

Vierde Nationale Congres Keten zorg en Geïntegreerde Zorg, Utrecht, 2 juli 2010

**Disease Management Programmes in Germany –  
What we did want to know  
What we have learned  
What we still want to know**

**Bernd Hagen, Lutz Altenhofen, Stephan Blaschy,  
Sabine Groos, Jens Kretschmann, Jan Köhler,  
Fritz Lichtner, Antje Schmidt, Maik Heringer**



**Zentralinstitut für die kassenärztliche Versorgung  
in der Bundesrepublik Deutschland**

DMP Projektbüro, Sedanstr. 10–16, 50668 Köln

Tel. (0221) 7763 6760 – Fax (0221) 7763 6767

E-Mail: bhagen@kbv.de

DMP in Germany – Vierde Nationale Congres Keten zorg en Geïntegreerde Zorg, Utrecht, 2 juli 2010

## **Prolegomena (1)**

---

- Structured care programmes between 1998 and 2002
- Disease management programmes (DMP) – a linkage of structured care and financial incentives for compulsory health insurance companies (“risk structure compensation”)
- DMP are running since 2003 (diabetes mellitus type 2, breast cancer), 2004 (cardio vascular disease), and 2006 (diabetes mellitus type 1, bronchial asthma, COPD)
- Major and common features:
  - Focus on improvement and continuity of care (examinations at regular intervals, preferred use of approved medications, interdisciplinary cooperation of general practitioners and specialists / hospitals, active participation of the patients in education and self management)
  - Defined set of indicators (“quality aims”) in relation to structure, process, and outcome of care



**Zentralinstitut für die kassenärztliche Versorgung**  
DMP Projektbüro, Sedanstr. 10–16, 50668 Köln

2 von 22

## Prolegomena (2)

---

- Major and common features (continued):
  - Individualized feedback of quality indicator related results to the physician at regular intervals
  - Evaluation of the programmes' results in a complete region at regular intervals

## What we want to know

---

- How many and what kind of patients are included / covered by the programmes?
- Are the quality aims of the programmes reached?
- Is there a change of structured care quality in the long run?
- Are there any extra benefits of the programmes related to the patients' health and expenditures of the health insurance companies?

### **Intermission: Major obstacles and criticism from the exterior**

---

- DMP were labelled as
  - “State” or “socialistic” medicine: intolerable restriction of the physicians’ freedom to treat their individual patients
  - “Bureaucratic monster”: too much paperwork just for formal reasons
- It was postulated that
  - There are no data
  - Data exist, but are completely faked and / or flawed
  - Data exist and are real, but there are no differences between DMP participants and non participants (and if there are any they can’t be detected because of the lack of a control group)

### **Intermission: Major obstacles and criticism from the interior (1)**

---

- Processes of quality indicator development and definition of quantitative aims are only in parts evidence based and transparent (closed circles of “experts”, only vague scientific evidence or missing experience, lack of adequate, comparable study populations)
- Development of the DMP documentations is driven by interests of the particular contractual partners and not by the principles of systematic, parsimonious, science-based work – and multiple changes occur during the DMPs’ progress
- Very bureaucratic, formal procedures of physicians’ accreditation, data handling and transfer, communication between the data hosting, the health insurance companies, and the physicians
- Electronic documentation already at the DMPs’ beginning would have been better (avoidance of errors, more comfort)

## **Intermission: Major obstacles and criticism from the interior (2)**

---

- Data privacy protection on the patients' side has led to nearly complete anonymity, so longitudinal analyses are very difficult or even impossible, e. g. in the case of patients who change their physician and / or health insurance company

## **What we have learned (1)**

---

The following results were gathered mostly from the North Rhine region

- Up to 70 till 80 percent of patients estimated to suffer from a specific disease are included
- Most of the quality aims are reached, especially in the long run, e. g. after several years of participation aims related to regularity of check-ups (diabetes: eye examination, screening of kidney function and feet symptoms) or improved pharmaceutical care (CVD)
- Some of them, e. g. the aim related to the number of hypoglycaemias, had to be adjusted (unrealistic high preliminary expectation of events)
- Some of them had to be defined more precisely, e. g. the criteria for diabetic patients with feet symptoms who should be referred to a specialist

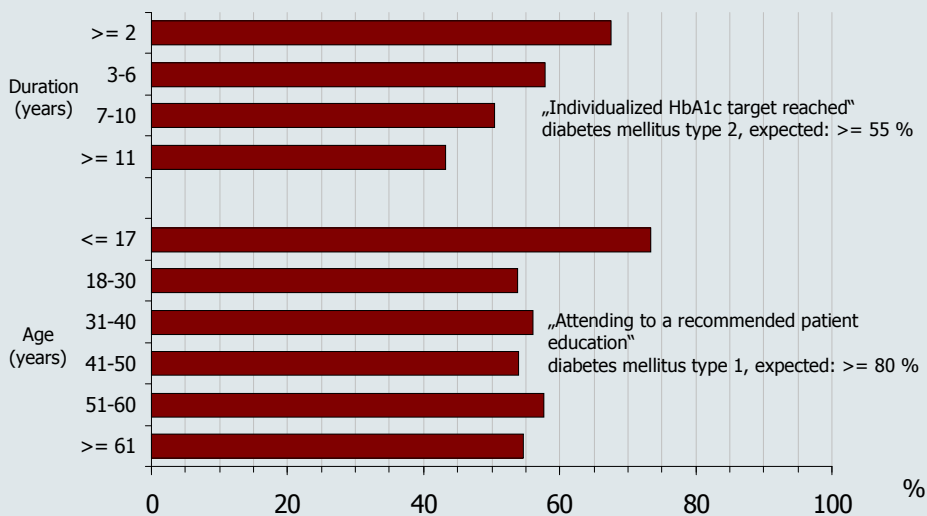
## What we have learned (2)

- In many areas for the first time ever large quantities of longitudinal data from representative patient populations were collected, e. g. female and old patients with CVD, children, adolescents, and adults with asthma, female and old patients with COPD

A lot of unexpected and exciting results were gathered

- There exist vast discrepancies between various subgroups of the patients as well as the physicians in relation to reaching of the quality aims, e. g.
  - patients with a short vs. long duration of diabetes (HbA1c, blood pressure, comorbidities)
  - female vs. male patients with CVD (LDL cholesterol, medication)
  - children and adolescents vs. adults with diabetes mellitus type 1 (attending patients' education)

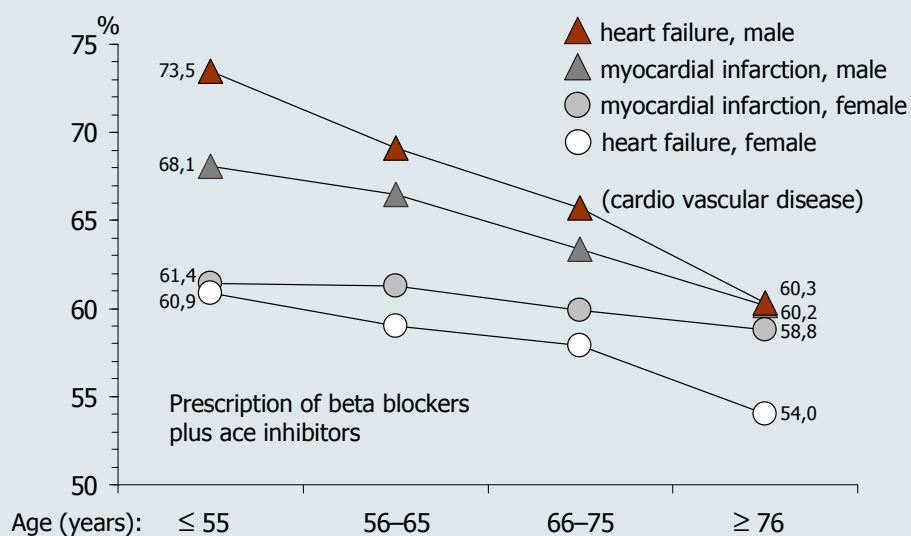
## Example of results: subgroup differences



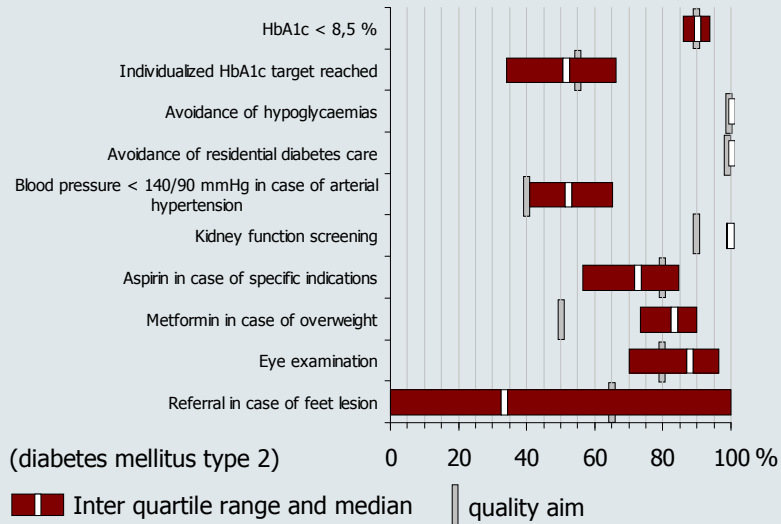
### What we have learned (3)

- Vast discrepancies between various subgroups (continued)
  - interaction of age and gender in patients with CVD (medication)
- There is a distinct variance of reaching the quality aims (inter quartile ranges differ enormously)
- Beyond that there are large differences in the correlations of variables which predict reaching of the quality aims in multivariate models
- Time course of outcome parameters like HbA1c, systolic blood pressure, and body weight depends on baseline conditions (linear models with estimated means)
- Progress of outcome parameters is often slower / smoother than expected (HbA1c, body weight) or even better than expected in the beginning (blood pressure, eye examination rate)

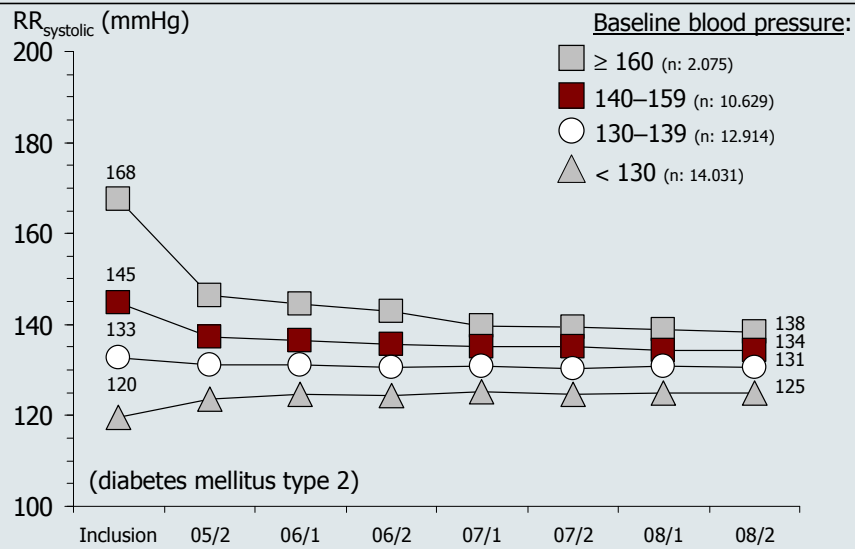
### Example of results: interaction of age and gender



### Example of results: variance in reaching quality aims



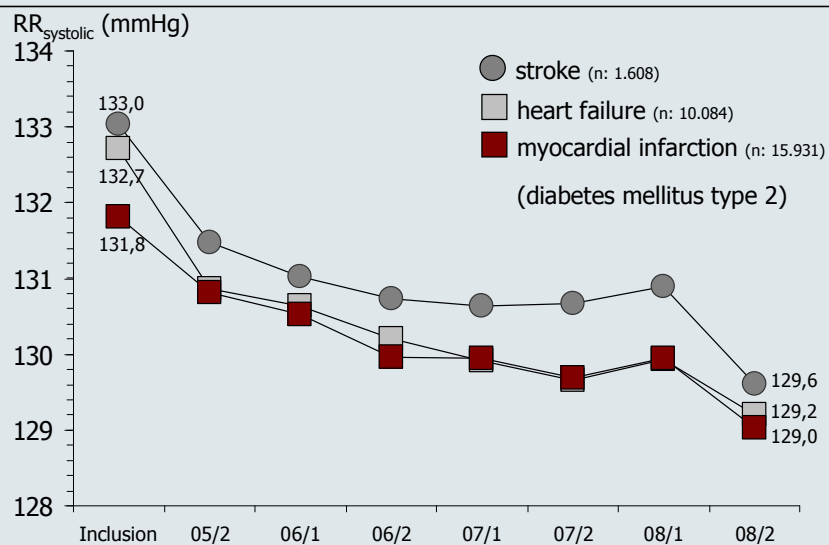
### Example of results: long term progress of parameters



## What we have learned (4)

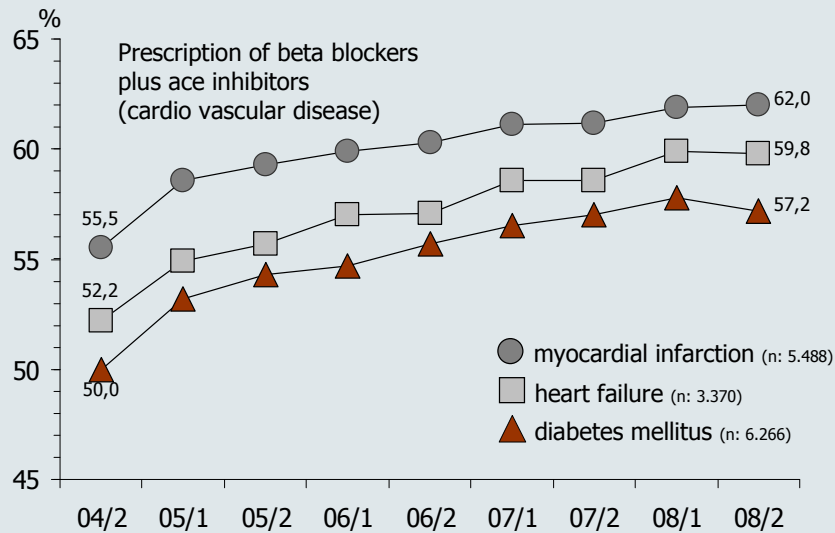
- Subgroups with specific risk combinations are treated specifically (intensified medication)
- Interdisciplinary cooperation does work and influences positively outcome parameters (HbA1c, blood pressure)
- Leaving of DMP is dominated by morbidity (D2, CVD, COPD) vs. lack of adherence (D1, asthma)
- Better quality of care "radiates" even to patients not included (secular trends)

## Example of results: progress of parameters in risk groups

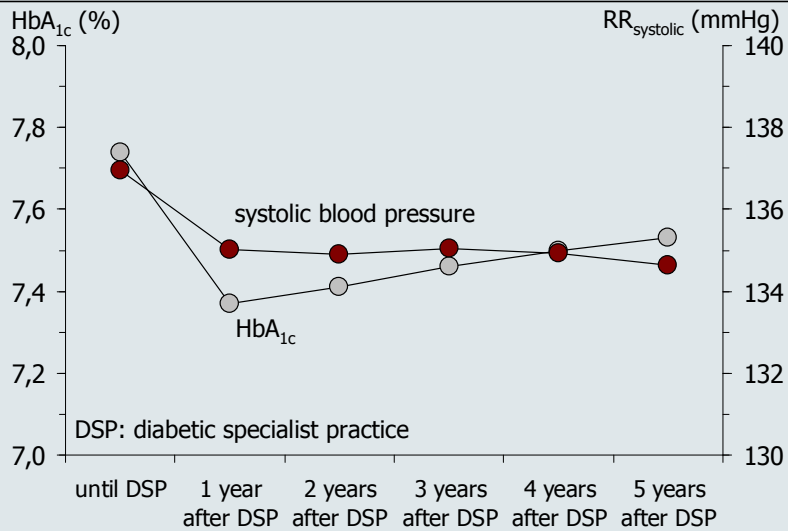




### Example of results: long term medication analysis



### Example of results: effects of referral to a specialist



## What we still want to know (1)

---

- Future development of participation: are there certain "DMP suitable" types of patients?  
(approximately yes, because of the active components)
- Future development of patient cohorts which are included: is there a tendency towards "worse" or "milder" forms of a specific disease?  
(approx. yes and no – diabetes mellitus type 2 vs. CVD)
- Effects of longer observation periods: are there prolonged improvements depending on the amount of time spent in a DMP?  
(approx. yes and no – HbA1c vs. blood pressure control / check-up rates)
- Are there regional differences in the quality of care: can we obtain a better quality of care in certain subgroups / communities / districts where networks of general practitioners and specialists are established?  
(approx. yes, because of a stricter attention to standards of care)



## What we still want to know (2)

---

- Are there any long term effects of feedback or CME activities connected with DMP participation on the physicians' behaviour?  
(very difficult to analyze because very subtle effects are influenced by a wealth of factors from out of DMP)
- Are there any long term effects of DMP on the progress of comorbidities, mortality, economic costs for the social system?  
(extremely difficult to analyze because of data "camouflage" by change of documentation – instead of incidence prevalence is documented at the moment – mortality is until now only documented externally and incompletely – cost intensive periods or residential care and the reasons therefore are often only documented indirectly, by a lack of documentation!)



## Résumé

---

- Eight years of DMP in Germany have produced a vast amount of data, knowledge, and answers to some important questions
- And have formed quite exciting proposals for a bunch of long term results which are up to now not known
- Hopefully politics and interest groups will give us some more years for those analyses

## Where you can download the reports

---

- report of 2008 of the North Rhine region:  
[http://www.kvno.de/presse/meld2010/dmp\\_qualitaet2008.html](http://www.kvno.de/presse/meld2010/dmp_qualitaet2008.html)
- or alternatively:  
<https://www.zi-dmp.de/Documents/Publikationen.aspx>
- report of 2006 and 2007 of the Westphalia-Lippe region:  
<http://www.kvwl.de/arzt/qsqm/prozess/dmp/index.htm>