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### Supplementary

**Table 1.** Source of the included variables.

|   | Hospital record | SHAR | Regional patient register | HOSP |
|---|-----------------|------|---------------------------|------|
| Patient 10-digit PIN                                    | X               | X    | X                         |      |
| Patient age   | X               | X    | X                         |      |
| Patient sex   | X               | X    |                           |      |
| Name of hospital  | X               | X    | X                         |      |
| Date of surgery   | X               | X    | X                         |      |
| Name of the surgeon                                     | X               |      |                           |      |
| Surgeon 10-digit PIN                                    | X               |      |                           |      |
| Date of license to practice                             |                 |      |                           | X    |
| Date of orthopedic specialist certification             |                 |      |                           | X    |
| Fixation technique                                      | X               | X    |                           |      |
| Indication for surgery (ICD-10 codes)                   | X               | X    |                           |      |
| ICD-10 codes 365 days prior to the index THA            |                 |      | X                         |      |
| ICD-10 and NOMESCO codes within 90 days postoperatively |                 |      | X                         |      |
|   |                 |      |                           |      |

*PIN* = personal identity number, *ICD-10* = International Statistical Classification of Diseases and Related Health

Problems 10th revision, *NOMESCO* = Nordic Medico-Statistical Committee, *SHAR* = Swedish Hip

Arthroplasty Register, *THA* = total hip arthroplasty, *HOSP* = Swedish National Board of Health and Welfare

register of licensed healthcare professionals.

**Table 2. Codes used for classification of adverse events.**

| <b>DA Diagnosis for complications (ICD-10 codes)<br/>If they occur as main or secondary diagnosis for readmission</b> |  |
|---|--|
| G97.8   | Other postprocedural disorders of nervous system   |
| G97.9   | Postprocedural disorder of nervous system, unspecified   |
| M96.6F  | Fracture of bone following insertion of orthopedic implant, joint prosthesis, or bone plate                  |
| M96.8   | Other postprocedural musculoskeletal disorders   |
| M96.9   | Postprocedural musculoskeletal disorder, unspecified   |
| T81.0   | Haemorrhage and haematoma complicating a procedure, not elsewhere classified                                 |
| T81.2   | Accidental puncture and laceration during a procedure, not elsewhere classified                              |
| T81.3   | Disruption of operation wound, not elsewhere classified  |
| T81.4   | Infection following a procedure, not elsewhere classified  |
| T81.5   | Foreign body accidentally left in body cavity or operation wound following a procedure                       |
| T81.6   | Acute reaction to foreign substance accidentally left during a procedure                                     |
| T81.7   | Vascular complications following a procedure, not elsewhere classified                                       |
| T81.8   | Other complications of procedures, not elsewhere classified  |
| T81.8W  | Other complications of procedures, not elsewhere classified  |
| T81.9   | Unspecified complication of procedure  |
| T84.0   | Mechanical complication of internal joint prosthesis   |
| T84.0F  | Mechanical complication of internal joint prosthesis   |
| T84.3   | Mechanical complication of other bone devices, implants and grafts   |
| T84.3F  | Mechanical complication of other bone devices, implants and grafts   |
| T84.4   | Mechanical complication of other internal orthopedic devices, implants and grafts                            |
| T84.5   | Infection and inflammatory reaction due to internal joint prosthesis   |
| T84.5F  | Infection and inflammatory reaction due to internal joint prosthesis   |
| T84.7   | Infection and inflammatory reaction due to other internal orthopedic prosthetic devices, implants and grafts |
| T84.7F  | Infection and inflammatory reaction due to other internal orthopedic prosthetic devices, implants and grafts |
| T84.8   | Other complications of internal orthopedic prosthetic devices, implants and grafts                           |
| T84.8F  | Other complications of internal orthopedic prosthetic devices, implants and grafts                           |
| T84.9   | Unspecified complication of internal orthopedic prosthetic device, implant and                               |
| T88.8   | Other specified complications of surgical and medical care, not elsewhere classified                         |
| T88.9   | Complication of surgical and medical care, unspecified   |

*F* = hip/femur, *W* = cause of the injury fall/object, *E* = pelvis, *ICD-10* = International Statistical Classification of Diseases and Related Health Problems 10<sup>th</sup> revision.

| <b>BD1 Diagnosis for hip related complications (ICD-10 codes)<br/>If they occur as main or secondary diagnosis for readmission</b> |                         |
|--|-------------------------|
| G57.0  | Lesion of sciatic nerve |
| G57.1  | Meralgia paraesthetica  |
| G57.2  | Lesion of femoral nerve |

|        |   |
|--------|---|
| M00.0  | Staphylococcal arthritis and polyarthritis                                  |
| M00.0F | Staphylococcal arthritis and polyarthritis                                  |
| M00.2F | Other streptococcal arthritis and polyarthritis                             |
| M00.8F | Arthritis and polyarthritis due to other specified bacterial agents         |
| M00.9F | Pyogenic arthritis, unspecified   |
| M24.3  | Pathological dislocation and subluxation of joint, not elsewhere classified |
| M24.4  | Recurrent dislocation and subluxation of joint                              |
| M24.4F | Recurrent dislocation and subluxation of joint                              |
| S73.0  | Dislocation of hip  |
| S74*   | Injury of nerves at hip and thigh level                                     |
| S75*   | Injury of femoral artery  |
| S76*   | Injury of muscle and tendon of hip  |

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**BD2 Diagnosis for hip related complications (ICD-10 codes)  
If they occur as main diagnosis for readmission**

|        |   |
|--------|---|
| M24.0F | Loose body in joint                     |
| M24.5F | Contracture of joint                    |
| M24.6F | Ankylosis of joint                      |
| M61.0F | Myositis ossificans traumatica          |
| M62.1F | Other rupture of muscle (nontraumatic)  |
| M66.2F | Spontaneous rupture of extensor tendons |
| M66.3F | Spontaneous rupture of flexor tendons   |
| M84.3F | Stress fracture                         |
| M86.0F | Acute haematogenous osteomyelitis       |
| M86.1F | Other acute osteomyelitis,              |
| M86.6  | Other chronic osteomyelitis, hip/femur  |
| M86.6F | Other chronic osteomyelitis             |
| M89.5E | Osteolysis                              |

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**DC Diagnosis for serious cardiovascular complication (ICD-10 codes)  
If they occur as main or secondary diagnosis for readmission**

|       |   |
|-------|---|
| I21.* | Acute myocardial infarction                               |
| I24.* | Other acute ischaemic heart diseases                      |
| I26.0 | Pulmonary embolism with mention of acute cor pulmonale    |
| I26.9 | Pulmonary embolism without mention of acute cor pulmonale |
| I46.0 | Cardiac arrest with successful resuscitation              |
| I46.1 | Sudden cardiac death, so described                        |
| I46.9 | Cardiac arrest, unspecified                               |

|       |  |
|-------|--|
| I49.0 | Ventricular fibrillation and flutter   |
| I60.* | Subarachnoid haemorrhage   |
| I61.* | Intracerebral haemorrhage  |
| I62.* | Other nontraumatic intracranial haemorrhage  |
| I63.* | Cerebral infarction  |
| I64.9 | Stroke, not specified as haemorrhage or 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   |
| I77.0 | Arteriovenous fistula, acquired  |
| I77.1 | Stricture of artery  |
| I77.2 | Rupture of artery  |
| I81.9 | Portal vein thrombosis   |
| I82.* | Other venous embolism and thrombosis   |
| I97.8 | Other postprocedural disorders of circulatory system, not elsewhere classified       |
| I97.9 | Postprocedural disorder of circulatory system, unspecified                           |
| J80.9 | Adult respiratory distress syndrome  |
| J81.9 | Pulmonary oedema   |
| T81.1 | Shock during or resulting from a procedure, not elsewhere classified                 |

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| <b>DM Diagnosis of medical complication (ICD-10 codes)<br/>If they occur as main or secondary diagnosis for readmission</b> |  |
|---|--|
| I80*  | Phlebitis and thrombophlebitis                               |
| J95.2   | Acute pulmonary insufficiency following nonthoracic surgery  |
| J95.3   | Chronic pulmonary insufficiency following surgery            |
| J95.5   | Postprocedural subglottic stenosis                           |
| J95.8   | Other postprocedural respiratory disorders                   |
| J95.9   | Postprocedural respiratory disorder, unspecified             |
| J96*  | Respiratory failure, not elsewhere classified                |
| J98.1   | Pulmonary collapse   |
| K25.*   | Gastric ulcer  |
| K26.*   | Duodenal ulcer   |
| K27.*   | Peptic ulcer, site unspecified                               |
| L89*  | Decubitus ulcer and pressure area                            |
| N17.*   | Acute renal failure  |
| N99.0   | Postprocedural renal failure                                 |
| N99.8   | Other postprocedural disorders of genitourinary system       |
| N99.9   | Postprocedural disorder of genitourinary system, unspecified |
| R33.9   | Retention of urine   |
| J13.*   | Pneumonia due to <i>Streptococcus pneumoniae</i>             |

|       |   |
|-------|---|
| J14.* | Pneumonia due to Haemophilus influenzae                               |
| 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                                       |

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| <b>DM 2 Diagnosis of medical complication (ICD-10 codes)<br/>If they occur as main diagnosis for readmission</b> |   |
|--|---|
| K29.*  | Gastritis and duodenitis                      |
| K59.0  | Constipation                                  |
| N99.1  | Postprocedural urethral stricture             |
| J20.*  | Acute bronchitis                              |
| J21.*  | Acute bronchiolitis                           |
| J22.*  | Unspecified acute lower respiratory infection |

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| <b>A Codes for hip surgery (NOMESCO)<br/>If they occur as main procedure during the readmission</b> |  |
|---|--|
| NFA02   | Exploration of soft tissue in hip or thigh, open surgery         |
| NFA11   | Diagnostic arthroscopy of hip joint                              |
| NFA12   | Exploration of hip joint, open surgery                           |
| NFA20   | Biopsy of soft tissue in hip joint/femur, percutaneous           |
| NFA21   | Biopsy of hip joint, arthroscopic                                |
| NFA22   | Biopsy of hip joint, open surgery                                |
| NFC*  | Revision hip arthroplasty  |
| NFF*  | Surgery on synovial membranes or joint surfaces, hip point/femur |
| NFG*  | Reconstruction or arthrodesis, hip point/femur                   |
| NFH*  | Surgery due to dislocation or loose body, hip point/femur        |
| NFJ*  | Surgery due to fracture, hip point/femur                         |
| NFK*  | Surgery on the bony structures, hip point/femur                  |
| NFL*  | Surgery on muscle or tendon, hip point/femur                     |
| NFM*  | Surgery on fascia and "bursa", hip point/femur                   |
| NFQ09   | Exarticulation of the hip joint                                  |
| NFS*  | Surgery due to infection, hip point/femur                        |
| NFT*  | Reconstructive surgery, hip point/femur                          |
| NFU*  | Extractions of implants, hip point/femur                         |
| NFW*  | Reoperations, hip point/femur                                    |
| QDA10   | Incision   |

|       |  |
|-------|--|
| QDB*  | Suture, Wound readjustment, Wound dressing |
| QDE35 | Reconstruction of defective skin           |
| QDG30 | Secondary suture                           |
| TNF05 | Incision (abscess)                         |
| TNF10 | Arthrocentesis of hip joint                |

**NOMESCO** = Nordic Medico-Statistical Committee.

**Table 3.** Result of the additional mixed model (hierarchical logistic regression) for AEs within 90 days following the surgery. Presented as OR (95% CI).

| <b>Models</b>              | <b>Male surgeons</b> | <b>Female surgeons</b> |
|----------------------------|----------------------|------------------------|
| <b>Unadjusted model</b>    | Reference            | 0.81 (0.57-1.40)       |
| <b>Additional model I</b>  | Reference            | 0.74 (0.53-1.05)       |
| <b>Additional model II</b> | Reference            | 0.75 (0.51-1.07)       |

*AEs* = adverse events, *OR* = odds ratio, *CI* = confidence interval. *Additional model I* = adjusted for patient's age, patient's sex and Elixhauser comorbidity index as fixed effects and surgeon as a random effect. *Additional model II* = adjusted for patient's age, patient's sex, Elixhauser comorbidity index and surgeon's experience as fixed effects and surgeon as a random effect.