Technical Guidance for

Surgical Specialty Quality Dashboard:

Orthopaedics: Painful Great Toe

V1.1

Contents

1. Introduction

The Surgical Specialty Quality Dashboards have been created by Methods Insight Analytics working in partnership with the Royal College of Surgeons England and NHS England. The dashboards are to support commissioning guidance for specific surgical pathways and are provided for each Clinical Commissioning Group (CCG) in England. The data is for patients who have received treatment for interventions that have been agreed in consultation with the relevant clinical reference groups and is analysed on various indicators benchmarking against the national mean.

Each intervention is defined by a combination of ICD-10 diagnosis codes and OPCS 4.6 procedure codes. One or many of each of these can be used to determine patients who have been treated for each intervention.

Spell Identification

Methods have employed a methodology of counting unique SPELL_Identifier fields to pull back records from any episode where a patient has had an intervention. This ensures that we do not count multiple occurrences of an operation where it is coded in multiple episodes.

2. Dashboard Guidance

2.1. Spine Charts

1. If an organisation is in this range their rate is much worse than expected by chance (99.8% or 3SD)
2. If an organisation is in this range their rate is worse than expected by chance (2SD or 95%)
3. If an organisation is in this range their rate is in the normal range of variation
4. The diamond represents the value for the organisation.
5. The vertical bar represents the average value for all acute Organisations in England
6. If an organisation is in this range their rate is better than expected by chance (2SD or 95%)
7. If an organisation is in this range their rate is much better than expected by chance (99.8% or 3SD)

Please note the scale of each chart is dynamic to show a range that enables each measure to be viewed clearly for the organisation in question.

The chart below shows an organisation whose performance on this indicator is better than the national picture by a degree that is unlikely to be explained by random chance

The two charts below show an organisation whose performance on this indicator does not differ from the national picture by more than can be explained by random chance.

The chart below shows an organisation whose performance on this indicator is worse than the national picture by a degree that is unlikely to be explained by random chance.

The chart below is for an indicator that does not have a desired direction for improvement. The Organisation shown in this example is within the expected range based on the national picture.

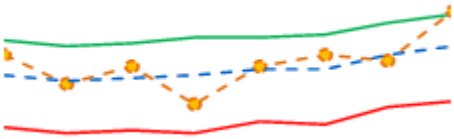
2.2. Notes on statistical process control

These charts are constructed using statistical process control (SPC) principles and use control limits to indicate variation from the national mean. The display shows both two standard deviation (95%) control limits and three standard deviation (99.8%) control limits. Values within these limits (the light grey section) are said to display 'normal cause variation' in that variation from the mean can be considered to be random. Values outside these limits (in the light green or orange sections) are said to display 'special cause variation' at a two standard deviation level, and a cause other than random chance should be considered. Values outside these sections (in the dark green or red sections) also display 'special cause variation' but against a more stringent test.

Variation at the two standard deviation level can be considered to raise an alert, and variation at the three standard deviation level to raise an alarm.

2.3. Time series charts

Methods use a ‘sparkline’ chart combined with SPC methodology to create an SPC sparkline. This shows how an organisation varies on a quality indicator over time and how it compares to national control limits over time.



The upper 3SD limit in this chart is shown as a green line which represents the highest expected quality of commissioned care for the indicator.

The lower 3SD limit in this chart is shown as a red line which represents the lowest expected quality of commissioned care for the indicator.

The actual values for the selected organisation is represented by the orange line and round data points.

The NHS England average (mean) value is represented by the dotted blue line.

The organisation in the example chart above was within national expected range for the last 7 quarters but improved the quality of the outcome measure so much that they had commissioned better than expected outcomes during the most recent quarter.

2.4. Directly Standardised Activity Rates

Activity may vary widely by age. Such variation complicates any comparisons made between two populations that have different age structures. For example, consider two areas A and B with equal-sized populations and identical activity rates. At first glance they appear to be the same.

Suppose, however, that area A has a younger age structure than area B. Given that there is likely to be an increase in the number of interventions required with age, one would expect the older population in area B to show a higher rate of activity.

The most comprehensive way of comparing the activity rate of two populations is to present and compare their age-specific activity. However, when the number of populations being compared increases, the volume of data that needs to be considered quickly becomes unmanageable. What is needed is a single, easily interpreted, summary figure for each population that is adjusted to take into account its age structure. Such summary figures are calculated using age standardisation methods. It may also be desirable to standardise for other variables, such as sex or level of deprivation that may also potentially confound any comparisons.

For directly standardised rates the age-specific rates of the subject population are applied to the age structure of the standard population. This gives the overall rate that would have occurred in the subject population if it had the standard age-profile.

3. The Indicators

3.1. Directly Standardised Activity Rate per 100000 population

Numerator:	Standard age/sex population x Rate of elective activity per 100000 population for same age/sex group
Denominator:	Standard age/sex population
Methodology:	Rate per 100000 population
Data Source:	HES (Hospital Episode Statistics)
	ONS: GP practice population age/sex 5 year age bands
Frequency:	Quarterly
Note:	DISCH_DATE IS NOT NULL
	ADMIMETH IN ('11','12','13')
	Gender_Code IN ('1','2')
	[Episode Number] = '1'

3.2. Average Length of Stay (Days)

Numerator:	Number of elective bed days (excluding daycase)
Denominator:	Number of elective spells (excluding daycase)
Methodology:	Average
Data Source:	HES (Hospital Episode Statistics)
Frequency:	Quarterly
Note:	DISCH_DATE IS NOT NULL
	ADMIMETH IN ('11','12','13')
	CLASSPAT <> '2'
	[Episode Number] = '1'

3.3. 7/30 day Re-admission Rate (%)

Numerator:	Total number of emergency re-admissions within 7/30 days of discharge
Denominator:	Total number of discharges following an elective admission
Methodology:	Percentage
Data Source:	HES (Hospital Episode Statistics)
Frequency:	Quarterly
Note:	Discharge Episodes: DISCH_DATE IS NOT NULL [Last Episode in Spell Indicator] = '1' CLASSPAT = '1' DISMETH <> '4' DISCH_DATE IS NOT NULL ADMIMETH IN ('11','12','13') Admission Episodes: [Episode Number] = '1' CLASSPAT = '1' ADMIMETH IN ('21','22','23','24','28')

3.4. Re-operations within 30 days (%)

Numerator:	Total number of re-operations within 30 days of discharge
Denominator:	Total number of discharges following an elective admission
Methodology:	Percentage
Data Source:	HES (Hospital Episode Statistics)
Frequency:	Quarterly
Note:	Discharge Episodes: DISCH_DATE IS NOT NULL [Last Episode in Spell Indicator] = '1'

CLASSPAT = '1'

DISMETH <> '4'

DISCH_DATE IS NOT NULL

ADMIMETH IN ('11','12','13')

Admission Episodes:

[Episode Number] = '1'

CLASSPAT = '1'

3.5. Day case Rates (%)

Numerator:	Number of elective procedures carried out as a daycase
Denominator:	Total number of elective procedures carried out
Methodology:	Percentage
Data Source:	HES (Hospital Episode Statistics)
Frequency:	Quarterly
Note:	DISCH_DATE IS NOT NULL
	ADMIMETH IN ('11','12','13')
	[Episode Number] = '1'

4. Interventions and Code Sets

4.1. Arthroplasty

Primary OPCS:

W53.1: Primary prosthetic replacement of articulation of bone not using cement NEC
W54.1: Primary prosthetic replacement of articulation of bone NEC
W57.1: Primary excision arthroplasty of first metatarsophalangeal joint
W57.2: Primary excision arthroplasty of joint NEC

Secondary OPCS:

N/A

Primary ICD-10: (will be included after any Primary OPCS)

M20.1: Hallux valgus (acquired)
M20.2: Hallux rigidus

4.2. Revision Arthroplasty

Primary OPCS:

W53.2: Conversion to prosthetic replacement of articulation of bone not using cement NEC
W53.3: Revision of prosthetic replacement of articulation of bone not using cement NEC
W54.2: Conversion to prosthetic replacement of articulation of bone NEC
W54.3: Revision of prosthetic replacement of articulation of bone NEC
W54.4: Attention to prosthetic replacement of articulation of bone NEC
W57.3: Revision of excision arthroplasty of joint
W57.4: Conversion to excision arthroplasty of joint

Secondary OPCS:

N/A

Primary ICD-10: (will be included after any Primary OPCS)

M20.1: Hallux valgus (acquired)
M20.2: Hallux rigidus

4.3. Osteotomy

Primary OPCS:

W12: Angulation periarticular divivion of bone
W13.1: Rotation periarticular osteotomy
W13.2: Displacement osteotomy
W13.8: Other specified other periarticular division of bone
W13.9: Unspecified other periarticular division of bone
W14: Diaphyseal division of bone
W15.1: Osteotomy of neck of first metatarsal bone
W15.2: Osteotomy of base of first metatarsal bone
W15.3: Osteotomy of first metatarsal bone NEC
W15.4: Osteotomy of head of metatarsal bone
W15.6: Cuneiform osteotomy of proximal phalanx with resection of head of first metatarsal
W15.7: Osteotomy of bone of foot and fixation HFQ

Secondary OPCS:

N/A

Primary ICD-10: (will be included after any Primary OPCS)

M20.1: Hallux valgus (acquired)
M20.2: Hallux rigidus

4.4. Arthodesis

Primary OPCS:

W59.1: Fusion of first metatarsophalangeal joint and replacement of lesser metatarsophalangeal joint
W59.2: Fusion of first metatarsophalangeal joint and excision of lesser metatarsophalangeal joint
W59.3: Fusion of first metatarsophalangeal joint NEC
W59.4: Fusion of interphalangeal joint of great toe
W59.5: Fusion of interphalangeal joint of toe NEC
W59.8: Other specified fusion of joint of toe
W59.9: Unspecified fusion of joint of toe
W03: Complex reconstruction of forefoot

Secondary OPCS:

N/A

Primary ICD-10: (will be included after any Primary OPCS)

M20.1: Hallux valgus (acquired)
M20.2: Hallux rigidus

4.5. Revision Arthodesis

Primary OPCS:

W59.6: Revision of fusion of joint of toe

Secondary OPCS:

N/A

Primary ICD-10: (will be included after Primary OPCS)

M20.1: Hallux valgus (acquired)

M20.2: Hallux rigidus

4.6. Soft Tissue Release

Primary OPCS:

T70.2: Tenotomy NEC

W79.1: Soft tissue correction of hallux valgus

W79.2: Excision of bunion NEC

Secondary OPCS:

N/A

Primary ICD-10: (will be included after any Primary OPCS)

M20.1: Hallux valgus (acquired)

M20.2: Hallux rigidus