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Hospital financing in Poland, DRG development in Poland using know-how from the Austrian LKF system

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PARALLEL SESSION 2/6: FUNDING



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Summary

A pilot project was carried out between December 2000 and March 2002 to look into the feasibility of developing a patient classification system for the potential use for hospital financing in Poland. The central objective of this exercise was to prepare a set of diagnosis related groups.

Twenty hospitals in two voivodships were selected as research sites.

The Polish health care system uses ICD9CM for procedure coding and ICD10 for coding of diagnoses. In order to make use of routinely collected patient data the procedure catalogue was mapped onto the Austrian procedure catalogue (MEL).

Cost data and MBDS data were collected from the year 2000 and the first quarter of 2001. Out of 872 case groups from the Austrian system (LDF) 585 (67%) were reached with the Polish data and future developments appear promising in the context of the Polish health care sector.

Introduction

The Ministry of Health in Warsaw decided to try and develop a set of diagnosis related groups for the potential use for hospital financing in Poland. Many of the 17 sickness funds had already experimented with the use of DRGs and similar mechanisms in the past. The sickness funds in Poland have a strong autonomous position when deciding on reimbursement mechanisms for hospital care. The objective of the Ministry was to develop a set of diagnosis related groups that could be offered to the sickness funds and thus streamline hospital financing practice.

The Polish health care system uses ICD9CM for procedure coding and ICD10 for coding of diagnoses. An ordinance regulating accounting in public health facilities was passed in 1998 and hospitals are obliged to adhere to it.

Based on actual clinical and cost data the diagnosis related groups were to be developed.

Methods

For logistical reasons and homogeneity of coding it was decided to implement the project in two voivodships, namely Lower Silesia and Podkarpace. The regional sickness funds agreed to cooperate in the matter and representatives of regional self-administration and the regional Parliaments were informed and asked for their consent.



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The project was guided and monitored by a technical working group in the Ministry of Health's Centre for Health Information and carried out by Austrian experts.

In close co-operation with the sickness funds twenty hospitals were selected to participate in the project. It was deemed a representative sample of the industry at large comprising teaching hospitals, specialised clinics for oncology, psychiatry as well as county hospitals. Voluntary participation and the willingness to collect data were prerequisites for participation.

Participating hospitals were briefed extensively and they were asked to nominate three persons each to be involved in the process of data collection. Throughout the data collection process weekly meetings were held to support the participants and resolve any problems they might encounter.

During the first stage of the project the decision was taken to use the Austrian grouper from the LKF system for the processing of the collected data in a first step in order to be able to compare results with Austrian data.

Data collection and processing

Since Polish regulations stipulate that each hospital treatment must be recorded using demographic information, a main diagnosis coded in ICD10 and procedures coded in ICD9CM it could be assumed that this information was available and could be used for the project. The sickness fund from Wroclaw made a data set available from 2000/2001 with information corresponding to the minimal basic data set (MBDS) used by the Austrian grouping and scoring system.

The database did include data from 102 hospitals with 1087099 individual data sets, of which 866399 were from 2000 and 220700 were from the first quarter of 2001.

To improve data quality three consecutive cleaning steps were taken. Data were imported into the grouping and scoring program for plausibility checks. After reporting back to the sickness fund they eliminated systematic errors.

The final database after the second data verification showed for the data from 2000 59% of data being correct, 12% had errors and 29% had warnings, and for 2001 64% were correct, 13% had errors and 23% had warnings.

As a quality indicator the proportion of four-digit versus three-digit coding of diagnoses was applied. There was a variation of documentation quality between the hospitals whereby the best hospital had almost 100 % of diagnoses documented correctly whereas the worst hospital had only 30% of diagnoses documented as four-digit codes.



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The analysis of length of stay (LOS) showed a relatively consistent picture between hospitals and between the two years 2000 and 2001. LOS for both years in the hospitals varied around five days. One hospital reported LOS for both years five to six times as long as the LOS of the other hospitals. Out of 1087099 patients only error free patients were considered for LOS recalculation resulting in 789064 data sets. Only patients with one single surgical procedure were selected for the recalculations with a result of 520162 data sets. For calculations of length of stay a winsorised mean was calculated using the following cut-off points:

Type	Lower limit	Upper limit
HDG20-Group (Psychiatry)	35%-Quantile	65%-Quantile
MEL-Group (except MEL28)	10%-Quantile	90%-Quantile
Other HDG-Groups (except HDG20)	20%-Quantile	80%-Quantile

HDG: Main diagnosis as primary variable for allocation

MEL: Procedure as primary variable for allocation

Cost data were collected in twenty hospitals but at the end of the data collection period it was only possible to receive cost data from nine hospitals. Data collection was carried out with an Excel spreadsheet, which was chosen because hospital staff were able to use it without further training.

Cost data were collected on the departmental level distinguishing between personnel costs, cost for drugs and material, administration costs and other costs. Procedure costs expressed as personnel costs and costs for drugs and medical material were collected in parallel. Hospitals were asked to focus on expensive and highly frequent procedures following the translated version of the Austrian MEL catalogue.

Adjustment of the procedure component:

Cost data were available from a subset of nine hospitals with a minimum of 6176 patients and a maximum of 37731 patients, the total number of patients being 169265, of which 497235 procedures were coded. This database served as the reference database for the calculations. From the nine reference hospitals seven had calculated procedures coded in ICD9CM with a minimum of one procedure and a maximum of 292 procedures per hospital.

The two databases were joined after grouping of the clinical data whereby 156211 procedures were used as individual calculations, that is hospitals had calculated the procedure themselves which they had coded. 227139 procedures were used with a "Poland value", that is the procedure had been calculated in any hospital. 29781 procedures were used that had been calculated in the hospital of Krosno. Of 84104 procedures calculations were not available.



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In a next step the total procedure costs for each case group (JGP) was calculated and from there the procedure component for each JGP was calculated by dividing the total procedure costs through the number of procedures in the case groups.

A list of procedures that were not calculated showed that mostly highly frequent but economically irrelevant procedures such as the consultation by a doctor had not been calculated.

Adjustment of the day component:

A calculation of ward specific day components was not possible because in some instances ward codes were used that did not exist in the official list of ward codes and the variations of costs between wards of the same type were considered to big. Therefore a “Poland value” over all wards was calculated resulting in a value that was used for the calculation of the day component for each case group.

Results

Out of the 872 case groups from the Austrian LKF system (LDF) 585 (67%) were reached with the Polish data set described above. 57 case groups (six percent) groups were recalculated using the Austrian relations of similar groups. Of the remaining 230 case groups only cost information was unavailable in 39 case groups (17%). For 191 case groups there was no clinical information available because no patient episodes had been reported in the database. This is partly attributable to the fact that some complex procedures from the MEL catalogue could not be mapped using ICD9CM codes.

Discussion and outlook

The results reported here show that it is possible to adapt the Austrian LKF system to a different health care setting. The data structure used in the grouping and scoring program can be easily adjusted to make use of existing data. The relative weights of the case groups resulting from this project need re-evaluation using a broader basis particularly on the side of the cost data. Some case groups were calculated from less than ten data sets and those certainly need special attention.

The areas of oncology, long term care, intensive care and psychiatry also need special attention. A decision needs to be taken whether they should be financed in the future with the same financing mechanism as the other areas and strategies need to be defined on how best collect the necessary data for these areas bearing in mind that there is a lack of clear categorisation of intensive care units or definitions as to what should be a treatment unit in oncology.

Finally it needs to be discussed by Polish stakeholders whether the currently used ICD9CM should be adapted to better serve the purposes of hospital financing.