



Litigations in trauma and orthopaedic surgery: analysis and outcomes of medicolegal claims during the last 10 years in the United Kingdom National Health Service

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- This study analyses the outcomes of litigation claims in trauma and orthopaedic surgery between 2008/2009 and 2018/2019.
- Utilizing a formal request to the NHS Resolution under the Freedom of Information Act, the data related to claims against orthopaedic surgery were obtained. A total of 8548 claims were analysed and re-grouped to perform a meaningful analysis for the type of claims and the type of injuries.
- The total pay-out cost for the settled claims was over £1.2 billion. The most common types of claims were related to mismanagement (39.0%), diagnostic issues (17.6%), perioperative issues (15.9%) and alleged incompetence (10.2%). The most common primary causes for claims were patients' dissatisfaction (52.2%), damage to the limbs (19.0%) and neurological injuries (9.2%).
- The highest amounts of damages paid out were related to patients' dissatisfaction (37.7%), burns and bruising (31.0%), neurological injuries (24.5%) and damage to the limbs (22.3%). The number of claims and the pay-out cost were found to be steadily increasing; however, there was a slightly declining trend observed during the last two years.
- The cost of litigation continues to have a significant financial impact on the NHS. The recent declining trend is encouraging; however, surgeons need to take consistent diligent steps to avoid preventable causes that lead to litigation claims.
- The proposed change in the coding system of claims in the NHS Resolution will not only help to formulate a clear classification system but will also improve the learning from previous experience.

Keywords: clinical negligence; litigation; medicolegal claims; mismanagement; patient satisfaction

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Introduction

Clinical negligence has huge financial implications on healthcare systems around the world and a substantial impact on patients and their families.¹ As a consequence of the dynamic social environment and active promotion of legal services, unsurprisingly a dramatic rise has been observed in healthcare litigations over the recent years.^{2,3} The National Health Service (NHS) Resolution (formerly NHS Litigation Authority, NHSLA, established in 1995, renamed in 2017) is responsible for ensuring that patients who suffer clinical negligence are appropriately compensated by settling valid claims fairly and quickly.⁴ Equally, it helps to protect NHS resources by opposing claims that lack merit or where disproportionately high damages are sought. The cost of the damages paid due to clinical negligence claims across all the specialities in the NHS has steadily increased, recorded at £60 billion in 2016/2017, £77 billion in 2017/2018, £83.4 billion in 2018/2019 and £84.1 billion until the end of March 2020.^{5,6} According to the annual NHS Resolution 2019/2020 report, trauma and orthopaedic surgery accounted for 12% of all the clinical negligence claims by numbers (highest among surgical specialities), and 5% by value of the damages paid out (second highest among surgical specialities after obstetrics and gynaecology).⁶

Trauma and orthopaedic surgeons treat a continuously increasing number of a wide range of conditions in their routine practice. There has been a noticeable advancement in technology and techniques along with an increased range of the available implants over the past two decades.⁷ To some extent, this may have contributed to proportionately increased associated risks and complications resulting in higher rates of potential dissatisfaction and litigation. This study aimed to review and analyse the outcomes of litigations in trauma and orthopaedic surgery over the last 10 years (financial years 2008/2009 to

2018/2019) with a view to identifying the types of claims, primary causes of injuries that led to the claims and the resultant financial losses incurred to the national health services in the United Kingdom.

Materials and methods

A formal request was submitted to the NHS Resolution to obtain the data for all the orthopaedic claims between the financial years 2008/2009 and 2018/2019 under the Freedom of Information Act.⁸ A retrospective review of a prospectively collected data was performed. The data contained information on the primary cause of injury, type of claims, year of the claim being settled, and the damages paid. The data comprised of all the settled claims that had been closed after pay-out. Due to the way the information is currently recorded in the NHS Resolution database, the details of claims were provided without any further classification related to the sub-specialty regions of the body. Therefore, for appropriate analysis, each claim was categorized into a broader category of the complaint. Given the general

grouping methodology and use of common terminology, the final categorization was difficult and was performed based on the 'primary types of claims' and the 'primary types of injuries'. This led to a reasonably understandable and clinically meaningful categorization of the litigation claims over the study period. However, an exact match to clinically established diagnoses was not possible due to the limited information in the recorded database. Some claims were related to more than one category, in which case the claim was allocated to the most suitable clinical category. Statistical analysis was performed using a chi-squared test and a p-value of < 0.05 was considered significant.

Results

Between the financial years 2008/2009 and 2018/2019, there was a total of 8548 claims that were settled and paid out in trauma and orthopaedic surgery across all the NHS trusts in the UK. The total amount paid out to settle these claims was £1.2 billion (£1,236,012,790). Table 1 presents the main primary types of claims and their sub-categories.

Table 1. Analysis of the primary type for claims settled/closed with damages paid out between 2008/2009 to 2018/2019

Claims category	Sub-category	No. of claims settled	Amount paid (£)
Diagnostic issues	Delayed diagnosis	1222	204,267,311
	Failure to refer for X-rays	142	18,781,566
	Failure to perform tests	62	11,185,793
	Wrong diagnosis	45	6,925,808
	Failure to act on abnormal results	38	4,842,734
Incompetence	Failure to recognize complications	350	80,672,969
	Failure to interpret X-rays	189	15,158,163
	Foreign body left in situ	103	5,620,857
	Failure to perform procedure	95	9,965,245
	Failure to supervise juniors	90	10,208,371
	Poor plaster cast application	46	2,070,129
	Delayed treatment	1963	280,671,477
Mismanagement	Inappropriate treatment	763	114,743,251
	Operator error	413	50,871,568
	Failed follow-up arrangements	95	6,460,554
	Performed operation not indicated	88	15,368,005
	Delay in referring to hospital	16	3,177,958
	Intraoperative problems	1222	221,150,960
	Burn (diathermy/antiseptic prep)	65	2,326,978
Perioperative issues	Inadequate intraoperative monitoring	43	7,766,798
	Retained instrument postop	18	385,352
	Application of excessive force	13	804,892
	Bacterial infection	66	18,099,344
	Failed infection control/hygiene	30	5,770,430
Infection	Cross infection	17	1,089,195
	Surgical procedure	75	3,889,804
Wrong-site surgery	Incorrect injection site	9	433,459
	Inadequate nursing care	384	28,918,535
Care-related issues	Medication errors	141	14,727,158
	Lack of assistance/care	103	6,280,919
	Lack of preoperative evaluation	52	7,750,263
	Inappropriate discharge	46	6,907,034
	Infusion problems	11	673,362
	Equipment-related issues	77	5,714,308
	Consent issues	310	48,127,580
Others	59	5,378,785	
Total		8548	1,236,012,790

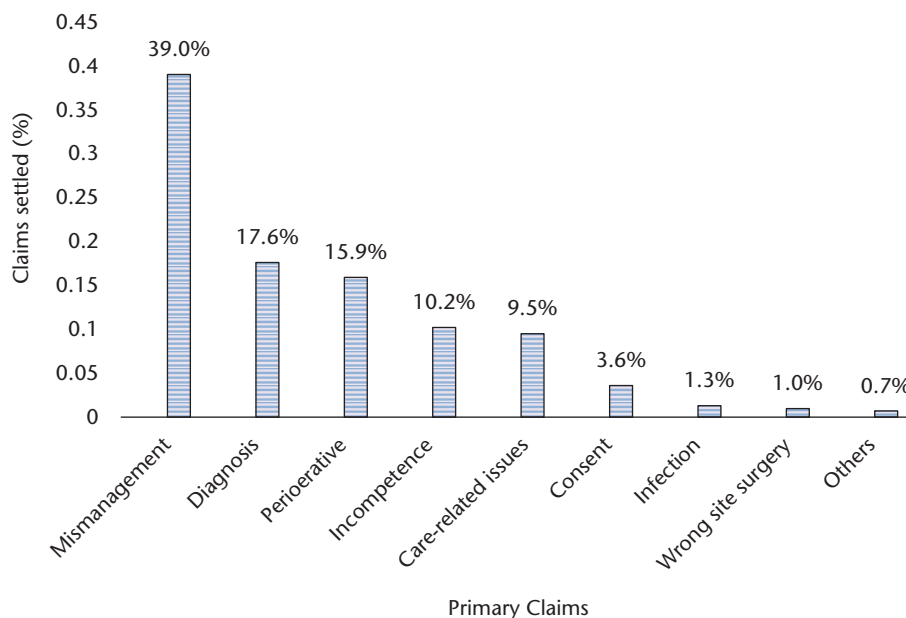


Fig. 1 The primary types of claims.

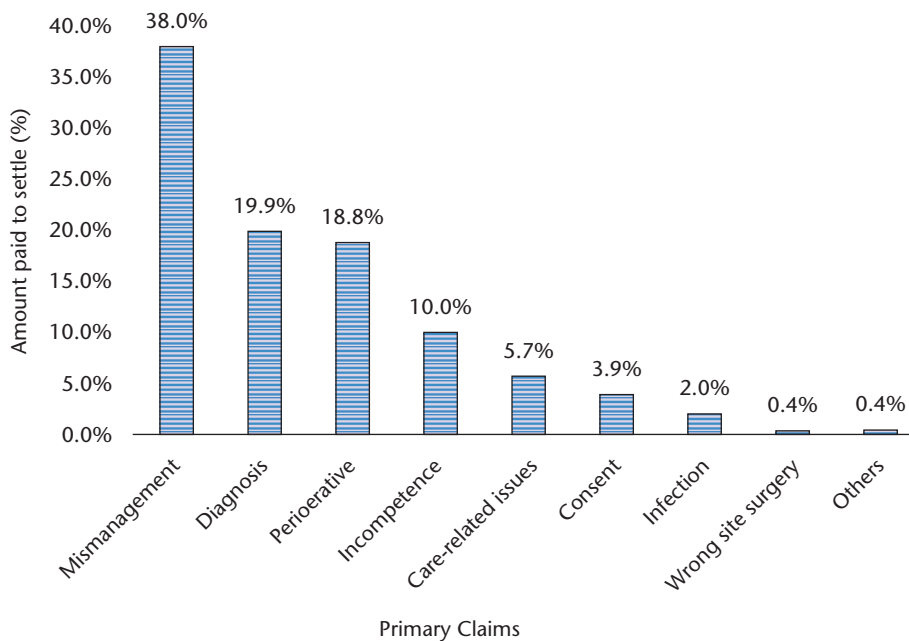


Fig. 2 The damages paid out to settle the primary claims.

Among the category of mismanagement (39.0%), the reasons for claims included delayed treatment (23.0%), inappropriate treatment (9.0%) and operator error (4.3%). Among the category of diagnostic issues (17.6%), the reasons for claims included a delay in diagnosis (14.3%) and failure to perform a test (2.4%) or act on it (1.0%) on time.

Among the perioperative issues (15.9%), the types of claims were primarily related to intraoperative complications

(14.3%) and a small number of cases related to diathermy or antiseptic burns (0.76%) (Fig. 1). The damages paid out to settle the claims were also highest in these categories (Fig. 2). Table 2 presents the main types of injuries and their related sub-categories that led to the claims. The commonest primary causes were patients' dissatisfaction (52.2%), damage to the limbs (19.0%) and neurological injuries (9.2%) (Table 3). Analysis of the

Table 2. Analysis of the primary type of injuries for claims settled/closed and the damages paid out from 2008/2009 to 2018/2019

Type of injury	Outcome	Claims settled	Amount paid (£)	
Neurological injury	Nerve damage	503	115,927,447	
	Spinal damage	99	66,904,507	
	Paraplegia	32	47,587,270	
	Quadriplegia	14	25,637,006	
	Foot drop	94	17,001,514	
	Partial paralysis	26	18,968,404	
	Incontinence	21	10,851,550	
Scar-related issues	Cosmetic disfigurement	17	2,182,676	
	Scarring	112	2,805,558	
Dissatisfaction	Poor outcomes	1162	143,715,556	
	Unnecessary pain	1519	126,938,863	
	Additional/unnecessary operations	1783	195,929,072	
Infection	Hospital-acquired infection	65	8,582,341	
	Other infections	106	13,627,528	
	Infectious diseases	15	3,054,665	
Damage to limbs	Joint damage	504	71,704,879	
	Fractures	638	47,953,690	
	Dislocation	84	9,711,346	
	Amputation lower	216	114,787,500	
	Amputation upper	49	9,421,787	
	Tissue damage	40	5,458,110	
	Limb deformity	109	16,368,821	
	Anaesthetic issues	Anaphylactic shock	11	237,064
		Cardiac arrest	11	840,221
		Others	7	407,139
Medical complications	Dental injuries	8	97,308	
	Stroke	6	2,351,905	
	Cardiovascular issues	6	253,131	
	Brain damage	10	11,158,312	
	Respiratory failure	12	703,642	
Visceral injury	Renal failure	9	607,620	
	Bowel injury	29	7,681,447	
	Bladder injury	31	9,771,348	
	Rupture of a structure	18	975,811	
Compartment syndrome		48	12,239,999	
VTE		118	10,648,277	
Tendon injury		132	10,706,687	
Psychiatric issues		40	3,386,709	
Pressure sores		265	16,404,543	
Burns and bruising		135	3,872,193	
Arterial injury		17	4,232,504	
Death		241	33,277,324	
Miscellaneous	Multiple injuries	20	4,509,752	
	Cancer-related issues	38	10,783,385	
	Others	67	4,510,838	
Total		8548	1,236,012,790	

Note. VTE, Venous Thromboembolism.

damages paid out to settle these claims are presented in Table 4. A year-on-year analysis of the claims during the study period is presented in Fig. 3 and the corresponding damages paid out during each year are presented in Fig. 4.

Among the type of injury categories, the most common claims were additional or unnecessary procedures (21.0%), damage to limbs (19.0%), pain-related issues (17.7%), poor outcomes (13.6%) and neurological injuries (9.2%). Death was recorded as the underlying cause for claims in 2.8% cases, pressure sores in 3.1%, infections in 2.2%, venous thromboembolism in 1.4% and compartment syndrome in 0.6% cases.

Discussion

The average number of settled claims was 854 per financial year during the study period. The average pay-out cost was £144,597 per settled claim. During the first two years of the studied period (2008/2009, 2010/2011), a trend of a rapidly increasing number of claims was observed. Over the following six-year period, the number of claims remained steady until a spike was observed in the year 2016/2017. Over the most recent two years, a slightly declining trend was observed in the number of claims and their associated pay-out costs (Fig. 3 and Fig. 4).

In a previously published report of the 10-year period 2000–2010 of the NHSLA data for litigation claims in

Table 3. Individual diagnoses for settled/closed claims

Type of injury	Claims settled
Dissatisfaction	52.2%
Damage to limbs	19.0%
Neurological injury	9.2%
Pressure sores	3.0%
Death	2.8%
Infection	2.2%
Burns and bruising	1.6%
Tendon injury	1.5%
Scar-related issues	1.5%
Miscellaneous	1.5%
VTE	1.4%
Visceral injury	0.9%
Compartment syndrome	0.6%
Medical complications	0.5%
Psychiatric issues	0.5%
Anaesthetic issues	0.4%
Arterial injury	0.2%

Note. VTE, Venous Thromboembolism.

trauma and orthopaedics, there were 5461 settled claims with the total pay-out cost of £251.99 million.⁹ The average number of settled claims, in that study, was 546 per financial year and the average pay-out cost of damages per successful closed claim was £61,468. In addition to a significant increase in the average number of claims during each year (308 per year), a direct comparison suggested a 4.7-fold increase in the total pay-out costs of claims ($p < 0.00001$) and a 2.4-fold increase in the average cost per successful claim between the years from 2008/2009 to 2018/2019 compared to the years from 2000 to 2010 ($p < 0.00001$).

Unfortunately, ‘never events’ still occur every year despite implementation and efforts to adhere to the World Health Organization (WHO) safe-surgery checklist.¹⁰ Although their prevalence remains low (1:20,000

procedures); and their impact, in most cases, is minimal; however, in others, the consequences can be devastating. In the current data, the number of claims related to ‘retained instrument’ was 18 during these 10 years compared to a report of 128 cases between 2007 to 2012 in a previously published account.¹¹ Wrong-site surgery accounted for a total of 84 claims that included surgical procedure on a wrong limb (75 claims) and wrong-site injection (9 claims) accounting for 0.98% of the total claims and 0.35% of the total pay-out in damages. These ‘never events’ are preventable and must be avoided by strict and consistent adherence to the safe-surgery checklist in every single case.

Claims relating to the consent process accounted for 3.6% of the total claims (310 claims) and 3.9% of the total pay-outs in damages. An American study reviewed cases from two malpractice insurers over 24 years and found no cases of proven inadequate consent in emergency surgery, compared with 24 cases in elective surgery.¹² It suggested that obtaining consent in a clinic setting, rather than on the day of surgery, significantly reduced the risk of consent-related litigations. It is acknowledged that surgeons in current practice face time pressures, which may leave little opportunity to discuss at length the diagnoses or available treatment options with their patients. However, with a robust consent process, and by using patient decision aids and information leaflets, the time available can be optimized to ensure that patients are given sufficient time to make a decision and take shared responsibility for their care.^{12–14}

The ‘Getting It Right First Time’ (GIRFT) programme was started in orthopaedic surgery in 2012 to address the unwarranted variation in clinical practice, improve patient care and provide cost savings including litigation costs.¹⁵

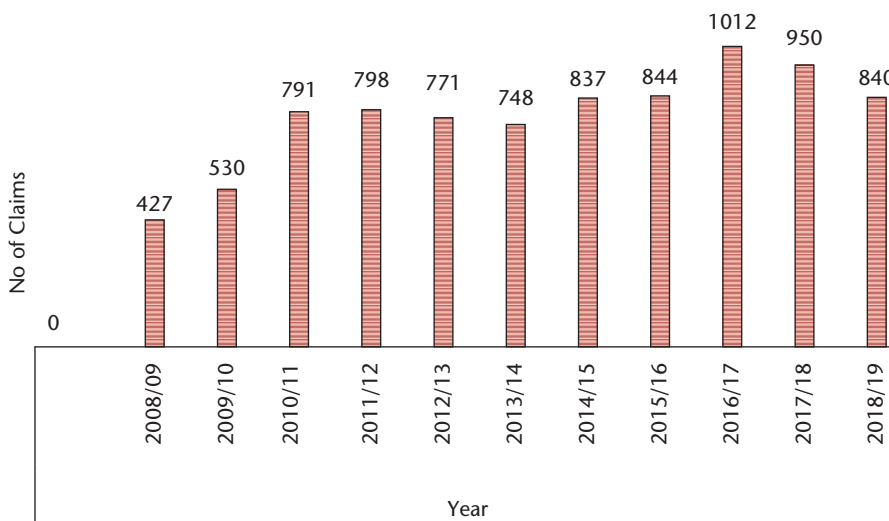


Fig. 3 A year-on-year analysis of the claims.

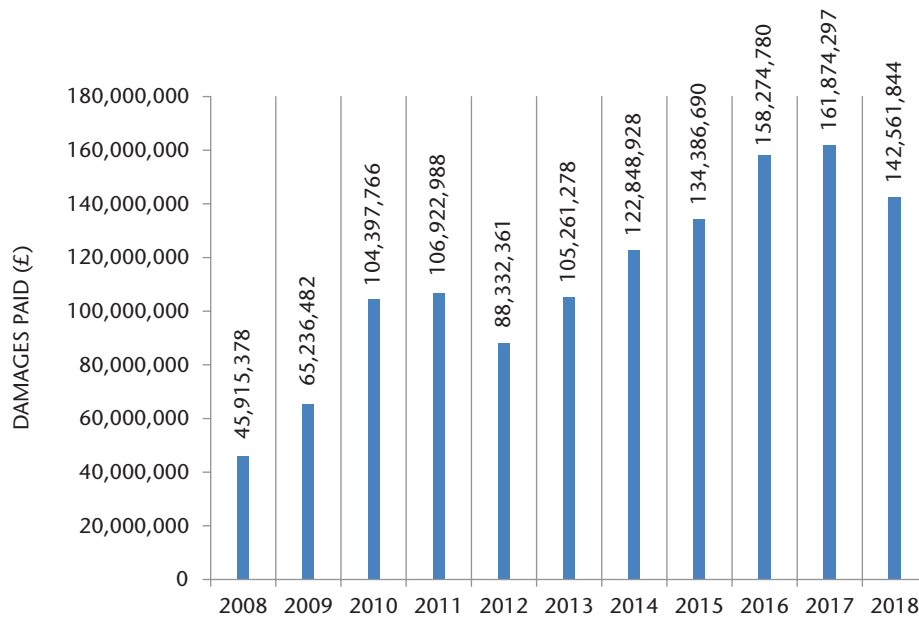


Fig. 4 A year-on-year analysis of the damages paid out.

Table 4. Damages paid out (%) to settle the claims for individual diagnoses

Type of injury	Pay-out (%)
Dissatisfaction	37.7%
Burns and bruising	31.0%
Neurological injury	24.5%
Damage to limbs	22.3%
Death	2.7%
Infection	2.0%
Miscellaneous	1.6%
Visceral injury	1.5%
Medical complications	1.2%
Compartment syndrome	1.0%
VTE	0.9%
Tendon injury	0.9%
Scar-related issues	0.4%
Arterial injury	0.3%
Psychiatric issues	0.3%
Anaesthetic issues	0.1%
Pressure sores	0.1%

Note. VTE: Venous Thromboembolism

In 2014, GIRFT reported a record level of clinical negligence claims and their resulting cost against orthopaedic surgery. However, in just four years since its reviews and recommendations, a noticeable positive change was observed in the number of claims in orthopaedic surgery.^{11,16,17} This is encouraging; however, this is a continuous work-in-progress and clinicians must remain diligent in their practice to further reduce the huge ongoing financial burdens associated with litigation. GIRFT is working in close collaboration with the NHS Resolution and aims to allow every trust to review their claims and implement changes to their safety processes from the lessons learnt.¹⁷ Besides,

GIRFT is also working to improve clinical coding of claims, which will undoubtedly help in accurate identification and classification of the causes of claims. It is believed that the existing litigation reports in the literature drawn from the NHS litigation database greatly underestimate the incidence of claims against specific procedures or diagnoses and consequently may provide somewhat inaccurate figures of claims volume and costs.¹⁷

Analysis of similar databases across other European countries also reports a rise in litigation claims in orthopaedic surgery. A French study analysed 71 claims over 10 years (2007–2016) and reported the most common causes to be infections, inadequate outcomes, postoperative care, technical errors, delayed treatment and diagnostic errors.¹⁸ Hip and knee surgery accounted for 52% of these claims; upper limb 16%, foot and ankle 16% and spine 3%. An Italian study analysed 635 litigation claims over 12 years (2002–2013) and reported a significant rise in the number of claims on a year-to-year basis.¹⁹ Hip and knee surgery accounted for 40% of these claims, upper limb 29%, foot and ankle 17% and spine 7%. A British study by Khan et al analysed 2117 claims over seven years (1995–2001) and reported a steady rise in the number of claims.²⁰ Hip and knee surgery accounted for 24% of these claims; upper limb 22%, foot and ankle 14% and spine 12%. Another British study by Ring et al analysed 1104 settled claims over 17 years (1995–2012) specifically related to foot and ankle surgery.²¹ The authors reported the most common area for claims was the ankle (33.7%) with 273 claims (73.4%) occurring as a result of trauma, followed by the first ray (21.4%) with 232 (98.3%) claims related to elective surgery.

In general, the increasing frequency of claims over the years may be attributed to several factors. Patients have higher expectations of their treatment and anticipate better outcomes. Public awareness of medical errors has increased, particularly from high-profile cases and, consequently, lower levels of confidence and trust exist in the healthcare system.²⁰ Nevertheless, it is generally believed that patient care is as safe as it has ever been despite the increase in clinical activity.¹⁰ The rise in litigation claims does not necessarily reflect increasing errors or sub-standard care but possibly is fuelled by the overzealous legal system, which encourages clients to make the most of an incident.³

The primary limitation of this study is that the data used for analysis were obtained from the NHS Resolution, which collects the data for legal and cost purposes and not for research purposes. Despite prospectively recorded data, not all the required clinical information was available to draw a definite conclusion about specific diagnoses used in clinical practice. It was also difficult to accurately categorize and re-group all the claims, hence posing the risk of under-reporting or reporting within the wrong category in the final analysis. It is also possible that not all claims get recorded in the database because some cases where negligence had not been proven might get settled without a formal claim being registered. Moreover, the information on submitted claims is recorded based on the patient's perception of the negligence and therefore may not entirely be consistent with the actual clinical problem that occurred. The data analysed were related to the NHS claims and not to the private sector. Nevertheless, this analysis is expected to provide clinicians with an update on litigation against trauma and orthopaedic surgery and modify potential areas in their practice to minimize such claims.

Conclusions

During the last 10 years, there has been a significant increase in the total number of claims, average number of claims per year, total pay-out cost and the average cost per claim related to trauma and orthopaedic surgery. The most common reasons for claims included mismanagement, diagnostic issues, perioperative issues, and care-related issues, which are all potentially preventable. Surgeons need to take diligent steps to avoid the preventable causes that lead to the creation of litigation claims. Although it cannot be firmly concluded, the recommendations from GIRFT may have started to have some positive impact over the past two years. It is expected that the proposed changes in the coding system of claims in the NHS Resolution will help to formulate a clear understanding of the classification of claims and are likely to improve learning from previous experience.

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