How the NJR has changed our Practice

Mr Tim Wilton MA FRCS
NJR Medical Director
Arthroplasty Surgeon
Past President BOA
Disclosures

• Past President BOA
• Past President BASK
• Previous Design Consultant to Smith and Nephew
• Speaker panel for Smith and Nephew
• Speaker panel for Stryker
• Speaker panel for Biomet
• Past Member MHRA Device Safety Committee
• Member ODEP and Beyond Compliance Committees
How has the NJR Data affected Practice?

• Data published about Implant Category performance

• Data Published about Bearing performance

• Data Published about individual implants

• Data published about Implant Specific Complications

• Data published about Surgeon’s performance
Changing practice in Hip Replacement

Figure 3.3 Fixation by year of primary hip replacement.
Changing Practice in Hip Replacement

Remarkably stable use of Metal-on-Poly for Cemented THR
In Contrast wild Fluctuations in Uncemented THR Bearings as Metal-on-Metal was abandoned (Due to NJR publication!)
Changing Practice in Hip Replacement

Uncemented MoM, Resurfacing and Ceramic-on-Metal all do badly compared to traditional bearings!
Changing Practice in Hip Replacement

Cemented Ceramic-on-Poly LOOKED better than Metal-on-Poly until 13 year follow-up
HYBRID THR
CoC, CoP and MoP all do better than 5% revision rate at 15 years
Little difference between Hip Implant classes as regards dislocation rate.
Considerable differences between Hip Implant types for Failure due to Lysis

Figure 3.12 (e) PTIR estimates of lysis by fixation and bearing.
Changing Practice in Hip Replacement

Similarly, failure due to aseptic loosening varies a great deal.
What about Implant specific Complications?

• Does Conformity, Trochlear Groove shape or “Stability” play a part in failure of TKR designs?
For example: Effect of resurfacing the patella

Surgeons may always resurface the patella at knee replacement because they believe from the literature they know it is better to do so (or NOT to do so!)

BUT

Is the literature detailed enough to tell us whether we should resurface the patella with THIS implant design but not with THAT one?
Overall NJR results with and without resurfacing
Overall results if secondary resurfacing is not included
Implants might have poor outcomes because of *how they are used*

- Some implants may mainly be used by surgeons who DO resurface patellae *(or Don’t!)*
- Some Implants may do better WITH patellar resurfacing
- Huge NJR database allows us to find out!!
Patellar Friendly—doesn’t need resurfacing
Not patellar friendly - needs resurfacing
Outlier Implants Withdrawn from UK market

Hip
- (p)(m)Profemur Cementless Stem with (m)Profemur L or (m)Profemur Z and Conserve Plus Resurfacing Cup
- Accolade with Mitch TRH Cup
- Anthology with BHR Resurfacing Cup
- ASR 300 cup
- ASR resurfacing cup
- CPCS with BHR Resurfacing Cup
- CPT with Adept Resurfacing Cup
- CPT with BHR Resurfacing Cup
- CPT with Durom Resurfacing Cup
- M2A 38 cup
- Metalfix Stem with Cormet 2000 Resurfacing Cup
- R3 used with a metal liner
- Taperfit Cemented Stem with Zimmer Cemented Cup
- Ultima TPS Stem used with Ultima Mom cup (646/651), but from outlier 016: this is now Ultima MoM cup used with anything
- JRI Bicondylar Knee

Knee
- St Leger Knee
- Tack
TKR revision rates by Brand

<table>
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<tr>
<th>Brand</th>
<th>Number of knee joints</th>
<th>Median (IQR) age at primary</th>
<th>Percentage (% male)</th>
<th>Time since primary</th>
<th>1 year</th>
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Beware Confounders!
Specific Implants results may depend upon sub-type

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<th>Brand</th>
<th>Number of knee joints</th>
<th>Median (IQR) age at primary</th>
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# UNI Implants by Brand

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<th>Brand</th>
<th>Number of knee joints</th>
<th>Median (IQR) age at primary</th>
<th>Percentage (% male)</th>
<th>Time since primary 1 year</th>
<th>3 years</th>
<th>5 years</th>
<th>10 years</th>
<th>13 years</th>
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Data on Surgeon Outcomes

- Funnel plots showing surgeons their own positions against every other surgeon for revision rates

- Similar plots for mortality

- Bar chart plots for PROMs, Satisfaction and Demographics

- Volume and scope of practice data
Overall improvements have occurred in THR revision rate in last decade

The Revision rate rose gradually until 2008 and then slowly improved each year since
Figure 3.5 (a) KM estimates of cumulative revision by year, in primary hip replacements.
People attributed this to Metal-on-Metal but was there another reason?

NJR started feeding back data about their practice to surgeons in 2008

• 1 year later the 1 year revision rate improved

• 3 years later the 3 year revision rate improved

• Etc etc
Figure 3.5 (b) KM estimates of cumulative revision by year, in primary hip replacements plotted by year of primary.
Results for Primary Knees shows improvement since 2008 WITHOUT any Metal-on-Metal issue!
Revision rate peaking at 3, 5 and 7 years after introducing surgeon feedback in 2008
Informing surgeons about their practice and letting them see how they perform in comparison to each other has been followed by the surgeons changing practice and the revision rate decreasing
Arrows showing surgeons who have stopped doing THR and red circles those who did a lot of M-o-M
Outlier Surgeons – what has happened?

- Many surgeons have changed their practice having seen their results
- Some have stopped using particular implants
- Some have simply stopped because they were not doing very many cases
- Some have stopped doing a certain procedure eg UKR
Unicondylar knee revision rate vs. surgeon annual volume
Clear relationship between doing few UNIs and a high revision rate

• Little by little the number of surgeons doing very few UNIs has decreased, each year over the last decade
Benefits for Patients

- Improved safety due to careful implant monitoring
- Improved choice due to available data about Hospitals and Surgeons
- Improved understanding of potential risks and benefits of surgery from publications and Decision Aid
Benefits for Surgeons

- Access to data about their own practice
- Information for Annual Appraisal Process
- Warning about poorly performing implants
- Access to Outcome and complications data about their operations
- Comparative data about their own revision rates
- EARLY warning about potential problems
Thank You

Tim Wilton MA FRCS
Medical Director NJR

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