Supplementary Table 6. Complete list of RWD sources: HIP KNEE ATHROPLASTY

Country	RWD Source Features											Socio-Demographic data	Clinical/epidemiological Data		Resource Use	
	Name of the source	Data provider/initiator	Type of study	Study approach	Data Accessibility	Aggregation level	Coverage (geographical)	Data collection ongoing	Coverage period	Completeness	Sample size		Clinical/epi Data available	Which variables	Resource Use Data available	Which variables
IT	**Hospital Discahrge Record [Scheda di Dimission Ospedaliera (SDO)]**	Minister of Health, filled in by physicians	Administrative database	Other	Restricted	Individual	Italy	yes	from 1991	NA	Hip prosthesis (2016): 103,336 Knee arthroplasty (2016): 76,165	Gender, Education, Residence, Place of birth, Year/date of birth, Citizenship, Marital status, Age	yes	Admission (type, date, unit); diagnosis; procedure; hospitalization (type, reason), discharge (date, unit, type), DRG code, date main intervention, date secondary interventions, type of institute, birth weight; priority class	yes	Length of stay
IT	**RIAP** **Italian Registry of Artro Prosthesis [Registro Italiano ArtroProtesi - Ginocchio]**	National Institute of Health [Istituto Superiore di Sanità]	Registry	Multiple device-based	Restricted	Individual	Italy	yes	Hip: from 2006 Knee: from 2010-2012	Hip: 31.5% (2016) Knee: 33.9% (2016)	Hip: 33,208 procedures (2016) Knee: 25,523 procedures (2016)	Gender, Residence, Place of birth, Citizenship, Age	yes	Admission (date, type, unit); Main diagnosis, secondary diagnoses, main procedure, secondary procedure; type of hospitalization, discharge (date, type, unit), DRG code, date interventions (main/secondary). Info on intervention (e.g. access, joint, side, cause, femur fixation methods, kneecap fixation method, use of femoral bone graft); info re device	yes	length of stay, type of procedure
IT	**RIPO** **Register of Orthopaedic Prosthetic Implants [Registro dell'implantologia Protesica Ortopedica]**	Istituto Ortopedico Rizzoli	Registry	Multiple device-based	Restricted	Individual	Emilia Romagna (Italy)	yes	Initiated in 1990; all Emilia-Romagna from 2000	Hip: 97.1% (2016) Knee: 98% (2016)	Hip: 11,332 (2016) Knee: 8,339 (2016)	Gender, Age, Year/date of birth, Place of birth, Residence	yes	Admission date, height, weight, discharge date, date of transferral from orthopaedic unit. Info re medical history (e.g. existing prosthesis, intervention date, place, type). Diagnoses (main, secondary). Info re procedures (e.g. date, surgeon). Pharmocological treatment; transfusions; fixation.	yes	length of stay, type of procedure
IT	**ROLP** **Orthopaedic Prosthetic Registry of Lombardy [Registro Ortopedico Protesico Lombardo]**	Istituto Ortopedico Galeazzi	Registry	Multiple device-based	Restricted	Individual	Lombardia	unknown	From 2003		Hip: 50,636 (prostheses 2008-2010) Knee: 45,873 (2001-2006)		yes	type of prosthesis, side, fixation; main and secondary diagnoses; main and secondary procedure, From 2007: access, previous procedure, cause of revision/replacement	yes	length of stay; type of procedure; price paid for device components (only for administrative use)
IT	**RIPO Puglia** **Register of Orthopaedic Prosthetic Implants [Registro dell'implantologia Protesica Ortopedica]**	Osservatorio Epidemiologico Regionale	Registry	Multiple device-based	Restricted	Individual	Puglia	yes	from 2000 voluntary; 2010 law act	Hip: 95% (2011) Knee: 90% (2011)	Hip: 4238 (2011) Knee: 2.823 (2011)	Gender, Year/date of birth, Residence, Place of birth	yes	Admission date; discharge (date, setting, ambulation); transfer date.Diagnosis; procedure; medical history (e.g. existing prosthesis, side, type of intervention). Info re intervention (e.g. side, surgery technique, duration). Pharmacological treatment; transfusion; fixation; height; weight; general condition (re hips); time of onset of pain; Charnley disability scale.	yes	length of stay; type of procedure
IT	**Registro provinciale delle protesi articolari (RPPA)**	Osservatorio per la Salute	Registry	Multiple device-based	Restricted	Individual	Provincia Autonoma Bolzano	yes	from 2010 (hip) and 2011 (knee)	Hip: 97.6 (2010-2016) Knee: (2011-2016) 96.4%	8 hospitals Hip: 1,411 procedures (2017) Knee: 1,000 (2017)	Age, Gender, Year/date of birth, Place of birth, Citizenship, Residence	yes	Diagnosis; procedure; side; type of prosthesis; type of revision/replacement; date implant/revision/replacement; number of revision; fixation; access; antibiotics	yes	type of procedure
IT	**RIPOC** **Register of Orthopaedic Prosthetic Implants [Registro di Implantologia Protesica della Calabria]**	Istituto Superiore di Sanità and Dipartimento Tutela della Salute of Calabria	Registry	Multiple device-based	Restricted	Individual	Calabria	yes	from 2013	Hip: 38.3% (2016) Knee: 57.4% (2016)		Gender, Year/date of birth, Residence, Place of birth	yes	Admission (date, type); diagnosis; discharge date, DRG. Medical history; Info re intervention/revision (e.g. date, side, technique); Pharmacological treatment; transfusion	yes	type of procedure
SP	**Catalan Arthroplasty Register (RACat)**	Catalan Health Service (CHS), the Catalan Society of Orthopaedic Surgery and Traumatology (SCCOT), and the Agency for Health Quality and Assessment of Catalonia (AQuAS)	Registry	Other	Restricted	Individual	Catalonia (spain)	yes	From 2005	hip: primary arthr. Around 75% (2013-2014) knee: primary arthr. Around 78% (2013-2014)	2013/2014 Hip: primary 46,488, revision 5,237 Knee: primary 60,192 revision: 6,689	Age, Gender, Residence, Year/date of birth	yes	date of admission; info re intervention (date, type, reasons for); date of discharge; joint (knee or hip); operated side (right or left); comorbidities; diagnosis (main, secondary); fixation technique; weight; anesthesia	yes	length of stay; type of procedure
SP	**Hospital Discharge Records in the National Health System [Registro de Altas de Hospitalización]**	Ministerio de Sanidad, Servicios Sociales e Igualdad	Administrative database	Disease-based	Restricted	Individual	Spain (295 hospitals)	yes	From 1987	NA		Age, Gender, Residence, Year/date of birth	yes	date and type of admission; info re intervention (date); date and type of discharge; comorbidities; diagnosis (main, secondary), morphology, inhospital infections	yes	length of stay, pre-intervention length of stay; type of procedure
SP	**Arthrotest Study [ESTUDIO CLÍNICO ARTHROTEST]**	Arthrotest Study Group funded by Bioiberica Farma	Observational Study	Disease-based	Private	Individual	Spain (31 sites)	no	unknown (puclication 2014)	NA	595 patients	Age, Gender	yes	BMI, presence of OA in the contralateral knee, and in a different joint, radiographic progression of KOA; saliva or serum samples; 774 SNPs from genes implicated in the molecular processes involved in OA (cartilage degradation, inflammation, extracellular matrix metabolism, and bone remodelling)	no	
SP	**SIDIAP (Information System for Research in Primary Care) [Sistema d'Informació per al Desenvolupament de l'Investigació en Atenció Primària]**	Catalan Institute of Health (CIH) and the Primary Care Research Institute Jordi Gol (IDIAP)	Administrative database	Disease-based	Restricted	Individual	Catalonia	yes	From 2006	NA	not available	Age, Gender, Citizenship, Year/date of birth	yes	Admission date; info re diagnosis; BMI; alochol, smoking; blood pressure; info re diagnostic procedure (e.g. laboratory tests, imaging (e.g. x-ray); cognitive test, mental health scale; pain scale); info re procedure; visits in primary care	yes	sick leave; costs generated in pharmacy, personnel
FR	**French hospital discharge database [Programme de médicalisation des systèmes d'information]**	High Authority of Health (haute autorité de santé)	Administrative database	Disease-based	Restricted	Individual	France	yes	From 1996	NA		Age, Gender, Residence	yes	Lifestyle (alcohol, smoking; diet; physical activity); Diagnosis; procedure; info re admission; info re discharge; medications and treatments; medical history; Dosimetry and machine types in radiotherapy; Simplified Severity Index (IGS II)	yes	length of stay
FR	**Total Hip Arthroplasty Register SOFCOT**	société française de chirurgie orthopédique et traumatologique (sofcot)	Registry	Disease-based	Restricted	Individual	France	yes	From 2006	not available	From 2006 untill 2015 23'909 primary THA and 2'901 re-interventions	Age, Gender	yes	Diagnosis; procedure; prosthesis revised; type of implant, fixation and cups used for revision	no	

FR	**A prospective observational five years study across five centers in Europe (2 French) and the USA (3 centres)**	Orthopaedic Research and Imaging Center in Arthroplasty Bruay-La-Buissière, and Clinique Saint-Roch Cavaillon	Observational Study	Multiple device-based	Unknown	Individual	2 centres in France (Bruay-La-Buissière, and Clinique Saint-Roch Cavaillon)	no	From April 2010 to 2017	NA	321 procedures	Age, Gender	yes	causes of total hip arthroplasty; femoral head materia and size; revision surgery; dislocation; impingmenet symptoms; clinical function; dual mobility acetabular component; pain	no	
FR	**QUATTRO Dual-mobility cup regional and private register**	Centre ostéo articulaire Echirolles & Genay Cedex, France	Registry	Single device-based	Restricted	Individual	Grenoble, Lyon and Nice (6 institutions)	no	May 2012 to December 2016	NA	2090 (2012- 2016)	Age, Gender	yes	BMI; American Society of Anesthesiologists (ASA) score, aetiology; surgical data (surgical approach); implant features (e.g. cemented or cementless)	no	
FR	**French Prospective Anterior Cruciate Ligament Reconstruction Cohort Study (FAST)**	Centre Médico-Chirurgical Paris V (CMCV)	Observational Study	Disease-based	Restricted	Individual	France (single-centre study)	yes	From 2012	NA	In 2015 1,336 patients (athlets). By 2052 estimated enrollment 7,000	Age, Gender	yes	BMI; cause of injury; Diagnosis; procedure	no	
FR	**Low friction arthroplasty and dual mobility cup: a new gold standard**	Centre Osteo-Articulaire, Echirolles, France	Observational Study	Single device-based	Unknown	Individual	Grenoble (Centre Osteo-Articulaire, Echirolles)	no	From 1994 to 2015	NA	3,476 primary THA, 424 revision THA	Age, Gender	yes	ASA, Devane score, obesity, aetiology, type of cup, comorbidity, implant characteristics	no	
DE		European Society of Sports Traumatology, Knee Surgery, Arthroscopy (ESSKA) 2018	Observational Study	Single device-based	Unknown	Individual	Brandenburg, Germany	no	unknown, before 2018	NA	88	Age, Gender	yes	Diagnosis, Procedure, BMI, weight, height, Comorbidities	yes	CT
DE	**QUIPS project**	German Society of Anesthesiologists and the German Society of Surgeons	Observational Study	Single device-based	Unknown	Individual	University Medical Center Regensburg, Germany	no	2014-2015	NA	256	Age, Gender	yes	Procedure	no	
DE			Observational Study	Disease-based	Unknown	Individual	Orthopedic University Hospital Hannover, Germany	no	July 23 - October 18, 2013	NA	172	Age, Gender	yes	Procedure, BMI, weight, height, Comorbidities, Year of Surgery	no	
DE	**The German arthroplasty register**	Endoprothesen-Register e. V.	Registry	Multiple device-based	Restricted	Individual	Germany	yes	2012 - ongoing	In 2017: 63% of all endoprosthetic interventions performed in Germany (about 448,000) on the knee and hip.	In 2017: 157,324 Hip and 125,614 knee interventions documented	Age, Gender	yes	Patient ID, Patient data (e.g., BMI), Diagnosis (main, secondaries); Information on the operated joint; name of clinic; Info on the Operation/Retreatment (Implantation technique, i.a. (partial) bone replacement, cement type for each component, cement mixture and application)	yes	type of procedure
DE			Observational Study	Single device-based	Unknown	Individual	Wiesbaden, Germany	no	before 2015	NA	162	Age, Gender	yes	BMI, weight, height, Diagnosis, Procedure	no	
DE		European Society of Sports Traumatology, Knee Surgery, Arthroscopy (ESSKA) 2018	Observational Study	Single device-based	Unknown	Individual	Charite, Berlin, Germany	no	December 2014 - September 2015	NA	115	Age, Gender	yes	BMI, weight, height, Diagnostics, Date of surgery and follow up	no	
DE		Department of Orthopaedic and Trauma Surgery, University Hospital Carl Gustav Carus, TU Dresden	Observational Study	Single device-based	Restricted	Individual	GER	no	2005-2013	NA	1841 patients	Age, Gender	yes	BMI, side (left/right), rotating-hinge TKA, intercondylar stabilized TKA, Stem, Metal wedge augmentation	yes	hospital
DE		ENDOC max der Orthopädische Klinik, Medizinische Hochschule Hannover	Observational Study	Multiple device-based	Restricted	Hospital	GER	NA	2011-2013	NA			yes	quality indicators for knee and hip endoprothesis	yes	hospital
DE	**Clinical and functional outcome of the GEMINI SL Fixed Bearing PS Knie-Endoprothese in short-, mid- and longterm follow-up**	German Clinical Trials Register	Registry	Single device-based	Restricted	Individual	GER	yes	since 2018	NA	aim: 250 participants	Age, Gender	yes		yes	hospitals
ENG	**National Joint Registry for England, Wales, Northern Ireland and the Isle of Man**	Department of Health and Welsh Government	Registry	Multiple device-based	Restricted	Individual	England and Wales (shoulder and elbow since 2002, hip and knee since Apr 2003, ankle since Apr 2010), Northern Ireland (since February 2013) and the Isle of Man (since July 2015)	yes	2002-present	95% of all primary hip and knee operations and 90% of all revisions (2017/18)	In 2017: 91,698 Hip and 102,177 knee replacements	Gender, Year/date of birth, Residence	yes	Height and weight (or BMI), Operation date, Anaesthetic type, Patient ASA grade, Consultant in charge, Operating surgeon, Operating surgeon grade, First assistant grade, Approach, Computer guided surgery used, Thromboprophylaxis, was bone graft used, surgeon's notes (free text), Untowards intra-operative events.	yes	type of procedure
ENG	**National Hip Fracture Database**	Royal College of Physicians	Administrative database	Disease-based	Restricted	Hospital	England, Wales and Northern Ireland	yes	From 2007	94.5% primary hip replacement, 94.9% primary knee replacement (2014/15)	66,739 patient cases submitted for 2017	Age, Gender	yes	Info re procedure; anesthesia; ASA score; admission date and time; discharge date	yes	Acute length of stay, Overall hospital length of stay (by hospital)

ENG	**Hospital Episode Statistics**	NHS Direct	Administrative database	Other	Restricted	Individual	England	yes	Data are available for all inpatient admissions in England from 2004/05 onwards; all outpatient admissions in England from 2004/05 onwards and all A&E admissions from 2007/08 onwards	99% of all hospital activities funded by the NHS in England		Age, Gender, Residence, Year/date of birth	yes	Info re admission; info re discharge; waiting time; Date of diagnosis, diagnosis, procedures carried out, comorbidities; info on GP	yes	Length of stay and associated cost
CH	**The Geneva Hip Arthroplasty Registry**	European Federation of National Associations of Orthopaedics and Traumatology (EFORT), Geneva University Hospital	Registry	Multiple device-based	Restricted	Individual	Hospitals: Division of orthopaedics and Trauma surgery of the Geneva University hospitals	yes	from 1996	100%	total hip arthroplasties (2016): 7114 Knee arthroplasty (2016): 4202	Age, Gender, Education, Employment status	yes	Diagnosis, Comorbidities (ASA class, Charnley grade)	yes	length of stay
CH	**Swiss National Joint Registry (SIRIS)**	Stiftung für Qualitätssicherung in der Implantationsmedizin, managed by University of Bern	Registry	Multiple device-based	Restricted	Individual	Switzerland	yes	from 2012	91% (theoretically 100%)	total hip arthroplasties (2015): 57718 Knee arthroplasty (2015): 51157	Age, Gender, Year/date of birth	yes	weight, hight, date of discharge	no	
CH	**Medical statistics of Swiss hospitals**	Federal Statistics Office (FSO)	Administrative database	Disease-based	Restricted	Individual	Switzerland	yes	From 2016	100%		Age, Gender, Marital status	yes	Diagnosis	yes	length of stay
BE	**Orthopride Belgian National Arthoplasty Register**	Belgian Orthopedic Associations (BVOT and SORBCOT), National Institute for Health and Disability Insurance and the Flemish Orthopedic Society provide funding to maintain the Registry.	Registry	Disease-based	Restricted	Individual	Belgium	yes	From 2009	In 2015, 82% of the prostheses were registered.	45,284 knee replacement procedures, 52,288 hip replacement procedures performed (2015-2016, Annual report 2017)	Age, Gender, Residence	yes	Patient characteristics (indication), Surgical characteristics (replacement type, removed components, surgical approach, type of implant (material, producer,brand), reoperations (indication for revision, demographics revisions)	yes	type of procedure
NL	**Dutch Arthroplasty Register (LROI)**	Leiden University Medical Center (LUMC)	Registry	Multiple device-based	Restricted	Individual	Netherlands	yes	From 2007	Primary total hip arthroplasties, 99%; primary hip hemiarthroplasties (orthopaedic surgeon), 95%; primary hip hemiarthroplasties (trauma surgeon), 50%; hip revision arthriplasties, 97%; primary knee arthroplasties, 99%; knee revision arthroplasties, 98%.1	THA: 29,937; TKA: 29,221 (2017)	Age, Gender	Yes	General information patient (e.g. height, weight, BMI), ASA score, charnley score, Diagnosis, Type of surgery (surgical approach, type of fixation, device used, bone graft, cup, femoral head size, cement, component materials and acetabular component), medication use, Previous surgery, reason for revision and type of procedure used for revision	yes	type of procedure
NL	**Clinical registry for the routine collection of health outcomes prior to and after THR and TKR**	Radboudumc, orthopedic department	Observational Study	Disease-based	Unknown	Individual	Nijmegen, the Netherlands	no	October 1993 - February 2014	NA	2089 patients	Age	Yes	Surgical characteristics (e.g. number of surgeries, primary hip replacement, revision, complications)	No	
NL	**ARGON-OPTIMA (Outcome Predictors for TIMing of ArthropLasty)**	ARGON program (Arthritis Research Group Orthopaedics in The Netherlands)	Observational Study	Disease-based	Restricted	Individual	Netherlands, 11 hospitals, pooled analysis of 20 cohorts	no	2014-2017	NA	2400 hip, 1783 knee	Age, Gender	Yes	Patient characteristics (BMI)	No	
NL	**Dutch Hip Fracture Audit (DHFA)**	A collaboration of different scientific professional associations	Registry	Disease-based	Restricted	Individual	Netherlands	yes	From 2016	58% (2017)	10,794 (2017)	Gender, Year/date of birth	yes	General information patient (e.g. height and weight, BMI); emergency care; hospitalization; diagnosis; procedure (e.g. type of surgery, cement, components); previous surgery; info re discharge (e.g. date of discharge);	yes	Length of stay, Emergency room visit; type of procedure
NL	**Brabant Injury Outcome Surveillance (BIOS) [not restricted to hip/knee]**	Network Emergency Care Brabant and St. Elisabeth Hospital, Tilburg, The Netherlands	Observational Study	Disease-based	Unknown	Individual	Noord-Brabant, the Netherlands	no	1 August 2015 - 31 July 2016; Follow-up duration, 2 years.	NA	Unknown	Age, Gender, Education, Employment status	yes	Injury characteristics (e.g. AIS, ISS, Glasgow Coma Scale, systolic blood pressure and respiratory rate) and comorbidity	yes	Direct medical costs (i.e. contacts with health care providers) and productivity costs

NL	**Open data from the Dutch Healthcare Authority (Opendisdata)**	Dutch hospitals	Administrative database	Disease-based	Public	Country	Netherlands	yes	From 2012	100% up until 2014	58,268 patients received a diagnosis of arthrosis pelvis, hip, upper leg. 23,410 hip replacement 116,004 patients received a diagnosis of arthrosis knee, 23,451 knee replacement		no		yes	Cost data. Average price of delivered care
SW	**The Swedish Knee Arthroplasty Register (SKAR)**	The Swedish Knee Arthroplasty Register	Registry	Disease-based	Restricted	Individual	Sweden	Yes	From 1975	98.1% of all admissions (in 2016)	14,957 arthroplasties (2017)	Age, Gender	Yes	Weight, Height, Diagnosis, many procedure-related variables [e.g. side; date, type; duration, use of cement); info re device (e.g. name of prostehsis); info re surgeon (e.g. experience); medical history (e.g. previous operation); info re anesthesia; thrombosis prophylaxis, antibiotics; ASA classification; audit in case of revision	Yes	Duration of surgery
SW	**The Swedish Hip Arthroplasty Register (SHAR)**	The Swedish Hip Arthroplasty Register	Registry	Disease-based	Restricted	Country	Sweden	Yes	From 1979 (from 1992 onwards individual level data)	Completeness for 2016: 98% of all total arthroplasties, 96% of all hemiarthroplasties, and 93% of all revisions.	16 923 total arthroplasties (2016)	Age, Gender, Residence	Yes	Info re patient (weight, Height, BMI, dementia, smoking); Diagnosis; type of prosthesis; info re procedure (e.g. side, date, incision, cement system, acetabular cup); ASA class; main action; info re thrombosis (e.g. drug, thromboprophylaxis); prosthesis condition (in case of reoperation); reason for reoperation	Yes	Duration of surgery, materials, medication use
NO	**Norwegian Hip Fracture Register**	Norwegian Hip Fracture Register	Registry	Disease-based	Restricted	Individual	Norway	Yes	From 2005	Primary operations (88% for osteosynthesis, 95% for hemiarthroplasty and 88% for total arthroplasty) Revisions (65% osteosynthesis, 66% hemiarthroplasty, and 90% total arthroplasty)	8321 primary operations and 891 reoperation, total 9212 (2017)	Age, Gender	Yes	Patient characteristics (comorbidities ASA Score, cognitive impairment), Surgical characteristics (fracture type, time between fracture and surgery, surgical approach, type of implant (using catalogue number), type of fixation, type of anesthesia, type of medications provided,reason for reoperation. (reoperations can be linked to primary operation)	Yes	duration of surgery
NO	**Norwegian Arthroplasty Register (NAR)**	Norwegian Arthroplasty Register (NAR)	Registry	Multiple device-based	Restricted	Individual	Norway	Yes	From 1987. Expanded to all joint replacement in 1994	96.9% primary surgery and 89% revision surgery (2015-2016)	9090 primary hip operations; 6542 primary knee operations (2017)	Age, Gender, Education, Employment status	Yes	Patient characteristics; comorbidities; ASA score; primary diagnosis; previous fractures or osteotomy to the knee. From 2018 also height weight, BMI, smoking and alochol consumption. Procedure and surgical characteristics (e.g. date, approach); fixation method (cemented/uncemented/ hybrid); fracture type, time between fracture and surgery; type of implant (e.g. head size); medications provided; reason for revision	Yes	duration of surgery
NO	**Norwegian Patient Register (NPR)**	Norwegian Directorate of Health	Registry	Other	Restricted	Individual	Norway	Yes	(NPR: 1997 (/ 2007) - present)	NA	Study: 37 897 primary total hip arthroplasty patients and 25 802 primary total knee arthroplasty patients	Age, Gender	Yes	Hospital type, Comorbidity (using the Charlson Comorbidity Index (CCI)), numbers of high tibial osteotomies (HTOs) [Date of death and emigration during follow-up in 67 was provided by Statistics Norway]	Yes	Length of hospital stay in the previous year
NO	**Norwegian Surveillance System for Antibiotic Consumption and Healthcare-Associated Infections (NOIS)**	Ministry of Health and Care Services	Registry	Other	Unknown	Individual	Norway	Yes	From 2005	The system has achieved 95% (52/55) hospital participation. The completeness of patient and procedure-related background data is 23.3% of the records having at least 1 missing value. The completeness of 30-day follow-up of patients is 90.7% and 81% of the infections were detected after discharge from hospital	2011: 5,540 total hip arthoplasty	Age, Gender, Education, Employment status	Yes	ASA score, method of fixation, NNIS index, infection incidence, CDC/ECDC classification (deep vs superficial infection)	Yes	Duration of surgery (minutes); type of surgery
DK	**Danish National Patient Registry**	Danish Health and Medicines Authority	Administrative database	Disease-based	Restricted	Individual	Denmark	yes	From 1977	NA		Age, Gender, Residence	yes	Info re admission and discharge; time of any incidents over the course of an illness; info re: diagnosis; procedures; examinations; treatment; accidents; cause of passive waiting periods; referral to; anaesthesia and intensive care	yes	length of stay
DK	**Danish Hip Arthroplasty Register**	Danish Orthopaedic Society	Registry	Other	Restricted	Individual	Denmark	yes	From 1995	overall 94% for THA	Primary hip operations 10,435 (2017)	Age, Gender	yes	Info re medical history on previous surgeries; Diagnosis; Harris Hip Score; info re procedure (e.g. date, duration); operation theatre; treatments (e.g. antibiotic, anaesthesia); reason for revision	yes	Duration of surgery
DK	**Danish Knee Arthroplasty Register**	Danish Orthopaedic Society	Registry	Other	Private	Individual	Denmark	yes	From 1997	99% in 2015	Primary procedure 8,241 (2015)	Age, Gender	yes	Weight; previous knee surgeries; info re procedure (e.g. time); info re components; comorbidity (Charnley classification); cause for revision	yes	duration of surgery; type of procedure
DK	**Danish Knee Ligament Reconstruction Registry**	Danish Orthopaedic Society	Registry	Disease-based	Private	Individual	Denmark	yes	From 2005	92% in the last years	2016: revision 107; primary 2226; Multiple ligament surgery 248	Age, Gender	yes	Infor re injury; pre-operative tests; Info re procedure (e.g. technique); use of implants; other injuries to the knee, and perioperative medical treatment.	no	
DK	**Lundbeck Foundation Centre for Fast-track Hip and Knee Replacement Collaboration (LCFC)**	Lundbeck Foundation Centre	Observational Study	Disease-based	Private	Individual	8 dedicated fast-track Danish orthopedic departments	yes	From 2010	NA	Estimated enrollment 38,000	Age, Gender, Marital status	yes	Preoperative functional level (daily use of crutches/cane/walker or use of wheel chair before operation); comorbidities; current pharmacological treatment; info re procedure (e.g. spinal anaesthesia, fluid therapy); pain treatment	yes	length of stay; incorporates data from the Danish National Database on Reimbursed prescriptions

DK	**Preopioid Versus Nonopioid in Total Knee Arthroplasty (TKA)**	Troels Haxholdt Lunn, Hvidovre University Hospital	Observational Study	Other	Restricted	Individual	4 Danish University teaching hospitals (Hvidovre Hospi-tal, Holstebro Hospital, Vejle Hospital, and Gen-tofte Hospital)	no	2011-2013	NA	140 individuals	Age, Gender	yes	BMI, weight, ASA score; smoking; pre-opioid pain; opioid pre-operative dosage	yes	operating time
DK	**The impact of age and preoperative health-related quality of life on patient-reported improvements after total hip arthroplasty**	Regional Hospital West Jutland in Denmark	Observational Study	Disease-based	Private	Individual	Regional Hospital West Jutland in Denmark	no	from September 2008 to December 2013	NA	2,166 primary elective THAs	Age, Gender	yes	Pre-operative EQ-5D	no	
FI	**Finnish Arthoplasty Register (FAR)**	National Institute for Health and Welfare	Registry	Disease-based	Restricted	Individual	Finland	yes	From 1980	2018: Hip: all operations 92.8% Knee: all operations 88.2%	2018, all operations: Hip: 11,168, Knee: 12,999	Age, Gender	yes	BMI; comorbidities based on ASA; medications; approach techniques; diagnosis; reasons for revision; fixation	no	
FI	**Finnish National Hospital Discharge Register**	National Institute for Health and Welfare	Administrative database	Disease-based	Restricted	Individual	Finland	yes	Since 1967	NA		Age, Gender, Year/date of birth, Residence, Citizenship	yes	data on start of care (e.g. type and day of admission); diagnoses; reason for seeking care; procedures (risk score); cardiac conditions; psychiatric info; data on discharge (e.g. date); complications; medications	yes	length of stay; type of procedure
FI	**Coxa joint replacement database**	Coxa Hospital for Joint Replacement	Observational Study	Disease-based	Private	Individual	Pirkanmaa Hospital District	no	Procedures: September 2002 - December 2011 , follow up until 2016	>99%	Hip & Knee primary arthroplasty and revisions n = 20,575	Age, Gender	yes	BMI; joint; ASA; comorbidity; diagnosis;(primary vs revision); medical history; comorbidities	yes	Reimbursement for medication; type of procedure
FI	**Pirkanmaa district hospital database**	four hospitals within the Pirkanmaa district catchment area	Observational Study	Disease-based	Private	Individual	Pirkanmaa Hospital District	no	January 2002 - December 2014	NA	1526 male patients	Age	yes	Diagnosis including Alcohol dependence syndrome (ADS); comorbidities; details of arthroplasty; Charlson age-adjusted comorbidity index (CCI)	no	
FI	**PERFECT (PERFormance, Efficiency, and Costs of Treatment Episodes) database**	National Institute for Health and Welfare	Observational Study	Disease-based	Private	Individual	Finland	unknown	From 1999	hip: 94.9%	hip (2013-14): 27,911 knee (2013-14): 37,615	Age, Gender	yes	Comorbidities; diagnoses; procedures; medical history (previous joint replacements); antibiotic profilaxis; fixation; aseptic loosening; infection; periprosthetic fracture; dislocation	yes	hospital stay; Medication purchases; Costs during years following joint fracture
HU	**Central registry for implants [Központi Implantátumregiszter (ImpReg)]**	Iniciator: National Health Insurance Fund Administration (NHIFA) Provider: Registered Private and public Health care providers (reimbursed and not reimbursed providers)	Registry	Other	Restricted	Individual	Hungary	yes	From 2014	NA	NA	Year/date of birth, Residence	Yes	Admission date Reason for admission and form of intervention (de novo implant or replacement of earleir implanted one, or removal of an implant)	no	
HU	**National Hip and knee Endoprothesis Implantation Registry [Nemzeti Csípő- és Térdízületi Endoprotézis Beültetés Regiszter]**	Iniciator: National Health Insurance Fund Administration (NHIFA) Provider: Registered Private and public Health care providers (reimbursed and not reimbursed providers)	Registry	Other	Restricted	Individual	Hungary	yes	From 2007	NA	51 387 procedure (2014)	Gender, Residence, Year/date of birth, Place of birth	YES	Admission date, ASA classification, form of anaesthesia, financial source(public, private), arthroplasty attributes : side, indication, BNO derived from ICD9, Type of the prothesis, complications during the operation, complications during hospital stay, removal, revision of implant	yes	antibiotics, thromboprophylaxis, identification of implanted device; type of procedure
PL	**Central Base of Arthroplasty (CBE)**	Polish National Health Fund	Administrative database	Multiple device-based	Public	Country	Poland	yes	From 2005	100%	In 2017: 56 688 - hip endoprosthesis (47 776 - total endoprosthesis, 10 249 -partial endoprosthesis, 663 - revision hip replacement); 27 653 - knee endoprosthesis (25 425 - total endoprosthesis, 1966 - partial edoprosthesis, 262-revision knee replacement)	Age, Gender	yes	**1.Basic information**: diagnosis, weigh, date of hospitalisation, date of operation, information about type of implant (cement/cementless/hybrid); **2.Surgical procedure**: e.g.high-pressure pulsed lavage cleansing, brushing the marrow cavity, reinforcement using, bone grafting, plugging of the marrow cavity; 3.	yes	Length of hospital stay, Hospitalisation costs
RO	**Evaluation and Study Design Outcome of Hemiarthroplasty in Romania 2001-2013**	Minister of Health, filled in by physicians	Registry	Single device-based	Public	Country	Romania	no	2001-2013	95%	101312 hip primary and revision interventions	Age, Gender	yes	Diagnosis, implant type	no	-
RO	**Registrul National de Endoprotezare - Raport 2010 - Statistici Sold**	Minister of Health, filled in by physicians	Registry	Single device-based	Public	Country	Romania	no	2003-2010	95%	62035	Age, Gender	yes	Diagnosis, implant type, cause of revision	no	-
RO	**Registrul National de Endoprotezare - Raport 2010 - Statistici Genunchi**	Minister of Health, filled in by physicians	Registry	Single device-based	Public	Country	Romania	no	2003-2010	95%	8934	Age, Gender	yes	Diagnosis, implant type, cause of revision	no	-

EU	**Nordic Arthroplasty Register Association (NARA) database**	Steering committee consist of 2 representatives from each member country. The members are the national Nordic registers which register arthroplasty and hemiarthroplasty.	Registry	Other	Restricted	Individual	Denmark, Finland, Norway, and Sweden	Yes	From 2007 (Finland from 2010)	97.5% Danish, 98.3% Swedish, 96.7% Norwegian, and 95% Finnish	Hip: 119,174 primary hip arthroplasthies in 1995 to 2013 Knee: 113,047 primary knee arthroplasthies in 1997 to 2012	Age, Gender	Yes	Diagnosis; info re procedure (e.g. date, approach, implant fixation); info re device (e.g. head size, material, cup component, stem component, caput component, size, tibia, patella component), date and reason for revision	no	
EU	**Network of Orthopaedic Registries of Europe (NORE)**	European Federation of National Associations of Orthopaedics and Traumatology (EFORT)	Other	Disease-based	Other	Individual	24 European registries	NA	From 2015	NA		Age, Gender, Year/date of birth	yes	Primary diagnosis; ASA Grade; Date of surgery; Date of revision; Reason for revision; Actual components removed; Actual components used in revision.	no	
EU	**European Arthroplasty Registry (EAR)**	European Federation of National Associations of Orthopaedics and Traumatology (EFORT)	Other	Disease-based	Other	Individual	25 registries in 24 countries	NA	From 2001 to 2014	NA		Gender, Year/date of birth	yes	Diagnosis; Preoperations; Prosthesis (partial, total); side; cementation technique; antibiotics in cement; approach; component (acetabular, femoral, tibial, humeral, talar, radial); inlay; head; patella; others	no	
EU	**PAIN OUT dataset**	University of Jena	Registry	Disease-based	Private	Individual	Worldwide	yes	From 2009 to 2030	NA	Estimated enrollment 200000 participants	Gender, Year/date of birth, Place of birth, Citizenship	yes	Weight, height; Medical history; Pre-medication; comorbidities; existing conditions; surgical procedure; intra-op info; Treatment; opioids & anaesthetic treatment	no	
EU	**Global Comparators Project**	Dr Foster Intelligence	Administrative database	Other	Private	Individual	10 countries (50 hospitals) England, USA, Australia, the Netherlands, Italy, Belgium, Denmark, Norway, Spain and Finland	yes	From 2011	NA	6,737,211 inpatient records	Age, Gender	yes	Method of admission; Source of admission; urgent admission in previous month; Charlson comorbidity score; Discharge date; Diagnosis; Procedure;	yes	Length of stay
EU	**Consortium on Health and Ageing: Network of Cohorts in Europe and United States (CHANCES)**	FP7-HEALTH funded project coordinated by Hellenic Health Foundation	Observational Study	Disease-based	Other	Individual	Greece, Sweden, The Netherlands, Germany, Denmark, United Kingdom, Finland, France, USA, Norway (Cohorts from fourteen studies)	no	From 2010 to 2015	NA	Available partially from studies. E.g. 223,880 participants from six cohorts	Age, Gender, Marital status, Education	yes	Lifestyle: (including tobacco smoking, drinking status, physical activity); anthropometry (including weight, height, waist/hip circumference); medical history(including use of drugs; reproductive history); dietary factors (including total energy intake, intake of specific macro-and micronutrients, foods and food groups, ethanolintake); and blood biomarkers.	no	
EU	**Observational Cohort Study to Evaluate Safety and Efficacy of Pradaxa in Patients With Moderate Renal Impairment Undergoing Elective THR Surgery or TKR Surgery**	Boehringer Ingelheim	Observational Study	Disease-based	Private	Individual	Austria, France, Germany, Italy, Spain, Sweden, United Kingdom	no	2009-2015	NA	472 participant	Age, Gender	yes	Median body mass index; Creatinine clearance; Medical history; Baseline conditions	no	
EU	**XAMOS - Xarelto for VTE Prophylaxis After Hip or Knee Arthroplasty**	Bayer Study Director	Observational Study	Other	Private	Individual	Australia, Austria, Belgium, Bosnia and Herzegovina, Brazil, Canada, Chile, China, Colombia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hong Kong, Hungary, India, Italy, Korea, Republic of, Latvia, Lebanon, Lithuania, Macedonia, The Former Yugoslav Republic of, Mexico, Netherlands, Norway, Philippines, Portugal, Serbia, Singapore, Slovakia, South Africa, Spain, Sweden, Switzerland, UAE, UK, Venezuela, Vietnam	no	2009-2013	NA	19,076 enrolled patients	Age, Gender	yes	BMI; frailty; info re procedure; anaesthesia; comorbidities; info re thromboembolism prophylaxis	yes	Supportive care after hospital discharge;

RWD Source Content									
Health Outcomes		**Type of DIAGNOSIS classification**	**Type of PROCEDURE classification**	**Medical Device**		**Comparator/ comparison**	**Other variables**	**Comments**	**References or links**
Health Outcome Data available	**Which variables**			**Is MD traceable?**	**Code**				
yes	Mortality; readmission; type of discharge	ICD 9 CM	ICD 9 CM	no		Yes if prosthesis flow is linked to HDR	residence of local health authority, type of hospital; education available from 2011 hospitalization payer	Report publicly available	http://www.salute.gov.it/portale/temi/p2_6.jsp?id=1232&area=ricoveriOspedalieri&menu=vuoto
yes	type of discharge including mortality; Removal/replacement	ICD 9 CM	ICD 9 CM	yes	CND (national product code) code of device planted	Yes. Device vs device	residence of local health authority, type of hospital; producer name; product code	Registry linked to SDO. Report publicly available	http://old.iss.it/riap/
yes	Complications, mortality	ICD 9 CM (dal 2009)	ICD 9 CM (dal 2009)	yes		Yes. Device vs device	Info re hospital (name, address), device labels	Registry linked to SDO; Report publicly available, mortality data and adherence restricted to those authorised	https://ripo.cineca.it/
yes	Revision/replacement	ICD 9 CM	ICD 9 CM	yes	CND (National classification of devices)	Yes. Device vs device	Producer name; product code	Registry linked to SDO (i.e. demographic info available from linkage). No ROLP report, difficult to retrieve information	http://normativasan.servizirl.it/port/GetNormativaFile?fileName=4420_06_VI%20Rapporto%20ROLP.pdf Info also included in the document "Registro nazionale degli interventi di protesi danca: basi operative per limplementazione"
yes	Complications; PROMS (only hip) at time of diagnosis: pain; ambulation aid; disharge way (independent, assisted)		ICD 9	yes	CND (National classification of devices)	Yes. Device vs device	Hospital, hospital unit; device label; surgeon; data on arthro and endo prosthesis	Registry linked to SDO. RIPO Puglia is part of RIAP project	https://www.sanita.puglia.it/web/oer/progetto-ripo
yes	Complications		ICD 9 CM	yes	CND (national device classififcation)	Yes. Device vs device	Hospital		http://www.provincia.bz.it/salute-benessere/osservatorio-salute/registro-provinciale-delle-protesi-articolari-rppa.asp
no		ICD 9 CM	ICD 9 CM	yes	CND (national device classififcation)	Yes. Device vs device	Hospital, unit, producer name	As part of RIAP, Calabria has created his own regional registry that is part of RIAP	http://www.registrisanitari.calabria.it/Informazioni.aspx
yes	status (death, alive or living outside Catalonia); complications	ICD 9 CM (currently adapting to ICD 10)	ICD 9 CM (currently adapting to ICD 10)	yes		Yes. Device vs device	health care region; name of the manufacturer; reference number and batch number of prosthesis components		http://aquas.gencat.cat/es/ambits/avaluacio-tecnologies-qualitat/registres-sanitaris/racat/
yes	Inhospital mortality; complications; re-hospitalization	ICD 10	ICD 10	no		No	type of funding, hospital		https://www.mscbs.gob.es/estadEstudios/estadisticas/cmbdhome.htm
yes	Radiographic progression of KOA (assessed analysing changes in KellgrenLawrence grade and the need for TK)	no	no	no		No		Only on KNEE. The aim of the study is to develop a genetic prognostic tool to predict radiographic progression towards severe disease in primary knee osteoarthritis(KOA) patients.	Francisco J. Blanco, Ingrid Möller, et a. &, the Arthrotest Study Group; Improved prediction of knee osteoarthritis progression by genetic polymorphisms: the Arthrotest Study, Rheumatology, Volume 54, Issue 7, 1 July 2015, Pages 1236–1243, https://doi.org/10.1093/rheumatology/keu478
yes	Referrals to secondary and tertiary level	ICD 10	ICD 10			Possible identify devices to compare through linkage with arthroplasty registry	Info re professionals (e.g. age, sex), Primary Health Care Center (e.g. location); type of health coverage		https://www.sidiap.org/
yes	Follow-up (componenti di cura, medico-social); in-hospital mortality and morbidity	ICD 10	French CCAM classification	no		No	Hospital; professional reference	Link refers to discharge document for admission longer than 24 hrs	https://www.has-sante.fr/portail/jcms/c_1777678/fr/ https://www.has-sante.fr/portail/upload/docs/application/pdf/2014-11/document_sortie_-_analyse_bibliographique.pdf
yes	Revision					Yes. Device vs device			http://www.sofcot.fr/Pages/Registre-des-protheses-de-hanche

yes	Revision; Dislocation, intra-prosthetic dissociation, impingement, and osteolysis			yes	ADM X3; MDM X3	Yes. Device vs device			Epinette JA, Harwin SF, Rowan FE, Tracol P, Mont MA, Chughtai M, Westrich GH. Early experience with dual mobility acetabular systems featuring highly cross-linked polyethylene liners for primary hip arthroplasty in patients under fifty five years of age: an international multi-centre preliminary study. Int Orthop. 2017 Mar;41(3):543-550. doi: 10.1007/s00264-016-3367-0
yes	Clinical scores (Postel Merle d'Aubigné score, Hospital for Special Surgery score), radiological analysis; intra-operative or post-operative complications			yes	QUATTRO™cup	Yes. Types of devices (materials) and device vs device			Ferreira A, Prudhon JL, Verdier R, Puch JM, Descamps L, Dehri G, Remi M, Caton JH. Contemporary dual-mobility cup regional and private register: methodology and results. Int Orthop. 2017 Mar;41(3):439-445. doi: 10.1007/s00264-017-3405-6 https://web.orthowave.net/index.php?0.1020797195822 7313
yes	Re-tear (number of); number of performance score (nternational Knee Documentation Committee score; Lyshom score; Tegner score; Knee injury and Osteoarthritis Outcome Score); joint line space measurement before surgery and at the final follow-up			no		No	level of sport	only KNEE	https://clinicaltrials.gov/ct2/show/NCT025111 58?term=NCT02511158&rank=1
yes	death, complications, minor/major revisions			yes	hybrid Charnley	Yes. Between dual mobility cup and fixed cup			Prudhon JL, Verdier R, Caton JH. Low friction arthroplasty and dual mobility cup: a new gold standard. Int Orthop. 2017 Mar;41(3):563-571. doi: 10.1007/s00264-016-3375-0
yes	Range of Motion (ROM), Western Ontario and McMaster Arthritis Center (WOMAC) score, knee society score (KSS), short form 36 health survey (SF-36)	ICD	OPS	yes		Unknown			Roland Becker, Department of Orthopaedics and Traumatology, Brandenburg Medical Scholl Theodor Fontane, Hochstrasse 26, 14770 Brandenburg, Germany
yes	Patient reported outcome - Pain intensity on NRS scale	ICD	OPS	yes		No		study on pain management, registry data used from hospital	Meissner, W. et al. Quality improvement in postoperative pain management: results from the QUIPS project. Dtsch Arztebl Int 105, 865–870 (2008).
yes	Patient reported outcome - German Pain Questionnaire	ICD	OPS			Unknown			Joachim Erlenwein, MD, Pain Clinic, Anesthesiology, University Hospital Göttingen, Robert-Koch-Str. 40, Göttingen 37075, Germany E-Mail: joachin.erlenwein@med.uni-goettingen.de
yes	information on revisions (reason for a revision operation), mortality	ICD-10	OPS	yes	Product identification number of prosthesis used (manufacturer, catalogue number and Implant designation)	Yes. Device vs device		due to data protection laws no data on the individual level accessible. Registration necessary	https://www.eprd.de/de/
yes	2 years of follow up roentgen analysis - femoral-component analysis	ICD	OPS	yes		Unknown			Ralf Bieger, ralf.bieger@uni-ulm.de
yes	follow up on knee movement	ICD	OPS	yes		Unknown			Robert Karl Zahn. robert.zahn@charite.de
no						Yes. Between parts of the prostheses			
no						Yes. Device vs device			
yes	Survival rate of the Gemini SL Fixed Bearing knee prosthesis with revision for any reason as the end point(3 5 years); 3-5 years: complications; subsequent surgical interventions; Knee Society Score; survival rate of endoprothesis	ICD-10	OPS	yes	Gemini SL Fixed Bearing knee prostheses	No		age (18-75)	https://www.drks.de/drks_web/navigate.do?navigationId =trial.HTML&TRIAL_ID=DRKS00013892 https://clinicaltrials.gov/ct2/show/NCT03575546
yes	Patient reported outcome measures (PROMS).		OPCS Procedure codes used for knee and hip	yes	Details of the exact components used in procedure (reference / lot number / barcode / supplier / component group / component type / fixation method)	Yes. Device vs device	Name of trust / Health board / Independent Group, Hospital, Provider data start date, Provider data end date, Provider identifier prefix, Contact name / email / telephone	Contact: Inez Dunn, Regional Co-ordinator for researchers inez.dunn@northgateps.com	http://www.njrcentre.org.uk/njrcentre/default .aspx
yes	30 day mortality rate; prompt orthogeriatric assessment (clinical guideline on management of hip fracture care in adults(CG124) and quality standard QS16); Prompt surgery; NICE compliant surgical approach; prompt mobilisation after surgery; Not delirious when tested after operation; Returned to original residence by 120 days			no		Yes. Material of prostheses		The NHFD annual report 2018 details the care provided to over 66,500 patients who sustained a hip fracture in England, Wales and Northern Ireland during 2017. Clinicians or members of the Clinical Commissioning Group (CCG) can request access. No mention that data is available for research on the website.	https://www.nhfd.co.uk/

yes	mortality; PROMs	ICD-10	OPCS-4	no		No	Ethnicity		Main info: https://digital.nhs.uk/data-and-information/data-tools-and-services/data-services/hospital-episode-statistics Data Dictionaries showing variables: https://digital.nhs.uk/data-and-information/data-tools-and-services/data-services/hospital-episode-statistics/hospital-episode-statistics-data-dictionary
yes	Health related quality of life, patient reportet outcomes (pain, function, general health, satisfaction), surgical complications, readmission, reoperation			yes	unknown	Yes. Device vs device	type of hospital, hospital volume	The registry exists since 1996, according to the sutdy from Lübbeke et al. (2018) it is the most granular registry in the European comparison	http://www.rpa.spot.pt/getdoc/0071e52c-7cdf-4d4e-86f7-5266c8b15bfb/The-Geneva-Hip-Arthroplasty-Registry_E-BOOK_Table-.aspx Should be the main reference but currently down: http://www.ear.efort.org/downloads/The%20Geneva%20Hip%20Arthroplasty%20Registry.pdf
yes	revisions rate, survival	no	no	yes	Manufacturer, item number, Lot number	Yes. Device vs device		Country wide registry	http://www.siris-implant.ch/fr/TIchargements
yes	mortality	ICD 10 (GM)	CHOP (swiss procedure codes), e.g. knee arthroplasty : 81.54	no		No		Only diagnosis available and procedure available, no info about the device used	https://www.bfs.admin.ch/bfs/de/home/statistiken/gesundheit/erhebungen/ms.html#1042039266
yes	mortality; revisions	Unknown	Unknown	Unknown		Yes. Between types of prostheses		Registration mandatory since 2014.	https://www.ehealth.fgov.be/nl/egezondheid/beroepsbeoefenaars-in-de-gezondheidszorg/qermidorthopride
Yes	NRS Pain in rest, NRS Pain during activity, HOOS-PS / KOOS-PS, EQ-5D index score/VAS, OHS / OKS, Anchor question(s); revision	No	No	No		Yes. Device vs device	Info re hospital		https://www.lroi.nl/
Yes	Patient-reported health outcomes (e.g. Harris Hip Score, the Oxford Hip Score and a visual analogue scale for hip; e.g. Western Ontario and McMaster Universities Arthritis Index, the Knee Society Score and a visual analogue scale for knee)	Unknown	Unknown	Unknown	Unknown	No			van der Wees, P. J., Wammes, J. J., Akkermans, R. P., ... & Schreurs, B. W. (2017). Patient-reported health outcomes after total hip and knee surgery in a Dutch University Hospital Setting: results of twenty years clinical registry. BMC musculoskeletal disorders, 18(1), 97.
Yes	Mortality, HRQoL, functioning, pain. Physical component summary scale of the 36-item and 12-item short form health survey (SF-36/RAND-36 and SF-12), EuroQoL 5 Dimensions (EQ5D); Hip/knee disability and Osteoarthritis Outcome Score (HOOS/ KOOS); Western Ontario & McMaster Universities Osteoarthritis Index (WOMAC), Oxford Hip Score (OHS), Visual Analogue Scale (VAS)	Unknown	Unknown	Unknown		Yes. Types of components		Data Available from the authors upon reasonable request and with permission of the third parties. Selected patients are those with primary end stage symptomatic osteaarthritis of th ehip and knee who underwent TKA or THA)	Hofstede, S. N., Gademan, M. G., Stijnen, T., Nelissen, R. G., & Marang-van de Mheen, P. J. (2018). The influence of preoperative determinants on quality of life, functioning and pain after total knee and hip replacement: a pooled analysis of Dutch cohorts. BMC musculoskeletal disorders, 19(1), 68.
yes	Follow-up (e.g. reoperation within 3 months and mobility after 3 months), Survival patient; complications	no	no	no		Yes. Difficult to assess between what		Data from the DHFA database is not yet available for research.	https://dica.nl/dhfa/home
yes	HRQoL (i.e. EQ-5D and HUI), anxiety and depressive disorders (i.e. Hospital Anxiety and Depression Scale), post-traumatic stress disorder (i.e. Impact Event Scale), functional outcome (i.e. GOS-E) and frailty (Groningen Frailty Index)	Unknown	Unknown		Unknown	Unknown (more likely no)			de Jongh, M. A., Kruithof, N., Gosens, T., van de Ree, ... & Lansink, K. W. W. (2017). Prevalence, recovery patterns and predictors of quality of life and costs after non-fatal injury: the Brabant Injury Outcome Surveillance (BIOS) study. Injury prevention, 23(1), 59-59.

no		Dutch specific classification	Dutch specific classification	no	it is tracable if a medical device was implanted	Unknown			www.opendisdata.nl
Yes, but only for participating hospitals (not listed as variables in current list	EQ-5D-3, KOOS, Modified Charnley Score, Satisfaction on VAS scale.	Unknown	Unknown	yes	Article and LOT numbers of prosthetic parts	Yes. Beyween components and type of prostheses	Hospital code;	For those hospitals that want to participate PROMs there is a register that includes EQ-5D-3, KOOS, Modified Charnley Score, Satisfaction on VAS scale (info provided by Dr. Otto Robertson)	http://www.myknee.se/en/
Yes	Mortality; reoperation; prosthesis removal; perioperation complication; PROMs on pain and mobility satisfaction with procedure; SRH; EQ-5D-3L, Pain / Discomfort, ORO / depression, Charnley, Health VAS	ICD codes for diagnosis for reoperation	NFB codes	no	n.a.	Yes. Beyween components and type of prostheses	Hospital ID, Region, Type of hospital, care unit		https://shpr.registercentrum.se/shar-in-english/about-the-swedish-hip-arthroplasty-register/how-to-access-register-data/p/S1_xFEuBm
Yes	mortality, EQ-5D-3L (pre fracture and 4, 12 and 36 months postoperatively), pain VAS; reoperation	Unknown	Unknown	no	(reoperations linked to primary operation - type of implant given by 11 digit catalogue code)	Yes. Beyween type of prostheses; type of fixation			http://nrlweb.ihelse.net/eng/
Yes from 2017 (trialed from August 2017 on 29 patients - being rolled out)	Mortality (from 1994), revision reoperations; perioperative complications. From 2017 for hip arthroplasties: Hip Disability and Osteoarthritis Outcome Score (HOOS), EQ-5D, Charnley Score, UCLA Activity, Pain VAS will be collected pre-operatively and 1, 6 and 10 years post operatively (Unlcear whether will also collect for knee)	Unknown	Unknown	no		Yes. Device vs device	Marital status, education, employment and living situation available FROM 2018. Hospital characteristics (annual hospital volume)	Reoperations can be linked to primary operation.	http://nrlweb.ihelse.net/eng/
Yes	Readmission	ICD-10 (International Classification of Diseases)	NCSP (NOMESCO Classification of Surgical Procedures)	no		No			https://helsedirektoratet.no/english/norwegian-patient-registry
Yes	Incidence surgical site infections	CDC/ECDC classificatio for surgical site infections	Unknown	Unknown		No			https://www.ncbi.nlm.nih.gov/pubmed/23318091 https://www.ncbi.nlm.nih.gov/pubmed/25672951
yes	Mortality; readmission	ICD-10	Nordic Classification of Surgical Procedures (NCSP)			Yes. Through linkage possible to access info of hip/knee arthroplasty registries	Hospital; other administrative data	Include both inpatient and outpatient data and emergency department contacts. Complete nationwide coverage since 1978 Before 1994 diagnostic information coded according to ICD-8. Classification of surgical procedures changed in 1996.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4655913/
yes	Revision; complication			no		Yes. Between components and types	Hospital info		http://danskhoftealloplastikregister.dk/en/dhr/
yes	Revision; Complications; PRO on pain			no		Yes. Between components and types	Hospital info		http://www.rkkp.dk/om-rkkp/de-kliniske-kvalitetsdatabaser/knaealloplastik-register/
yes	Revision; complications; post-operative tests; Stability; PRO on knee function (using KOOS and Tegner) before surgery and 1, 5 and 10 years after surgery.					Yes. Between graft- and implant choices			https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5098507/
yes	Mortality; re-admission (surgically related, co-morbidity related)					Yes. Types of devices (materials) and device vs device		Info regarding LOS , and readmissions within 90 days obtained from the Danish National Health Registry (DNHR). Mortality was obtained through the Central Office of Civil Registration (CPR) based upon all citizens' unique social security number.	http://www.fthk.dk/default.asp?MainMenuId=353&PageId=353&Desc=Publications and https://clinicaltrials.gov/ct2/show/NCT01515670?term=NCT01515670&rank=1

yes	PRO on Pain 24h after surgery and 7 days; Opioid consumption			no		No		collaboration with Lundbeck Foundation Centre for Fast-track Hip&Knee Replacement	Aasvang, E. K., et al. (2016). "Chronic pre-operative opioid use and acute pain after fast-track total knee arthroplasty." Acta Anaesthesiol Scand 60(4): 529-536. https://clinicaltrials.gov/ct2/show/NCT01323179?term=NCT01323179&rank=1
yes	HRQoL at 0–3 and 0–12 months			no		No			Aalund, P. K., et al. (2017). "The impact of age and preoperative health-related quality of life on patient-reported improvements after total hip arthroplasty." Clin Interv Aging 12: 1951-1956.
yes	revision; mortality; complications	ICD-10	Nordic Medico-Statistical Committee classification (nomesco)	yes	Barcodes of archived implant notification form stickers of the old register	Yes. Device vs device			https://thl.fi/far/#index
yes	Readmission; mortality	ICD-10	Finnish version of Nomesko			Yes. Prosthesis types		-ICD-10 have been used since 2010 -Since 1994 Name of the register changed to the Finnish Health Care Register	https://thl.fi/fi/web/thlfi-en/statistics/information-on-statistics/register-descriptions/care-register-for-health-care
yes	Mortality (up to 10 years)			no		Yes			Jämsä P, Jämsen E, Huhtala H, Eskelinen A, Oksala N. Moderate to Severe Renal Insufficiency Is Associated With High Mortality After Hip and Knee Replacement. Clin Orthop Relat Res. 2018 Jun;476(6):1284-1292. doi: 10.1007/s11999.0000000000000256
yes	Implant survival; revision as an endpoint; mortality; number of revisions	ICD-10		no		No		This is a single centre study, but relevant for the topic	Kosola J, Kaipia A, Laitinen MK, Nieminen J. Complications after surgical treatment of femoral neck fractures in men with alcohol dependence syndrome: retrospective register analysis of 154 cases. Arch Orthop Trauma Surg. 2017 Jul;137(7):967-973. doi: 10.1007/s00402-017-2713-z
yes	Revision; Mortality; risk for revision; days at home after surgery	ICD-10	Nomesco	no		Yes. Prosthesis types	type of hospital	The main source of the PERFECT project is the Finnish national Hospital Discharge Register (HILMO)	http://www.terveytemme.fi/perfect/
yes	de novo/Removal/replacement	no diagnosis code	no procedure code	Yes	implant (type, name, serial number, name of the manufacturer, Name of supplier, availability of the supplier)	Yes. Device vs device	Name and registration number of responsible healthcare provider and medical personnel as well (seal number for the doctor)	The main aim of the register to provide up to date information about the de novo/replacement/removal of different implants in order to improve patient safety	https://impreg.neak.gov.hu/
yes	Removal/replacement, complications	BNO based on ICD9	no procedure code	YES	implant (type, name, serial number, name of the manufacturer, Name of supplier, availability of the supplier)	Yes. Between type of the protheses	Name and registration number of responsible healthcare provider and medical personnel as well (seal number for the doctor)	the main aim of the register to provide up to date information about the implanted devices in knee and hip replacement, improving patient pathway management, quality control of devices, financial control,	https://protreg.neak.gov.hu/
yes	Mortality; complications (intra and post-operative)	ICD-10 (M16.0,M16.1,S72.0, T84.0); (M17.0,M17.1T84.0)	ICD-9 (81.51,81.52,81.53);(81.54,81.55	yes	ICD-9 (81.51,81.52,81.53); (81.54,81.55)	Yes. Device vs device			https://aplikacje.nfz.gov.pl/cbe/Help/index.html?rozpoczecie_i_zakonczenie_prac.htm
yes	revision rate, mortality	ICD 10 CM	ICD 10 CM	no		Yes. Between type of the protheses	Hospital name, county		http://www.rne.ro/rnemedia/download/RAR_2013_Evaluation_And_Study_Design_Outcome_Of_Hemiarthroplasty_In_Romania.pdf
yes	revision rate	ICD 10 CM	ICD 10 CM	yes	Producer/cup	Yes. Between type of the protheses	Hospital name		http://www.rne.ro/rnemedia/download/RNE_Statistici_Sold_2010.pdf
yes	revision rate	ICD 10 CM	ICD 10 CM	yes	Producer/cup	Yes. Between type of the protheses	Hospital name		http://www.rne.ro/rnemedia/download/RNE_Statistici_Genunchi_2010.pdf

yes	Mortality; revision	Unknown	Unknown	No		Yes.Device vs device	Country; hospital	It is a dynamic minimal dataset with 25 variable	i
yes	Revision; Mortality			yes	Product Code; Lot/Batch Number	NA	Hospital identifier; Surgeon identifier number	NORE supports the development of arthroplasty registries and register documentation, and aims to enhance the comparability of reports by standardisation. In the template we report data as they advise registries to be completed	https://www.efort.org/about-us/nore/
yes						NA		EAR is an EFORT project, which is organized by the EFORT-EAR. It acts as a coordinating centre based on the voluntary cooperation of different National Arthroplasty Registers and supports the development of national and supranational register projects by process standardization. The organization established the EFORT-EAR minimal dataset, which is approved yearly at the EFORT congress.	https://books.google.it/books?id=T0d7JhHMlf0C&pg=PA4&lpg=PA4&dq=Labek+G.+European+Arthroplasty+Registers.+(EAR-EFORT);+2009&source=bl&ots=N7jWHHyPwL&sig=PNUWacQDmP6scXznYKzN90Pg8jU&hl=it&sa=X&ved=2ahUKEwjww7Hry7LdAhXHDuwKHdVFAnsQ6AEwA3oECAcQAQ#v=onepage&q=Labek%20G.%20European%20Arthroplasty%20Registers.%20(EAR-EFORT)%3B%202009&f=false
yes	Postoperative pain treatment, PROs of postoperative pain, PRO side effects,		ICD-9	no		No	Language of questionnaire; years of immigration; religion	Registry not fcused on joints, but usable to some extent	https://clinicaltrials.gov/ct2/show/NCT02083835 http://pain-out.med.uni-jena.de/
yes	in-hospital mortality, unplanned readmission within 30 days of discharge	ICD10 used in England, ICD9-DE in Holland, ICD9-CM in the other countries -> merged using Agency for Healthcare Research and Quality Clinical Classifications Software (HCUP CCS 2012)	ICD9 in Italy and Belgium; CVV in the Netherlands; and OPCS in England -> merged using OPCS	no		No		Hard to find up to date information. The project started in 2011 and is declared ongoing on its website	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3876394/pdf/hesr0048-2081.pdf https://www.imperial.ac.uk/dr-foster-unit/research/healthcare-performance/international-comparisons-of-hospital-performance-the-global-comparators-initiative/
yes	18 health conditions and mortality, including prevalence and incidence of fractures and osteoporosis	NA	NA	no		No	409 variables been proposed; 287 of them finalized for use in CHANCES	This is a EU project harmonising 14 cohort studies of health and ageing from Europe and United States. No focus on device DISCUSS IF TOPIC FITS	http://www.hhf-greece.gr/chances/index.html
yes	Major Bleeding Events (MBE); Symptomatic Venous Thromboembolic Events (sVTE) and All Cause Mortality (from first intake (day of surgery) until 24 hours after last intake (planned: knee replacement: Day 10 after surgery, hip replacement: Day 28-35 after surgery) of Pradaxa)					No	ethnicity	Eligibility of patients: 18+ years with moderate renal impairment undergoing elective total hip replacement surgery	https://clinicaltrials.gov/ct2/show/study/NCT00847301
yes	Bleeding events; Symptomatic thromboembolic events; Uncommon adverse events ; All cause mortality ; PROs Overall healing process at hospital discharge; Convenience of drug administration; patient compliance			no		No	Ethnicity	Main goal to provide info to the risk-benefit assessment of the drug Xarelto Prophylaxis after Hip or Knee Arthroplasty	https://clinicaltrials.gov/ct2/show/NCT00831714?term=NCT00831714&rank=1

Supplementary Table 6. Complete list of RWD sources: TAVI & TMVR

N study	RWD Source Features														Resc
	Name of the source	Data provider/initiator	Type of study	Study approach	Data Accessibility	Aggregation level	Coverage (geographical)	Data collection ongoing	Coverage period	Completeness	Sample size	Socio-Demographic data	Clinical/epi Data available	Which variables	Resource Use Data available
													Clinical/epidemiological Data		
IT	**RISVEPA (Registro Italiano GISE sull'impianto di Valvola Aortica Percutanea)**	IRCCS Policlinico S. Donato	Registry	Disease-based	Restricted	Individual	Italy	yes	From 2010		estimated 2000 patients	Age, Gender	yes	BMI; diagnosis; sugical risk consensus; EuroSCORE; STS score; comorbidities; medical historiy; cardiac measurement; anesthesia; info re procedure	yes
IT	**OBSERVANT II**	Ministry of Health	Observational Study	Disease-based	Private	Individual	Italy	yes	From 2016		at least 823 new TAVI	Age, Gender, Marital status, Residence, Year/date of birth, Place of birth	yes	info re consultation (e.g. choice of procedure); medical history; previous procedures; BMI; NYHA class; EuroSCORE; pre-intervention conditions; cardiac measurements; info re procedure; type of discharge	yes
IT	**CoreValve Registry**	Ferrarotto Hospital, Catania; University of Padova; A.O.U. Pisana; Spedali Civili, Brescia	Registry	Single device-based	Private	Individual	Italy	unknown	From 2007		663 consecutive patients (From June 2007 to December 2009)	Age, Gender	yes	EuroSCORE; comorbidities; CVD history; NYHA class; cardiac measurements;	no
IT	**One Hospital ClinicalService Project (OHCS)**	PI: Institute of Cardiology, Dep. Experimental, Diagnostic and Specialty Medicine, University of Bologna, S. Orsola-Malpighi University Hospital, Bologna; Cardiology Dep., Policlinico di Modena, University of Modena and Reggio Emilia funded by Medtronic	Observational Study	Multiple device-based	Restricted	Individual	Italy	yes	From 2007		estimated 10,000 patients	Age, Gender	yes	BMI; logistic EUROscore; STS score; comorbidities; CVD and medical history; NYHA class; cardiac measurement; info re procedure (e.g. anesthesia); info re device (e.g. size); Echocardiography data pre-discharge	yes
IT	**Multicenter Ancillary Registry**	Italian Radial Club	Registry	Other	Private	Individual	Italy	yes	2009-2014		906 patients	Age, Gender	yes	BMI; comorbidities; smoking; medical history; cardiac meauserements; info re procedure (e.g. time)	yes
IT	**Balloon aortic valvuloplasty (BAV) registry**	Cardiology Unit of the Policlinico Sant'Orsola-Malpighi University Hospital in Bologna	Registry	Disease-based	Private	Individual	Bologna	no	2000-2015		1,621 BAV procedures	Age, Gender	yes	BMI; BSA; comorbidities; smoking; CVD; CVD history; cardiac measurements; NYHA class; logistic EuroSCORE, STS score; LVEF; info re device; echocardiographic data pre-BAV; info re procedure	no
IT	**RELEVANT (REgistry of Lotus valvE for treatment of aortic VAlve steNosis with Tavr**	5 centres	Registry	Single device-based	Private	Individual	Italy (5 centres)	no	December 2013 and April 2016		225 patients	Age, Gender	yes	Comorbidities; medical history; STS score; logistic EUROscore; Euroscore II; LVEF; etiology of aortic valve disease; cardiac measurmeent; procedural details; pre device insertion hemodynamic data on the aortic stenosis; omputed tomography	no
IT	**Real world data from San Raffaele Milano**	San Raffaele Scientific Institute, Milan	Observational Study	Disease-based	Private	Individual	Patients admitted to a hospital in Milan	no	November 2007 May 2015		829 patients	Age, Gender	yes	Comorbidities; smoking; CVD history; EF; cardiac measurement; STS score; logistic EUROscore; info re procedure; multislice computed tomography; coronary angiography; info re device	yes
IT	**Multicentric observational study on patients with severe aortic stenosis undertaking TAVI or AVR**	Institute of Cardiology, Azienda Ospedaliero-Universitaria di Bologna. Sponsors and Collaborators: Azienda Ospedaliera Universitaria di Bologna Policlinico S. Orsola Malpighi Ministry of Health, Region Emilia-Romagna	Observational Study	Disease-based	Private	Individual	Italy	no	2013-2016		518 patients	Age, Gender	yes	BMI NYHA class; comorbidities; CVD; logistic EuroSCORE	yes
SP	**IDEAS (Influencia del Diagnóstico de Estenosis Aórtica Severa)**	Geriatric Cardiology of the Spanish Society of Cardiology	Registry	Disease-based	Restricted	Individual	Spain	no	Jan 2014		726 patients	Age, Gender	yes	Clinical and echocardiographic parameters; Charlson co-morbidity index; EuroSCORE II; symptoms of dyspnea, angina, or syncope determined by chart review. One-year follow-up aortic valve intervention (AVR or TAVI), and time from echocardiography to intervention	no
SP	**Hospital Discharge Records in the National Health System [Registro de Altas de Hospitalización]**	Ministerio de Sanidad, Servicios Sociales e Igualdad	Administrative database	Disease-based	Restricted	Individual	Spain (295 hospitals)	yes	From 1987	NA		Gender, Year/date of birth, Residence	yes	date and type of admission; info re intervention (date, type); date and type of discharge; comorbidities; diagnosis (main, secondary), morphology, inhospital infections	yes
SP	**Spanish Cardiac Catheterization and Coronary Intervention Registry**	Working Group on Cardiac Catheterization and Interventional Cardiology	Registry	Disease-based	Restricted	Hospital	Spain	yes	From 1990		In 2017, 481 valvuloplasties, 52% on the aortic valve, 43% on the mitral valve, and 5% on pulmonary valve. (2017)	Age, Gender	yes	Diagnosis; procedure	no
SP	**Spanish TAVI National registry**	Working Group on Cardiac Catheterization and Interventional Cardiology of the Spanish Society of Cardiology and the Spanish Society of Thoracic-Cardiovascular Surgery	Registry	Multiple device-based	Restricted	Individual	Spain	yes	From 2010			Age, Gender	yes	BMI; co-morbidities; medical history; previous ECG; renal function; clinical presentation; info re TAVI; Echocardiograph Characteristics; approach	yes

SP	**Observational, multicentre, retrospective study of BMI of patients admitted for TAVI**	Hospital Clínico Universitario de Santiago de Compostela, Hospital Central de Asturias and Hospital Virgen de la Victoria de Málaga	Observational Study	Other	Private	Individual	3 sites in Spain	no	October 2008 - July 2015		778 patients	Age, Gender	yes	BMI; EuroSCORE; co-morbidities; CVD history; NYHA class; frailty; clinical, interventional and follow-up data; info re procedure; complications during the procedure	yes
SP	**Multicentre registry focused on intracardiac shunts post TAVI**	10 centres	Registry	Other	Private	Individual	Spain	no	January 2009 to December 2016		2,239 patients	Age, Gender	yes	BMI; Echocardiographic, computed tomography (CT) and procedural characteristics; logistic EuroSCORE, STS score, comorbidities, previous coronary artery disease, peripheral artery disease; potential source of infection in case of suspected infective endocarditis, bacterial cause, initial symptoms, antibiotic treatment and its duration were recorded. Info re procedure (e.g. approach); info re device (e.g. type and size); info re intracardiac shunts	yes
SP	**Multicentre prospective study on cost utivity TAVR vs SAVR**	6 Spanish hospitals	Observational Study	Disease-based	Private	Individual	Spain	no	October 2011 - July 2013		231 patients	Age, Gender	yes	Comorbidities; CVD history; LVEF; frailty; NYHA class; EuroSCORE; pre-intervention EQ5D index; info re procedure (e.g. time)	yes
FR	**France TAVI registry**	GACI French Society of cardiology's working group of interventional cardiology	Registry	Disease-based	Restricted	Individual	France	yes	From 2013		12,804 patients	Age, Gender	yes	BMI; EuroSCORE; NYHA class; medical history; Echocardiographic findings; co-morbidities; CVD; clinical history; access site; anaesthesia; operators; ino re device	yes
FR	**French Hospital Information System [Programme de médicalisation des systèmes d'information]**	High Authority of Health (haute autorité de santé)	Administrative database	Disease-based	Restricted	Individual	France	yes	From 1996	NA		Age, Gender, Residence	yes	Lifestyle (alcohol, smoking; diet; physical activity); Diagnosis; procedure; info re admission; info re discharge; medications and treatments; medical history; delivery approach	yes
FR	**Massy TAVI database**	Department of Interventional Cardiology, Institut Cardiovas-culaire Paris Sud, Massy, France	Observational Study	Disease-based	Private	Individual	admissions to Institut Cardiovas-culaire Paris Sud, Massy, France	yes	From October 2006	NA	1,203 patients	Age, Gender	yes	BMI; NYHA classification; EuroSCORE; co-morbidity; CVD clinical history; Echocardiographic data; info re procedure	yes
FR	**Observational study on patients who undertook TAVI and BAV**	The GHM and CHU in Grenoble and the Clinique du Tonkin in Lyon	Observational Study	Other	Private	Individual	3 French centers (Grenoble and Lyon)	no	From January 2012 to November 2014	NA	113 patients	Age, Gender	yes	STS score, co-morbidities; medical history; info re anatomy; info re sheath; info re procedure (Prostar XL percutaneous vascular surgical system (Prostar group) or Perclose ProGlide suture-mediated closure system (Proglide group))	yes
FR	**BAVARD multicentre registry**	Clinique Pasteur	Registry	Disease-based	Private	Individual	France	yes	From 2018	NA	184 patients	Age, Gender	yes	co-morbidities; smoking; CVD history; BMI; BSA; NYHA classification; info re anatomy; info re procedure	yes
DE	prospective TAVI databases	Heart Center Segeberger Kliniken, Bad Segeberg & Heart Center Bad Krozingen, Bad Krozingen	Observational Study	Multiple device-based	Unknown	Individual	Heart Clinics Bad Segeberg & Bad Krotzingen, Germany	yes	September 17, 2007 - February 1, 2012		394	Age, gender	yes	BMI, weight, height, Comorbidities, Procedure	no
DE	German registry for acute aortic dissection type A (GERAADA)	Deutsche Gesellschaft für Thorax-, Herz- und Gefäßchirurgie	Registry	Disease-based	Restricted	Individual	Germany	no	2006 - 2018			Age, gender	yes	Comorbidities, Procedure	no
DE	German Aortic Valve Registry (GARY)	German Aortic Valve Registry (GARY) GmbH	Registry	Disease-based	Restricted	Individual	Germany	yes	July 1. 2010 - 2018	0.9	> 130.000	Age, gender	yes	Comorbidities, Procedure, date of decease + discharge	yes
DE	German Quality Assurance for Congenital Heart Diseases Registry	Deutsche Gesellschaft für Pädiatrische Kardiologie (DGPK) und die Deutsche Gesellschaft für Thorax-, Herz- und Gefäßchirurgie (DGTHG)	Administrative database	Multiple device-based	Unknown	Individual	Germany	yes	since 2006	ca 300.000 cases - 13,3%	40000	age, gender, citizenship, year + date of birth, marital status	yes	Diagnosis, procedure	yes
DE	German Quality Assurance Registry on Aortic Valve Replacement (AQUA)	aQua – Institut für angewandte Qualitätsförderung und Forschung im Gesundheitswesen GmbH	Registry	Multiple device-based	Restricted	Individual	Germany	yes	since 2008	~100%	~70.319	age, gender	yes	comorbidities, surcigical history, BMI	yes
DE	Balloon Expandable Transcatheter Aortic Valve Implantation Without Predilation of the Aortic Valve (EASE-IT)		Registry	Multiple device-based	Unknown	Individual	10 sites in Germany	no	April 2014 - May 2016		200	age, gender	yes	Diagnosis, procedure, comorbidities, risk scores, current medication	yes
DE	Transfemoral Transcatheter Aortic Valve Implantation With or Without Predilation of the Aortic Valve (EASE-IT TF)		Registry	Multiple device-based	Unknown	Individual	10 sites in Germany	no	May 2016 - December 2017		196	age, gender	yes	Comorbidities, age, surgical history, diagnosis, procedure, risk scores, current medication	yes

DE	ACURATE neo TA study	PI: Abteilung Herzchirurgie Kerckhoff-Klinik Sponsors: Symetis SA	Observational Study	Single device-based	Private	Individual	7 sites in Germany	no	November 18, 2015 - March 28, 2017		60	age, gender	yes	Comorbidities	no
DE	Institute for Quality Assurance and Transparency in Healthcare (IQTIG)	Institute for Quality Assurance and Transparency in Healthcare (IQTIG)	Administrative database	Multiple device-based	Public	Individual	Germany	yes	since 2015	~100%		age, gender	yes	baseline, comorbidities	yes
DE	German DRG statistic	research Datacenters at the Federal Bureau of Statistics	Registry	Single device-based	Restricted	Individual	Germany	yes	since 2003	~100%		age, gender	yes	Comorbidities, drg code/ type, EUROScore, Procedure	yes
DE	multicenter Registry		Observational Study	Single device-based	Unknown	Individual	5 centers, Germany	no			101	age, gender	yes	Comorbidities, BMI, age, EUROScore, risk score	yes
DE	German Mitral Valve Registry	https://dgk.org/	Observational Study	Single device-based	Unknown	Individual	10 centers in Germany	yes	since 2010			age, gender	yes	Comorbidities, STS score, EUROScore	yes
DE	German Transcatheter Mitral Valve Interventions Registry (TRAMI)	Institut für Herzinfaktforschunf (IHF) in Ludwigshafen	Registry	Disease-based	Unknown	Individual	21 participating hospitals	yes	since 2010		>1064	age, gender	yes	baseline, Comorbidities, BMI, EUROScore	no
DE	TAVI cohorts at the University Heart Center Hamburg Eppendorf	University Heart Center Hambrug	Observational Study	Single device-based	Unknown	Individual	University Heart Center, Hamburg, Germany	NA			500	age, gender	yes	Comorbidities, BMI, EUROScore	no
DE	Bonn Tavi Registry		Registry	Single device-based	Unknown	Individual	Bonn, Germany	NA			347	age, gender	yes	Comorbidities, BMI, EUROScore	no
DE	Kerckhoff Clinic TAVI Registry	Kerckhoff Clinic, Bad Nauheim	Observational Study	Single device-based	Unknown	Individual	Bad Nauheim, Germany	NA	2011-2015		946	age, gender	yes	Comorbidities, BMI, baseline	no
DE	Everyday Practice With Transcatheter Aortic Valve Implantation (EVERY-TAVI)	University Hospital Munich	Observational Study	Single device-based	Unknown	Individual	Department of Cardiology, LMU Munich; Cardiology Department, Segeberger Kliniken, Bad Segeberg	no	November 2007 - May 2018		2370	age, gender	yes	Comorbidities, BMI	yes
DE	prospective registry	Bad Rothenfelde Heart Center	Registry	Multiple device-based	Unknown	Individual	Bad Rothenfelde Heart Center, Germany	no	2008-2016		1644	age, gender	yes	Comorbidities, EUROScore, baseline	yes
DE	The TAVI Calculation of Costs Trial (TCCT)	University Freiburg	Observational Study	Multiple device-based	Unknown	Individual	university Hospital Freiburg, Germany	NA	April 2011 - October 2013		300	age, gender	yes	Baseline, comorbidities, EUROScore	yes
DE	Cohort of patients undergoing transcatheter aortic valve implantation	Klinik für Herz- und Kreislauferkrankungen, Deutsches HerzzentrumMünchen, Munich, Germany.	Observational Study	Multiple device-based	Unknown	Individual	Klinik für Herz- und Kreislauferkrankungen, Deutsches HerzzentrumMünchen, Munich, Germany.	NA	January 2014 - November 2015		549	age, gender	yes	EUROScore, comorbidities, baseline, BMI	yes
DE		Cardiovascular Center, Klinikum Nürnberg	Observational Study	Multiple device-based	Unknown	Individual	Cardiovascular Center, Klinikum Nürnberg	yes	since 2010		>626	age, gender	yes	weight, height, commorbidities, EUROScore	yes
DE		Clinic for Cardiology, Herz- und Diabeteszentrum NRW, Ruhr-Universität Bochum, Bad Oeynhausen, Germany	Observational Study	Multiple device-based	Unknown	Individual	Clinic for Cardiology, Herz- und Diabeteszentrum NRW, Ruhr-Universität Bochum, Bad Oeynhausen, Germany	no	March 2009 - February 2016		1359	age, gender	yes	weight, height, commorbidities, EUROScore I & II, STS Score	no
DE	TAVI registry Karlsruhe (TAVIK)	Department of Cardiology, Medical Clinic IV, Municipal Hospital Karlsruhe, Academic Teaching Hospital of the University of Freiburg, Karlsruhe, Germany	Registry	Multiple device-based	Restricted	Individual	Karlsruhe, Germany	yes	since April 2008		>2000	age, gender	yes	EUROScore, comorbidities, BMI	no
DE	Coronary and Structural Interventions Ulm - Transcatheter Aortic Valve Replacement (CSI-Ulm-TAVR)	University of Ulm	Observational Study	Multiple device-based	Unknown	Individual	University of Ulm	yes	June 2014 - estimated 2025		~2000	age, gender	yes	comorbidities, BMI	no
DE	Registry of the German Society for Thoracic and Cardiovascular Surgery	German Society for Thoracic and Cardiovascular Surgery (GSTCVS)	Registry	Disease-based	Unknown	Country	Germany	yes	sice 1989			age	yes	diagnosis	yes
DE	Cohort Regensburg and Cohort Munich		Observational Study	Single device-based	Unknown	Individual	University of Regensburg medical Center and Department of Cardiology at German Heart Center Munich, Germany	no	July 2010 - May 2015		222	age, gender	yes	comorbidities	yes

DE	German Heart Report Data	German Heart Foundation, the German Cardiac Society, the German Society for Thoracic and Cardiovascular Surgery, and the German Society of Pediatric Cardiology	Administrative database	Disease-based	Restricted	Individual	Germany	yes				age, gender	yes	comorbidities, diagnosis	yes
DE	Asklepios clinic St. Georg (Hamburg, Germany) and the Brandenburg Heart Centre (Bernau, Germany)		Observational Study	Multiple device-based	Unknown	Individual	Hamburg and Regensburg, Germany	no	September 2009 - June 2016		575	age, gender	yes	comorbidities, diagnosis, BMI, EUROscore	yes
DE	German National Register for Congenital Heart Defects	German Heart Foundation, the German Cardiac Society, the German Society for Thoracic and Cardiovascular Surgery, and the German Society of Pediatric Cardiology	Registry	Disease-based	Unknown	Individual	Germany	yes	2004 - ongoing		>55.000	age, gender	yes	comorbidities, diagnosis	yes
ENG	UK TAVI registry	NICOR: National Institute for Cardiovascular Outcomes Research (formerly at UCL; now at Barts Health NHS Trust)	Registry	Multiple device-based	Restricted	Individual	UK	yes	Since the introduction of TAVI procedures in 2007	All of UK	Not known	Age, Gender, Residence, Year/date of birth	yes	Height, weight, admission date , type of admission (i.e. "Procedure urgency"), comorbidities, date of discharge, date of decease (if reason for discharge); anaesthesia (general, conscious sedation)	yes
CH	Swiss Transcatheter Aortic Valve Implantation Registry, NCT01368250 (includes Bern TAVI Registry)	Swiss Working Group for Interventional Cardiology, Swiss Society of Cardiac Surgery, managed by Clinical Trials Unit (CTU) Bern	Registry	Multiple device-based	Restricted	Individual	Switzerland	yes	from February 2011	>90%	7898	Age, Gender	yes	Procedure, Comborbidities, BMI	yes
BE	Belgian TAVI Registry		Registry	Multiple device-based	Unknown	individual	Belgium	Unknown	2008-ongoing	All TAVI procedures in Belgium	current unknown (2008-march 2012 = 861)	Age gender	Yes	EuroSCORE, Aortic valve area, peak and mean gradient, LVEF, NYHA class, comorbidities, previous procedures; surgical variables (procedure, valve type, access route, valve size, procedural success, valve migration)	yes
NL	National Cardiovascular Data Registry (NCDR)	Nederlandse Hart Registratie (NHR), in collaboration with Meetbaar Beter	Registry	Disease-based	Restricted	Individual	Netherlands	Yes	NHR: since 2017; Meetbaar beter: since 2013; NCDR: since 2007	Meetbaar beter = 2016: 99%; 2015: 99%; 2014: 96%; 2013: 92%	Meetbaar beter: 150.000 (of which 4296 for TAVI) in 2016	Age, Gender	Yes	Hospital referral, Shock, Reanimation / OHCA, morbidities; cardiac history (e.g. Previous MI); CVD conditions; LVEF; weight; Smoking status; date of intervention; stent type; date and time of balloon inflation; Quality of life (SF-12 / SF-36)	yes
SW	(SWEDEHEART) (Merger of RIKS-HIA, SEPHIA, SCAAR, TAVI and the Swedish Heart Surgery Registry.)	Uppsala Clinical Research Centre	Registry	Disease-based	Restricted	Individual	Sweden	Yes SWEDEHEART ongoing	study period (2008-2015) SWEDEHEART (2007-ongoing	All consecutive patients undergoing TAVI in all eight centres in Sweden are included.	1848	Age, gender	Yes	Height, weight, body surface area, conditions (diabetes, hypertension, COPD), cardiac intervention history, laboratory values (VARC-2 creatine levels, glomerular filtration rate (eGFR), EuroSCORE I, LVEF) echocardiographyic and procedural data (Aortic value area and gradient, annulus diameter, Systolic pulmonary artery pressure, aortic regurgitation, contrast volume, fluroscopy time	Yes
NO	Norwegian Cardiovascular disease registry (includes multiple other heart registries including the Norwegian Registry for Cardiac Surgery)	Norwegian Institute of Public health	Registry	Disease-based	Unknown	individual	Norway	Yes	2012-ongoing	National reporting compulsary		Age gender	Yes	Condition, history of CVD, risk facotrs for CVD, comborbidities, EuroScore; hospital, prosthetic valve type, medications, subsequent treatments	Yes
DK	**SAVORY registry**	Rigshospitalet, Denmark	Observational Study	Disease-based	Private	Individual	Denmark	yes	2015-2020	NA	75 participants	Age, Gender	yes	BMI; morbidities; procedure; New York Heart Association class; 4DCT scan; Valvular haemodynamics, stroke volume and ejection; info re valve	no
DK	**Observational single-center study on Prosthetic valve endocarditis (PVE) after TAVI**	Rigshospitalet, Copenhagen, Denmark	Observational Study	Disease-based	Private	Individual	Denmark (patients admitted at Rigshospitalet, Copenhagen)	no	Nov. 2007 - Feb 2014	NA	509 patients	Age, Gender	yes	BMI; co-morbidities; pace-makers (y/n); diagnosis; CVD conditions; ecocardiographic data; procedural details; implant position; antibiotic treatment;	yes

DK	**Denmark Heart Registry (DHR)**	National Institute of Public Health	Registry	Multiple device-based	Restricted	Individual	Eastern and Western Denmark	yes	From 1998, TAVI from 2007		since onset: 1,782 for TAVR in West Dnm; 678 in East Dnm	Age, Gender	yes	BMI; smoking; co-morbidities; CVD; medical histpry; LVEF; STS score; EuroSCORE; info re procedure	yes
PL	Polish Registry of Transcatheter Aortic Valve Implantation (POL-TAVI)	Silesian Center for Heart Diseases in Zabrze	Registry	Multiple device-based	Restricted	Country	Poland	yes	2013 -present	100%	number of procedures: 382 (2013), 459 (2014), 629 (2015), 869 (2016)	Age, Gender, Year/date of birth, Residence	yes	Date of hospitalization, weight, height; smoking; alcoholism; comorbidities (e.g. diabetes, hypertension); CVD (e.g. atrial fibrillation, pacemaker), cardiac history (e.g. previous cardiac surgery); EUROSCORE, Heart Team; EQ-5D at baseline; echocardiography,TEE, angiography data; info re procedure (e.g. date, type of anesthesia, scheduled/urgent/sudden, aortic valvuloplasty,sheath size) info re valve. Reason for re-hospitalization	yes
PL	Cerebral oximetry-guided transcarotid TAVI hospital prospective registry	Medical University of Silesia in Katowice	Observational Study	Single device-based	Restricted	Hospital	Silesia	yes	2017 - present	100%	12 in 2018	Age, Gender, Year/date of birth	yes	as in POL-TAVI + Parameters of regional cerebral oximetry	yes
PL	Balloon aortic valvuloplasty (BAV) hospital prospective registry	Silesian Center for Heart Diseases in Zabrze	Observational Study	Single device-based	Restricted	Hospital	Silesia	yes	2008 - present	100%	28 in 2010	Age, Gender, Year/date of birth	yes	Logistic EuroSCORE, NYHA class, surgical risk, baseline and post-valvuloplasty haemodynamic parameters (ejection fraction, aortic valve area, right ventricular systolic pressure), short-term complications	no
multi-country	**CGA-TAVI multicentre registry (comprehensive geriatric assessment after transcatheter aortic valve implantation (TAVI))**	PI: A. Ungar, Geriatric Cardiology and Medicine - U. of Florence Sponsors: Institut für Pharmakologie und Präventive Medizin	Registry	Single device-based	Private	Individual	Canada, Italy, Netherlands	no	From 2014 to 2017		72 participants	Age, Gender	yes	BMI; Logistic EuroSCORE; STS score; comorbidities; NYHA class; CVD history; cardiac condition; Echocardiographic parameters	no
multi-country	**FAST-TAVI registry (Feasibility And Safety of early discharge after Transfemoral TAVI)**	PI: C. Tamburino and M. Barbanti, Ferrarotto Hospital, University of Catania Sponsors: Institut für Pharmakologie und Präventive Medizin Edwards Lifesciences	Registry	Single device-based	Private	Individual	10 sites across Italy, the Netherlands and the UK	yes	From 2015		500 participants (estimated)	Age, Gender	yes	Clinical characteristics; Physical examination (symptoms, mobility, self-care); Laboratory analysis(includes blood and urine analysis, complete blood count, electrolytes, renal function etc); Current medication; electrocardiogram; Echocardiogram; mini-mental state examination; short-form-12 quality of life questionnaire; Clinical event assessment	yes
multi-country	**NeoChord International Independent Registry (NIIR)**	Padua and Vilnius University Hospitals	Registry	Single device-based	Private	Individual	Padua and Vilnius	no	February 2013 and June 2014		62 patients	Age, Gender	yes	Logistic EuroSCORE I; EuroSCORE II; STS score; comorbidities; CVD history; NYHA class; mitral regurgitation severity; cardiac measurement; info re procedure (e.g. NeoChords attempted)	yes
multi-country	Early Feasibilty Study of the Tendyne Mitral Valve System - NCT02321514	unknown	Observational Study	Single device-based	unknown	individual	8 sites in 3 countries (Australia, US, Norway)	Yes	study period (November 2014 - March 2016) Early Feasibilty Study of the Tendyne Mitral Valve Syste (November 2014 -)	Unknown	30	Age, gender	Yes	BMI; comorbidities (diabetes, COPD, chronic kindey disease, atrial fibrillation, prior stroke or MI); prior treatment (percutaneous revascularisation, coronary artery bypass, ICD/BiV PPM); STS score; EuroSCORE, Medications, NYHA class, cardiovascular characteristics (mitral valve pathology and gradient, severity of mitral regurgittion, LVEF)	Yes
multi-country	PRAGMATIC AS	PRAGMATIC AS	Registry	Multiple device-based	Unknown	individual	Netherlands (Rotterdam), France (Toulouse), Italy (Milan)	No	1 Feb - 30 April 2014	Unknown - All consecutive patients above 50 years old with symptomatic severe degenerative AS at relevant centres included	166 TAVI (overall registry sample size 467)	Age, Gender	Yes	BMI; comorbidities (e.g. hypertension, diabetes); previous relevant procedures/incidents; CVD (e.g. atrial fibrillation, pacemaker or AICD); NYHA class, Canadian cardiovascular society class. Cardiovascular characteristics (e.g. left ventricular systolic/diastolic function, LVEF, peak velocity and gradient); EoroSCORE; frailty markers; concomitant disease; operative impediments.	yes
EU	**Nordic Lotus-TAVR registry**		Registry	Single device-based	Private	Individual	8 Nordic TAVR centers	no	Until Spetember 2015		232 patients	Age, Gender	yes	Comorbidities; BMI; CVD history; NYHA class; STS score; EuroSCORE II; Echocardiographic assessment; Cardiac CT assessment; info re procedure (e.g. anesthesia, access route); info re device (e.g. valve size)	yes
EU	**ROUTE registry (Registry Of the Utilisation of the Transaortic (Tao) TAVI Approach Using the Edwards Sapien XT Valve)**	PI: St. Thomas' Hospital, London, UK; Institut Hospitalier Jacques Cartier, Massy, France Sponsonr: Institut für Pharmakologie und Präventive Medizin Investigators	Registry	Multiple device-based	Restricted	Individual	22 sites in Europe	no	2013-2015		303 participants	Age, Gender	yes	Comorbidities; smoking; Echocardiogram data; NYHA class; symptoms (syncope, dizziness, CCS angina class); Logistic EuroSCORE; STS; cardiac comorbidities; info re intervention; current medications	yes
EU	**WIN-TAVI (Women's INternational Transcatheter Aortic Valve Implantation) registry**	Society for Cardiovascular Angiography and Interventions Sponsor: Icahn School of Medicine at Mount Sinai	Registry	Disease-based	Restricted	Individual	18 sites in Europe, 1 site in the United States,	no	2013-2015		1,019 participants	Age	yes	BMI; CVD history; Echocardiography data; Multidetector computed tomography data; cardiac measurement; LVEF; EuroSCORE; comorbidities; frailty; info re procedure; info re device; female-specific charactoristics (e.g. history pregnancy; age of menopause)	yes

EU	**EuRECS-TAVI (European Registry on Emergent Cardiac Surgery during TAVI)**	investigator-initiated independent multicentre observational registry conducted by a group of investigators	Registry	Multiple device-based	Restricted	Individual	Europe, Israel, and New Zealand	no	2013-2016		27,760 TF-TAVI procedures	Age, Gender	yes	CVD history; LVEF; Logistic EuroSCORE; STS score; info re device; diagnosis	no
EU	**IMPULSE**	PI: Queen Elizabeth Hospital, Birmingham, UK; Department of Cardiology and Angiology, University of Kiel, Germany; Hôpital Bichat, Paris Sponsors: Institut für Pharmakologie und Präventive Medizin; Edwards Lifesciences	Registry	Disease-based	Restricted	Individual	23 sites in Europe	no	2014-2018		2,173 participants		yes	Symptoms; co-morbidities; frailty; EuroSCORE; echocardiogram data (at time of enrolment and by nurse); eligibility for different treatment options	no
EU	**JUPITER Registry**	PI: King's College Hospital, London; UKE Hamburg Sponsor: JenaValve Technology GmbH	Registry	Single device-based	Restricted	Individual	15 centres in Europe	yes	From 2012		210 patients	Age, Gender	yes	logistic EuroSCORE; STS score; NYHA class; LVEF; cardiac morbidity; CVD history; comorbidities; info re procedure	yes
EU	**RESPOND Post Market Study**	PI: Erasmus Medical Center; German Heart Center Berlin Sponsors: Boston Scientific Corporation	Registry	Single device-based	Restricted	Individual	41 centres in Europe, New Zealand, and Latin America	yes	From 2014		1,064 participants	Age, Gender	yes	STS score; EuroSCORE; comorbidities; NYHA class; CVD history; cardiac conditions; frailty; eligibility (infor re AS); Echocardiographic data	yes
EU	**SOURCE 3 Registry (SAPIEN Aortic Bioprosthesis European Outcome)**	PI: King's Health Partners, London/UK, Hôpital Bichat, Paris/France, St Thomas' Hospital, London/UK	Registry	Single device-based	Restricted	Individual	80 centers in 10 countries	no	July 2014 - October 2015		1,947 patients	Age, Gender	yes	Comorbidities; smoking; CVD; LVEF; NYHA class; cardiac conditions; Logistic EuroSCORE; anesthesia; info re devise; info re procedure	yes
EU	**Transcatheter Valve Treatment Pilot (TCVTP) registry**	European Society of Cardiology	Registry	Multiple device-based	Restricted	Individual	137 centres in 10 European countries	yes	Pilot study launched in 2011-12		4,571 patients	Gender, Year/date of birth	yes	Height, weight; smoking; comorbidities; medical history; cardiac history; previous interventions; EuroSCORE; EuroQol 5D; pre-intervention pharmacological treatment; LV functions; echocardiogram data; TMVR and TAVI Specific Investigations; info re procedure; info re device; data at discharge (e.g. echocardiogram data); enrollement in clinical trial (y/n)	yes
EU	**ADVANCE DA (CoreValve® ADVANCE Direct Aortic Study)**	PI: N. Moat, The Royal Brompton Hospital; G. Bruschi, Azienda spedaliera Niguarda Ca' Granda Milano Sponsors: Medtronic Bakken Research Center	Observational Study	Single device-based	Restricted	Individual	Czech Republic, France, Germany, Italy, Netherlands, UK	no	2014-2015		100 participants	Age, Gender	yes	STS score; logidstic EuroSCORE; comorbidities; NYHA class; CVD history; cardiac conditions; frailty; BMI	yes
EU	**ACURATE neo implantation in bicuspid aortic valve registry**		Registry	Single device-based	Restricted	Individual	7 centrs in Sweden, Switzerland, Italy and Germany		October 2012 and July 2017		712 patients	Age, Gender	yes	BMI; comorbidities; cardiac history; CVD; NYHA class; STS score; EuroSCORE; Echocardiographic and computed tomography data; info re procedure	yes
EU	**TAV-in-BAV registry**		Registry	Multiple device-based	Private	Individual	12 centers in France, Denmark, Germany, Switzerland, Italy, Belgium and Canada	no	From october 2013-2017		139 patients	Age, Gender	yes	BMI; comorbidities; cardiac history; CVD; NYHA class; STS score; EuroSCORE and logistic EuroSCORE; cardiac measurment; info re diagnosis; info re procedure and devide	yes
EU	**Multicentre registry on the safety, efficacy and early clinical outcomes of the SAPIEN XT 20 mm balloon-expanding THV**	R. Puri & J. Rodés-Cabau, Quebec Heart & Lung Institute, Laval University with other collaborators	Registry	Single device-based	Private	Individual	23 centres in Europe and Canada	no	Until Decembder 2015		55 patients	Age, Gender	yes	BMI; comorbidities; CVD; NYHA class; STS score; Logistic EuroSCORE; LVEF; infor re procedure	yes
EU	**Infectious Endocarditis after TAVR International Registry**	Drs Rodés-Cabau and Regueiro had full access to all of the data in the study and take responsibility for the integrity of the data	Registry	Disease-based	Private	Individual	47 centers from Europe, North America, and South America	no	June 2005 - October 2015		250 patients	Age, Gender	yes	Comorbidities; CVD; cardiac and clinical history; cardiac conditions; Logistic EuroSCORE; LVEF; infor re procedure (e.g. antibiotic prophylaxis); info re device	yes
EU	**ADVANCE II**	PI: A.S. Petronio, Azienda Ospedaliero, Universitaria Pisana Sponsors: Medtronic Bakken Research Center Investigators	Observational Study	Single device-based	Private	Individual	9 high-volume European centers	no	October 2011 to April 2013		194 patients	Age, Gender	yes	implant depth; STS score; info re procedure; info re device	yes
EU	**TMVR registry**	TMVR Registry investigators	Registry	Multiple device-based	Private	Individual	40 centers in Europe and North America	yes	From November 2015		521 patients (till 2018)	Age, Gender	yes	STS score; NYHA class; cardiac history; biomarkers; LVEF; echocardiographic data; info re procedure (e.g. access, Valve-in-MAC; Valve-in-Ring; Valve-in-MAC); info re device	yes
EU	**TOPAS-TAVI registry**	Drs Rodés-Cabau and Ms Pelletier Beaumont with collaborators. Sponsors: Canadian Institutes of Health Research	Registry	Disease-based	Private	Individual	14 centres in Europe and North America	yes	from 2007 to 2013 retrospectively, from 2014 prospectively		293 participants	Age, Gender	yes	BMI; NYHA class; comorbidities; CVD; medical history; biomarker (e.g. hemoglobin); STS score; Echocardiographic data; LVEF; info re procedure; info re device	yes
EU	**Valve-in-Valve International data (VIVID)**	Dr Dvir and colleagues	Registry	Multiple device-based	Private	Individual	110 centers from around the world	yes	From December 2010		1,550 patients (until 2018)	Age, Gender	yes	BMI; comorbidities; cardiac history; etiology; aortic regurgutation; LVEF; NYHA class; STS score; Logistic EuroSCORE; EuroSCORE II; info re device; info re procedure; anesthesia	yes

EU	**International multicenter registry on TAVR**		Registry	Multiple device-based	Private	Individual	18 centers from Europe, North America, and the Middle East	no	November 2005 - December 2016		17,092 patients	Age, Gender	yes	BMI; comorbidities; smoking; cardiac history; CVD; NYHA class; STS score; Logistic EuroSCORE; Echocardiogram data; cardiac measurements; info re procedure; info re device	yes
EU	**Bicuspid AS TAVR registry**		Registry	Multiple device-based	Private	Individual	33 centers in Europe, North America, and the Asia-Pacific region	yes	From December 2013		6,475 patients (bicuspid 576, tricuspid 5,900)	Age, Gender	yes	NYHA class; STS score; Logistic EuroSCORE; comorbidities; cardiac history; CVD; Echocardiogram data; info re procedure; info re device; Type of bicuspid	yes
EU	**FORWARD (CoreValve Evolut R FORWAR) study**	PI: E. Grube, University Hospital, Bonn; S. Windecker, INSELSPITAL, Universitätsspital Bern Sponsors: Medtronic Cardiovascular	Observational Study	Single device-based	Private	Individual	53 centers in 4 continents	yes	From 2016		1060 participants enrolled	Age, Gender	yes	BMI; comorbidities; NYHA class; STS score; Logistic EuroSCORE; cardiac history; CVD; frailty; Echocardiographic data; anesthesia	yes
EU	**Ten-center observational study of patients with aortic stenosis who underwent TAVI**		Observational Study	Multiple device-based	Private	Individual	10 centres in Europe (Netherlands, Germany , Belgium, Spain), Canada, Colombia, Australia	no	From November 2005 to March 2013		1706 patients	Age, Gender	yes	BMI; comorbidities; NYHA class; STS score; Logistic EuroSCORE; cardiac history; History of malignancy; CVD; frailty; Echocardiographic data; biomarkers (creatinine, hemoglobine, leukocite); info re procedure; anesthesia	yes
EU	**ACURATE TA™ Valve Implantation Registry: SAVI 2 (TA-SAVI2)**	PI: Thomas Walther, Kerckhoff Klinik Sponsors: Symetis SA	Registry	Single device-based	Restricted	Individual	Austria, Germany, Italy, Switzerland	no	2013-2014		250 patients	Age, Gender	yes	Logistic EuroSCORE; STS score; info re procedure prior balloon valvuloplasty; Echocardiographic parameters; NYHA class	no
EU	**ClOsure device iN TRansfemoral aOrtic vaLve implantation (CONTROL)**	Leviev Heart Center, Sheba Medical Center (Israel)	Observational Study	Multiple device-based	Private	Individual	9 centres in France, Italy, California, Canada, Germany, Israel	no	March 2007 to December 2014		3138 patients	Age, Gender	yes	BMI; comorbidities; CVD history; STS score; Echocardiographic parameters; anatomic data (e.g. minimal luminal diameters); info re procedure (e.g. sheath characteristics)	yes
EU	**SAVI-TF (Symetis ACURATE neo Valve Implantation Using Transfemoral Access) Registry**	PI: H. Möllmann, Kerckhoff Klinik Sponsors: Symetis SA	Registry	Single device-based	Private	Individual	24 centres in Germany, Italy, Switzerland, UK (London), Poland	no	From October 2014 to April 2017		1000 patients	Age, Gender	yes	Logistic EuroSCORE I and II; STS score; info re device; info re procedure; Echocardiographic parameters	no
EU	**Edwards SAPIEN™ Aortic Bioprosthesis Multi-Region Outcome Registry XT (SOURCE XT REGISTRY)**	PI: Olaf Wendler, FRCS Sponsors: Edwards Lifesciences	Registry	Single device-based	Private	Individual	99 sites in 17 countries	yes	From 2010		2954 participants	Age, Gender	yes	Logistic Euro-SCORE I; STS score; NYHA class; angina CCS clas; diagnosis; CVD history; comorbidities; CVD; fail conditions; echocardiographic data; LVEF; info re procedure; anesthesia; info re device (e.g. valve size)	yes
EU	**International Multicenter Portico Transcatheter Aortic Valve Implantation System Study**	Sponsored by Abbott (formerly St. Jude Medical)	Observational Study	Single device-based	Unknown	Individual	12 centres across Europe and Australia	no	December 2011-September 2015		222		yes	BMI; NYHA class; frailty indices; comorbidities; cardiac measures; STS score; physical performance (a 5-m gait speed test, grip strength testing, Katz Index of Independence in Activities of Daily Living); Modified Rankin Scale; cardiac history; CVD (e.g. AF, pacemaker); anesthesia; guidewire selection ; postprocedure medications	yes
EU	**DISCOVER - A Registry to Evaluate the Direct Flow Medical Transcatheter Aortic Valve System**	PI: C. Naber, E. Krankenhaus Essen GmbH Sponsor: Direct Flow Medical, Inc.	Registry	Single device-based	Private	Individual	Germany, Italy; France, UK	yes	From 2013		1000 participants (estimated)	Age, Gender	yes	BMI; Logistic EuroSCORE; comorbidities; NYHA class; CVD history; Echocardiographic and CT parameters; info re procedure and device	no

RWD Source Content										
ource Use	Health Outcomes		Type of DIAGNOSIS classification	Type of PROCEDURE classification	Medical Device		Comparator/ comparison	Other variables	Comments	References or links
Which variables	Health Outcome Data available	Which variables			Is MD traceable?	Code				
Length of stay	yes	Mortality; stroke; bleeding; other complications; pacemaker dependency	no	no	yes	Corevalve, Directflow, Lotus, Portico, Sapien, Sapien XT, Symetis, Other	No		Study approach: All patients in whom TAVI was attempted at participating centers	https://clinicaltrials.gov/ct2/show/NCT02713932?term=NCT02713932&rank=1
Length of stay; type of procedure; antithrombotic treatment	yes	Mortality (in-hospital; 30 days); complications; AMI; permanent pacemaker	no	no	no	SAPIEN XT, Edwards SAPIEN e CoreValve and next generation prostheses: EvolutR, SAPIEN 3, Acurate, Lotus, Direct Flow, Portico, JenaValve, Engager	New and old generation prostheses	Ethnicity		Seccareccia, F., Tarantini, G., Bedogni, F., Berti, S., Santoro, G., Tamburino, C., ... & D'Errigo, P. (2017). OBSERVANT II: Studio osservazionale per la valutazione di efficacia delle procedure transcatetere con dispositivi di nuova generazione nel trattamento della stenosi aortica sintomatica severa. Protocollo di studio. Giornale Italiano di Cardiologia, 18(6), 14S-26S.
	yes	procedural results (e.g. success; CoreValve-in-CoreValve; CoreVlave migration; conversion to surgery); mortality; stroke; complications; re-hospitalization; stroke; new pacemaker	no	no	yes	Corevalve	No. Possible to compare route access			Petronio AS, De Carlo M, Bedogni F, ...& Colombo A. 2-year results of CoreValve implantation through the subclavian access: a propensity-matched comparison with the femoral access. J Am Coll Cardiol. 2012; 60:502-7. Tamburino C, Capodanno D, Ramondo A,.....& Ussia GP. Incidence and predictors of early and late mortality after transcatheter aortic valve implantation in 663 patients with severe aortic stenosis. Circulation. 2011; 123:299-308
Length of stay	yes	Mortality (in-hospital; within 10 years); complications; stroke; pacemaker; device interventions	no	no	yes	CoreValve Evolut R	Yes. Device vs device			https://clinicaltrials.gov/ct2/show/record/NCT01007474?term=NCT01007474&rank=1
Length of stay	yes	Procedural success rate; in-hospital beeding; mortality (in-hospital and 1-month); ischemic attacks or stroke; complications	no	no	no		No. Possible to compare route access		procedure-based	Cortese, B., Rigattieri, S., Aranzulla, T. C., Russo, F., Latib, A., Burzotta, F., ... & Di Palma, G. (2018). Transradial versus transfemoral ancillary approach in complex structural, coronary, and peripheral interventions. Results from the multicenter ancillary registry: A study of the Italian Radial Club. Catheterization and Cardiovascular Interventions, 91(1), 97-102.
	yes	Mortality (in-hospital and post); complications (intra-procedure and post); aortic regurgitation; pacemaker implant (VARC-2)	no	no	yes	NA	No			Dall'Ara G, Saia F, Moretti C, et al. & Marzocchi A. Incidence, treatment, and outcome of acute aortic valve regurgitation complicating percutaneous balloon aortic valvuloplasty. Catheter Cardiovasc Interv. 2017 Mar 1;89(4):E145-E152. doi: 10.1002/ccd.26378.
	yes	Mortality; complications; in-hospital and 30-day stroke, pacemaker implantation, aortic regurgitation, complications (VARC 2)	no	no	yes	Lotus valve	No			Montone RA, Testa L, Fraccaro C, ...& N, Bedogni F. Procedural and 30-day clinical outcomes following transcatheter aortic valve replacement with lotus valve: Results of the RELEVANT study. Catheter Cardiovasc Interv. 2017 Dec 1;90(7):1206-1211. c. Epub 2017 Feb 1. PubMed PMID: 28145039.
length of stay; type of procedure; aortography or echocardiography following regurgitation	yes	Mortality (intra-operatory, in-hospital, within 7 years); complications (in-hospital)	no	no	no		No. Possible to compare route access		follow-up was conducted either by clinic visits or telephone consultations	Ruparelia, N., Latib, A., Buzzatti, ... & Tanaka, A. (2016). Long-term outcomes after transcatheter aortic valve implantation from a single high-volume center (the Milan experience). The American journal of cardiology, 117(5), 813-819.
Length of stay; In-hospital costs; hospital costs for TAVI and surgical AVR (including costs of hospitalization, drugs and devices); Follow-up costs (1 year) including new hospital admissions, outpatient clinic and drugs	yes	Mini Mental State Examination (MMSE) (baseline, 3m, 12m); hospital Anxiety and Depression Scale (HADS)(baseline, 3m, 12m); Minnesota Living with Heart Failure Questionnaire (MLHFQ)(baseline, 3m, 12m); EQ-5D; VAS (visual analogic scale) Myocardial infarction, stroke and pacemaker (30-day, 12m, up to 2-year (longest available follow-up)); Complications	no	no	yes	TAVI: Edwards Sapien XT, Corevalve, Acurate-TA AVR: all kind of commercially available prosthesis (stented, stentless, mechanical)	Yes. Device vs device; device vs SAVR			https://clinicaltrials.gov/ct2/show/record/NCT01852552?term=NCT01852552&rank=1
	yes	Mortality	no	no	no		Yes. SAVR	hospital characteristics		González-Saldivar H, Rodriguez-Pascual C, et al., and Influence of the Severe Aortic Stenosis Diagnosis (IDEAS) Investigators. Comparison of 1-Year Outcome in Patients With Severe Aorta Stenosis Treated Conservatively or by Aortic Valve Replacement or by Percutaneous Transcatheter Aortic Valve Implantation (Data from a Multicenter Spanish Registry). Am J Cardiol. 2016 Jul 15;118(2):244-50. doi: 10.1016/j.amjcard.2016.04.044. Epub 2016 May 5. PubMed PMID: 27239021.
length of stay, pre-intervention length of stay	yes	Inhospital mortality; complications; re-hospitalization	ICD 10	ICD 10	no		Yes. SAVR if identifiable through ICD 10	type of funding, hospital		https://www.mscbs.gob.es/estadEstudios/estadisticas/cmbdhome.htm
	yes	Mortality; new major cardiovascular events (e.g. myocardial infarction, stroke); re-hospitalization for heart failure; stenosis severity; hemodynamic; Functional outcome: (changes in Duke Activity Score Index and the 6-min walk test distance during follow-up)	no	no			No	Info re hospital		https://www.registroactividadshci.es/
Procedural time; Fluoroscopy time; procedural approach	yes	Mortality; immediate implant success; procedure-related complications; in hospital complications; other complications; aortic regurgitation	no	no	yes	Medtronic CoreValve and Edwards SAPIEN	Yes. Device vs device	Type of room		Sabaté M, Cánovas S, García E, Hernández Antolín R, Maroto L, Hernández JM, et al. In-hospital and mid-term predictors of mortality after transcatheter aortic valve implantation: data from the TAVI National Registry 2010–2011. Rev Esp Cardiol (Engl Ed). 2013;66:949–58.

length of stay	yes	Mortality; complications pacemaker; aortic regurgitation	no	no	yes	CoreValve	No. Possible to compare route access			González-Ferreiro, R., Muñoz-García, A. J., López-Otero, D., Avanzas, P., Pascual, I., Alonso-Briales, J. H., ... & Morís, C. (2017). Prognostic value of body mass index in transcatheter aortic valve implantation: a "J"-shaped curve. International journal of cardiology, 232, 342-347.
procedural approach	yes	Mortality; infection-related intracardiac shunts (IRICS) following TAVI; complications after TAVI (e.g. aortic regurgitation, pacemaker implantation) (VARC-2)	no	no	no		Possible to compare Balloon-expandable and Self-expanding valves			Amat-Santos, I. J., Rojas, P., Stella, P. R., Nombela-Franco, L., Lezáun-Burgui, R., Munoz-Garcia, A. J., ... & Kooistra, N. H. (2018). Intracardiac Shunts Following Transcatheter Aortic Valve Implantation: A Multicentre Study. EuroIntervention: journal of EuroPCR in collaboration with the Working Group on Interventional Cardiology of the European Society of Cardiology.
Length of stay, ICU length of stay; Pre-procedural costs; Procedural costs (except Kit); Hospitalization costs; Post-procedural and complications costs	yes	Mortality (in-hospital, within 1 year); stroke; need pacemaker; complications; EQ5D; QALYs;	no	no	yes	Edwards SAPIEN, Medtronic-CoreValve	Yes. Device vs device		Resource consumption during index hospitalization was collected at each center by the local investigators; after discharge, resource use was collected through a patient logbook	Ribera, A., Sîlof, J., Andrea, R., Falces, C., Gutiérrez, E., del Valle-Fernández, R., ... & Altisent, O. A. J. (2015). Transfemoral transcatheter aortic valve replacement compared with surgical replacement in patients with severe aortic stenosis and comparable risk: Cost–utility and its determinants. International journal of cardiology, 182, 321-328.
Length of stay; procedural approach	yes	Mortality; valvular hemodynamic deterioration; complications (e.g. stroke, bleeding, new pacemaker implantation, acute kidney injury, and infections); paravalvular regurgitation; mean gradient at 30 days	No	No	yes	Edwards Lifesciences (Sapien XT/S3) Medtronic CoreValve/Evolut-R 2,155 (32.1) Other	Yes. Device vs device			https://www.clinicaltrials.gov/ct2/show/NCT01777828 slides on https://sfcardio.fr/sites/default/files/pdf/Lebreton.pdf
Length of stay	yes	Follow-up (componenti di cura, medico-social)	ICD 10	French CCAM classification	no		Yes. SAVR	Hospital	Link refers to discharge document for admission longer than 24 hrs	https://www.has-sante.fr/portail/jcms/c_1777678/fr/ https://www.has-sante.fr/portail/upload/docs/application/pdf/2014-11/document_sortie_-_analyse_bibliographique.pdf
Procedural approach	yes	Mortality; Device success; safety endpoint; Major stroke; complications (VARC-2); Pacemaker implantation; aortic regurgitation; Two valve implantation	No	No	yes	Edwards S/XT, CoreValve, S3	Yes. Device vs device		Latest published results pertain to 2015. We assume the dataset is ongoing	Arai, T., Lefèvre, T., Hovasse, T., ... & Bouvier, E. (2017). Incidence and predictors of coronary obstruction following transcatheter aortic valve implantation in the real world. Catheterization and Cardiovascular Interventions, 90(7), 1192-1197.
Length of stay	yes	Mortality; complications; MI; acute kidney injury; any stroke					TAVI vs BAV		Study participants selected by procedures	Faurie, B., Abdellaoui, M., Wautot, F., Staat, P., Champagnac, D., Wintzer-Wehekind, J., ... & Monségu, J. (2016). Rapid pacing using the left ventricular guidewire: Reviving an old technique to simplify BAV and TAVI procedures. Catheterization and Cardiovascular Interventions, 88(6), 988-993.
Procedural access	yes	Mortality; Valve performance (30 days, 1 year); Patient-prosthesis mismatch; Ellipticity index at 30 days; VARC-2 endpoints			yes	Edwards Sapien 3, Medtronic Evolut R, and Boston Lotus in BAV patients. Boston Acurate Neo, Abbott Portico, and Direct Flow prosthesis	Yes. Device vs device			https://www.clinicaltrials.gov/ct2/show/NCT03495050?term=NCT03495050&rank=1
	yes	Rupture after surgery, causes of device failure, mortality, follow up data	ICD	OPS	yes	Medtronic CoreValve and the EdwardsSapien XT valve	Yes. Device vs device		institutional database	Abdel-Wahab, M., Comberg, T., Büttner, H. J., El-Mawardy, M., Chatani, K., Gick, M., ... & Neumann, F. J. (2014). Aortic regurgitation after transcatheter aortic valve implantation with balloon-and self-expandable prostheses: a pooled analysis from a 2-center experience. JACC: Cardiovascular Interventions, 7(3), 284-292.
	yes	Mortality, Morbidity	ICD	OPS	yes		Unknown		-sign up for access -no further data collection	https://www.dgthg.de/de/Register
procedure approach; procedure time; duration of mechanical ventilation; ICU stay; hospital stay; outpatient visits; time from incision to closure, fluoroscopy time; Employment as well as disability and reduction of earning capacity	yes	5 year follow up data: Mortality, Morbidity, Quality of Life	ICD	OPS	yes	Edwards Lifesciences, Medtronic CoreValve, Symetis SA, JenaValve	Yes. Device vs device		-anonymized, **includes german TAVI registry!** (Discontinued in 2010) -prospective, controlled, 5-year observational multicenter registry, and a real world investigation with only one exclusion criterion, the absence of patients' written consent. -TAVI Registry: The registry stopped inclusion in June 2010; after that all patients were included in the prospective German Aortic Valve Replacement Registry. - sign up for access! Included in AQUA Quality reports	official website (in German) https://www.aortenklappenregister.de/ clinical trial: https://clinicaltrials.gov/ct2/show/NCT01165827 reference: Beckmann, A., Hamm, C., Figulla, H. R., Cremer, J., Kuck, K. H., Lange, R., ... & Beyersdorf, F. (2012). The German Aortic Valve Registry (GARY): a nationwide registry for patients undergoing invasive therapy for severe aortic valve stenosis. The Thoracic and cardiovascular surgeon, 60(05), 319-325.
care information & costs	yes	quality of life	ICD	OPS	yes		Yes. Device vs device		anonymized	http://www.kompetenznetz-ahf.de/forschung/register-biobank/
lenght and information on operation, duration of hospital stay	yes	mortality, follow up data	ICD	OPS	yes		Yes. Device vs device		free acces for qualityreports	https://www.aqua-institut.de/ https://sqg.de/front_content.php?idart=106 NEW INFORMATION: https://iqtig.org/qs-berichte/qualitaetsreport/
length of stay	yes	mortality + causes	ICD	OPS	yes		Yes. Device vs device		multi-center	NCT02127580 https://clinicaltrials.gov/ct2/show/NCT02127580
length of stay	yes	mortality + causes, morbidity	ICD	OPS	yes		Yes. Device vs device		prospective, multi-center	https://clinicaltrials.gov/ct2/show/NCT02760771

	yes	mortality, follow up data	ICD	OPS	yes	CURATE neo TA delivery system	No		multi-center	https://clinicaltrials.gov/ct2/show/NCT02950428
duration of hospital stay, lenght and information on operation	yes	in hospital mortality	ICD	OPS	yes		Yes. Device vs device		replaces AQUA?	Institute für Qualitätssicherung und Transparenz im Gesundheitswesen www.iqtig.org/
relevant costs (operation), duration of hospital stay	yes	mortality	ICD	OPS	yes		Yes. Other surgeries		120€ for data on operation?	https://www.destatis.de/DE/Startseite.html, https://www.g-drg.de/
lenght of operation	yes	mortality, follow up data	ICD	OPS	yes		Unknown		multi-center	
lenght of operation, duration of stay	yes	mortality, follow up data	ICD	OPS	yes		No		multi-center	https://dgk.org/
	yes	mortality, follow up data	ICD	OPS	yes		No		multi-center, patients can be enrolled retrospectively	
	yes	mortality	ICD	OPS	yes		Yes. Device vs device		Cohort	
	yes	mortality	ICD	OPS	yes		Yes. Device vs device		Cohort or Registry?	
	yes	mortality, follow up data	ICD	OPS	yes		Yes. Device vs device		single center	https://www.kerckhoff-klinik.de/startseite/
Medication used, procedural details	yes	mortality, follow up data (telephone interviews)	ICD	OPS	yes	CoreValve, CoreValveE, Sapien XT, Sapien S3, Lotus	Yes. Device vs device		plan to share data is undecided	https://clinicaltrials.gov/ct2/show/NCT02289339
duration of pocedure	yes	mortality, follow up data (telephone interviews)	ICD	OPS	yes		Yes. Device vs device		single center	
prodecure costs	yes	mortality, EQ-5D questionnaire	ICD	OPS	yes		Yes. Device vs device		single center, 2463 questionnaires answered, cost analyses of different procedures	https://www.drks.de/drks_web/navigate.do?navigationId=trial.HTML&TRIAL_ID=DRKS00000797
days in hospital, days in intensive care	yes	mortality, follow up data	ICD	OPS	yes		Yes. Device vs device		single center	
costs data available: operating room, including anasthesia; hospital stay, including ICU and surgical ward; diagnostic, radiology and laboratory; including diagnostics	yes	mortality, follow up data	ICD	OPS	yes		Yes. Device vs device		single center, data retrospectively collected from electronic patient data	
	yes	mortality, follow up data	ICD	OPS	yes		Yes. Device vs device		single center	
	yes	mortality, follow up data	ICD	OPS	yes		Yes. Device vs device		single center, data available on reasonable request	corresponding author: Gerhard Schymik
	yes	mortality, follow up data	ICD	OPS	yes		Yes. Device vs device		single center	https://clinicaltrials.gov/ct2/show/NCT02162069
type of procedure	yes	in hospital mortality	ICD	OPS			Unknown		volunatry, numbe of procedures counted rather than individual patients	https://www.dgthg.de/de/dgthg_leistungsstatistik
type of procedure	yes	mortality, morbidity, follow up data	ICD	OPS	yes		Unknown			

type of procedure	yes	mortality, morbidity	ICD	OPS			Unknown		combines databases	https://www.herzstiftung.de/herzbericht
type of procedure	yes	mortality, morbidity	ICD	OPS			Yes. Device vs device			
type of procedure	yes	mortality, morbidity	ICD	OPS			Unknown			https://www.kompetenznetz-ahf.de/forscher/forschen-mit-uns/forschungsbasis-nationales-register/
Length of stay; procedural approach	yes	Mortality during hospitalisation; pacemaker implantation; complications; aortic regurgitation	Unknown	Unknown	yes	Sapien/Sapien XT (Edwards Lifesciences), CoreValve (Medtronic devices), Portico (St. Jude), Direct Flow device (Direct Flow Medical), or JenaValve (JenaValve)	Yes. Device vs device	Hospital identifier /number		Datasets available http://www.ucl.ac.uk/nicor/data/datasets Data Access Request Form - Audit data https://www.hqip.org.uk/national-programmes/accessing-ncapop-data/#.XEb2mlX7RhE
length of stay (intensive, intermediate, general)	yes	cariovascular mortality, Major Adverse Cardiac and Cerebrovascular Events (30 days, one year), VARC efficacy endpoint (one year), NYHA Class (one year)	No	No	yes	Medtronic CoreValve® (Medtronic Inc., USA), Edwards SAPIEN XT (Edwards Lifesciences, CA, USA), Symetis Acurate TA™ (Symetis,Switzerland), JenaValve (JenaValve Technology GmbH, Germany) and the Portico™ THV (St. Jude Medical MN, USA)	Yes. Device vs device		Several articles mentioned a "Bern TAVI registry", one article stated that the registry was now included in the national registry.	https://www.swisstavi.ch/
procedural access	yes	30 day mortality, morbidity (MI, pacemaker, stroke)	Unknown	Unknown	yes	(the SAPIEN valve or the CoreValve)	Yes. Device vs device			
procedural access	yes	Quality of life (SF-12 / SF-36), [optional for Meetbaar Beter in 2016]; Bleeding (30 days), Kidney insuffience (30 days), Mortality (30 days and 1 year)	Unknown	Unknown	no		No			http://www.ncdr.nl/
Length of stay	yes	Bleeding VARC-2 and complications, mortality	Unknown	Unknown	yes	(Medtronic CoreValve and the Edwards SAPIEN	Yes. Device vs device			https://www.ncbi.nlm.nih.gov/pubmed/28761674
Procedure approach; outpatient visits and inpatient stays; procedural type	Yes	mortality, early morbitidy (CPPV>24t, MCS po, Renal Failure, stroke, deep infection, haemorrhage), quality of life PROMs	Unknown	Unknown	No		Unknown		Limited possibility to extract data due to language barriers	https://legeforeningen.no/PageFiles/20098/Heart%20Surgery%20in%20Norway%202014.pdf in Norwegian: https://www.kvalitetsregistre.no/sites/default/files/4_arsrapport_2017_hjertekirurgi.pdf
	yes	Mortality; Frequency of (patients with) abnormal aortic valve bioprosthesis leaflet mobility and morphology (At least 21 days post-procedure) reduced leaflet motion	No	No	yes	(CoreValveTM (Medtronic, MN, USA), EvolutRTM (Medtronic, MN, USA), LotusTM (Boston Scientific, USA), PorticoTM (St. Jude Medical, MN, USA), Sapien 3TM (Edwards Lifesciences, CA, USA)	Yes. Device vs device		It is a single centre study, but included for relevance and because Rigshospitalet is an important centre for TAVR and TMVR	https://clinicaltrials.gov/ct2/show/NCT02426307?term=NCT02426307&rank=1
procedural approach	yes	Mortality; incidence of PVE; complications due to PVE; surgery	No	No	yes	Medtronic CoreValve system	No			Olsen NT, De Backer O, Thyregod HG, Vejlstrup N, Bundgaard H, Søndergaard L, Ihlemann N. Prosthetic valve endocarditis after transcatheter aortic valve implantation. Circ Cardiovasc Interv. 2015 Apr;8(4). pii: e001939. doi: 10.1161/CIRCINTERVENTIONS.114.001939. PubMed PMID: 25873728.

Lenght of stay	yes	Mortality (30days, 1 year); complications		NOMESCO	yes	CoreValve, Portico; EvolutR, Portico; Lotus; Edwards	Yes. Device vs device		Each hospital submits data to their local database (the East Denmark Heart Registry [EDHR] or the West Denmark Heart Registry [WDHR] electronic database). All procedures, but with a selected set of data variables, are subsequently extracted from the EDHR and WDHR and reported to the DHR.	Özcan, C., Juel, K., Lassen, J. F., von Kappelgaard, L. M., Mortensen, P. E., & Gislason, G. (2016). The Danish heart registry. Clinical epidemiology, 8, 503.
Length of hospital stay; duration of procedure; procedural approach	yes	Implantation outcomes; periprocedural complications and in operating room and (e.g. effective valve implantation, valve regurgitation,pacemaker, cardiogenic shock). Test at discharge (e.g. echocardiography); aortic valve regurgitation,pacemaker,MI, complications. Mortality. Follow-up at 1 month, 6 month, 1 year after TAVI; rehospitalisation; patient's health condition (NYHA, CCS, NT, 6-min walk test; EQ-5D; aortic valve regurgitation; pacemaker)	ICD-10 (I35.0)	ICD-9 (35.0)	yes	ICD-9 (35.05, 35.06) Medtronic Corevalve/Edwards Sapien/Edwards Sapien XT/other	Yes. Device vs device			https://poltavi.pl/
Length of hospital stay; duration of procedure; procedural approach	yes	Mortality	ICD-10 (I35.0)	ICD-10 (I35.0)	yes	ICD-9 (35.05, 35.06)	Yes. SAVR if identifiable though ICD-10			hospital data, papers
	yes	Mortality	ICD 10 (I35.0)	ICD 9 (35.96)	yes	ICD 9 (35.96)	Yes. SAVR if identifiable though ICD-9			hospital data, papers
	yes	Comprehensive geriatric assessment (Baseline, 3 months); TAVI related hospitalization, nursing home admission;			yes	Edwards SAPIEN XT	No		- Only TAVI patients aged 80+ years - CGA is an array of several different assessments with regard to frailty, comorbidities, administrative data (Silver code), Quality of life etc.	https://clinicaltrials.gov/ct2/show/NCT01991444
Length of stay; Relative costs of TAVI including hospitalization	yes	At 30 days: all-cause mortality, VARC complications, permanent pacemaker implantation, stroke, re-hospitalisation due to cardiac reasons; short-form-12 quality of life questionnaire			yes	SAPIEN 3 transcatheter heart valve (THV; Edwards Lifesciences, Irvine, CA)	No			https://clinicaltrials.gov/ct2/show/NCT02404467 Barbanti, M., Baan, J., Spence, M. S.,, ... & Vis, M. (2017). Feasibility and safety of early discharge after transfemoral transcatheter aortic valve implantation–rationale and design of the FAST-TAVI registry. BMC cardiovascular disorders, 17(1), 259.
Length of stay	yes	Perioperative complications; mortality; stroke; AMI; Mitral regurgitation; pacemaker implantation; re-operation			yes	NeoChord DS 1000 (NeoChord, Inc., Minneapolis, MN, USA)	No			Colli, A., Manzan, E., Rucinskas, K., ... & Gerosa, G. (2015). Acute safety and efficacy of the NeoChord procedure. Interactive cardiovascular and thoracic surgery, 20(5), 575-581.
procedural time and details of procedural requirements. post-procedural medication requirements; time to discharge and location (home or extended care rehabilitation facility)	Yes	Post procedure (30days) mortality, stroke, MI, device dysfunction, life threatening bleeding, renal failure, sepsis, arrhythmia; City Cardiomyopathy Quality of life score; rehospitalisation or reintervention in 30day follow up	Unknown	Unknown	yes	(Tendyne Mitral valve system)	No			https://clinicaltrials.gov/ct2/show/NCT02321514?term=NCT02321514&draw=1&rank=1
Length of stay	yes	mortality; procedural outcomes (bleeding, need for additional procedures)	Unknown	Unknown	yes	Edwards balloon-expandable valve or Medtronic CoreValve®)	Yes. Device vs device		(also non TAVI patients in registry)	Van Mieghem, N. M., Dumonteil, N., Chieffo, A., Roux, Y., Van Der Boon, R. M., Giustino, G., ... & Marcheix, B. (2016). Current decision making and short-term outcome in patients with degenerative aortic stenosis: the Pooled-RotterdAm-Milano-Toulouse In Collaboration Aortic Stenosis survey. EuroIntervention, 11(11), e1305-13.
ICU stay, Length of stay; procedural approach	yes	Procedural outcome: device success; Outcome at 30 days: Mortality, stroke, permanent pacemaker			yes	e Lotus Valve System (Boston Scientific, MA, USA)	No			De Backer, O., Götberg, M., Ihlberg, L., Packer, E., Savontaus, M., Nielsen, N. E., ... & Eskola, M. (2016). Efficacy and safety of the Lotus Valve System for treatment of patients with severe aortic valve stenosis and intermediate surgical risk: results from the Nordic Lotus-TAVR registry. International journal of cardiology, 219, 92-97.
Length of stay; procedural approach	yes	Mortality (in-hospital, 30 day); complications (e.g. MI, stroke); adverse Events in Relation to baseline parameters; pacemaker implantation	no	no	yes	Edwards SAPIEN THV (SAPIEN XT or SAPIEN 3)	Yes. Device vs device			https://clinicaltrials.gov/ct2/show/study/NCT01991431?term=NCT01991431&rank=1
total length of stay; ICU length of stay	yes	Mortality; complications; VARC 2 early safety endpoint at 30-days; VARC 2 at 2 years; NYHA class at 2 years; BARC type 3a-c and type 5a-b, AKI	no	no	yes	Edwards Sapien S3, Edwards Sapien XT, Medtronic Evolut R, Medtronic CoreValve, Direct Flow, Lotus, Portico, Symetis ACURATE Neo	Yes. Device vs device			https://clinicaltrials.gov/ct2/show/NCT01819181

	yes	Mortality (in-hospital, 3 day, 1 year); complications	no	no	yes	Edwards Sapien XT and Sapien S3 ; Medtronic CoreValve and CoreValve Evolut R; Abbott Portico; Symetis ACURATE neo TF; Direct Flow Medical Transcatheter Aortic Valve System; JenaValve Edwards Centera; Lotus (Boston Scientific)	Yes. Device vs device			Eggebrecht, H., Vaquerizo, B., Moris, C., Bossone, E., Lämmer, J., Czerny, M., ... & Scholtz, S. (2017). Incidence and outcomes of emergent cardiac surgery during transfemoral transcatheter aortic valve implantation (TAVI): insights from the E uropean R egistry on E mergent C ardiac S urgery during TAVI (EuRECS-TAVI). European heart journal, 39(8), 676-684.
	yes	Referral rates at 3 months for Intervention (SAVR or TAVI) and type of intervention selected; Outcomes (survival) at 1 year including the time between diagnosis and treatment; emergency admissions	no	no	no		Yes. SAVR		not focused on TAVI or TMVR, but very relevant anyways	https://clinicaltrials.gov/ct2/show/NCT02241447
Length of stay; ICU length of stay; duration of procedure	yes	Mortality; VARC-I endpoint; adverse events; device success; combined safety at 30 days and combined efficacy at 1 year; qualityof life at 1 year (using Short-Form health survey)	no	no	yes	JenaValve	No			https://clinicaltrials.gov/ct2/show/NCT01598844?term=NCT01598844&rank=1
Length of stay	yes	Mortality (in-hospital, 30 days, 1 year); Safety composite of all-cause mortality and disabling stroke; VARC efficacy composite; time related valve safety composite; Grade of paravalvular aortic valve regurgitation	no	no	yes	Lotus	No. But possible to compare Lotus Valve vs Lotus Valve with Depth Guard.			https://clinicaltrials.gov/ct2/show/NCT02031302?term=NCT02031302&rank=1
Length of stay; ICU length of stay; procedure time; fluoroscopy time; procedural access	yes	Mortality; stroke; complications; VARC-2 endpoints, permanent pacemaker insertion; procedural complications; functional status, and echocardiographic assessment of valve function	no	no	yes	SAPIEN 3	No. Possible to compare route access			Wendler, O., Schymik, G., Treede, H., ... & Vahanian, A. (2017). SOURCE 3 registry: design and 30-day results of the European postapproval registry of the latest generation of the SAPIEN 3 transcatheter heart valve. Circulation, 135(12), 1123-1132.
Length of stay; procedural approach (access site)	yes	TAVI and TMVR (peri) procedural outcomes and complications Mortality (in hospital, 1 month, 1 year); VARC endpoint: MI; aortic regurgitation; pace maker; re-hospitalization (after 1 month, 1 year); NYHA at 1 month & 1 year; EuroQol 5D at 1 month & 1 year	no	no	yes	Medtronic Corevalve; Edwards Sapien XT; Other manufacturer	Yes. Device vs device			https://www.escardio.org/Research/Registries-&-surveys/Observational-research-programme/TransCatheter-Valve-Treatment-TCVT-Registry
Length of stay	yes	(Peri) Procedural complications; Mortality (30 days, 6monts, 1 year); stroke; complications	no	no	yes	Medtronic Corevalve	No	region of enrollment		https://clinicaltrials.gov/ct2/show/NCT01676727?term=NCT01676727&rank=1
Procedural approach (access site); fluoroscopy time	yes	Procedural outcome (e.g. need for second valve, pacemaker implantation); At 30 days: perivalvular regurgitation; LVEF; Mortality; complications; stroke; re-hospitalization	no	no	yes	ACURATE neo™ (Boston Scientific, Marlborough, MA, USA)	No. Possible to compare ACURATE valves in bicuspid and tricuspid anatomies		Focus on bicuspid aostic valve	Mangieri, A., Chieffo, A., Kim, W. K., Stefanini, G. G., Rescigno, G., Barbanti, M., ... & Toggweiler, S. (2018). Transcatheter aortic valve implantation using the ACURATE neo in bicuspid and tricuspid aortic valve stenosis: a propensity-matched analysis of a European experience. EuroIntervention: journal of EuroPCR in collaboration with the Working Group on Interventional Cardiology of the European Society of Cardiology, 14(12), e1269-e1275.
Length of stay; procedural approach (access site); fluoroscopy duration	yes	Mortality (Procedural, 30-day); clinical complications defined according to VARC; valve efficacy, safety, and success. Post-implant aortic regurgitation	no	no	yes	Sapien XT (Edwards Lifesciences, Inc., Irvine) CoreValve (Medtronic, Inc., Minneapolis)	Yes. Device vs device			Mylotte, D., Lefevre, T., ... & Thériault-Lauzier, P. (2014). Transcatheter aortic valve replacement in bicuspid aortic valve disease. Journal of the American College of Cardiology, 64(22), 2330-2339.
Length of stay; procedural approach (access site)	yes	Periprocedural outcomes; in-hospital and 30 day outcomes: mortality; VARC-2 endpoints, stroke; pace maker; complications; aortic regurgitation	no	no	yes	Sapien XT	No			Puri, R., Byrne, J., Muller, R., .. & Cerillo, A. (2017). Transcatheter aortic valve implantation in patients with small aortic annuli using a 20 mm balloon-expanding valve. Heart, 103(2), 148-153.
Length of stay; procedural approach (access site); antibiotic prophylaxis;	yes	Infectious Endocarditis (primary outcome); in-hospital outcome (device success, stroke, pace maker implant; aortic regurgitation)	no	no	yes	CoreValve system; Edwards; other	Yes. Device vs device		Patients diagnosedwith definite infectiveendocarditis afterTAVR	Regueiro A, Linke A, et al. &, Rodés-Cabau J. Association Between Transcatheter Aortic Valve Replacement and Subsequent Infective Endocarditis and In-Hospital Death. JAMA. 2016 Sep 13;316(10):1083-92. doi: 10.1001/jama.2016.12347. PubMed PMID: 27623462.
Procedural approach (access site)	yes	At 1 and 6 months: mortality; VARC-2 endpoints stroke; MI; pace maker implantation; complications, regurgitation	no	no	yes	Medtronic CoreValve	No			https://clinicaltrials.gov/ct2/show/NCT01624870
Procedural approach (access site); Fluoroscopic time	yes	Procedural Outcomes (e.g. need for second valve, device success); mortality (30 days, 1 year); MVARC endpoint stroke; complications	no	no	yes	Sapien, Sapien XT, Sapien 3(Edwards); Melody (Medtronic); Lotus (Boston Scientif); Direct Flow (Direct Flow Medical)	Yes. Device vs device			Yoon, S. H., Whisenant, B. K., Bleiziffer, S., Delgado, V., Dhoble, A., Schofer, N., ... & Schmidt, T. (2018). Outcomes of transcatheter mitral valve replacement for degenerated bioprostheses, failed annuloplasty rings, and mitral annular calcification. European Heart Journal.
Procedural approach (access site)	yes	Changes in LVEF over time; dobutamine stress echocardiography examination results; mortality (30-day, follow-up period); VARC 2 complications	no	no	yes	Sapien, Sapien XT, Sapien 3(Edwards); CoreValve (Medtronic); Lotus (Boston Scientif); Direct Flow (Direct Flow Medical);Portico	Yes. Device vs device			https://www.clinicaltrials.gov/ct2/show/NCT01835028 Maes, F., Lerakis, S.., ... & Nombela-Franco, L. (2019). Outcomes From Transcatheter Aortic Valve Replacement in Patients With Low-Flow, Low-Gradient Aortic Stenosis and Left Ventricular Ejection Fraction Less Than 30%: A Substudy From the TOPAS-TAVI Registry. JAMA cardiology, 4(1), 64-70.
Length of stay; procedural approach (access site)	yes	(Peri) procedural complications; VARC endpoints stroke; pacemaker implantation; mortality (30 days); NYHA class at 30 days	no	no	yes	CoreValve (Medtronic); SAPIEN devices (Edwards Lifesciences)	Yes. Device vs device			Dvir, D., Webb, J. G., Bleiziffer, S., Pasic, M., Waksman, R., Kodali, S., ... & Treede, H. (2014). Transcatheter aortic valve implantation in failed bioprosthetic surgical valves. Jama, 312(2), 162-170.

procedural approach (access site)	yes	Mortality; peri-procedural outcomes (e.g. pacemaker implant, VARC complications); Delayed Coronary Obstruction	no	no	yes	CoreValve/Evolut R, Portico, Sapien XT, Sapien 3, Lotus	Yes. Device vs device			Jabbour, R. J., Tanaka, A., Finkelstein, A., Mack, M., Tamburino, C., Van Mieghem, N., ... & Rahhab, Z. (2018). Delayed Coronary Obstruction After Transcatheter Aortic Valve Replacement. Journal of the American College of Cardiology, 71(14), 1513-1524.
procedural approach (access site)	yes	Procedural outcomes (e.g. death, need for second valve, device success); 30 day outcomes: mortality; stroke; complications, VARC-2 endpoints	no	no	yes	Sapien XT, Sapien 3(Edwards); CoreValve (Medtronic); Lotus (Boston Scientif); Evolut R	Yes. Device vs device			Yoon, S. H., Bleiziffer, S.,... & Holy, E. W. (2017). Outcomes in transcatheter aortic valve replacement for bicuspid versus tricuspid aortic valve stenosis. Journal of the American College of Cardiology, 69(21), 2579-2589.
Length of stay; procedural approach (access site)	yes	Mortality (30 days); device success according to VARC2 (24h to 7 days); Hemodynamic performance (24h, 7days and 1year); VARC 2 complication (30 days); stroke; pacemaker implantation (30 days); NYHA class (30 days, 1 year)			yes	CoreValve™ Evolut R™ System (Medtronic)	No			https://clinicaltrials.gov/ct2/show/NCT02592369?term=NCT02592369
Length of stay; procedural approach (access site); Duration of procedure	yes	Periprocedural outcomes; in-hospital mortality and complications, VARC endpoints			yes	Medtronic CoreValve (Medtronic Inc, Minneapolis, MN), Edwards SAPIEN, SAPIEN XT (Edwards Lifesciences, Irvine, CA), or the Direct Flow Valve (Direct Flow Medical, Inc, Santa Rosa, CA)	Yes. Device vs device			Nuis, R. J., Sinning, J. M., Rodés-Cabau, J., ... & Urena, M. (2013). Prevalence, factors associated with, and prognostic effects of preoperative anemia on short-and long-term mortality in patients undergoing transcatheter aortic valve implantation. Circulation: Cardiovascular Interventions, CIRCINTERVENTIONS-113.
	yes	Mortality (30 days, 12 months); rate of clinical endpoints (VARC-2) at 30 days and 12 months; complications (Stroke, Myocardial infarction, Bleeding); procedural success			yes	ACURATE TA™ Transapical Aortic Bioprosthesis	No			https://clinicaltrials.gov/ct2/show/study/NCT02663375
Length of stay	yes	Mortality (in-hospital, 30 days); complications; stroke; myocardial infarction			yes	SAPIEN; SAPIEN XT; SAPIEN 3; CoreValve; Portico; Lotus; Direct Flow; Symetis acurate	Yes. Device vs device			Barbash, I. M., Barbanti, M., Webb, J., ., ... & Buccheri, S. (2015). Comparison of vascular closure devices for access site closure after transfemoral aortic valve implantation. European heart journal, 36(47), 3370-3379. https://slideplayer.com/slide/4894921/
	yes	At 7 days , 30 days, 12 months: mortality (intra-procedure, 30 days); complications (VARC 2); stroke; myocardial infarction. Procedural success; device success (7 days, 12 months)			yes	ACURATE neo aortic	No			https://clinicaltrials.gov/ct2/show/NCT02306226?term=NCT02306226&rank=1
Procedural approach (access site); procedure time, fluoroscopy time	yes	At 30 days and 1 year: Mortality; cardiac death, and stroke; VARC-1 endpoints major vascular complications, major and life-threatening bleeding; permanent pacemaker insertion; procedure and device-related complications; functional status; echocardiographic assessment of the valve and heart function; procedural success; device success (no moderate or severe aortic regurgitation at discharge); frailty			yes	SAPEIN XT	No. Possible to compare route access			https://clinicaltrials.gov/ct2/show/study/NCT01238497?show_locs=Y
Postprocedure medications	yes	Mortality (30 days); At 30 days/1 year: cardiovascular Adverse Events, NYHA Classification at Day 30 ; acute Device Success at 7 days; myocardial infarction, complications; 6-minute walk test, effective orifice area; Pacemaker implantation (VARC definitions)			yes	Portico valve (St. Jude Medical, Plymouth, MN)	No		This study was conducted over 12 sites, including England, but also in Europe and Australia. Should it have been excluded?	Linke, A., Holzhey, D., Möllmann, H., ... & Butter, C. (2018). Treatment of aortic stenosis with a self-expanding, resheathable transcatheter valve: one-year results of the international multicenter portico transcatheter aortic valve implantation system study. Circulation: Cardiovascular Interventions, 11(2), e005206.
	yes	Mortality (30 days); stroke; complications; repeat procedure			yes	Direct Flow Medical® (DFM) prosthesis (Direct Flow Medical, Inc., Santa Rosa, CA, USA)	No			https://clinicaltrials.gov/ct2/show/NCT01845285?term=NCT01845285&rank=1

Supplementary Table 6. Complete list of RWD sources: DA VINCI

N study	Case (disease and/or procedure)	RWD Source Features												
		Name of the source	**Data provider/initiator**	**Type of study**	**Study approach**	**Data Accessibility**	**Aggregation level**	**Coverage (geographical)**	**Data collection ongoing**	**Coverage period**	**Completeness**	**Sample size**	**Socio-Demographic data**	**Clinical/epi Data available**
IT	Splenectomy for splenomegaly	**Retrospective comparative cohort study on Robotic vs laparoscopic splenectomy for splenomegaly**	General and Oncologic Surgery, Morgagni-Pierantoni Hospital	Observational Study	Multiple device-based	Private	Individual	Forlì	no	January 2000 to October 2017	NA	39 patients	Age, Marital status	yes
IT	NA	**AB medica database**	AB Medica	Observational Study	Single device-based	Restricted	NUTS2	Italy	yes	From 2002		20,450 (2018)		yes
IT	Gynecologic Cancer	**Retrospective cohort study of Robotic Surgery in Elderly and Very Elderly Gynecologic Cancer Patients**	Catholic University of Sacred Heart	Observational Study	Disease-based	Private	Individual	Rome	no	September 2013 to April 2017	NA	204 elderly and very elderly patients	Age	yes
IT	colectomy for cancer	**A single-centre retrospective observational study comparing laparoscopic 3D and robotic colectomy for cancer**	Department of General Surgery, Clinica Chirurgica, Ospedali Riuniti, Polytechnic University of Marche	Observational Study	Disease-based	Private	Individual	Ancona	no	June 2013 to September 2014	NA	47 procedures	Age, Gender	yes
IT	tongue tumors	**Prospective, single-center cohort trial of patients with base of tongue tumors treated with transoral robotic surgery**	Department of Otolaryngology, Head Neck Surgery of the Regina Elena National Cancer Institute	Observational Study	Disease-based	Private	Individual	Rome	no	November 2010 to October 2013	NA	13 patients	Age, Gender	yes
IT	lingual tonsillitis	**Trans-oral robotic surgery (TORS) for the treatmentof lingual tonsillitis**	Department of Head-Neck Surgery,Otolaryngology, Head-Neck and OralSurgery Unit, Morgagni PierantoniHospital	Observational Study	Disease-based	Private	Individual	Forlì	no	February 2012 to April 2014	NA	10 patients	Age, Gender	yes
IT	Nipple-Sparing Mastectomy	**Prospective study on Robotic Nipple-Sparing Mastectomy for the Treatment of Breast Cancer**	European Institute of Oncology	Observational Study	Disease-based	Private	Individual	Milan	no	June 2014 to May 2016	NA	24 women (29 procedures)	Age	yes
IT	Mesometrial Resection in Early Cervical Cancer	**A Case-Control Study on Robotic Total Mesometrial Resection versus Laparoscopic Total Mesometrial Resection in Early Cervical Cancer**	Gynecologic Oncologic Unit, Catholic University of the Sacred Heart, Rome and Gynecologic Oncologic Unit, Foundation for Research and Care "Giovanni Paolo II", Catholic University of the Sacred Heart, Campobasso	Observational Study	Disease-based	Private	Individual	Rome and Campobasso	no	July 2013 to August 2015	NA	21 cases, 42 controls		
IT	colectomy	**Prospectively collected institutional databases: Suprapubic approach for robotic complete mesocolic excision in right colectomy**	European Institute of Oncology, Milan and Misericordia Hospital, Grosseto	Observational Study	Disease-based	Private	Individual	Milan and Grosseto	no	July to December 2016	NA	20 patients	Age, Gender	yes
IT	pancreaticoduodenectomy	**Robotic-Assisted Pancreatic Resections**	Division of General and Transplant Surgery, University of Pisa, Pisa, Italy	Observational Study	Single device-based	Private	Individual	Pisa (Italy) University Hospital	no	October 2008 to October 2014,	NA	200 patients	Age, Gender	yes
IT	hysterectomy	**Robotic single-site hysterectomy: two institutions' preliminary experience**	2 institutions: Department of Obstetrics and Gynaecology, IRCCS–Fondazione Policlinico San Matteo and University of Pavia & Department of Obstetrics and Gynaecology, Santa Chiara Hospital of Trento	Observational Study	Single device-based	Private	Individual	Pavia and Trento (Italy)	no	May 2012–June 2013	NA	45 patients	Age	yes
IT	pyeloplasty for ureteropelvic junction obstruction	**Robot-assisted, Single-site, Dismembered Pyeloplasty for Ureteropelvic Junction Obstruction with the New da Vinci Platform: A Stage 2a Study**	two surgery centers: San Raffaele Turro Hospital, Milan & San Luigi Gonzaga Hospital, Orbassano, Turin	Observational Study	Single device-based	Private	Individual	Turin and Milan (Italy)	no	July 2011 to September 2013	NA	30 patients	Age, Gender	yes
IT	thymectomy in patients with clinically early stage thymoma	**Robotic-assisted thymectomy for early-stage thymoma: a propensityscore matched analysis**	Division of Thoracic Surgery, European Institute of Oncology, University of Milan	Observational Study	Disease-based	Private	Individual	Milan	no	1998 to 2017	NA	180 patients of which 28 with robotic surgery	Age, Gender	yes
IT	thymectomy for early-stage thymoma	**Comparing robotic and trans-sternal thymectomy for early-stage thymoma: a propensity score-matching study**	Unit of Thoracic Surgery of the University of Padova	Observational Study	Disease-based	Private	Individual	Padua (Italy)	no	1982 to 2016	NA	164 patients, robotic approach (56 patients)	Age, Gender	yes
Multi-country	laparoscopic parenchymal-preserving liver resections for lesions	**Robotic versus laparoscopic resections of posterosuperior segments of the liver: a propensity score-matched comparison**	2 centres: Ghent University Hospital Medical School & Spoleto General Hospital	Observational Study	Disease-based	Private	Individual	Ghent (BE) and Spoleto (IT)	no	June 2008 and February 2014	NA	36 patients	Age, Gender	yes
IT	Liver Resection	**Traditional versus Robot-Assisted Full Laparoscopic Liver Resection: A Matched-Pair Comparative Study**	San Matteo degli Infermi Hospital	Observational Study	Single device-based	Private	Individual	Spoleto (Italy)	no	January 2008–April 2013	NA	46 patients	Age, Gender	yes
SP	rectal resection	**Database of laparoscopic and robotic rectal resection surgeries**	Sanchinarro Hospital, San PabloUniversity, General Surgery Department, Madrid	Observational Study	Multiple device-based	Private	Individual	Madrid	yes	from 2010 up to March 2017	NA	237 procedures	Age, Gender	yes

SP	esophagectomy for esophageal cancer	**Observational cohort study on robotic esophagectomy for esophageal cancer**	Universidad de Cirugìa Esófago-Gástrica, Servicio de Cirugía General y Aparato Digestivo, Hospital Universitario Marque´s de Valdecilla, Universidad de Cantabria	Observational Study	Disease-based	Private	Individual	Santander	no	September 2011 to June 2014	NA	66 patients	Age, Gender	yes
FR	supraglotticsquamous cell carcinoma	**Multicentre observational study of the French Robotic SurgeryGroup of GETTEC**	Groupe d'Etude des Tumeurs de la Teteet du Cou (GETTEC)	Observational Study	Disease-based	Private	Individual	9 centres in France	yes	From 2008	NA	122 patients	Age, Gender	yes
FR	high risk endometrial cancer	**Retrospective observational study in patients with high risk endometrial cancer who underwent dual docking robotic hysterectomy**	European Hospital Georges-Pompidou	Observational Study	Disease-based	Private	Individual	Paris	no	January 2014 to March 2016	NA	20 patients	Age	yes
FR	Coronary Artery Bypass Graft Surgery	**Association of Robotic Totally Endoscopic Coronary Artery Bypass Graft Surgery and Preliminary Cardiac Enhanced Recovery After Surgery Program: A Retrospective Analysis**	Department of Cardiac Anesthesia and Critical Care	Observational Study	Disease-based	Private	Individual	University hospita in Bordeaux	no	September 2011 to March 2014	NA	71 patients	Age, Gender	yes
FR	thoracoscopic surgery for lung lobectomy	**Prospective surgical database**	Department of Thoracic Surgery, Rouen University Hospital, Rouen, France	Observational Study	Multiple device-based	Private	Individual	Rouen	no	April 2012 - December 2013		28 robot-assisted procedures	Age, Gender	yes
FR	Transoral robotic surgery for squamous cell carcinoma of the upper aerodigestive tract	**Transoral robotic surgery versus conventional surgery in treatment for squamous cell carcinoma of the upper aerodigestive tract**	ENT department of Tours University Hospital	Observational Study	Disease-based	Private	Individual	Tours (France)	no	December 2008 to June 2013	NA	45 patients of which 26 met the inclusion criteria	Age, Gender	yes
FR	segmentectomies	**Perioperative outcomes of video- and robot-assisted segmentectomies**	Department of General and Thoracic Surgery, Rouen University Hospital, Rouen	Observational Study	Other	Private	Individual	Rouen (France)	no	April 2010 to June 2014	NA	17 patients	Age, Gender	yes
DE		Prospective institutional database		Administrative database	Multiple device-based	Unknown	Individual	Alfred Krupp Hospital, Essen, Germany	NA	2010-2014		11	Age, Gender	yes
DE		StuDoQ|Robotik - DGAV-Register	Deutsche Gesellschaft für Allgemein- und Viszeralchirurgie	Registry	Other	Restricted	Individual	Germany	yes	May 2016 - ongoing		2,000		
DE			Head and Neck Cancer Center of the Hubertus Wald University Cancer Center Hamburg, Dept. of Otorhinolaryngology	Observational Study	Single device-based	Restricted	Individual	GER	NA	2012-2013		10 patients	age, gender	yes
DE			Head and Neck Cancer Center of the Hubertus Wald University Cancer Center Hamburg, Dept. of Otorhinolaryngology	Observational Study	Single device-based	Restricted	Individual	GER	NA	since 2011		50 patients	age, gender	yes
DE			Department of Urology, Medical Faculty Heinrich Heine University Duesseldorf	Observational Study	Multiple device-based	Restricted	Individual	GER	no	2008-2016		148 patients	age, gender	yes
DE			clinic for general-, abdominal- and pediatric surgery	Observational Study	Single device-based	Restricted	Individual	GER	no	2010-2015		202 patients	age, gender	yes
DE			different hospitals	Observational Study	Unknown	Restricted	Hospital	GER	no	2010-2015				no
DE			clinic for abdominal-, thoracic and vascular surgery (Gießen/Marburg)	Observational Study	Single device-based	Restricted	Individual	GER	no	2013-2018		151 patients	age, gender	no
DE			University Hospital Heidelberg	Observational Study	Single device-based	Restricted	Individual	GER	no	2013-2015		9 patients	age	yes
DE			Department of Gynecology and Obstetrics, West-German Tumor Center, University of Duisburg-Essen	Observational Study	Single device-based	Restricted	Individual	GER	NA			36 patients	age	yes
DE			clinic for general- and abdominal surgery, Erlangen	Observational Study	Multiple device-based	Restricted	Individual	GER	no	2012-2016		81 patients	age, gender	yes
DE			Department of Urology and Paediatric Urology, Saarland University Medical Centre, Homburg	Observational Study	Multiple device-based	Restricted	Individual	GER	no	2001-2015		114 patients	age, gender	yes

DE		Database of the obligatory external quality control program of the Institute of Quality Assurance Hessen	Institure of Quality Assurance Hessen	Administrative database	Other	Unknown	Hospital	Hessen	yes	2003-ongoing	only ampling		age,gender	yes
DE		Da Vinci XI Resarch Program	German Clinical Trials Register	Observational Study	Single device-based	Restricted	Individual	GER	yes	since 2017		aim: 600 participants	age (> 18 yrs); gender	no
ENG	NA	Hospital Episode Statistics	NHS Direct	Administrative database	Other	Restricted	Individual	England	yes	Inpatient admissions in England from 2004/05 onwards. Outpatient admissions in England from 2004/05 onwards. A& E admissions in England from 2007/08 onwards	Aims to collect all hospital activity funded by the NHS in England. Captures ~99% of these	20 million consultant episodes per year	Age, Gender, Residence	yes
ENG	colorectal surgery for rectal cancer	**Totally robotic rectal resection: an experience of the first 100 consecutive cases**	Department of Minimally Invasive Colorectal Unit, Queen Alexandra Hospital NHS Trust	Observational Study	Single device-based	Private	Individual	Queen Alexandra Hospital, Portsmouth, UK	no	May 2013 to April 2015	NA	100 robotic rectal procedures	Age, Gender	yes
BE	hysterectomy for cervical cancer	Robot-assisted radical hysterectomy in cervical carcinoma: the Belgian experience.	Unknown	observational study	Single device-based	Unknown	individual	multi-center; 5 Belgian centers performing robot-assisted radical hysterectomies	Unknown	July 2007 - January 2014	Unknown - consecutive women	109	Age, gender (all female)	Yes
BE	robotic mital valve repair for degenerative mitral regurgitation (MR)	**Robotic mitral valve repair: a European single-centre experience**	Pole de Recherche Cardiovasculaire, Institut de Recherche Experimentale et Clinique, Université Catholique de Louvain, Brussels, Belgium	Observational Study	Single device-based	Private	Individual	Brussels (Belgium)	no	February 2012 to July 2016	NA	134 patients	Age, Gender	yes
BE	coronary artery bypass grafting surgery	**Robotic-enhanced coronary surgery in octogenarians**	Department of Cardiovascular and Thoracic Surgery, OLV Clinic, Aalst, Belgium	Observational Study	Single device-based	Private	Individual	Aalst (Belgium)	no	July 2002 to September 2015	NA	667 patients, 44 aged 80+	Age, Gender	yes
NL	hiatal hernia repair and redo antireflux surgery	No name	Meander Medical Center, Amersfoort, Netherlands	observational study	Single device-based	Unknown	individual	single institution; Meander Medical Center, Amersfoort, Netherlands	Unknown	January 2011 - July 2017	Unknown	362	Age, gender	Yes
NL	rectal resections	Does robotic rectal cancer surgery improve the results of experienced laparoscopic surgeons? An observational single institution study comparing 168 robotic assisted with 184 laparoscopic rectal resections	Amphia Breda, Breda, The Netherlands	observational study	Other	Unknown	individual	single institution; Amphia Breda, Breda, The Netherlands	Unknown	2005 - 2015 (robot 2012 - 2015 - controls 2005 - 2015)	Unknown	168 robotic assisted with 184 laparoscopic rectal resections	Age, gender	Yes
NL		No name	Meander medical Center, Amersfoort, The Netherlands	observational study	Single device-based	Unknown	individual	single institution; Meander medical Center, Amersfoort, The Netherlands	Unknown	February 2010 - October 2015	Unknown -all consecutive patients	258	Age, gender	Yes
NL	cystectomy	RACE study	Rijnstate hospital, Arnhem, the Netherlands and Radboud University Medical Center, Nijmegen, the Netherlands	observational study	Other	Unknown	individual	multicenter; > 20 Dutch hospitals	No (only FU)	2016-2018	Unknown	370	Age, gender, zipcode residence, municipality of birth	Yes
NL		PROZIB	Netherlands Comprehensive Cancer Organisation (IKNL)	registry	disease-based	Unknown	individual	national coverage (selection of hospitals participated in the collection of PROMS)	Yes	2015-2016	Unknown	Clinical data: ~6000 PROMS: ~ 1800	Age	Yes
NL	Prostatectomy	Prostatectomy registry	Dutch Association of Urology	registry	Other	Private	individual	national coverage	Yes	2010-ongoing	Unknown	>9500	Age	Yes
NL	Cystectomy	Cystectomy registry	Dutch Association of Urology	registry	Other	Private	individual	national coverage	Yes	2010-ongoing	Unknown	>5800	Age, gender	Yes

NL	hysterectomy	Perioperative surgical outcome of conventional and robot-assisted total laparoscopic hysterectomy	Rijnstate hospital, Arnhem, the Netherlands	Observational study	Other	Private	individual	Single institution, Rijnstate hospital Arnhem)	Unknown	2002-2014	Unknown	294 (123 conventional, 171 robot)	Age	Yes
NL		Blazib	Netherlands Comprehensive Cancer Organisation (IKNL)	registry	disease-based	Restricted	individual	National coverage (selection of hospitals (N=55) participated in the collection of PROMS)	Yes	PROMS: 2017-2019	Unknown	clinical data: ~5700 PROMS: ~ 1709	Age, gender, zipcode residence, municipality of birth	Yes
SW	Endometrial Cancer	No name	Sahlgrenska University Hospital, Western Sweden	observational study	Other	Unknown	individual	single center; Sahlgrenska University Hospital, Western Sweden	No	2006 - 2014 (robot all 2011-2014 - controls 2006-2009)	Unknown	137 and 141 women 70 years or older were identified to have undergone open, respectively and robotic surgery	Age, gender (all female)	Yes
SW	hysterectomy	No name	Skane University Hospital, Lund, Sweden	observational study	Single device-based	Unknown	individual	single institution; Skane University Hospital, Lund, Sweden	Unknown	October 2005 - December 2013	Unknown -all women scheduled for robotic hysterectomy between October 2005 and December 2013	949	Age, gender (all female)	Yes
SW	rectal surgery	No name	Danderyd Hospital, Stockholm, Sweden (data from ERAS database)	observational study	Other	Unknown	individual	single institution; Danderyd Hospital, Stockholm, Sweden	Unknown	January 2011 - January 2017 (April 2014 - January 2017 for robotic surgery)	Unknown	119 (72 had robotic surgery)	Age, gender	Yes
DK	NA	**Surgical database at the hospital (ORBIT)**	Herlev Hospital	Observational Study	Single device-based	Private	Individual	Herlev Hospital's Centre for Robotic Surgery	no	September 2008 to July 2013	NA	2,473 procedures	Age	yes
DK	Prostatectomy	**Robot-assisted radical prostatectomy (file #2006-41-6256)**	Department of Urology, Rigshospitalet, Copenhagen, Denmark	Observational Study	Single device-based	Private	Individual	Department of Urology, Rigshospitalet, Copenhagen, Denmark	no	January 2009 to December 2012	NA	239 patients		yes
DK	hysterectomy	**Cost-analysis of robotic-assisted laparoscopic hysterectomy versus total abdominal hysterectomy for women with endometrial cancer and atypical complex hyperplasia**	Copenhagen University Hospital, Herlev, Denmark	Observational Study	Multiple device-based	Private	Individual	Copenhagen		January 2013 to September 2014		202 women treated with robotic-assisted laparoscopic hysterectomy	Age	yes
DK	anti-reflux surgery	**Two years of experience with robot-assisted anti-reflux surgery: A retrospective cohort study**	The Department of Surgery A, Odense University Hospital and The Department of General Surgery, Kolding Hospital	Observational Study	Multiple device-based	Private	Individual	2 centres in Denmark		April 2013 to April 2015		39 patients underwent robotic assisted surgery	Age, Gender	yes
DK	NA	**Danish National Patient Register**		Registry	Other	Restricted	Individual	Denmark		2006–2013				yes
FI	Prostatectomy	**Hospital Care Register for Health Care Local robot-assisted laparoscopic radical prostatectomy (RALP) registry**		Registry	Other	Restricted	Individual	4 university hospitals: Tampere University Hospital, Helsinki University Hospital, Turku University Hospital and Oulu University Hospital	yes	2008-2012	NA	1997 patients	Age	yes
FI	Infrarenal Para-aortic Lymphadenectomy in Gynecological Cancers	**Robotic-Assisted Infrarenal Para-aortic Lymphadenectomy in Gynecological Cancers**	Department of Obstetrics and Gynecology of Tampere University Hospital	Observational Study	Single device-based	Private	Individual	Tampere University Hospital		2009-2016		627 robotic-assisted operations	Age	yes
FI	endometrial carcinoma	**Laparoscopic vs robotic-assisted surgery for endometrial carcinoma in a centre with long laparoscopic experience**	Department of Obstetrics and Gynaecology, Helsinki University Central Hospital	Observational Study	Single device-based	Private	Individual	Helsinki University Central Hospital	no	May 2009 - February 2013		67 robotic procedure	Age	yes

FI	mitral valve repair due to degenerative mitral regurgitation	**Early experience with robotic mitral valve repair with intra-aortic occlusion**	Helsinki University Central Hospital Heart and Lung Center	Observational Study	Single device-based	Private	Individual	Helsinki (Finland)	no	May 2011 to December 2015	NA	142 patients	Age, Gender	yes
PL		DaVinci robotic surgery system hospital prospective registry	Regional Hospital in Wroclaw	Observational Study	Single device-based	Restricted	Hospital	Lower Silesia	yes	2011 -present	1	216 in 2016	Age, Gender, Residence, Year/date of birth	yes
EU	kidney transplantation	No name	European Robotic Urological Society (ERUS) Robot Assisted Kidney Transplant (RAKT) group	observational study	Single device-based	unknown	individual	8 European institutions (Barcelona (Spain); Turkey; Toulouse (France); Halle (Germany); Ghent (Belgium); Homburg/Saar (Germany); Florence (Italy)	No	July 2015 - May 2017	Unknown	120 RAKT patients	Age, gender	Yes
EU		**Assessment of Ventilatory Management During General Anesthesia for Robotic Surgery**	Hospital Israelita Albert Einstein	Observational Study	Multiple device-based	Restricted	Individual	Belgium, Brazil, Germany, Israel, Spain, United States	yes	August 2017 to 2019 (estimated)	NA	500 enrolled estimated	Age, Gender	yes
EU	nephrectomy	Transatlantic Robotic Nephron-sparing Surgery (TRoNeS) study	Unknown	observational study	Single device-based	Unknown	individual	multicenter; three high volume tertiary care centers (Humanitas Clinical and Research Center, Milan, Italy; Onze-Lieve-Vrouw Hospital, Aalst, Belgium; and Swedish Medical Center, Seattle, WA, USA).	Unknown	2010 - 2016	Unknown	635	Age, gender	Yes
EU	kidney transplantation	**robot-assisted kidney transplantation (RAKT) database**	European Robotic Urological Society (ERUS) RAKT group	Observational Study	Disease-based	Private	Individual	Spain, Turkey, France, Germany, Belgium, Italy	no	July 2015 to May 2017	NA	120 patients	Age, Gender	yes
EU	Pancreatoduodenectomy	**A Pan-European Study on Minimally Invasive Versus Open Pancreatoduodenectomy in High-volume Centers**	European Consortium on Minimally Invasive Pancreatic Surgery (E-MIPS)	Observational Study	Disease-based	Private	Individual	7 countries 14 centres	no	February 2017 April 2018	NA	4220 participants	Age, Gender	yes
EU	Gastric Cancer	**A Multi-Institutional Chart Review to Compare the Outcomes of Robotic, Laparoscopic and Open Surgery for Gastric Cancer**	International study group on Minimally Invasive surgery for GASTRIc Cancer - IMIGASTRIC	Registry	Disease-based	Restricted	Individual	25 centres in Italy, Germany, Luxembourg, France + China, Turkey, Japan, USA, Canada	yes	From 2018		Estimated 7000	Gender, Year/date of birth	yes

RWD Source Content												
Clinical/epidemiological Data	**Resource Use**		**Health Outcomes**		**Type of DIAGNOSIS classification**	**Type of PROCEDURE classification**	**Medical Device**		**Comparator/ comparison**	**Other variables**	**Comments**	**References or links**
Which variables	**Resource Use Data available**	**Which variables**	**Health Outcome Data available**	**Which variables**			**Is MD traceable?**	**Code**				
BMI; ASA score; type of disease; spleen cranio-caudal diameter; type of surgery; timing of naso-gastric tube and drain removal and oral intake	yes	hospital stay; operative time	yes	conversion to open surgery; intraoperative blood loss; postoperative morbidity and mortality; time to first flatus;			yes	(EndoWrist™ robotic instruments) and bipolar clamp (Cadiere™)	Yes. Device vs device			Cavaliere D, Solaini L, Di Pietrantonio D, D'Acapito F, Tauceri F, Framarini M, Ercolani G. Robotic vs laparoscopic splenectomy for splenomegaly: A retrospective comparative cohort study. Int J Surg. 2018 Jul;55:1-4. doi: 10.1016/j.ijsu.2018.05.012
type of procedure (i.e. speciality, e.g. prostatectomy, hysterectomy)	yes	length of stay	yes	complications; blood transfusion; mortality; tumor margin; functional recovery			yes		No			http://www.abmedica.it/en
CVD;	yes	hospital stay; type of intervention; operative time;	yes	blood loss and need for blood transfusion; conversions to open surgery; complications; disease relapse; mortality (cause of)					No			Gallotta V, Conte C, D'Indinosante M, Federico A, Biscione A, Vizzielli G, Bottoni C, Carbone MV, Legge F, Uccella S, Ciocchetti P, Russo A, Polidori L, Scambia G, Ferrandina G. Robotic Surgery in Elderly and Very Elderly Gynecologic Cancer Patients. J Minim Invasive Gynecol. 2018 Jul - Aug;25(5):872-877. doi: 10.1016/j.jmig.2018.01.007
BMI; ASA score; anaesthesia time; diagnosis; procedure	yes	hospital stay; costs of procedures; operative time;	yes	complications; pain medications; first flatus; mobilization; post-operativer disease-related group (DRG); solid food			no		Yes. 3D laparoscopic colectomy			Guerrieri, M., Campagnacci, R., Sperti, P., Belfiori, G., Gesuita, R., & Ghiselli, R. (2015). Totally robotic vs 3D laparoscopic colectomy: A single centers preliminary experience. World journal of gastroenterology, 21(46), 13152.
info re procedure; Swallowing; QoL and voice before surgery	yes	hospital stay; operative time;	yes	Intraoperative and postoperative complications; Blood loss; recovery to normal breathing; Swallowing; QoL and voice after surgery (at 6 and 12 months of follow-up)			no	no mention of the version	No			Mercante G, Masiello A, Sperduti I, Cristalli G, Pellini R, Spriano G. Quality of life and functional evaluation in patients with tongue base tumors treated exclusively with transoral robotic surgery: A 1-year follow-up study. J Craniomaxillofac Surg. 2015 Oct;43(8):1561-6. doi: 10.1016/j.jcms.2015.06.024
Clinical history	yes	hospital stay; operative time;	yes	Tissue removed; complications; post-operative symptoms; swallowing functionin the first week one month after surgery; post-operative pain			yes	DaVinci® mouth-gag Storz® Crow-Davis re-tractor	No			Montevecchi F, Cammaroto G, Meccariello G, D'Agostino G, Hsu YS, Galletti B, Vicini C. Trans-oral robotic surgery (TORS) for the treatment of lingual tonsillitis. When conventional therapies fail. Int J Med Robot. 2017 Sep;13(3). doi: 10.1002/rcs.1763
BMI; breast cancer characteristics; info re tumor (e.g. size, location, type and grade); nodal status, receipt of adjuvant chemotherapy, radiation and hormonal therapy	yes	hospital stay; operative time;	yes	conversions to open technique; complications; reoperations, rehospitalizations or implant loss; recurrences or metastatic disease			yes	da Vinci Xi Surgical System® (Intuitive Surgical, Sunnyvale, CA) and da Vinci Si Surgical System® (Intuitive Surgical, Sunnyvale, CA)	No			Toesca A, Peradze N, Manconi A, Galimberti V, Intra M, Colleoni M, Bonanni B, Curigliano G, Rietjens M, Viale G, Sacchini V, Veronesi P. Robotic nipple-sparing mastectomy for the treatment of breast cancer: Feasibility and safety study. Breast. 2017 Feb;31:51-56. doi: 10.1016/j.breast.2016.10.009
	yes	hospital stay; operative time	yes	blood loss					Yes. Laparoscopic Total Mesometrial Resection			Vizzielli G, Lucidi A, Gallotta V, Petrillo M, Dessole M, Fagotti A, Costantini B, Scambia G, Chiantera V. Robotic Total Mesometrial Resection versus Laparoscopic Total Mesometrial Resection in Early Cervical Cancer: A Case-Control Study. J Minim Invasive Gynecol. 2016 Jul-Aug;23(5):804-9. doi: 10.1016/j.jmig.2016.04.006
BMI; info re tumor; previous surgeries;	yes	postoperative hospital stay; operative time;	yes	intraoperative blood losses; conversion to open surgery; postoperative complications; postoperative mortality within 30 days from surgery; oncologic adequacy of resection; tumor diameter			yes	Da Vinci Xi	No			Petz W, Ribero D, Bertani E, Borin S, Formisano G, Esposito S, Spinoglio G, Bianchi PP. Suprapubic approach for robotic complete mesocolic excision in right colectomy: Oncologic safety and short-term outcomes of an original technique. Eur J Surg Oncol. 2017 Nov; 43(11): 2060-2066. doi: 10.1016/j.ejso.2017.07.020
BMI; medical history (e.g. previous abdominal surgery); ASA grade; Charlson comorbidity index; Tumor type	yes	operative time; length of hospital stay	yes	Conversion to open surgery; 30-day and 90-day mortality; severe complications; re-operation; 90-day re-admission; tumor margin; Vein resection; blood transfusion; lymph nodes;Pancreatic Fistula; Delayed Gastric Emptying; Local recurrence; metastasis	NA	NA	no		Yes. Open pancreaticoduodenectomies (OPD)			Boggi, U., Napoli, N., Costa, F., Kauffmann, E. F., ... & Amorese, G. (2016). Robotic-assisted pancreatic resections. World journal of surgery, 40(10), 2497-2506.
height; BMI; previous surgery; diagnosis	yes	total operating time; docking time, console time, intraoperative	yes	intra and post-operative complications; conversion to standard laparoscopy or laparotomy; estimated blood loss; Postoperative pain (VAS); hospitalization	NA	NA	yes	da Vinci Si	No			Bogliolo, S., Mereu, L., Cassani, C., Gardella, B., ...& Spinillo, A., 2015. Robotic single-site hysterectomy: two institutions' preliminary experience. The International Journal of Medical Robotics and Computer Assisted Surgery, 11(2), pp.159-165.
BMI; Presence of stones; symptomatic disease; Type of symptoms; Preoperative biomarkers	yes	Hospital stay; Intraoperative time; Time to catheter removal; Time to drain removal	yes	Conversion rate; intra and post-operative complication; functional and symptomatologic success of surgical treatment; visual analog scale (VAS) of pain; good cosmetic results evaluated using a patient scar-assessment scale (PSAS) and a VAS for cosmesis (Follow-up visits were done at 1, 3, 6, and 12 mo, and then annually)	NA	NA	yes	da Vinci Si	No			Buffi, N. M., Lughezzani, G., Fossati, N., ... & Porpiglia, F. (2015). Robot-assisted, single-site, dismembered pyeloplasty for ureteropelvic junction obstruction with the new da Vinci platform: a stage 2a study. European urology, 67(1), 151-156.
Pathological stage, histological examination; mean size and stage of the tumor; adjuvant radiotherapy; Pulmonary resection	yes	Length of stay; operating time;	yes	in-hospital, 30-day mortality; Post-operative complications; Recurrence; conversion to open surgery	NA	NA	yes	da Vinci S (2006–2009) da Vinci SI (2009–2015), da vinci XI since the end of 2015	Yes. Open thymectomy (OT)			Casiraghi, M., Galetta, D., Borri, A., Tessitore, A., , ... & Spaggiari, L. (2018). Robotic-assisted thymectomy for early-stage thymoma: a propensity-score matched analysis. Journal of robotic surgery, 1-6.
Masaoka stage, World Health Organization (WHO) histological classification, tumour dimension and myasthenia gravis (MG); administration of adjuvant treatment	yes	operative time, day of drain removal and length of hospital stay; operation and the hospital stay costs; postoperative stay	yes	complications, conversion or additional ports or accesses; Intraoperative blood loss; Recurrence,	NA	NA	no	no mention of the version	Yes. Median sternotomy			Marulli, G., Comacchio, G. M., Schiavon, M., ... & Rea, F. (2018). Comparing robotic and trans-sternal thymectomy for early-stage thymoma: a propensity score-matching study. European Journal of Cardio-Thoracic Surgery, 54(3), 579-584.
year of operation, number of lesions, total mean size of lesions, previous abdominal surgery, and neoadjuvant chemotherapy; Indication for resection; Pathology (malignant) comorbidity; ASA score	yes	type of operation; Postoperative stay	yes	Blood loss; complication; 30-day mortality; conversion	NA	NA	yes	Da Vinci S and Si Surgical System	Yes. Laparoscopic resections of posterosuperior segments of the liver			Montalti, R., Scuderi, V., Patriti, A., Vivarelli, M., & Troisi, R. I. (2016). Robotic versus laparoscopic resections of posterosuperior segments of the liver: a propensity score-matched comparison. Surgical endoscopy, 30(3), 1004-1013.
BMI; ASA score; Previous history of a bdominal surgery; Previous history of UGI surgery,tumor characteristics;	yes	operative time; length of hospital stay; Type of liver resection; Duration of portal triad clamping	yes	blood loss, transfusions; conversion rate, morbidity, mortality; Severity of complications	NA	NA	yes	da Vinci S	Yes. Traditional laparoscopic liver resection		Each patient was matched to a patient who had undergone TLLR at Antoine Béclère Hospital.	Tranchart, H., Cenbelli, C., Ferretti, S., Dagher, I., & Patriti, A. (2014). Traditional versus robot-assisted full laparoscopic liver resection: a matched-pair comparative study. World journal of surgery, 38(11), 2904-2908.
Diagnosis; TNM stage; tumor size; ASA score; BMI; info re procedure; co-morbidities; pathological data (e.g. resection margins and retrieved lymphonodes)	yes	Opeartive time; Direct hospital costs: operative costs (cost of the operation room in relation to the operative time, and all required supplies, anaesthesia, laboratory time and related blood transfusion costs) and hospitalisation costs (room and board, length of hospital stay)	yes	Intra-operative outcomes (e.g. blood loss, coversion to open surgery); mortality, readmission up to 90 days; post-operative morbidity (e.g. f anastomotic leakage)			yes	da Vinci Robotic Surgical System model Si and Xi (Intuitive Surgical, Sunnyvale, CA, USA)	Yes. Device vs device		Follow-up assessment performed at 15 postoperative days, at 1, 3 and 6 months, and every 6 months until a post-operative period of 5 years	Ielpo B, Duran H, Díaz E, Fabra I,.....& Vicente E. Robotic versus laparoscopic surgery for rectal cancer: a comparative study of clinical outcomes and costs. Int J Colorectal Dis. 2017 Oct;32(10):1423-1429. doi: 10.1007/s00384-017-2876-7 Duran, H., Ielpo, B., Caruso, R., ... & Vicente, E. (2014). Does robotic distal pancreatectomy surgery offer similar results as laparoscopic and open approach? A comparative study from a single medical center. The International Journal of Medical Robotics and Computer Assisted Surgery, 10(3), 280-285. Ielpo, B., Duran, H., Díaz, E., ... & Lazzaro, S. (2017). Robotic versus

Diagnosis; info re procedures (e.g. techniques); co-morbidities; ASA score; histology;	yes	hospital stay; procedure technique	yes	post-operative mortality; intra-hospital morbidity, complications			yes	robot Da Vinci (Intuitive, Sunnyvale, California, EE.UU.) model SI	No			Trugeda Carrera MS, Fernández-Díaz MJ, Rodríguez-Sanjuán JC, Manuel-Palazuelos JC, de Diego García EM, Gómez-Fleitas M. [Initial results of robotic esophagectomy for esophageal cancer]. Cir Esp. 2015 Jun-Jul;93(6):396-402. doi: 10.1016/j.ciresp.2015.01.002
Tumor site; clinical and pathological stage.	yes	type of supraglottic laryngectomy	yes	Survival; disease-free survival; recurrence; Perioperative data: neck dissection, postoperative data: adjuvant radiotherapy; pathological examinations (e.g. margin status,perineural or lymphovascular invasion, and extracapsularnodal spread).			yes	da Vinci robot (Intuitive Surgical, Sunnyvale, CA) [version not specified]	No			Doazan M, Hans S, Morinière S, Lallemant B, Vergez S, Aubry K, De Monès E, Espitalier F, Jegoux F, Pradat P, Céruse P. Oncologic outcomes with transoral robotic surgery for supraglottic squamous cell carcinoma: Results of the French Robotic Surgery Group of GETTEC. Head Neck. 2018 Sep;40(9):2050-2059. doi: 10.1002/hed.25199
BMI; co-morbidities; previous surgeries; Preoperative assessment (e.g. clinical examination, endometrial biopsy, abdominopelvic magnetic resonance imaging (MRI)). Diagnosis; risk stage. Info re procedure.	yes	length of stay; Operating time	yes	Intraoperative complications and postoperative complications occurring within 4 weeks following the surgical procedure. Recurrences; mortality; Re-hospitalization			yes	Da Vinci surgical system Si	No	Ethnicity		Loaec C, Bats AS, Ngo C, Cornou C, Rossi L, Bensaid C, Nos C, Lecuru F. Dual docking robotic surgical staging for high risk endometrial cancer. Eur J Obstet Gynecol Reprod Biol. 2018 Jun;225:79-83. doi: 0.1016/j.ejogrb.2018.04.009
BMI, functional status, hisotry of stroke, co-morbidities, length of anesthesia	yes	length of hospital stay, length of ICU stay	yes	Reoperation; wound infection; myocardial infarction, Post-operative conditions (transient ischemic attack, stroke, pneumonia, renal replacement therapy, new episode of atrial fibrillation, reintubation for respiratory failure); mortality				da Vinci robot (Intuitive Surgical, Sunnyvale, CA) [version not specified]	Yes. Standard surgery and perioperative care			Zaouter C, Imbault J, Labrousse L, ...&, Ouattara A. Association of Robotic Totally Endoscopic Coronary Artery Bypass Graft Surgery Associated With a Preliminary Cardiac Enhanced Recovery After Surgery Program: A Retrospective Analysis. J Cardiothorac Vasc Anesth. 2015 Dec;29(6):1489-97. doi: 10.1053/j.jvca.2015.03.003
Preoperative pulmonary function test, administration of neoadjuvant treatment; tumor characteristics (e.g. localization, clinical stage). Info re procedure	yes	Length of stay; preincision time, operative time	yes	Number of dissected lymph nodes, and lymph node stations sampled. Operation conversion; intraoperative bleeding. Postoperative within 30 days and perioperative morbidity and mortality, drainage time. Postoperative complications. Complications			yes	Da Vinci S	Yes. Device vs device			Mahieu, J., Rinieri, P., Bubenheim, M., Calenda, E., Melki, J., Peillon, C., & Baste, J. M. (2016). Robot-assisted thoracoscopic surgery versus video-assisted thoracoscopic surgery for lung lobectomy: can a robotic approach improve short-term outcomes and operative safety?. The Thoracic and cardiovascular surgeon, 64(04), 354-362.
TNM classification; tumor location; BMI; age-adjusted Charlson comorbidity index	yes	Duration of operating room occupation; duration of surgical robot installation; time for primary tumor resection, and neck dissection; type of tumor removal; type of neck dissection; durations of tracheotomy, hospitalization in days. Cost of surgery, cost of hospitalization and treatment cost.	yes	Complications; flap reconstruction; and tracheotomy; resection limits; histological lymph node status; capsular rupture; neoplastic emboli; perineural invasion; mortality; disease-free survival at 3 years; number of local, metastatic, or lymph node recurrences.	NA	NA	no	da Vinci, but no reference to model or version	Yes. Conventional surgery			Hammoudi, K., Pinlong, E., Kim, S., Bakhos, D., & Morinière, S. (2015). Transoral robotic surgery versus conventional surgery in treatment for squamous cell carcinoma of the upper aerodigestive tract. Head & neck, 37(9), 1304-1309.
ASA classification; Preoperative histological diagnosis	yes	Operative time; Postoperative stay	yes	Conversion to lobectomy; conversion to thoracotomy; estimated blood loss; Postoperative complication; Chest tube duration; reoperation	NA	NA	yes		Yes. video-assisted segmentectomies			Rinieri, P., Peillon, C., Salaün, M., ... & Baste, J. M. (2016). Perioperative outcomes of video-and robot-assisted segmentectomies. Asian Cardiovascular and Thoracic Annals, 24(2), 145-151.
BMI, Comorbidities, Procedure	yes	Operation time	yes	outcome at follow up	ICD	OPS	yes		Yes. Other types of surgeries		prospective institutional database	Stephan Buse, stephen.buse@krupp-krankenhaus.de
			yes	30-day mortality, bleeding, myocardial infarctions, wound infections, liver and splenic injuries, post- and intraoperative complications and other outcomes based on the Clavien-Dindo Classification of Surgical Complications					Yes. Other surgeries		Disease-specific registries of the DGAV exist (i.e., StuDoQ|Rektumkarzinom, StuDoQ|Kolonkarzinom). These two disease-specific registries include additional modules for robotics as well. For example, the StuDoQ|Rektumkarzinom (rectal cancer) registry contains an additional module with which the robotics-specific aspects of the operation can be recorded. The DGAV says on its website that, if	http://www.dgav.de/studoq/studoqrobotik.html
BMI, indication	yes	hospital	no						Unknown			
cTNM (C2), pTNM (C4), stage, tumour site, p16/HPV-DANN, alcohol, nicotine p/y, HPV-driven	yes	hospital	yes	surgical outcomes					Unknown			
ASA score, CCI, BMI, perioperative chemotherapy, pT stage, pN status, lymph node yield, margin status	yes	hospital	yes	overall survival (OS), cancer-specific mortality (CSM)					Yes. Device vs device			
BMI, ASA, neoadjuvant therapy, location of the tumor	yes	hospital	yes	mortality					Unknown			
	yes	hospital	no						Unknown		survey based, no individual patient data	
	yes	hospital	yes	intra- and post-operative complications					Unknown			
tumor, tumor size, surgery, operation time, previous abdominal surgery, hepatic steatosis	yes	hospital	yes	postop.morbidity, mortality					Unknown			
cervical cancer, endometrial cancer	no		no						Unknown			
BMI, ASA, previous abdominal surgeries, malignant and benign diseases	yes	hospital	yes	morbidity; mortality					Unknown			
BMI, ASA, CCI, side of surgery	yes	hospital	yes	intra- and post-operative complications					Yes. Open Surgery			Probst, K. A., Ohlmann, C. H., Saar, M., Siemer, S., Stöeckle, M., & Janssen, M. (2016). Robot-assisted vs open adrenalectomy: evaluation of cost-effectiveness and peri-operative outcome. BJU international, 118(6), 952-957.

diagnosis	yes	lenght of stay	yes	in hospital mortality and morbidity	ICD	OPS			Unknown			https://www.gqhnet.de/geschaeftsstelle/veroeffentlichungen/berichte
	yes	hospital	no		ICD	OPS			Yes. Device vs device			https://www.drks.de/drks_web/navigate.do?navigationId=trial.HTML&TRIAL_ID=DRKS00012749
date of diagnosis, number of hospitalisations, procedures carried out, comorbidities etc	yes	length of stay and associated cost	yes	mortality; PROMs	Uses the International Classification for Diseases	OPCS			Yes. Possible to identify robotic surgery and compare it with other procedures		HES offers better quality of data collected on operations since 2004, when Payment by Results was introduced	Main info: https://digital.nhs.uk/data-and-information/data-tools-and-services/data-services/hospital-episode-statistics Data Dictionaries showing variables: https://digital.nhs.uk/data-and-information/data-tools-and-services/data-services/hospital-episode-statistics/hospital-episode-statistics-data-dictionary
BMI; medical history (e.g. previous laparoscopic or open abdominal surgery); ASA grade	yes	operating time; type of procedure; length of stay	yes	mortality in 30 day; readmission/re-operation; intra-operative complications; post-operative morbidities; conversion to laparoscopy or open surgery; Oncological outcomes: tumour stage, lymph node harvest, resection margin	NA	NA	yes	Vinci® Si	No			Ahmed, J., M. Nasir, K. Flashman, J. Khan, and A. Parvaiz. "Totally robotic rectal resection: an experience of the first 100 consecutive cases." International journal of colorectal disease 31, no. 4 (2016): 869-876.
Patient characteristics and operative outcomes (BMI, No. pelvic nodes, operative blood loss, FIGO stage), pathology	Yes	hospital stay, operative time	Yes	disease-free survival, overall survival	Unknown	Unknown	yes	da Vinci S or Si	No			Segaert, A., Traen, K., Van Trappen, P., Peeters, F., Leunen, K., Goffin, F., & Vergote, I. (2015). Robot-assisted radical hysterectomy in cervical carcinoma: the Belgian experience. International Journal of Gynecologic Cancer, 25(9), 1690-1696.
BMI; NYHA class; Comorbidities; Echocardiographic data; Valve pathology; Concomitant procedure	yes	Mitral valve repair type; Perfusion time	yes	Postoperative complications; operative mortality; Readmission within 30 days; re-operation; survival at 12 and 36 months; freedom from recurrent mitral regurgitation	NA	NA	yes	da Vinci Si system	No			Navarra, E., Mastrobuoni, S., De Kerchove, L., ... & Noirhomme, P. (2017). Robotic mitral valve repair: a European single-centre experience. Interactive cardiovascular and thoracic surgery, 25(1), 62-67.
BMI; Logistic EuroSCORE; co-morbidities (e.g. Hypertension, Dyslipidaemia); Smoking history; cardiac conditions (e.g. Left ventricular ejection fraction); History of cardiac conditions; Concomitant vascular procedures	yes	Operative time; Length of ICU stay; Length of hospital stay; type of procedure (stand-alone or hybrid treatment)	yes	Conversions to sternotomy; 30-day, 30 months, in-hospital mortality; Re-exploration; Perioperative myocardial infarction; Wound complication; Renal impairment; PPI; Neurological complications; Pulmonary infection; Repeat non-coronary cardiac operation; cardiac conditions in late follow up	NA	NA	yes	DaVinci Si	No			Roubelakis, A., Casselman, F., van der Merwe, J., Stockman, B., Degrieck, I., & Van Praet, F. (2017). Robotic-enhanced coronary surgery in octogenarians. Interactive cardiovascular and thoracic surgery, 24(3), 384-387.
Patient characteristics (ASA score, BMI, previous intra-abdominal surgeries and comorbidities), perioperative details,	Yes	operating time, length of stay	Yes	mortality; postoperative complication details, postoperative morbidity and treatment	Unknown	Unknown	yes	da Vinci Si-HD	Unknown			Mertens, A. C., Tolboom, R. C., Zavrtanik, H., Draaisma, W. A., & Broeders, I. A. (2019). Morbidity and mortality in complex robot-assisted hiatal hernia surgery: 7-year experience in a high-volume center. Surgical endoscopy, 33(7), 2152-2161. Tolboom, R. C., Draaisma, W. A., & Broeders, I. A. (2016). Evaluation of conventional laparoscopic versus robot-assisted laparoscopic redo hiatal hernia and antireflux surgery: a cohort study. Journal of robotic
Patient characteristics, diagnostic data, data on preceding operations and neoadjuvant treatment, perioperative and operative data, logistic data,	Yes	operating time, length of stay	Yes	30-day or in-hospital mortality; and short-term outcomes.	Unknown	Unknown	yes	Da Vinci SI	Yes. Laparoscopic rectal resections			Crolla RMPH, Mulder PG, van der Schelling GP. Does robotic rectal cancer surgery improve the results of experienced laparoscopic surgeons? An observational single institution study comparing 168 robotic assisted with 184 laparoscopic rectal resections. Surg Endosc. 2018 Nov;32(11):4562-4570. doi: 10.1007/s00464-018-6209-y.
Patient characteristics and admission details (ASA, parity, primary/redo rectopexy, history, diagnosis, conversion, intraoperative complications),	yes	length of hospital stay; operation time	Yes	arly complications, late and mesh complications, functional outcome, recurrence	Unknown	Unknown	yes	da Vinci Si-HD	No			van Iersel JJ, Formijne Jonkers HA, Paulides TJC,...& Broeders IAMJ. Robot-Assisted Ventral Mesh Rectopexy for Rectal Prolapse: A 5-Year Experience at a Tertiary Referral Center. Dis Colon Rectum. 2017 Nov;60(11):1215-1223. van Zanten F, Brem C, Lenters E, Broeders IAMJ, Schraffordt Koops SE. Sexual function after robot-assisted prolapse surgery: a prospective study. Int Urogynecol J. 2018 Jun;29(6):905-912. van Zanten F, van Iersel JJ, Hartog FE, Aalders KIM,...& Schraffordt Koops SE. Mesh Exposure After Robot-Assisted Laparoscopic Pelvic Floor Surgery: A Prospective Cohort Study. J Minim Invasive Gynecol. 2019 May - Jun;26(4):636-642. van Iersel JJ, de Witte CJ, Verheijen PM, Broeders IA, ...& Schraffordt Koops SE. Robot-Assisted Laparoscopic Rectopexy for Multicompartment
Preoperative variables, intra- and postoperative variables (e.g. blood loss, complications)	Yes	operating time, hospital and intensive care stay	Yes	Mortality, quality of life (EQ-5D-5L; Bladder Cancer Index; FACT-BL-Cys)	Unknown	Unknown	No		No			https://racestudie.nl/index.html
Diagnostic data and data on type of treatment	Yes	operating time, length of stay	Yes	Mortality, quality of life; blood loss, readmissions	ICD-10	Unknown	No		No			https://www.prozib.nl/ Itemset datacollection clinical data: https://www.iknl.nl/docs/default-source/PDF_Docs/tumorsoorten/itemset_urogenital_prostaat.pdf?sfvrsn=2
Preoperative variables, intra- and postoperative variables (e.g. tumor stage, surgical margin, blood loss)	Yes	operating time	Yes	Mortality, quality of life	Unknown	Unknown	No		Yes. Other types of surgeries			van der Poel, H., & de Jong, I. J. Jaarverslag prostatectomieregistratie NVU 2017. Tijdschrift voor Urologie, 1-8.
Preoperative variables, intra- and postoperative variables (e.g. blood loss)	Yes	operating time, length of stay	Yes	Mortality (30- and 90-day)	Unknown	Unknown	No		Yes. Other types of surgeries			van der Poel, Henk, de Jong, Igle-Jan, & Werkgroep oncologische urologie van de, N. V. U. (2018). Jaarverslag cystectomieregistratie NVU 2017. Tijdschrift voor Urologie. doi: 10.1007/s13629-018-0241-4

Patient characteristics (BMI, Uterus weight, indication for surgery, history of abdominal surgery) and operative outcomes (operation time, skin to skin time, complications, rehospitalisation, reoperation, blood loss, length of stay)	Yes	operating time, length of stay	yes	blood transfusion	Unknown	Unknown	No		Yes. Conventional total laparoscopic hysterectomy			van Weelden, W. J., Gordon, B., Roovers, E. A., Kraayenbrink, A. A., Aalders, C., Hartog, F., & Dijkhuizen, F. (2017). Perioperative surgical outcome of conventional and robot-assisted total laparoscopic hysterectomy. Gynecological surgery, 14(1), 5. doi:10.1186/s10397-017-1008-2
Patientcharacteristics , tumour characteristics, pathology and treatment (see detailed results in itemset datacollection)	Yes	operating time, length of stay	Yes	Mortality, quality of life, blood loss, readmissions	ICD-10	Unknown	No		No			https://www.blazib.nl/ Itemset datacollection: https://iknl.nl/docs/default-source/PDF_Docs/tumorsoorten/itemset_project_blazib.pdf
Patient characteristics (BMI, comorbidities, previous abdominal or pelvic surgeries). Surgical characteristics (technique used, tumour stage FIGO staging system, occurance of lymphadenectomy,	Yes	operating time, operating theatre time, anesthetic time, length of stay, Individual patient costs for each hospital stay monitored in regional case costing system - all hospital activities included, including any subsequent hospitalisations; type of surgery	yes	adverse event occurance, conversions to open surgery, estimated blood loss, postoperative and intraoperative complications, surgical complications within 30 days), mortality	Unknown	Unknown	No		Yes. Open Surgery for Endometrial Cancer			Lindfors A, Åkesson Å, Staf C, Sjöli P, Sundfeldt K, Dahm-Kähler P. Robotic vs Open Surgery for Endometrial Cancer in Elderly Patients: Surgical Outcome, Survival, and Cost Analysis. Int J Gynecol Cancer. 2018 May;28(4):692-699. doi: 10.1097/IGC.0000000000001240.
BMI, previous abdominal surgery, surgical procedure performed, , uterine weight,	Yes	hospital stay, surgical times	yes	intraoperative and postoperative complications, conversions, estimated blood loss; number of readmissions	Unknown	Unknown	yes	da Vinci, da Vinci S or Da Vinci Si	Yes. Between device generations			Lönnerfors C, Reynisson P, Geppert B, Persson J. The effect of increased experience on complications in robotic hysterectomy for malignant and benign gynecological disease. J Robot Surg. 2015 Dec;9(4):321-30. doi: 10.1007/s11701-015-0534-z.
Level of tumour, previous abdominal surgery, C-reactive protein values, specific surgical data,	Yes	operating time, length of stay, readmissions	Yes	30-day mortality, postoperative pathology, complications (including late complications), reoperations,	Unknown	Unknown	No		Yes. Laparoscopic rectal tumour surgery			Asklid D, Gerjy R, Hjern F, Pekkari K, Gustafsson UO. Robotic vs laparoscopic rectal tumour surgery: a cohort study. Colorectal Dis. 2019 Feb;21(2):191-199. doi: 10.1111/codi.14475.
date, type of surgery, conversion to open surgery and length of anaesthesia. BMI, ASA score, tupe of anaesthesia	yes	length of hospital stay; operative time	yes	Re-operations and mortality up to 30 days post-operatively		all cases with the procedure code KZXX00			No		Some data (clinical and resources) collected through the patient administrative system at the hospital and the Danish Anaesthesia Database	Kehlet Watt S, Jakobsen HL, Vogelsang R, Kromann-Andersen B, Palle C, Paskeviciute Frøding L, Dreijer B, Gögenur I. Implementation of a multidisciplinary robotic centre in a high-volume university hospital. Dan Med J. 2015 Jul;62(7). pii: A5115. PubMed PMID: 26183049.
Info re surgeon experience; pre and perioperative info: lower urinary tract symptoms, BMI, cT category, Gleason score, PSA, type of nerve sparing approach, whether lymphadenectomy was performed or not, and	yes	days of post-operative admission; operative time	yes	Complications, infections; whether the procedure was converted into open surgery or not. Blood loss during surgery. Number of days with bladder catheterisation and final histopathology			yes	DaVinci version A5.0 robot	No		The study includes data only up to the end of 2012, but the study was included considering the relevance of the centre, the number of patients and the paucity of studies/RWE available for Denmark	Thomsen FB, Berg KD, Hvarness H, Nielsen J, Iversen P. Robot-assisted radical prostatectomy is a safe procedure. Dan Med J. 2013 Sep;60(9):A4696. PubMed PMID: 24001463. Jacobsen, A., Berg, K. D., Iversen, P., Brasso, K., & Røder, M. A. (2016). Anastomotic complications after robot-assisted laparoscopic and open radical prostatectomy. Scandinavian journal of urology, 50(4), 274-279.
BMI; smoking; alcohol; ASA score; comorbidities (CVD, diabetes, respiratory diseases); duration of anesthesia	yes	Length of stay in the PACU; operative time; number of hospital bed days. Costs of instruments, disposables, waste, and service agreements with the robot manufacturer. Additional costs for PLA and/or OM. Operation cost. Service cost. Surgeons, nurses, and industry costs. Cost of ospital bed day. Outpatient visits. Cost of complications after surgery.	yes	Postoperative complications (wound infections)			yes	Vinci S or da Vinci Si robot (da Vinci Surgical System, Intuitive Surgical Inc., Sunnyvale, CA, USA)	Yes. Device vs device			Herling, S. F., Palle, C., Møller, A. M., Thomsen, T., & Sørensen, J. (2016). Cost-analysis of robotic-assisted laparoscopic hysterectomy versus total abdominal hysterectomy for women with endometrial cancer and atypical complex hyperplasia. Acta obstetricia et gynecologica Scandinavica, 95(3), 299-308.
BMI; ASA score; comorbidity; smoking; alcohol; previous abdominal surgery; docking time, type of fundic wrap	yes	Length of stay; operative time	yes	Perioperative and postoperative complications; need for reoperation or any upper gastrointestinal endoscopy from surgery to final follow-up; 30 day mortality			yes	(Da Vinci SI, Intuitive Surgical, Sunnyvale, California, USA	Yes. Device vs device			Jensen, J. S., Antonsen, H. K., & Durup, J. (2017). Two years of experience with robot-assisted anti-reflux surgery: A retrospective cohort study. International Journal of Surgery, 39, 260-266.
Info re admission and discharge; time of any incidents over the course of an illness; info re: diagnosis; procedures; examinations; treatment; accidents; cause of passive waiting periods; referral to; anaesthesia and intensive care	yes	length of stay	yes	Mortality; readmission					Yes. Total laparoscopic hysterectomy, or open abdominal hysterectomy (OAH)			Laursen, K. R., Hyldgård, V. B., Jensen, P. T., & Søgaard, R. (2018). Health care cost consequences of using robot technology for hysterectomy: a register-based study of consecutive patients during 2006–2013. Journal of robotic surgery, 12(2), 283-294.
Biopsy Gleason score, clinical stage, info re diagnosis, info re procedure	yes	length of stay; robotic console times; operative time	yes	Postoperative complications (blood loss); Complications according to the Clavien–Dindo classification		NOMESCO	yes	da Vinci S in TAYS and HYKS, and the da Vinci Si in TYKS and OYS	Yes. Between device generations	Info re surgeon	The study includes data only up to 2012, but the source is still existing and hence the study was included, also considering its relevance and the paucity of studies/RWE available for	Riikonen, J., Kaipia, A., Petas, A., Horte, A., Koskimäki, J., Kähkönen, E., ... & Matikainen, M. (2016). Initiation of robot-assisted radical prostatectomies in Finland: Impact on centralization and quality of care. Scandinavian journal of urology, 50(3), 149-154.
BMI; Info re procedure (e.g. operation type such as pelvic lymphadenectomy); diagnosis;	yes	length of stay	yes	Extent of operation in terms of the height (i.e. how often the level cranial to the IMA was achieved); surgical outcome Intraoperativ, 30 days, 1-6 months (eg, number of lymph nodes, complication rate, and recovery)			yes	da Vinci S Surgical System; Intuitive Surgical Inc, Sunnyvale, CA	No			Mäenpää, M. M., Nieminen, K., Tomás, E. I., Luukkaala, T. H., & Mäenpää, J. U. (2018). Robotic-Assisted Infrarenal Para-aortic Lymphadenectomy in Gynecological Cancers: Technique and Surgical Outcomes. International Journal of Gynecological Cancer, 28(5), 951-958.
BMI; ASA physical status score; Histological features of the tumours; Info re procedure (e.g. operation type such as pelvic lymphadenectomy); diagnosis;	yes	length of stay; costs of surgical approach (costs of human and technical resources, surgical instruments, cost of the operating room per intervention); operative time; operation type	yes	Surgical outcomes(e.g., estimated blood loss); intraoperative and postoperative complications. Pathological data (number of lymph nodes retrieved, histology and grade of the tumour)			yes	Vinci S HD Surgical System; Si HD model (Intuitive Surgical, Sunnyvale, CA)	Yes. Laparoscopic surgery for endometrial carcinoma		Study on hysterectomy for endometrial carcinoma	Turunen, H., Pakarinen, P., Sjöberg, J., & Loukovaara, M. (2013). Laparoscopic vs robotic-assisted surgery for endometrial carcinoma in a centre with long laparoscopic experience. Journal of Obstetrics and Gynaecology, 33(7), 720-724.

BSA, Body surface area; Logistic EuroSCORE I; NYHA class; cardiac conditions and history; Concomitant surgery;	yes	Operation length; console time; Cardiopulmonary bypass time; Crossclamp time; type of mitral procedure; Mitral valve repair technique; ICU stay; Ventilation time; hospitalization time	yes	Conversions; complications; 30-d mortality; re-operation	NA	NA	yes	da Vinci Si	Yes. Sternotomy			Kesävuori, R., Raivio, P., Jokinen, J. J., ..., & Vento, A. (2018). Early experience with robotic mitral valve repair with intra-aortic occlusion. The Journal of thoracic and cardiovascular surgery, 155(4), 1463-1471.
Indication, BMI, ASA, Tumor location, Procedure type, Lymph node harvest,	yes	Length of hospital stay; Procedure type; Mean operative time	yes	Mean blood loss, Conversion to open surgery rate, Perioperative complications, Surgical site infections	ICD-10	ICD-9 (dependent on procedure type, i.e., for prostatectomy 60.69)	no		No			hospital data, papers
BMI, graft characteristics (preemptive, dialysis duration, vascular anatomy, urological abnormality, graft introduction), Surgical (warm/cold ischemia time, rewarming time, arterial, venous and vascular anastomosis time, blood loss), creatinine levels, eGFR, complications (Clavien-Dindo classification)	Yes	operative time	Yes	Pain VAS	Unknown	Unknown	yes	Si/Xi da Vinci	Yes. Between device generations			Breda A, Territo A, Gausa L, Tugcu V, Alcaraz A, ...& Doumerc N. Robot-assisted Kidney Transplantation: The European Experience. Eur Urol. 2018 Feb;73(2):273-281. doi: 10.1016/j.eururo.2017.08.028. Epub 2017 Sep 12. PubMed PMID: 28916408.
BMI; ASA score; functional status; comorbidities; Condition of the procedure; ; incision; info re procedure; intraoperative characteristics (e.g. type of anaesthesia)	yes	surgery duration	yes	Postoperative pulmonary complications; intra-operative mechanical ventilation practice					No			https://clinicaltrials.gov/ct2/show/NCT02958215
BMI, Charlson comorbidity index; Renal nephrometry score categories; biomarkers; diagnosis, type of ischemia; tumor size; PADUA score categories	Yes	length of stay; type of procedure; operative time	yes	conversion to open surgery; complications; margin, ischemia,	Unknown	Unknown	yes	Da Vinci Si, da Vinci Xi	Yes. Between device generations			Casale, P., Lughezzani, G., Buffi, N., Larcher, A., Porter, J., Mottrie, A., & ERUS Scientific Working Group. (2018). Evolution of Robot-assisted Partial Nephrectomy: Techniques and Outcomes from the Transatlantic Robotic Nephron-sparing Surgery Study Group. European urology.
Preemptive; BMI; dialisis duration; info re donor; medical info (e.g. vascular anatomy, urological anomalies). Info re procedure; pre-operative functional data	yes	operative time	yes	cold and warm ischemia time; rewarming time; blood loss; reimplantation; intraoperative complications; post-operative outcomes on postoperative day 1, 3, 7, and 30.					No	Donor relationship		http://uroweb.org/section/eus/uinformation/
time to adjuvant therapy; BMI, comorbidities, surgical history, computed tomography/ magnetic resonance imaging (CT/MRI)-scan information, ASA classification, and Eastern Cooperative Oncology Group (ECOG) performance status; Preoperative tumor characteristics; Pathology	yes	length of stay	yes	Major morbidity after 90-days; radical resection; mortality; complications during the initial hospitalization and readmissions All outcomes are limited to in-hospital or 30-day events.					Yes. Open pancreatoduodenectomy			https://clinicaltrials.gov/ct2/show/NCT03172572?term=NCT03172572&rank=1
BMI; ASA score; concomitant illness; previous surgery; Staging laparoscopy; Peritoneal lavage cytology; Neoadjuvant chemotherapy; Neoadjuvant radiotherapy; Preoperative blood samples; operation data; info re tumore; info re surgery (e.g. date, type); info re tumor	yes	Length of postoperative hospital stays; type of procedure; Total operative time; Robot docking time; Enhanced recovery after surgery	yes	Postoperative clinical findings (e.g. mobilisation; diet; first flatus); Postoperative daily clinical findings;In-hospital postoperative complications and complications after discharge; follow up outcomes: chemotherary, radiotherapy, mortality, disease-free survival. Outcome re procedure (e.g. rate of conversion to open surgery, rate of intraoperative blood transfusion and average of estimated blood loss)					Yes. Laparoscopic and Open Surgery for Gastric Cancer			https://clinicaltrials.gov/ct2/show/NCT02325453?term=NCT02325453&rank=1 http://www.imigastric.com/