



Diagnoses-related procedure bundles in outpatient care – an approach using secondary data



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BACKGROUND / OBJECTIVES

Currently, one focus of discussion concerning health care reform in Austria lies on strengthening ambulatory health care provision. Consequently, legal changes aim at fostering the development of new structures in health care (group practices). At the same time, payment reform is being discussed in order to facilitate the adoption of these new concepts under existing financial constraints. Therefore, a research project was set up to assess the feasibility of the available administrative health care data, to develop a statistical toolkit in order to identify diagnoses-related procedure bundles in ambulatory care and to calculate costs for the procedure bundles. The focus of research lies on the feasibility of diagnosis- and patient-oriented methods of payment for episodes of care in the Austrian outpatient sector.

DATA

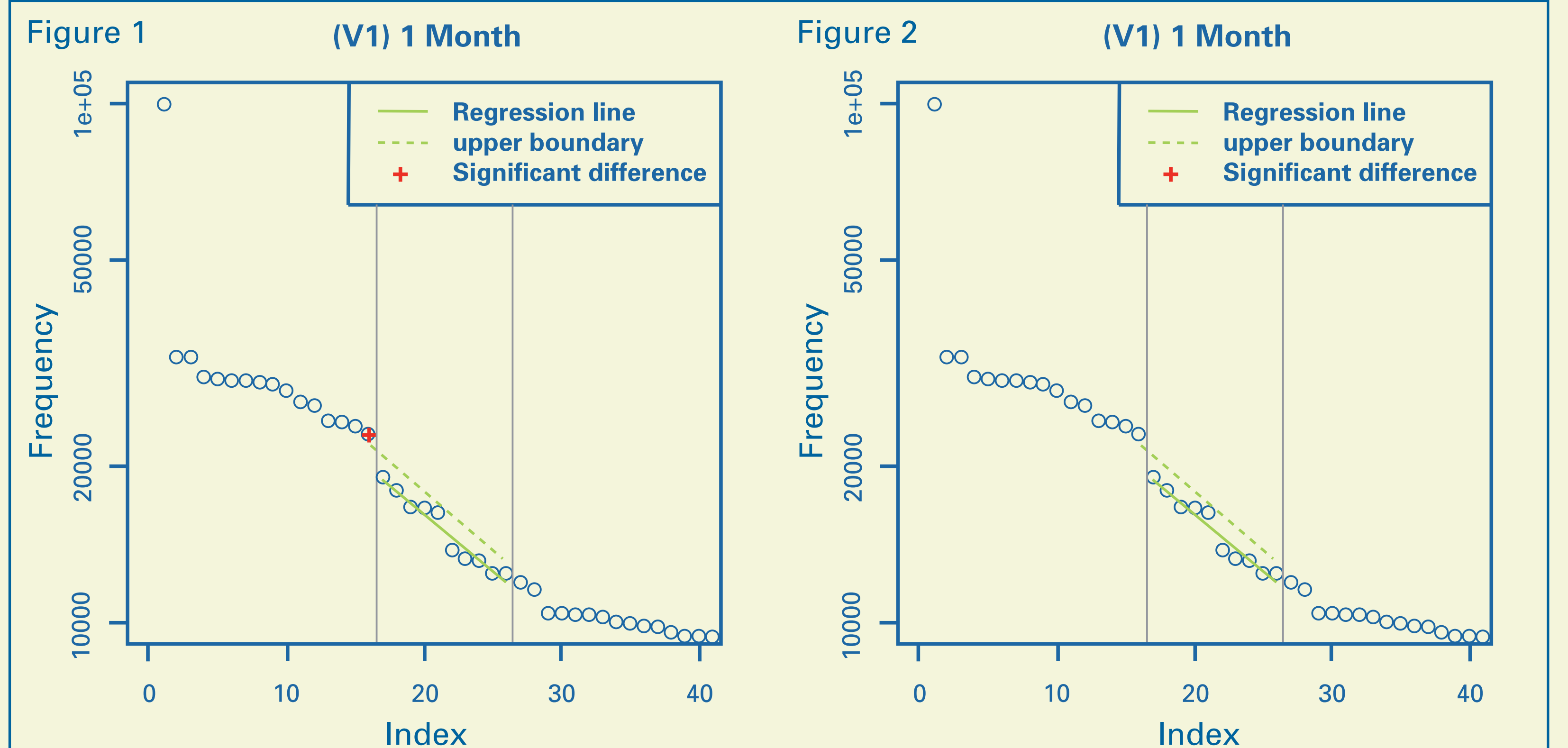
We use a data base of pseudonymous claims data for the years 2006-2007, which allows us to analyze health care provision in outpatient care from a patient's, provider's and insurer's perspective. The data is linked using a unique patient identifier. Currently, no diagnoses for outpatient care are being coded by doctors. Thus, we use the results of another project, where diagnoses were derived from ATC-Codes – this information was attached to the unique ID according to a person's personal record of medication. Moreover, we matched hospital data (procedures, DRGs etc.) from the MBDS data set, using statistical methods.

METHODS

When calculating procedure bundles, only costly procedures from outpatient care were included (with regard to tariff x frequency). We limited our research to a number of common chronic diseases (e.g. diabetes, COPD/asthma, dementia) and used three different approaches to include patients in the data sample:

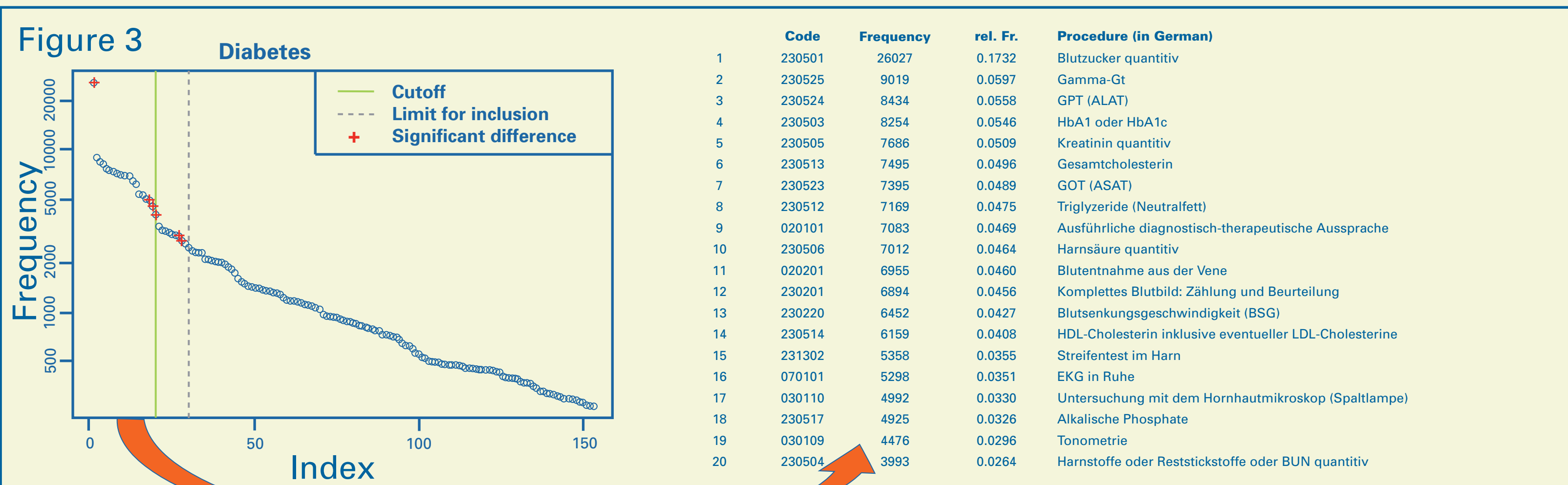
- (1) patients with no other disease than the disease in question for $t_0 \pm 6$ months,
- (2) patients with no other disease than the disease in question for $t_0 \pm 1$ month
- (3) all patients having the disease in question at the time t_0 , regardless of any other disease.

Then we applied linear regression to identify those procedures that are significantly related to the single diagnoses in the sample (within a time span of -90 days/ $+180$ days from the diagnosis). As an upper boundary, two times the standard deviation of the residuals was used. We defined procedure bundles as all procedures to the left of the most significant difference between two adjacent procedures.



Figures 1 and 2 exemplify the method to derive diagnoses-related procedure bundles. In Figure 1 the difference between two procedures could be shown to be significant (marked by the red cross). Figure 2 shows an example where no significant difference between two adjacent procedures could be found.

RESULTS (shown for Diabetes mellitus)



Results show that – for most of the diseases we considered- procedure bundles can be identified using the methods described above. To a large extent, significant procedures for each diagnosis represent technical procedures, such as the determining laboratory values or ECGs. In addition, expected non-technical procedures (e.g. eye treatment for diabetes patients) could be allocated to the relevant diagnoses. However, we couldn't find feasible bundles or those diagnoses where "quasi-unique" ATC-Codes do not exist. The bundles did not vary substantially across the three methods of including diagnoses in the sample.

CONCLUSIONS

The obtained results can be seen as a first step towards describing outpatient procedure bundles related to a number of chronic diseases. In a next step, experts have to refine the bundles. These bundles provide a solid ground for the calculation of costs for diagnosis-related procedure bundles in ambulatory care. The methods used can be implemented in other data sets as well and are therefore not limited to the context of the Austrian health care system.

REFERENCES

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Pfeffer N., Eisl A., Endel F., Endel G., Filzmoser P., Scholler C., Weisser A.: Identification of diagnoses-related procedure bundles in outpatient care using statistical methods, Poster contribution, PCSI 2010, Munich, Germany