



National Joint Registry

www.njrcentre.org.uk

Working for patients, driving forward quality

The infrastructure and development of the NJR Component Database

PART 1

International Strategic Workshop

1st March 2018

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Background

- **Monitoring implant performance is a fundamental requirement of the NJR.**
- **Requirement to detect and investigate signals of higher than expected revision rates.**
- **Ability to quickly attribute concerns to a particular product or product family is vital to ensure swift investigation, and where necessary the removal of poorly performing products from the market.**



Background

- **Over 80,000 unique products in the component database. How do we monitor?**
- **At product code level, we never have enough data to draw conclusions.**
- **We need to ‘group’ products together to look at performance/outcomes over the larger set of data.**
- **We can monitor products by their ‘brand’ or ‘brand family’. Members of families can contain different characteristics!**
- **‘Brands’ are like families – they can contain some very odd characters!**

Why Classify?

- Products under the same 'brand name' can have different characteristics
- As a result of classifying products by characteristics, registries have made important findings: Large Head, Metal-on-Metal



Metal on Polyethylene



Metal on Metal



Ceramic on Ceramic



Why Classify?

- **As the device industry continues to innovate, products have increased modularity and variants within brands.**
 - **Composite material types,**
 - **Highly cross-linked poly,**
 - **Small stem,**
 - **Personalised implants.**
- **Registry needs to be able identify all products with these characteristics in order to assess the benefit to patients.**
- **Failure to classify and monitor these new variants can lead to ‘hiding’ or ‘camouflaging’ a poorly performing product within the product family (where perhaps the more common variants of the product are performing well).**



Why Classify?

- **With an outcome-based registry, it is possible to link product attributes to outcome: e.g:**
 - **Relationship between size of head, stability and wear**
 - **The difference in performance between Titanium and Cobalt Chrome modular femoral necks**
 - **Mixing and matching components from different manufacturers**
 - **Reassurance that a modification in one attribute does not affect outcome**
 - **Some TKR designs need to be used with patella resurfacing (work in progress)**
 - **THERE ARE MANY POSSIBLE QUESTIONS – WE DON'T KNOW THEM ALL**

Component Database Development

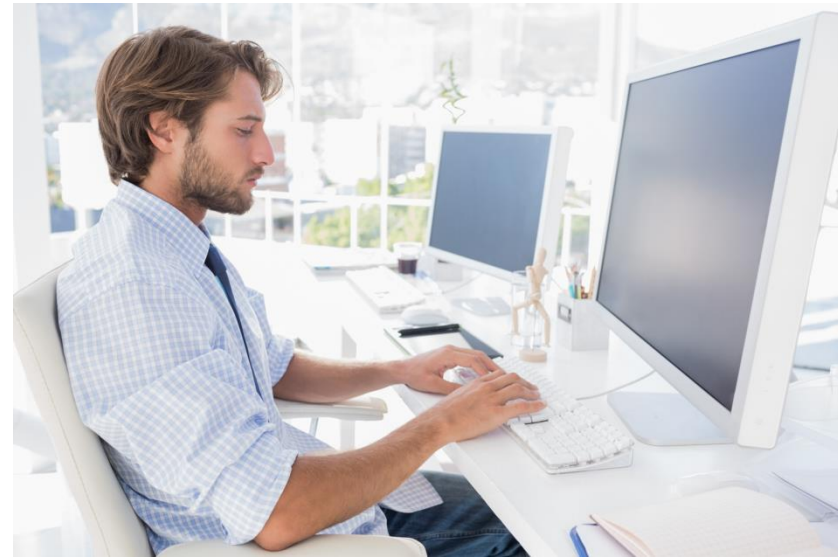
- In 2015, NJR started a programme of work to implement a new implant classification to increase granularity.
- Specifically, to cater for developments in implant technologies – new implant characteristics that the registry wants to monitor





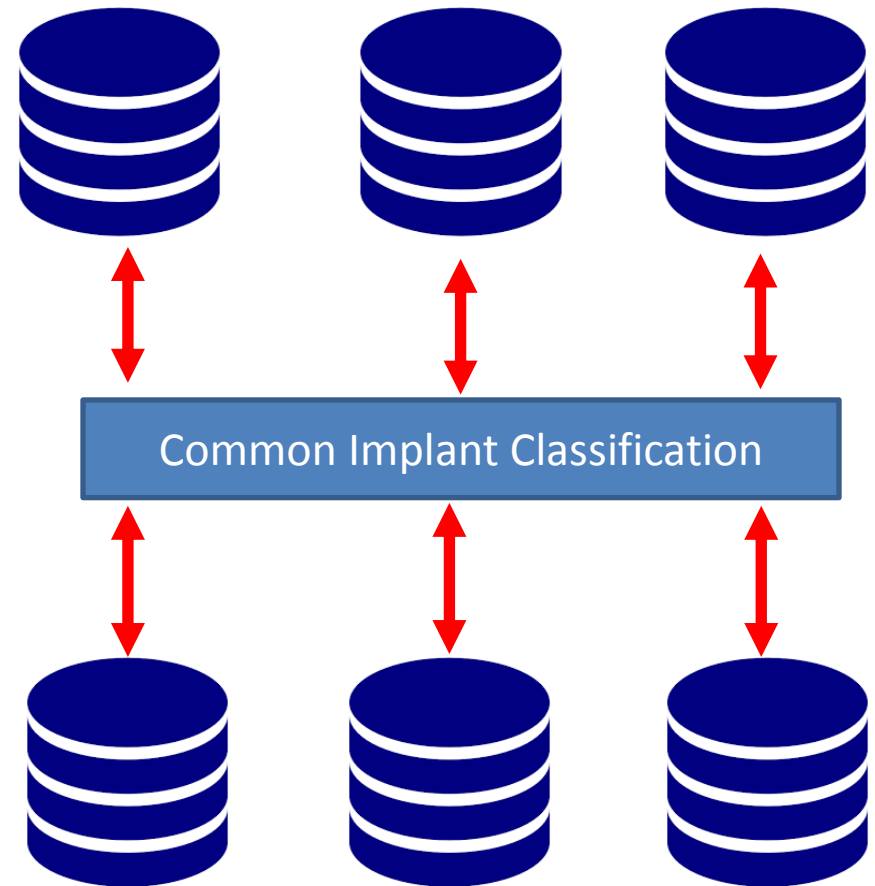
Component Database Development

- **NJR wanted to enhance the way in which the NJR Component Database is managed and updated.**
- **Implant database visible, and editable by industry.**
- **Industry responsible for the correct classification of their products**



Component Database Development

- This work was considered in line with international efforts to harmonise orthopaedic device classification across registries, in support of device surveillance across the globe.





International Collaboration

- We knew our 'gaps' but we wanted to learn from others.
- We consulted and collaborated with EPRD, Dutch Arthroplasty Registry, NORE and ISAR to draw insight from how others were approaching the problem.





Benefits of Wider Use

- **Stronger international collaboration**
- **Common definition of implants**
 - Shared intelligence
 - Improved surveillance
 - Improved outcomes analysis
- **Reduce aggregate resource for industry and registries**



Current Status

- **System is live**
- **Industry are uploading**
- **Shoulder classification under development**
- **We will increasingly adopt the new classification in our analysis – this is a ‘journey’**
- **We can continue to use the old higher level classification model where we do not have granular data.**



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