

## Supplementary data

### Appendix 1: ICD 10- and NOMESCO codes used for definition of adverse events according to the Swedish Knee Arthroplasty Register (SKAR)

#### DA. Surgical diagnosis

If the codes occur as the main or a secondary diagnosis during the first admission or as the main diagnosis during a later admission

Exact code	
G978	Other postprocedural disorders of nervous system
G979	Postprocedural disorder of nervous system, unspecified
M966G	Fracture of bone following insertion of orthopaedic implant, joint prosthesis, or bone plate knee/lower leg
M968	Other postprocedural musculoskeletal disorders
M969	Postprocedural musculoskeletal disorder, unspecified
T810	Haemorrhage and haematoma complicating a procedure, not elsewhere classified
T812	Accidental puncture and laceration during a procedure, not elsewhere classified
T813	Disruption of operation wound, not elsewhere classified
T814	Infection following a procedure, not elsewhere classified
T815	Foreign body accidentally left in body cavity or operation wound following a procedure
T816	Acute reaction to foreign substance accidentally left during a procedure
T817	Vascular complications following a procedure, not elsewhere classified
T818	Other complications of procedures, not elsewhere classified
T818W	Other complications of procedures, not elsewhere classified
T819	Unspecified complication of procedure
T840	Mechanical complication of internal joint prosthesis
T840G	Mechanical complication of internal joint prosthesis knee/lower leg
T843	Mechanical complication of other bone devices, implants and grafts
T843G	Mechanical complication of other bone devices, implants and grafts knee/lower leg
T844	Mechanical complication of other internal orthopaedic devices, implants and grafts
T844G	Mechanical complication of other internal orthopaedic devices, implants and grafts, knee/lower leg
T845	Infection and inflammatory reaction due to internal joint prosthesis
T845G	Infection and inflammatory reaction due to internal joint prosthesis knee/lower leg
T847	Infection and inflammatory reaction due to other internal orthopaedic prosthetic devices, implants and grafts
T847G	Infection and inflammatory reaction due to other internal orthopaedic prosthetic devices, implants and grafts knee/lower leg
T848	Other complications of internal orthopaedic prosthetic devices, implants and grafts
T848G	Other complications of internal orthopaedic prosthetic devices, implants and grafts knee/lower leg
T849	Unspecified complication of internal orthopaedic prosthetic device, implant and graft
T888	Other specified complications of surgical and medical care, not elsewhere classified
T889	Complication of surgical and medical care, unspecified

#### DB. Diagnosis for knee-related events

If the codes occur as the main or a secondary diagnosis during the first admission or as a main diagnosis during a later admission

Exact code	
G573	Lesion of lateral popliteal nerve
G574	Lesion of medial popliteal nerve
M000	Staphylococcal arthritis and polyarthritis
M000G	Staphylococcal arthritis and polyarthritis, knee
M002G	Other streptococcal arthritis and polyarthritis, knee
M008G	Arthritis and polyarthritis due to other specified bacterial agents, knee
M009G	Pyogenic arthritis, unspecified, knee
M220	Recurrent dislocation of patella
M221	Recurrent subluxation of patella
M236	Other spontaneous disruption of ligament(s) of knee
M244G	Recurrent dislocation and subluxation of joint, knee
M621G	Other rupture of muscle (nontraumatic), knee/lower leg
M662G	Spontaneous rupture of extensor tendons, knee/lower leg
M663G	Spontaneous rupture of flexor tendons, knee/lower leg
M843G	Stress fracture, lower leg
S342	Injury of nerve root of lumbar and sacral spine
S800	Contusion of knee
S810	Open wound of knee
S830	Dislocation of patella
S831	Dislocation of knee
S834L	Sprain and strain involving lateral collateral ligament of knee
S834M	Sprain and strain involving medial collateral ligament of knee
S835R	Sprain and strain involving anterior cruciate ligament of knee
S835S	Sprain and strain involving anterior cruciate ligament of knee
S835X	Sprain and strain involving cruciate ligament of knee, unspecified
S840	Injury of tibial nerve at lower leg level
S841	Injury of peroneal nerve at lower leg level

#### If the codes occur as the main diagnosis after the first admission

Exact code	
M235	Chronic instability of knee
M240G	Loose body in joint, knee
M245G	Contracture of joint, knee
M246G	Ankylosis of joint, knee
M256	Stiffness of joint, not elsewhere classified
M256G	Stiffness of joint, not elsewhere classified, knee
M659G	Synovitis and tenosynovitis, unspecified, knee
M860G	Acute haematogenous osteomyelitis, knee/lower leg
M861G	Other acute osteomyelitis, knee/lower leg
M866	Other chronic osteomyelitis
M866G	Other chronic osteomyelitis, knee/lower leg
M895G	Osteolysis, knee/lower leg

**DC. Cardiovascular diagnosis**

If the codes occur as the main or a secondary diagnosis during the first admission or as the main diagnosis during a later admission

Exact code	
I260	Pulmonary embolism with mention of acute cor pulmonale
I269	Pulmonary embolism without mention of acute cor pulmonale
I460	Cardiac arrest with successful resuscitation
I461	Sudden cardiac death, so described
I469	Cardiac arrest, unspecified
I490	Ventricular fibrillation and flutter
I649	Stroke, not specified as haemorrhage or infarction
I770	Arteriovenous fistula, acquired
I771	Stricture of artery
I772	Rupture of artery
I819	Portal vein thrombosis
I978	Other postprocedural disorders of circulatory system, not elsewhere classified
I979	Postprocedural disorder of circulatory system, unspecified
J809	Adult respiratory distress syndrome
J819	Pulmonary oedema
T811	Shock during or resulting from a procedure, not elsewhere classified

**Code starts with**

I21	Acute myocardial infarction
I24	Other acute ischaemic heart diseases
I60	Subarachnoid haemorrhage
I61	Intracerebral haemorrhage
I62	Other nontraumatic intracranial haemorrhage
I63	Cerebral infarction
I65	Occlusion and stenosis of precerebral arteries, not resulting in cerebral infarction
I66	Occlusion and stenosis of cerebral arteries, not resulting in cerebral infarction
I72	Other aneurysm and dissection
I74	Arterial embolism and thrombosis
I82	Other venous embolism and thrombosis

**DM. Diagnoses for other medical events**

If the codes occur as the main or a secondary diagnosis during the first admission or as a secondary diagnosis during a later admission

Exact code	
J952	Acute pulmonary insufficiency following nonthoracic surgery
J953	Chronic pulmonary insufficiency following surgery
J955	Postprocedural subglottic stenosis
J958	Other postprocedural respiratory disorders
J959	Postprocedural respiratory disorder, unspecified
J981	Pulmonary collapse
N990	Postprocedural renal failure
N998	Other postprocedural disorders of genitourinary system
N999	Postprocedural disorder of genitourinary system, unspecified
R339	Retention of urine

**Code starts with**

L89	Decubitus ulcer and pressure area
I80	Phlebitis and thrombophlebitis
J13	Pneumonia due to <i>Streptococcus pneumoniae</i>
J14	Pneumonia due to <i>Haemophilus influenzae</i>
J15	Bacterial pneumonia, not elsewhere classified
J16	Pneumonia due to other infectious organisms, not elsewhere classified
J17	Pneumonia in diseases classified elsewhere
J18	Pneumonia, organism unspecified
J96	Respiratory failure, not elsewhere classified
K25	Gastric ulcer
K26	Duodenal ulcer
K27	Peptic ulcer, site unspecified
N17	Acute renal failure

**If the codes occur as the main diagnosis after the first admission**

Exact code	
K590	Constipation
N991	Postprocedural urethral stricture

**Code starts with**

J20	Acute bronchitis
J21	Acute bronchiolitis
J22	Unspecified acute lower respiratory infection
K29	Gastritis and duodenitis

**A. Surgical intervention codes**

If the codes occur during the first admission at a date after the primary surgery date or as the main intervention code at a later date

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**Exact code**


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NFQ09	Exarticulation of hip
NFQ19	Amputation of femur
NFQ99	Other amputation or related operation on hip or femur
NGB59	Patellofemoral prosthesis, supplementary
NGF01	Total synovectomy of knee, arthroscopic
NGF02	Total synovectomy of knee, open
NGF10	Partial synovectomy of knee, percutaneous
NGF11	Partial synovectomy of knee, arthroscopic
NGF12	Partial synovectomy of knee, open
NGF91	Other operation on synovia or joint surface of knee, arthroscopic
NGF92	Other operation on synovia or joint surface of knee, open
NGK09	Excision of fragment of bone of knee or lower leg
NGK19	Partial or total excision of bone of knee or lower leg
NGM09	Fasciotomy of knee or lower leg
NGQ09	Exarticulation of knee
NGT09	Removal of foreign body from tissue of knee or lower leg
NGT19	Forcible manipulation of knee joint
QDA10	Incision of skin of lower limb. Includes: Drainage
QDB00	Suture of skin of lower limb
QDB05	Revision of wound of skin of lower limb
QDB99	Other procedure for wound of skin of lower limb
QDE35	Repair of skin defect of lower limb after surgery or injury
TNG05	Incision of soft tissue, knee and lower leg
TNG10	Arthrocentesis, knee joint

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**Code starts with**


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NGA	Exploratory procedures on knee and lower leg
NGC	Secondary prosthetic replacement of knee joint
NGE	Operations on capsules and ligaments of knee joint
NGG	Excision, reconstruction and fusion of knee joint
NGH	Miscellaneous operations on knee joint. Includes: Reduction of dislocations
NGJ	Fracture surgery of knee and lower leg
NGL	Operations on muscles and tendons of knee and lower leg
NGS	Operations for infection of tendons, joints and bone of knee and lower leg
NGU	Removal of implants and external fixation devices from knee and lower leg
NGW	Reoperations on knee and lower leg
QDG	Operations for chronic ulcers and fistulae of skin of lower limb

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## Appendix 2: ICD 10- and NOMESCO codes used for definition of adverse events according to the Swedish Hip Arthroplasty Register (SHAR)

### DA. Surgical diagnosis

If the codes occur as the main or a secondary diagnosis during the first admission or as the main diagnosis during a later admission

Exact code	
G978	Other postprocedural disorders of nervous system
G979	Postprocedural disorder of nervous system, unspecified
M966F	Fracture of bone following insertion of orthopaedic implant, joint prosthesis, or bone plate hip/femur
M968	Other postprocedural musculoskeletal disorders
M969	Postprocedural musculoskeletal disorder, unspecified
T810	Haemorrhage and haematoma complicating a procedure, not elsewhere classified
T812	Accidental puncture and laceration during a procedure, not elsewhere classified
T813	Disruption of operation wound, not elsewhere classified
T814	Infection following a procedure, not elsewhere classified
T815	Foreign body accidentally left in body cavity or operation wound following a procedure
T816	Acute reaction to foreign substance accidentally left during a procedure
T817	Vascular complications following a procedure, not elsewhere classified
T818	Other complications of procedures, not elsewhere classified
T818W	Other complications of procedures, not elsewhere classified
T819	Unspecified complication of procedure
T840	Mechanical complication of internal joint prosthesis
T840F	Mechanical complication of internal joint prosthesis hip/femur
T843	Mechanical complication of other bone devices, implants and grafts
T843F	Mechanical complication of other bone devices, implants and grafts hip/femur
T844	Mechanical complication of other internal orthopaedic devices, implants and grafts
T844F	Mechanical complication of other internal orthopaedic devices, implants and grafts, hip/femur
T845	Infection and inflammatory reaction due to internal joint prosthesis
T845F	Infection and inflammatory reaction due to internal joint prosthesis hip/femur
T847	Infection and inflammatory reaction due to other internal orthopaedic prosthetic devices, implants and grafts
T847F	Infection and inflammatory reaction due to other internal orthopaedic prosthetic devices, implants and grafts hip/femur
T848	Other complications of internal orthopaedic prosthetic devices, implants and grafts
T848F	Other complications of internal orthopaedic prosthetic devices, implants and grafts hip/femur
T849	Unspecified complication of internal orthopaedic prosthetic device, implant and graft
T888	Other specified complications of surgical and medical care, not elsewhere classified
T889	Complication of surgical and medical care, unspecified

### DB. Diagnosis for hip-related events

If the codes occur as the main or a secondary diagnosis during the first admission or as a main diagnosis during a later admission

Exact code	
G570	Lesion of sciatic nerve
G571	Meralgia paraesthetica
G572	Lesion of femoral nerve
M000	Staphylococcal arthritis and polyarthritis
M000F	Staphylococcal arthritis and polyarthritis hip/femur
M002F	Other streptococcal arthritis and polyarthritis hip/femur
M008F	Arthritis and polyarthritis due to other specified bacterial agents hip/femur
M009F	Pyogenic arthritis, unspecified hip/femur
M243	Pathological dislocation and subluxation of joint, not elsewhere classified
M244	Recurrent dislocation and subluxation of joint
M244F	Recurrent dislocation and subluxation of joint hip/femur
S730	Dislocation of hip

#### Code starts with

S74	Injury of nerves at hip and thigh level
S75	Injury of femoral artery
S76	Injury of muscle and tendon of hip

#### If the codes occur as the main diagnosis after the first admission

Exact code	
M240F	Loose body in joint hip/femur
M245F	Contracture of joint hip/femur
M246F	Ankylosis of joint hip/femur
M610F	Myositis ossificans traumatica
M614	Other calcification of muscle
M614F	Other calcification of muscle hip/femur
M621F	Other rupture of muscle (nontraumatic) hip/femur
M662F	Spontaneous rupture of extensor tendons hip/femur
M663F	Spontaneous rupture of flexor tendons hip/femur
M843F	Stress fracture, hip/femur
M860F	Acute haematogenous osteomyelitis hip/femur
M861F	Other acute osteomyelitis hip/femur
M866	Other chronic osteomyelitis hip/femur
M866F	Other chronic osteomyelitis hip/femur
M895E	Osteolysis pelvis

**DC. Cardiovascular diagnosis**

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I260	Pulmonary embolism with mention of acute cor pulmonale
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I772	Rupture of artery
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I65	Occlusion and stenosis of precerebral arteries, not resulting in cerebral infarction
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**Code starts with**

L89	Decubitus ulcer and pressure area
I80	Phlebitis and thrombophlebitis
J13	Pneumonia due to <i>Streptococcus pneumoniae</i>
J14	Pneumonia due to <i>Haemophilus influenzae</i>
J15	Bacterial pneumonia, not elsewhere classified
J16	Pneumonia due to other infectious organisms, not elsewhere classified
J17	Pneumonia in diseases classified elsewhere
J18	Pneumonia, organism unspecified
J96	Respiratory failure, not elsewhere classified
K25	Gastric ulcer
K26	Duodenal ulcer
K27	Peptic ulcer, site unspecified
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**If the codes occur as the main diagnosis after the first admission**

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**Code starts with**

J20	Acute bronchitis
J21	Acute bronchiolitis
J22	Unspecified acute lower respiratory infection
K29	Gastritis and duodenitis

**B. Surgical intervention codes**

If the codes occur during the first admission at a date after the primary surgery date or as the main intervention code at a later date

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 Exact code
 

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NFQ09	Exarticulation of the hip joint
NFA02	Exploration of soft tissue of hip and thigh, open surgery
NFA11	Diagnostic arthroscopy of hip joint
NFA12	Exploration of hip joint, open surgery
NFA20	Biopsy of soft tissue or joint of hip and thigh, percutaneous
NFA21	Biopsy of soft tissue or joint of hip and thigh, arthroscopic
NFA22	Biopsy of soft tissue or joint of hip and thigh, open
QDA10	Incision of skin of lower limb. Includes: Drainage
QDE35	Repair of skin defect of lower limb after surgery or injury
TNF05	Incision of soft tissue hip and thigh
TNF10	Arthrocentesis of hip joint
QDB00	Suture of skin of lower limb
QDB05	Revision of wound of skin of lower limb
QDB99	Other procedure for wound of skin of lower limb

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 Code starts with
 

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NFC	Secondary prosthetic replacement of hip joint
NFF	Operations on synovia and surfaces of hip joint
NFG	Excision, reconstruction and fusion of hip joint
NFH	Miscellaneous operations on hip joint. Includes: Reduction of dislocations
NFJ	Fracture surgery of femur
NFK	Operations on femur
NFL	Operations on muscles and tendons of hip and thigh
NFM	Operations on muscles and tendons of hip and thigh
NFS	Operations for infection of tendons, joints and bone of hip and thigh
NFT	Miscellaneous operations on hip or thigh
NFU	Removal of implants and external fixation devices from hip and femur
NFW	Reoperations on hip or thigh
QDG	Operations for chronic ulcers and fistulae of skin of lower limb

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