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2013

Commissioning guide:

Treatment of painful tingling fingers

Sponsoring Organisation: British Society for Surgery of the Hand (BSSH), British Orthopaedic Association (BOA), Royal College of Surgeons of England (RCSEng)
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NICE accredited
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NICE has accredited the process used by Surgical Speciality Associations and Royal College of Surgeons to produce its Commissioning guidance. Accreditation is valid for 5 years from September 2012. More information on accreditation can be viewed at www.nice.org.uk/accreditation

Contents

Introduction

This guidance addresses the management of Painful tingling of the fingers and numbness of the hand which is common and can be disabling. It needs timely treatment to prevent avoidable, irreversible and disabling loss of feeling and power.

When patients present with non-traumatic painful tingling of the fingers, the following should be considered:

- carpal tunnel syndrome,
- cubital tunnel syndrome,
- cervical nerve root entrapment

Carpal tunnel syndrome (CTS) occurs when the median nerve is compressed at the wrist in the carpal tunnel.

This is the commonest form of nerve entrapment. The prevalence of Carpal Tunnel Syndrome in the UK is 7–16%.

A UK General Practice Research Database found that 88 men and 193 women present as new cases per 100,000 population.[1]

Carpal tunnel syndrome is normally diagnosed in primary care and early management is non-surgical.

In secondary care 52996 procedures are undertaken annually.[2]

The surgical decompression rate is 43–74 per 100,000.[3]

The proportion of carpal tunnel release procedures undertaken as day cases varies between 96.69%[4] and 99%.[5]

Cubital tunnel syndrome[6], with tingling of the little and ring finger, is the second most common nerve entrapment in the upper limb and can rapidly weaken hand grip.

It occurs in 25 men and 19 women per 100,000 population each year.[1]

This pathway is a guide which can be modified according to the needs of the local health economy.

1 High Value Care Pathway for painful tingling fingers

Carpal tunnel syndrome and cubital tunnel syndrome are the most common causes of tingling.

Carpal tunnel syndrome occurs due to compression of the median nerve at the wrist which causes changes in feeling of the thumb, index, middle and radial half of the ring finger.

Cubital tunnel syndrome occurs due to compression of the ulnar nerve at the elbow which causes changes in feeling of the little and ulnar half of the ring finger with weakness of small muscles of the hand but not the thumb.

1.1 Primary Care

Assessment

Mild

- History
  - intermittent paraesthesia in the correct distribution
  - nocturnal symptoms (or pain/paraesthesia exacerbated at night)
- Examination
  - subjective sensory impairment in the correct distribution in more severe cases.
  - subjective weakness in the thumb/loss of co-ordination.
- Investigation
  - Nerve Conduction Studies (NCS) are not indicated
  - blood test are only needed if the history and examination suggests a specific secondary cause

Red Flags: may include

- fracture,
- onset of tingling/ numbness after injury
- nerve tumour, tumour

Yellow Flags: urgent referral (<2/52)

- neurological diseases
- inflammatory joint disease (including gout and RA)
- peripheral limb ischaemia (thoracic outlet syndrome or Raynaud's disease)
- cervical nerve root entrapment

This should result in referral to secondary care: including Orthopaedic, Rheumatology or Vascular surgery

Management

Mild symptoms:

- patient information,
- patients with mild carpal tunnel syndrome can be treated with a trial of conservative management by involvement of the MDT

Physiotherapy

- median or ulnar nerve mobilisation techniques
    - wrist splints (wrist in neutral) at night for Carpal Tunnel Syndrome
    - Do not use elbow splints[7] for cubital tunnel syndrome
    - a single steroid + local anaesthetic injection
- patients with a potential reversible cause (pregnancy, hypothyroidism) can be considered for conservative treatment.
- patients with mild carpal or cubital tunnel syndrome should be improved in up to 6 weeks of such management.

Refer to intermediate provider

- persistent symptoms and disability not responding to up to 6 weeks of evidence based non-surgical treatments
- moderate deteriorating symptoms
- functional impairment

Refer to Secondary care provider

- moderate to severe or deteriorating symptoms
- Sudden and severe symptoms

1.2 Intermediate Care[1]

Assessment

- History
    - as above and rule out red flags
    - moderate

[1] Those services that do not require the resources of a general hospital, but are beyond the scope of the traditional primary care team (René JFM, Marcel GMOR, Stuart GP, et al. What is intermediate care? BMJ 2004;**329**(7462):360-61).

    - intermittent paraesthesia in the correct distribution
    - regular night waking
    - NO persistent hypoesthesia
- Examination
    - as above
    - vibration sense may be reduced
    - objective but mild weakness of the thenar muscles

- Investigation
    - NCS not routinely needed
    - "routine blood tests" rarely contribute to management

Management

Providers should adopt a shared decision making model, define treatment goals and take into account the patient's personal circumstances

Patient information should be provided by MDT

- Splints at night
- Single steroid + local anaesthetic injection if:
    - not already given in Primary care
    - painful reversible paraesthesia not helped by splints
    - or when
    - diagnosis is uncertain
    - surgery cannot be undertaken safely

Physiotherapy

- median or ulnar[7] nerve mobilisation techniques

Refer to secondary care provider

- moderate to severe or deteriorating symptoms
- daily symptoms, frequent night waking

- persistent symptoms causing functional impairment not responding to up to 12 weeks of evidence based non-surgical treatments; this time to include any treatment received in primary care

- patients with moderate or severe carpal tunnel should be considered for surgery (open or endoscopic)
- where conservative management has failed and surgical treatment is considered
    - results after surgery after long periods of persistent symptoms may deteriorate[8,9]
- patients who are not suitable for surgery or have decided not to have surgery should be offered an appropriate care package

1.3 Secondary Care

Assessment

- History
    - as above, confirm diagnosis
    - check for red and yellow flags
    - severe involvement
        - persistent paraesthesia in the correct distribution
        - persistent numbness and weakness in the correct distribution

- Examination
    - vibration and 2-point discrimination reduced
    - objective weakness of the thenar muscles
    - wasting of the thenar eminence

- Investigation
    - Nerve Conduction Studies (NCS) done for
        - equivocal clinical examination and history
        - persistent or recurrent carpal tunnel syndrome

- an unclear diagnosis suggesting peripheral neuropathy

Management

Providers should adopt a shared decision making model, define treatment goals and take into account the patient's personal circumstances, all alternatives MUST be discussed.

Patient Information should be provided.

Carpal or cubital[10,11] tunnel decompression

- surgical decompression can be undertaken either by an open or keyhole technique

- the potential benefits of endoscopic procedures over open procedures (or vice-versa) either in terms of cost or outcomes remains unproven and is the subject of on-going research12-15
- open surgery is recommended for elderly patients and patients with multiple co-morbidities
- the overall success rate of carpal tunnel open surgery is more than 95% with a complication rate of less than 3%[16]

- Anterior transposition may be needed for the Ulnar nerve at the elbow for
    - persistent symptoms after decompression
    - subluxing ulnar nerve
    - tardy ulnar nerve palsy with a fixed flexion deformity of the elbow
    - severe ulnar nerve palsy with weakness and persistent decrease in feeling

- Surgery should be performed
    - in an appropriate sterile operating room
    - as a day case in an ambulatory or in-patient facility, unless clinical or social circumstances dictate otherwise
    - under the supervision of a consultant surgeon who has undertaken recognised trainingunder local or regional anaesthetic, although general anaesthetic may be needed occasionally and for ulnar nerve surgery

Patients should be informed that the decision to have surgery can be a dynamic process and a decision to not undergo surgery does not exclude them from having surgery at a future time point

Urgent surgery is indicated where there is
clinical evidence of recent denervation with persistent altered feeling
sudden progression of symptoms
risk of permanent irreversible nerve damage.

Other cases may be treated as routine within an 18-week framework.

Follow-up

- patients will normally need around 2 outpatient follow appointments or equivalent to
- identify a small minority of patients who will need hand therapy
- identify and manage early
    - CRPS
    - Sensitive scar
    - Nerve damage

Care is predominantly provided by a secondary care provider, with potential for provision of surgery in other settings where appropriate facilities are available, including access to hand therapy and appropriate nursing support.

The impact of use of independent sector providers on training and the stability of the hand unit as a whole should be considered when commissioning.

Recurrence rates after carpal tunnel decompression are between 0.3 and 12%.[17]

Secondary Care: Specialised Surgery

Refer to specialised secondary care provider

- sudden severe symptoms
- marked weakness with function deficit which may need reconstructive surgery such as tendon transfers
- CRPS 1 not resolving in a fortnight
- nerve injury
- recurrent or persistent tingling after decompression

2 Procedures explorer for painful tingling fingers

http://rcs.methods.co.uk/pet.html

The Procedures Explorer offers clinicians and commissioners an opportunity to identify variation and take action to reduce "variation in the use of health care services that cannot be explained by variation in patient illness or patient preferences" [18]

The Procedures Explorer for treatment of painful tingling fingers describes variation in:

The Procedures Explorer Tool is available via the Royal College of Surgeons website.

The Procedures Explorer for treatment of painful tingling fingers describes variation in:

Procedure	OPCS4 codes*	Exclusions
Carpal tunnel decompression	A651 ICD10 G560	
Revision carpal tunnel decompression	A691-2 with site code Z092	
Cubital tunnel decompression	A671, A678+Z094, A733+Z094	
Ulnar nerve anterior transposition	A681, A683+Z094	

Revision ulnar nerve surgery	A682, A685, A691, A698, A699, with Z094 as needed ICD10 G562

3 Quality dashboard for painful tingling fingers

The quality dashboard provides an overview of activity commissioned by CCGs from the relevant pathways, and indicators of the quality of care provided by surgical units.

The quality dashboard is available via the Royal College of Surgeons website.

For the current dashboard indicators (see appendix 1)

Measure	Definition	Data Source*
1. Standardised activity rate	Activity rate standardised for age and sex	HES/ Quality Dashboard appendix 1
2. Average length of stay	Total spell duration/total number of patients discharged	HES/ Quality Dashboard appendix 1
3. Day case rate	Number of patients admitted and discharged on the same day/total number of patients discharged	HES/ Quality Dashboard appendix 1
4. Short stay rate	Number of patients admitted and discharged within 48 hours /total number of patients discharged	HES/ Quality Dashboard appendix 1
5. 7 /30 day readmission rate	Number of patients readmitted as an emergency within 7/30 days of discharge /total number of patients discharged Excludes cancer, dementia, mental health	HES/ Quality Dashboard appendix 1
6. Reoperations within 30 days/ 1 year	Number of patients re-operated during an emergency readmission within 30 days/ 1 year /total number of patients discharged	HES/ Quality Dashboard appendix 1
7. In hospital mortality rate	Number of patients who die while in hospital /total number of patients discharged	HES/ Quality Dashboard appendix 1

* includes data from HES, National Clinical Audits, registries

4 Levers for implementation

4.1 Audit and peer review measures

Levers for Implementation are tools for commissioners and providers to aid implementation of high value care pathways.

Measure	Standard	Data source
Carpal tunnel questionnaire	Carpal Tunnel Symptom and function questionnaire	PROM
Patient Evaluation Measure	Patient Evaluation Measure	PROM
Revision rate after surgery	The number of procedures that required revision surgery within an agreed time (? 1 year)	HES
Complication rate	Define common complications to include nerve injury, CRPS 1*	HES, CUSUM

*CRPS 1 Complex Regional Pain Syndrome type 1 (Algodystrophy)

4.2 Quality Specification/CQUIN (Commissioning for Quality and Innovation)

Measure	Description	Data source
1 Day case rate	98%	HES, Dashboard
2 Local anaesthetic rate	Proportion of procedures carried out under local anaesthetic	
3 Revision rate	Rate/100,000 population	HES, Dashboard
4 Time off work	% off work > 1 week	

5 Directory

5.1 Patient Information for painful tingling fingers

Links to patient information and shared decision making tools

Name	Publisher	Link
Carpal tunnel syndrome	British Society for Surgery of the Hand	http://www.bssh.ac.uk/patients/commonhandconditions/carpaltunnelsyndrome
Carpal tunnel syndrome	Patient.co.uk	http://www.patient.co.uk/health/Carpal-Tunnel-Syndrome.htm
Carpal tunnel syndrome	NHS Choices	http://webarchive.nationalarchives.gov.uk/+/www.nhs.uk/conditions/carpal-tunnel-syndrome/pages/whatisitfinal.aspx
Carpal tunnel syndrome	Arthritis Research UK	http://www.arthritisresearchuk.org/arthritis-information/conditions/carpal-tunnel-syndrome.aspx
Carpal tunnel syndrome: Patient decision aid	NHS Shared Decision Making	http://sdm.rightcare.nhs.uk/pda/carpal-tunnel-syndrome/introduction/
Carpal tunnel syndrome	BMJ	http://bestpractice.bmj.com/best-practice/pdf/patient-summaries/531940.pdf

5.2 Clinician information for painful tingling fingers

Name	Publisher	Link
Quality standard for carpal tunnel syndrome	British Society for Surgery of the Hand	http://www.bssh.ac.uk/education/guidelines/carpal_tunnel_syndrome.pdf

6 Benefits and risks

Benefits and risks of commissioning the pathway are described below.

Consideration	Benefit	Risk
Patient outcome	Ensures access to prompt and effective therapy	Prolonged treatment with patients disabled and dependent, who are unable to work if of working age, irreversible changes in the nerve
Patient safety	Reduces chance of missing serious nerve pathology Avoids delay in decompressing nerve	
Patient experience	Improves access to patient information	Patients not taking charge of their care, dependence on primary and secondary care
Equity of access	Improves access to effective procedures	Withholding of access for financial reasons alone, irreversible changes in the nerve with prolonged or permanent disability
Resource impact	Reduces unnecessary investigation (blood tests, Neurophysiology), referral (in early disease) and intervention	Resource required to establish effective providers

7 Further information

7.1 Research recommendations

- Costs and numbers of patients who have injections / splinting and are then referred
- The use of patient based questionnaire that quantify severity of symptoms and changes with treatment
- Identification of patients who would benefit from post-operative hand therapy
- Role of nerve conduction studies in diagnosis and in predicting outcome

7.2 Evidence base

1. Latinovic R, Gulliford MC, Hughes RA. Incidence of common compressive neuropathies in primary care. *Journal of Neurology, Neurosurgery and Psychiatry* 2006;77-2:263-5.

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5. Skues M. *BADS Directory of Procedures.* Fourth ed. London: British Association of Day Surgery, 2012.

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9. Shi Q, MacDermid JC. Is surgical intervention more effective than non-surgical treatment for carpal tunnel syndrome? A systematic review. *J Orthop Surg Res* 2011;6:17.

10. Macadam SA, Gandhi R, Bezuhly M, Lefaivre KA. Simple decompression versus anterior subcutaneous and submuscular transposition of the ulnar nerve for cubital tunnel syndrome: a meta-analysis. *Journal of Hand Surgery - American Volume* 2008;33-8:1314-12.

11. Zlowodzki M, Chan S, Bhandari M, Kalliainen L, Schubert W. Anterior transposition compared with simple decompression for treatment of cubital tunnel syndrome. A meta-analysis of randomized, controlled trials. *Journal of Bone & Joint Surgery - American Volume* 2007;89-12:2591-8.

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14. Thoma A, Veltri K, Haines T, Duku E. A meta-analysis of randomized controlled trials comparing endoscopic and open carpal tunnel decompression. *Plastic & Reconstructive Surgery* 2004;114-5:1137-46.

15. Gerritsen AA, Uitdehaag BM, van Geldere D, Scholten RJ, de Vet HC, Bouter LM. Systematic review of randomized clinical trials of surgical treatment for carpal tunnel syndrome. *British Journal of Surgery* 2001;88-10:1285-95.

16. Jimenez DF, Gibbs SR, Clapper AT. Endoscopic treatment of carpal tunnel syndrome: a critical review. *Journal of Neurosurgery* 1998;88-5:817-26.

17. Wulle C. Treatment of recurrence of the carpal tunnel syndrome. *Annales de Chirurgie de la Main* 1987;6-3:203-9.

18. Wennberg JE, Fisher ES, Goodman DC, Skinner JS. Tracking the Care of Patients with Severe Chronic Illness: The Dartmouth Atlas of Health Care 2008. Lebanon, New Hampshire: The Dartmouth Institute for Health Policy and Clinical Practice 2008:1-123.

7.3 Guide development group for painful tingling fingers

A commissioning guide development group was established to review and advise on the content of the commissioning guide. This group met four times with additional interaction taking place via email.

Name	Job Title/Role	Affiliation
Ian Trail (Chair)	Consultant Trauma & Orthopaedic Surgeon President British Society for Surgery of the Hand	British Society for Surgery of the Hand
Professor Joe Dias	Chair, Musculoskeletal Commissioning Guidance Development Project; Consultant Orthopaedic Surgeon	BSSH, BOA
David Clark	Consultant Orthopaedic Surgeon	British Orthopaedic Directors Society
Philip Ainsworth	Interim Director of Operations and Programmes	British Society of Rheumatology
Ailsa Bosworth	Patient representative	National Rheumatoid Arthritis Society
Paul Kelly	Patient representative	
Zoe Clift	Clinical Specialist; Hand Therapy; St Thomas' Hospital, London	British Association of Hand Therapists (Former Chair)
Dr Junaid Bajwa	General Practitioner & Commissioner	NHS Greenwich
Dr Naveed Akhtar	General Practitioner and Commissioner GPwSI Hand Surgery	West Essex CCG Mid Essex Trust
Simon Swift	Director	Insight Analytics

Over the course of the development of the Commissioning guidance document, the guideline development group was advised by a project manager from East Kent Hospitals NHS Trust.

Information specialist support provided by Bazian, 10 Fitzroy Square, London, W1T 5HP

7.4 Funding statement

The development of this commissioning guidance has been funded by the following sources:

- DH Right Care funded the costs of the guide development group, literature searches and contributed towards administrative costs.
- The Royal College of Surgeons of England and the British Orthopaedic Association provided staff to support the guideline development.

7.5 Methods Statement

The development of this guidance has followed a defined, NICE Accredited process. This included a systematic literature review, public consultation and the development of a Guidance Development Group which included those involved in commissioning, delivering, supporting and receiving surgical care as well as those who had undergone treatment. An essential component of the process was to ensure that the guidance was subject to peer review by senior clinicians, commissioners and patient representatives. Details are available at this site:
www.rcseng.ac.uk/providers-commissioners/docs/rcseng-ssa-commissioning-guidance-process-manual/at_download/file

7.6 Conflicts of Interest Statement

Individuals involved in the development and formal peer review of commissioning guides are asked to complete a conflict of interest declaration. It is noted that declaring a conflict of interest does not imply that the individual has been influenced by his or her secondary interest, but this is intended to make interests (financial or otherwise) more transparent and to allow others to have knowledge of the interest. Professor Joe Dias (Chair, Musculoskeletal Commissioning Guidance Development Project; Consultant Orthopaedic Surgeon) has seen and approved these. All records are kept on file, and are available on request.

Appendix 1: Dashboard

To support the commissioning guides the Quality Dashboards show information derived from Hospital Episode Statistics (HES) data. These dashboards show indicators for activity commissioned by CCGs across the relevant surgical pathways and provide an indication of the quality of care provided to patients.

The dashboards are supported by a meta data document to show how each indicator was derived.

http://rcs.methods.co.uk/dashboards.html

METHODS

NHS

Created and maintained by Methods Insight Analytics in association with BOA

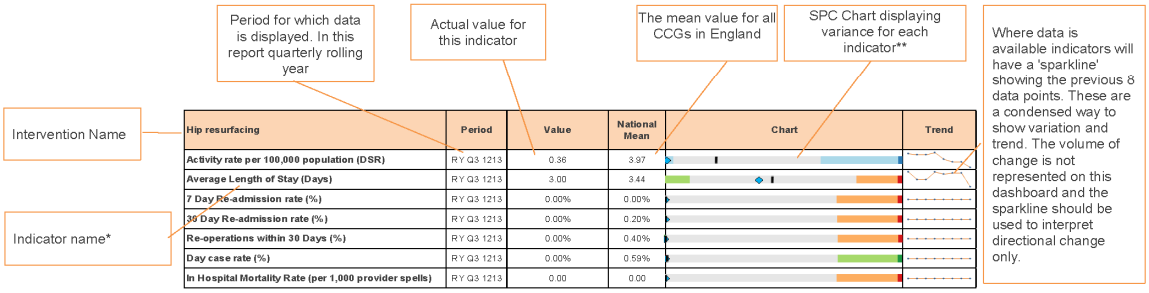
Rightcare Surgical Commissioning Dashboard: Orthopaedics

The Right Care Dashboard provides rates of Activity for CCGs for interventions identified as a priority by the surgical specialist association.

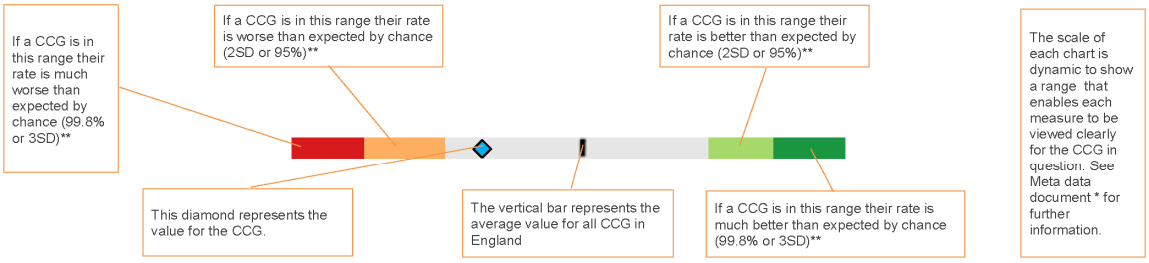
These rates are directly standardised against the national population for Age and Sex.

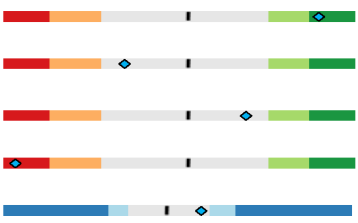
This dashboard supports the Painful Osteoarthritis of the Hip commissioning guidance document developed by the BOA working group with the RCSE.

Report Overview



How to interpret charts





The chart on the left shows a CCG 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 on the left shows a CCG whose performance on this indicator does not differ from the national picture by more than can be explained by random chance**

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

* For a full description of each metric and metadata, please see technical guidance.

** 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.

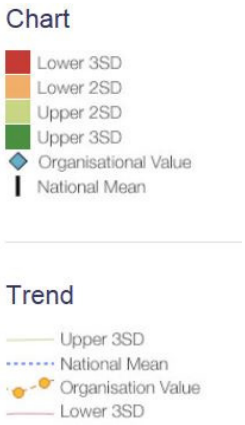
Variation at the two standard deviation level can be considered to raise an alert, and variation at the three standard deviation level to raise an alarm.

Example CCG:

Orthopaedics-Tingling Fingers

Carpal Tunnel

Metric	Period	Value	Mean	Chart	Trend
Age/Sex Standardised Activity (per 100,000 population)	RY Q4 1213	84.84	87.99		
Average Length of Stay (Days)	RY Q4 1213	0.01	0.04		
7 Day Readmission Rate (%)	RY Q4 1213	0.00	0.35		
30 Day Readmission Rate (%)	RY Q4 1213	0.00	1.13		
30 Day Reoperation Rate (%)	RY Q4 1213	0.00	0.60		
Daycase Rate (%)	RY Q4 1213	99.34	98.39		
In Hospital Mortality Rate (per 1,000 discharges)	RY Q4 1213	0.00	0.00		



Cubital Tunnel

Metric	Period	Value	Mean	Chart	Trend
Age/Sex Standardised Activity (per 100,000 population)	RY Q4 1213	14.50	13.28		
Average Length of Stay (Days)	RY Q4 1213	0.15	0.17		
7 Day Readmission Rate (%)	RY Q4 1213	0.00	0.23		
30 Day Readmission Rate (%)	RY Q4 1213	0.00	0.75		
30 Day Reoperation Rate (%)	RY Q4 1213	0.00	0.41		
Daycase Rate (%)	RY Q4 1213	84.62	88.59		
In Hospital Mortality Rate (per 1,000 discharges)	RY Q4 1213	0.00	0.00		