UniversityHospital Heidelberg

# Modelling care sensitivity using ACG® systems – Insights from a German cohort study

## ACG International Conference, Baltimore

May 6-9 2012

Tobias Freund, MD

Dep. of General Practice and Health Services Research, University Hospital Heidelberg, Germany

# Background

- Predictive models (PM) identify high risk individuals as potential participants of chronic care services [Forrest 2009]

- Physicians identify patients with high likelihood to participate actively in chronic care services [Freund 2011]

# Case finding by PCP

What are the motives behind including or excluding patients from care management?

-> 13 semi-structured interviews with PCPs

Three categories

1. Programs inclusion/exclusion criteria
2. Physician-related
3. Patient-related

Tobias Freund, Michel Wensing, Stefan Geißler, Frank Peters-Klimm, Cornelia Mahler, Cynthia M. Boyd, Joachim Szecsenyi. **Primary care physicians' experiences with case finding for practice-based care management.** *Am J Man Care* 2012;18(4)

# Case finding by PCP

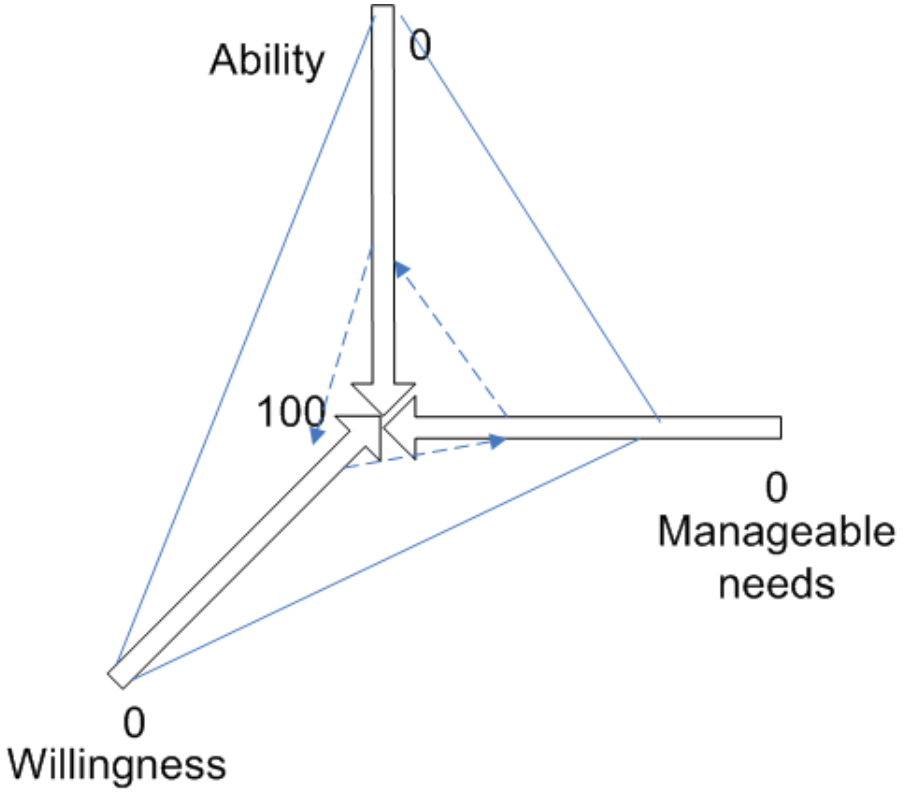
- **Physician-related**
  - Sympathy/aversion
  - Knowing the patient
- **Patient-related**
  - Willingness to participate
  - Ability to participate
    - Cognitive status
    - Adherence
    - Social situation
  - Actionable needs
    - Need for intensified care (comprehensive care/frequent monitoring)
    - Morbidity (“ill, but not too ill”)
    - *Non-Adherence*

# Care Sensitivity

**Willigness to participate**

**Ability to participate**
eg. cognitive status, language, infrastructure

**Manageable care needs**
i.e. conditions manageable with offered program



# Model

73,499 AOK-beneficiaries from 115 primary care practices in Germany

- Dx,Rx input 2009
- ACG Systems version 9.01i

Multivariate logistic regression predicting participation in:

a) Disease Management

b) Care Management

# Modelling approach

| Care sensitivity domain | ACG output |
| --- | --- |
| **Willigness to participate** | *Prior participation in Chronic Care Services (+)* *[CM model only]* |
| **Ability to participate** eg. cognitive status, language, infrastructure | Adherence marker [CSA/Rx-Gap] (+) |
| **Actionable care needs** i.e. conditions manageable with offered program | Frailty Flag (-) |

# Disease Management

- Low intensity care program for CHD, COPD, DM Type I/II
- Counselling, PE and blood check every 3mts
  - 10,233 patients eligible by diagnosis (no minors)
  - 2,499 (24%) DMP participants (any program)

# Disease Management

Model:

Pseudo $R^2$ 0.10

| | |
|---|---|
| *Willingness:* | *NA* |
| Ability [CSA mean value] | OR 1.04* [95% CI 1.01-1.06] |
| Actionable [Frailty Flag] care needs | OR 0.97* [95% CI 0.85-1.09] |

*adjusted for age, gender, generic drug count and practice site

# Care Management

- Intensified care program for high-risk CHF, DM type 2 and COPD patients
- Primary care practice-based CM with trained health care assistants (assessment, care planning, telephone monitoring)
  - 5,167 patients eligible by diagnosis and LOH > 75$^{th}$ percentile (LOH>0.174)
  - 23% CM participants

# Care Management

Model:

Pseudo $R^2$ 0.07

| | |
|---|---|
| Willingness [Prior DMP] | OR 1.30* [95% CI 1.10-1.53] |
| Ability [Rx-Gap sum] | OR 1.10* [95%CI 1.07-1.14] |
| Actionable [Frailty Flag] care needs | OR 0.78* [95% CI 0.66-0.91] |

*adjusted for age, gender and practice site

# Conclusion

- ACG System 9.01 output variables can be used to model care sensitivity
- Findings to be confirmed in other settings/larger populations
- Additional variables will be explored
- Combining risk- and care sensitivity modelling may optimize case finding (e.g. higher response/offer ratio-> saving screener resources)

# Thank you!

Contact:

tobias.freund@med.uni-heidelberg.de