# Appendix C: Examples of good practice in the NHS across the elective care pathway

This appendix provides examples of good practice observed at each stage of the orthopaedic or ophthalmic elective care pathway at the following NHS foundation trusts and trusts:

- The Newcastle Upon Tyne Hospitals NHS Foundation Trust
- The Robert Jones and Agnes Hunt Orthopaedic Hospital NHS Foundation Trust
- Sunderland Eye Infirmary, City Hospitals Sunderland NHS Foundation Trust
- Moorfields Eye Hospital NHS Foundation Trust
- South West London Elective Orthopaedic Centre, Kingston Hospital Foundation Trust
- Royal Devon and Exeter NHS Foundation Trust
- The Royal Orthopaedic Hospital NHS Foundation Trust
- Worcestershire Acute Hospitals NHS Trust

These were chosen to represent a range of provider types in the NHS – large teaching hospitals, small district general hospitals and specialist centres.

Information was gathered during site visits and interviews with management staff and clinicians.

# Good practice examples are organised around the nine improvement opportunities in the patient pathway

**Optimised care pathway**

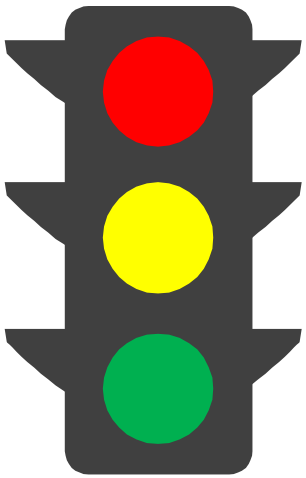
| First specialist input | Outpatient care | Inpatient pre-operative care | Surgery | Inpatient post-operative care | Follow-up post discharge |
|---|---|---|---|---|---|
| 1 Stratification of patients by risk and alignment of resources to risk | 2 Streamlined diagnostics, outpatients and pre-assessment | 3 Day of surgery admission | 4 Specialisation and extended roles within team<br>5 Optimised scheduling and management<br>6 Surgical teams supported to use theatres efficiently | 7 Standardis-ation of ward care and enhanced recovery<br>8 Proactive management of infections and readmissions | 9 Nurse/allied health professional (AHP)-led follow-up for routine patients and level of follow-up aligned to patients risk profile |

# 1 Stratification of patients by risk

## The Royal Orthopaedic Hospital NHS Foundation Trust

**Rapid assessment pathway**

A band 5 nurse and healthcare assistant carry out initial assessment to determine if a patient needs a full preoperative assessment. The patient is categorised under a red/amber/green (RAG) system



Patient is sent for full preassessment and anaesthetic review

Patient is sent for full preassessment

Patient is discharged home until day of surgery

### Key performance measures

- Reduction in late cancellations due to patient fitness
- Reduction in patients requiring full preop assessment – conversion of amber patients to green patients
- Time to process notes – ultimate target <3 days

### Enablers

- Nurses, after receiving training, able to filter patients effectively (eg training in cardiovascular medicine, dementia, electrocardiography, interpreting blood results)
- Separation of administrative tasks from clinical decision-making
- Dedicated anaesthetic resource
- Continual monitoring of patients assigned to each RAG rating

# 2/4 Streamlined diagnostics and treatment, and extended roles within outpatient procedure team

## The Newcastle Upon Tyne Hospitals NHS Foundation Trust

Hub-and-spoke model (three sites with two further spoke sites opening in 2015)

### One-stop clinic for diagnosis, assessment and treatment of wet AMD[1]

**Urgent referral from optician**

**AMD patients returning for follow-up injections[2]**

**Walk-in at ophthal-mology A&E** *(triaged to wet AMD clinic)*

**Check-in at Ophthal-mology OP reception**

**Vision test and eye drops** *Specialist nurse*

*Bottleneck if insufficient OCT equipment*

**Photography** *Medical photographer*

**Assessment of images, consultation and eye exam** *Ophthalmologist **or** specialist nurse **or** optometrist working within consultant-led clinic*

*Bottleneck if insufficient suitable space (or trained staff)*

**Anti-VEGF treatment[3]** *Specialist nurse (~70%) in 'clean room'*

**GP referral**

*If needed*

**Additional support services available on site:**
- low vision aids
- refracted visual acuity
- ECLO certificate of vision impairment

*If indicated*

**Fluorescein angiography** *Medical photographer*

**Key performance indicators**
- 25 injections per 4-hour clinic
- ~7 new patients/week
- ~225 injections/week
- 55% OP/injection conversion rate

**Enablers**
- Electronic health record (Medisoft)
- Trained specialist nurses (two FTEs initially; two further added in 2015)
- Well-designed clinic estates

*~2 hours total patient time in clinic*
*- less time required during twice-monthly Saturday wet AMD-only OP clinics*

ECLO, eye clinic liaison office; OP, outpatient; OCT, optical coherence tomography; FTE, full-time equivalent; VEGF, vascular endothelial growth factor; AMD, age-related macular degeneration

[1] Similar pathway for diabetic retinopathy and retinal vein occlusion [2] Accelerated pathway for follow-up patients – if vision test and nurse assessment suggest no further issues, patient goes straight to treatment during the standard course of treatment. Further assessment required if issues raised or new treatment cycle frequency needs to be determined

[3] Principally Lucentis and Eylea

Sources included Medisoft data

# 2 Streamlined diagnostics, outpatients and preassessment

## Sunderland Eye Infirmary
## City Hospitals Sunderland NHS Foundation Trust

### Outpatients: standardised pathway

- Entire outpatients episode takes about an hour
- Dedicated ophthalmic nurses with extended roles
- First appointment includes OCT/fluorescein and assessment – occasionally injection on same day (aim is one-stop shop)
- Standardised outpatient pathway now being delivered at multiple sites

**Reception admits patient to waiting area** → **Patient information + dilating drops by nurse (band 5)** → **OCT scan by HCA (band 2)** → **Initial discus-sion with consultant** → **Ongoing nurse-led services**

- Recently updated AMD protocol
- Process/systems have evolved over time in clinics and have been a collaboration between medical and nursing teams
- Continuous improvement

### Key performance measures

- Turnaround time
- Time between tests/assessments
- AMD clinic: 18 patients seen per clinic session per consultant compared to NHS average of 10 to 12
- Cataracts: 15 patients per day per consultant compared to NHS average of 10 to 12

### Enablers

- Streamlined estates for cataracts
- Twin vision stations in macular unit
- Expanded roles
- Culture within hospital

OCT, optical coherence tomography; AMD, age-related macular degeneration; HCA, healthcare assistant

# 2 Streamlined diagnostics, outpatients and preassessment

## Moorfields Eye Hospital NHS Foundation Trust

### Virtual clinics for diagnosing and managing glaucoma

**Patients undergo diagnostic imaging in a dedicated facility separate from the consultant-led glaucoma clinic**

↓

**iPads in remote community clinics with a purpose-built application are used to capture metrics associated with glaucoma assessments**

↓

**Patient data are messaged securely to the Moorfields OpenEyes patient record system**

↓

**These images and other biometry are reviewed remotely by a consultant and a decision taken on the best clinical management plan for the patient**

*"Virtual clinics are a way of improving living with glaucoma by reducing the patient's need for regular travel to a central hospital and freeing up more of the consultant's specialist time to concentrate on treating the patient's condition."*

Bill Aylward, Consultant Ophthalmologist

**Key performance measures**

- Proportion of patients diagnosed with glaucoma in virtual clinics
- Number of patients reviewed per 4-hour session

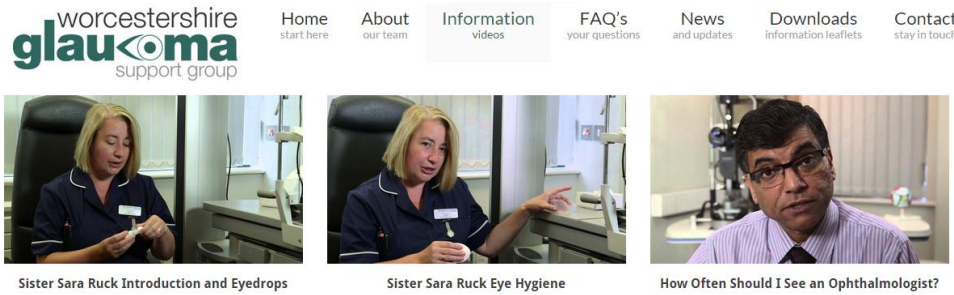
**Enablers**

- Secure and reliable ICT infrastructure
- Patient satisfaction despite less face-to-face time with ophthalmologist

# 2 Streamlined diagnostics, outpatients and preassessment

## Worcestershire Acute Hospitals NHS Trust

### Worcestershire Glaucoma Support Group[1]




- Provides patient-to-patient interaction and networking – improves the patient experience
- Provides access to up-to-date information regarding available treatments and enables patients to share experiences about them
- Videos featuring the consultant ophthalmologist and nurse explain the diagnosis and how to care for eyes at home
- If patients access educational materials before seeing a specialist, time can be saved in outpatients and outcomes can be improved

### Key performance measures

- Number of patients attending support group meetings
- Number of people visiting website and videos

### Enablers

- Dedicated support group team
- Local media/social media
- Local population

[1] www.worcestershireglaucomasupport.co.uk/

# 4 Specialisation and extended roles within theatre team

## Royal Devon and Exeter NHS Foundation Trust

### Local anaesthetic provided by anaesthetic physician assistants

- Majority of cataract surgery in UK is carried out under topical or sub-Tenon's anaesthesia
- Topical is likely to be more cost-effective as no anaesthetist is required but not suitable for all patients (not always possible to predict preop)
- Sub-Tenon's (+/- sedation) may give better patient experience
- Anaesthetist may improve patient flow during list
- At Royal Devon and Exeter cataract sessions covered by anaesthetic physician assistants (band 7 – ~1/3 cost of consultant)
- Initially, only straightforward cataract surgery (no sedation), 'allowed' under RCOphth guidelines 2012
- Now expanding anaesthetic physician assistant remit to include more complex cases, glaucoma, etc, and administration of IV sedation when needed (outside RCOphth guidelines)

**Key performance measures**

- No difference in quality of block, complications or patient satisfaction compared to consultant anaesthetist (shown by audit)

**Enablers**

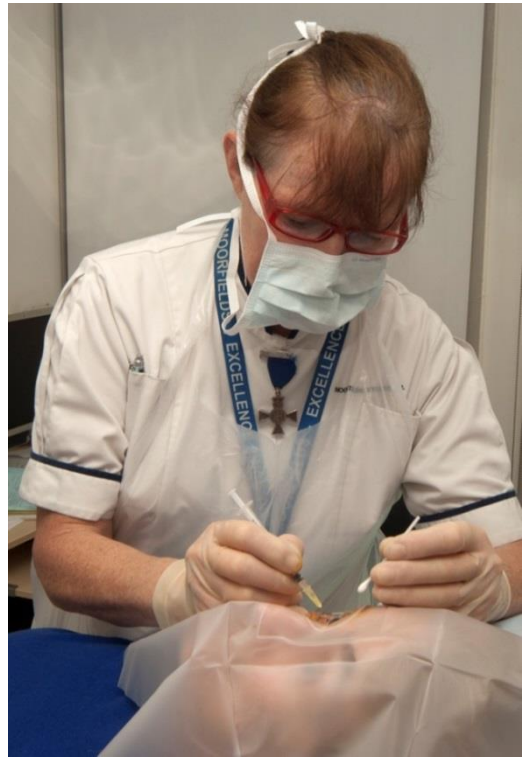
- Availability of anaesthetic physician assistant (~100 in UK). Could use nurse practitioner as alternative
- Local training programme, protocols and supervision
- Local governance and risk arrangements

# 4 Specialisation and extended roles in theatre or outpatient procedure team

## Moorfields Eye Hospital NHS Foundation Trust

### Senior nurses trained to deliver injectable treatments[1] for neurovascular AMD

- NICE-recommended therapy for AMD[1] requires that each patient receives 4 to 6 anti-VEGF injections/year for up to 2 years
- Insufficient ophthalmologist workforce to meet demand
- Extended roles for nurses within ophthalmic care already included: substitute for ophthalmic surgeons in some treatments, eg laser capsulotomy treatment
- **Using nurses allows the service to become a 'one-stop' service where the injection is given on the same day the decision is made**
- Senior (band 7, but can be band 6 or 5) nurses trained to deliver IVT
- This innovation has increased volume of IVT delivered at Moorfields by 50%; with ~50% provided by nursing staff



### Key performance measures

- 50% of IVT procedures for AMD delivered by nursing staff (up to 99% in other sites)
- No differences in safety/quality of care
- Overall volume of IVT procedures for AMD has increased by 50%

### Enablers

- Training programme for specialist nurses
- Supporting protocols, governance and supervision
- Supporting legal framework to address drug licensing requirements and litigation risk

[1] Ranibizumab and aflibercept

AMD, age-related macular degeneration; IVT, intravitreal therapy; NICE, National Institute for Health and Care Excellence

Michellotti et al. (2014) Transformational change: Nurses substituting for ophthalmologists for intravitreal injections - a quality improvement report. DaCosta et al. (2014) Implementation of a nurse-delivered intravitreal injection service.

# 4 Extended roles in theatre team

## The Newcastle Upon Tyne Hospitals NHS Foundation Trust

### Dedicated anaesthetic team

- Dedicated orthopaedic anaesthetic block room piloted in November 2014:
  - prepares patient for surgery while preceding patient on the list is in theatre
  - dedicated orderly and clean team (two HCAs) included in the block room team
- Operational outcomes from the pilot:
  - handover time reduced from 45 to 10 minutes
  - additional patient on most lists
- Financial costs and impact:
  - implementation costs:
    - £422k staffing
    - £141k capital equipment
  - estimated additional income: £2.2 million
- Pilot was funded substantively by increasing activity and throughput in theatres

### Key performance measures

- Reduced turnaround times
- On-time starts and finishes
- Increased activity and through flow
- Improved efficiency
- Reduction in patient waiting times

### Enablers

- Adequate resourcing
- Ring-fenced orthopaedic beds
- Ring-fenced anaesthetic theatres
- MDT process and buy in

HCA, healthcare assistant; MDT, multi-disciplinary team

# 5 Optimised scheduling and management

## Sunderland Eye Infirmary: cataract surgery
## City Hospitals Sunderland NHS Foundation Trust

**Annual plan** → **Scheduling** → **Day of list: preop lounge** → **Preop prepara-tion** → **Theatre** → **PACU**

**20 lists/week dedicated to cataracts**

**Four lists include an anaesthetist** for patients requiring nerve block or sedation; all other lists use eyedrops

**Separate teaching lists** (9/week) **and service lists**[1] (11/week)

Teaching lists have six cataracts/list

Service lists have 10 to 12 cataracts/ list

**No parallel lists**

**Schedule based on individual surgeon's speed** (eg 5 cataracts per list for some surgeons, 12 per list for others)

**Complex cases directed to specific consultants**

**No simultan-eous cataract surgeries** performed

**Staggered starts:** patients arrive 30 to 60 min before procedure

**Four primary nurses per list** allocated to two patients per list. Perform preop check in, preop preparation, present in theatre, postop recovery and discharge minimizing handover and improving turnaround time

**Area of best practice identified by the Care Quality Commission**

### Key performance measures

- Eight cataracts per 4-hour list (average)
- Improvements in:
  - theatre utilisation
  - turnaround time
  - cancellations
  - on-time starts

### Enablers

- Discrete, purpose-built unit with dedicated theatres, patient preop waiting room and recovery room co-located
- Two scrub nurses per list: one assisting in surgery and one setting up for the next case

PACU, post-anaesthesia care unit

[1] Non-teaching list

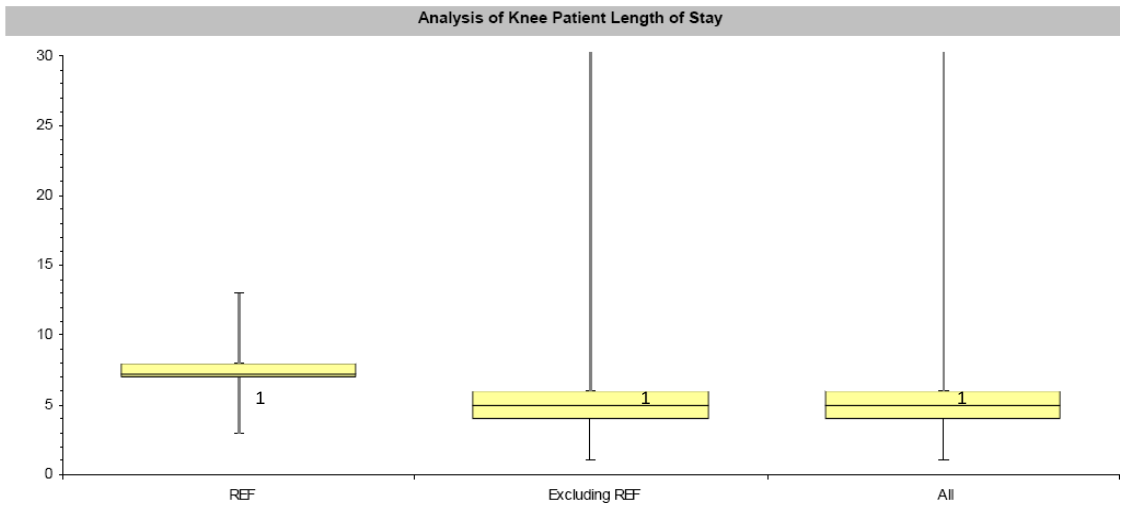
# 5 Optimised scheduling and management

## South West London Elective Orthopaedic Centre (SWLEOC)
## Kingston Hospital NHS Foundation Trust

### Surgeons receive individual performance reports

- Individualised performance reports for clinical outcomes prepared annually for each surgeon
- Surgeons are gently incentivised to improve outcomes
- SWLEOC overall clinical outcomes report prepared annually, with information on how each surgeon has benefitted overall outcomes

Chart shows outcomes (ALOS) for knee patients of surgeon A (REF) compared to centre average (ALL) and hypothetical performance for centre if surgeon A excluded (excluding REF)




### Key performance measures

- Average patients per list
- Efficient use of theatres
- Complications
- Oxford Orthopaedic scores
- Euroqol health outcome scores
- Patient satisfaction
- Length of stay

### Enablers

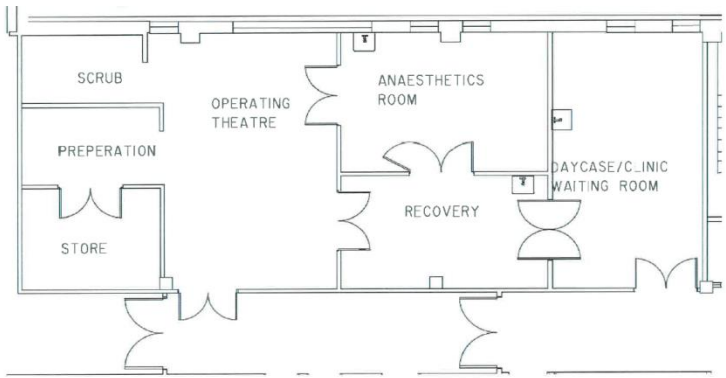
- Second largest outcome database of its kind globally
- This is now web based

# 5 Optimised scheduling and management

## Worcestershire Royal Hospital
## Worcestershire Acute Hospitals NHS Trust

**Purpose-built, streamlined infrastructure optimises flow of patients for eye surgery**

- Dedicated preop waiting room next door to anaesthetic room
- Ring-fenced theatres situated next door to both anaesthetic room and recovery room. Flow is therefore very efficient, with the physical layout following the treatment pathway
- Quick theatre turnaround time (~5 min)
- Compact layout of rooms and theatre minimises transfer times/delays
- Theatres have capacity for patients to be wheeled in and out, rather than walking out – improves patient experience




### Key performance measures

- 5-min theatre turnaround time

### Enablers

- Worcestershire has purpose-built, ring-fenced ophthalmology theatres designed around the patient pathway
- Tools to measure theatre utilisation time, start times, etc

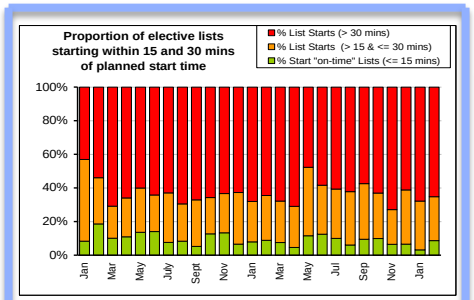
# 6 Surgical teams incentivised to use theatres efficiently

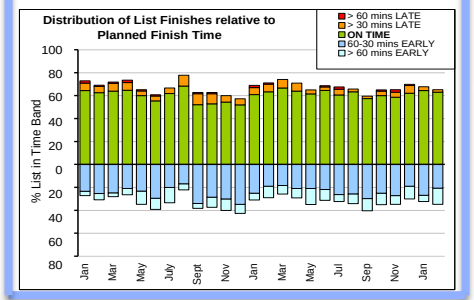
## Royal Devon and Exeter NHS Foundation Trust

### Formula 1: Performance management for theatre utilisation

- Formula 1 is a theatre system that collects outcomes and measures theatre efficiency
- Monthly reports on performance of individual surgeons/lists are used to incentivise productivity

***F1 Monthly Summary Report*** ***Specialty:*** **OPH** ***from Jan 2013***



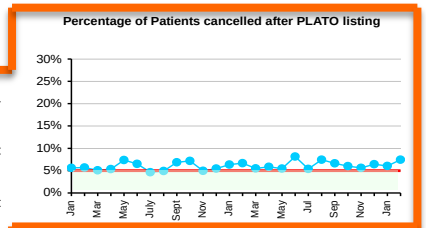

**Clinical Lead:**

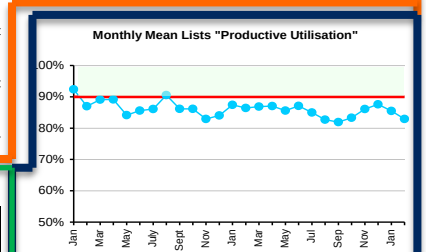
**Cluster Manager:**

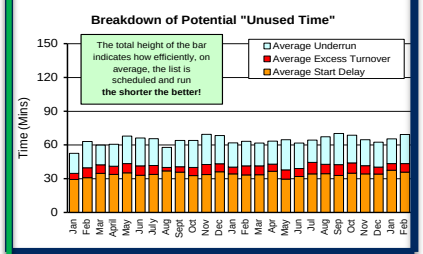
| Top 3 Cancellations | | % |
|---|---|---|
| Q3 13 | Pt DNA or cancelled op | 51 |
| | Medical canc - Pt unfit | 32 |
| | Unknown | 14 |
| Q4 13 | Patient DNA or cancelled operation | 55 |
| | Medical cancellation - patient unfit | 36 |
| | Unknown | 8 |
| Q1 14 | Patient DNA or cancelled operation | 54 |
| | Medical cancellation - patient unfit | 35 |
| | Unknown | 7 |
| Q2 14 | Medical cancellation - patient unfit | 43 |
| | Patient DNA or cancelled operation | 36 |
| | Unknown | 13 |
| Q3 14 | Medical cancellation - patient unfit | 49 |
| | Patient DNA or cancelled operation | 36 |
| | Unknown | 12 |

**Planned List Times**

| | Start | End | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|
| AM | 08:30 | 12:30 | 508 | 503 | 83 |
| PM | 13:30 | 17:30 | 484 | 467 | 81 |
| AD | 08:30 | 17:30 | 10 | 6 | 0 |
| ADE | 08:30 | 21:00 | 0 | 0 | 0 |
| EVE | 17:30 | 21:00 | 124 | 132 | 21 |
| W/End Lists | | | 40 | 26 | 9 |




| | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sept | Oct | Nov | Dec | Jan | Feb |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cases | 423 | 381 | 470 | 433 | 428 | 433 | 433 | 472 | 473 | 423 | 451 | 499 | 470 | 450 | 482 | 471 |
| Cancelled | 22 | 22 | 32 | 31 | 25 | 27 | 25 | 42 | 27 | 34 | 32 | 32 | 28 | 31 | 31 | 38 |
| Sessions | 92 | 78 | 100 | 90 | 93 | 87 | 87 | 96 | 100 | 82 | 94 | 101 | 93 | 91 | 93 | 92 |
| Cases/Session | 4.6 | 4.9 | 4.7 | 4.8 | 4.6 | 5.0 | 5.0 | 4.9 | 4.7 | 5.2 | 4.8 | 4.9 | 5.1 | 4.9 | 5.2 | 5.1 |
| Lists | 90 | 75 | 100 | 90 | 93 | 86 | 86 | 96 | 99 | 82 | 94 | 100 | 92 | 90 | 93 | 92 |
| > 90 min unused | 16 | 13 | 10 | 14 | 11 | 14 | 19 | 17 | 20 | 13 | 20 | 19 | 13 | 16 | 15 | 16 |

### Key performance measures

- Start and finish time
- Cancellation data
- Session and logistic data
- List utilisation data

### Enablers

- IT systems
- Team 'buy-in'

# 6 Surgical teams incentivised to use theatres efficiently

## Worcestershire Royal Hospital
## Worcestershire Acute Hospitals NHS Trust

### Surgeons have targets for number of procedures per list

- Targets of cataract procedures per surgeon per 4-hour list: eight (two complex + six simple cases)
- When the target is met, the surgeon (and surgical team) may finish early and are allowed a break – to ensure quality of care and to avoid fatigue

### Key performance measures

- Average cataract patients per 4-hour list: 7.6 (June 2012)

### Enablers

- Small team culture with strong focus on effective use of resources
- Specialist, experienced multi-disciplinary team

# 8 Standardisation of ward care and enhanced recovery

## The Newcastle Upon Tyne Hospitals NHS Foundation Trust

### Patient education before and after surgery

- Arthroplasty team work with patients prior to surgery to set expectations for postoperative journey, including length of stay. All patients receive:
  - an education session before admission; held on the ward to which they will be admitted
  - joint pathway patient guide for hip or knee replacement; to be used before, during and after joint replacement
  - expected length of stay (aim for 3 days but at present mostly 5 days)
  - goals
  - postoperative exercises
- Patients are given a 'discharge wallet' with information on:
  - what the patient must do before leaving hospital (dos and don'ts)
  - the district nursing service
  - Friends and Family feedback card
  - follow-up appointment
  - numbers to call for advice or information, or to make a complaint

### Key performance measures

- Patient education
- Reduced risk of infection
- Management of pain to aid recovery
- Average postoperative length of stay 3 to 5 days
- Patient feedback to change practice

### Enablers

- Patient guide booklets
- Multi-disciplinary team approach
- Dedicated orthopaedic discharge team
- Discharge booklet
- Helpline with arthroplasty specialist nurses

# 8 Low readmissions and complications

## South West London Elective Orthopaedic Centre (SWLEOC)
## Kingston Hospital NHS Foundation Trust

### Infection control processes

- **Preadmission:** all patients screened for infection before admission and risk factors addressed by preassessment nurse:
  - if an organism known to cause infection is identified, medication is prescribed before surgery to reduce potential complications
  - special precautions to prevent cross-contamination (if medical treatment is not an option)
- **In hospital:**
  - dedicated infection control group, infection control 'champions'
  - dedicated surgical site surveillance nurse works with patients post-operatively to educate them on wound care and answer questions
  - annual training/updates for all staff
  - information boards in all areas (for staff, patients and visitors):
    – latest news, initiatives and information
    – latest audit data
  - hand wipes, information booklets and education for patients and visitors
- **Post discharge:**
  - dedicated phone line for patients to use post discharge if they have concerns about their wound or any aspect of their recovery

### Key performance measures

- Infection rates:
  - SWLEOC: 0.2%
  - national average: 1%
- Readmission rates

### Enablers

- Ring-fenced beds
- Local culture
- Access to microbiology team

# 8 Low readmissions and complications

## The Royal Orthopaedic Hospital NHS Foundation Trust

**Bone Infection Unit (BIU) founded March 2012 – a specialist team for the treatment of bone, joint and spinal infections**

- Before the introduction of the BIU, all patients received 6 weeks of IV antibiotics as an inpatient and treatment of patients with and without prosthesis did not differ
- Under the care of the BIU, a patient-specific plan is made – all patients receive 2 weeks of IV antibiotics in hospital and then are managed with oral antibiotics through a specific tailored plan
- BIU is made up of a multidisciplinary team including:
  - tissue viability and infection control nurses
  - consultant microbiologist
  - consultant orthopaedic surgeon
  - infection control specialist nurse
  - antimicrobial pharmacist
  - ROCS (Royal Orthopaedic Community Scheme)
- Unit has the support of the senior leadership team through the medical director
- Operates as a 'virtual unit' – manages patients in the hospital and the community. The BIU offers home visits post discharge through ROCS, and patient satisfaction with the service is high
- Tertiary referral centre

### Key performance measures

- Average patient bed days (for these patients) have reduced by 4 weeks as a result of the new approach
- Improved patient satisfaction that treatment is managed in the home environment
- Increased demand from tertiary referrals
- Consideration is now being given to the creation of a national registry

### Enablers

- Appropriate and early management of surgical site infections (SSIs)
- ROCS team support
- Clinical autonomy in the management of the unit
- Wound infection helpline
- Dedicated analyst and epidemiologist, and MDT approach

MDT, multi-disciplinary team; IV, intravenous

# 8 Low readmissions and complications

## The Robert Jones and Agnes Hunt Orthopaedic Hospital (RJAH)

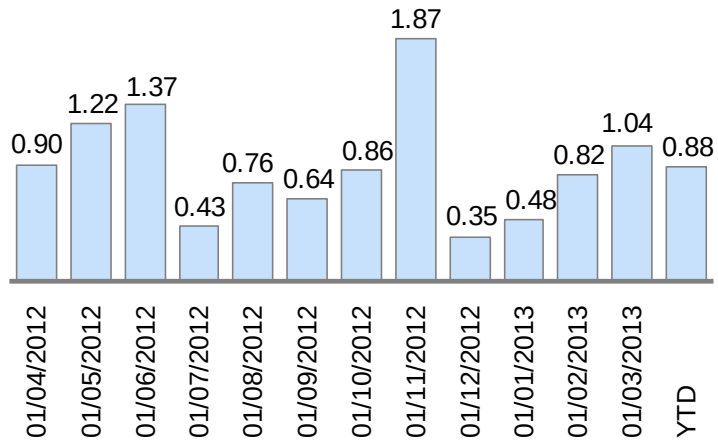
- **Within 28-day readmission rates at RJAH:**
  - five patients readmitted as an emergency within 28 days of initial discharge in April 2015:
    – four required treatment for wound issues
    – one required an urgent MRI
  - equivalent to a rate of 0.88%
  - this rate excludes day case patients and patients with certain cancer diagnostic codes (in line with national guidance)
  - if readmissions to all/any trust are included, the readmission rate is 6.63% (which is still low compared to other specialist orthopaedic trusts)

- **Reasons for low readmission rates at RJAH:**
  - wound nurse/clinic
  - secretaries provide rapid access review for consultants
  - patients are not discharged until stabilised

**Healthcare Evaluation Data (includes readmission to any trust)**

| ORGANISATION | 2008/ 2009 | 2009/ 2010 | 2010/ 2011 | 2011/ 2012 |
|---|---|---|---|---|
| ENGLAND | 10.90 | 11.16 | 11.42 | 11.45 |
| | | | | |
| ROBERT JONES AND AGNES HUNT ORTHOPAEDIC HOSPITAL NHS TRUST | 6.37 | 5.82 | 6.80 | 6.63 |
| ROYAL NATIONAL ORTHOPAEDIC HOSPITAL NHS TRUST | 9.09 | 9.04 | 9.18 | 10.86 |
| THE ROYAL ORTHOPAEDIC HOSPITAL NHS FOUNDATION TRUST | 8.92 | 8.84 | 8.54 | 7.94 |
| | | | | |

**Monthly board metric: readmission rate for RJAH only**

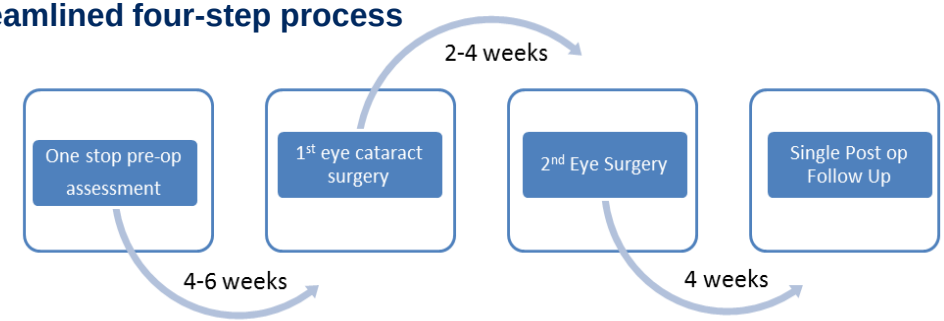


# 9 Streamlined follow-up

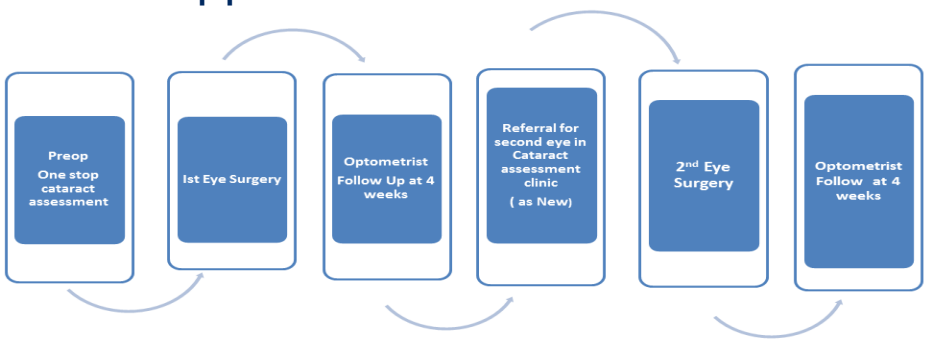
## Worcestershire Acute Hospitals NHS Trust

### Approach to bilateral cataract surgery

### Streamlined four-step process




### Traditional six-step process




### Key performance measures

In eligible patients (~80%):

- outpatient/surgery conversion rate increased two-fold
- follow-up of outpatients per surgery reduced by 50%

### Enablers

- Supportive commissioners with long-term view on efficiency