

Implant Bespoke Report for:

DePuy

Corail Stem (Standard Offset Non-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 Non-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 Non-Collared)**

Acetabular Components **Any Acetabular Components from all manufacturers**

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

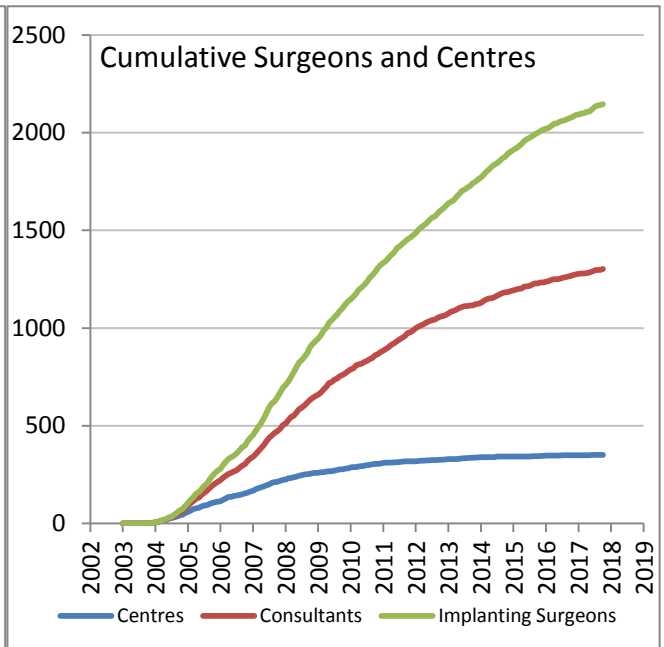
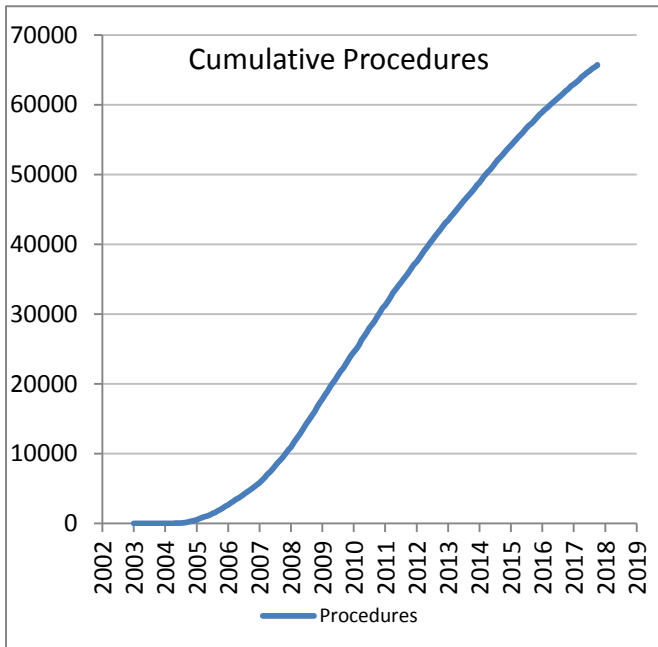
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NJR Recorded Usage

Implant Usage

Date of first recorded usage in the NJR: **13 May 2003**
 Date of last recorded usage in this dataset: **09 October 2017**
 Maximum implantation time: 14.4 years
 Mean implantation time: 5.8 years

Totals Recorded in NJR	Cumulative Total
Procedures	65,729
Patients	59,686
Centres	351
Consultants	1,303
Implanting Surgeons	2,146



Current Outcome	Year of implantation														Total	%
	Pre-2006	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017			
Death	643	640	935	1133	926	703	453	365	260	166	68	36	1	6329	9.6%	
Revised	219	347	491	543	370	206	155	129	92	99	62	31	19	2763	4.2%	
Unrevised	1821	2167	3669	5183	5458	5797	5653	5447	5059	5038	4629	3934	2782	56637	86.2%	
Total	2683	3154	5095	6859	6754	6706	6261	5941	5411	5303	4759	4001	2802	65729	100%	

Patient / Procedure Details

Patient Details

	Corail Stem (Standard Offset Non- Collared)	All NJR Cementless Stems	All NJR hip replacement
Total Procedures	65,729	395,274	967,957
Total Patients	59,686	345,121	829,519
Demographics			
Mean age	65.3	65.4	68.5
< 50	8.1%	8.3%	6.0%
50 – 59	18.8%	18.7%	13.7%
60 – 69	36.6%	35.2%	29.5%
70 – 79	28.1%	28.5%	34.4%
≥ 80	8.5%	9.3%	16.3%
Median BMI	28	28	28
% BMI information available	56.8%	60.4%	57.7%
Underweight (BMI < 18.5)	0.7%	0.7%	0.9%
Normal (18.5 ≤ BMI < 25)	19.5%	19.0%	20.9%
Overweight (25 ≤ BMI < 30)	39.5%	39.4%	39.8%
Obese I (30 ≤ BMI < 35)	25.9%	26.6%	25.6%
Obese II (35 ≤ BMI < 40)	10.7%	10.6%	9.6%
Obese III (BMI ≥ 40)	3.7%	3.7%	3.3%
% Male	36.9%	43.9%	40.1%
ASA Grades			
P1 - Fit and healthy	18.6%	18.9%	16.7%
P2 - Mild disease not incapacitating	69.6%	68.5%	67.6%
P3 - Incapacitating systemic disease	11.5%	12.2%	15.1%
P4 / P5	0.3%	0.4%	0.6%
Indications			
Osteoarthritis	93.81%	93.09%	92.00%
Rheumatoid Arthritis	1.30%	1.22%	1.32%
Avascular Necrosis	2.40%	2.60%	2.51%
Fractured Neck of Femur	1.40%	1.76%	2.92%
CDH/DDH	1.83%	2.01%	1.54%
Other	1.55%	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	444	405.27	0.033
Dislocation / Subluxation	319	339.38	0.23
Adverse Soft Tissue Reaction	851	573.25	<0.001
Infection	273	276.87	0.817
Aseptic Loosening - Stem	434	375.73	0.001
Aseptic Loosening - Socket	223	231.79	0.534
Periprosthetic Fracture Stem	281	226.78	<0.001
Periprosthetic Fracture Socket	24	32.77	0.099
Malalignment Stem	73	67.19	0.419
Malalignment Socket	123	136.03	0.233
Wear Of Acetabular Component	110	116.52	0.536
Lysis Stem	93	69.93	0.003
Lysis Socket	88	68.61	0.01
Implant Fracture Stem	23	29.67	0.19
Implant Fracture Socket	57	39.06	0.002
Implant Fracture Head	5	13.28	0.009
Dissociation of Liner	55	44.02	0.079
Other / reason not recorded	176	145.54	0.007
Total Revised	2763	2399.92	<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 Non-Collared)	All other Cementless Stems in NJR
Femoral only	564	20%	23%
Acetabular only	1015	37%	36%
Both femoral and acetabular	819	30%	33%
Neither femoral nor acetabular revision recorded *	365	13%	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	164	195.90	0.012
Dislocation / Subluxation	265	284.72	0.204
Adverse Soft Tissue Reaction	61	63.82	0.729
Infection	195	201.06	0.672
Aseptic Loosening - Stem	288	267.43	0.169
Aseptic Loosening - Socket	89	136.32	<0.001
Periprosthetic Fracture Stem	231	187.82	<0.001
Periprosthetic Fracture Socket	17	27.97	0.021
Malalignment Stem	52	53.34	0.881
Malalignment Socket	76	99.67	0.008
Wear Of Acetabular Component	67	85.13	0.031
Lysis Stem	40	34.16	0.26
Lysis Socket	27	28.71	0.836
Implant Fracture Stem	15	21.90	0.128
Implant Fracture Socket	53	35.79	0.002
Implant Fracture Head	4	11.79	0.01
Dissociation of Liner	46	35.71	0.065
Other / reason not recorded	85	76.67	0.286
Total Revised	1386	1411.36	0.465

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

† multiple reasons may be listed for one revision procedure

Significantly better, $p < 0.001$

Significantly better, $p < 0.05$

Significantly worse $p < 0.05$

Significantly worse $p < 0.001$

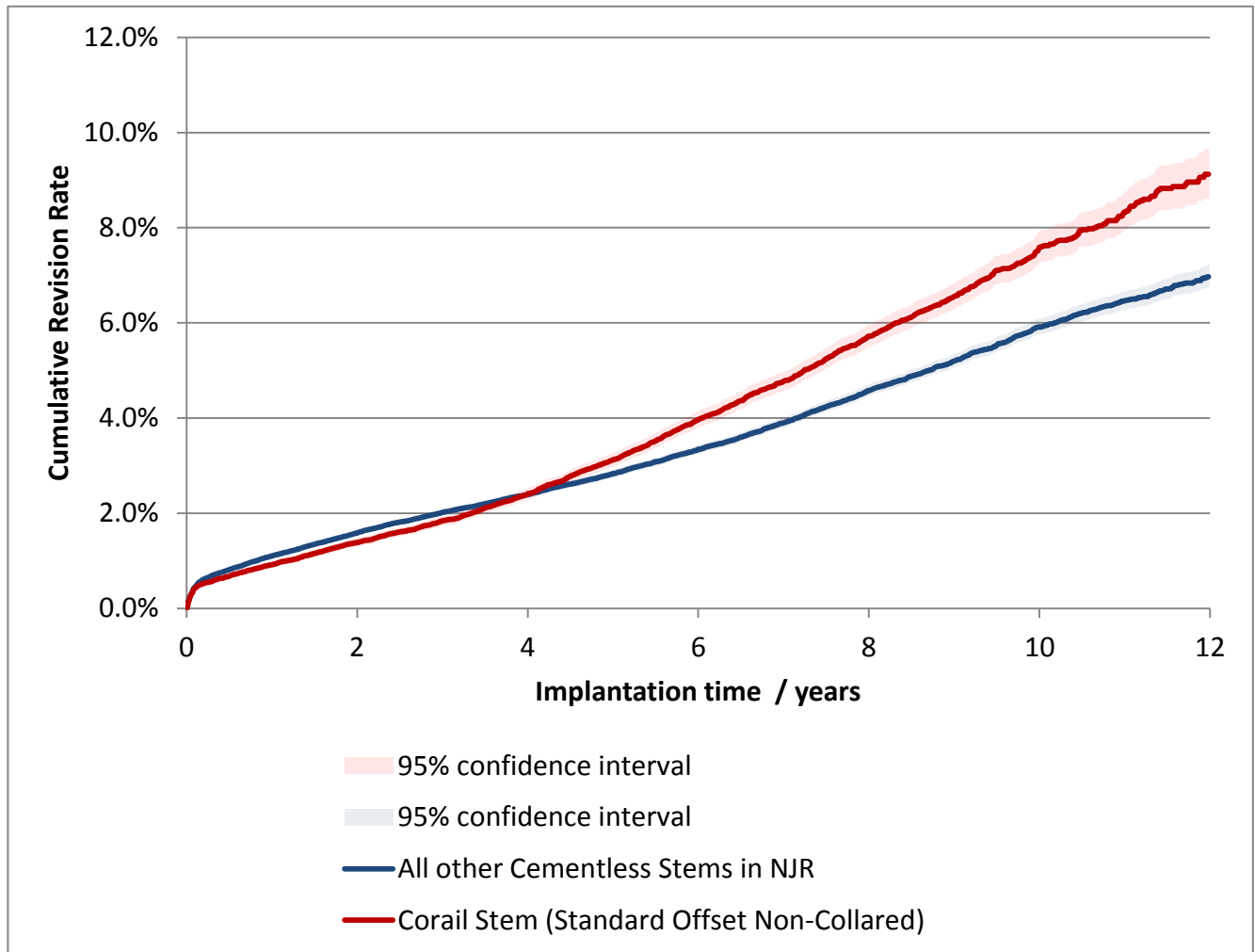


Components Revised	Number of procedures	Corail Stem (Standard Offset Non-Collared)	All other Cementless Stems in NJR
Femoral only	454	33%	29%
Acetabular only	339	24%	28%
Both femoral and acetabular	434	31%	32%
Neither femoral nor acetabular revision recorded *	159	11%	11%

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 Non-Collared) / All other Cementless Stems in NJR, with endpoint as any revision.

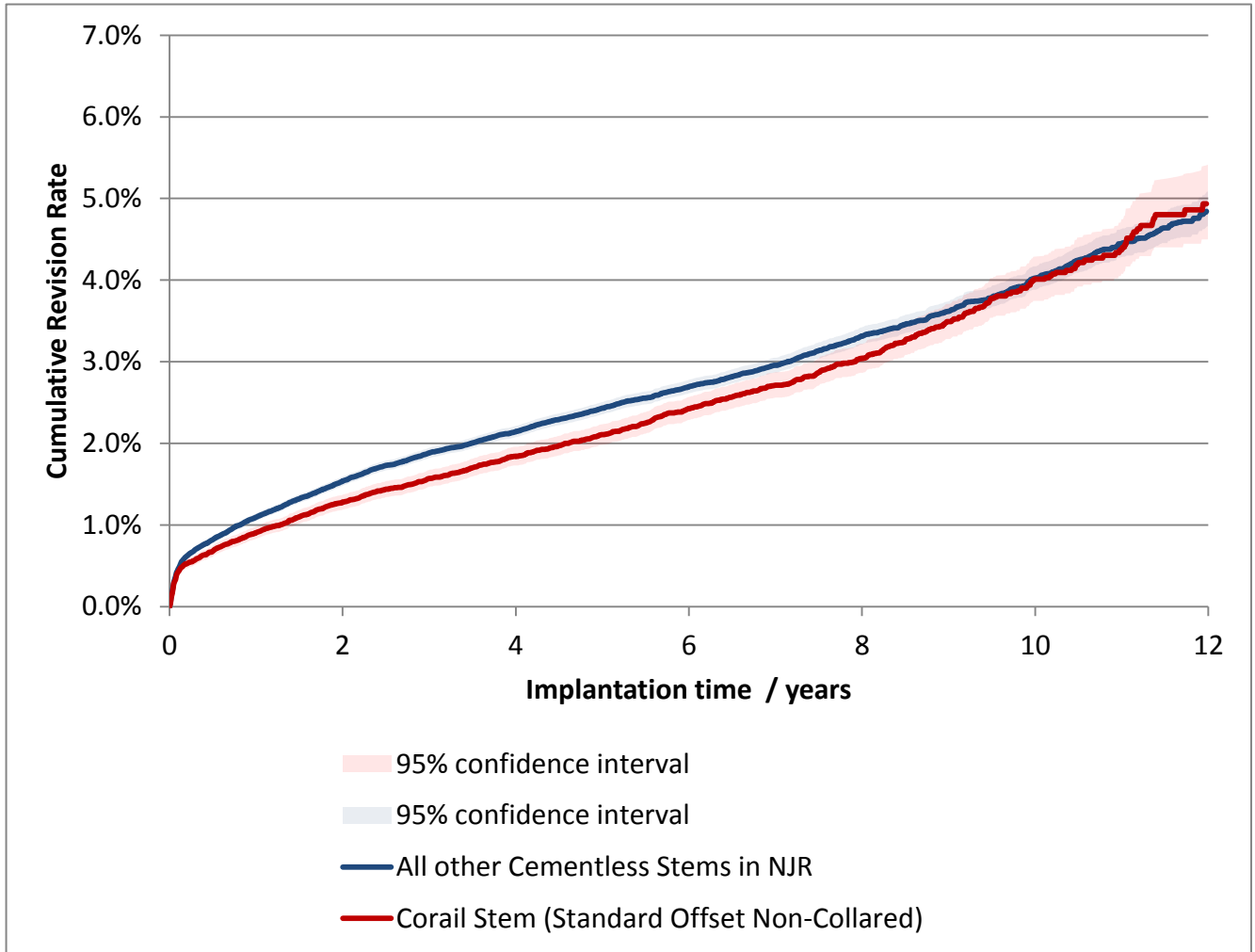
Adjustment	Hazard Ratio (95% CI)	p-value
All bearings. Unadjusted.	1.19 ‡ (1.14 - 1.24)	<0.001 ‡
All bearings. Adjusted for age, gender, year cohort and indications.	1.13 ‡ (1.08 - 1.18)	<0.001 ‡

‡ Hazard ratio varies with time

Revision and Survivorship

Cumulative Revision Rate

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



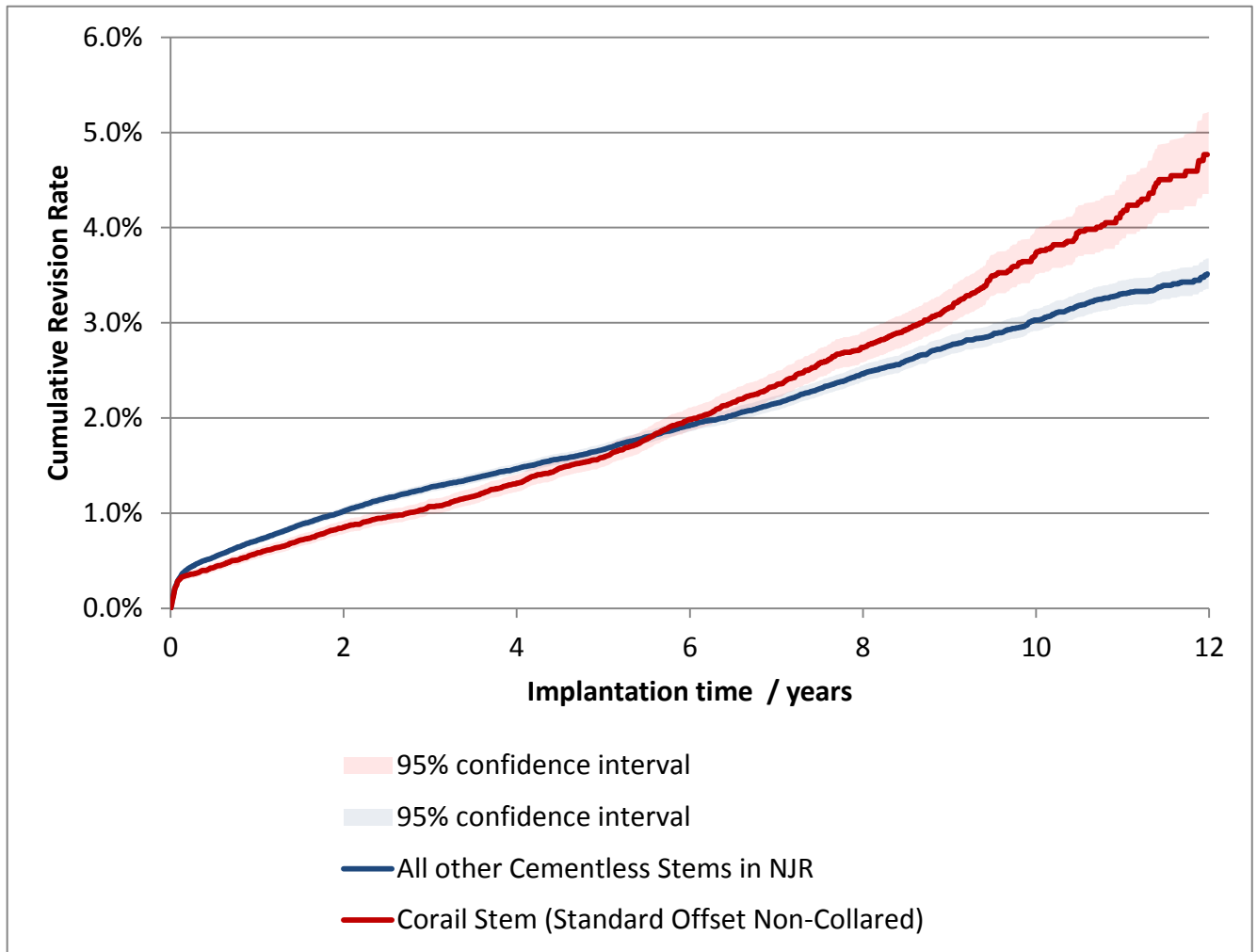
Cox Proportional Hazards model for revision risk ratio of Corail Stem (Standard Offset Non-Collared) / All other Cementless Stems in NJR, with endpoint as any revision.

Adjustment	Hazard Ratio (95% CI)	p-value
Excluding MoM, Unadjusted.	0.96 (0.91 - 1.02)	0.184
Excluding MoM. Adjusted for age, gender, year cohort and indications.	0.96 (0.91 - 1.02)	0.175

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 Non-Collared) / all other All other Cementless Stems in NJR, with endpoint as Femoral revision.

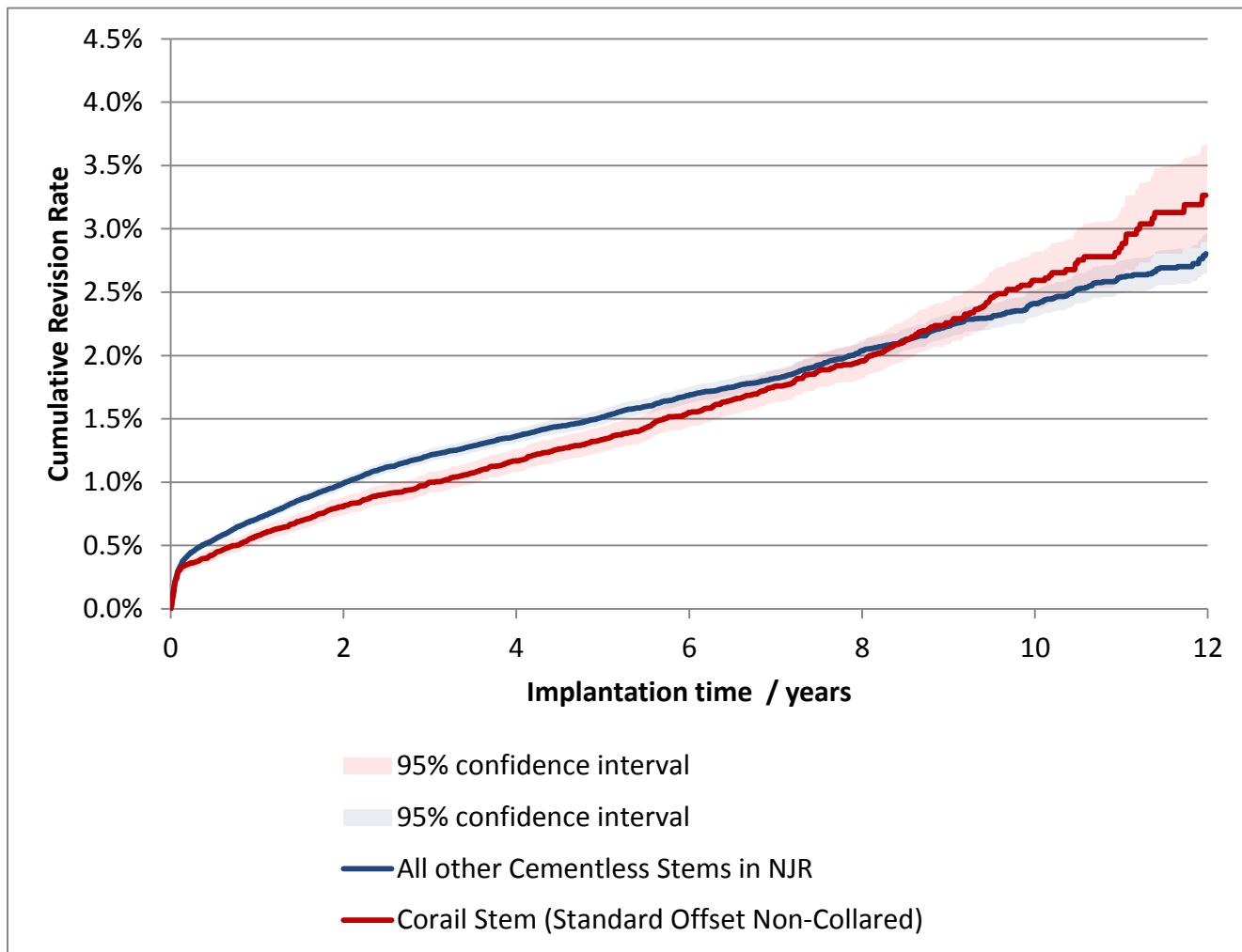
Adjustment	Hazard Ratio (95% CI)	p-value
All bearings. Unadjusted.	1.10 ‡ (1.03 - 1.16)	0.002 ‡
All bearings. Adjusted for age, gender, year cohort and indications.	1.09 ‡ (1.02 - 1.15)	0.006 ‡

‡ 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 Non-Collared) / All other Cementless Stems in NJR, with endpoint as Femoral revision.

Adjustment	Hazard Ratio (95% CI)	p-value
Excluding MoM, Unadjusted	0.99 (0.92 - 1.07)	0.867
Excluding MoM. Adjusted for age, gender, year cohort and indications.	1.01 (0.94 - 1.09)	0.733

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 Non-Collared)	All NJR Cementless Stems	All THR	At Risk	Corail Stem (Standard Offset Non-Collared)	All NJR Cementless Stems	All THR
0	65,729	-	-	-	58,173	-	-	-
1	60,956	0.9% (0.8% - 1.0%)	1.0% (0.9% - 1.0%)	0.8% (0.8% - 0.8%)	53,550	0.9% (0.8% - 1.0%)	1.0% (0.9% - 1.0%)	0.7% (0.7% - 0.8%)
2	56,009	1.4% (1.3% - 1.5%)	1.4% (1.4% - 1.5%)	1.2% (1.1% - 1.2%)	48,763	1.3% (1.2% - 1.4%)	1.4% (1.3% - 1.4%)	1.1% (1.1% - 1.1%)
3	50,411	1.8% (1.7% - 1.9%)	1.9% (1.8% - 1.9%)	1.5% (1.5% - 1.6%)	43,352	1.6% (1.5% - 1.7%)	1.7% (1.7% - 1.8%)	1.4% (1.4% - 1.4%)
4	44,213	2.4% (2.3% - 2.5%)	2.3% (2.3% - 2.4%)	1.9% (1.9% - 1.9%)	37,433	1.8% (1.7% - 2.0%)	2.0% (1.9% - 2.0%)	1.6% (1.6% - 1.7%)
5	38,116	3.1% (3.0% - 3.3%)	2.9% (2.8% - 2.9%)	2.4% (2.3% - 2.4%)	31,690	2.1% (2.0% - 2.2%)	2.3% (2.2% - 2.3%)	1.9% (1.9% - 1.9%)
6	31,604	4.0% (3.8% - 4.1%)	3.5% (3.4% - 3.5%)	2.8% (2.8% - 2.9%)	25,530	2.4% (2.3% - 2.6%)	2.5% (2.5% - 2.6%)	2.1% (2.1% - 2.2%)
7	25,013	4.8% (4.6% - 5.0%)	4.1% (4.0% - 4.2%)	3.4% (3.3% - 3.4%)	19,272	2.7% (2.6% - 2.9%)	2.8% (2.8% - 2.9%)	2.4% (2.4% - 2.5%)
8	18,424	5.7% (5.5% - 6.0%)	4.9% (4.8% - 5.0%)	3.9% (3.9% - 4.0%)	13,538	3.0% (2.9% - 3.2%)	3.2% (3.1% - 3.2%)	2.7% (2.7% - 2.8%)
9	12,368	6.6% (6.3% - 6.8%)	5.6% (5.5% - 5.7%)	4.5% (4.4% - 4.5%)	8,861	3.5% (3.3% - 3.7%)	3.5% (3.4% - 3.6%)	3.1% (3.0% - 3.1%)
10	7,123	7.6% (7.3% - 7.9%)	6.4% (6.2% - 6.5%)	5.1% (5.0% - 5.1%)	5,125	4.0% (3.7% - 4.3%)	3.9% (3.8% - 4.0%)	3.4% (3.4% - 3.5%)
11	3,590	8.3% (7.9% - 8.7%)	7.0% (6.8% - 7.1%)	5.6% (5.5% - 5.7%)	2,733	4.4% (4.0% - 4.7%)	4.4% (4.2% - 4.5%)	3.9% (3.8% - 4.0%)
12	1,437	9.1% (8.6% - 9.7%)	7.6% (7.4% - 7.8%)	6.2% (6.1% - 6.3%)	1,191	4.9% (4.5% - 5.4%)	4.9% (4.7% - 5.0%)	4.3% (4.2% - 4.4%)
13	167	9.9% (9.1% - 11.3%)	8.2% (8.0% - 8.5%)	6.7% (6.6% - 6.8%)	152	5.6% (4.9% - 7.0%)	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 Non-Collared)	All NJR Cementless Stems	All THR	At Risk	Corail Stem (Standard Offset Non-Collared)	All NJR Cementless Stems	All THR
0	65,729	-	-	-	58,173	-	-	-
1	60,956	0.6% (0.5% - 0.6%)	0.6% (0.6% - 0.6%)	0.5% (0.5% - 0.5%)	53,550	0.6% (0.5% - 0.6%)	0.6% (0.6% - 0.6%)	0.5% (0.5% - 0.5%)
2	56,009	0.9% (0.8% - 0.9%)	0.9% (0.9% - 0.9%)	0.8% (0.8% - 0.8%)	48,763	0.8% (0.7% - 0.9%)	0.9% (0.8% - 0.9%)	0.7% (0.7% - 0.7%)
3	50,411	1.1% (1.0% - 1.2%)	1.1% (1.1% - 1.2%)	1.0% (1.0% - 1.0%)	43,352	1.0% (0.9% - 1.1%)	1.1% (1.1% - 1.1%)	0.9% (0.9% - 0.9%)
4	44,213	1.3% (1.2% - 1.4%)	1.4% (1.3% - 1.4%)	1.3% (1.2% - 1.3%)	37,433	1.2% (1.1% - 1.3%)	1.3% (1.2% - 1.3%)	1.1% (1.0% - 1.1%)
5	38,116	1.6% (1.5% - 1.7%)	1.6% (1.6% - 1.7%)	1.5% (1.5% - 1.6%)	31,690	1.3% (1.2% - 1.4%)	1.4% (1.4% - 1.5%)	1.2% (1.2% - 1.3%)
6	31,604	2.0% (1.9% - 2.1%)	1.9% (1.9% - 2.0%)	1.9% (1.8% - 1.9%)	25,530	1.6% (1.4% - 1.7%)	1.6% (1.6% - 1.7%)	1.4% (1.4% - 1.4%)
7	25,013	2.3% (2.2% - 2.5%)	2.2% (2.1% - 2.3%)	2.2% (2.2% - 2.2%)	19,272	1.8% (1.6% - 1.9%)	1.8% (1.7% - 1.8%)	1.6% (1.6% - 1.6%)
8	18,424	2.7% (2.6% - 2.9%)	2.5% (2.5% - 2.6%)	2.6% (2.5% - 2.6%)	13,538	2.0% (1.8% - 2.1%)	2.0% (1.9% - 2.0%)	1.8% (1.8% - 1.9%)
9	12,368	3.2% (3.0% - 3.4%)	2.9% (2.8% - 2.9%)	2.9% (2.9% - 3.0%)	8,861	2.3% (2.1% - 2.4%)	2.2% (2.1% - 2.3%)	2.0% (2.0% - 2.1%)
10	7,123	3.7% (3.5% - 4.0%)	3.2% (3.1% - 3.3%)	3.3% (3.3% - 3.4%)	5,125	2.6% (2.4% - 2.8%)	2.4% (2.3% - 2.5%)	2.3% (2.3% - 2.4%)
11	3,590	4.2% (3.9% - 4.5%)	3.6% (3.4% - 3.7%)	3.7% (3.7% - 3.8%)	2,733	2.8% (2.6% - 3.1%)	2.7% (2.6% - 2.8%)	2.6% (2.5% - 2.7%)
12	1,437	4.8% (4.4% - 5.2%)	3.9% (3.7% - 4.0%)	4.1% (4.1% - 4.2%)	1,191	3.3% (2.9% - 3.7%)	2.9% (2.8% - 3.1%)	2.9% (2.8% - 3.0%)
13	167	5.3% (4.7% - 6.5%)	4.3% (4.1% - 4.5%)	4.6% (4.5% - 4.7%)	152	3.7% (3.1% - 4.8%)	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 Non-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 Non-Collared)							
	All NJR Cementless Stems							
EQ-5D Index (-0.59 - 1.00)	Corail Stem (Standard Offset Non-Collared)							
	All NJR Cementless Stems							
EQ-VAS (0 - 100)	Corail Stem (Standard Offset Non-Collared)							
	All NJR Cementless Stems							

Data unavailable

Bespoke Report for:

Corail Stem (Standard Offset Non-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
3L92507	Corail Collarless Stem K8S 125mm	4,323
3L92509	Corail Collarless Stem K9S 130mm	5,750
3L92510	Corail Collarless Stem K10S 140mm	11,346
3L92511	Corail Collarless Stem K11S 145mm	16,779
3L92512	Corail Collarless Stem K12S 150mm	14,446
3L92513	Corail Collarless Stem K13S 155mm	7,018
3L92514	Corail Collarless Stem K14S 160mm	3,550
3L92515	Corail Collarless Stem K15S 165mm	1,617
3L92516	Corail Collarless Stem K16S 170mm	628
3L92518	Corail Collarless Stem K18S 180mm	260
3L92520	Corail Collarless Stem K20S 190mm	12