Fragmentation of diabetes treatment in Austria – an indicator for the need for shared electronic health record systems

Georg Duftschmid\textsuperscript{a}, Wolfgang Dorda\textsuperscript{a}, Gottfried Endel\textsuperscript{b}, Karl Fröschl\textsuperscript{c}, Walter Gall\textsuperscript{a}, Wilfried Grossmann\textsuperscript{c}, Milan Hronsky\textsuperscript{a}

\textsuperscript{a} Section for Medical Information Management and Imaging, Center for Medical Statistics, Informatics and Intelligent Systems, Medical University of Vienna

\textsuperscript{b} Main Association of Austrian Social Security Institutions

\textsuperscript{c} Faculty of Informatics, University of Vienna
Motivation

- Shared EHR system (SEHRS)
  - integrates health data across borders of different health institutions
  - built to facilitate integrated shared care within “community of care“ [ISO/TR 20514:2005]
Motivation

• Need for SEHRS depends on fragmentation of care

⇒ However, large-scale quantitative analyses on fragmentation of care are lacking
Goal

• Goal: Analyze fragmentation of care in Austria
  – Scope: Pharmaceutically treated Diabetes Mellitus (DM)
  – Particular focus on visits related to health issue DM

Information of other care providers highly relevant
Data Source

- De-identified Social Security claims data
  - Visit data from general practitioners (GPs), specialists, and hospitals
  - Data from drugs dispensed at pharmacies
  - Demographic data
  - Covers years 2006 and 2007
  - Covers approx. 97% of Austrian population (~ 8 Mio. persons)
Methods

- Identify patient collective
  - Received DM-specific drug (ATC-codes A10A, A10B, A10X)
  - Did not die between 2006 and 2007
  - Had at least 1 visit at care provider between 2006 and 2007

- Identify DM-related visits
  - Hospital visits with DM-specific diagnosis (ICD10-codes E10-E14)
  - Outpatient visits with DM-specific drug prescribed
  - Outpatient visits with DM-specific lab test performed
Results

• 325,743 Austrians (~ 4% of population)
  – received DM-specific drugs
  – were alive between 2006 and 2007
  – had at least 1 visit at care provider

• Numbers plausible according to 2 comparisons
  – Austrian Health Survey 2006/07
  – Clinical register of juvenile DM patients
Results

Visits of our study collective at care providers

16 Mio. overall visits
- GP: 64%
- Specialists: 34%
- Hospital: 2%

4.4 Mio. DM-related visits
- GP: 74%
- Specialists: 22%
- Hospital: 4%

34 overall visits per patient in median
10 DM-related visits per patient in median
Results

Study patients visiting different care providers

Considering all visits

- 1 provider: 3%
- 2 or more providers: 97%

Considering only DM-related visits

- 0 provider: 7%
- 1 provider: 19%
- 2 or more providers: 74%
- 2 providers: 28%
- 3 providers: 22%
- 4 providers: 12%
- 5 or more providers: 11%
Discussion

• Not all DM patients considered
  – Non-pharmaceutical treatments

• Not all DM-related visits considered
  – Dispensations of DM-specific drugs at pharmacies
  – Other DM-specific procedures

• Free choice of care practitioner in Austria
Conclusions

• Care of DM patients highly fragmented in Austria
  – 97% had visits at 2 or more different care providers
  – 74% had visits related to DM at 2 or more different care providers
⇒ SEHRS highly useful for Austrian DM patients

• Include DM-related data in upcoming Austrian SEHRS
Conclusions

Thank you for your attention!

Georg Duftschmid

Section for Medical Information Management and Imaging, Center for Medical Statistics, Informatics and Intelligent Systems, Medical University of Vienna