

# **National Joint Registry Minimum Data Set Version 7 Change Specification**

## **NJR MDSv7 Change**

**DCB1567 Amd 66/2017**

**Version 1.0**

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# Data Coordination Board

This information standard (DCB1567) has been approved for publication by the Department of Health and Social Care under [section 250 of the Health and Social Care Act 2012](#).

Assurance that this information standard meets the requirements of the Act and is appropriate for the use specified in the specification document has been provided by the Data Coordination Board (DCB), a sub-group of the Digital Delivery Board.

This information standard comprises the following documents:

- Specification
- Implementation Guide
- Change Specification.

An Information Standards Notice (DCB1567 Amd 66/2017) has been issued as a notification of use and implementation timescales. Please read this alongside the documents for the standard.

The controlled versions of these documents can be found on the [NHS Digital website](#). Any copies held outside of that area, in whatever format (e.g. paper, email attachment), are considered to have passed out of control and should be checked for currency and validity.

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## Amendment History:

Version	Date	Amendment History
1.0	30 April 2018	Release version

## Approvals:

Name	Organisation	Version	Date
Elaine Young	Healthcare Quality Improvement Partnership	1.0	30 April 2018

## Related Documents:

Ser	Document Reference	Title	Version	Date
01	CAG Letter	Ethics and Confidentiality Committee application for section 251 support. PIAG 2-05(j)/2006: National Joint Registry	-	13/11/12
02	DCB1567 Amd 66/2017	NJR Specification	1.0	30/04/18
03	DCB1567 Amd 66/2017	NJR Implementation Guide	1.0	30/04/18

## Glossary of Terms:

Term	Acronym	Definition
Arthrodesis	-	Complete fusion of a joint
Arthroplasty	-	A procedure where a natural joint is reconstructed with an artificial prosthesis
British Orthopaedic Association	BOA	Governing body of orthopaedic and trauma surgery in the UK
Care Quality Commission	CQC	Responsible for the monitoring of healthcare standards within both the NHS and independent sector and for licensing of independent sector hospitals. The NJR works closely with the CQC, assisting them in monitoring the quality of relevant orthopaedic services
Department of Health and Social Care	DHSC	The Department of Health and Social Care provides strategic leadership for public health, the NHS and social care in England.
Healthcare Quality Improvement Partnership	HQIP	A not-for-profit limited company involving the Academy of Medical Royal Colleges, the Royal College of Surgeons, and National Voices. Contracted by NHS England for the delivery of the National Clinical Audit and Patient Outcomes Programme
Hemi-arthroplasty	-	Joint replacement surgery in which only one of the joint surfaces are replaced, in contrast to total joint replacement in which they are both replaced
Medicines and Healthcare products Regulatory Agency	MHRA	Responsible for monitoring all devices and medicines sold in the UK. The NJR works closely with the MHRA to identify poorly performing prostheses and enhancing the Agency's ability to undertake post-market surveillance of devices
Minimum Data Set	MDS	The data set used by the NJR, usually followed by a version number, eg. MDSv5
National Clinical Audit and Patient Outcomes Programme	NCAPOP	The NHS England funded programme for national clinical audit of which the NJR forms a part

National Institute for Health and Care Excellence	NICE	Responsible for producing clinical guidelines to ensure high quality, evidence-based care for patients in the NHS. The NJR works closely with the NICE in the analysis of the economics/outcomes of joint replacement and the development of clinical guidelines, eg. chemical thromboprophylaxis
National Joint Registry	NJR	The National Joint Registry of England and Wales was established in 2002 and its purpose is to define, improve and maintain the quality of care of individuals receiving Joint Replacement Surgery across the NHS and the independent healthcare sector.
Orthopaedic Unit	-	Any organisation undertaking joint replacement surgery for joints that should be providing data to the NJR. This includes organisations in both the NHS and the independent healthcare sector.
Thromboprophylaxis	-	Treatment to prevent DVT and PE. Can be mechanical or chemical.
Total Ankle Replacement	TAR	Total replacement of the ankle joint including hybrid techniques. Includes revision procedures.
Total Elbow Replacement	TER	Total replacement of the elbow joint including resurfacing. Includes revision procedures.
Total Hip Replacement	THR	Total replacement of the hip joint including resurfacing and hybrid techniques. Includes revision procedures
Total Knee Replacement	TKR	Total replacement of the knee joint including unicondylar, patella-femoral, and hybrid techniques. Includes revision procedures
Total Shoulder Replacement	TSR	Total replacement of the shoulder joint including resurfacing and hemi-arthroplasty techniques. Includes revision procedures.

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## 1 Overview

### 1.1 Summary

<b>Standard</b>	
Standard Number	DCB1567
Standard Title	National Joint Registry Minimum Data Set
<b>Release</b>	
Release Number	Amd 66/2017
Release Title	Version 7.0
Description	<p>The NJR started to collect data in April 2003 with the express purpose of improving patient safety and outcomes through the early identification of failing hip and knee prostheses. The NJR also monitors the performance of surgical teams and orthopaedic units and has established processes for the handling of suspected outlier performance for both implants and surgeons. The NJR collects data from both public sector and independent sector hospitals in England, Wales, and Northern Ireland.</p> <p>The NJR currently collects data on hip, knee, ankle, elbow, and shoulder joint replacement surgery and now monitors implant, surgical team, and hospital performance in order to ensure patient safety and provide stakeholders with information that will lead to improvements in outcomes. The outcomes of surgical practice are reported to clinicians and trust management.</p> <p>The NJR works closely with regulators: Medicines and Healthcare products Regulatory Agency (MHRA), the Care Quality Commission (CQC), and the National Institute of Health and Care Excellence (NICE). It also works with other organisations such as NHS Choices and the British Orthopaedic Association (BOA).</p>
Implementation Dates	4 June 2018 – 1 January 2019

### 1.2 Supporting Products

<b>Reference</b>	<b>Title</b>
NJR MDS 7 Data Definitions	NJR MDS7 Data Definitions v1 included in the MDSv7 Specification
Table of Changes for MDSv7	NJR MDS Review Summary Table of Changes as at 19 Feb 18 attached as Appendix A to this document

## 2 Change Specification

The NJR started to collect data in April 2003 with the express purpose of improving patient safety and outcomes through the early identification of failing hip and knee prostheses. The NJR also monitors the performance of surgical teams and orthopaedic units and has established processes for the handling of suspected outlier performance for implants, surgeons, and hospitals. Since its formation in 2002, the NJR has also added data collections for ankle, shoulder, and elbow joint replacement surgery.

The standard is currently at Version 6 of the Minimum Data Set (MDSv6) which records data relating to THR, TKR, TAR, TSR, TER. This change request outlines the changes to the dataset to take it to Version 7 (MDSv7).

MDSv7 entailed a review of all the data currently collected by the NJR following a one year consultation exercise with the orthopaedic professional societies, industry, individual orthopaedic surgeons, and analysts of NJR data. Changes to clinical practice and advances in implant technology have necessitated changes to the existing standard.

When considering requests for changes to the standard, the MDS Review Group's priority has been to ensure that the changes did not impose a significant additional data entry burden for clinicians and data entry staff. Where new data has been added, some data has been removed, especially where the latter requires free text. Many of the changes are new options within existing sections that require only a single data item to be selected. There has also been an emphasis on ensuring consistency of the data collected across all joint procedures in order to remove complexity and to simplify data entry.

The list of changes was shared and reviewed by the relevant professional societies and NJR researchers and statisticians, and the new standard now represents the minimum data needed to monitor the outcomes of joint replacement surgery.

The new data entry requirements, and new MDSv7 forms, are available to download from the [NJR website](#).

### 2.1 New Items

The new items requested by NJR stakeholders and approved by the NJR Steering Committee are:

- Requirement to capture all of a patient's forenames to aid subsequent patient tracing and avoid data errors where a surname is hyphenated.
- Capture new information on the use, structure and type of bone graft used.
- Add in new option 'Debridement and Implant Retention (DAIR)' to all revision forms, a procedure which, whilst it may not include the ex-plantation and implantation of implants, is used where infection is identified
- New options relating to the components removed on all revision forms.
- Addition of BMI or 'Height and Weight' to shoulder and elbow procedures.
- The addition of an 'Unknown' option for 'Handedness' to shoulder and elbow procedures.

- The addition of an option 'Conversion of hemi-arthroplasty to total primary hip replacement' to the hip primary form in the section 'Surgical Approach - Patient Procedure'.
- The addition of an option 'Conversion of hemi-arthroplasty to primary hip replacement retaining femoral stem' on the hip primary form in the section 'Surgical Approach - Patient Procedure'.
- The addition of an option 'Direct Anterior' to the hip primary form in the section 'Surgical approach - Patient Position'.
- The addition of an option 'Application Posterior Lip Augmentation Device (PLAD)' to the hip revision form in the section 'Surgical Approach - Patient Procedure'.
- The addition of new options 'Secondary resurfacing of patella' and 'Partial replacement second compartment of knee (Uni or PFR)' to the knee primary form in the section 'Surgical approach - Patient procedure'.
- The addition of two new options, 'Cuff tear without arthropathy' and 'Dislocation arthropathy', to the shoulder primary form in the section 'Primary procedure details - Indications for implantation'.
- Add six new options for primary shoulder procedures 'For fracture', 'For instability', 'For impingement', 'For cuff tear', 'For gleno-humeral arthritis', and 'Previous arthrodesis' to the shoulder primary form in the section 'Primary procedure details - Previous surgery'.
- Add nine new options for Patient Procedure Types to the primary shoulder form in the section 'Surgical approach - Patient procedure': 'Resurfacing total arthroplasty'; 'Resurfacing hemi-arthroplasty'; 'Stemless conventional total arthroplasty'; 'Stemless hemi-arthroplasty'; 'Stemless total reverse arthroplasty'; 'Stemmed conventional total arthroplasty'; 'Stemmed hemi-arthroplasty'; 'Stemmed total reverse arthroplasty'; 'Interpositional Arthroplasty (Gleno-humeral)'.
- Add two new fixation types, 'Fixation Humerus' and 'Fixation Glenoid', each with three options, 'Cemented', 'Uncemented', and 'Not Applicable', to the shoulder primary and revision forms in the section 'Surgical approach - Fixation type'.
- Add two new options, 'Trans-deltoid' and 'Other', to the shoulder primary and revision forms in the section 'Surgical Approach - Approach'.
- In the section 'Surgical Approach - Rotator Cuff', add three new options to the re-named heading 'Rotator cuff repaired': 'No'; 'Yes - Primary pair'; 'Yes - Augmented patch repair'.
- Add five new fields, 'Long head biceps (LHB) present', 'LHB tenotomy performed', 'LHB tenodesis performed', 'Muscle transfer', and 'Other' to the shoulder primary and revision forms in the section 'Surgical approach - Other soft tissues'.
- On the shoulder revision form, add new options, 'Aseptic loosening humerus', 'Aseptic loosening glenoid', 'Stiffness', 'Impingement', 'Component dissociation', 'Glenoid implant wear', 'Native glenoid surface erosion', 'Implant fracture', and 'Lysis'

(with sub options 'Humerus' and 'Glenoid'), 'Dislocation/subluxation', and 'Unexplained pain' to the shoulder revision form in the section 'Revision procedure details - Indications for/findings at time of revision'.

- Add nine new options, 'Revision resurfacing total arthroplasty', 'Revision resurfacing hemi-arthroplasty', 'Revision stemless conventional total arthroplasty', 'Revision stemless hemi-arthroplasty', 'Revision stemless total reverse arthroplasty', 'Revision stemmed conventional total arthroplasty', 'Revision stemmed hemi-arthroplasty', 'Revision stemmed total reverse arthroplasty', and 'Revision glenohumeral interpositional arthroplasty', to the shoulder revision form in the section 'Surgical approach - Patient procedure'.
- Add a new option 'Distal humeral hemi-arthroplasty' to the elbow primary form in the section 'Surgical approach - Patient procedure'.
- Add one new option 'Revision distal humeral hemi-arthroplasty' to the elbow revision form under 'Surgical approach - Patient procedure'.
- Add new option 'Medial ligament release' to the ankle primary and revision forms in the section 'Surgical approach - Associated procedures at the time of surgery'.
- Add two new options, 'Nerve injury' and 'Tendon injury', to the ankle primary and revision forms in the section 'Intra-operative events'.

## 2.2 Amendments

- On all revision forms, in the section 'Revision procedure details - Procedure type' replace 'Single stage revision' with 'Single stage revision (includes modular exchange for indications other than infection).' A field name amendment only.
- On all revision forms, in the section 'Primary operation details', amend field name 'Primary operation details' to 'Previous operation details' on both section heading and sub-headings. A field name amendment only.
- On all revision forms, change the section heading under 'Surgical approach' from 'Surgical Approach (Single Stage and Stage 2 of 2 Stage Rev)' to 'Surgical Approach (Single Stage, Stage 2 of 2 Stage Rev, DAIR)'. A field name amendment only.
- On all revision forms, in the section 'Surgical Approach', change the field name from 'Revision of and to resurfacing arthroplasty' to 'Revision of AND TO resurfacing arthroplasty'. A heading name amendment only.
- On hip, knee, and shoulder primary forms, in the section 'Primary procedure details', change the field name from 'Avascular necrosis' to 'Avascular necrosis (AVN)'. A field name amendment only.
- On the hip primary form, in the section 'Procedure details', change the field name from 'Trauma (Chronic)' to 'Trauma - Chronic'. A field name amendment only.
- On the hip primary form, in the section 'Procedure details', change the field name from 'Trauma - acute (Neck of femur)' to 'Trauma - acute (e.g. Neck of femur)'. A field name amendment only.

- On the hip primary and revision forms, in the section 'Surgical approach - Patient position', change the field name from 'Hardinge' to 'Hardinge/Anterolateral'. A field name amendment only.
- On the knee primary form, in the section 'Surgical approach - Patient procedure', re-assign the field 'Patello-Femoral knee replacement' to be an option under the renamed Patient Procedure 'Unicompartmental Knee Replacement (Select all that apply)'.
- On the shoulder primary form, in the section 'Primary procedure details -Indications for implantation', change the field name from 'Acute Trauma' to 'Acute Fracture'. A field name amendment only.
- On the shoulder primary and revision forms, in the section 'Surgical approach', change the field name from 'Minimally Invasive Technique' to 'Patient Specific Instrumentation'. Reassignment of an existing field name.
- On the shoulder primary and revision forms, in the section 'Surgical Approach - Soft tissues', change the field name from 'Soft tissues' to 'Rotator Cuff'.
- On the shoulder primary form, in the re-named section 'Rotator Cuff', under 'Surgical Approach - Rotator cuff', re-name the heading 'Repaired' to 'Rotator cuff repaired'.

## 2.3 Deletions

- On all revision forms, under the section 'Components removed', delete the fields 'Brand' and 'Not available' from the relevant sections, e.g. 'Femoral component removed' and 'Acetabular component removed' for hips, and 'Humeral component removed' and 'Glenoid component removed' for shoulders.
- On both the Shoulder and Elbow primary and revision forms, remove the option 'Regional - Epidural' from 'Anaesthetic type' in the section 'Operation Details'.
- On the shoulder primary form in the section 'Primary procedure details', remove four options: 'Excision ACJ'; 'Stabilisation'; 'Subacromial decompression'; 'Cuff repair'.
- On the shoulder primary form, in the section 'Surgical Approach - Patient Procedure', remove the four options 'Primary total prosthetic replacement'; 'Primary hemi-arthroplasty of joint'; 'Primary resurfacing arthroplasty of joint'; 'Primary resurfacing hemi-arthroplasty of joint'.
- On the shoulder primary and revision forms, in the section 'Surgical approach - Fixation type', remove the three options 'Cementless', 'Cemented', and 'Hybrid'.
- On the shoulder primary and revision forms in the section 'Surgical approach - Approach', remove the four options 'Deltoid detachment', 'Superior (Mackenzie)', 'Posterior', and 'Deltoid Split'.
- On the shoulder primary and revision forms in the section 'Surgical Approach - Soft Tissues', remove the field 'Long head biceps tenotomy' and its two options 'Yes' and 'No'.

- On the shoulder primary and revision forms, in the section 'Intra-operative events', remove the options 'Shaft Penetration' and 'Nerve Injury'.
- On the shoulder revision form, in the section 'Revision procedure details - Indications for/findings at time of revision', remove the three options 'Aseptic loosening', 'Conversion hemi to total', and 'Conversion total to hemi'.
- On the shoulder revision form, in the section 'Surgical approach - Patient procedure', remove the six options 'Revision total prosthetic replacement', 'Revision hemi-arthroplasty of joint', 'Revision resurfacing arthroplasty of joint', 'Revision resurfacing hemi-arthroplasty of joint', and 'Revision reverse polarity total prosthetic replacement'.

### 3 Bulk Upload

The changes to the data set will also entail changes to the XML schema used for the NJR's Bulk Upload service. This service enables hospitals to upload NJR procedure records from third party orthopaedic applications. The schema and interface requirements are published on the NJR website at:

<http://www.njrcentre.org.uk/njrcentre/Healthcareproviders/Enteringdata/Dataentry/Bulkupload/tabid/112/Default.aspx>.

## A. NJR MDS Review Summary Table of Changes as at 19 February 2018

### A.1 MDSv7 - Changes common to two or more joints

Changes common to two or more joints					
Ser	Section	Change	Impact on Burden	Forms Affected	Remarks
01	Patient Details.	Change heading from 'Forename' to 'Forename(s)	Increase. Additional forenames required	H1, H2, K1, K2, S1, S2, E1, E2, A1, A2	The NJR sends all records to the NJR batch tracing service. The use of hyphenated surnames cannot be handled by the service and returns erroneous matches. This takes significant effort to resolve.
02	Surgical Approach, Bonegraft Used.	Bonegraft: Delete existing 'Femur' and 'Acetabulum' and the two options ('Yes'/'No') associated with each. Replace with: 'Femur' and two options 'Structural' and 'Morsellised/Chips'. Add sub heading 'Type' with four options: 'Autograft', 'Allograft', 'Synthetic', 'Other'. Repeated for 'Acetabulum', i.e. two options 'Structural' and 'Morsellised/Chips'. Add sub heading 'Type' with four options: 'Autograft', 'Allograft', 'Synthetic', 'Other'	Increase. Two single-select options to be entered increased to four	H1, H2, K1, K2, S1, S2, E1, E2, A1, A2	Clinical need and consistency across all data entry forms. This change is applicable across all forms, however it will be 'Tibial' and 'Femoral' for K1 and K2, 'Humeral' and 'Glenoid' for S1 and S2, 'Humeral' and 'Ulnar' for E1 and E2, and 'Talar', 'Tibial', and 'Fibular' for A1 and A2
03	Revision Procedure Details, Procedure Type.	Field name change: Replace 'Single stage revision' with 'Single stage revision (includes modular exchange for indications other than infection)'.	None. Field name change.	H2, K2, S2, E2, A2	Clinical need. Clarity
04	Revision Procedure Details, Procedure Type.	New option: 'Debridement and implant retention (DAIR)'.	None. New option in single select section only.	H2, K2, S2, E2, A2	To ensure that surgeons understand that such procedures are classified as revisions by making it an explicit option. Clinical need.
05	Primary Operation Details.	Field name change: 'Primary Operation Details' to 'Previous operation details' on both section heading and sub-headings.	None. Field name change.	H2, K2, S2, E2, A2	Previous operation may have been a revision rather than a primary, i.e. a revision of a revision is being recorded.

Ser	Section	Change	Impact on Burden	Forms Affected	Remarks
06	Components Removed.	Delete fields 'Brand' and 'Not available' from headings 'Femoral component removed?' and 'Acetabular component removed'.	Reduction. Removal of need to enter free text in 'brand' for all component 'sites'	H2, K2, S2, E2, A2	Brand is difficult to identify and free text cannot be analysed. Data quality improvement. it will be 'Brand of knee removed' for K2, 'Humeral' and 'Glenoid' for S2, 'Humeral' and 'Radial' and 'Ulnar' for E2, and 'Talar', 'Tibial', and 'Meniscal' for A2
07	Components Removed.	New Fields: add 'Modular head removed' with two options 'Yes' and 'No'; add 'Femoral cement removed?' with three options 'Yes', 'No' and 'Not available'; add 'Acetabular liner removed?' with two options 'Yes' and 'No'; add 'Acetabular cement removed?' with two options 'Yes' and 'No'.	Requirement to provide two options (one free text) is replaced with requirement to select up to six options.	H2, K2, S2, E2, A2	Clinical need. For H2 it will be 6 options, for K2 it will be 4 options, for S2 it will be 5 options, for E2 it will be 3 options, for A2 it will be 3 options.
08	Surgical Approach.	Section heading change: change section heading from 'Surgical Approach (Single Stage and Stage 2 of 2 Stage Rev)' to 'Surgical Approach (Single Stage, Stage 2 of 2 Stage Rev, DAIR)'.	None. Heading change.	H2, K2, S2, E2, A2	To ensure that surgeons understand that DAIR procedures are classified as revisions by making it an explicit option. Clinical and data quality need.
09	Surgical Approach, Patient Procedure.	Add three new options: 'Debridement and implant retention (DAIR) with modular exchange'; 'Debridement and implant retention (DAIR) without modular exchange'; 'Modular exchange for indications other than infection'.	None. Three more options in a single-select section.	H2, K2, S2, E2, A2	Procedure types becoming increasingly common and which meet the NJR's definition of a revision. Clinical need.
10	Patient Details.	Under 'Patient Details' add new heading 'BMI' with three options 'Either height (m) and weight (kg) or'; 'BMI', or 'Not Available'.	Additional data. The system will calculate BMI if height and weight are entered.	S1, S2, E1, E2	This is a clinical requirement and also makes the S1, S2, E1, and E2 forms consistent with those used for Hips, Knees, and Ankles
11	Patient Details, Handedness.	New Option: add 'Unknown' to 'Handedness'.	New option only in single-select section.	S1, S2, E1, E2	Concerns that without this new option, data quality may be adversely affected. It is a mandatory data field.
12	Surgical Approach.	Field name change: 'Revision of and to resurfacing arthroplasty' to 'Revision of AND TO resurfacing arthroplasty'.	None. Field name change.	H2, K2, S2, E2, A2	

Ser	Section	Change	Impact on Burden	Forms Affected	Remarks
13	Primary Procedure Details, Indications for implantation.	Field name change: 'Avascular necrosis' to 'Avascular necrosis (AVN)'.	None. Field name change.	H1, K1, S1	Clarity.
14	Operation Details, Anaesthetic Types.	Remove option: 'Regional -Epidural'.	None. Removal of option.	S1, S2, E1, E2	Not required for shoulder replacement surgery.

## A.2 MDSv7 - Hip Specific Changes

Hip Specific Changes					
Ser	Section	Change	Impact on Burden	Forms Affected	Remarks
15	Procedure Details.	Field name change: 'Trauma (Chronic) to 'Trauma - Chronic'	None. Field name change only.	H1	To provide clarity.
16	Procedure Details.	Field name change 'Trauma - Acute (Neck of femur)' to 'Trauma - Acute (e.g. Neck of femur)'	None. Field name change only.	H1	To provide clarity.
17	Surgical Approach, Patient Procedure.	New option: 'Conversion of hemi-arthroplasty to total primary hip replacement'	None. New option in single-select section.	H1	To provide clarity.
18	Surgical Approach, Patient Procedure.	New option: 'Conversion of hemi arthroplasty to primary hip replacement retaining femoral stem'	None. New option in single-select section.	H1	Clinical need.
19	Surgical Approach, Patient Position.	Field name change: 'Hardinge' to 'Hardinge/Anterolateral'	None. Field name change only	H1, H2	Clinical need.
20	Surgical Approach, Patient Position.	New option: 'Direct Anterior'	None. New option in single-select section.	H1	Clinical need.
21	Surgical Approach, Patient Procedure.	Add one new options: 'Application Posterior Lip Augmentation Device (PLAD);	None. New option in a single-select section.	H2	Procedure types becoming increasingly common and which meet the NJR's definition of a revision. Clinical need.
22	Surgical Approach, Patient Position.	New option: 'Direct Anterior'.	None. New option in a single-select section.	H2	Clinical need.

### A.3 MDSv7 - Knee Specific Changes

Knee Specific Changes					
Ser	Section	Change	Impact on Burden	Forms Affected	Remarks
23	Surgical Approach, Patient Procedure.	Field name change: 'Unicondylar Knee Replacement' to 'Unicompartmental Knee Replacement (Select all that apply)'. None. Field name change	None. Field name change	K1	Clinical need. 'Unicondylar Knee Replacement' indicates a replacement of a single condyle within the knee. However, replacing more than one condyle without doing a total knee replacement is increasingly common.
24	Surgical Approach, Patient Procedure.	Field re-assignment: Move patient procedure 'Patello-Femoral knee replacement' to be an option under the renamed Patient Procedure 'Unicompartmental Knee Replacement (Select all that apply)'. None. Movement of existing patient procedure to become an option under an existing patient procedure.	None. Movement of existing patient procedure to become an option under an existing patient procedure.	K1	Clinical need. 'Unicondylar Knee Replacement' indicated a replacement of a single condyle within the knee. However, replacing more than one condyle without doing a total knee replacement is increasingly common.
25	Surgical Approach, Patient Procedure	Add two new options for 'Patient Procedure': 'Secondary resurfacing of patella'; 'Partial replacement second compartment of knee (Uni or PFR). Potential increase. The system currently allows only the selection of a 'medial' or 'lateral' sided uni-knee. This will allow surgeons to select either 'lateral' or 'media;' as well as secondary patella resurfacing and the other (medial or lateral) compartment. However, instances where all three options are selected are uncommon with most surgeons undertaking a total replacement rather than replacing the three condyles individually.	Potential increase. The system currently allows only the selection of a 'medial' or 'lateral' sided uni-knee. This will allow surgeons to select either 'lateral' or 'media;' as well as secondary patella resurfacing and the other (medial or lateral) compartment. However, instances where all three options are selected are uncommon with most surgeons undertaking a total replacement rather than replacing the three condyles individually.	K2	Procedures which are becoming increasingly common and which meet the NJR's definition of a revision.

## A.4 MDSv7 - Shoulder Specific Changes

Shoulder Specific Changes					
Ser	Section	Change	Impact on Burden	Forms Affected	Remarks
26	Primary Procedure Details, Indications for implantation.	Field name change: 'Acute Trauma to 'Acute Fracture'.	None. Field renaming.	S1	Clarity.
27	Primary Procedure Details, Indications for implantation.	New Options: 'Cuff tear without arthropathy' and 'Dislocation arthropathy'	Two new options in section that requires user to select all that apply. Increase from eight to ten possible selections. However, it is unlikely that all option will ever be selected.	S1	Clinical need.
28	Primary Procedure Details, Previous Surgery (not arthroplasty).	Remove Options: 'Excision ACJ'; 'Stabilisation'; 'Subacromial decompression'; 'Cuff repair'	None. Four options removed.	S1	Clinical need.
29	Primary Procedure Details, Previous Surgery (not arthroplasty).	Add six new options: 'For fracture'; 'For instability'; 'For impingement'; 'For cuff tear'; 'For gleno-humeral arthritis'; 'Previous arthrodesis'.	. Increase from six to eight possible options.	S1	Clinical need.
30	Surgical Approach, Patient Procedure.	Remove four of five Patient Procedure Types: 'Primary total prosthetic replacement'; 'Primary hemi-arthroplasty of joint'; 'Primary resurfacing arthroplasty of joint'; 'Primary resurfacing hemi-arthroplasty of joint'.	Four single select options removed.	S1	Clinical need. Changes in implants have increased the number and types of possible patient procedure types.
31	Surgical Approach, Patient Procedure.	Add nine new Patient Procedure Types: 'Resurfacing total arthroplasty'; 'Resurfacing hemi-arthroplasty'; 'Stemless conventional total arthroplasty'; 'Stemless hemi-arthroplasty'; 'Stemless total reverse arthroplasty'; 'Stemmed conventional total arthroplasty'; 'Stemmed hemi-arthroplasty'; 'Stemmed total reverse arthroplasty'; 'Interpositional Arthroplasty (Glenohumeral)'.	None. Nine new options added to a section where only one option can be selected. Increase to nine from four options.	S1	Clinical need. Changes in implants have increased the number and types of possible patient procedure types. Adds new options to section following the removal of four Patient Procedure Types in the serial above.
32	Surgical Approach, Fixation type.	Remove three options for 'Fixation Type': 'Cementless'; 'Cemented'; 'Hybrid'.	None. Removal of three single select options.	S1, S2	Clinical need.

Ser	Section	Change	Impact on Burden	Forms Affected	Remarks
33	Surgical Approach, Fixation Type.	Add two new fixation types: 'Fixation Humerus' and 'Fixation Glenoid', each with three options: 'Cemented'; 'Uncemented'; 'Not Applicable'.	Increase. Requirement to select two options (Glenoid and Humeral fixation) instead of one. Addition of four single select options. Requirement for selection of one additional option.	S1, S2	Clinical need.
34	Surgical Approach, Approach.	Remove four options: 'Deltoid detachment'; 'Superior (MacKenzie)'; 'Posterior'; 'Deltoid Split'.	None. Removal of four single select options.	S1, S2	Clinical need.
35	Surgical Approach, Approach.	Add two new options: 'Trans-deltoid'; 'Other'.	None. Addition of two new options. Total options in section reduced from five to three options.	S1, S2	Clinical need.
36	Surgical Approach.	Replace field 'Minimally Invasive Technique' with 'Patient Specific Instrumentation' retaining options 'Yes and 'No'.	None. One for one replacement.	S1, S2	Clinical need.
37	Surgical Approach, Soft Tissues	Change Section Heading from 'Soft Tissues' to 'Rotator Cuff'	None. Field name change only.	S1, S2	Clinical need.
38	Surgical Approach, Soft Tissues	Remove field 'Long head biceps tenotomy' and the two options 'Yes' and 'No'.	None. One field and two single select options removed.	S1, S2	Clinical need.
39	Surgical Approach, Rotator cuff	In new section 'Rotator Cuff' rename existing field 'Repaired' to 'Rotator Cuff Repaired' with three new options: 'No'; 'Yes - primary repair'; 'Yes - augmented patch repair'	None. Three, single-select options added.	S1, S2	Clinical need.
40	Surgical Approach	Add new Section 'Other Soft Tissues'	None. New Section.	S1, S2	Clinical need.
41	Surgical Approach, Other Soft Tissues	In new section 'Other Soft Tissues' add five new fields: 'Long head biceps (LHB) present'; 'LHB tenotomy performed'; 'LHB tenodesis performed'; 'Muscle transfer' 'Other'. Each field to have two options 'Yes' and 'No'.	Increase. Five new fields, each with two options ('Yes' and 'No') one of which must be selected. Five new options to be selected.	S1, S2	Clinical need.
42	Intra Operative Events	Remove two options: 'Shaft Penetration'; 'Nerve Injury'.	None. Two single select options removed.	S1, S2	Clinical need.
43	Revision procedure Details, Indications for/findings at time of revision.	Delete options: 'Aseptic loosening'; 'Conversion hemi to total'; 'Conversion total to hemi'.	None. Three single-select options removed.	S2	Clinical need.

Ser	Section	Change	Impact on Burden	Forms Affected	Remarks
44	Revision procedure Details, Indications for/findings at time of revision.	Add options: 'Aseptic loosening humerus'; 'Aseptic loosening glenoid' 'Stiffness'; 'Impingement'; 'Component dissociation'; 'Glenoid implant wear'; 'Native glenoid surface erosion'; 'Implant fracture'; 'Lysis' with sub options 'Humerus' and 'Glenoid'; 'Dislocation/subluxation'; 'Unexplained pain'.	Potential increases. Eleven multi-select options added.	S2	Clinical need.
45	Surgical Approach, Patient procedure.	Delete six options: 'Revision total prosthetic replacement'; 'Revision hemi-arthroplasty of joint'; 'Revision resurfacing arthroplasty of joint'; 'Revision resurfacing hemi-arthroplasty of joint'; 'Revision reverse polarity total prosthetic replacement'.	None. Removal of six single-select options.	S2	Clinical need.
46	Surgical Approach, Patient procedure.	Add nine new options: 'Revision resurfacing total arthroplasty'; 'Revision resurfacing hemi-arthroplasty'; 'Revision stemless conventional total arthroplasty' 'Revision stemless hemi-arthroplasty'; 'Revision stemless total reverse arthroplasty'; 'Revision stemmed conventional total arthroplasty'; 'Revision stemmed hemi-arthroplasty'; 'Revision stemmed total reverse arthroplasty'; 'Revision glenohumeral interpositional arthroplasty'	None. Addition of nine single-select options in single option select section	S2	Clinical need.

## A.5 MDSv7 - Elbow Specific Changes

Elbow Specific Changes					
Ser	Section	Change	Impact on Burden	Forms Affected	Remarks
47	Surgical Approach, Patient procedure	Add new option: 'Distal humeral hemi-arthroplasty'	None. One new option in field of single-select options	E1	Clinical need.
48	Surgical Approach, Patient Procedure	Add one new 'Patient Procedure' types: 'Revision distal humeral hemi-arthroplasty'	None. One new option in a single-select section.	E2	Clinical need.

## A.6 MDSv7 - Ankle Specific Changes

Ankle Specific Changes					
Ser	Section	Change	Impact on Burden	Forms Affected	Remarks
49	Surgical Approach, Associated procedures at the time of surgery (select all that apply).	Add new option 'Medial ligament release'.	None. One new option in a multi-select section.	A1, A2	Clinical need.
50	Intra-operative Events	Under heading 'Untoward intra-operative events' add two new options: 'Nerve injury' and 'Tendon injury'.	Possible increase. Two new options in multi-select section.	A1, A2	Clinical need.