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Why do surgeons receive more complaints than their physician peers?

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Title: Why do surgeons receive more complaints than their physician peers?

Running head: Complaints about surgeons and physicians

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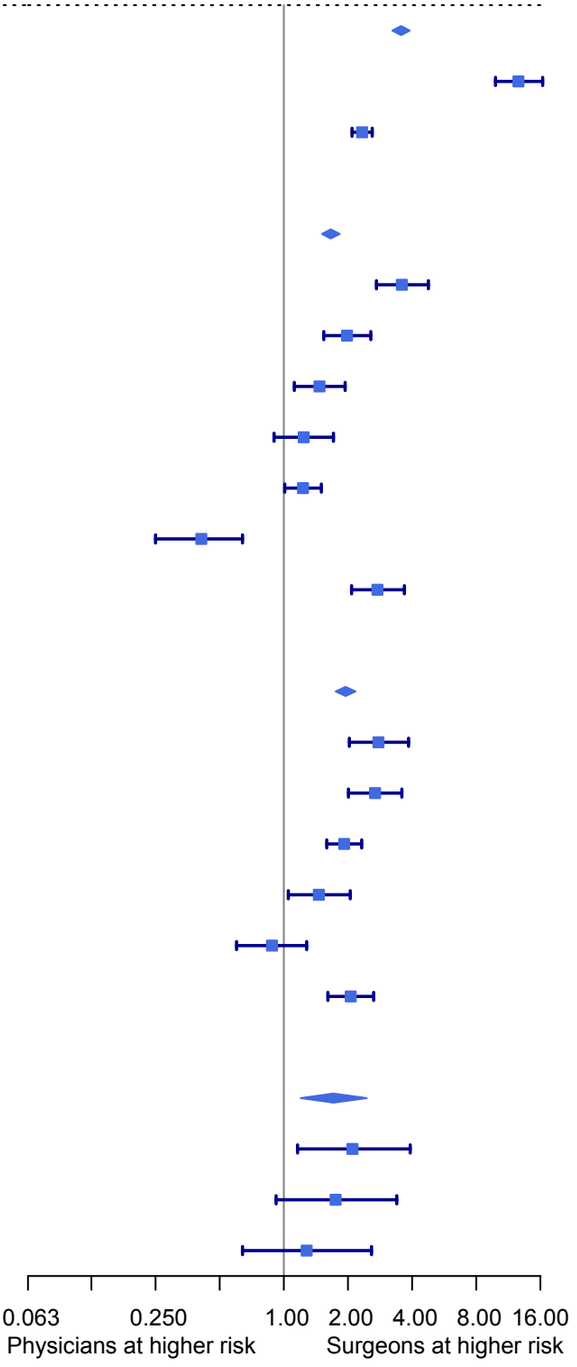
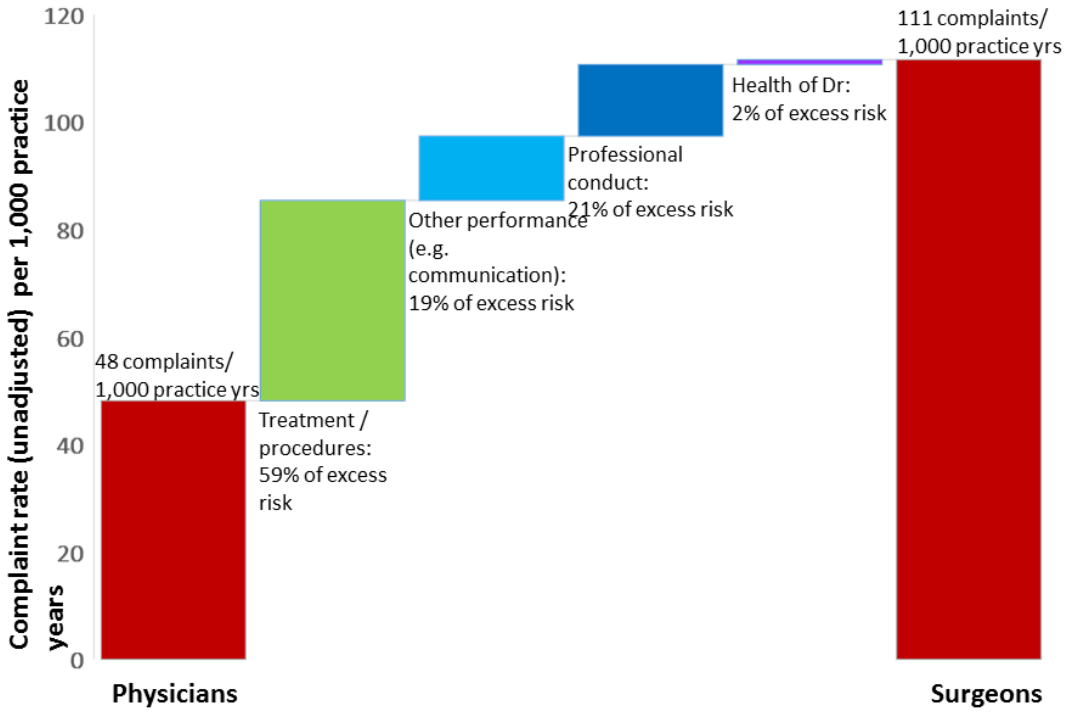
3 tables, 2 figures, abstract 235 words, text 2511 words

Reference group: Physicians	IRR (95% CI)	Complaints: Surgeons	Complaints: Physicians
Treatment and Procedural Concerns	**3.55 (3.23 - 3.90)**	**1707**	**583**
Procedures	12.62 (9.85 - 16.40)	719	69
Treatment	2.33 (2.09 - 2.60)	988	514
Other Performance Concerns	**1.66 (1.51 - 1.83)**	**987**	**719**
Monitoring and Follow-up	3.58 (2.72 - 4.77)	207	70
Communication	1.98 (1.54 - 2.56)	167	102
Access and delays	1.47 (1.12 - 1.94)	119	98
Investigation/tests	1.24 (0.90 - 1.71)	83	81
Assessment/diagnosis	1.23 (1.01 - 1.50)	218	215
Prescribing *	0.41 (0.25 - 0.64)	27	80
Other performance issues	2.75 (2.08 - 3.68)	166	73
Professional Conduct Concerns	**1.95 (1.75 - 2.17)**	**898**	**559**
Reports and certificates	2.78 (2.03 - 3.85)	133	58
Fees and Fraud	2.68 (2.01 - 3.58)	159	72
Interpersonal behaviour	1.92 (1.59 - 2.32)	291	184
Records	1.46 (1.05 - 2.05)	82	68
Sexual boundaries	0.88 (0.60 - 1.28)	51	70
Other conduct issues	2.06 (1.61 - 2.64)	182	107
**Health Concerns ** **	**1.71 (1.20 - 2.45)**	**79**	**56**
Substance use	2.10 (1.16 - 3.92)	33	19
Physical health and cognition	1.75 (0.92 - 3.39)	26	18
Mental Health	1.28 (0.64 - 2.58)	19	18



** Note: This category also includes a small number of conduct issues relating to unlawful use or supply of medicines*
***Note: 'Health impairment - other' not shown due to small numbers*



Why do surgeons receive more complaints than their physician peers?

Abstract

Introduction: Compared with other doctors, surgeons are at increased risk of medicolegal events, including patient complaints and negligence claims. This retrospective study aimed to describe the frequency and nature of complaints involving surgeons, compared with physicians.

Methods: We assembled a national dataset of complaints about surgeons and physicians lodged with medical regulators in Australia from 2011 to 2016. We classified the complaints into 19 issues across four domains: treatment and procedures, other performance, professional conduct, and health. We assessed differences in complaint risk using incidence rate ratios. Finally, we used a multivariate model to identify predictors of complaints among surgeons.

Results: The rate of complaints was 2.3 times higher among surgeons than physicians (112 compared with 48 complaints per 1,000 practice years, $p < 0.001$). Two-fifths (41%) of the higher rate of complaints among surgeons was attributable to issues other than procedures and treatments, including fees (IRR = 2.68), substance use (IRR = 2.10), communication (IRR = 1.98), and interpersonal behaviour (IRR = 1.92). Male surgeons were at higher risk of complaints, as were specialists in orthopaedics, plastic surgery, and neurosurgery.

Discussion: Surgeons are more than twice as likely to attract complaints as their physician peers. This elevated risk arises partly from involvement in surgical procedures and treatments, but also reflects wider concerns about interpersonal skills, professional ethics, and substance use. Improved understanding of these patterns may assist efforts to reduce harm and support safe practice.

Abstract word count: 235 words

Introduction

Compared with doctors in other specialties, surgeons are at higher risk of medicolegal events, including patient complaints(1) and negligence claims.(2, 3) One possible explanation is that surgeons administer the riskiest treatments to the sickest patients; and therefore easily-observable poor outcomes go with the territory.(4) A competing explanation is that behaviours that provoke medico-legal actions (e.g. poor communication skills) are more prevalent among surgeons—either because persons with such traits select into surgery, or because these traits develop during training and practice.(5)

These are theories. There is little hard evidence about why surgeons experience more medico-legal events than their peers in other specialties. A deeper understanding of this difference could support efforts to improve standards, including changes in regulatory practices and professional development.

This study focused on one type of medicolegal risk – complaints to regulators. Our study had two aims. First, we sought to compare the risk of complaints among surgeons to the risk among physicians. Physicians were chosen as the comparison group because they undergo a similar period of training and work in similar hospital environments. Second, using detailed information on complaint issues, we sought to locate any risk difference between the two groups.

Methods

Data

We created two datasets and linked them: a registration dataset and a complaints dataset. The registration dataset consisted of information on all surgeons and physicians registered in Australia between January 2011 and December 2016, including their age, sex, specialty, practice location, and dates of registration. Our complaints dataset consisted of information on all complaints lodged with medical regulators, such as the Medical Board of Australia and the Medical Council of New South Wales, during the study period. The Australian Health Practitioner Regulation Agency (AHPRA) provided complaints data for all states and territories, except New South Wales. The Health Professionals Council Authority (HPCA) provided equivalent data for New South Wales. We linked the datasets using anonymised, unique identification variables.

Measures

We defined surgeons to include all specialists in adult and paediatric surgery; physicians included all specialists in adult internal medicine. AHPRA provided information on doctors' birth dates in five year bands (e.g. 1970 to 1974). We recoded these dates to reflect each doctor's age group in 2015.

Complaints were originally coded by AHPRA case-managers into one of 149 complaint categories. Two reviewers independently classified these 149 categories into 19 complaint issues (e.g. procedures, prescribing). For example, complaints about bullying, discrimination, disrespect, threats and assault were coded as "interpersonal behaviour"; concerns about a practioner's use of alcohol or drugs were coded as "substance use". Any coding differences were resolved by consensus. We then grouped these 19 issues into four domains relating to: (1) treatment and procedures; (2) other performance; (3) professional conduct; and (4) health of the doctor.

To control for differences in clinical practice time we created a measure of exposure time ("practice years") and adjusted for it in analyses. Practice years were estimated at the doctor level, as a multiplicative function of two variables: the duration of registration and the average number of clinical hours worked per week by doctors of the same age, sex, and specialty(6) (see Table S1).

Data analyses

First we described the characteristics of doctors and complaints in our study using counts and percentages. To estimate the incidence of complaints among surgeons and physicians, we conducted analyses within each of the four domains and 19 complaint issues. The incidence rate ratios (IRRs) we report indicate the ratio of the complaint rate amongst surgeons to the complaint rate amongst physicians, after adjusting for practice years.

To understand in more depth how complaint rates varied between surgeons and physicians, we calculated the absolute difference between complaint rates in each specialty (the excess risk) and disaggregated this by the domain of the complaints (see Table S2 for further details). Finally, we used multivariate analyses to evaluate the association between age, sex, location and surgical subspeciality and complaint risk in surgeons. Analyses were conducted using Stata 14.0 (College Station, TX).

The University of Melbourne's ethics committee approved the study. AHPRA and HPCA provided the data in a de-identified form under a strict data protection plan and deed of confidentiality.

Results

Characteristics of doctors and their complaints

A total of 5,885 surgeons and 8,303 physicians were registered to practise during the study period. Surgeons and physicians differed with respect to age, sex and practice location (all $p < 0.001$) (Table 1). On average, surgeons were more likely to be older (surgeons: 21% over 65 years vs. physicians:

14% over 65), to be male (surgeons: 90% vs. physicians: 71%) and to work in regional or remote areas (surgeons: 16% vs. physicians: 12%).

There were 3,671 complaints about surgeons and 1,917 complaints about physicians during the study period. Six percent of surgeons had three or more complaints, accounting for 42% of all complaints about surgeons.

Source and outcome of complaints

Across both groups, over 85% of the complaints were made by patients or their relatives, with a further 10% coming from fellow practitioners and employers (Table 2).

Approximately 10% of complaints resulted in regulatory action such as a reprimand or imposition of conditions. A further 15% were referred to another body, such as a health complaints commissioner. The finding that over 60% of complaints resulted in no further action does not mean they were unfounded: no further action is common if steps have already been taken to address the concerns raised. On average, complaints about surgeons took longer to resolve (surgeons: median of 87 days vs. physicians: median of 79 days, p=0.001).

Complaint rates and rate ratios

Overall, the rate of complaints among surgeons was 2.3 times higher then the rate of complaints among physicians (111.4 vs 48.0 complaints per 1,000 practice years).

Surgeons had higher rates of complaints across all four domains of practice: treatment/procedure (IRR=3.55, 95% CI=3.23-3.90), other performance (IRR = 1.66, 95% CI = 1.51-1.83), professional conduct (IRR = 1.95, 95% CI = 1.75-2.17), and health (IRR = 1.71, 95% CI =1.20-2.45) (Figure 1). However, the size of the rate difference varied substantially across the 19 issues. The rate of complaints regarding procedures among surgeons was more than 12 times larger than the rate among physicians (IRR=12.62, 95% CI=9.85-16.40). Surgeons were at substantially increased risk of complaints regarding monitoring and follow-up (IRR = 3.58, 95% CI = 2.72 – 4.77), reports and certificates (IRR = 2.78, 95% CI = 2.03-3.85), fees and fraud (IRR = 2.68, 95% CI = 2.01-3.59), substance use (IRR = 2.10, 95% CI = 1.16-3.92), communication (IRR = 1.98, 95% CI 1.54-2.56) and interpersonal behaviour (IRR 1.92, 95% CI 1.59-2.32) . On the other hand, surgeons had a lower rate of complaints regarding prescribing of medicines (IRR = 0.41, 95% CI = 0.25-0.64).

Composition of risk difference

Fifty nine percent of the overall risk difference between surgeons and physicians was attributable to a higher rate of complaints relating to treatments and procedures (Figure 2). The remaining risk difference (41%) arose from other performance, professional conduct, and health concerns.

Risk factors for complaints among surgeons

Compared to surgeons aged 35 years or less, surgeons aged over 65 years were at highest risk of complaint (IRR 6.57, 95% CI=4.61 – 9.37) (Table 3). After adjusting for age, surgical sub-specialty, location, and clinical hours worked, male surgeons were 1.31 (95% CI =1.09-1.57) times more likely to be the subject of a complaint compared with their female peers. Those who practiced in regional and rural areas were more likely to be the subject of a complaint compared with their metropolitan peers (IRR = 1.22, 95% CI = 1.07 – 1.39).

Surgeons who specialised in neurosurgery, plastic surgery, and orthopaedic surgery were at higher risk of complaint compared with general surgeons (IRR 1.75, 1.74, and 1.30 respectively). A sensitivity analysis confined to complaints that resulted in regulatory action (such as the imposition of conditions) showed similar findings, however the elevated risk for male surgeons, regional/remote surgeons, and specialty was no longer statistically significant (see Table S3 for details).

Discussion

Summary of principal findings

This analysis of over 5,500 complaints lodged with regulators in Australia over a six year period found that, overall, surgeons had more than twice the rate of complaints experienced by their physician peers. There were clear "hot-spots" of risk. Incidence rate ratios showed that, compared with physicians, surgeons had more than ten times the risk of complaints in relation to procedures. Approximately three-fifths of the risk difference between surgeons and physicians arose from complaints relating to treatments or procedures. The remainder of the difference arose from surgeons' higher risk of complaints across a range of issues: surgeons had complaint rates more than 1.5 times as high as physicans in relation to monitoring and follow-up, fees and fraud, reports and certificates, substance use, communication, and interpersonal behaviour. Surgeons were at lower risk in relation to prescribing. Risk was increased among male surgeons, older surgeons, regional or remote surgeons, and specialists in orthopaedics, neurosurgery and plastic surgery.

Results in context

Previous research has shown that surgeons have a higher risk of medicolegal events than other doctors.(1-3, 7-10) Some surgeons have speculated that this arises from the procedural nature of their work – in particular its level of risk, and the immediate and overt nature of its outcomes.(4) Although

we found that treatment and procedure-related complaints were more prevalent in surgeons than physicians, we also also found systematic differences in complaints over other issues including communication and interpersonal behaviour. Recent research into discrimination and bullying in the surgical profession found that these behaviours are "pervasive and serious problems in the practice of surgery".(5) Our findings bolster these concerns.

Previous studies have shown worrying levels of alcohol misuse(11) and burnout(12) among surgeons. This study found that – while health related complaints were rare – surgeons were significantly more likely to be the subject of a complaint about substance use. This is an important finding, not only because of its implications for the wellbeing of individual surgeons, but because substance use can have an adverse impact on patient care.(13, 14)

Consistent with previous studies (1, 3, 7, 15) we found that being older, male, and a specialist in neurosurgery, plastic surgery, or orthopaedics were risk factors for complaints. Further analysis of individual and systemic factors leading to complaints within these groups is needed, and craft groups should be actively involved in developing interventions to remedy recurring patterns of complaint.

Strengths and limitations

To the best of our knowledge, this is the first published study to use complaints data to investigate the excess risk of medico-legal events among surgeons. A key strength is its comprehensiveness: the analysis included every surgeon and physician registered in Australia. The detailed data on doctors' demographic characteristics and the complaints lodged allowed us to disaggregate complaint rates, while accounting for registration time and an estimate of clinical hours worked.

Our study has several limitations. First, medical regulators coded the concerns raised by complaints when they were received; this coding does not reflect new information uncovered during subsequent investigation. Second, we were unable to measure a number of important practitioner-level variables such as whether the surgeons and physicians in our study were working in public or private practice, the systems and supports available to them, or the complexity of their caseload.

Finally we note that complaints to regulators represent only a fraction of the harm and dissatisfaction experienced as a result of medical and surgical care. Some patients and relatives will raise their concerns directly with the doctor or hospital involved, the relevant college, or a civil court; many others will not speak up at all, despite poor care experiences.(16) Conversely, some complaints arise in response to unavoidable complications rather than any lapse or wrongdoing by the doctor. However regardless of the outcome, the fact that a complaint was lodged means someone was

sufficiently worried or dissatisfied to raise a concern, and can result in a time-consuming and stressful experience for the doctor concerned.

Conclusion

There are important differences in the risk of complaints between surgeons and physicians. To explain the higher rate of complaints among surgeons as an artefact of the nature of surgical care is overly simplistic. Treatments and procedures account for some of the excess complaints risk; the remainder relates to wider issues of professionalism such as communication, interpersonal behaviour, and substance use.

Our findings lend weight to calls to improve the professional culture within surgery. Recent efforts to identify, understand and address bullying and harassment are an important step in the right direction.(17) A collective effort by educators, regulators, employers and surgeons is needed to foster and role-model a culture in which surgeons are supported to care safely for themselves, their colleagues, and their patients.

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List of supporting information

Table S1: Predicted working hours

Table S2: Excess risk disaggregation

Table S3: Sensitivity analysis results – complaints resulting in regulatory action

Table 1: Characteristics of surgeons and physicians in practice during study period

	Registered to practise during study period		
	Surgeons (n=5,885)	**Physicians (n=8,303)**	**p-value**
	% [a]	**%**	
Age [b]			<0.01
d35	5	10	
36-45	31	35	
46-55	26	25	
≥56	17	17	
≥66	21	14	
Sex			<0.01
Female	10	29	
Male	90	71	
Practice location			<0.01
Metropolitan	84	88	
Regional / remote area	16	12	
Surgical subspecialty			N/A
General surgery [c]	37	N/A	
Orthopaedic surgery	25	N/A	
Ear, nose, throat and oral surgery	11	N/A	
Plastic surgery	8	N/A	
Urology	8	N/A	
Neurosurgery	4	N/A	
Cardio-thoracic surgery	3	N/A	
Paediatric surgery	2	N/A	

[a] Percentages in subcategories may not add up to the total number due to missing information and rounding

[b] Age in 2015 among surgeons and physicians registered to practice in that year

[c] Includes vascular surgery

Table 2. Source and outcome of complaints[a]

	Surgeons n=3,671	Physicians n=1,917	p-value
	%	%	
Source			0.02
Patient or relative [b]	86	84	
Fellow practitioner	5	6	
Employer	3	2	
Other	6	8	
Regulatory Outcome [c]			0.03
Case still open at end of study period	13	10	
No regulatory action	61	66	
Referral to another body	16	13	
Caution, reprimand, fine, or undertaking	6	7	
Conditions, suspension, cancellation	4	3	

[a] Regulatory outcomes not included for NSW data
[b] Including complaints received via complaints commissions
[c] Does not sum to 100 percent as the outcome was unknown for a small number of complaints

Table 3. Predictors of complaints among surgeons

	Incidence rate ratio (95% confidence interval)	p-values
Age Group		<0.01
d35	1.00	
36-45	3.23 (2.27 – 4.59)	
46-55	5.56 (3.92 – 7.89)	
56-65	6.19 (4.33 – 8.84)	
≥65	6.57 (4.61 – 9.37)	
Sex		<0.01
Female	1.00	
Male	1.31 (1.09 – 1.57)	
Practice location		<0.01
Metropolitan	1.00	
Regional and remote	1.22 (1.07 – 1.39)	
Subspecialty		<0.01
Cardio-thoracic surgery	0.48 (0.34 – 0.66)	
Paediatric surgery	0.53 (0.33 – 0.85)	
General surgery [a]	1.00	
Ear, nose, throat and oral surgery	1.07 (0.91 – 1.26)	
Urology	1.16 (0.97 – 1.39)	
Orthopaedic surgery	1.30 (1.15 – 1.46)	
Plastic surgery	1.74 (1.47 – 2.07)	
Neurosurgery	1.75 (1.42 – 2.17)	

[a] Includes vascular surgery