

The Role of General Practitioners in Trauma Care in Switzerland: Variation by Injury Type, Region, Patient Profile, and Over Time

Marc Höglinger¹, Fabio Knöfler¹, Rita Schaumann-von Stosch^{2,3}, Stefan Scholz², Klaus Eichler¹

¹ Winterthur Institute of Health Economics, Zurich University of Applied Sciences, Winterthur, Switzerland

² SUVA – Swiss National Accident Insurance Fund, Lucerne, Switzerland

³ SGTV – Swiss Association for Traumatology and Insurance Medicine

Objectives

General practitioners (GPs) play an essential role in the Swiss health care system as the main providers of ambulatory physician care^[1]. Our study analyzes to what extent and for what types of injury GPs act as initial point of care and to what extent they act as sole care providers or refer patients to other health care providers. We examined differences depending on injury type, patient profile, region, and developments over time.

Methods

Using a claims dataset from the largest Swiss accident insurer with N=2.2 million injury cases between 2008 and 2014, we constructed individual treatment sequences to determine when and from which providers patients received care. We estimated probabilities for the different types of initial care providers and for the role GPs play in the treatment sequence. Estimates were adjusted for injury type and patient characteristics using multinomial regression models.

Results

GPs provided initial care in 54% of accidents (Figure 1, left) and were the sole care providers in 43% of the cases (Figure 1, right). In addition, they provided follow-up care for 15% of the cases. Overall, GPs had some part in 71% of all accident cases.

There is, however, considerable variation in the role of GPs depending on patient profile and region. One clear pattern is that the more rural a region the higher the probability that GPs are involved. In addition, we observed that younger patients, non-Swiss citizens, and males all have a lower probability of receiving initial care from a GP (Figure 2, first panel). As a result, they also showed a lower probability of having a GP as their sole care provider.

For the period of 2008 to 2014, we observed a decrease in the probability of GPs providing initial care from 60% to 54% (Figure 3, top panel). At the same time, there was an increase from 32% to 38% for cases where a hospital emergency department (ED) became the initial point of care (in- and outpatient ED, Figure 3, bottom two panels). These complementary trends hold even when adjusting for changing patient characteristics and injury types.

Conclusions

GPs play a key role in Swiss trauma care, but there is considerable variation depending on the region, patient profile, and injury type.

Our data also confirm the claim made in the literature^[2,3], that trauma patients are treated increasingly in hospital emergency departments – at the cost of GPs who provide less trauma care. The general decline from 2008 to 2014 in GP involvement in trauma care is an indication that the role of GPs in the Swiss healthcare system is changing, which may have implications for their continuing education and training as well as for healthcare costs.

Future research should identify the relative impact of potential causes such as changes in patient behavior and in GPs' skills, preparedness, and willingness to treat trauma patients. Also, structural factors such as GPs' opening-hours and out-of-hours availability as well as the increased use of special diagnostic tools (e.g., CTs) that are not at GPs' disposal might be drivers of the observed changes.

References

- Djalali, S., Meier, T., Hasler, S., Rosemann, T., & Tandjung, R. (2015). Primary care in Switzerland gains strength. *Fam Pract*, 32(3), 348-353.
- Chmiel, C., Huber, C. A., Rosemann, T., Zoller, M., Eichler, K., Sidler, P., & Senn, O. (2011). Walk-ins seeking treatment at an emergency department or general practitioner out-of-hours service: a cross-sectional comparison. *BMC Health Serv Res*, 11, 94.
- Eichler, K., Imhof, D., Chmiel, C., Zoller, M., Senn, O., Rosemann, T., & Huber, C. A. (2010). The provision of out-of-hours care and associated costs in an urban area of Switzerland: a cost description study. *BMC Fam Pract*, 11, 99.

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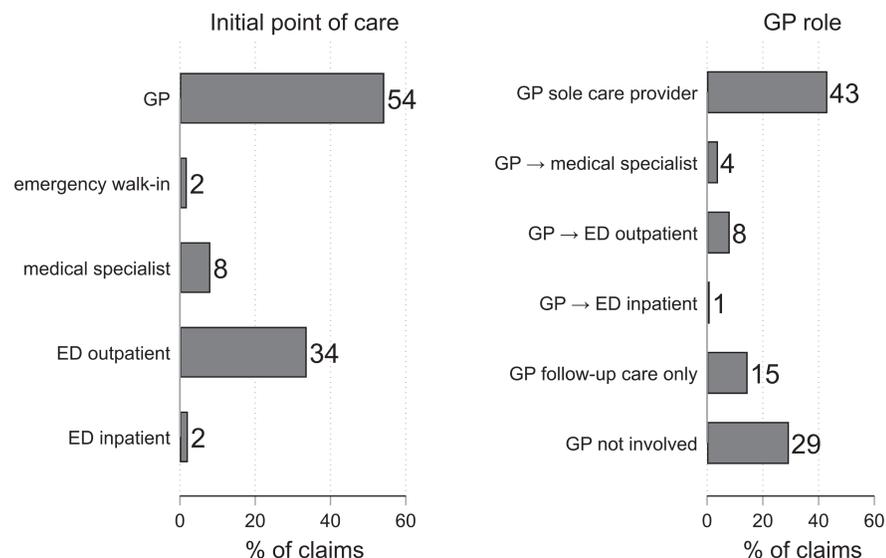


Figure 1: Initial point of care (left) and GP role in trauma care (right) overall. N=2.2 million accident insurance claims 2008-2014. ED: emergency department; medical specialist: e.g. orthopedic or trauma specialist.

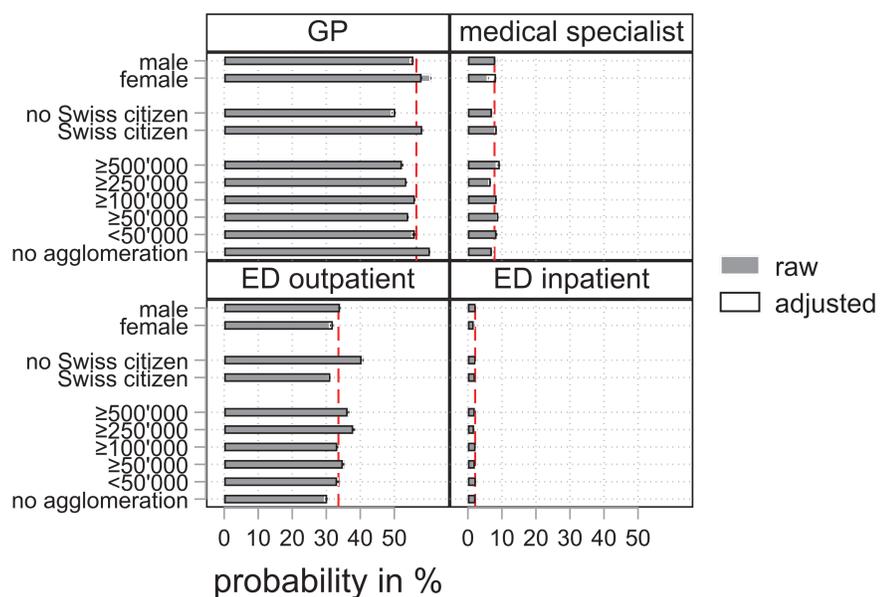


Figure 2: Initial point of care by patient profile and region. Raw and adjusted probabilities (in %). The dashed red line indicates the mean. Adjusted probabilities are based on a multinomial model adjusting for injury type and location, time of the accident, patient's gender, citizenship, age, and place of residence (agglomeration size). ED: emergency department; medical specialist: e.g., orthopedic or trauma specialist.

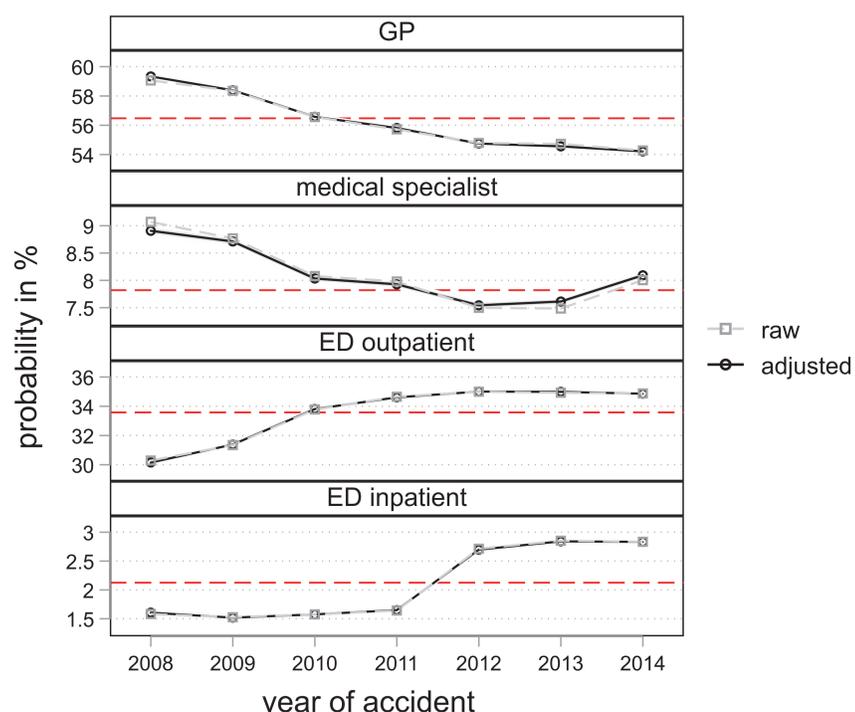


Figure 3: Initial point of care over time. Raw and adjusted probabilities (in %). The dashed red line indicates the mean. Adjusted probabilities are based on a multinomial model adjusting for injury type and location, time of the accident, patient's gender, citizenship, age, and place of residence (agglomeration size). ED: emergency department; medical specialist: e.g., orthopedic or trauma specialist.