ICPC as a tool for research

Mette Trøllund Rask, MSc, PhD-fellow

mette.rask@alm.au.dk

SCHOOL OF PUBLIC HEALTH

FACULTY OF HEALTH SCIENCES
AARHUS UNIVERSITY

THE RESEARCH UNIT
FOR GENERAL PRACTICE

Aarhus

ICPC applications in research

- **Research based on automatically collection of ICPC codes of clinical encounters:**
    - Clinical epidemiology
    - Symptom- and disease patterns
    - Symptom- and disease management
    - Outcomes research
- **Offers a thorough insight into the activities in general practice:**
    - What do patients present with in general practice?
    - In how many encounters is a symptom diagnosis applied?
    - In how many encounters is an exact diagnosis made?
    - How many patients suffer from chronic diseases?

Methodological concerns

- **Data quality is crucial to research**
  - GPs' use of ICPC (consistency)
  - GPs' coding of symptom versus specific diagnoses
  - GPs' coding of single versus multiple complaints in the same encounter

Methodological concerns

- **Data quality is crucial to research**

- Inter-observer variability (ICPC)

    - Mean agreement at rubric level 56-71% (Britt et al 1998; Schroll 2003)

    - Mean agreement at chapter component 70% (Britt et al 1998)

    - Mean agreement at chapter level 79-94% (Britt et al 1998; Schroll 2003)

- Intra-observer variability (ICPC)

    - 25% of GPs changed diagnoses (Schroll 2003)

An example of ICPC as a tool for research: Development of a new classification of medically unexplained symptoms

Aim

- **Development of a new diagnostic category for MUS:**

  - 'Multiple symptoms' defined as 3 or more symptoms during 6 months not verified as diseases/disorders

Normal physiological phenomena	Acute or sub-acute functional somatic symptoms	Chronic somatization

- **Register based study of ICPC codes investigating:**

  1) Prevalence of 'multiple symptoms'

  2) Appropriateness of the suggested diagnostic criteria for 'multiple symptoms'

  3) GPs' evaluations of the diagnostic classification of own patients fulfilling the criteria for 'multiple symptoms'

Methods

- Retrospective 6 and 12 months retrieval of data from DAMD (date of retrieval: 30th November 2009)

- Selection of GPs: coding of at least 70% of face-to-face encounters in the retrieval period and the prior 6 months
  - 41 practices included in the 6 month data extraction
  - 29 practices included in the 12 month data extraction

- Identification of patients with at least 3 different symptom diagnoses ('multiple symptoms')

- Generation of GP lists of patients with 'multiple symptoms'

Methods

- ## Example of GP evaluation list:

Patient:	123456-1234 Anna Jensen

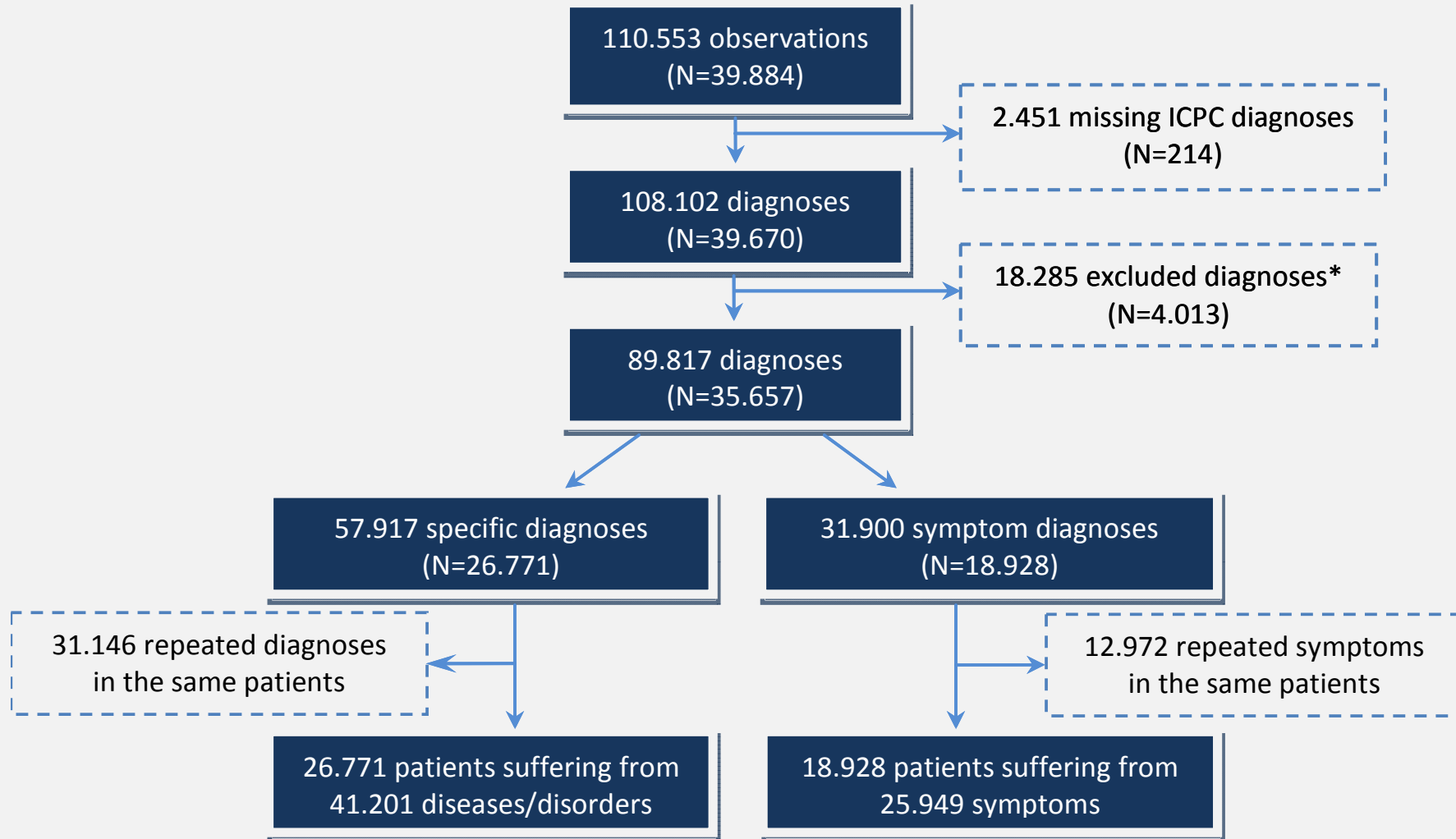| GP INITIALS: DATE: _____-_____ 2010			SYMPTOM COURSE Tick one checkbox			DEFINITIVE DIAGNOSIS IN RELATION TO SYMPTOM Specify one code		ARE YOU CERTAIN ABOUT THE DEFINITIVE DIAGNOSIS? Tick one checkbox		DO YOU CONSIDER THE DIAGNOSTIC CRITERIA OF A24 FULFILLED? Tick one checkbox	
Symptom code	Symptom date	Initials registrated in DAMD	Symptom resolved	Symptom unchanged	Not specified	Symptom diagnose (A-Y 01-29)	Specific diagnose (A-Y 70-99)	Yes	No	Yes	No
1. A01	02-06-2009	HKM	☐	☐	☐			☐	☐		
2. A04	02-06-2009	HKM	☐	☐	☐			☐	☐		
3. L02	10-08-2009	PRS	☐	☐	☐			☐	☐		
4. L18	08-10-2009	TJK	☐	☐	☐			☐	☐		
										☐	☐

Comments:

- Validity of 'multiple symptoms' (false positives)
- Investigation of 'multiple symptoms' as a predictor of later development of disease or disorder

ICPC as a tool for research

Flow chart

ICPC as a tool for research

Flow chart

110.553 observations
(N=39.884)

2.451 missing ICPC diagnoses
(N=214)

108.102 diagnoses
(N=39.670)

18.285 excluded diagnoses*
(N=4.013)

89.817 diagnoses
(N=35.657)

57.917 specific diagnoses
(N=26.771)

31.900 symptom diagnoses
(N=18.928)

31.146 repeated diagnoses
in the same patients

12.972 repeated symptoms
in the same patients

26.771 patients suffering from
41.201 diseases/disorders

18.928 patients suffering from
25.949 symptoms

*Excluded diagnoses:
Process codes (n=9720), Z chapter (n=715), W10-14 (n=1989), Y13-14 (n=81), chapter codes only (n=5780)

Results

Results

Results

Frequency of selected diagnoses (possibly) related to MUS during a 6-month period:

Conclusion

During a 6-month period – preliminary results

- 18.928 patients were registered with 25.949 symptoms/complaints

  - 7.4% of the patients had at least 3 different symptoms and could be classified with the new diagnosis 'multiple symptoms'

- 26.771 patients were registered with 41.201 diseases/disorders

  - Of these diagnoses 3.7% were possibly related to MUS

Perspectives of
ICPC applications in research

- Databases based on ICPC codes such as the Danish DAMD have great potential for future research

- Research based on the ICPC gives insight into activities in general practice and points to areas of special relevance

- Research directed towards further development of ICPC is necessary in order to make the classification system reflect daily clinical practice

Thank you for your attention