

# A Review of National Hand Surgery Registries

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**Introduction:** Since the creation of the Swedish HAKIR registry in 2010, several hand surgery registries have been created around the world. Most are focused on wrist arthroplasty, with more and more interest for interphalangeal and trapezo-metacarpal arthroplasties. Despite the existence of these registries, data are still scarce and endpoints are often not the same, making comparison and data analysis between registries difficult. The aim of this review is to map existing registries in hand and wrist surgery and to provide a recommendation basis for future registries.

**Materials and methods :** We systematically searched on the internet and in Pubmed for all existing hand surgery registries, on both elective and emergency procedures. We also reviewed all available reports of the registries recorded at ISAR. After contacting the representatives from each identified registry, a questionnaire was sent assessing registry characteristics, general information, baseline characteristics of the patients and outcomes.

**Results:** We included a total of five national registries. All registries were voluntary and assessed data from the following localizations: wrist/carpal, metacarpal and phalangeal; except for the Australian registry which only includes wrist and carpal arthroplasty. Sweden records all performed hand surgery interventions whereas the German registry includes trauma patients only. All registries collect information on patients treated at university, community and private hospitals. Only Sweden currently reports patient reported outcomes (PROs), the UK intends to do so.

Country	Sweden	Netherlands	United Kingdom	Germany	Australia
<b>Name</b>	HAKIR	LROI	BSSH	DGH	AOANJRR
<b>Year started</b>	2010	2016	2012	2018	2006
<b>Geography</b>	National	National	National	National	National
<b>Minimal age</b>	16	All patients		18	
<b>Specialty</b>					
Orthopedic surgery		x	x	x	
Hand surgery	x			x	x
Plastic surgery		x	x	x	x
<b>Inclusion criteria</b>					
Degenerative OA	x		x		x
Post-traumatic OA	x		x		x
Prosthetic Arthroplasty	x	x	x		x
Non-prosthetic Arthroplasty	x		x		
Non operative treatment			x		
All hand surgery interventions	x		x	x	
<b>Objective</b>					
Descriptive		x	x		x
Research	x	x	x	x	x
Post market surveillance		x	x	x	x
Comparable effectiveness	x	x			x
Quality Improvement	x	x	x	x	x
Benchmarking		x	x	x	x
Best Practice	x	x		x	x
Cost Evaluation		x			x
<b>Registry data input</b>					
Lifestyle			x		
Clinical	x	x	x		x
Genetic				x	
Environmental					x
Patient-reported outcomes	x		x		x
Imaging		x			
Biological				x	
Costs				x	

Table 1: Registry characteristics ↑

Table 2: General information ↓

Country	Sweden	Netherlands	United Kingdom	Germany	Australia
<b>Obtained from</b>					
Patients (e.g. questionnaires)	x		x		
Health care providers	x	x	x		x
Industry (e.g. implant details)				x	x
<b>Indirectly via linkage to</b>					
Electronic health records		x			x
Administrative data		x	x		x
Mortality data	x	x			x
<b>Funding</b>					
Government	x				x
University				x	
Other institution			x (BSSH)		
Research grants				DGH	
Insurance companies		x			

**Conclusions:** Various national hand surgery registries have been created, either including all surgical interventions or only focusing on a category of patients, i.e. trauma surgery or prosthetic arthroplasty. Non-operative treatment is generally not included. There is a large heterogeneity between included endpoints and registry objectives. Funding is mostly provided on a government level. Most registries focus on the wrist, with recent efforts attempting to include metacarpo-phalangeal and interphalangeal arthroplasty. PRO collection is so far infrequent.

Country	Sweden	Netherlands	United Kingdom	Germany	Australia
<b>Registry</b>	HAKIR	LROI	BSSH	DGH	AOANJRR
<b>Age</b>	x	x	x	x	x
<b>Sex</b>	x	x	x	x	x
<b>BMI</b>		x			x
<b>Smoking</b>		x			
<b>Handedness</b>	x	x			
<b>Work status</b>				x	
Employed/Unemployed				x	
<b>Socioeconomic status</b>					
Deprivation index				x	
<b>Joint specific history</b>		x			
Previous surgery	x				
<b>Smoking</b>		x			
<b>ASA class</b>		x			x
<b>Hospital-related information</b>					
Type of hospital	x	x		x	x
Hospital volume	x	x		x	x
<b>Surgery-related factors</b>					
Surgeon level of experience			x	x	
<b>Arthrodesis</b>	x	x	x		
<b>Non-prosthetic arthroplasty</b>	x		x		
<b>Type of Prosthesis</b>					
Wrist / Carpal	x	x	x		x
Trapezometacarpal	x	x			
Metacarpo-phalangeal	x	x			
Interphalangeal	x	x			
DRUJ	x	x			x
<b>Surgical approach</b>	x	x			
Fixation	x	x			

Table 3: Baseline characteristics ↑

Table 4: Registry outcomes ↓

Country	Sweden	Netherlands	United Kingdom	Germany	Australia
<b>Name</b>	HAKIR	LROI	BSSH	DGH	AOANJRR
<b>Number of cases</b>	x	x	x	x	x
<b>Revision rates</b>	x	x	x		x
<b>Surgical complications</b>					
Infection	x	x			x
Surgical site infection	x	x			x
Prosthesis infection	x	x			x
Dislocation	x	x			x
Lysis	x	x			x
Loosening	x	x			x
Pain	x	x			x
Contracture	x	x			x
Malposition	x	x			x
Implant breakage	x	x			x
Metal related pathology			x		x
Progression of initial disease			x		x
Peri-prosthetic fracture			x		x
<b>Reoperation</b>	x		x		
<b>Mortality</b>		x			x
<b>Physician related outcomes</b>					
Range of motion measurements	x				
<b>PROMs</b>			x		
VAS scale	x				
Satisfaction	x				
Quick Dash	x				

**References:**

- LROI annual report 2018. [www.lroi-rapportage.nl/media/pdf/PDF%20Online\\_LROI\\_annual\\_report\\_2018.pdf](http://www.lroi-rapportage.nl/media/pdf/PDF%20Online_LROI_annual_report_2018.pdf)  
 - Australian Orthopaedic Association National Joint Replacement Registry (AOANJRR): Demographics and Outcome of Elbow and Wrist Arthroplasty: Supplementary Report, in Hip, Knee & Shoulder Arthroplasty: 2018 Annual Report, AOA, Adelaide; 2018: 1-30.  
 - Årsrapport 2017. [https://hakir.se/wp-content/uploads/2018/08/%C3%85rsrapport\\_2017.pdf](https://hakir.se/wp-content/uploads/2018/08/%C3%85rsrapport_2017.pdf)