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THE VALIDITY OF THE REGISTRATION OF VAGINAL PROLAPSE SURGERY AND HOW TO IMPROVE THE QUALITY

Hypothesis / aims of study
By law, all surgical procedures carried out at Danish hospitals are reported to the National Patient Registry (LPR) according to the ICD10 coding system. The following year a report is published. The codes for very different procedures are very much alike for which reason there is a potential risk of miscoding. Furthermore, there are no options to code for the complexity of the entire vaginal prolapse procedure or recurrent prolapse procedures. There is no automatic feedback to the reporting hospitals, and a fee is charged to get own data for scientific and quality analysis. The aim of this study was, therefore, to investigate the validity the coding of vaginal prolapse surgery and how to improve the quality of the coding.

Study design, materials and methods
Electronic data including all patients registered with one or more codes for vaginal prolapse surgery in 1996-1998 were requested from LPR in 1999. Two local datasets from the registration system "Green System" (GS) were also requested including patients registered with one or more codes for vaginal prolapse surgery in 1996-1998. Datasets were compared on the level of social security numbers (CPR). All records were reviewed, and the validity of the coding was evaluated through careful review of the description of the surgical procedure and the discharge summary. In the case of coding discrepancies between the text and the coding of the surgical procedure and the discharge summary, a manual comparison with the coding in GS and LPR was performed. A simple, local guideline on coding was introduced by September 15, 1999. Cases with obvious, wrong combinations of codes in LPR were extracted from the 1996-1998 LPR-dataset and a corresponding LPR-dataset from 1999-2001. The study was approved of by the regional scientific ethics committee (KF 01-404/98).

Results
The total number of patients registered in GS was 304, and the validity of the GS-data at the level of CPR was 96.4% (293/304). The cost of the LPR datasets was 8775 DKR. Data were requested in January 1999, but we had to request 4 datasets to get a presumably correct one. The first dataset included data from another hospital (n=0). In the second dataset (n=200) all patients with only one code were missing. In the third dataset (n=308) the last digit in all codes was missing. The fourth dataset also consisted of 308 patients and was therefore considered correct. Therefore, the validity of the different LPR-datasets on the level of CPR was 0%, 64.9% and 100%. The validity of the reporting from GS to LPR on the level of CPR was 96.2%. The total number of patients from the LPR and GS datasets was 312 as the LPR dataset also included 7 outpatients.

From the review of patient records the validity of a vaginal prolapse procedure being coded as such was 93.6%. In 18 cases (5.8%) a vaginal prolapse code had been used (presumably due to key punch, hearing or speaking errors) although a non-vaginal, non-prolapse procedures had been undertaken. In 16 cases (5.1%) the coding was correct, but vaginal hysterectomy or amputation of the cervix had been undertaken for other reasons than prolapse. In 35 cases (11.2%) the coding was incorrect due to lack of consensus about coding (primarily posterior repair and Manchester procedure). In 24 cases (7.7%) and 13 cases (4.2%) the coding was incomplete due to missing codes and key punch errors, respectively. Furthermore, 1 abdominal prolapse procedure was coded as a vaginal procedure. The most aggravating coding errors are shown in Fig. 1. In 1996-1998 there were 7% obvious coding errors according to LPR based on the use of codes that were not supposed to occur together. After the introduction of the local guideline this was reduced significantly to 0.5% in 1999-2001.

Interpretation of results and concluding message
The validity of the reporting of vaginal prolapse surgery to the LPR on the level of CPR is high. However, due to the design of the codes and lack of consensus on how to code for vaginal prolapse procedures, coding errors are very common. Therefore the true validity of

data from LPR is limited. By introducing a simple guideline our quality of coding was improved significantly. Therefore guidelines on coding are desirable. Other suggestions for improvement of the validity of coding of register data are: revision of the codes, automatic linking of a code with the corresponding procedure, age related stop functions requiring specific confirmation when certain codes or combination of codes are used. Regular feedback to the reporting hospitals and the implementation of codes for complexity of the entire procedure and recurrent prolapse procedures is also desirable.

Fig. 1. Miscoding due to key-punch, hearing or speaking errors resulting in non-vaginal prolapse procedures being registered as vaginal prolapse procedures. X-axis: Wrong codes Y-axis/columns: number of correct codes.