.</td>
<td>63</td>
</tr>
<tr>
<td>Health officials know that cell phones cause cancer but are doing nothing to stop it because large corporations won’t let them.</td>
<td>57</td>
</tr>
<tr>
<td>The CIA deliberately infected large numbers of African Americans with HIV under the guise of a hepatitis inoculation program.</td>
<td>32</td>
</tr>
<tr>
<td>The global dissemination of genetically modified foods by Monsanto Inc is part of a secret program, called Agenda 21, launched by the Rockefeller and Ford foundations to shrink the world’s population.</td>
<td>19</td>
</tr>
<tr>
<td>Doctors and the government still want to vaccinate children even though they know these vaccines cause autism and other psychological disorders.</td>
<td>69</td>
</tr>
<tr>
<td>Public water fluoridation is really just a secret way for chemical companies to dump the dangerous byproducts of phosphate mines into the environment.</td>
<td>25</td>
</tr>
</tbody>
</table>

Abbreviations: CIA, Central Intelligence Agency; HIV, human immunodeficiency virus.

* Percentages may not total 100% because of rounding.