

Implant Summary Report for:

Heraeus Medical

Hips using Palacos Cement

Comprising PRIMARY hips implanted up to:
NJR Database extract:

01 July 2024
31 July 2024

Produced on:
Licensed for use until:

16 August 2024
16 August 2025

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This report has been produced by the National Joint Registry (NJR). It summarises usage and outcomes associated with the Hips using Palacos Cement up to the specified dates. This analysis is based on data collected by the NJR and PROMs data collected by NHS Digital for the following combinations of products:

Cemented Components	Hips using Palacos Cement
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Appendix A lists details of all Palacos Cement products included in this report.

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NJR Recorded Usage

Implant Usage

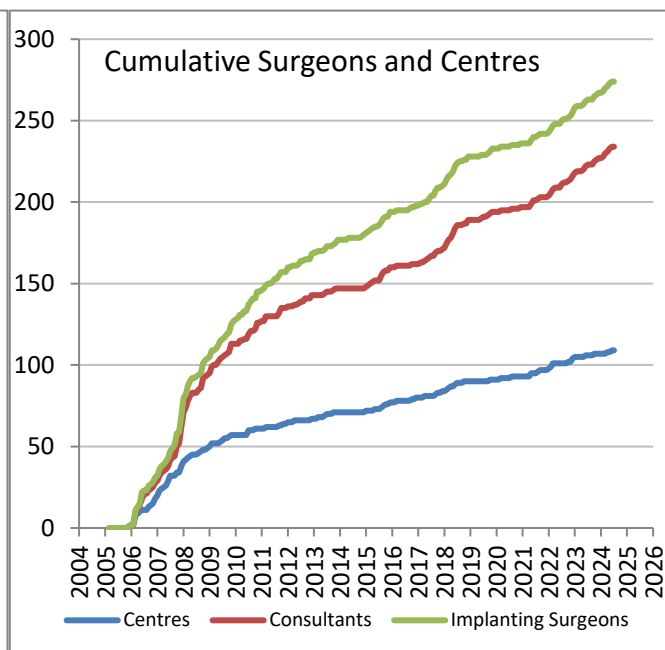
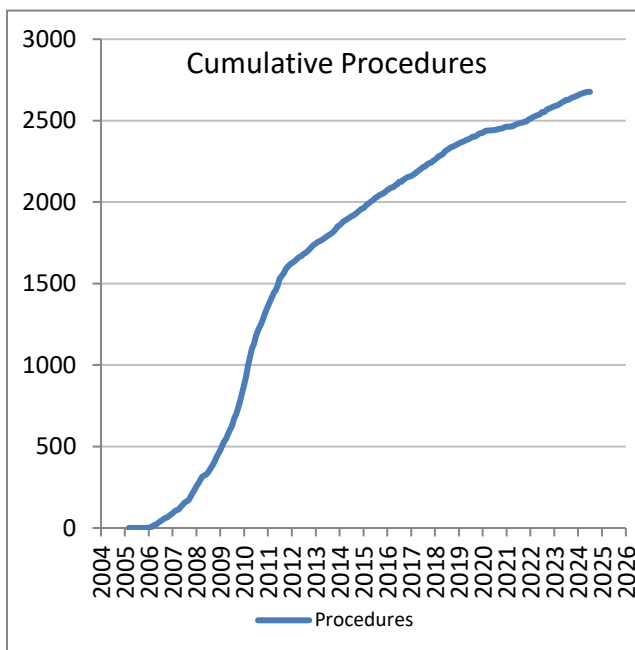
Date of first recorded usage in the NJR: **15 November 2005**

Date of last recorded usage in this dataset: **11 June 2024**

Maximum implantation time: 18.6 years

Mean implantation time: 9.0 years

Totals Recorded in NJR	Cumulative Total
Procedures	2,677
Patients	2,537
Centres	109
Consultants	234
Implanting Surgeons	274



Current Outcome	Year of implantation													Total	%
	Pre-2013	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024		
Death	906	48	31	34	20	20	15	7	6	3	0	1	0	1091	40.8%
Revised	60	4	4	4	3	4	4	1	3	1	0	2	0	90	3.4%
Unrevised	779	61	71	72	63	77	80	57	28	46	76	64	22	1496	55.9%
Total	1745	113	106	110	86	101	99	65	37	50	76	67	22	2677	100%

Patient / Procedure Details

Patient Details

	Hips using Palacos Cement	All other cement brands in NJR	All NJR hip replacement
Total Procedures	2,677	995,992	1,649,604
Total Patients	2,537	856,580	1,364,179
Demographics			
Mean age	73.7	71.2	68.7
< 50	1.6%	4.0%	6.1%
50 – 59	6.1%	10.4%	14.6%
60 – 69	21.9%	25.5%	29.3%
70 – 79	45.3%	39.8%	34.6%
≥ 80	25.2%	20.3%	15.4%
Median BMI	27	28	28
% BMI information available	56.6%	66.4%	66.4%
Underweight (BMI < 18.5)	1.3%	1.0%	0.9%
Normal (18.5 ≤ BMI < 25)	24.8%	22.1%	20.9%
Overweight (25 ≤ BMI < 30)	41.8%	39.4%	39.1%
Obese I (30 ≤ BMI < 35)	21.6%	25.1%	25.8%
Obese II (35 ≤ BMI < 40)	7.7%	9.4%	10.0%
Obese III (BMI ≥ 40)	2.8%	3.1%	3.3%
% Male	33.7%	36.8%	40.2%
ASA Grades			
P1 - Fit and healthy	12.8%	11.8%	14.1%
P2 - Mild disease not incapacitating	67.7%	67.0%	67.9%
P3 - Incapacitating systemic disease	18.8%	20.4%	17.4%
P4 / P5	0.7%	0.7%	0.6%
Indications			
Osteoarthritis	93.57%	89.89%	91.20%
Rheumatoid Arthritis	0.93%	1.41%	1.29%
Avascular Necrosis	2.99%	2.67%	2.65%
Fractured Neck of Femur	3.32%	4.84%	3.63%
CDH/DDH	2.91%	1.20%	1.61%
Other	1.46%	2.58%	2.26%

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
Unexplained Pain	7	7.28	1
Dislocation / Subluxation	27	17.34	0.029
Adverse Soft Tissue Reaction	6	5.88	0.836
Infection	11	12.72	0.778
Aseptic Loosening - Stem	15	8.69	0.04
Aseptic Loosening - Socket	9	16.07	0.08
Periprosthetic Fracture Stem	16	14.44	0.599
Periprosthetic Fracture Socket	0	1.34	0.649
Malalignment Stem	8	1.65	<0.001
Malalignment Socket	1	3.44	0.276
Wear Of Acetabular Component	5	4.19	0.619
Lysis Stem	6	2.68	0.055
Lysis Socket	5	3.99	0.608
Implant Fracture Stem	1	1.66	1
Implant Fracture Socket	0	0.33	1
Implant Fracture Head	0	0.34	1
Dissociation of Liner	0	0.74	1
Other / reason not recorded	5	3.65	0.424
Total Revised	90	80.31	0.288

[†] multiple reasons may be listed for one revision procedure ^{*} Based on All NJR Hips with Cement, adjusted for agegroup, gender, indications, and implantation year

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	Hips using Palacos Cement	All other cement brands in NJR
Femoral only	19	21%	21%
Acetabular only	24	27%	19%
Both femoral and acetabular	45	50%	51%
Neither femoral nor acetabular revision recorded [*]	2	2%	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
Unexplained Pain	4	4.35	1
Dislocation / Subluxation	27	17.12	0.028
Adverse Soft Tissue Reaction	2	1.09	0.297
Infection	11	12.36	0.886
Aseptic Loosening - Stem	12	7.53	0.1
Aseptic Loosening - Socket	9	15.16	0.122
Periprosthetic Fracture Stem	15	13.12	0.578
Periprosthetic Fracture Socket	0	1.25	0.642
Malalignment Stem	8	1.43	<0.001
Malalignment Socket	1	3.00	0.383
Wear Of Acetabular Component	5	4.13	0.616
Lysis Stem	4	2.09	0.16
Lysis Socket	4	3.44	0.593
Implant Fracture Stem	0	1.55	0.415
Implant Fracture Socket	0	0.31	1
Implant Fracture Head	0	0.27	1
Dissociation of Liner	0	0.69	1
Other / reason not recorded	3	2.57	0.747
Total Revised	78	69.14	0.278

* Based on All NJR Hips with Cement (excluding metal on metal), adjusted for agegroup, gender, indications, and implantation year

† 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



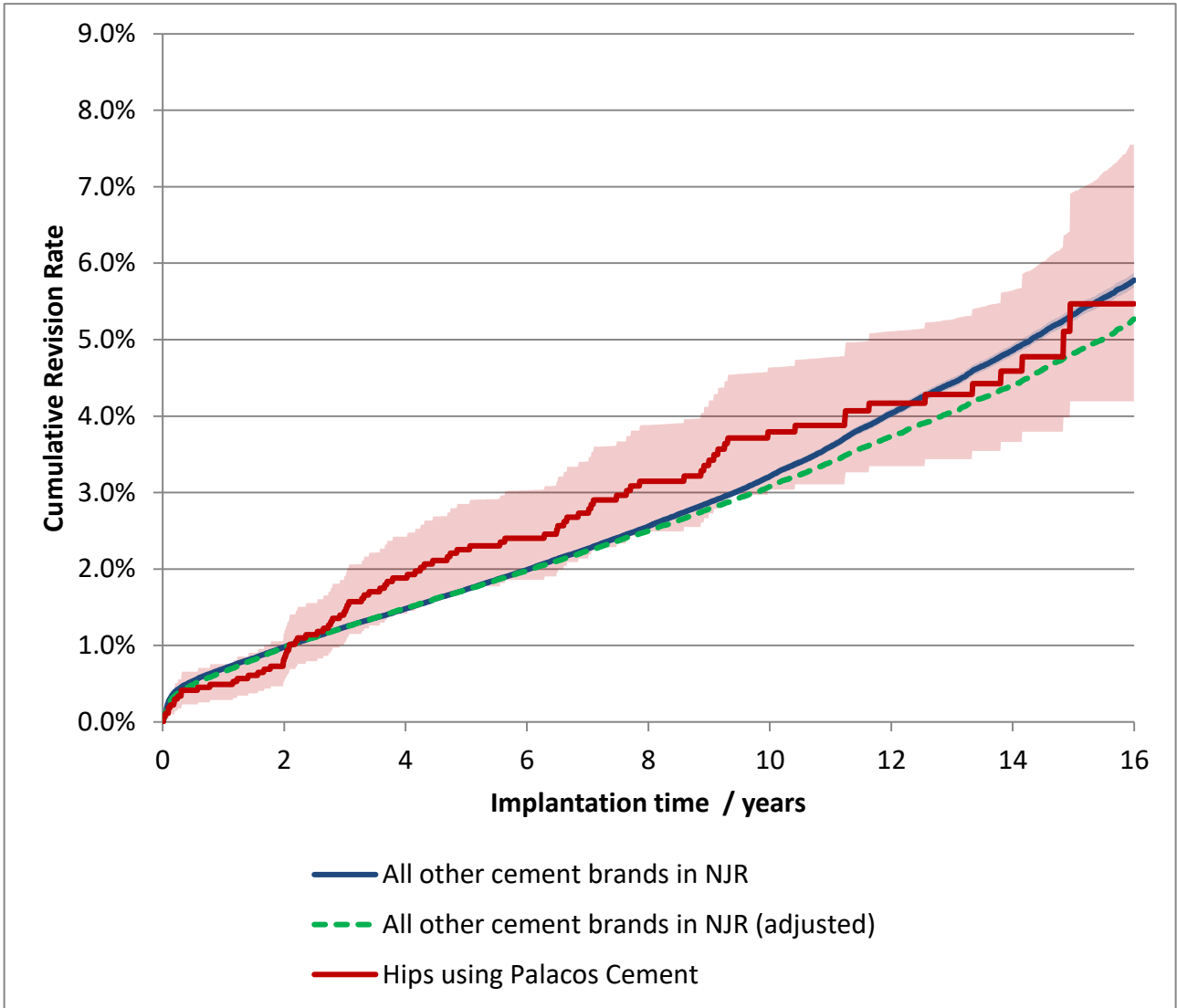
Components Revised	Number of procedures	Hips using Palacos Cement	All other cement brands in NJR
Femoral only	17	22%	23%
Acetabular only	24	31%	23%
Both femoral and acetabular	35	45%	43%
Neither femoral nor acetabular revision recorded *	2	3%	11%

* includes isolated head and/or liner exchange

Revision and Survivorship

Cumulative Revision Rate

Endpoint: All reasons for revision. All Bearing types



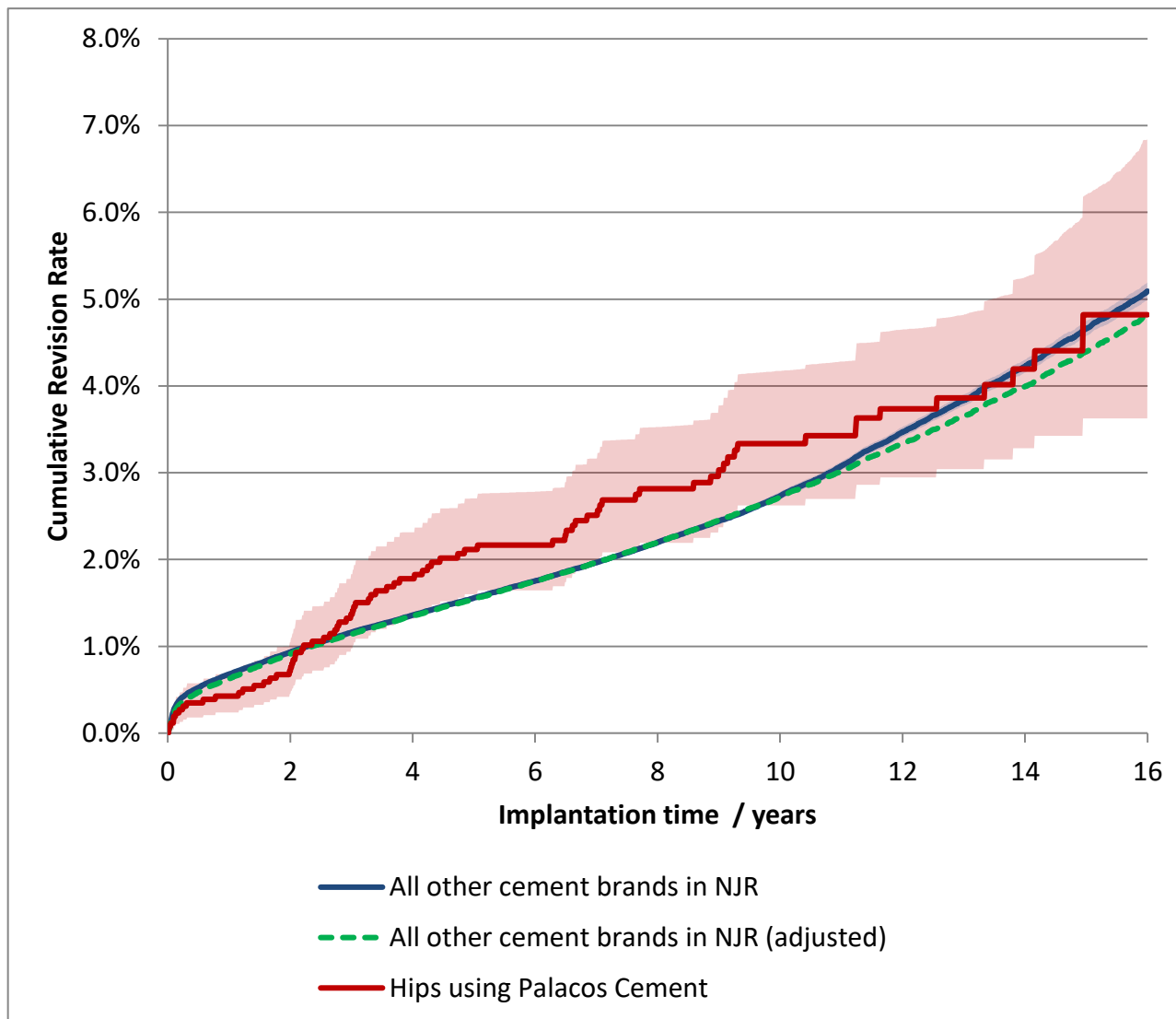
Cox Proportional Hazards model for revision risk ratio of Hips using Palacos Cement / All other cement brands in NJR, with endpoint as any revision.

Adjustment	Hazard Ratio (95% CI)	p-value
All bearings. Unadjusted.	1.05 (0.86 - 1.30)	0.625
All bearings. Adjusted for age, gender, year cohort and indications.	1.12 (0.91 - 1.38)	0.278

Revision and Survivorship

Cumulative Revision Rate

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



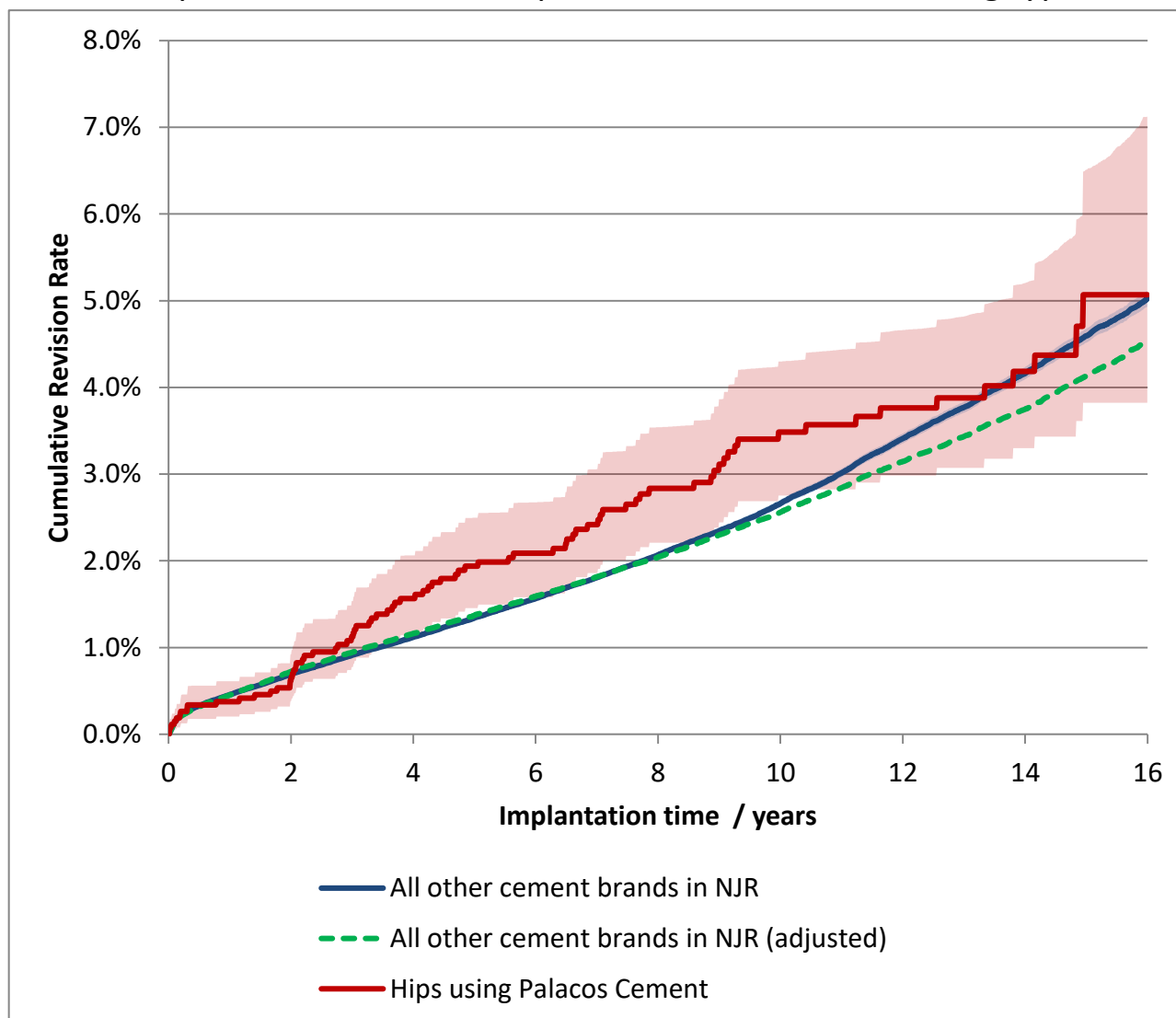
Cox Proportional Hazards model for revision risk ratio of Hips using Palacos Cement / All other cement brands in NJR, with endpoint as any revision.

Adjustment	Hazard Ratio (95% CI)	p-value
Excluding MoM, Unadjusted.	1.10 (0.88 - 1.37)	0.420
Excluding MoM. Adjusted for age, gender, year cohort and indications.	1.13 (0.90 - 1.41)	0.285

Revision and Survivorship

Cumulative Revision Rate

Endpoint: Cemented Component Revision. All Bearing types



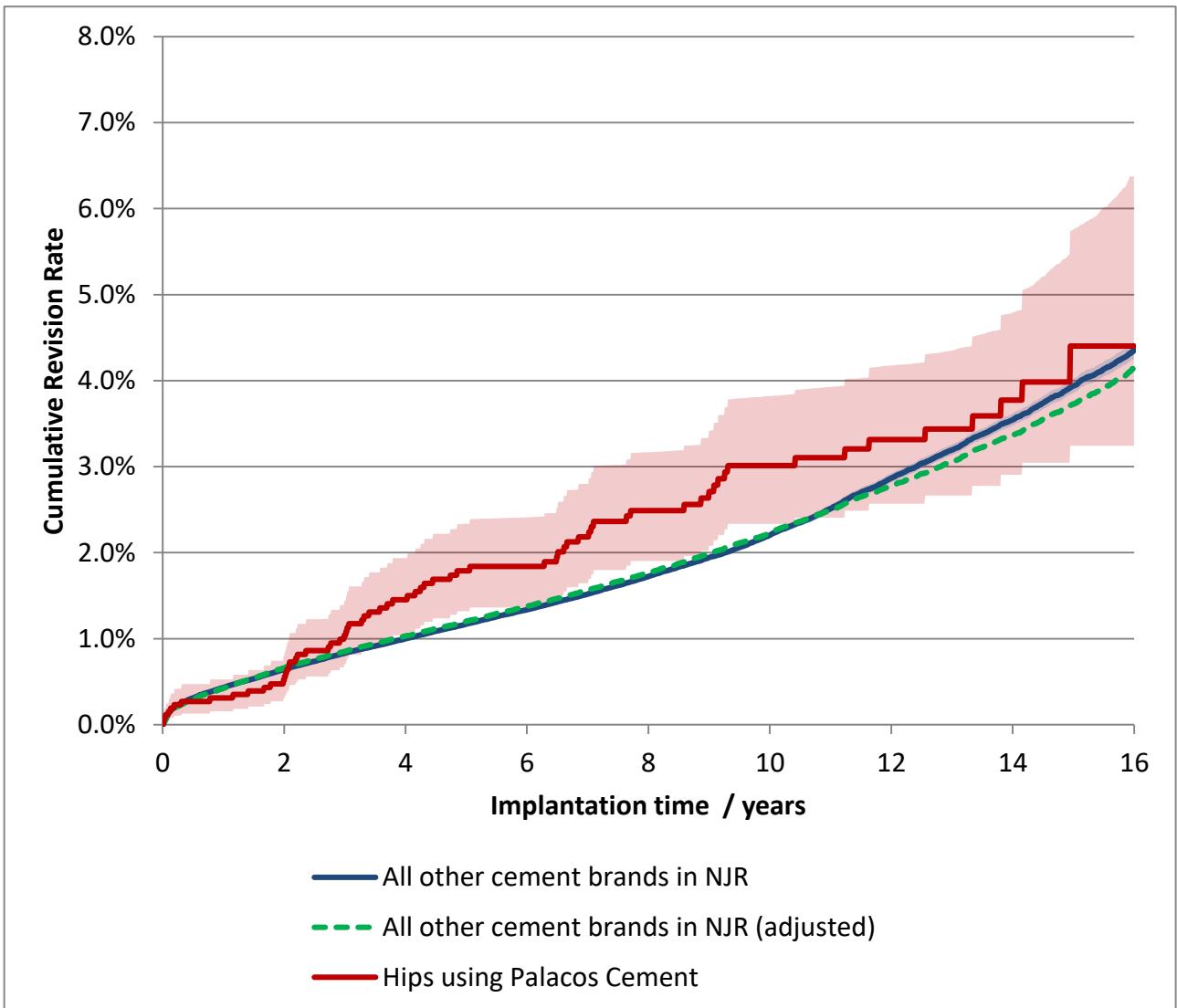
Cox Proportional Hazards model for revision risk ratio of Hips using Palacos Cement / All other cement brands in NJR, with endpoint as any revision.

Adjustment	Hazard Ratio (95% CI)	p-value
All bearings. Unadjusted.	1.13 (0.91 - 1.40)	0.284
All bearings. Adjusted for age, gender, year cohort and indications.	1.20 (0.96 - 1.49)	0.107

Revision and Survivorship

Cumulative Revision Rate

Endpoint: Cemented Component Revision. Excluding Metal-on-Metal



Cox Proportional Hazards model for revision risk ratio of Hips using Palacos Cement / All other cement brands in NJR, with endpoint as any revision.

Adjustment	Hazard Ratio (95% CI)	p-value
Excluding MoM. Unadjusted.	1.18 (0.93 - 1.50)	0.172
Excluding MoM. Adjusted for age, gender, year cohort and indications.	1.20 (0.95 - 1.52)	0.133

Revision and Survivorship

Cumulative Revision Rate

Endpoint: All revisions

Period /years	All Bearing types				Excluding Metal on Metal Bearings			
	At Risk	Hips using Palacos Cement	All other cement brands in NJR	All THR	At Risk	Hips using Palacos Cement	All other cement brands in NJR	All THR
0	2,677	-	-	-	2,599	-	-	-
1	2,555	0.5% (0.3% - 0.8%)	0.7% (0.7% - 0.7%)	0.8% (0.8% - 0.8%)	2,479	0.4% (0.2% - 0.7%)	0.7% (0.7% - 0.7%)	0.8% (0.7% - 0.8%)
2	2,423	0.8% (0.5% - 1.2%)	1.0% (1.0% - 1.0%)	1.1% (1.1% - 1.1%)	2,348	0.7% (0.5% - 1.0%)	0.9% (0.9% - 1.0%)	1.0% (1.0% - 1.1%)
3	2,273	1.4% (1.0% - 1.9%)	1.2% (1.2% - 1.3%)	1.4% (1.4% - 1.4%)	2,198	1.4% (1.0% - 1.8%)	1.2% (1.1% - 1.2%)	1.3% (1.3% - 1.3%)
4	2,154	1.9% (1.4% - 2.4%)	1.5% (1.5% - 1.5%)	1.7% (1.6% - 1.7%)	2,081	1.8% (1.3% - 2.3%)	1.4% (1.3% - 1.4%)	1.5% (1.5% - 1.5%)
5	2,033	2.3% (1.7% - 2.9%)	1.7% (1.7% - 1.8%)	2.0% (1.9% - 2.0%)	1,964	2.1% (1.6% - 2.7%)	1.6% (1.5% - 1.6%)	1.7% (1.7% - 1.7%)
6	1,884	2.4% (1.9% - 3.0%)	2.0% (2.0% - 2.0%)	2.3% (2.2% - 2.3%)	1,817	2.2% (1.6% - 2.8%)	1.8% (1.7% - 1.8%)	1.9% (1.9% - 1.9%)
7	1,709	2.7% (2.1% - 3.4%)	2.3% (2.2% - 2.3%)	2.6% (2.6% - 2.6%)	1,642	2.5% (1.9% - 3.2%)	2.0% (1.9% - 2.0%)	2.1% (2.1% - 2.1%)
8	1,551	3.1% (2.5% - 3.9%)	2.6% (2.5% - 2.6%)	2.9% (2.9% - 3.0%)	1,487	2.8% (2.2% - 3.5%)	2.2% (2.2% - 2.2%)	2.3% (2.3% - 2.4%)
9	1,369	3.4% (2.7% - 4.2%)	2.9% (2.8% - 2.9%)	3.3% (3.2% - 3.3%)	1,308	3.0% (2.4% - 3.8%)	2.4% (2.4% - 2.5%)	2.6% (2.6% - 2.6%)
10	1,194	3.8% (3.0% - 4.6%)	3.2% (3.2% - 3.3%)	3.6% (3.6% - 3.7%)	1,135	3.3% (2.6% - 4.2%)	2.7% (2.7% - 2.8%)	2.9% (2.8% - 2.9%)
11	1,033	3.9% (3.1% - 4.8%)	3.6% (3.5% - 3.7%)	4.0% (4.0% - 4.1%)	974	3.4% (2.7% - 4.3%)	3.1% (3.0% - 3.1%)	3.2% (3.1% - 3.2%)
12	910	4.2% (3.3% - 5.1%)	4.0% (4.0% - 4.1%)	4.5% (4.4% - 4.5%)	851	3.7% (2.9% - 4.6%)	3.5% (3.4% - 3.5%)	3.5% (3.5% - 3.6%)
13	767	4.3% (3.4% - 5.3%)	4.4% (4.4% - 4.5%)	4.9% (4.9% - 5.0%)	709	3.9% (3.0% - 4.8%)	3.8% (3.8% - 3.9%)	3.9% (3.9% - 3.9%)
14	548	4.6% (3.7% - 5.6%)	4.9% (4.8% - 4.9%)	5.4% (5.3% - 5.4%)	494	4.2% (3.3% - 5.3%)	4.2% (4.2% - 4.3%)	4.3% (4.2% - 4.3%)
15	251	5.5% (4.2% - 6.9%)	5.3% (5.2% - 5.4%)	5.9% (5.8% - 5.9%)	220	4.8% (3.6% - 6.2%)	4.7% (4.6% - 4.7%)	4.7% (4.6% - 4.8%)

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: Cemented Component Revision

Period /years	All Bearing types				Excluding Metal on Metal Bearings			
	At Risk	Hips using Palacos Cement	All other cement brands in NJR	All THR	At Risk	Hips using Palacos Cement	All other cement brands in NJR	All THR
0	2,677	-	-	-	2,599	-	-	-
1	2,555	0.4% (0.2% - 0.6%)	0.5% (0.4% - 0.5%)	(-)	2,479	0.3% (0.2% - 0.5%)	0.4% (0.4% - 0.4%)	(-)
2	2,423	0.6% (0.4% - 0.9%)	0.7% (0.7% - 0.7%)	(-)	2,348	0.5% (0.3% - 0.8%)	0.6% (0.6% - 0.7%)	(-)
3	2,273	1.1% (0.8% - 1.5%)	0.9% (0.9% - 0.9%)	(-)	2,198	1.0% (0.7% - 1.4%)	0.8% (0.8% - 0.9%)	(-)
4	2,154	1.6% (1.1% - 2.1%)	1.1% (1.1% - 1.1%)	(-)	2,081	1.5% (1.0% - 1.9%)	1.0% (1.0% - 1.0%)	(-)
5	2,033	1.9% (1.5% - 2.5%)	1.3% (1.3% - 1.4%)	(-)	1,964	1.8% (1.3% - 2.3%)	1.2% (1.1% - 1.2%)	(-)
6	1,884	2.1% (1.6% - 2.7%)	1.6% (1.5% - 1.6%)	(-)	1,817	1.8% (1.4% - 2.4%)	1.3% (1.3% - 1.4%)	(-)
7	1,709	2.4% (1.9% - 3.1%)	1.8% (1.8% - 1.8%)	(-)	1,642	2.2% (1.6% - 2.8%)	1.5% (1.5% - 1.5%)	(-)
8	1,551	2.8% (2.2% - 3.5%)	2.1% (2.0% - 2.1%)	(-)	1,487	2.5% (1.9% - 3.2%)	1.7% (1.7% - 1.8%)	(-)
9	1,369	3.1% (2.4% - 3.9%)	2.3% (2.3% - 2.4%)	(-)	1,308	2.7% (2.1% - 3.4%)	1.9% (1.9% - 2.0%)	(-)
10	1,194	3.5% (2.8% - 4.3%)	2.7% (2.6% - 2.7%)	(-)	1,135	3.0% (2.3% - 3.8%)	2.2% (2.2% - 2.2%)	(-)
11	1,033	3.6% (2.8% - 4.4%)	3.0% (3.0% - 3.1%)	(-)	974	3.1% (2.4% - 3.9%)	2.5% (2.5% - 2.6%)	(-)
12	910	3.8% (3.0% - 4.7%)	3.4% (3.4% - 3.5%)	(-)	851	3.3% (2.6% - 4.2%)	2.9% (2.8% - 2.9%)	(-)
13	767	3.9% (3.1% - 4.8%)	3.8% (3.7% - 3.8%)	(-)	709	3.4% (2.7% - 4.3%)	3.2% (3.1% - 3.3%)	(-)
14	548	4.2% (3.3% - 5.2%)	4.2% (4.1% - 4.2%)	(-)	494	3.8% (2.9% - 4.8%)	3.5% (3.5% - 3.6%)	(-)
15	251	5.1% (3.8% - 6.5%)	4.6% (4.5% - 4.7%)	(-)	220	4.4% (3.2% - 5.8%)	3.9% (3.9% - 4.0%)	(-)

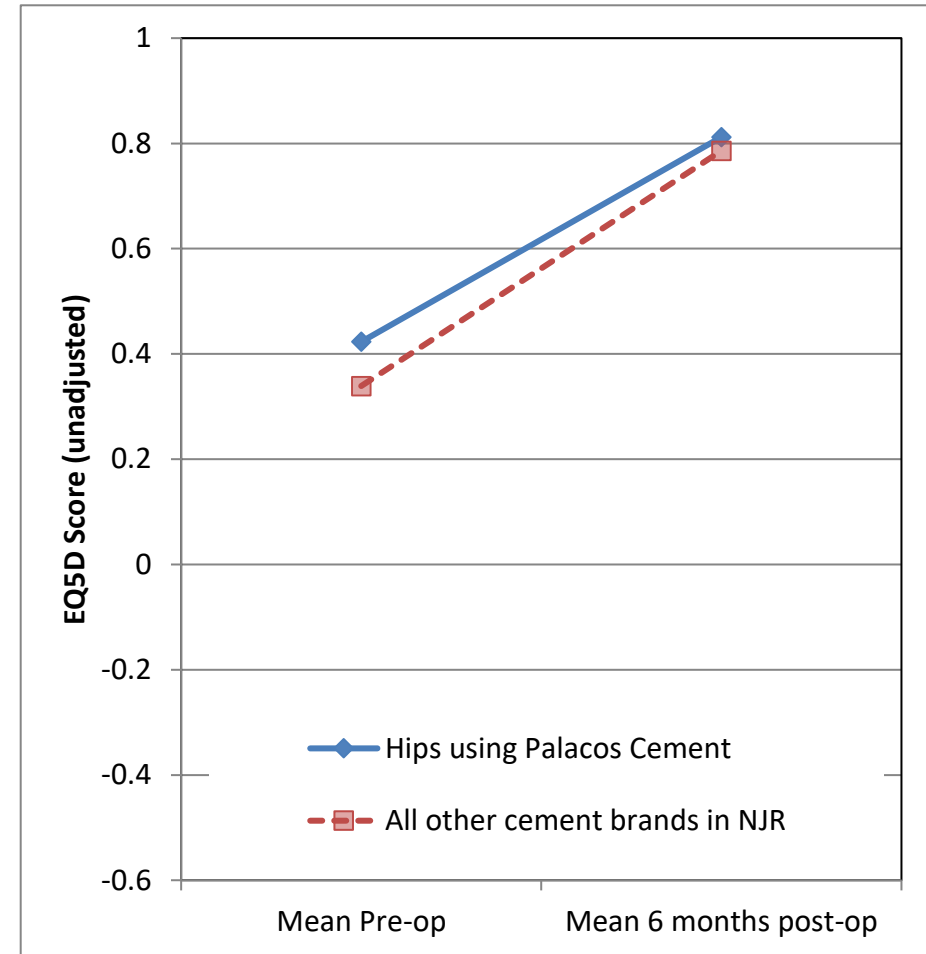
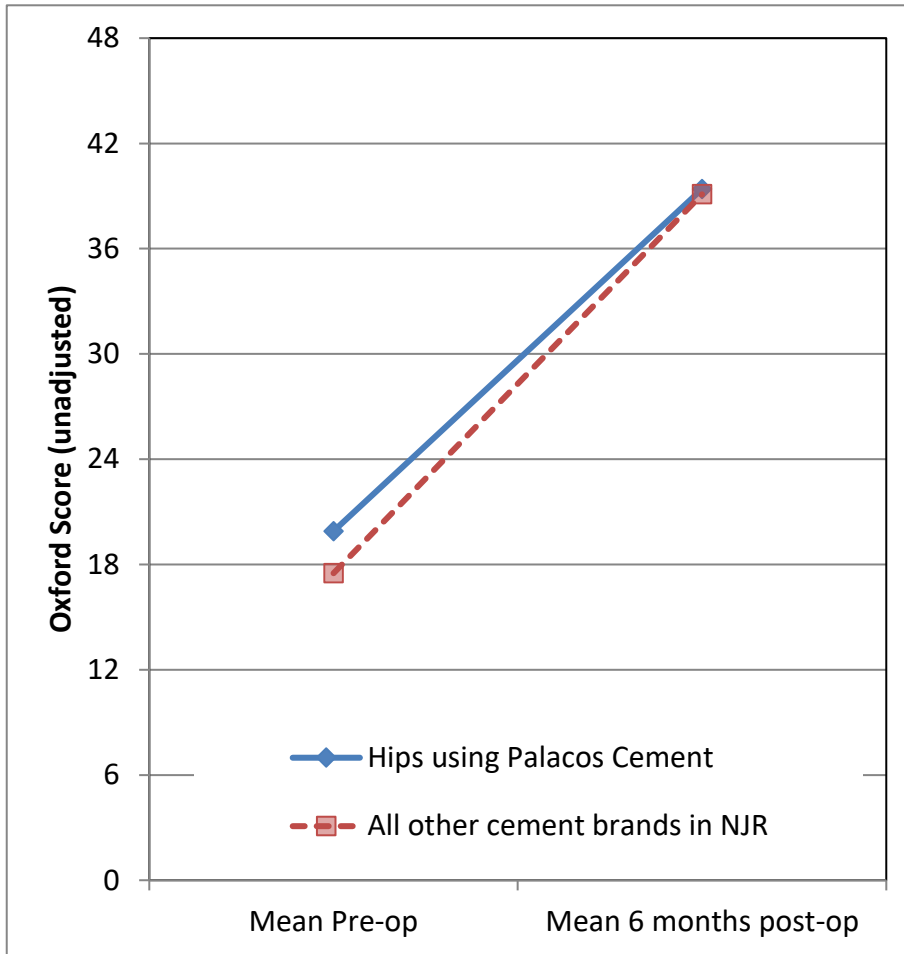
Cumulative revision rate with 95% confidence intervals

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

PROMs Analysis

Patient Reported Outcomes

Comprising PROMs data up to and including: 31/03/2022



Patient Reported Outcomes

PROMs Analysis

Comprising PROMs data up to and including: 31/03/2022

Oxford Hip Score (0 - 48)	Hips using Palacos Cement	All other cement brands in NJR	All THR in NJR
Paired Records	719	218,736	367,524
PreOp score	19.9 (19.3 - 20.5)	17.5 (17.5 - 17.6)	17.9 (17.9 - 17.9)
6 month score	39.4 (38.8 - 40.0)	39.1 (39.1 - 39.2)	39.6 (39.5 - 39.6)
6 month score (adjusted)	38.8 (38.2 - 39.3)	39.5 (39.4 - 39.5)	39.6 (39.5 - 39.6)
Health gain	19.5 (18.8 - 20.2)	21.6 (21.6 - 21.6)	21.7 (21.6 - 21.7)
Health gain (adjusted)	20.8 (20.3 - 21.4)	21.6 (21.5 - 21.6)	21.7 (21.6 - 21.7)
p value (adjusted health gain)	0.005		
Score Improved	95.5%	97.3%	97.3%

EQ-5D Index (-0.59 - 1.00)	Hips using Palacos Cement	All other cement brands in NJR	All THR in NJR
Paired Records	668	201,039	338,993
PreOp score	0.423 (0.400 - 0.446)	0.339 (0.337 - 0.340)	0.353 (0.351 - 0.354)
6 month score	0.812 (0.794 - 0.829)	0.786 (0.785 - 0.787)	0.795 (0.794 - 0.796)
6 month score (adjusted)	0.791 (0.775 - 0.808)	0.792 (0.791 - 0.793)	0.795 (0.794 - 0.796)
Health gain	0.388 (0.363 - 0.414)	0.447 (0.446 - 0.448)	0.442 (0.441 - 0.444)
Health gain (adjusted)	0.439 (0.422 - 0.455)	0.439 (0.438 - 0.440)	0.442 (0.442 - 0.443)
p value (adjusted health gain)	0.84		
Score Improved	87.4%	89.7%	89.7%

EQ-VAS (0 - 100)	Hips using Palacos Cement	All other cement brands in NJR	All THR in NJR
Paired Records	631	192,794	325,935
PreOp score	66.8 (65.3 - 68.3)	64.2 (64.1 - 64.3)	64.6 (64.5 - 64.7)
6 month score	76.7 (75.4 - 78.1)	76.3 (76.2 - 76.4)	77.0 (76.9 - 77.1)
6 month score (adjusted)	75.9 (74.7 - 77.1)	76.8 (76.8 - 76.9)	77.0 (76.9 - 77.1)
Health gain	9.9 (8.2 - 11.7)	12.1 (12.0 - 12.2)	12.4 (12.3 - 12.5)
Health gain (adjusted)	11.3 (10.1 - 12.5)	12.2 (12.2 - 12.3)	12.4 (12.3 - 12.5)
p value (adjusted health gain)	0.069		
Score Improved	61.8%	65.9%	66.7%

Adjusted scores correspond to the NHS Digital version 3 casemix-adjustment model. This includes patient variables from PROMs, HES, and IMD data.

Figures in parentheses represent the 95% confidence interval for the mean

Summary Report for:

Hips using Palacos Cement

Responses are not case mix adjusted

Patient Reported Outcomes



Patient Reported Outcomes

Success

Response	Hips using Palacos Cement	All other cement brands in NJR
Much better	624	193393
A little better	65	19595
About the same	25	5346
A little worse	10	3022
Much worse	10	2000

Answer to 6-months general health question:
 "Overall, how are your problems now, compared to before your operation?"

Satisfaction

Response	Hips using Palacos Cement	All other cement brands in NJR
Excellent	288	90804
Very Good	249	77706
Good	132	38263
Fair	49	12735
Poor	18	3509

Answer to 6-months general health question:
 "How would you describe the results of your operation?"

Disclaimer

Disclaimer

The data used for this analysis was obtained from the National Joint Registry ("NJR"), part of the Healthcare Quality Improvement Partnership ("HQIP"). HQIP, the NJR and/or its contractor, NEC Software Solutions (UK) Limited ("NEC") take no responsibility (except as prohibited by law) for the accuracy, currency, reliability and correctness of any data used or referred to in this report, nor for the accuracy, currency, reliability and correctness of links or references to other information sources and disclaims all warranties in relation to such data, links and references to the maximum extent permitted by legislation including any duty of care to third party readers of the data analysis.

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