The East Midlands Specialist Orthopaedic Network

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East Midlands Regional RCS Event

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Disclosures

• No personal disclosures

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  • DePuy Synthes
  • ZimmerBiomet
  • B Braun
  • JRI
  • Implantcast
The Scale of the Problem

Projections of Primary and Revision Hip and Knee Arthroplasty in the United States from 2005 to 2030

By Steven Kurtz, PhD, Kevin Ong, PhD, Edmund Lau, MS, Fionna Mowat, PhD, and Michael Halpern, MPH, MD, PhD


**Fig. 1**
The projected number of primary total hip arthroplasty (THA) and total knee arthroplasty (TKA) procedures in the United States from 2005 to 2030.

**Fig. 2**
The projected number of revision total hip arthroplasty (THA) and total knee arthroplasty (TKA) procedures in the United States from 2005 to 2030.
And it gets worse the next time

Failure rates for 4762 revision total hip arthroplasties in the Norwegian Arthroplasty Register

VOL. 86-B, No. 4, MAY 2004

26% failure rate at 10 years
Inferior functional outcome
Even worse with subsequent re-revisions
2nd revision  28% failure at 10y
3rd revision  40%
4th revision  41%
And revision THR in the UK too...
And revision TKR in the UK too…
Timing is important

<table>
<thead>
<tr>
<th>Years since first revision</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Numbers at risk</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary not in the NJR</td>
<td>57,204</td>
<td>49,375</td>
<td>47,742</td>
<td>36,781</td>
</tr>
<tr>
<td>First rev. &lt;1y</td>
<td>5,924</td>
<td>4,779</td>
<td>3,918</td>
<td>3,245</td>
</tr>
<tr>
<td>First rev. 1–3y</td>
<td>4,990</td>
<td>4,204</td>
<td>3,625</td>
<td>3,062</td>
</tr>
<tr>
<td>5y</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Does it really matter?

• Associated with increasing complexity
• Severe impact on our patients

<table>
<thead>
<tr>
<th></th>
<th>Primary THR</th>
<th>Revision THR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mortality</td>
<td>1%</td>
<td>2.6%</td>
</tr>
<tr>
<td>PE</td>
<td>0.9%</td>
<td>0.8%</td>
</tr>
<tr>
<td>Infection</td>
<td>0.2%</td>
<td>0.9%</td>
</tr>
<tr>
<td>Dislocation</td>
<td>3%</td>
<td>8.4%</td>
</tr>
<tr>
<td>Readmission</td>
<td>4.6%</td>
<td>10%</td>
</tr>
</tbody>
</table>
## Economics matter too

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Cost</th>
<th>Reimbursement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infected revision</td>
<td>£21,000</td>
<td>£6-12,000</td>
</tr>
<tr>
<td>Aseptic revision</td>
<td>£12,000</td>
<td></td>
</tr>
<tr>
<td>Periprosthetic #</td>
<td>£18,000</td>
<td></td>
</tr>
<tr>
<td>Revision for instability</td>
<td>£11,000</td>
<td></td>
</tr>
</tbody>
</table>

Cost of:
- Infected revision: £30,000
- Aseptic revision: £9,655

Reimbursement:
- £7675
This is a crisis. A large crisis.

In fact, if you’ve got a moment, it’s a 12-storey crisis, with a magnificent entrance hall, carpeting throughout, 24-hour porterage and an enormous sign on the roof, saying “this is a large crisis”.

A large crisis requires a large plan.
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A large crisis requires a large plan.

Now get me two pencils and a pair of underpants.
Getting it right first time

Author and Project Chair
Immediate Past President of the British Orthopaedic Association
Chair of National Clinical Reference Group on Specialist Orthopaedics
Chair of the Federation of Specialist Hospitals
Getting it right **second time**

<table>
<thead>
<tr>
<th></th>
<th>Total Ops</th>
<th>Total Surgeons</th>
<th>Average Ops per Surgeon</th>
<th>Surgeons delivering 5 or fewer*</th>
<th>Surgeons delivering 10 or fewer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Number</td>
<td>% of all Surgeons</td>
</tr>
<tr>
<td>Primary hip</td>
<td>74,193</td>
<td>1,437</td>
<td>51.6</td>
<td>230</td>
<td>16.0%</td>
</tr>
<tr>
<td>Hip revision</td>
<td>10,078</td>
<td>784</td>
<td>12.9</td>
<td>360</td>
<td>45.9%</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td>Number</td>
<td>% of all Surgeons</td>
</tr>
<tr>
<td>Total knee replacement</td>
<td>73,043</td>
<td>1,507</td>
<td>48.5</td>
<td>130</td>
<td>8.6%</td>
</tr>
<tr>
<td>Unicondylar knee replacement</td>
<td>6,582</td>
<td>637</td>
<td>10.3</td>
<td>348</td>
<td>54.6%</td>
</tr>
<tr>
<td>Patello-femoral knee replacement</td>
<td>1,207</td>
<td>351</td>
<td>3.4</td>
<td>294</td>
<td>83.8%</td>
</tr>
<tr>
<td>Knee revision</td>
<td>5,828</td>
<td>879</td>
<td>6.6</td>
<td>512</td>
<td>58.2%</td>
</tr>
</tbody>
</table>
A critical mass of operations?

Networks

It is not the intention in supporting a network model of delivery that all complex or specialist procedures or care is only undertaken at the specialist centre. Rather it is in the intention that by delivering care through a network model that there will be increased local access to complex or specialist procedures and care, but within an appropriate framework which ensures that the required expertise, resources, support and clinical governance are available, standards followed and outcomes reported. Configuration of the network and the patient pathway will be for local determination by commissioners and clinicians informed by this specification, best practice, the location of providers and the needs of patients.

- Specialist orthopaedic networks should comprise one or more specialist centre hubs linked to a number of spoke units which will be deemed specialist.
- Networks work together collaboratively ensuring patients have seamless access to care and transfer back to their locality hospital home when medically fit.
- Networks will meet regularly to examine performance through formal governance processes which will include infection rate and readmission data. Performance improvement is undertaken through regular mortality and morbidity meetings which will generate action plans for improvement.
- Oversight of the network will be undertaken according to local structures and processes within a quality assurance framework.
A critical mass of operations?

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Direct discussion during visits has already begun to influence the shape and form of orthopaedic networks, including
one network for revision arthroplasty in Nottingham, a city wide review in Manchester and very direct participation in
the on going review of the structure of orthopaedic delivery in London.
EMSON

- Case presentation
- Via Webex
- Plan presented, group discussion
- Documented and signed off
- Returned to referrer
- Revision surgeon chairs meeting
- Other orthopaedic colleagues
- Specialist microbiologist
- Other specialties available
  - Anaesthetics, vascular, plastics, radiology
EMSON in action
Activity to September 2016

- Since January 2015
- 18 consultants from 5 hospitals
- 524 referrals
  - 274 in 2015
  - 250 in 2016
- Significant numbers had amendment to initial plan
Outcome of discussion

- Boston
- Lincoln
- Grantham
- Sherwood Forest
- Nottingham

Categories:
- Other
- Further investigation
- Micro advice
- Implant advice
- Technical advice
- No change in plan
Loan kit usage

Boston | Lincoln | Grantham | Sherwood Forest | Nottingham | TOTAL

- No
- Yes

TOTAL: 450

Nottingham Elective Orthopaedic Services
Challenges & lessons learnt

- No challenge to involve colleagues
- Referral protocol, proforma and network secretarial support
- Communication logistics!
  - IT, PACS, Webex, Job plans!

- Moving forward
  - Examining ways to quantify improvements
  - Outcome review meetings
  - Ensure 100% compliance
Comments

• Very well received by local surgeons
• Keen to continue to participate
  • “No one else to discuss complex cases with”
  • “Meetings have improved practice and confidence”
  • “Discussion helped with valuable advice, helped planning and kit requirements”
Conclusion

- EMSON is a protected, integral and popular part of our week
- IT links, job plans and timetables are all issues
- Analysis of outpatient referrals
  - 20% increase in tertiary referrals to Nottingham
- Future focus on outcomes, value for money, compliance and reduction in loan kit usage
- Now averaging 12-15 cases per week
  - Introducing all complex primary arthroplasty will be a challenge
- Early experiences to be published in Ann R Coll Surg Eng shortly…
- Outcome review planned & will be published
Thank you for your attention

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