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Appendix table 1

Table comparing excluded cases with cases included in further analysis.

		Excluded cases	Study cases	p overall
		n = 62072	n = 299019	
PFF revision cases (%)		228 (0.4)	1055 (0.4)	0.606
Age in years mean (SD)		72.55 (9.44)	72.00 (9.66)	<0.001
Patient sex (%)	<i>Male</i>	21715 (35.0)	106654 (35.7)	0.001
	<i>Female</i>	40357 (65.0)	192365 (64.3)	
American Society of Anesthesiologists group (%)	<i>1 - Fit and healthy</i>	7199 (11.6)	38014 (12.7)	<0.001
	<i>2 - Mild disease not incapacitating</i>	43171 (69.5)	209112 (69.9)	
	<i>3 - Incapacitating systemic disease</i>	11338 (18.3)	50369 (16.8)	
	<i>4 - Life threatening disease</i>	357 (0.6)	1484 (0.5)	
	<i>5 - Expected to die within 24hrs with or without an operation</i>	7 (0.0)	40 (0.0)	
Side (%)	<i>Left</i>	27436 (44.2)	132435 (44.3)	0.686
	<i>Right</i>	34636 (55.8)	166584 (55.7)	
Posterior approach (%)		35153 (56.6)	178814 (59.8)	<0.001
Lead surgeon grade (%)	<i>Consultant</i>	49837 (80.3)	236187 (79.0)	<0.001
	<i>Non consultant</i>	12235 (19.7)	62832 (21.0)	
Computer guided surgery (%)		1905 (3.1)	6646 (2.2)	<0.001
Minimally invasive technique (%)		2730 (4.4)	11349 (3.8)	<0.001
Intraoperative fracture (%)		251 (0.4)	1190 (0.4)	0.845
Year of surgery (%)	2004 to 2007	17268 (27.8)	54307 (18.2)	<0.001
	2008 to 2011	19620 (31.6)	86294 (28.9)	
	2012 to 2016	25184 (40.6)	158418 (53.0)	
<i>Implant variables</i>				
Stem manufacturer: brand (%)	<i>Medacta UK Ltd: AMiStem-C</i>	77 (0.1)	0 (0.0)	<0.001
	<i>Zimmer Biomet: Aura II Cemented Stem</i>	91 (0.1)	0 (0.0)	
	<i>JRI Orthopaedics Ltd: Avanteon Cemented Stem</i>	56 (0.1)	688 (0.2)	
	<i>DePuy: C-Stem AMT Cemented Stem</i>	3814 (6.1)	15862 (5.3)	
	<i>DePuy: C-Stem AMT Line Extension</i>	29 (0.0)	257 (0.1)	
	<i>DePuy: C-Stem Cemented Stem</i>	7642 (12.3)	13070 (4.4)	
	<i>Zimmer Biomet: CF-30</i>	3 (0.0)	0 (0.0)	
	<i>Medacta UK Ltd: Cone</i>	4 (0.0)	0 (0.0)	
	<i>DePuy: Corail Cemented</i>	7 (0.0)	488 (0.2)	
	<i>Smith & Nephew: CPCS</i>	907 (1.5)	3337 (1.1)	
	<i>Endo Plus (UK) Limited: CPS Plus</i>	2231 (3.6)	0 (0.0)	
	<i>Zimmer Biomet: CPT</i>	4639 (7.5)	46503 (15.6)	
	<i>Implantcast GmbH: EcoFit Hip Stem Highly Polished</i>	12 (0.0)	0 (0.0)	
	<i>Implants International: Edinburgh</i>	116 (0.2)	0 (0.0)	
	<i>Stryker: Exeter</i>	75 (0.1)	277 (0.1)	
	<i>Stryker: Exeter No.1 125mm stem Line Extension</i>	88 (0.1)	567 (0.2)	
	<i>Stryker: Exeter V40</i>	38581 (62.2)	208063 (69.6)	
	<i>Lima: Friendly</i>	2 (0.0)	0 (0.0)	

	<i>JRI Orthopaedics Ltd: Furlong Cemented Hemiarthroplasty</i>	0 (0.0)	43 (0.0)	
	<i>JRI Orthopaedics Ltd: Furlong Cemented Stem</i>	191 (0.3)	1706 (0.6)	
	<i>Symbios SA: Harmony Cemented</i>	29 (0.0)	0 (0.0)	
	<i>Orthodynamics: Logic Cemented Stem</i>	5 (0.0)	0 (0.0)	
	<i>Zimmer Biomet: MS-30</i>	959 (1.5)	4686 (1.6)	
	<i>Zimmer Biomet: Olympia</i>	1248 (2.0)	0 (0.0)	
	<i>Orthimo: OptiStem</i>	152 (0.2)	0 (0.0)	
	<i>MicroPort Orthopedics: Profemur Xm</i>	530 (0.9)	0 (0.0)	
	<i>Medacta UK Ltd: Quadra-C</i>	4 (0.0)	0 (0.0)	
	<i>Zimmer Biomet: Sirius stem</i>	14 (0.0)	123 (0.0)	
	<i>Corin: Taperfit Cemented Stem</i>	392 (0.6)	3190 (1.1)	
	<i>B Braun / Aesculap: Trilliance</i>	2 (0.0)	159 (0.1)	
	<i>Mathys Orthopaedics Ltd: Twinsys Cemented Stem</i>	3 (0.0)	0 (0.0)	
	<i>United Orthopedic Corporation: UCP Stem</i>	8 (0.0)	0 (0.0)	
	<i>DePuy: Ultima TPS Stem</i>	119 (0.2)	0 (0.0)	
	<i>Medacta UK Ltd: XActa</i>	42 (0.1)	0 (0.0)	
Stem material (%)	<i>Cobalt chrome alloy</i>	5680 (9.2)	46648 (15.6)	<0.001
	<i>Stainless steel alloy</i>	56392 (90.8)	252371 (84.4)	
Stem length (mm) mean (SD)		135.29 (9.44)	136.30 (9.42)	<0.001
Offset (mm) mean (SD)		40.59 (3.96)	40.54 (4.08)	0.008
Stem taper (%)	<i>Double taper</i>	44531 (71.7)	261160 (87.3)	<0.001
	<i>Triple taper</i>	17499 (28.2)	37859 (12.7)	
	<i>NA</i>	42 (0.1)	0 (0.0)	
Diaphyseal cross sectional shape (%)	<i>Oval</i>	11581 (18.7)	29189 (9.8)	<0.001
	<i>Rectangular</i>	49081 (79.1)	269452 (90.1)	
	<i>Round</i>	1364 (2.2)	378 (0.1)	
	<i>NA</i>	46 (0.1)	0 (0.0)	
Metaphyseal surface shape (%)	<i>Flat</i>	60789 (97.9)	292584 (97.8)	<0.001
	<i>Vertical ridges</i>	1241 (2.0)	6435 (2.2)	
	<i>NA</i>	42 (0.1)	0 (0.0)	
Cement manufacturer: brand (%)	<i>Zimmer Biomet: Bone Cement R</i>	138 (0.2)	577 (0.2)	<0.001
	<i>DePuy: CMW1</i>	9329 (15.0)	7003 (2.3)	
	<i>DePuy: CMW2</i>	4074 (6.6)	3307 (1.1)	
	<i>DePuy: CMW3</i>	165 (0.3)	2080 (0.7)	
	<i>Heraeus Medical: Copal</i>	6 (0.0)	243 (0.1)	
	<i>DePuy: Endurance</i>	8 (0.0)	10 (0.0)	
	<i>Zimmer Biomet: Osteopal</i>	11 (0.0)	72 (0.0)	
	<i>Heraeus Medical: Palacos</i>	25710 (41.4)	180342 (60.3)	
	<i>Zimmer Biomet: Refobacin</i>	4282 (6.9)	25238 (8.4)	
	<i>Schering-Plough: Schering Plough Old HMP</i>	1984 (3.2)	23889 (8.0)	
	<i>Stryker: Simplex</i>	7842 (12.6)	52399 (17.5)	
	<i>DePuy: Smartset</i>	370 (0.6)	3810 (1.3)	
	<i>Tecres Medical: VancogenX</i>	2 (0.0)	7 (0.0)	
	<i>Smith & Nephew: Versabond AB</i>	0 (0.0)	37 (0.0)	
	<i>Midland Medical Technologies Ltd: Wright Medical Bone Cement</i>	0 (0.0)	5 (0.0)	

Cement viscosity (%)	NA	8151 (13.1)	0 (0.0)	<0.001		
	High	31740 (51.1)	235491 (78.8)			
	Low	471 (0.8)	3193 (1.1)			
	Medium	1331 (2.1)	60335 (20.2)			
	Mixed	15781 (25.4)	0 (0.0)			
Head diameter (mm) (%)	NA	12749 (20.5)	0 (0.0)	<0.001		
	22	4048 (6.5)	6262 (2.1)			
	26	4011 (6.5)	11931 (4.0)			
	28	35886 (57.8)	157884 (52.8)			
	30	29 (0.0)	611 (0.2)			
	32	11576 (18.6)	82528 (27.6)			
	36	1927 (3.1)	37810 (12.6)			
	38	11 (0.0)	0 (0.0)			
	40	67 (0.1)	1736 (0.6)			
	42	159 (0.3)	0 (0.0)			
	44	79 (0.1)	221 (0.1)			
	46	396 (0.6)	1 (0.0)			
	48	114 (0.2)	34 (0.0)			
	50	352 (0.6)	0 (0.0)			
	52	73 (0.1)	0 (0.0)			
	54	101 (0.2)	1 (0.0)			
	56	11 (0.0)	0 (0.0)			
	58	13 (0.0)	0 (0.0)			
	Bearing combination (%)	NA	3219 (5.2)		0 (0.0)	<0.001
		Ceramic on ceramic	1043 (1.7)		18350 (6.1)	
Ceramic on polyethylene		4407 (7.1)	15223 (5.1)			
Ceramic on XL polyethylene		3078 (5.0)	33518 (11.2)			
Metal on metal		2143 (3.5)	0 (0.0)			
Metal on polyethylene		36865 (59.4)	156229 (52.2)			
Metal on XL polyethylene		9613 (15.5)	75699 (25.3)			
Other		1336 (2.2)	0 (0.0)			
NA		3587 (5.8)	0 (0.0)			

Note: Unless indicated all values are cases with percentage proportion in parentheses. SD denotes standard deviation, IQR is inter quartile range, PFF denotes periprosthetic fracture of the femur and XL denotes highly cross-linked, NA indicates missing data.