

Implant Bespoke Report for:

DePuy

Corail Stem (Standard Offset Collared)

Comprising PRIMARY hips implanted up to:	09 October 2017
NJR Database extract:	08 December 2017
Produced on:	29 December 2017
Licenced for use until:	05 June 2019

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This report has been produced by the National Joint Registry of England, Wales and Northern Ireland (NJR). It summarises usage and outcomes associated with the Corail Stem (Standard Offset Collared), based on data collected by the NJR up to the specified date, for the following combinations of products:

Femoral components	Corail Stem (Standard Offset Collared)
Acetabular Components	Any Acetabular Components from all manufacturers

Appendix A lists details of all Corail Stem components included in this report.

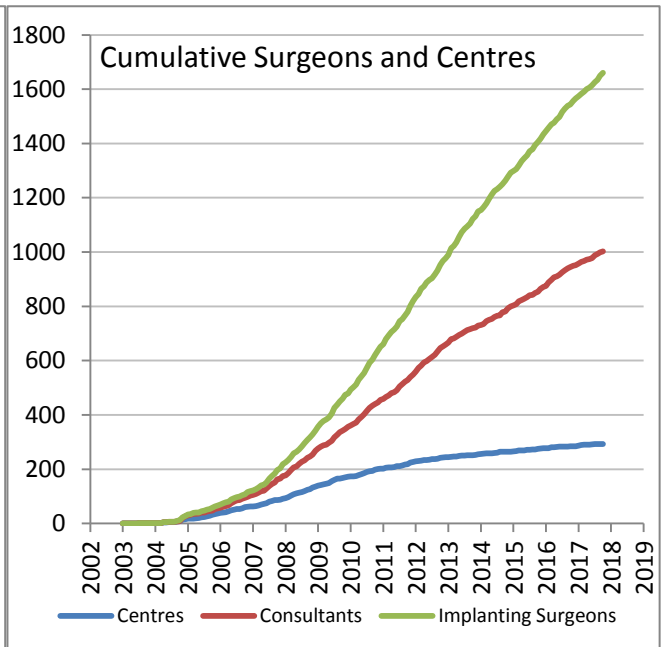
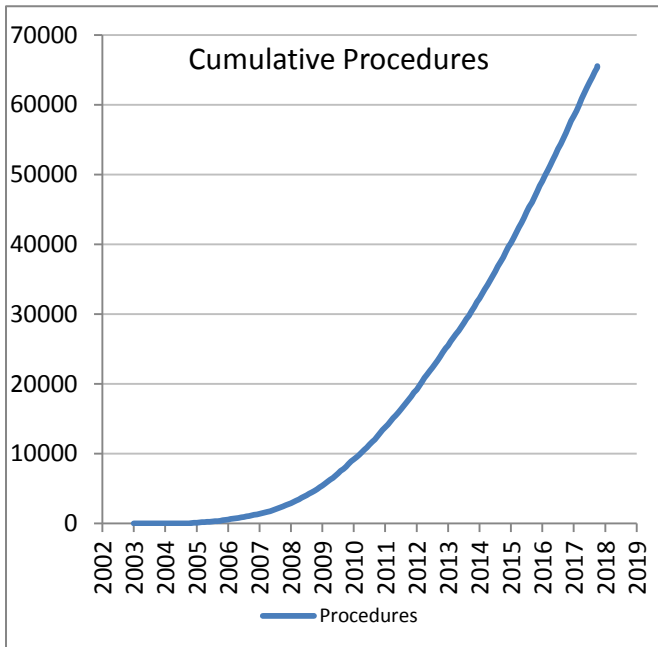
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NJR Recorded Usage

Implant Usage

Date of first recorded usage in the NJR: **05 June 2003**
 Date of last recorded usage in this dataset: **09 October 2017**
 Maximum implantation time: 14.3 years
 Mean implantation time: 3.9 years

Totals Recorded in NJR	Cumulative Total
Procedures	65,545
Patients	59,709
Centres	294
Consultants	1,004
Implanting Surgeons	1,662



Current Outcome	Year of implantation													Total	%
	Pre-2006	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017		
Death	141	181	355	557	653	664	637	479	406	337	227	106	20	4763	7.3%
Revised	51	42	119	179	171	103	94	106	78	81	98	68	28	1218	1.9%
Unrevised	381	583	1060	1789	2914	3808	4683	5738	6261	7504	8552	9148	7143	59564	90.9%
Total	573	806	1534	2525	3738	4575	5414	6323	6745	7922	8877	9322	7191	65545	100%

Patient / Procedure Details

Patient Details

	Corail Stem (Standard Offset Collared)	All NJR Cementless Stems	All NJR hip replacement
Total Procedures	65,545	395,274	967,957
Total Patients	59,709	345,121	829,519
Demographics			
Mean age	67.8	65.4	68.5
< 50	5.7%	8.3%	6.0%
50 – 59	15.2%	18.7%	13.7%
60 – 69	32.7%	35.2%	29.5%
70 – 79	32.9%	28.5%	34.4%
≥ 80	13.7%	9.3%	16.3%
Median BMI	28	28	28
% BMI information available	65.3%	60.4%	57.7%
Underweight (BMI < 18.5)	0.8%	0.7%	0.9%
Normal (18.5 ≤ BMI < 25)	20.6%	19.0%	20.9%
Overweight (25 ≤ BMI < 30)	38.6%	39.4%	39.8%
Obese I (30 ≤ BMI < 35)	25.6%	26.6%	25.6%
Obese II (35 ≤ BMI < 40)	10.6%	10.6%	9.6%
Obese III (BMI ≥ 40)	3.7%	3.7%	3.3%
% Male	34.2%	43.9%	40.1%
ASA Grades			
P1 - Fit and healthy	15.2%	18.9%	16.7%
P2 - Mild disease not incapacitating	70.5%	68.5%	67.6%
P3 - Incapacitating systemic disease	13.9%	12.2%	15.1%
P4 / P5	0.5%	0.4%	0.6%
Indications			
Osteoarthritis	93.00%	93.09%	92.00%
Rheumatoid Arthritis	1.19%	1.22%	1.32%
Avascular Necrosis	1.99%	2.60%	2.51%
Fractured Neck of Femur	3.08%	1.76%	2.92%
CDH/DDH	1.31%	2.01%	1.54%
Other	1.24%	1.84%	2.14%

Total of indications may exceed total number of implants, since more than one indication can be listed per case.

Revision and Survivorship

Reasons for Revision - All bearing types

Reasons for revision of primary procedures in which the implant was used.

Reason for Revision	Revised [†]	Expected Revisions [*]	p value
Pain	195	248.33	<0.001
Dislocation / Subluxation	221	275.81	<0.001
Adverse Soft Tissue Reaction	249	261.79	0.436
Infection	182	204.26	0.099
Aseptic Loosening - Stem	182	234.93	<0.001
Aseptic Loosening - Socket	91	146.92	<0.001
Periprosthetic Fracture Stem	70	199.44	<0.001
Periprosthetic Fracture Socket	10	29.82	<0.001
Malalignment Stem	40	51.88	0.084
Malalignment Socket	86	94.34	0.377
Wear Of Acetabular Component	66	66.62	1
Lysis Stem	25	35.37	0.076
Lysis Socket	19	33.11	0.008
Implant Fracture Stem	9	21.19	0.003
Implant Fracture Socket	30	25.47	0.341
Implant Fracture Head	3	6.64	0.157
Dissociation of Liner	35	31.15	0.442
Other / reason not recorded	72	100.04	0.002
Total Revised	1218	1588.66	<0.001

† multiple reasons may be listed for one revision procedure

* Based on All NJR Cementless Stems adjusted for agegroup, gender, and indications

Significantly better, $p < 0.001$ Significantly better, $p < 0.05$ Significantly worse $p < 0.05$ Significantly worse $p < 0.001$ 

Components Revised	Number of procedures	Corail Stem (Standard Offset Collared)	All other Cementless Stems in NJR
Femoral only	208	17%	23%
Acetabular only	459	38%	36%
Both femoral and acetabular	372	31%	33%
Neither femoral nor acetabular revision recorded *	179	15%	9%

* includes isolated head and/or liner exchange

Revision and Survivorship

Reasons for Revision - excluding Metal on Metal

Reasons for revision of non-MoM primary procedures in which the implant was used.

Reason for Revision	Revised [†]	Expected Revisions [*]	p value
Pain	80	144.49	<0.001
Dislocation / Subluxation	196	249.27	<0.001
Adverse Soft Tissue Reaction	32	37.45	0.387
Infection	154	169.99	0.2
Aseptic Loosening - Stem	142	189.17	<0.001
Aseptic Loosening - Socket	72	97.61	0.005
Periprosthetic Fracture Stem	54	179.75	<0.001
Periprosthetic Fracture Socket	10	27.64	<0.001
Malalignment Stem	34	45.10	0.076
Malalignment Socket	62	76.00	0.084
Wear Of Acetabular Component	45	52.85	0.274
Lysis Stem	15	19.89	0.287
Lysis Socket	16	15.47	0.893
Implant Fracture Stem	7	17.78	0.005
Implant Fracture Socket	30	25.07	0.286
Implant Fracture Head	3	6.41	0.211
Dissociation of Liner	30	28.06	0.684
Other / reason not recorded	47	64.14	0.021
Total Revised	817	1133.22	<0.001

† multiple reasons may be listed for one revision procedure

* Based on All NJR Cementless Stems (excluding metal on metal), adjusted for agegroup, gender, and indications

Significantly better, p < 0.001

Significantly better, p < 0.05

Significantly worse p < 0.05

Significantly worse p < 0.001

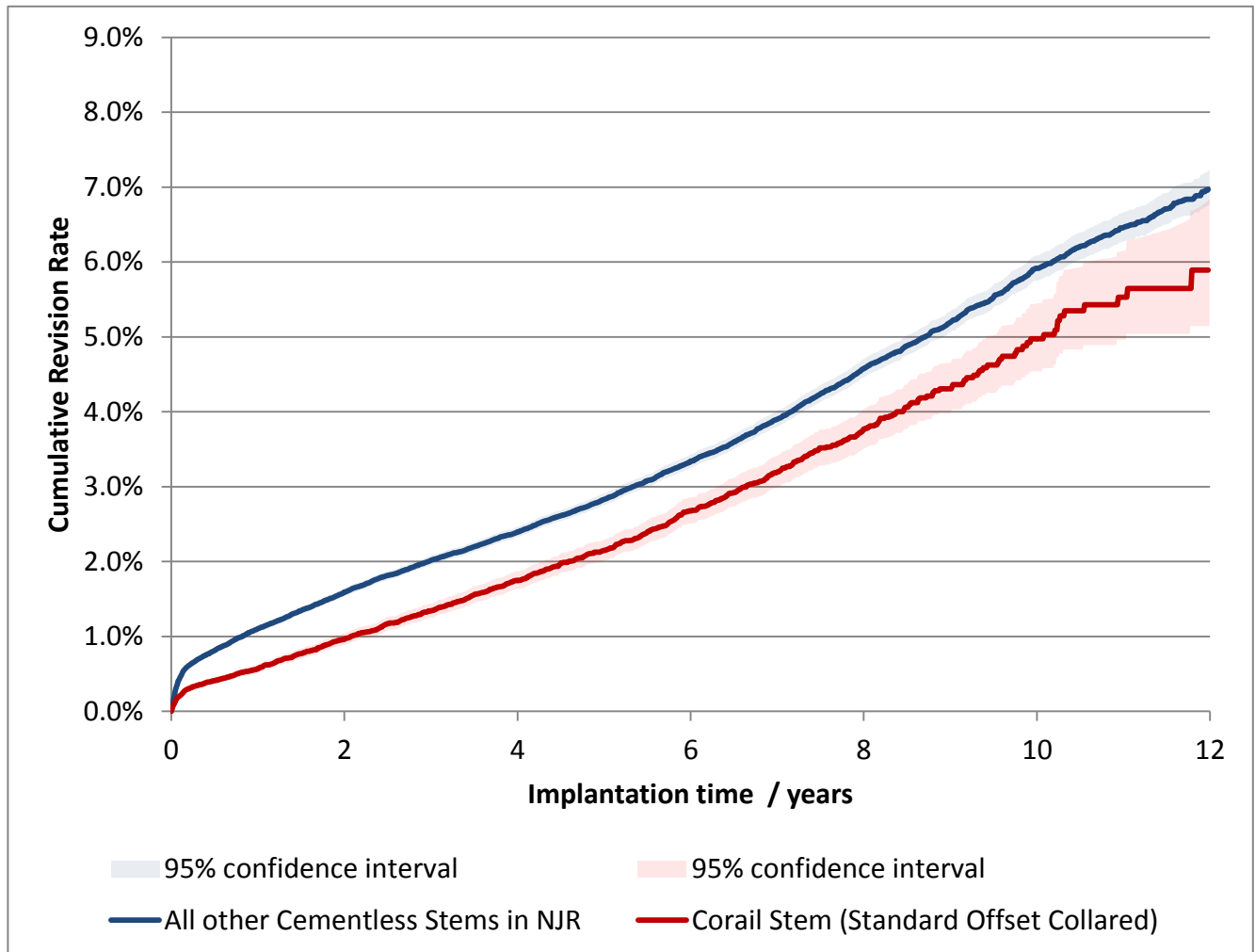


Components Revised	Number of procedures	Corail Stem (Standard Offset Collared)	All other Cementless Stems in NJR
Femoral only	174	21%	29%
Acetabular only	249	30%	28%
Both femoral and acetabular	270	33%	32%
Neither femoral nor acetabular revision recorded *	124	15%	11%

Revision and Survivorship

Cumulative Revision Rate

Endpoint: All reasons for revision. All Bearing types



Cox Proportional Hazards model for revision risk ratio of Corail Stem (Standard Offset Collared) / All other Cementless Stems in NJR, with endpoint as any revision.

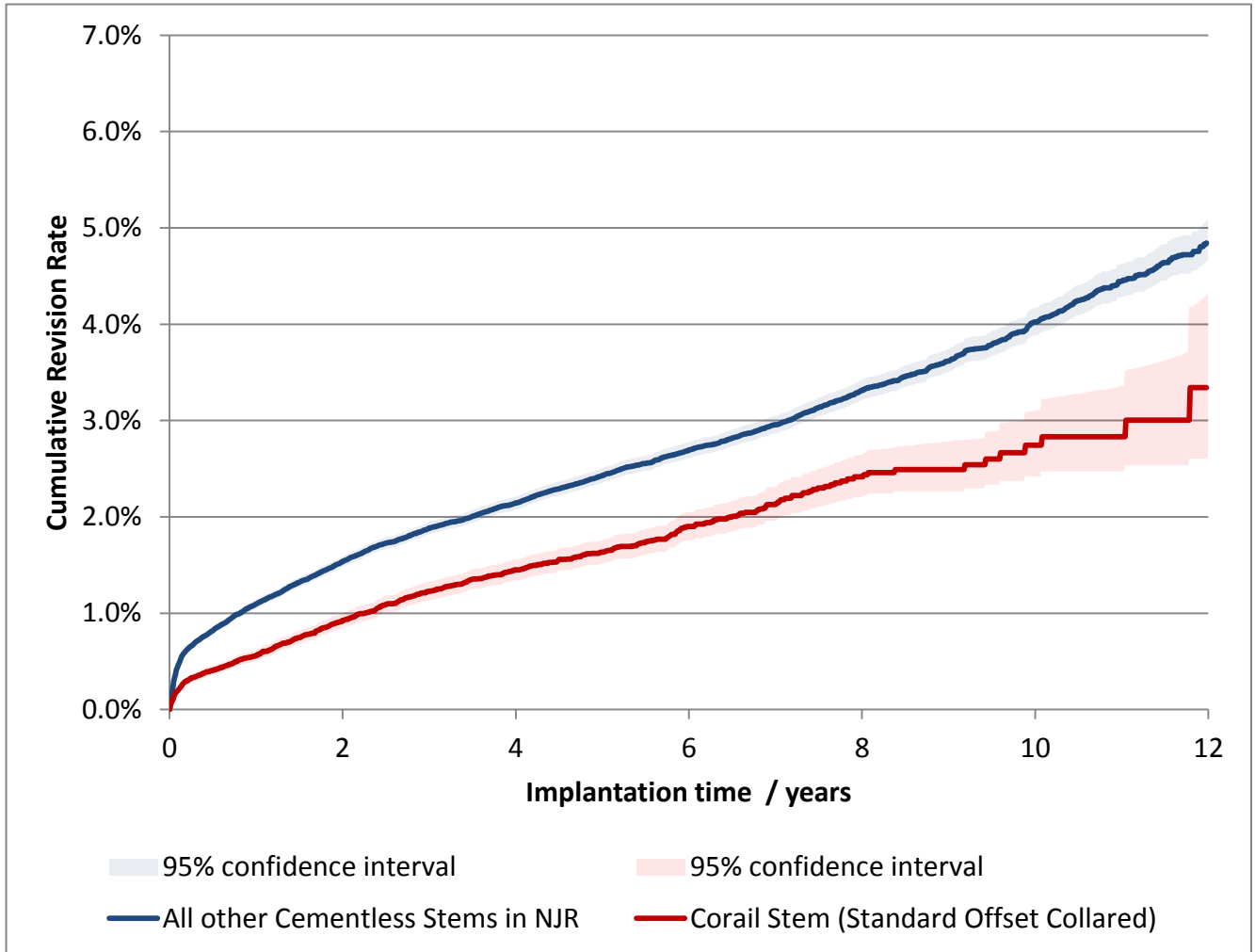
Adjustment	Hazard Ratio (95% CI)	p-value
All bearings. Unadjusted.	0.71 (0.67 - 0.75)	<0.001
All bearings. Adjusted for age, gender, year cohort and indications.	0.80 ‡ (0.76 - 0.85)	<0.001 ‡

‡ Hazard ratio varies with time

Revision and Survivorship

Cumulative Revision Rate

Endpoint: All reasons for revision. Excluding Metal-on-Metal



Cox Proportional Hazards model for revision risk ratio of Corail Stem (Standard Offset Collared) / All other Cementless Stems in NJR, with endpoint as any revision.

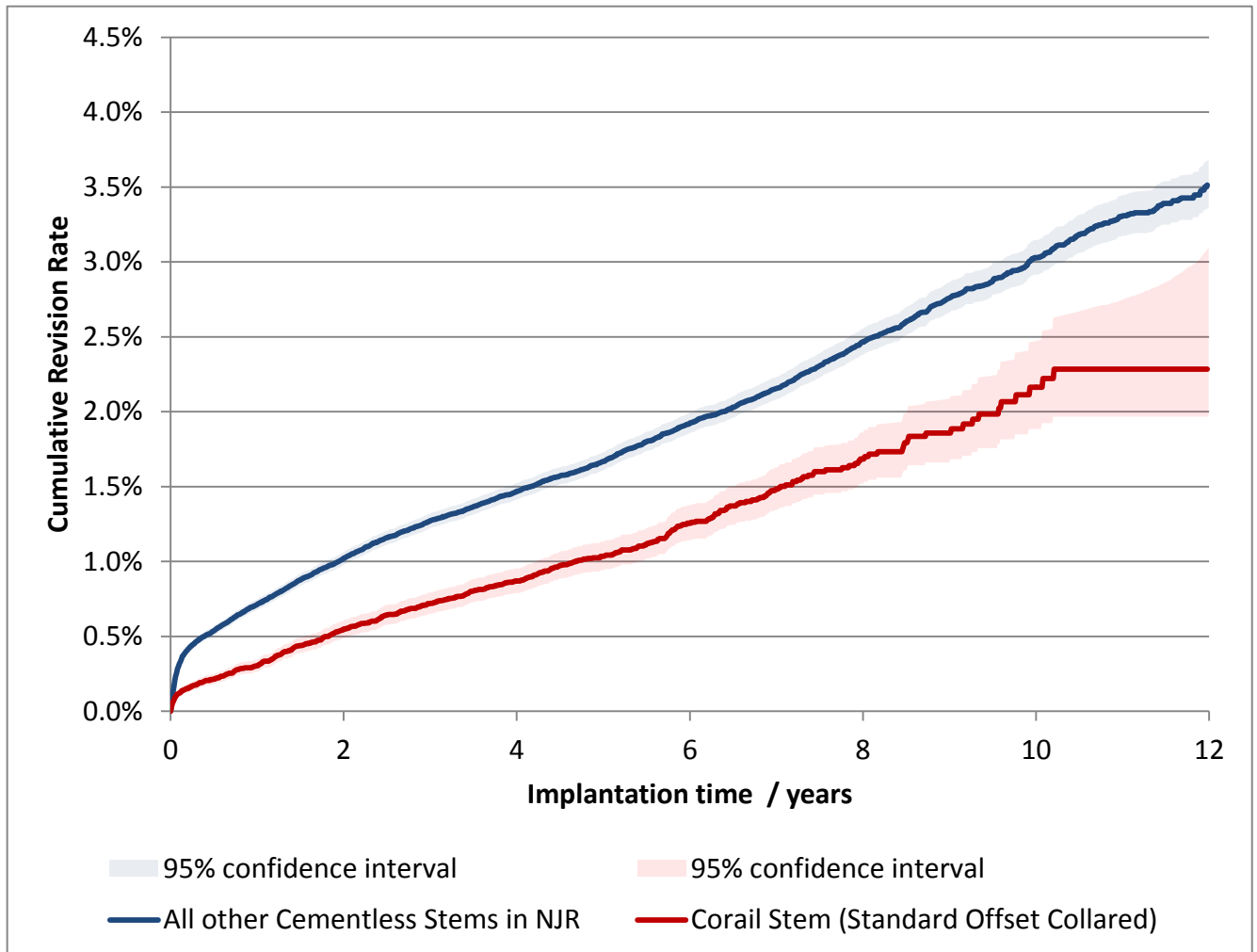
Adjustment	Hazard Ratio (95% CI)	p-value
Excluding MoM, Unadjusted.	0.67 (0.63 - 0.72)	<0.001
Excluding MoM. Adjusted for age, gender, year cohort and indications.	0.71 ‡ (0.66 - 0.76)	<0.001 ‡

‡ Hazard ratio varies with time

Revision and Survivorship

Cumulative Revision Rate

Endpoint: Femoral Revision. All Bearing types



Cox Proportional Hazards model for revision risk ratio of Corail Stem (Standard Offset Collared) / all other All other Cementless Stems in NJR, with endpoint as Femoral revision.

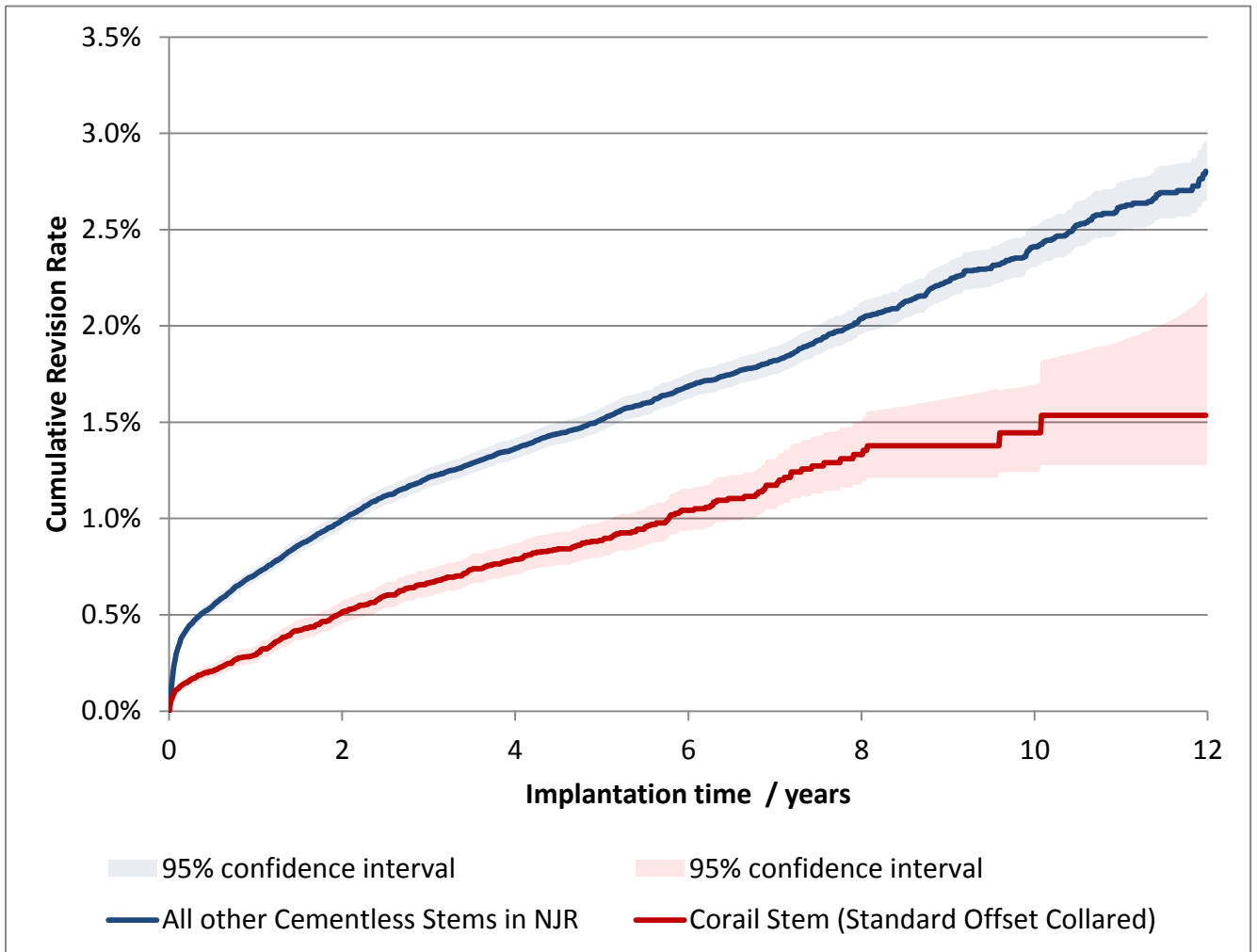
Adjustment	Hazard Ratio (95% CI)	p-value
All bearings. Unadjusted.	0.60 (0.55 - 0.65)	<0.001
All bearings. Adjusted for age, gender, year cohort and indications.	0.65 ‡ (0.60 - 0.71)	<0.001 ‡

‡ Hazard ratio varies with time

Revision and Survivorship

Cumulative Revision Rate

Endpoint: Femoral Revision. Excluding Metal-on-Metal



Cox Proportional Hazards model for revision risk ratio of Corail Stem (Standard Offset Collared) / All other Cementless Stems in NJR, with endpoint as Femoral revision.

Adjustment	Hazard Ratio (95% CI)	p-value
Excluding MoM, Unadjusted	0.57 (0.52 - 0.63)	<0.001
Excluding MoM. Adjusted for age, gender, year cohort and indications.	0.60 ‡ (0.54 - 0.66)	<0.001 ‡

‡ Hazard ratio varies with time

Revision and Survivorship

Cumulative Revision Rate

Endpoint: All revisions

Period /years	All Bearing types				Excluding Metal on Metal Bearings			
	At Risk	Corail Stem (Standard Offset Collared)	All NJR Cementless Stems	All THR	At Risk	Corail Stem (Standard Offset Collared)	All NJR Cementless Stems	All THR
0	65,545	-	-	-	62,047	-	-	-
1	55,250	0.6% (0.5% - 0.6%)	1.0% (0.9% - 1.0%)	0.8% (0.8% - 0.8%)	51,832	0.6% (0.5% - 0.6%)	1.0% (0.9% - 1.0%)	0.7% (0.7% - 0.8%)
2	45,392	1.0% (0.9% - 1.0%)	1.4% (1.4% - 1.5%)	1.2% (1.1% - 1.2%)	42,057	0.9% (0.8% - 1.0%)	1.4% (1.3% - 1.4%)	1.1% (1.1% - 1.1%)
3	36,266	1.3% (1.2% - 1.4%)	1.9% (1.8% - 1.9%)	1.5% (1.5% - 1.6%)	33,038	1.2% (1.1% - 1.3%)	1.7% (1.7% - 1.8%)	1.4% (1.4% - 1.4%)
4	28,184	1.7% (1.6% - 1.9%)	2.3% (2.3% - 2.4%)	1.9% (1.9% - 1.9%)	25,092	1.4% (1.3% - 1.6%)	2.0% (1.9% - 2.0%)	1.6% (1.6% - 1.7%)
5	21,466	2.2% (2.0% - 2.3%)	2.9% (2.8% - 2.9%)	2.4% (2.3% - 2.4%)	18,519	1.6% (1.5% - 1.8%)	2.3% (2.2% - 2.3%)	1.9% (1.9% - 1.9%)
6	15,312	2.7% (2.5% - 2.9%)	3.5% (3.4% - 3.5%)	2.8% (2.8% - 2.9%)	12,522	1.9% (1.8% - 2.1%)	2.5% (2.5% - 2.6%)	2.1% (2.1% - 2.2%)
7	10,290	3.2% (3.0% - 3.4%)	4.1% (4.0% - 4.2%)	3.4% (3.3% - 3.4%)	7,721	2.1% (2.0% - 2.3%)	2.8% (2.8% - 2.9%)	2.4% (2.4% - 2.5%)
8	6,364	3.8% (3.5% - 4.0%)	4.9% (4.8% - 5.0%)	3.9% (3.9% - 4.0%)	4,336	2.4% (2.2% - 2.6%)	3.2% (3.1% - 3.2%)	2.7% (2.7% - 2.8%)
9	3,454	4.3% (4.0% - 4.7%)	5.6% (5.5% - 5.7%)	4.5% (4.4% - 4.5%)	2,165	2.5% (2.3% - 2.8%)	3.5% (3.4% - 3.6%)	3.1% (3.0% - 3.1%)
10	1,816	5.0% (4.5% - 5.4%)	6.4% (6.2% - 6.5%)	5.1% (5.0% - 5.1%)	1,153	2.7% (2.4% - 3.1%)	3.9% (3.8% - 4.0%)	3.4% (3.4% - 3.5%)
11	857	5.5% (5.0% - 6.1%)	7.0% (6.8% - 7.1%)	5.6% (5.5% - 5.7%)	586	2.8% (2.5% - 3.4%)	4.4% (4.2% - 4.5%)	3.9% (3.8% - 4.0%)
12	275	5.9% (5.1% - 6.8%)	7.6% (7.4% - 7.8%)	6.2% (6.1% - 6.3%)	212	3.3% (2.6% - 4.3%)	4.9% (4.7% - 5.0%)	4.3% (4.2% - 4.4%)
13		(-)	8.2% (8.0% - 8.5%)	6.7% (6.6% - 6.8%)		(-)	5.4% (5.2% - 5.7%)	4.8% (4.7% - 4.9%)
14		(-)	9.0% (8.5% - 9.4%)	7.3% (7.1% - 7.5%)		(-)	6.2% (5.7% - 6.7%)	5.4% (5.2% - 5.6%)
15		(-)	(-)	(-)		(-)	(-)	(-)

Cumulative revision rate with 95% confidence intervals

Rate is only reported for times where more than 40 remain at risk

Revision and Survivorship

Cumulative Revision Rate

Endpoint: Femoral Revision

Period /years	All Bearing types				Excluding Metal on Metal Bearings			
	At Risk	Corail Stem (Standard Offset Collared)	All NJR Cementless Stems	All THR	At Risk	Corail Stem (Standard Offset Collared)	All NJR Cementless Stems	All THR
0	65,545	-	-	-	62,047	-	-	-
1	55,250	0.3% (0.3% - 0.3%)	0.6% (0.6% - 0.6%)	0.5% (0.5% - 0.5%)	51,832	0.3% (0.3% - 0.3%)	0.6% (0.6% - 0.6%)	0.5% (0.5% - 0.5%)
2	45,392	0.5% (0.5% - 0.6%)	0.9% (0.9% - 0.9%)	0.8% (0.8% - 0.8%)	42,057	0.5% (0.5% - 0.6%)	0.9% (0.8% - 0.9%)	0.7% (0.7% - 0.7%)
3	36,266	0.7% (0.6% - 0.8%)	1.1% (1.1% - 1.2%)	1.0% (1.0% - 1.0%)	33,038	0.7% (0.6% - 0.7%)	1.1% (1.1% - 1.1%)	0.9% (0.9% - 0.9%)
4	28,184	0.9% (0.8% - 1.0%)	1.4% (1.3% - 1.4%)	1.3% (1.2% - 1.3%)	25,092	0.8% (0.7% - 0.9%)	1.3% (1.2% - 1.3%)	1.1% (1.0% - 1.1%)
5	21,466	1.0% (0.9% - 1.1%)	1.6% (1.6% - 1.7%)	1.5% (1.5% - 1.6%)	18,519	0.9% (0.8% - 1.0%)	1.4% (1.4% - 1.5%)	1.2% (1.2% - 1.3%)
6	15,312	1.3% (1.1% - 1.4%)	1.9% (1.9% - 2.0%)	1.9% (1.8% - 1.9%)	12,522	1.0% (0.9% - 1.2%)	1.6% (1.6% - 1.7%)	1.4% (1.4% - 1.4%)
7	10,290	1.5% (1.3% - 1.6%)	2.2% (2.1% - 2.3%)	2.2% (2.2% - 2.2%)	7,721	1.2% (1.0% - 1.3%)	1.8% (1.7% - 1.8%)	1.6% (1.6% - 1.6%)
8	6,364	1.7% (1.5% - 1.9%)	2.5% (2.5% - 2.6%)	2.6% (2.5% - 2.6%)	4,336	1.3% (1.2% - 1.5%)	2.0% (1.9% - 2.0%)	1.8% (1.8% - 1.9%)
9	3,454	1.9% (1.7% - 2.1%)	2.9% (2.8% - 2.9%)	2.9% (2.9% - 3.0%)	2,165	1.4% (1.2% - 1.6%)	2.2% (2.1% - 2.3%)	2.0% (2.0% - 2.1%)
10	1,816	2.2% (1.9% - 2.5%)	3.2% (3.1% - 3.3%)	3.3% (3.3% - 3.4%)	1,153	1.4% (1.2% - 1.7%)	2.4% (2.3% - 2.5%)	2.3% (2.3% - 2.4%)
11	857	2.3% (2.0% - 2.7%)	3.6% (3.4% - 3.7%)	3.7% (3.7% - 3.8%)	586	1.5% (1.3% - 1.9%)	2.7% (2.6% - 2.8%)	2.6% (2.5% - 2.7%)
12	275	2.3% (2.0% - 3.1%)	3.9% (3.7% - 4.0%)	4.1% (4.1% - 4.2%)	212	1.5% (1.3% - 2.2%)	2.9% (2.8% - 3.1%)	2.9% (2.8% - 3.0%)
13		(-)	4.3% (4.1% - 4.5%)	4.6% (4.5% - 4.7%)		(-)	3.3% (3.1% - 3.5%)	3.3% (3.2% - 3.4%)
14		(-)	4.6% (4.3% - 4.9%)	5.0% (4.8% - 5.2%)		(-)	3.6% (3.3% - 4.0%)	3.6% (3.4% - 3.8%)
15		(-)	(-)	(-)		(-)	(-)	(-)

Cumulative revision rate with 95% confidence intervals

Rate is only reported for times where more than 40 remain at risk

Bespoke Report for:

Corail Stem (Standard Offset Collared)

Patient Reported Outcomes

PROMs Analysis

Comprising PROMs data up to and including: 30/12/2014

Measure	Product Group	Pre-Op Records	Mean Pre-Op Score	6-month records	Mean 6 month Score	Health Gain	Improved	Unchanged / Worsened
Oxford Hip Score (0 - 48)	Corail Stem (Standard Offset Collared)							
	All NJR Cementless Stems							
EQ-5D Index (-0.59 - 1.00)	Corail Stem (Standard Offset Collared)							
	All NJR Cementless Stems							
EQ-VAS (0 - 100)	Corail Stem (Standard Offset Collared)							
	All NJR Cementless Stems							

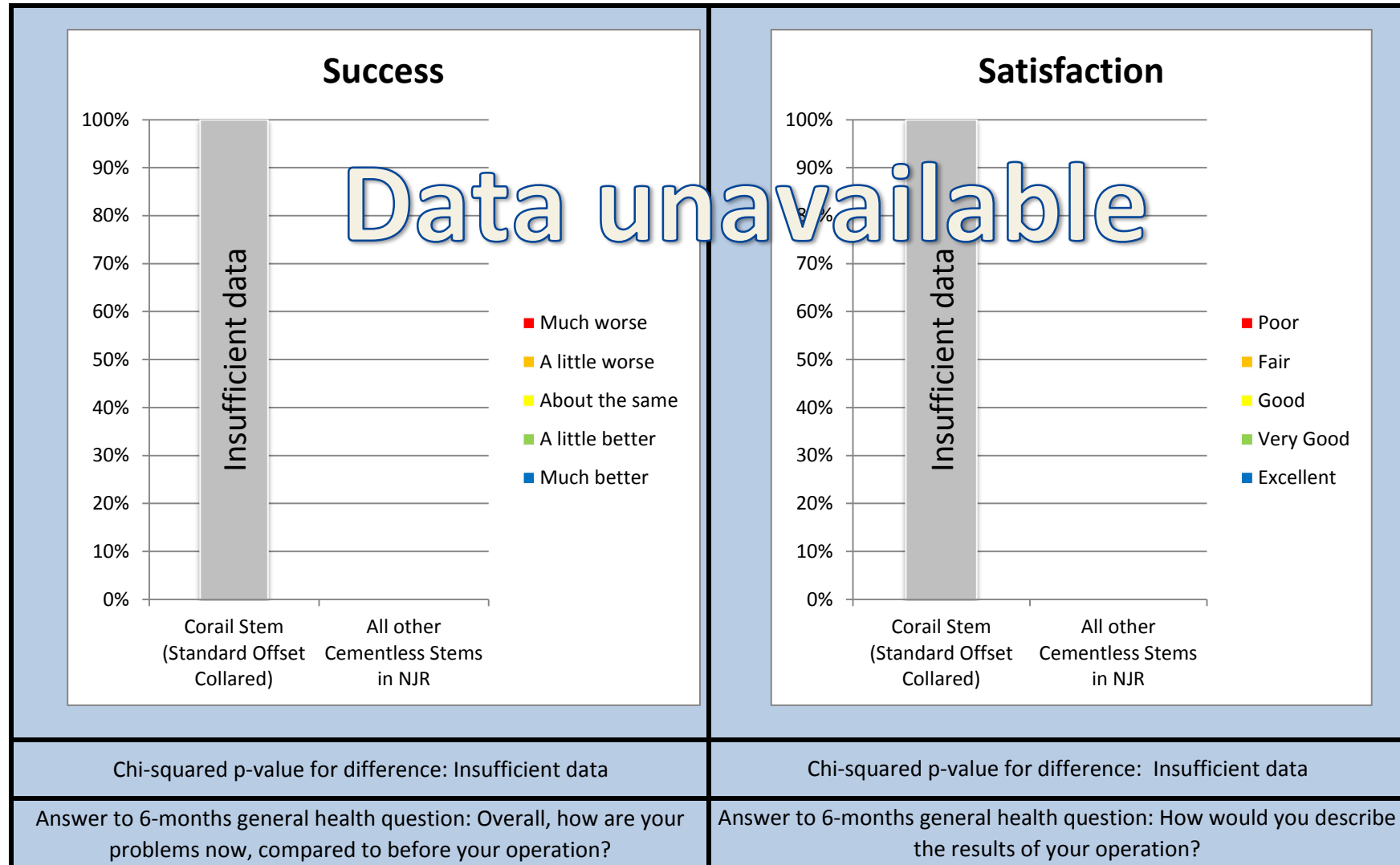
Data unavailable

Bespoke Report for:

Corail Stem (Standard Offset Collared)

Responses are not case mix adjusted

Patient Reported Outcomes



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Disclaimer

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Appendix A: Component List

Catalogue Number	Description	Number Implanted
3L92498	Corail Collared Stem K8A 115mm	3,664
3L92499	Corail Collared Stem K9A 130mm	5,862
3L92500	Corail Collared Stem K10A 140mm	11,814
3L92501	Corail Collared Stem K11A 145mm	17,210
3L92502	Corail Collared Stem K12A 150mm	14,034
3L92503	Corail Collared Stem K13A 155mm	6,887
3L92504	Corail Collared Stem K14A 160mm	3,573
3L92505	Corail Collared Stem K15A 165mm	1,705
3L92506	Corail Collared Stem K16A 170mm	644
3L92508	Corail Collared Stem K18A 180mm	140
3L92521	Corail Collared Stem K20A 190mm	12