Automated ADE detection from electronic medical records using NLP

SwissMADE is the first Swiss project to use electronic patient records. We employed the dictionary-based entity recognizer OGER to extract drug and diagnose mentions.

Data Extraction

Reports from patients who received antithrombotic drugs during hospital stay in one of the four hospitals below longer than 24 hours, aged 65 and older, between 2015 and 2016.

The paper describes the processing of 18 000 reports extracted from the University Hospital of Zurich (USZ).

Anonymization (per category)

type	recall	precision
age	94.452	95.206
contact	99.133	99.154
date	99.139	98.576
location	85.208	84.304
name	98.991	90.818
occupation	55.238	60.559

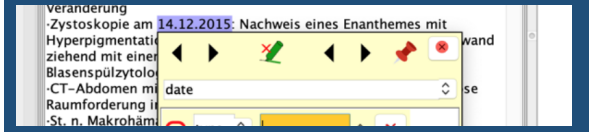
Automatic Annotation

From structured patient data, dictionaries are generated of of drug and diagnose variations. These dictionaries are used by OGER to automatically annotate free text data.

```
rug id="dr1" type="brand_name">Dafalgan</
g id="dr1" type="dosage">1 g</drug>) (alt
rug> <drug id="dr1" type="dosage">1000mg<
rug id="dr2" type="brand_name">Amlodipin
="dr2" type="dosage">5 mg</drug>)r
```

Manual Annotation

400 reports are automatically annotated by the Kantonsspital Baden (KSB) using the GATE annotation tool and a schema developed by all four hospitals together.



This data set will serve as an evaluation for our pipeline.

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