

# A field study of computerized chronic disease management in outpatient depression

Requirements analysis for evolving  
decision-making

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# Chronic disease management. What is it?

- Coordinated clinical practices & care
- Inseparable from information systems (IS)

## Why do it?

- Healthcare costs
- Quality of chronic care

# How do we develop and improve it?

## The role of data analysis/evidence:

- Program improvement questions
- Vignette of clinical processes and resulting information in databases
- Using information to answer questions

# Purpose of our talk

- Propose that exploratory data analysis needs to drive the design of IS --not be an afterthought as "Reports"
- Show why
- Provide a 1<sup>st</sup> step in defining user-centered needs & their benefits

## Background: Our study

- Depression disease management in the university medical center
- Year-long ethno-observations/interviews
- Analysis of work, information flows & uses

# Background: Information system

- Systems/databases for patient data
- Care manager system in Psychiatry
- User interfaces and interactions

# Available information and exploratory data analysis questions

- "What disease management practices have the greatest positive effects at the lowest costs?"
- Key issues related to...
  - patient outcomes
  - program outcomes
  - the relationship between the two

## Case example

Improving/re-designing treatments to coincide with patient outcome evidence

- Seasonal patterns
- Additional insights from exploratory data visualizations
- Insights and implemented improvements

# Conclusions

Needs: effective analysis for program improvements:

- Definition of relevant outcomes & data for assessing them
- Adaptability
  - evolving medicine, unanticipated chronic issues, inherent tensions
  - domain expertise and to freedom to explore knowledge (relationships) not factoids
- User control
  - become adept at looking at info you have

# Conclusions

- Benefits of exploratory data analysis driving IS and UI designs
  - Quality of care
  - Costs
  - Scalability