

# **Fragility fracture indicators for the NHS Outcomes Framework and Clinical Commissioning Group Outcomes Indicator Set**

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Indicator specifications

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This document describes the process of calculating the fragility fracture indicators for the NHS Outcomes Framework (NHSOF) and Clinical Commissioning Group Outcomes Indicator Set (CCGOIS).

The indicators were derived by the Clinical Effectiveness Unit (CEU) at the Royal College of Surgeons of England (RCS) based on existing indicator specifications received from the Health and Social Care Information Centre (HSCIC). This document was prepared by Carmen Tsang and David Cromwell at the CEU for the National Hip Fracture Database (NHFD) during October 2014. Parts of this document have been reproduced by HSCIC for the HSCIC Indicators Portal. All analyses were carried out using STATA version 11.

## NOTES ON DATA QUALITY

### SMALL NUMBERS

Where a numerator or denominator field contains a value between one and five, both the numerator and denominator fields in the output data files were suppressed.

### DATA COMPLETENESS

The derivation of the NHSOF indicator values for some organisations was affected by the quality of the data on the geographical area in which patients were resident. In the National Hip Fracture Database (NHFD) dataset of admissions during calendar year 2013, 8,424 records were without geographical mapping (including cases in Wales and Northern Ireland). Table 1 lists the indicators where data were suppressed due to small numbers or where there were no eligible cases for analyses.

**Table 1 Data suppression and ineligible cases by indicator**

Indicator	Breakdown level	Data rows		
		Total, n	Suppressed due to small numbers, n	With no eligible cases, n
NHSOF 3.5.i Mobility at 30 days	CCG	211	90	13
	Provider	176*	34	64
	Local authority	326	135	27
	Health Boards, Wales	7	1	0
	Commissioning Groups, Northern Ireland	5	1	0
NHSOF 3.5.i Mobility at 120 days	CCG	211	92	23
	Area team	25	1	0
	Provider	176*	26	81
	Local authority	326	123	46
	Health Boards, Wales	7	2	0
Best Practice	CCG	211	1	0
	Health Boards, Wales	7	1	0
	Commissioning Groups, Northern Ireland	5	2	0

\*Includes patients with an English LSOA code who were admitted to hospitals outside of England.

## CCG INDICATOR 3.11 HIP FRACTURE: RECEIVED COLLABORATIVE ORTHOGERIATRIC CARE

### SPECIFICATION

#### DENOMINATOR

The number of patients in the National Hip Fracture Database excluding those that died without receiving surgery or died within 48 hours of receiving surgery.

##### Inclusion criteria

- Aged 60 to 110 years old inclusive
- Admitted between 1 January and 31 December for the year to be reported

##### Exclusion criteria

- Cases that died without surgery (discharge destination from ward or trust recorded as “dead” and no date/time of primary operation and/or operation performed is “no operation”)
- Cases that died (discharge destination from ward or trust recorded “dead”) within 48 hours of surgery (difference between date/time of primary operation and date/time of discharge from hospital trust)
- Cases no longer in the NHFD dataset at the time of analyses (deletions requested by hospitals), n=10
- Cases without geographical mapping, n=8,424

##### Fields used

1. Age
2. Date and time of admission to A&E
3. Date and time of primary operation
4. Operation performed
5. Discharge destination from acute orthopaedic ward
6. Date and time of discharge from hospital trust
7. Discharge destination from hospital trust

#### NUMERATOR

Among patients in the denominator, the number who had a joint acute care protocol at admission, evidence of Multi-Disciplinary Team (MDT) rehabilitation agreed with a responsible orthogeriatrician and orthopaedic surgeon, and with General Medical Council (GMC) numbers recorded.

##### Fields used

1. Admitted using jointly agreed assessment protocol
2. Orthopaedic GMC number/name
3. Geriatrician GMC number/name
4. Multidisciplinary rehabilitation team assessment

## RESULTS

### ENGLAND

There were 57,680 cases of hip fracture in England during calendar year 2013 that were recorded in the National Hip Fracture Database (NHFD). After exclusions, there were 56,377 valid cases and 93.6% received collaborative orthogeriatric care (n=52,744/56,377).

#### Exclusions

Non-mutually exclusive exclusions (some cases excluded for multiple reasons)

- n=618 cases died without having surgery:
  - n=470 cases died (discharge destination from acute orthopaedic ward recorded as “dead”) without having surgery
  - n=148 cases died (discharge destination from trust recorded as “dead”) without having surgery
- n=554 cases died within 48 hours of surgery:
  - n=487 cases with discharge destination from acute orthopaedic ward recorded as “dead”
  - n= 67 cases with discharge destination from hospital trust recorded as “dead”
  - n=131 cases with missing discharge destination from ward or trust and date/time of surgery or operation performed fields
  - n=610 cases with missing admitted using jointly agreed assessment protocol or multidisciplinary rehabilitation team assessment fields

Additional exclusions for CCG analyses

- n=4,610 with an invalid or missing CCG code:
  - n=3,976 cases missing CCG code
  - n= 634 cases with invalid CCG code

Additional exclusions for area code analyses

- n=4,610 cases not mapped to an area team

### WALES

There were 3,908 cases of hip fracture in Wales during calendar year 2013 that were recorded in the National Hip Fracture Database (NHFD). After exclusions, there were 3,793 valid cases and 15.4% received collaborative orthogeriatric care (n=586/3,793).

#### Exclusions

Non-mutually exclusive exclusions (some cases excluded for multiple reasons)

- n=63 cases died without having surgery:
  - n=40 cases died (discharge destination from acute orthopaedic ward recorded as “dead”) without having surgery
  - n=23 cases died (discharge destination from trust recorded as “dead”) without having surgery
- n=35 cases died within 48 hours of surgery
- n=17 cases with missing discharge destination from ward or trust and date/time of surgery or operation performed fields
- n=313 cases with missing admitted using jointly agreed assessment protocol or multidisciplinary rehabilitation team assessment fields

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## NORTHERN IRELAND

There were 1,659 cases of hip fracture in Northern Ireland during calendar year 2013 that were recorded in the National Hip Fracture Database (NHFD). After exclusions, there were 1,635 valid cases and 77.2% received collaborative orthogeriatric care (n=1,262/1,635).

### **Exclusions**

Non-mutually exclusive exclusions (some cases excluded for multiple reasons)

- n=20 cases died without having surgery
- n<5 cases died within 48 hours of surgery
- n=0 cases with missing discharge destination from ward or trust and date/time of surgery or operation performed fields
- n=8 cases with missing admitted using jointly agreed assessment protocol or multidisciplinary rehabilitation team assessment fields

Additional exclusions for analyses by Northern Ireland Commissioning Group

- n=8 cases not matched to a Commissioning Group

## CCG INDICATOR 3.12 HIP FRACTURE: TIMELY SURGERY

### SPECIFICATION

#### DENOMINATOR

The number of patients in the National Hip Fracture Database excluding those that died on the day, or day after, admission (unless they underwent surgery).

#### Inclusion criteria

- Aged 60 to 110 years old inclusive
- Admitted between 1 January and 31 December for the year to be reported

#### Exclusion criteria

- Cases that died (discharge destination from ward or trust recorded as “dead”) on the day of, or day after, admission (difference between date of primary operation and date of admission to A&E) unless they underwent surgery (operation performed is not “no operation”)
- Cases with date/time of admission to A&E after date/time of primary operation
- Cases no longer in the NHFD dataset at the time of analyses (deletions requested by hospitals)
- Cases without geographical mapping, n=8,424

#### Fields used

1. Age
2. Date and time of admission to A&E
3. Date and time of primary operation
4. Operation performed
5. Discharge destination from acute orthopaedic ward
6. Discharge destination from hospital trust

#### NUMERATOR

Among patients in the denominator, the number of patients who receive surgery on the same day, or the day after, admission.

#### Fields used

1. Date and time of admission to A&E
2. Date and time of primary operation
3. Operation performed

### RESULTS

#### ENGLAND

There were 57,680 cases of hip fracture in England during calendar year 2013 that were recorded in the National Hip Fracture Database (NHFD). After exclusions, there were 54,956 valid cases and 74.9% received surgery on the day of, or day after, admission (n=41,145/54,956).

## Exclusions

Non-mutually exclusive exclusions (some cases excluded for multiple reasons)

- n=15 cases with date of admission to A&E after date of primary operation (inpatient fall)
- n=611 cases who did not have surgery and died:
  - n=465 cases who did not have surgery and discharge destination from acute orthopaedic ward recorded as “dead”
  - n=146 cases who did not have surgery and discharge destination from hospital trust recorded as “dead”
- n=2,098 cases missing discharge destination from ward or trust
- n=663 cases missing date/time of surgery or operation performed fields

Additional exclusions for CCG analyses

- n=4,352 with an invalid or missing CCG code:
  - n=3,748 cases missing CCG code
  - n=604 cases with invalid CCG code

Additional exclusions for area code analyses

- n=4,352 cases not mapped to an area team

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## WALES

There were 3,908 cases of hip fracture in Wales during calendar year 2013 that were recorded in the National Hip Fracture Database (NHFD). After exclusions, there were 3,568 valid cases and 64.9% received surgery on the day of, or day after, admission (n=2,315/3,568).

## Exclusions

Non-mutually exclusive exclusions (some cases excluded for multiple reasons)

- n<5 cases with date of admission to A&E after date of primary operation (inpatient fall)
- n=61 cases who did not have surgery and died:
  - n=38 cases who did not have surgery and discharge destination from acute orthopaedic ward recorded as “dead”
  - n=23 cases who did not have surgery and discharge destination from hospital trust recorded as “dead”
- n=278 cases missing discharge destination from ward or trust
- n=69 cases missing date/time of surgery or operation performed fields

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## NORTHERN IRELAND

There were 1,659 cases of hip fracture in Northern Ireland during calendar year 2013 that were recorded in the National Hip Fracture Database (NHFD). After exclusions, there were 1,629 valid cases and 23.4% received surgery on the day of, or day after, admission (n=382/1,629).

## Exclusions

Non-mutually exclusive exclusions (some cases excluded for multiple reasons)

- n= 5 cases with date of admission to A&E after date of primary operation (inpatient fall)
- n=20 cases who did not have surgery and died:
- n= 6 cases missing discharge destination from ward or trust
- n=15 cases missing date/time of surgery or operation performed fields

Additional exclusions for analyses by Northern Ireland Commissioning Group

- n=8 cases not matched to a Commissioning Group

## CCG INDICATOR 3.13 HIP FRACTURE: MULTIFACTORIAL RISK ASSESSMENT

### SPECIFICATION

#### DENOMINATOR

The number of patients in the National Hip Fracture Database excluding those that died in hospital.

##### **Inclusion criteria**

- Aged 60 to 110 years old inclusive
- Admitted between 1 January and 31 December for the year to be reported

##### **Exclusion criteria**

- Cases that died in hospital
- Cases no longer in the NHFD dataset at the time of analyses (deletions requested by hospitals)
- Cases not mapped to a CCG
- Cases without geographical mapping, n=8,424

##### **Fields used**

1. Age
2. Date and time of admission to A&E
3. Discharge destination from acute orthopaedic ward
4. Discharge destination from hospital trust

#### NUMERATOR

Among patients in the denominator, the number of patients who received a multifactorial risk assessment of future falls risk.

##### **Fields used**

1. Multifactorial falls assessment

### RESULTS

#### ENGLAND

There were 57,680 cases of hip fracture in England during calendar year 2013 that were recorded in the National Hip Fracture Database (NHFD). After exclusions, there were 50,987 valid cases and 96.9% had a multifactorial falls assessment (n=49,419/50,987).

##### **Exclusions**

Non-mutually exclusive exclusions (some cases excluded for multiple reasons)

- n=3,732 cases who died before/on discharge from the orthopaedic ward
- n=1,061 cases who died before/on discharge from the hospital trust
- n=1,900 cases missing discharge from the orthopaedic ward or hospital trust fields
- n= 97 cases missing multifactorial falls assessment field

#### Additional exclusions for CCG analyses

- n=4,192 with an invalid or missing CCG code:
  - n=3,620 cases missing CCG code
  - n= 572 cases with invalid CCG code

#### Additional exclusions for area code analyses

- n=4,192 cases not mapped to an area team

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## WALES

There were 3,908 cases of hip fracture in Wales during calendar year 2013 that were recorded in the National Hip Fracture Database (NHFD). After exclusions, there were 3,178 valid cases and 69.3% had a multifactorial falls assessment (n=2,201/3,178).

### Exclusions

Non-mutually exclusive exclusions (some cases excluded for multiple reasons)

- n=284 cases who died before/on discharge from the orthopaedic ward
- n=192 cases who died before/on discharge from the hospital trust
- n=254 cases missing discharge from the orthopaedic ward or hospital trust fields
- n=236 cases missing multifactorial falls assessment field

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## NORTHERN IRELAND

There were 1,659 cases of hip fracture in Northern Ireland during calendar year 2013 that were recorded in the National Hip Fracture Database (NHFD). After exclusions, there were 1,555 valid cases and 74.1% had a multifactorial falls assessment (n=1,152/1,555).

### Exclusions

Non-mutually exclusive exclusions (some cases excluded for multiple reasons)

- n=63 cases who died before/on discharge from the orthopaedic ward
- n=35 cases who died before/on discharge from the hospital trust
- n= 6 cases missing discharge from the orthopaedic ward or hospital trust fields
- n= 0 cases missing multifactorial falls assessment field

Additional exclusions for analyses by Northern Ireland Commissioning Group

- n=8 cases not matched to a Commissioning Group

## NHSOF 3.5.1 PROPORTION OF PATIENTS RECOVERING TO THEIR PREVIOUS LEVELS OF MOBILITY/WALKING ABILITY AT 30 DAYS

### SPECIFICATION

#### DENOMINATOR

Number of admitted patients with a mobility score of 1, 2 or 3 recorded at admission, and a mobility score recorded at 30 days.

#### Inclusion criteria

- Aged 60 to 110 years old inclusive
- Admitted between 1 January and 31 December for the year to be reported
- Pre-fracture mobility score in category 1, 2 or 3
- Valid (not missing) mobility categories at admission and at 30 days

#### Exclusion criteria

- Cases no longer in the NHFD dataset at the time of analyses (deletions requested by hospitals), n=10
- Cases without geographical mapping, n=8,424

#### Fields used

1. Age
2. Date and time of admission to A&E
3. Discharge destination from acute orthopaedic ward
4. Discharge destination from hospital trust
5. Walking ability indoors
6. Walking ability outdoors
7. Accompanied to walk indoors
8. Accompanied to walk outdoors
9. Walking ability indoors at 30 days
10. Walking ability outdoors at 30 days
11. Accompanied to walk indoors at 30 days
12. Accompanied to walk outdoors at 30 days
13. Mobility at admission (derived from fields 5 to 8)
14. Mobility at 30 days (derived from fields 9 to 12)

#### NUMERATOR

Among patients in the denominator, the number of patients whose mobility category at 30 days was lower (i.e. better), the same or only one mobility category higher (i.e. worse) than the mobility category at admission.

#### Fields used

1. Mobility at admission
2. Mobility at 30 days

## RESULTS

### ENGLAND

There were 57,680 cases of hip fracture in England during calendar year 2013 that were recorded in the National Hip Fracture Database (NHFD). After exclusions, there were 9,880 valid cases and 24.0% recovered to their previous level of mobility/walking ability at 30 days after admission (n=2,375/9,880).

#### Exclusions

Non-mutually exclusive exclusions (some cases excluded for multiple reasons)

- n=23,260 cases with pre-fracture mobility score in category 4 or 5
- n=40,412 cases missing mobility score:
  - n= 697 cases missing pre-fracture mobility score only
  - n=35,968 cases missing mobility score at 30 days only
  - n= 3,747 cases missing pre-fracture and 30 days mobility scores

Additional exclusions for CCG analyses

- n=2,950 with an invalid or missing CCG code:
  - n=2,590 cases missing CCG code
  - n= 360 cases with invalid CCG code

Additional exclusions for area code analyses

- n=1,457 cases not mapped to an area team

Additional exclusions for analyses by local authority and region

- n=781 cases not mapped to a local authority or region

### WALES

There were 3,908 cases of hip fracture in Wales during calendar year 2013 that were recorded in the National Hip Fracture Database (NHFD). After exclusions, there were 689 valid cases and 17.4% recovered to their previous level of mobility/walking ability at 30 days after admission (n=120/689).

#### Exclusions

Non-mutually exclusive exclusions (some cases excluded for multiple reasons)

- n=1,631 cases with pre-fracture mobility score in category 4 or 5
- n=1,588 cases missing mobility score:
  - n= 42 cases missing pre-fracture mobility score only
  - n=1,240 cases missing mobility score at 30 days only
  - n= 306 cases missing pre-fracture and 30 days mobility scores

### NORTHERN IRELAND

There were 1,659 cases of hip fracture in Northern Ireland during calendar year 2013 that were recorded in the National Hip Fracture Database (NHFD). After exclusions, there were 756 valid cases and 15.6% recovered to their previous level of mobility/walking ability at 30 days after admission (n=118/756).

**Exclusions**

Non-mutually exclusive exclusions (some cases excluded for multiple reasons)

- n=845 cases with pre-fracture mobility score in category 4 or 5
- n= 58 cases missing mobility score

Additional exclusions for analyses by Northern Ireland Commissioning Group

- n<5 cases not matched to a Commissioning Group

## NHSOF 3.5.II PROPORTION OF PATIENTS RECOVERING TO THEIR PREVIOUS LEVELS OF MOBILITY/WALKING ABILITY AT 120 DAYS

### SPECIFICATION

#### DENOMINATOR

Number of admitted patients with a mobility score of 1, 2 or 3 recorded at admission, and a mobility score recorded at 120 days.

##### Inclusion criteria

- Aged 60 to 110 years old inclusive
- Admitted between 1 January and 31 December for the year to be reported
- Pre-fracture mobility score in category 1, 2 or 3
- Valid (not missing) mobility categories at admission and at 120 days

##### Exclusion criteria

- Cases no longer in the NHFD dataset at the time of analyses (deletions requested by hospitals), n=10
- Cases without geographical mapping, n=8,424

##### Fields used

1. Age
2. Date and time of admission to A&E
3. Discharge destination from acute orthopaedic ward
4. Discharge destination from hospital trust
5. Walking ability indoors
6. Walking ability outdoors
7. Accompanied to walk indoors
8. Accompanied to walk outdoors
9. Walking ability indoors at 120 days
10. Walking ability outdoors at 120 days
11. Accompanied to walk indoors at 120 days
12. Accompanied to walk outdoors at 120 days
13. Mobility at admission (derived from fields 5 to 8)
14. Mobility at 120 days (derived from fields 9 to 12)

#### NUMERATOR

Among patients in the denominator, the number of patients whose mobility category at 120 days was lower (i.e. better), the same or only one mobility category higher (i.e. worse) than the mobility category at admission.

##### Fields used

1. Mobility at admission
2. Mobility at 120 days

## RESULTS

### ENGLAND

There were 57,680 cases of hip fracture in England during calendar year 2013 that were recorded in the National Hip Fracture Database (NHFD). After exclusions, there were 7,172 valid cases and 50.3% recovered to their previous level of mobility/walking ability at 120 days after admission (n=3,609/7,172).

#### Exclusions

Non-mutually exclusive exclusions (some cases excluded for multiple reasons)

- n=23,260 cases with pre-fracture mobility score in category 4 or 5
- n=27,248 cases missing mobility score:
  - n= 349 cases missing pre-fracture mobility score only
  - n=22,804 cases missing mobility score at 30 days only
  - n= 4,095 cases missing pre-fracture and 30 days mobility scores

Additional exclusions for CCG analyses

- n=1,574 with an invalid or missing CCG code:
  - n=1,214 cases missing CCG code
  - n= 360 cases with invalid CCG code

Additional exclusions for area code analyses

- n=1,347 cases not mapped to an area team

Additional exclusions for analyses by local authority and region

- n=172 cases not mapped to a local authority or region

### WALES

There were 3,908 cases of hip fracture in Wales during calendar year 2013 that were recorded in the National Hip Fracture Database (NHFD). After exclusions, there were 435 valid cases and 40.5% recovered to their previous level of mobility/walking ability at 120 days after admission (n=176/435).

#### Exclusions

Non-mutually exclusive exclusions (some cases excluded for multiple reasons)

- n=1,631 cases with pre-fracture mobility score in category 4 or 5
- n=1,842 cases missing mobility score:
  - n= 21 cases missing pre-fracture mobility score only
  - n=1,494 cases missing mobility score at 30 days only
  - n= 327 cases missing pre-fracture and 30 days mobility scores

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## NORTHERN IRELAND

There were 1,659 cases of hip fracture in Northern Ireland during calendar year 2013 that were recorded in the National Hip Fracture Database (NHFD). After exclusions, there were 685 valid cases and 42.5% recovered to their previous level of mobility/walking ability at 120 days after admission (n=291/685).

### **Exclusions**

Non-mutually exclusive exclusions (some cases excluded for multiple reasons)

- n=845 cases with pre-fracture mobility score in category 4 or 5
- n=129 cases missing mobility score

Additional exclusions for analyses by Northern Ireland Commissioning Group

- n<5 cases not matched to a Commissioning Group

## BEST PRACTICE

### SPECIFICATION

#### DENOMINATOR

The number of patients in the National Hip Fracture Database that were discharged from the hospital trust in the calendar year.

##### **Inclusion criteria**

- Aged 60 to 110 years old inclusive
- Discharged between 1 January and 31 December for the year to be reported

##### **Exclusion criteria**

- Cases no longer in the NHFD dataset at the time of analyses (deletions requested by hospitals), n=3
- Cases without geographical mapping, n=7,559

##### **Fields used**

1. Age
2. Date and time of admission to A&E
3. Date and time of discharge from hospital trust

#### NUMERATOR

Among patients in the denominator, the number of patients who achieved Best Practice Tariff:

- Time to surgery is in the range greater than 0 hours and less than or equal to 36 hours.
- Orthopaedic GMC number and geriatrician GMC number are not missing.
- Admitted Using Jointly Agreed Assessment Protocol is equal to 'Yes'.
- Time to geriatrician assessment is between 0 and 72 hours, and geriatrician grade is equal to 'Consultant', 'ST3' or 'SAS'.
- MDT Assessment is equal to 'Yes'.
- Bone Therapy Medication response indicates patient received any form of assessment/action.
- Falls Assessment response indicates patient received any form of assessment/action.
- Valid preoperative AMT score.
- Valid postoperative AMT score.

##### **Fields used**

1. Date and time of admission to A&E
2. Date and time of primary operation
3. Operation performed
4. Orthopaedic GMC number/name
5. Geriatrician GMC number/name
6. Admitted using jointly agreed assessment protocol
7. Date and time of Geriatrician assessment
8. Geriatrician grade
9. Multidisciplinary rehabilitation team assessment
10. Bone therapy medication assessment

11. Preoperative AMT score
12. Postoperative AMT score

## RESULTS

### ENGLAND

There were 57,605 cases of hip fracture in England discharged during calendar year 2013 and recorded in the National Hip Fracture Database (NHFD). After exclusions, there were 56,301 valid cases and 61.9% achieved BPT attainment (n=34,852/56,301).

#### Exclusions

Non-mutually exclusive exclusions

- n= 548 cases without a date of discharge from the hospital trust
- n <5 cases with date of discharge from the hospital trust after 2013
- n=1,304 cases missing date/time of primary operation or performed operation fields
- n=2,797 cases missing geriatrician assessment date/time
- n= 201 cases missing admitted using jointly agreed assessment protocol field
- n= 491 cases missing multidisciplinary rehabilitation team assessment field
- n= 67 cases missing bone health assessment field
- n= 153 cases missing multifactorial falls assessment field
- n= 167 cases missing preoperative AMT score
- n=1,037 cases missing postoperative AMT score

Additional exclusions for CCG analyses

- n=1,453 with an invalid or missing CCG code:
  - n=1,144 cases missing CCG code
  - n= 309 cases with invalid CCG code

Additional exclusions for area code analyses

- n=1,453 cases not mapped to an area team

### WALES

There were 3,767 cases of hip fracture in Wales discharged during calendar year 2013 and recorded in the National Hip Fracture Database (NHFD). After exclusions, there were 3,638 valid cases and 3.0% achieved BPT attainment (n=110/3,638).

#### Exclusions

- n= 532 cases without a date of discharge from the hospital trust
- n= 129 cases missing date/time of primary operation or performed operation fields
- n=1,753 cases missing geriatrician assessment date/time
- n= 133 cases missing admitted using jointly agreed assessment protocol field
- n= 198 cases missing multidisciplinary rehabilitation team assessment field
- n= 66 cases missing bone health assessment field
- n= 183 cases missing multifactorial falls assessment field
- n= 483 cases missing preoperative AMT score
- n=1,698 cases missing postoperative AMT score

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## NORTHERN IRELAND

There were 1,656 cases of hip fracture in Northern Ireland discharged during calendar year 2013 and recorded in the National Hip Fracture Database (NHFD). After exclusions, there were 1,621 valid cases and 2.4% achieved BPT attainment (n=39/1,621).

### Exclusions

- n= 47 cases without a date of discharge from the hospital trust
- n= 35 cases missing date/time of primary operation or performed operation fields
- n=342 cases missing geriatrician assessment date/time
- n= 0 cases missing admitted using jointly agreed assessment protocol field
- n= 7 cases missing multidisciplinary rehabilitation team assessment field
- n= 0 cases missing bone health assessment field
- n= 0 cases missing multifactorial falls assessment field
- n= 16 cases missing preoperative AMT score
- n= 43 cases missing postoperative AMT score

Additional exclusions for analyses by Northern Ireland Commissioning Group

- n=10 cases not matched to a Commissioning Group

## CRUDE MORTALITY RATE

### SPECIFICATION

#### DENOMINATOR

The number of patients in the National Hip Fracture Database excluding those that were not matched to mortality data from the Office of National Statistics (ONS).

#### Inclusion criteria

- Aged 60 to 110 years old inclusive
- Admitted between 1 January and 31 December for the year to be reported

#### Exclusion criteria

- Cases not matched to Office of National Statistics (ONS) mortality data, n=2,538
- Cases no longer in the NHFD dataset at the time of analyses (deletions requested by hospitals), n=10
- Cases without geographical mapping, n=8,424

#### Fields used

1. Age
2. Date of admission to A&E
3. Date of ONS match

#### NUMERATOR

Among patients in the denominator, the number of patients who died within 30 days of admission to A&E.

#### Fields used

1. Date of admission to A&E
2. Date of death

### RESULTS

#### ENGLAND

There were 57,680 cases of hip fracture in England during calendar year 2013 that were recorded in the National Hip Fracture Database (NHFD). After exclusions, there were 57,201 valid cases, with a 8.0% mortality rate within 30 days of admission.

#### Exclusions

Additional exclusions for area team analyses

- n=4,393 not mapped to an area team

Additional exclusions for CCG analyses

- n=3,767 not mapped to a CCG

#### WALES

There were 3,908 cases of hip fracture in Wales during calendar year 2013 that were recorded in the National Hip Fracture Database (NHFD). After exclusions, there were 3,882 valid cases, with a 8.2% mortality rate within 30 days of admission.

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#### NORTHERN IRELAND

There were 1,659 cases of hip fracture in Northern Ireland during calendar year 2013 that were recorded in the National Hip Fracture Database (NHFD). The crude mortality rate in 2013 was not calculated because death data submitted from hospitals in Northern Ireland to the NHFD were not validated.

## PRESSURE ULCER RATE

### SPECIFICATION

#### DENOMINATOR

The number of patients in the National Hip Fracture Database excluding those that died in hospital.

##### Inclusion criteria

- Aged 60 to 110 years old inclusive
- Admitted between 1 January and 31 December for the year to be reported

##### Exclusion criteria

- Cases who died in hospital, n=5,481:
  - Cases that died (discharge destination from acute orthopaedic ward recorded as “dead”), n=4,166 cases
  - Cases that died (discharge destination from trust recorded as “dead”), n=1,315
- Cases no longer in the NHFD dataset at the time of analyses (deletions requested by hospitals), n=10
- Cases without geographical mapping, n=8,424

##### Fields used

1. Age
2. Date of admission to A&E
3. Discharge destination from acute orthopaedic ward
4. Discharge destination from hospital trust

#### NUMERATOR

Among patients in the denominator, the number of patients who developed a pressure ulcer in hospital.

##### Fields used

1. Pressure ulcer

### RESULTS

#### ENGLAND

There were 57,680 cases of hip fracture in England during calendar year 2013 that were recorded in the National Hip Fracture Database (NHFD). After exclusions, there were 52,887 valid cases and a 3.0% pressure ulcer rate.

Additional exclusions for area team analyses

- n=4,533 not mapped to an area team

Additional exclusions for CCG analyses

- n=3,927 not mapped to a CCG

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## WALES

There were 3,908 cases of hip fracture in Wales during calendar year 2013 that were recorded in the National Hip Fracture Database (NHFD). After exclusions, there were 3,432 valid cases and a 2.0% pressure ulcer rate.

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## NORTHERN IRELAND

There were 1,659 cases of hip fracture in Northern Ireland during calendar year 2013 that were recorded in the National Hip Fracture Database (NHFD). After exclusions, there were 1,561 valid cases and a 2.4% pressure ulcer rate.

Additional exclusions for analyses by Northern Ireland Commissioning Group

- n=8 cases not matched to a Commissioning Group