Public Health Scotland

Summary of Outlier Responses

Scottish Hip Fracture Audit Annual Report

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Annual governance process

The Scottish National Audit Programme (SNAP) governance process provides a framework for identifying where patient outcomes may be significantly different in individual hospitals and mandates investigation to better understand why this may be the case.

The results are presented in funnel plots, hospitals which appear on the lower part of the chart have performance which is significantly worse than the Scottish average and therefore are formally alerted to this. Health Boards are required to provide a formal response to any alerts as well as details of a full investigation (including action plan) if they are identified as an outlier in any of the Key Performance Indicators at more than three standard deviations (>3SD) from the Scottish average and a summary of these responses are included in this report. Where a hospital is greater than 2 standard deviations (>2SD) from the Scottish average they are required to clinically review this and note any changes or actions that should be taken. Although not required to submit these SNAP, were these have been received they are also included in this report.

More information to explain funnel plots is available at:
www.shfa.scot.nhs.uk/_docs/2017/Interpretation_of_funnel_chart.pdf

Please note that although Health Boards were asked to complete a standard template for the responses, not all have followed this, hence the reason why the layout and content differs from one response to the next.

Glossary of terms

AAGBI = Association Anaesthetists of Great Britain and Ireland

AWI = Adults with Incapacity Act 2000

BOAST = British Orthopaedic Association Standards for Trauma and Orthopaedics

CGA = Comprehensive Geriatric assessment is usually carried out by care of the elderly doctor, elderly care nurse or advanced nurse practitioner or another member of the care of the elderly team.

Clinical portal, Cortex = electronic patient record/administration system

COTE/ MOE = Care of The Elderly is another term for Medicine of the Elderly

DNA CPR = Do Not Attempt Cardiopulmonary Resuscitation

DOAC = Direct Oral AntiCoagulants

IT = Information Technology Team

MSk = MusculoSkeletal

NICE = National Institute for Clinical Excellence

NOF fracture = Neck of Femur Fracture, which is another term for hip fracture.

SBAR = Situation, Background, Assessment, Recommendations

SCI gateway = Scottish Care Information Gateway

TEP = Treatment escalation plan

NHS Ayrshire and Arran

University Hospital Ayr (UHA) was identified as an outlier of >3 SD below Scottish average in 'Percentage of patients who had Comprehensive Geriatric Assessment (CGA) within 3 days'.

University Hospital Crosshouse (UHX) was identified as an outlier of >3 SD below Scottish average in the following indicators

1. Percentage of patients who had cemented hemiarthroplasty
2. Percentage of patients who had CGA within 3 days
3. Percentage of patients alive at day 30
4. Percentage of patients who had surgery within 36 hours

Current Improvement work

In response to the most recent published results, a document entitled "Recovery Plan for Hip Fractures UHX" was compiled with the collaboration of all parties and distributed widely at the beginning of June 2021.

Uncemented Hemiarthroplasties

This issue will be addressed via educational sessions with the orthopaedic surgical and anaesthetic teams to highlight the limited clinical indication for the use of uncemented hemi-arthroplasty surgery for patients who have little/no independent mobility and/or significant medical co-morbidity with limited life expectation.

It is our hope that the SHFA standards will, in the near future, align with NICE124 guidance that there is no role for uncemented hemi-arthroplasty in hip fractures. Should this occur, then it is our intention to remove all remaining uncemented implants "from the shelf".

Percentage of patients who had CGA within 3 days

From March 2021 we have instituted a hip fracture multidisciplinary team (MDT) consisting of: consultant orthopaedic surgeon, junior doctors, advanced nurse practitioners (ANPs), nursing staff, physiotherapy and OT staff. This team reviews the management of every hip fracture in the ward with particular reference to: **AWI, TEP, and DNA CPR** form completion in relevant patients; CGA review; medicine reconciliation and discharge planning.

As of April 2021 we have added a single Consultant session of ortho-geriatric input. This consultant will review any relevant patient identified by the MDT for ortho-geriatric review based on the CGA. The CGA is currently being completed on admission if possible by ANPs who have received relevant training. This has resulted in almost 90% achievement of the CGA standard as of February 2021.

From August 2021 an additional 3 sessions of Consultant Orthogeriatric input will be available, giving 5 day access to this service. In addition, we are in the process of exploring the possibility of funding for care of the elderly (COTE) Clinical Development Fellows based on the orthopaedic trauma ward.

30 day mortality

Of the 43 deaths noted within 30 days of presentation: - 9 tested positive for Covid at some point during their admission, with Covid being cited on the death certificate of 7. Eight died after being discharged back to their care home. Day of theatre 40 cases (3 had no op), Same day 17.5%, Day 1 32.5%, Day 2 27.5%, Day 3 17.5%, Day 5 2.5%, Day 14 2.5%

It was difficult on **Clinical Portal** to determine the number of hours between presentation and surgery for those patients who died. However, on the assumption that the “36 hour" threshold would have passed by day 1, 50% of those patients who died were operated on beyond 24-36 hours of presenting.

Although we do not have Covid numbers from other units for comparison, it has been well documented that NHS Ayrshire & Arran (and, in particular, University Hospital Crosshouse) was disproportionately affected by the pandemic. That said, we acknowledge that we may well still have been an outlier for our mortality rate, regardless of the effect of the pandemic.

Percentage of patients who had surgery within 36 hours

We have identified a number of factors which, collectively, have contributed to the poor performance on this standard. By working with all stakeholders, we have written a set of guidelines and distributed this to all parties, followed up with informal awareness sessions in all relevant areas.

In conjunction with these guidelines, there are now formal audit processes in place to help capture trends in variance at an early stage.

Conclusion

Data continues to be collected prospectively and analysed by our Audit Facilitator. These figures (in particular, the exceptions) will be discussed at monthly hip fracture meetings.

Trauma services across NHS Ayrshire & Arran will be centralised at UHX when the West of Scotland Trauma Network goes live on 30 August 2021. This is seen almost as a “fresh start” and we believe that the processes put in place within the last few months will significantly improve our performance on those standards on which we are currently outliers, whilst at the same time maintaining compliance on all other standards.

NHS Dumfries and Galloway

Dumfries and Galloway Royal Infirmary was identified as an outlier >3SD below the Scottish average in 'Comprehensive Geriatric Assessment (CGA) commenced within 3 days of admission'.

Current Improvement work and performance against Scottish Standards

1. Creation of an electronic CGA referral system on **Cortix** to help easily identify patients with Neck of Femur (NOF) fractures that need to be seen for CGA assessment, even if the patients are on other wards, minimising missing any patients. Discussions have been taking place with IT regarding that. In the meantime, emphasis has been put in place to clearly identify and have a more robust handover system for patients with hip fractures using the **SBAR** and the trauma sheet till electronic system is up and running.

2. CGA specialty stickers have been created to put in notes beside Orthogeriatric team input to allow easy identification of input and accurate data collection by audit coordinator.

3. To implement a leave calendar to minimise leave overlap between staff involved in CGA assessment as they all are working part time (one is even a locum) to ensure 5/7-day cover and minimise any disruption to the Orthogeriatric service.

4. Continue to analyse our performance and data in our 6 weekly NOF fracture meeting to identify any problems and suboptimal performances early and to act accordingly to rectify that.

5. To tackle the issue of lack of cross cover and shortage of staff on the long term, there is a plan to create a business case for a frailty specialist nurse within the team to create a more robust and sustainable service that shouldn't be affected by leaves or redeployment. This could be clearly seen as an effect from COVID 19 and redeployment in our board, although other boards have been in a similar situation, highlighting the need to work to create a more sustainable and robust service.

NHS Fife

Victoria Hospital Kirkcaldy was identified as an outlier >2SD below the Scottish average for 'theatre within 36 hours of admission'.

Response from NHS Fife Orthopaedic team

Historically time to theatre for hip fracture patients has been a challenge for Fife. In 2017 just 38% of hips were operated on within 36 hours. While we have seen improvement, more progress is required. The majority of these delays are due to lack of theatre time therefore this is where our efforts are focused.

2020 has brought severe challenges to all health boards. During the height of the pandemic our medicine for the elderly colleagues were redeployed necessitating consultant orthopaedic cover on the hip fracture ward. In addition, orthopaedic consultants were redeployed to run the Emergency Department minor injuries unit.

We lost theatre capacity in a number of ways. Our day case site was closed resulting in management of upper limb trauma that would previously have been operated on elsewhere using main trauma theatre capacity. We lost the ability to manipulate fractures in the Emergency Department, an area that has been a problem for us pre-COVID, with up to 14% of our general trauma theatre cases being simple manipulations which could have been managed elsewhere, and in accordance with **NICE (NG38) and BOAST** (Early Management of the Paediatric Forearm Fracture) guidelines. Our elective unit closed necessitating use of trauma theatre for some urgent cases which would normally have been done elsewhere.

Finally changes in the theatre working environment have presented huge challenges for improving efficiency and our average case throughput fell by about 0.5 cases per day. Despite this our theatre capacity remains unchanged compared to pre-COVID levels.

Despite our delays to theatre we would like to point out that our 30 day mortality for this report period is in line with the Scottish average, and has been better than average in previous years. Our comprehensive geriatric assessment is excellent

(>3SD above average for assessment within 3 days) as a result of our excellent care of the elderly team input and specialised hip fracture ward.

Actions

Much work has been done to try to improve the use of existing resources, including strict prioritisation of hip fracture patients, ‘Golden’ patients and early anaesthetic assessments, and this work is ongoing. There remains potential for further small gains, for example by minimising late starts (averaging 20 minutes) and minimising down times e.g. staff to cover breaks, however we believe that more significant improvements will likely require additional theatre resources throughout the week. To investigate this further, we are working to undertake a detailed data-analysis and modelling exercise. This will test our usage of existing resources and allow us to model proposed solutions, including upper limb lists and/or additional theatre capacity, with the resulting resource implications.

NHS Forth Valley

Forth Valley Royal Hospital was identified as an outlier >>3SD below the Scottish average for 'theatre within 36 hours of admission'.

Current Improvement work and performance against Scottish Standards

1. A weekly Monday all day additional consultant trauma list has been set up. This addresses any excess of patients admitted over the weekend and provides a full day of extra trauma operating.

2. The regular Saturday morning trauma list has been converted to an all day Saturday trauma list.

3. A weekly morning hip fracture list is being trialled. The list starts on 16th June 2021 and is being run by our permanent, experienced, speciality doctors. The aim is to provide surgery on two hip fractures per list. The trial will run for three months and we will audit our results.

4. Increased focus on **DOAC** and warfarinised patients, with early use of advanced agents (Beriplex) to reverse Warfarin.

Other measures

Golden patient: the first two patients on the following days trauma list are identified the preceding afternoon. This was started a few years ago. The aim is that the first patient is a hip fracture patient. This allows the medical team to optimise the patient prior to surgery and reduces the incidence of delays due to correctable problems.

Medical delays to theatre: we are satisfied that the majority of our medical delays to theatre are for the normalisation of potentially correctable conditions, as per **AAGBI** guidelines. We have recently audited this as already discussed.

Further measures

We would like to know our data for the missing period in spring 2020 and our local audit co-ordinator has had approval and funding to review these records.

We would like to review the medical records of all the patients who have breached the 36 hour target. This is to review the reason for the breach and, particularly for those not simply waiting for theatre availability, to ensure that the reason for the delay was unavoidable. It has not been possible for health records to provide over 140 set of notes for review in the timescale required for this reply and similarly with ongoing clinical commitments, it is difficult for the clinicians to go through the notes, but we intend to follow this up after this reply has been submitted.

NHS Greater Glasgow and Clyde

Inverclyde Royal Hospital was identified as an outlier >3SD below the Scottish average in 'Comprehensive Geriatric Assessment commenced within 3 days of admission (CGA)'.

Response

This standard was not met due to sickness/absence of the Elderly Care Orthopaedic nurse which meant there were not appropriate staffing levels to be able to undertake CGA in a timely manner.

The development of the major trauma centre at Queen Elizabeth University Hospital and major trauma unit at Royal Alexandra Hospital will also change the pathway for fractures, which may further support improvements in CGA within 3 days.

Royal Alexandra Hospital was identified as an outlier >2SD below the Scottish average in 'Percentage of patients who were readmitted within 14 days of discharge.

A clinical review is in progress to identify cases of re-admission. This should be completed by the end of June 2021.

NHS Grampian

Aberdeen Royal Infirmary (ARI) was identified as an outlier in the following areas

- >2SD below the Scottish average for 'theatre within 36 hours of admission'.
- >2SD below the Scottish average in 'Comprehensive Geriatric Assessment commenced within 3 days of admission'.
- >2SD below the Scottish average for 'percentage of patients who had returned home by 30days'.

Current Improvement work and performance against Scottish Standards

The Local Hip Fracture Audit Group (LHFAG) are a multidisciplinary group with input from all relevant areas and services, including emergency department, ward teams, physiotherapy, occupational therapy, surgical, anaesthetic and elderly care. We meet bimonthly and review the most recent data and set action points and plans in response.

Our most recent meeting discussed the three areas where we are outliers and explored possible remedial actions.

1. Time to theatre. There is ongoing discussion regarding increased trauma theatre provision in ARI. It is recognised that we are unusual in not having a dedicated Sunday trauma theatre but as this solution has proven difficult to staff in the past and will likely continue to be difficult to find theatre staff for. Improved weekday theatre provision is being explored as a more deliverable initial move. This strategy is supported by the IHO (Institute of Healthcare Optimisation) study and report carried out a few years ago which identified a significantly greater improvement in time to theatre for intermediate - low priority patients than providing an additional (Sunday) weekend trauma list. It is recognised by all involved that ideally both options would be implemented as soon as possible but this is currently impossible due to issues in theatre nursing staffing. Additionally, as a significant number of the hip fracture patients still get listed in general emergency theatres, there is a review

currently ongoing into the classification and prioritisation system used in emergency theatres. The aim of this is to identify whether hip fracture patients are receiving inappropriately low priority in emergency theatre and how this can be improved (e.g. reclassification of hip fractures to higher priority vs lowering other procedures classification etc.). There is also discussion ongoing regarding the development of a standard operating procedure for the listing of hip fracture patients to optimise the use of trauma theatres for these patients.

2. CGA review within 3 days. These are carried out by our Ortho- Trauma advanced nurse practitioners (ANP) who were re-deployed during the first wave COVID response, during which they didn't take any leave either which left a backlog of leave to catch up on when they returned to Ortho Trauma - which also contributed. We are now back to a normal position which is actually slightly enhanced for a while as there is a trainee ANP with them for the next year.

3. Aberdeen is a negative outlier for the return to home within 30 days. This is an issue that is beyond the ability of the LHFAG to influence, based as it is on broader issues regarding delivery of care in the community. The LHFAG will address this problem through the organisational structure.

NHS Highland

Raigmore Hospital was identified as an outlier >3SD below the Scottish average in the percentage of patients who had cemented hemiarthroplasty.

Response

Raigmore Hospital actively engaged with the SNAP process triggered by our 2019 data (2020 report) and regarding which we were alerted 31.07.2020. An agreement was reached within the Trauma & Orthopaedic Department to move to making cemented hemiarthroplasty our standard of care 02.09.2020. This move has required adjustments for surgeons, anaesthetists and our theatres.

The SHFA dashboard data from September 2020 to March 2021 records 114 hemi-arthroplasties as being performed at Raigmore Hospital of which 101 or **88.6% were cemented** and 13 were not. Our change in practice unfortunately occurred too late in 2020 to have a significant effect on the data for the year as a whole (2021 report). That said the data for 2019 (2020 report) showed only 48.4% of hemiarthroplasty patients had cemented prostheses while the data for 2020 (2021 report) showed 62.1% did.

I would anticipate that the data for Raigmore for 2021 (2022 report) will continue with this trend.

NHS Lanarkshire

University Hospital Wishaw (UHW) (including data from Hairmyres hospital until 23rd March 2020) was identified as an outlier >3SD below the Scottish average in 'percentage of patients who were alive at 30 days post admission' and >2SD below in 'percentage of patients who had returned home by 30 days'.

Current Improvement work and performance against Scottish Standards

- A case note review of all 74 patients has been carried out
- The reviewers agree that UHW had a 30-day mortality rate >>3SD above the Scottish average for 2020
- Two recommendations from the 2019 response have been implemented (frailty scoring and increased consultant presence in theatre)
- Covid-19 had a major impact on the service in UHW both in terms of a direct cause of mortality but also as a stressor on the service which compromised patient care in other ways.
- Despite identification of the Care Of The Elderly (COTE) resource as a contributing factor to the outlier status in 2019 it remains an issue and is considered to be highly significant in the outlier status in 2020.

Actions

- The service is presenting a paper to the divisional management team NHS Lanarkshire at the end of May 2021 on the COTE issue seeking redesign and resource to deliver a COTE service consistent with Scottish standards and comparable with similar units in Scotland.
- The service will work to increase the skills and roles of our non-medical workforce to support the frail patients in the unit
- A ward has been designated as the hip fracture ward allowing focus of resource and skill.

- Theatre efficiency work is ongoing to improve time to theatre for these patients.
- Work will continue on fast-tracking patient for admission with training of non-medical staff in collaboration with the emergency department to deliver local anaesthetic blocks.

NHS Lothian

Royal Infirmary Edinburgh was identified as an outlier >2SD below the Scottish average in 'Percentage of patients who were readmitted within 14 days of discharge.

Current Improvement work and performance against Scottish Standards

We identified all patients that were readmitted within 14 days from discharge following their hip fracture from the data submitted to the SHFA. Simple descriptive analysis was undertaken to assess the reasons why these patients were admitted which were then classified into: not related to the hip fracture and related to the hip fracture which was subsequently grouped into medical or surgical related reasons. We feel the increased re-admission rate demonstrated for NHS Lothian may represent the co-incidental reasons for re-admission that were not related to their hip fracture care.

We plan to reassess our readmitted patients within 14 days from discharge following their hip fracture during 2021 to ensure we are no longer outliers and if we remain to be we will investigate this further to see if there are possible reasons for this.

NHS Tayside

Ninewells hospital was identified as an outlier >2 SD below the average for the percentage of patients who had cemented hemiarthroplasty.

Response

Firstly, it must be stressed that this technique does not constitute routine practice in Tayside but is done in rare scenarios when time and the use of cement may have a deleterious effect on patient outcome. As a group, we are in agreement that we should still be able to use an uncemented hemiarthroplasty when we deem it to be in the patient's best interest.

Examining the data in more detail, of the 38 cases reported, 16 were under the care 13 different consultant surgeons with documented clinical reasons to support the decision not to use cement. The remaining 22 cases were performed by a single surgeon. There were four cases where medical reasons could be used to justify the decision. I have discussed the data with my colleague in some detail and reviewed the evidence with him. He recognises that he is an outlier for implanting uncemented prosthesis in Scotland. He is yet to be swayed by the evidence as the main risk of periprosthetic fracture has not been borne out with the Thompsons implant. Additionally, we have not identified any post-operative complications associated with this consultant's decision to use an uncemented implant, to date.

We will continue to monitor our local data as part of the audit process for neck of femur fracture patients. The consultant body remain aware of the guidance on the use of uncemented prosthesis but would like to retain the option to use this technique when required.

NHS Western Isles (NHSWI)

Western Isles Hospital (WIH) was identified as an outlier >>3SD below the Scottish average in 'Comprehensive Geriatric Assessment (CGA) commenced within 3 days of admission'.

Response

NHSWI have struggled to deliver the CGA for hip fractures, and indeed all >65 years appropriate admissions, in both the 2019 & 2020 audits. The main identified cause is the absence of a geriatrician (or indeed an ortho geriatrician) based at the WIH, where the general medicine consultant rota relies on locums. The outlier status has been discussed at local MSK group meetings, and then with related stakeholders to source a resilient and sustainable way forward.

Seeking to address and improve CGA performance, a phantom CGA "clinic" has been created. This process creates a clear pathway of communication between the orthopaedic & general medicine teams. The related pro forma ensures accurate patient handover, and the e-process ensures a consistent and timely referral process.

The phantom "clinic" was established in February 2020, and an iterative approach to improvement has been slow but steady. The most recent changes have resulted in the orthopaedic junior doctor submitting a **SCI** gateway referral to the general medical department.

The collaborative work between orthopaedics, general medicine & the SHFA group at Western Isles Hospital has introduced a system designed to ensure timely review of patients with hip fracture in keeping with CGA.

This continues to be an iterative process, as we strive to improve and maintain our review rates; and share the learning from this process with those involved with other older persons admitted to hospital.