

## Supplementary data

Table 5. Definitions of revision provided by the different registries

Country/region	Years included	Revision definitions
Australia <sup>a</sup>	2007–2014	Revision procedures are re-operations of previous shoulder replacements where one or more of the prosthetic components are replaced, removed, or another component is added. Revisions include re-operations of primary partial, primary total, or previous revision procedures
California <sup>b</sup>	2005–2013	Revisions, defined here as any procedure after the registered index arthroplasty involving the addition, removal or replacement of at least 1 implanted component, are captured together with reasons for revision and validated by chart review
Denmark <sup>c</sup>	2004–2014	Revision is defined as removal or exchange of part of or the whole arthroplasty, or the addition of a glenoid component to an existing hemiarthroplasty.
Emilia-Romagna <sup>d</sup>	2008–2013	No definition for revision of shoulder prostheses provided
Germany <sup>e</sup>	2008–2012	Not applicable
New Zealand <sup>f</sup>	2000–2014	Revision is defined by the registry as a new operation in a previously replaced shoulder joint during which one or more of the components are exchanged, removed, manipulated, or added. It includes excision, arthrodesis, or amputation, but not soft tissue procedures. A two- or more staged procedure is registered as one revision
Norway <sup>g</sup>	1994–2014	Revision procedures, defined as removal or exchange of any component or the addition of a glenoid component
Sweden <sup>h</sup>	1999–2013	Revision procedures, defined as removal or exchange of any component or the addition of a glenoid component
United Kingdom <sup>i</sup>	2012–2014	Operation performed to remove (and usually replace) one or more components of a total joint prosthesis for whatever reason

Sources (websites, annual reports, publications):

<sup>a</sup> <https://aoanjrr.sahmri.com/documents/10180/217645/Shoulder%20Arthroplasty>.

<sup>b</sup> Dillon et al. 2015.

<sup>c</sup> Rasmussen et al. 2012.

<sup>d</sup> [https://ripo.cineca.it/pdf/relazione\\_2014\\_inglese\\_rev1.pdf](https://ripo.cineca.it/pdf/relazione_2014_inglese_rev1.pdf)

<sup>e</sup> Oppermann et al. 2016.

<sup>f</sup> [http://nzoa.org.nz/system/files/Web\\_DH7657\\_NZJR2014Report\\_v4\\_12Nov15.pdf](http://nzoa.org.nz/system/files/Web_DH7657_NZJR2014Report_v4_12Nov15.pdf)

<sup>g</sup> <https://www.kvalitetsregistre.no/sites/default/files/http-nrlweb.ihelse.net/Rapporter/Rapport2015.pdf>

<sup>h</sup> <http://ssas.se/files/docs/rapp14.pdf> and [https://www.ssar-rapport.se/SAAR\\_web/publicReport.html?category=skulder](https://www.ssar-rapport.se/SAAR_web/publicReport.html?category=skulder) (accessed 7 April 2016)

<sup>i</sup> <http://www.hqip.org.uk/public/cms/253/625/24/95/2015-9-11%20NJR%20Online%20Annual%20Report%202015%20compressed.pdf?realName=Ey3Qcl.pdf>

Table 6. Outcomes, their measures and strata reported by the regional/national registries

Country/region	Main outcome	Causes of revision, stratified by...	Revision measure	Revision stratified by...	Revision stratified by indication AND procedure type	Other outcomes
Australia <sup>a</sup>	Revision	Yes, indication, procedure type	Revisions/100 component years (95% CI); cumulative revision probability (95% CI) (survival curve)	Age, sex, indication (all), procedure type, prosthesis brand, fixation, glenoid type, and glenoid design	Yes (+ by prosthesis brand)	No
California <sup>b</sup>	Revision	Yes, indication (elective–acute trauma), procedure type	n (%)	Indication (elective–acute trauma)	Yes	Deep infection, DVT, PE, 30- and 90-day mortality
Denmark <sup>c</sup>	Revision	Yes	n (%), survival (95% CI)	Indication (OA–acute trauma–fracture > 14 days), procedure type, hospital	Yes	WOOS, reoperation rate
Emilia-Romagna <sup>d</sup>	Revision	Yes, procedure type	Survival (95% CI) (survival curve)	Procedure type	No	No
New Zealand <sup>e</sup>	Revision	Yes	Revisions/100 component years (95% CI); survival (survival curve)	Age, sex, procedure type prosthesis brand, glenoid fixation, surgeon annual workload, OSS score at 6 months	No	OSS
Norway <sup>f</sup>	Revision	Yes, procedure type	n	No	No	No
Sweden <sup>g</sup>	Revision	No	Cumulative revision probability (95% CI) (survival curve)	Indication (all), procedure type	Yes	WOOS, EQ5D
United Kingdom <sup>h</sup>	Revision	Yes, procedure type	Cumulative revision probability (survival curve)	Indication (elective–acute trauma), procedure type	Yes	Mortality, OSS

OA = osteoarthritis; CI = confidence interval; WOOS = Western Ontario Osteoarthritis of the Shoulder; OSS = Oxford Shoulder Score. Sources (websites, annual reports, publications):

<sup>a</sup> <https://aoanjrr.sahmri.com/documents/10180/217645/Shoulder%20Arthroplasty>

<sup>b</sup> Dillon et al. 2015.

<sup>c</sup> [https://www.sundhed.dk/content/cms/3/4703\\_dsr\\_%C3%A5rsrapport2015\\_final.pdf](https://www.sundhed.dk/content/cms/3/4703_dsr_%C3%A5rsrapport2015_final.pdf)

<sup>d</sup> [https://ripo.cineca.it/pdf/relazione\\_2014\\_inglese\\_rev1.pdf](https://ripo.cineca.it/pdf/relazione_2014_inglese_rev1.pdf)

<sup>e</sup> [http://nzoa.org.nz/system/files/Web\\_DH7657\\_NZJR2014Report\\_v4\\_12Nov15.pdf](http://nzoa.org.nz/system/files/Web_DH7657_NZJR2014Report_v4_12Nov15.pdf)

<sup>f</sup> <https://www.kvalitetsregistre.no/sites/default/files/http://nrlweb.ihelse.net/Rapporter/Rapport2015.pdf>

<sup>g</sup> <http://ssas.se/files/docs/rapp14.pdf> and [https://www.ssar-rapport.se/SAAR\\_web/publicReport.html?category=skulder](https://www.ssar-rapport.se/SAAR_web/publicReport.html?category=skulder) (accessed 7 April 2016 and 3 October 2016).

<sup>h</sup> <http://www.hqip.org.uk/public/cms/253/625/24/95/2015-9-11%20NJR%20Online%20Annual%20Report%202015%20compressed.pdf?realName=Ey3Qcl.pdf>