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Rates of Advanced Imaging by Practice Peers After Malpractice Injury Reports in Florida, 2009-2013

The cumulative risk for physicians of facing a malpractice claim is high across all specialties.¹ The perception of this risk may drive defensive medicine, including the use of diagnostic

imaging.² Certain events, such as injury reports against one's practice peer, may increase the perception of this risk. It is unknown whether such reports, which are precursors to malpractice suits, are associated with greater subsequent use of diagnostic imaging.

Methods | I performed analyses using 2009-2013 claims data for a random 20% sample of Medicare beneficiaries linked by physician to publicly available 2010-2012 injury reports on Florida physicians from the Florida Office of Insurance Regulation.³ Physicians are notified of reports against them,⁴ and a subset of reports result in a malpractice suit or paid claim. Using Medicare data, I identified nonextremity computed tomography scans or magnetic resonance imaging that occurred within 7 days of an evaluation and management (E&M) visit to primary care physicians and medical specialists for beneficiaries aged 65 years or older who were continuously enrolled in Medicare Parts A and B that calendar year. The outcome was the physician rate of advanced imaging testing, defined as the number of E&M visits that resulted in an advanced imaging test over the total number of E&M visits in a given quarter of a year for a physician. The National Bureau of Economic Research Institutional Review Board waived human participant review for the study because the patient data lacked identifiers.

I identified physician practices using tax identification numbers in the Medicare data. I focused on practices that had at most 1 injury report in the examined time period. My empirical specification was an event study that compared rates of advanced imaging tests performed by practice peers of a physician who had a report against him or her from 4 quarters before the report to 4 quarters after, with the quarter prior to the report as the reference category. I included physician fixed effects, quarter by year fixed effects, and controls for mean age, sex, non-Hispanic white race/ethnicity, and Elixhauser comorbidity score⁵ of a physician's patients in a given quarter. I included physicians in practices with no injury report during the examined time period to obtain more precise estimates of the coefficients of interest. I clustered SEs at the practice level. All *P* values were from 2-sided tests and results were deemed statistically significant at *P* < .05.

Results | The sample included 361 physicians with a peer who had an injury report across 2918 physician quarters (Table). The mean rate of advanced imaging was 2.3 per 100 E&M visits for physicians whose peer had an injury report. Compared with the quarter prior to the injury report against their peer, the rate of advanced imaging was 0.78 per 100 E&M visits higher (95% CI, 0.14-1.42) in the quarter after the injury report (Figure). The difference was no longer statistically significant the second quarter after the report. None of the other coefficients for the quarter relative to the report were statistically significant. In sensitivity analyses, in performing a difference-in-differences analysis replacing the event time variables with a single post-injury report variable, the coefficient of this variable was 0.43 (95% CI, 0.20-0.65). Results were driven more by reports of injuries that resulted in death (coefficient, 0.49; 95% CI, 0.24-0.73) compared with those that did not result in death (coefficient, 0.23; 95% CI, -0.22 to 0.67).

Table. Sample Characteristics in Florida, 2009-2013

Characteristic	Mean Values ^a			P Value for Difference ^b
	All	Practice Peers of Physicians With 1 Injury Report	Physicians in Practices With No Injury Reports	
Physicians, No.	20 200	361	19 839	NA
Physician quarters, No.	193 530	2918	190 612	NA
Rate of imaging	0.029	0.023	0.029	<.001
Age, y	77.2	77.2	77.2	.60
Female sex	0.578	0.592	0.578	.005
Minority race/ethnicity ^c	0.195	0.149	0.196	<.001
Elixhauser score ^d	4.99	4.88	4.99	.001

Abbreviation: NA, not applicable.

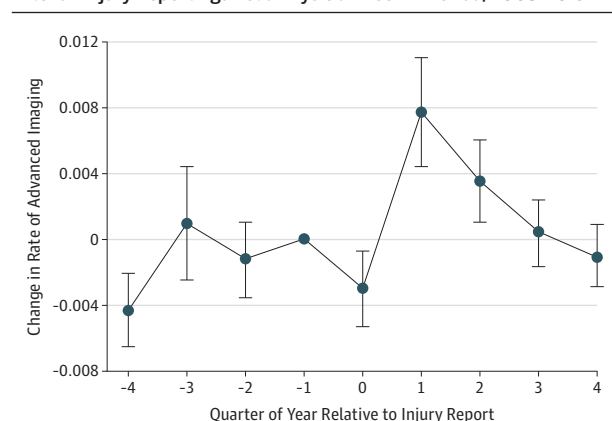
^a Across all physician quarters.

^b Calculated using t tests.

^c Race/ethnicity was self-reported. *Minority* refers to any race/ethnicity that is not non-Hispanic white.

^d Elixhauser Comorbidity software identifies up to 31 patient comorbidities, such as hypertension and diabetes, based on diagnosis codes found in administrative data, and the Elixhauser comorbidity score is the sum of these comorbidities.

Figure. Change in Rate of Advanced Imaging After an Injury Report Against a Physician Peer in Florida, 2009-2013



The bands are SEs clustered at the practice level. Estimates are from a regression that includes physician fixed effects, quarter-by-year fixed effects, and controls for mean age, sex, non-Hispanic white race/ethnicity, and Elixhauser score of a physician's patients in a given quarter. The quarter prior to the malpractice report is the reference category. Elixhauser Comorbidity software identifies up to 31 patient comorbidities, such as hypertension and diabetes, based on diagnosis codes found in administrative data, and the Elixhauser score is the sum of these comorbidities.

Discussion | Rates of advanced imaging increased 0.78 per 100 E&M visits compared with a mean of 2.3 in the first quarter after an injury report against a physician's peer, but this increase did not persist. These results are consistent with prior research that suggests that perceived malpractice risk, rather than objective malpractice risk, may influence defensive medicine.² Limitations to this study include an inability to distinguish responses based solely on malpractice concerns from responses based on wanting to avoid similar injuries. Results are limited to the Medicare population in Florida and may not be generalizable to other populations.

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Findings From the Behavioral Risk Factor Surveillance System on Health-Related Quality of Life Among US Transgender Adults, 2014-2017

The National Institutes of Health has prioritized research into disparities affecting the transgender population. An important domain in disparities research is health-related quality of life (HRQOL), which reflects the burden of chronic and acute physical and mental health conditions as well as unmet health care needs.¹ Historically, a lack of routine, standardized data collection has hindered explorations of transgender population health and HRQOL. In 2014, however, the Centers for Disease Control and Prevention (CDC) introduced an optional Sexual Orientation and Gender Identity module for the Behavioral Risk Factor Surveillance System (BRFSS). In 2014 through 2017, 36 states and territories representing almost 75% of the US population used the module at least once. This study compared HRQOL between transgender and cisgender adults in this rare probability sample of the transgender population.

Methods | The BRFSS is the largest continuously operating health survey in the world and is fielded annually by every state. The Sexual Orientation and Gender Identity module includes a question that asks, "Do you consider yourself to be transgender?" with the following primary answer options: (1) yes, transgender, male to female; (2) yes, transgender, female to male; (3) yes, transgender, gender nonconforming; and (4) no. Gender identity in the pooled 2014 through 2017 BRFSS data set was classified as transgender (response options 1-3;