Accountable Care in Germany – Using Ambulatory Networks to Reduce Avoidable Hospitalizations in 4 German Regions

Patient-sharing networks – a new concept to link research and health policy

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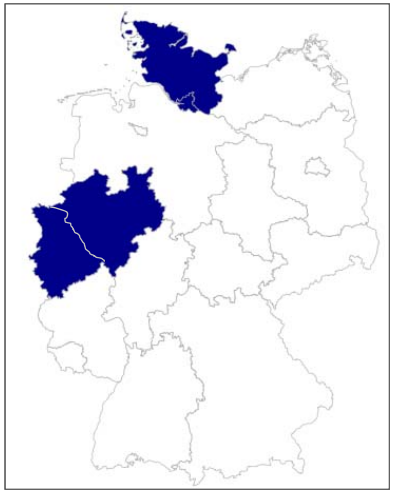
Motivation & Background



- **Background**
  - Extent of chronic diseases
    Prevalence of diabetes mellitus in Germany 2015: 9,8%[1]
- **Structural framework**
  - No gatekeeping system in Germany
  - Continuity of care is challenging *but could reduce hospitalizations*[2]
  - Accountability of care in the outpatient sector *but no systematical feedback on quality of care*

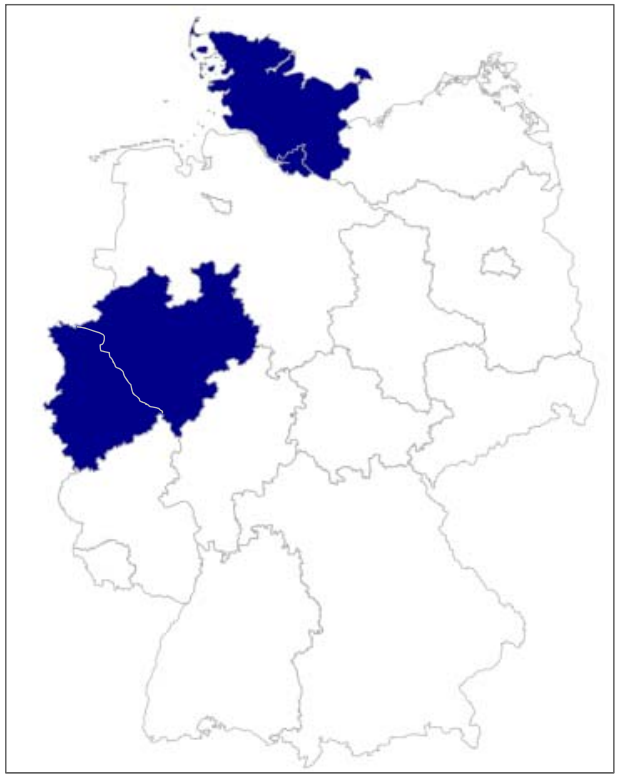
➢ **A better cooperation among (outpatient) physicians and regular feedback improve the *quality* of healthcare and reduce avoidable hospitalizations?**

[1] Goffrier B, Schulz Mandy, Bätzing-Feigenbaum J.:Administrative Prävalenzen und Inzidenzen des Diabetes mellitus von 2009 bis 2015,Zentralinstitut für die kassenärztliche Versorgung in Deutschland (Zi). Versorgungsatlas-Bericht Nr. 17/03.
[2] Rümenapf, G., Geiger, S., Schneider, B., Amendt, K., Wilhelm, N., Morbach, S., und Nagel, N. (2013). Readmissions of patients with diabetes mellitus and foot ulcers after infra-popliteal bypass surgery: attacking the problem by an integrated case management model. Eur. J. Vasc. Med. 42, 56–67.

Project information

Accountable Care in Deutschland (ACD)

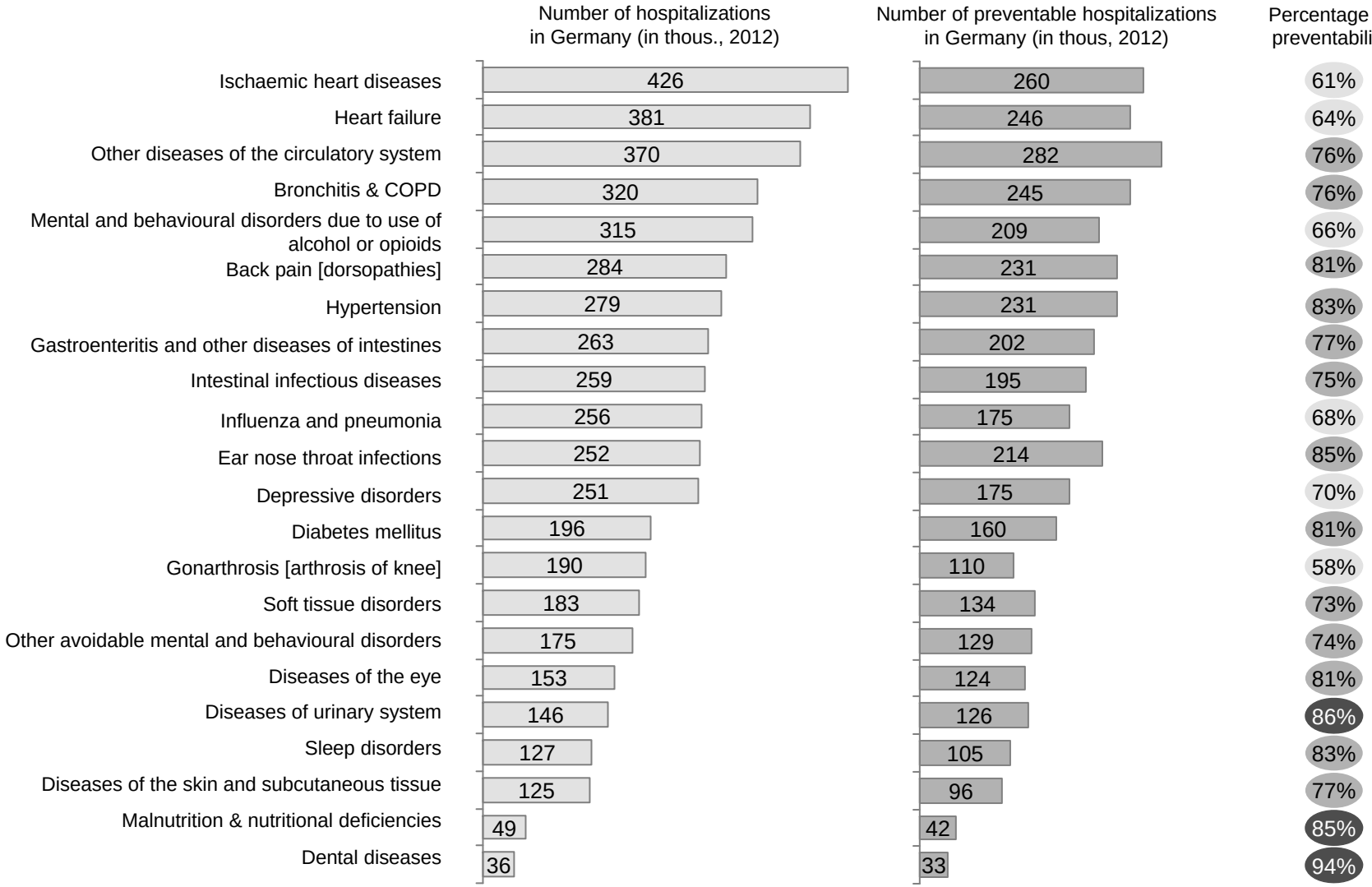
- Financed by the *Gemeinsamer Bundesausschuss* for a three-year term
- Interdisciplinary research team
  - Health insurances
  - Associations of statutory health insurance physicians and their scientific institute
  - Universities (health economics, medical science, biostatistics)
- Outpatient networks are constructed based on administrative data in 4 German regions
- **Intervention (RCT):**
  Structured quality circles and regular feedback



Improve the quality of health care, patient outcomes and job satisfaction through coordination

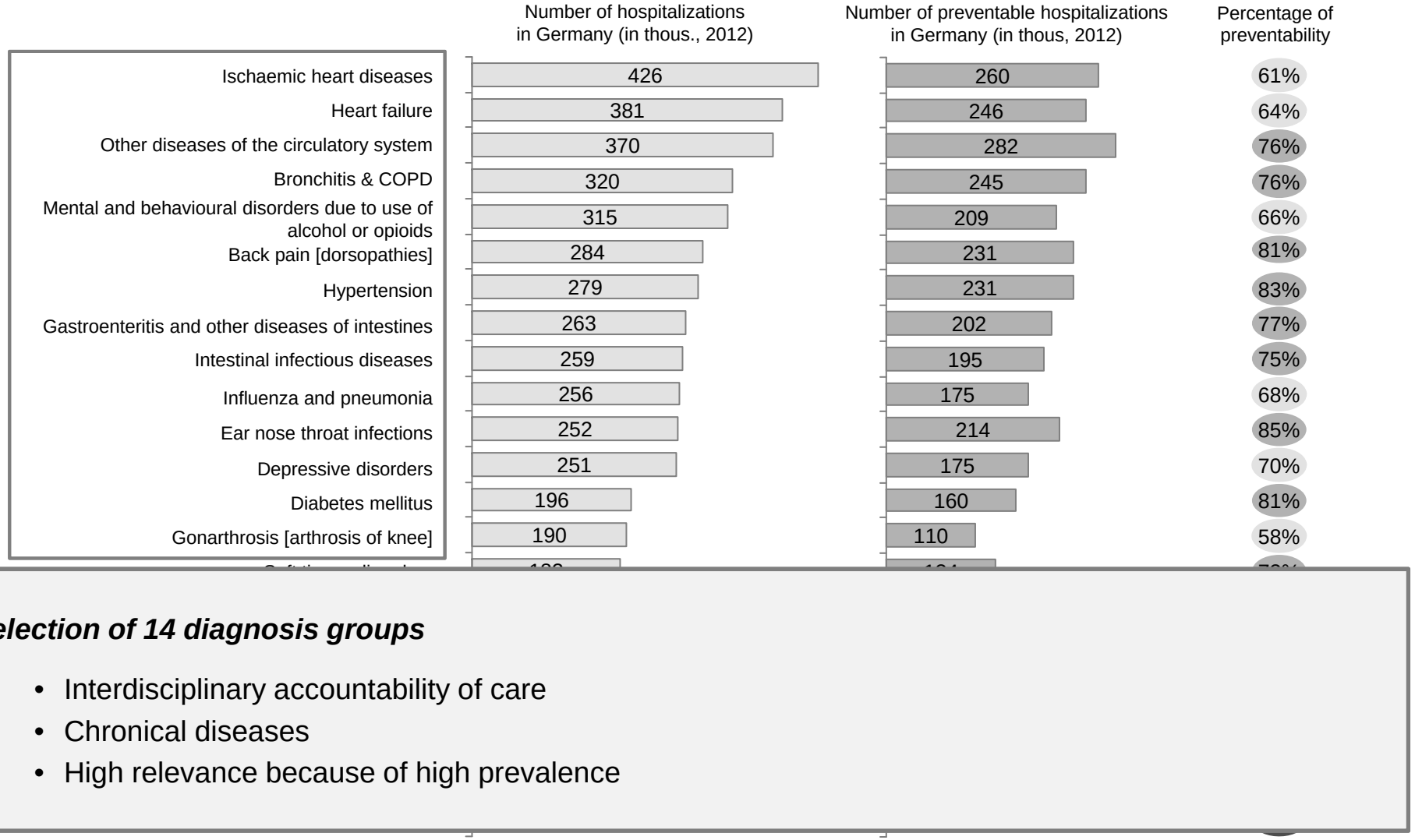
AOK Rheinland/Hamburg · KVWL Kassenärztliche Vereinigung Westfalen-Lippe · Kassenärztliche Vereinigung Nordrhein · Zi Zentralinstitut für die Kassenärztliche Versorgung in Deutschland · KVH Kassenärztliche Vereinigung Hamburg · MHH Medizinische Hochschule Hannover · Heinrich Heine Universität Düsseldorf · KVSH Kassenärztliche Vereinigung Schleswig-Holstein Körperschaft des öffentlichen Rechts · LMU Ludwig-Maximilians-Universität München · WINEG · AOK NordWest

Selection of patient population



Sundmacher, L.; Fischbach, D.; Schüttig, W.; Naumann, C.; Faisst, C. (2015) Which hospitalisations are ambulatory care-sensitive, to what degree, and how could the rates be reduced? Results of a group consensus study with German providers. Published in: Health Policy.

Selection of patient population



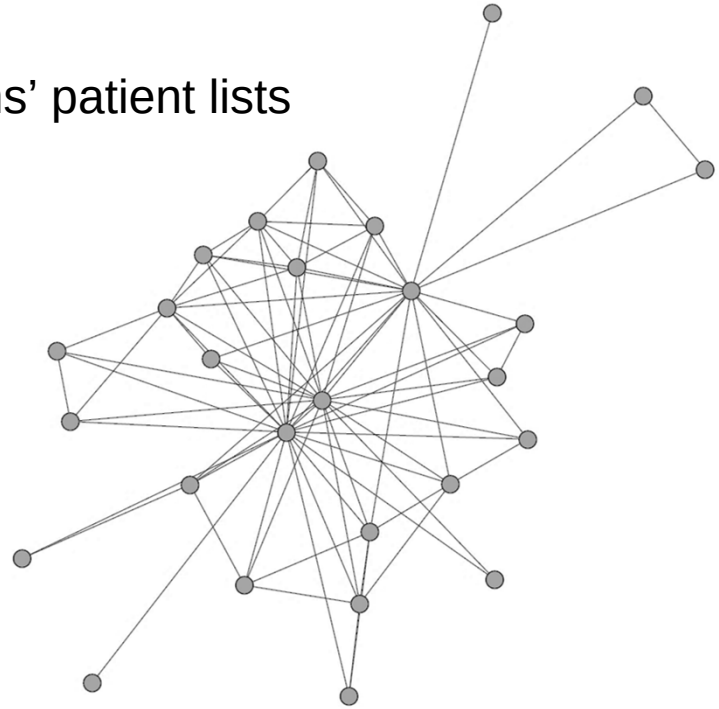
Selection of 14 diagnosis groups

- Interdisciplinary accountability of care
- Chronical diseases
- High relevance because of high prevalence

Sundmacher, L.; Fischbach, D.; Schüttig, W.; Naumann, C.; Faisst, C. (2015) Which hospitalisations are ambulatory care-sensitive, to what degree, and how could the rates be reduced? Results of a group consensus study with German providers. Published in: Health Policy.

Network Construction

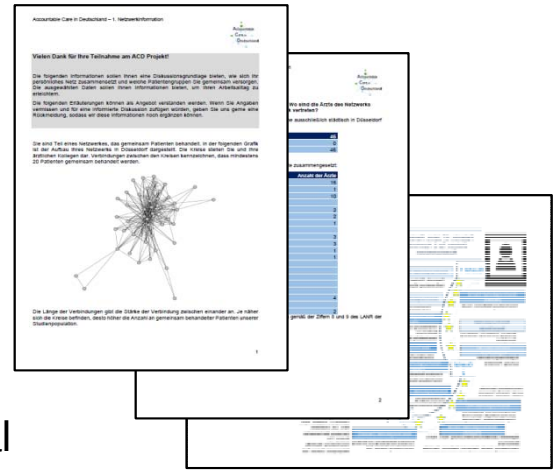
- **Technical approach**
  - Administrative data is used to develop physicians' patient lists
  - Control for connections between physicians
  - Construct the network



- **Network characteristics**
  - Physician based
  - Weighted edges (no. of shared patients)
  - Modularity algorithm to detect communities

- **Challenges**
  - Threshold of no. of shared patients? → 20 Patients
  - Patients assigned to multiple networks → Define a usual provider
  - Physicians in a 'bridge' position → Allocation based on no. of patients

Intervention



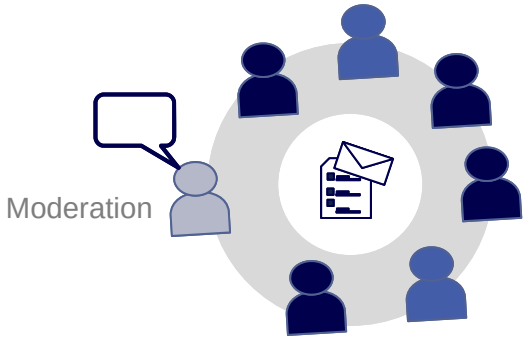
- **Organization**
  - Cluster randomization of networks within the regions
  - Intervention through organized quality circles every 6 months with structured and moderated dialogue
  - Quarterly provided **feedback** on patient outcomes and medical guideline adherence
  - **Feedback** through patient based indicators aggregated on a network level

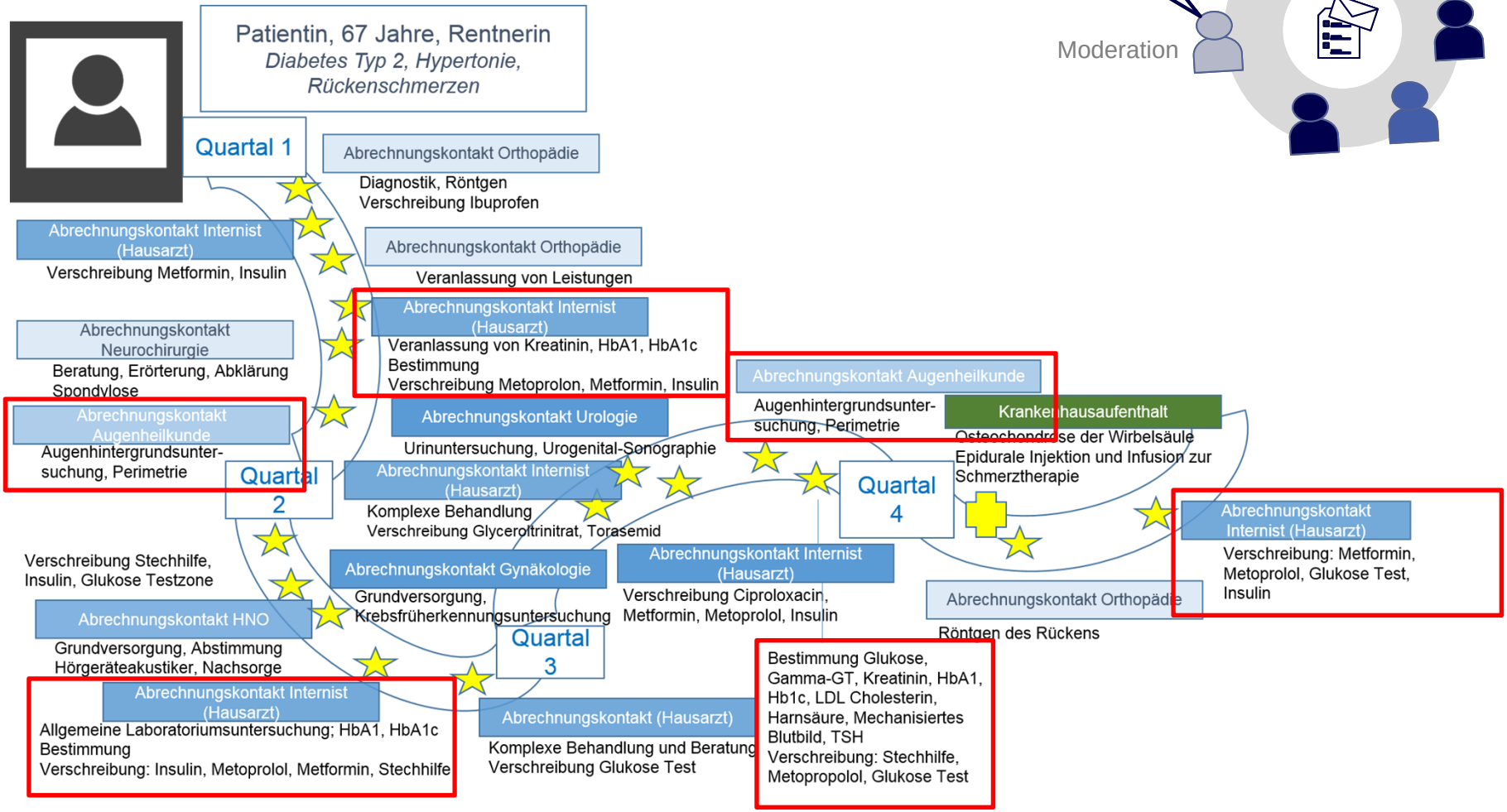
Structural indicators		Process indicators		Outcome oriented indicators	
No. of physicians (per specialization)	**46** (17 general practitioners, 10 internists, 4 specialists in neurology, …)	Rate of diabetes patients consulting a general practitioner at least 4 times a year	**98%**	Mortality rate (per diagnosis group)	**2,4%** (5% of ischaemic heart disease patients, 4% diabetes patients,…)
No. of patients (per diagnosis group)	**4.822** (1191 diabetes patients, 757 ischaemic heart disease patients,…)	Rate of diabetes patients consulting an eye specialist	**59%**	No. of hospital cases (per diagnosis group)	**478** (26 caused by diabetes patients, 32 by patients with back pain,…)
No. of shared patients on average	**48,7**	Rate of diabetes patients getting a HbA1c test	**91%**	No. of patients with more than 1 hospital case (per diagnosis group)	**63** (7 heart failure patients, 2 back pain patients,…)
Demographical information about the patients	**Ø Age: 61.1y; ~ 59% female patients**	Rate of ischaemic heart disease a prescription of statins	**70%**	No. of cases in the emergency department of heart failure patients	**147** (No of heart failure patients: 320)

All indicators are calculated based on the observation period of a year

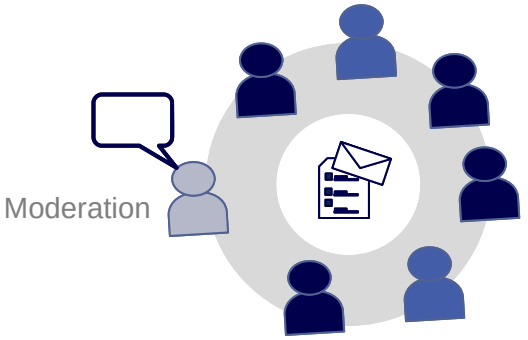
Intervention

- Exemplary patient pathway





Objectives and Implications



- **Networking improves the quality of care?**
  - Analyze the current status
  - Identify strengths and weaknesses
  - Define and pursue joint indicator targets
  - Identify typical patient pathways
  - Avoid unintended incidents
- **Evaluation**
  - After two years of intervention
  - Improvements in health care, based on quality indicators and job satisfaction
  - Comparison between selected and not selected networks

ACD – Summary

1. Construction and identification of physicians' networks
2. Cluster randomization
3. Intervention
4. Evaluation

Thank you
for your attention!

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