



National audits of hip fractures: Are yearly audits required?



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ABSTRACT

Introduction: Hip fractures are a significant cause of morbidity and mortality to the increasing elderly population. The Scottish Hip Fracture Audit started in 1993 with national audits from 2002. It was a national prospective audit reporting on clinical standards in hip fracture care and produced an annual report. Due to national funding changes the continual audit was discontinued in 2008. In 2013, the MSK Audit Group published a “snapshot” into a 4 month period of hip fracture care in Scotland. Our purpose was to identify whether there had been an initial improvement in hip fracture care and whether this improvement was sustained with the discontinuation of the annual audit.

Methods: The reported outcomes from the annual Scottish Hip Fracture Audit from 2003 to 2008 were compared to the latest MSK Hip Fracture Audit published in 2013. Some data is available from the 2014 MSK Hip Fracture Audit and this was also used for comparison purposes. Local audit co-ordinators at each participating site collected a data-set for all patients admitted with a hip fracture. The case mix variables and management variables were compared for the reported years.

Results: The continual audit demonstrated an improvement in the percentage of patients discharged from accident and emergency in 4 h (80.5% 2003 vs. 96% 2008) which was not maintained 5 years later. An improvement in the percentage of patients having surgery within 48 h of admission (89.9–98.4%) was also not maintained after 5 years (91.8%). 30 day mortality improved with continual audit, a trend which continued in 2013. The re-introduction of continuous audit in 2014 demonstrated an improvement in accident and emergency waiting times and time to theatre.

Discussion: The Scottish Hip Fracture Audit demonstrated improved standards of care until it was discontinued in 2008. The improvement was not sustained throughout all variables with the 2013 audit. With the re-introduction of regular audit, standards once again improved. We would recommend a more regular audit in an effort to not only improve standards of care for patients with a hip fracture but to maintain them.

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Introduction

Hip fragility fractures are a significant cause of morbidity and mortality in the UK with approximately 70,000 patients being admitted every year [1]. This figure is estimated to rise significantly with the rising elderly population [2]. In an effort to improve the standards of care for patients with hip fractures,

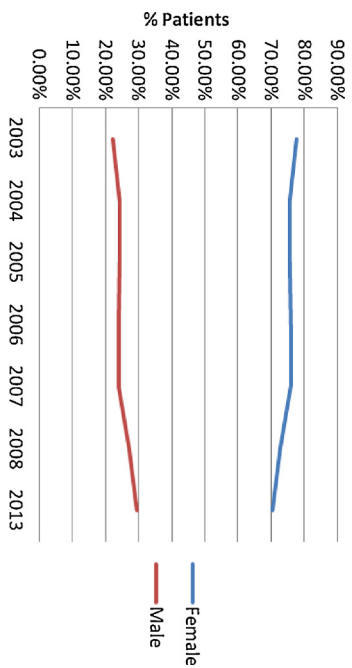
both the Scottish Intercollegiate Guideline Network and the National Institute for Clinical Excellence have introduced guidelines for hip fracture care [3,4]. These include the concepts of reducing wait in accident and emergency, reducing time to theatre times and a multi-disciplinary approach to hip fracture care. In England and Wales this has been followed with financial tariffs for achieving certain standards of care.

The original Scottish Hip Fracture Audit commenced in 1993 and in 2002 the Scottish Hip Fracture Audit had become a national audit. Its purpose was to report on the standards of care for patients admitted with a hip fracture in Scotland. From 2002, it was a continual national audit with annual reports until 2008 reporting

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Table 1
Patient demographics.

Demographics		Year						
		2003	2004	2005	2006	2007	2008	2013
Hospitals		15	21	13	14	21	21	21
Patient number		4047	5123	4426	3391	6368	6658	1387
Age in years	Mean	80	80	80	80	80	80	81
Female	%	77.6% (3141/4047)	75.6% (3873/5123)	75.6% (3345/4426)	76.0% (2577/3391)	76.1% (4849/6368)	72.9% (4854/6658)	70.5% (978/1387)
	Mean age	81	81	81	81	81	81	82
Male	%	22.4% (906/4047)	24.4% (1250/5123)	24.4% (1081/4426)	24.0% (814/3391)	23.9% (1519/6368)	27.1% (1804/6658)	29.5% (409/1387)
	Mean age	79	77	77	77	78	77	79
Residential status	Own home	63.9 (2580/4040)	67.7 (3470/5123)	67.1% (2895/4312)	69.3% (2348/3390)	69.6% (4435/6368)	70.1% (4668/6658)	73.1% (1014/1387)
	Institution	25.4 (1025/4040)	23.4 (1199/5123)	23.8% (1026/4312)	23.4% (794/3390)	21.9% (1393/6368)	21.7% (1446/6658)	19.7% (273/1387)
Mobility	Unaccompanied no aids	42.2% (1683/3992)	45.3% (2290/5051)	44.6 (1892/4245)	48.1% (1613/3353)	47.3% (3002/6351)	46.0% (3051/6636)	42.7% (585/1369)
	Unaccompanied 1 aid	24.5% (977/3992)	20.2% (1022/5051)	21.8% (924/4245)	19.0% (636/3353)	19.0% (1206/6351)	20.1% (1334/6636)	21.6% (296/1369)
	Unaccompanied 2 aids	19.4% (775/3992)	18.8% (952/5051)	19.7% (837/4245)	18.7% (626/3353)	19.5% (1236/6351)	20.2% (1340/6636)	24.5% (335/1369)
	Needs accompaniment	10.8% (431/3992)	11.4% (577/5051)	11.0% (467/4245)	10.7% (358/3353)	11.1% (707/6351)	10.3% (681/6636)	9.2% (126/1369)
	Unable to walk	3.2% (126/3992)	4.2% (210/5051)	2.9% (125/4245)	3.6% (120/3353)	3.1% (200/6351)	3.5% (230/6636)	2.0% (27/1369)
ASA	1	2.5% (85/3426)	2.2% (88/3946)	2.7% (88/3293)	2.5% (66/2676)	2.3% (120/5247)	2.8% (161/5719)	2.7% (35/1273)
	2	28.5% (978/3426)	24.6% (970/3946)	24.6% (811/3293)	26.8% (717/2676)	26.9% (1413/5247)	25.4% (1454/5719)	25.4% (323/1273)
	3	52.9% (1812/3426)	54.4% (2145/3946)	54.7% (1802/3293)	56.1% (1501/2676)	55.7% (2920/5247)	56.4% (3224/5719)	56.4% (718/1273)
	4	16.0% (548/3426)	18.1% (715/3946)	17.6% (579/3293)	14.6% (390/2676)	14.7% (773/5247)	15.2% (868/5719)	15.1% (192/1273)
	5	0.1% (3/3426)	0.7% (28/3946)	0.4% (13/3293)	0.1% (2/2676)	0.4% (21/5247)	0.2% (12/5719)	0.4% (5/1273)

**Fig. 1.** Sex distribution.

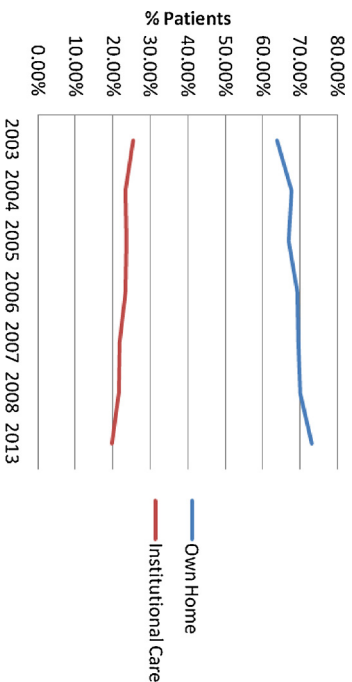
data from, at its peak, 21 hospitals in the country. The financial burden of continual audit is not insignificant and due to national funding changes, the audit was stopped and recommenced 5 years later in 2013. Our aim was to determine whether there was an improvement in the standards of care with the continual audit and whether this was sustained with the discontinuation of the continual audit.

The MSK group now collect data on hip fracture care for one week every month. This provides monthly updates on the standards of hip fracture care. The results from October 2014 were used to determine the effect of re-introduction of continuous audit. Mortality and discharge information are not yet available for this period.

Methods

The Scottish Hip Fracture Audit was a national prospective audit collecting data for patients admitted in Scotland with a hip fracture. Participating hospitals had a locally funded audit co-ordinator who collected a centrally determined data-set for all hip fracture admissions. Follow up data was collected at 120 days by a combination of telephone calls and postal questionnaires. Standardised data collection procedures, along with sub-contracted dual data entry and a monthly ongoing validation process were utilised to ensure accurate and complete data. Patients who were treated non-operatively were excluded from the analysis.

In 2013, the MSK Audit Group published its findings from a four month window of hip fracture care in all operating hospitals in Scotland. The data was again collected by local data co-ordinators in each hospital with a standardised data-set for each admission. We compared the results of the continual audit from 2003 to 2008 with the 4-month "snapshot" 5 years later. The aim was to firstly determine whether continual audit improved standards and secondly to determine whether this was sustained when it was discontinued.

**Fig. 2.** Pre-fracture residence.

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