

# Impact of financial incentives to improve quality indicators in diabetes patients

## A cluster-randomized controlled trial in Swiss primary care

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### Challenges, Goals

Evidence regarding pay-for-performance (P4P) programs is inconclusive. However P4P interventions might be an interesting approach to improve adherence to guidelines and improve quality of care in primary care. In Switzerland no data on the P4P approach exists and the role of quality indicators (QI), especially in primary care has been marginal. The main reason might be that documentation in primary care is still mainly paper based instead of based on electronic medical records (EMR). The Institute of Primary Care of the University and University Hospital of Zurich founded the research network FIRE («Family medicine ICPC Research using Electronic medical records») with currently 231 primary care physicians (PCPs), voluntarily documenting their consultations based on EMRs. The study team previously demonstrated that the FIRE database offers a valuable database for the calculation of QIs according to the Quality and Outcomes Framework of the NHS in patients with diabetes. The study aims to test a P4P approach in Swiss primary care using clinical routine data from EMRs.

### Research questions, methodology, approach

#### Primary outcomes

- Proportion of diabetic patients with last blood pressure measurement < 140/85 mmHg (clinical QI)
- Proportion of diabetic patients with at least one measurement of HbA1c in the preceding 12 months (process QI)

#### Secondary outcomes

- Proportion of diabetic patients with at least one blood pressure measurement in the preceding 12 months (process QI)
- Proportion of diabetic patients with HbA1c levels < 7.5% (clinical QI)
- Proportion of diabetic patients with at least one cholesterol measurement in the preceding 12 months (process QI)
- Proportion of diabetic patients with total cholesterol < 5 mmol/l (clinical QI)

#### Database

The FIRE database, consisting of administrative data, vital signs (blood pressure), lab values (HbA1c), diagnostic codes (ICPC-2), and medication data (ATC codes) provides the database for the project.

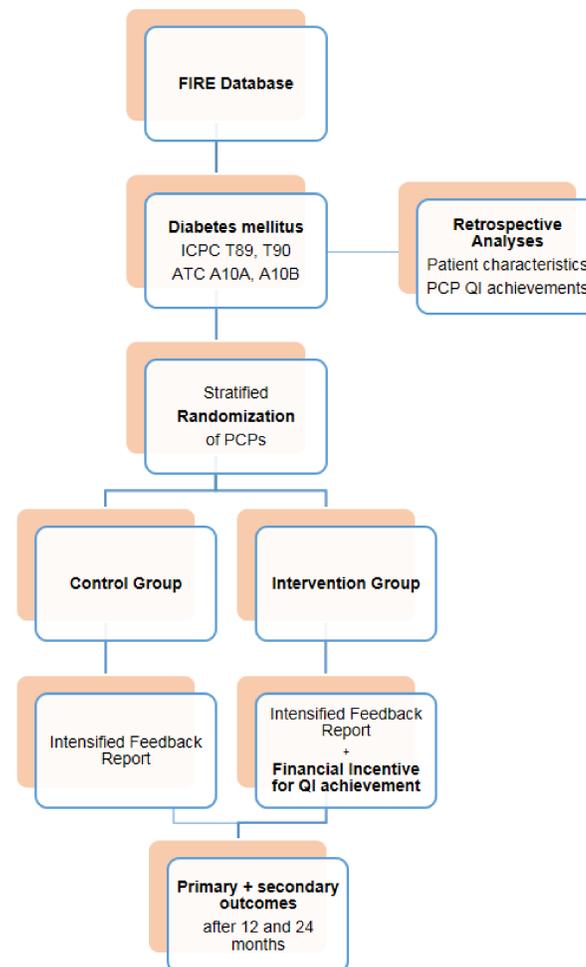


Figure 1: Study Flow

#### Identification of patients

Patients with diabetes mellitus will be identified according to the ICPC-codes for diabetes (T89, T90) and the antidiabetic medications (ATC- A10A, ATC- A10B).

**Analysis** Retrospective analysis of patient characteristics and PCP QI achievement 12 months before inclusion that → allows a stratified randomization of PCPs by current QI achievements and number of diabetic patients.

- Level of randomization will be the PCP (cluster randomized controlled trial).
- Primary and secondary outcomes 12 and 24 months after randomization will be compared using random effects logistic regression analysis with the individual as the unit of analysis and the PCP included as the random effect to control for the effects of clustering.

#### Intervention

- PCPs contributing to the FIRE database already receive a bimonthly feedback report on their data. For the current project the control and intervention group will receive an intensified feedback on the characteristics of their current diabetic patients, including last data of blood pressure and HbA1c measurements and latest recommendations of diabetes treatment guidelines and targeted thresholds for QIs at baseline.

- PCPs in the **intervention group** will be informed that they receive a **financial incentive** 12 months after the intensified baseline feedback provision for increasing QI achievements regarding percentage of diabetic patients with blood pressure < 140/85 mmHg (clinical QI) and percentage of patients where HbA1c was measured within the last 12 months (process QI).
- The bimonthly feedback reports will continue for another 12 months. 24 months after baseline, performance will be measured again in order to estimate long-term effects of the incentive.
- Clinical and process QIs regarding cholesterol control will not appear on the educational feedback for PCPs and are not part of the incentive scheme which allows investigating the effect of a P4P program on non-incentivized QIs.

### Expected Results

We hypothesize that financial incentives increase PCP's achievements regarding QIs in diabetes patients more effectively than evidence-based educational feedback reports. Furthermore differences of P4P on process QIs and clinical QIs will be investigated and the sustainability as well as the effect of a P4P intervention on non-incentivized QIs will be assessed.

### References

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