



APPLIED

RESEARCH CHAIR

**Health Services and Policy Research on
CHRONIC DISEASES IN PRIMARY CARE**

Canadian Institutes of Health Research-Institute of Health Services and Policy Research /
Canadian Health Services Research Foundation /
Centre de santé et de services sociaux de Chicoutimi

MULTIMORBIDITY: the insidious **epidemic**

Evidence-Based Medicine Meets Multimorbidity: A Blind Date?

Frankfurt, Germany

October 17th, 2012

Acknowledgements and conflicts of interest



Centre de santé et de services sociaux
de Chicoutimi

Centre hospitalier affilié universitaire régional

Agence de la santé
et des services sociaux
du Saguenay –
Lac-Saint-Jean



Multimorbidity

..... Huuumm... diabetes, cardiovascular disease, back pain, high blood pressure, today we will treat





Presentation outline

MULTIMORBIDITY, THE INSIDIOUS EPIDEMIC

1. Definitions
2. Prevalence, trends and more
3. Publications on multimorbidity /
comorbidity



1. Definitions



Epidemic vs non-epidemic

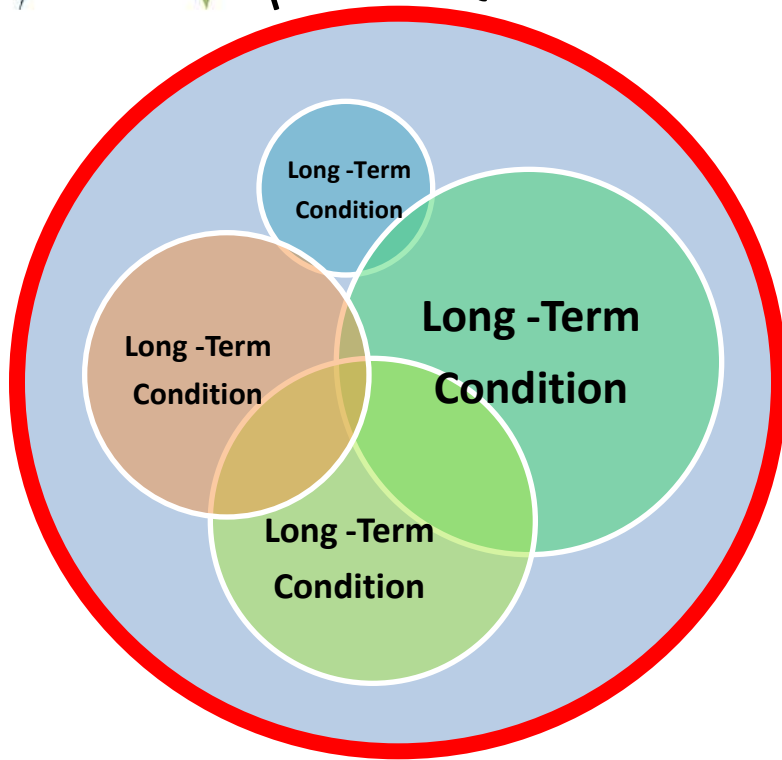
- What is an epidemic?

When new cases of a given disease, in a given population, over a given period, substantially exceed what is expected based on recent experience.

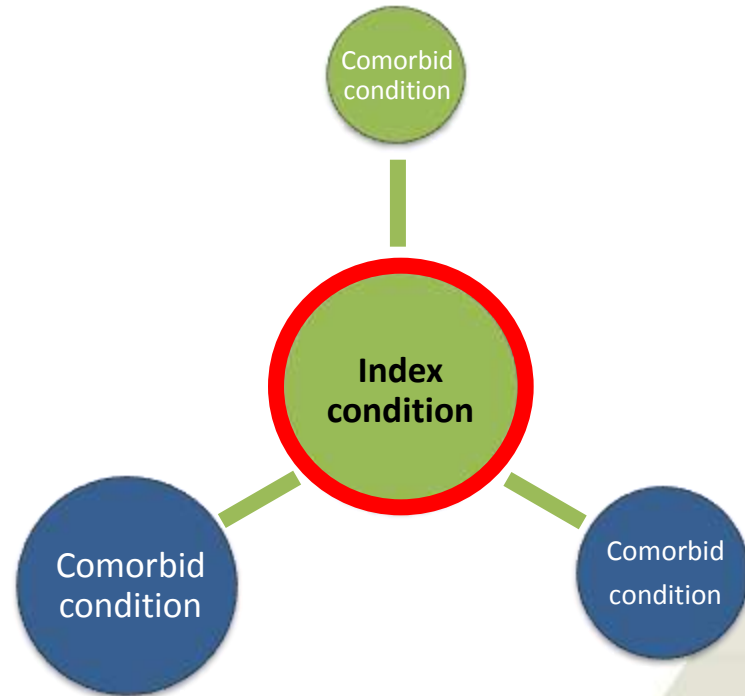
MULTIMORBIDITY vs COMORBIDITY



patient



Multimorbidity



Comorbidity



Multimorbidity and Complexity





THE HEALTH-DISEASE CONTINUUM

The course of a long-term condition





MULTIMORBIDITY AS A « CAREER »

Chronic condition

5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85

Obesity

Hypertension

Hyperlipidemia

Diabetes

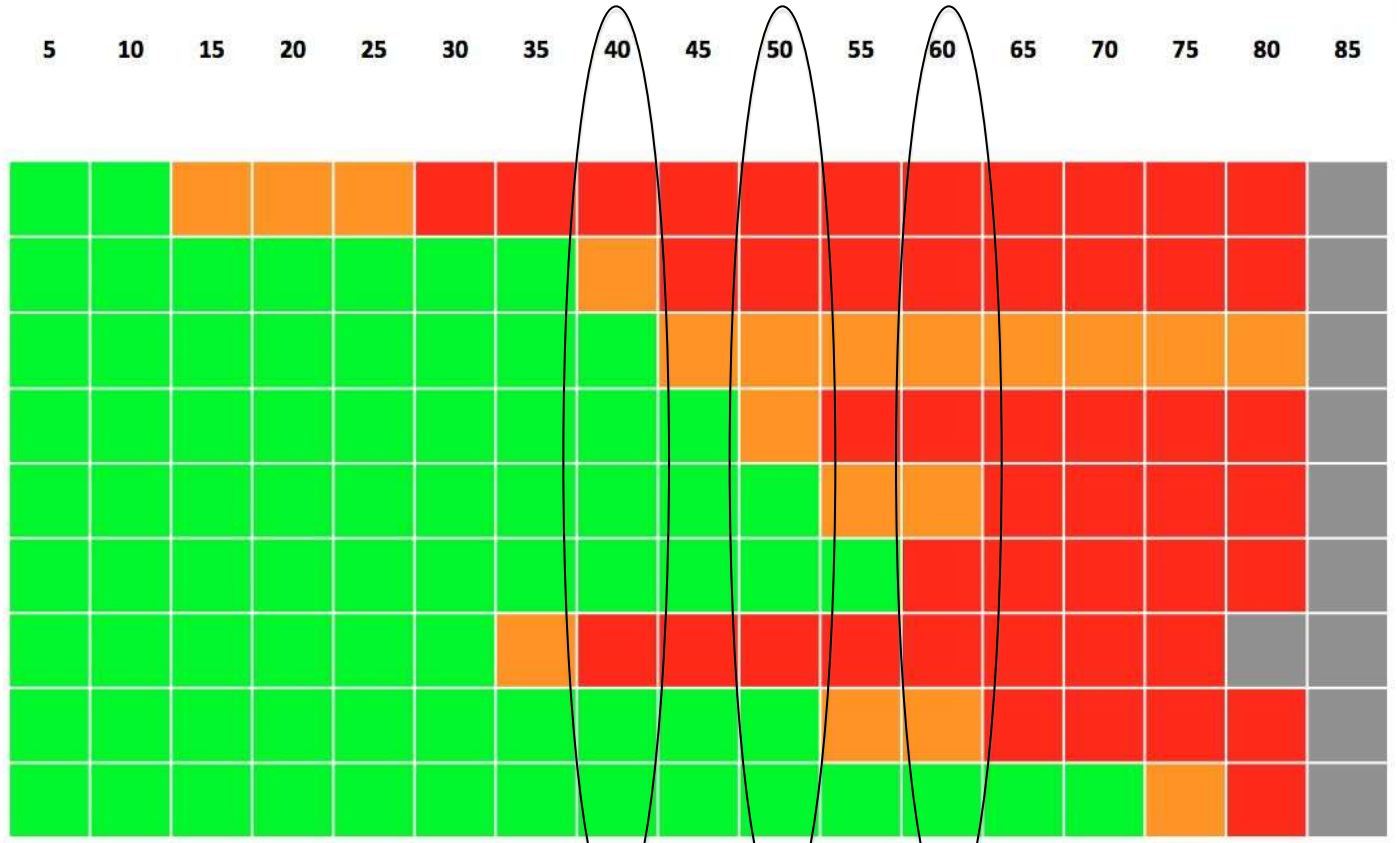
CardioVD

PeripheralAD

Osteoarthritis

Osteoporosis

Dementia





Numbers

- What is a long term condition and which ones should be considered ?
- Threshold: how many conditions does it take to be considered multimorbid ?

The list of conditions

TOP 5
TOP 10
TOP 20

HBP
OBESITY
HYPERLIPIDEMIA
DIABETES
COPD
ASTHMA
CANCER
CVD
DEPRESSION
OSTEOARTHRITIS
DEPRESSION
STROKE
THYROID DISORDER
RENAL FAILURE
ANXIETY
OSTEOPOROSIS
DEMENTIA
GERD
OTHER ARTHRITIS
HEART FAILURE
CHRONIC BACK PAIN



UK Read codes: 40 conditions

List of the 40 conditions included in the multimorbidity count

Hypertension
Depression
Painful condition
Asthma (currently treated)
Coronary heart disease
Treated dyspepsia
Diabetes
Thyroid disorders
Rheumatoid arthritis, other inflammatory polyarthropathies & systematic connective tissue disorders
Hearing loss
Chronic obstructive pulmonary disease
Anxiety & other neurotic, stress related & somatoform disorders
Irritable bowel syndrome
New diagnosis of cancer in last five years
Alcohol problems
Other psychoactive substance misuse
Treated constipation
Stroke & transient ischaemic attack
Chronic kidney disease
Diverticular disease of intestine
Atrial fibrillation
Peripheral vascular disease
Heart failure
Prostate disorders
Glaucoma
Epilepsy (currently treated)
Dementia
Schizophrenia (and related non-organic psychosis) or bipolar disorder
Psoriasis or eczema
Inflammatory bowel disease
Migraine
Blindness & low vision
Chronic sinusitis
Learning disability
Anorexia or bulimia
Bronchiectasis
Parkinson's disease
Multiple sclerosis
Viral Hepatitis
Chronic liver disease



ICPC-2: 140 conditions

A A04 Weakness/Tiredness general
A70 Tuberculosis
A79 Malignancy, NOS
A90 Congenital anomaly NOS/multiple
B B72 Hodgkin's disease/lymphoma
B73 Leukaemia
B74 Malignant neoplasm blood other
B75 Benign/unspecified neoplasm blood
B78 Hereditary haemolytic anaemia
B81 Anaemia, Vit B12/folate deficiency
B82 Anaemia, other/unspecified
B83 Purpura/coagulation defects
B90 HIV infection/AIDS
D D72 Viral hepatitis
D74 Malignant neoplasm stomach
D75 Malignant neoplasm colon/rectum
D76 Malignant neoplasm pancreas
D77 Malignant neoplasm digestive other/NOS
D81 Congenital anomaly digestive system
002 Harelip
001 Megacolon;congenital
D84 Congenital anomaly digestive system
D85 Duodenal ulcer
D86 Peptic ulcer other
D92 Diverticular disease
D93 Irritable bowel syndrome
D94 Chronic enteritis/ulcerative colitis
D97 Liver disease NOS
D98 Cholecystitis/cholelithiasis
D99 Disease digestive system, other
F F74 Neoplasm of eye/adnexa
F83 Retinopathy
F84 Macular degeneration
F92 Cataract
F93 Glaucoma
F94 Blindness
H H75 Neoplasm of ear
H82 Vertiginous syndrome
H84 Presbycusis
H86 Deafness
K K71 Rheumatic fever/heart disease
K72 Neoplasm, cardiovascular
K73 Congenital anomaly, cardiovascular
K74 Ischaemic heart disease with angina
K75 Acute myocardial infarction
K76 Ischaemic heart disease without angina
K77 Heart failure
K78 Atrial fibrillation/flutter
K79 Paroxysmal tachycardia
K80 Cardiac arrhythmia NOS
K81 Heart/arterial murmur NOS
K82 Pulmonary heart disease
K83 Heart valve disease NOS
K84 Heart disease, other
K86 Hypertension, uncomplicated
K87 Hypertension, complicated
K88 Postural hypotension
K89 Transient cerebral ischaemia
K90 Stroke/cerebrovascular accident
K91 Cerebrovascular disease
K92 Atherosclerosis/peripheral vascular disease
K93 Pulmonary embolism
K94 Phlebitis/thrombophlebitis
K95 Varicose veins of leg
L L71 Malignant neoplasm, musculoskeletal
L82 Congenital anomaly, musculoskeletal
L83 Neck syndrome
L84 Back syndrome without radiating pain
L85 Acquired deformity of spine
L86 Back syndrome with radiating pain
L88 Rheumatoid/seropositive arthritis
L89 Osteoarthritis of hip
L90 Osteoarthritis of knee
L91 Osteoarthritis, other
L92 Shoulder syndrome
L93 Tennis elbow
L95 Osteoporosis
L99 Musculoskeletal disease, other
N N73 Neurological infection, other
N74 Malignant neoplasm nervous system
N75 Benign neoplasm nervous system
N76 Neoplasm nervous system, unspecified
N85 Congenital anomaly neurological
N86 Multiple sclerosis
N87 Parkinsonism
N88 Epilepsy
N89 Migraine
N90 Cluster headache
N92 Trigeminal neuralgia
N93 Carpal tunnel syndrome
N94 Peripheral neuritis/neuropathy
N99 Neurological disease, other
P P15 Chronic alcohol abuse
P70 Dementia
P71 Organic psychosis, other
P72 Schizophrenia
P73 Affective psychosis
P74 Anxiety disorder/anxiety state
P75 Somatisation disorder
P76 Depressive disorder
P78 Neuraesthesia, surmenage
P79 Phobia/compulsive disorder
P80 Personality disorder
P81 Hyperkinetic disorder
P82 Post-traumatic stress disorder
P85 Mental retardation
P86 Anorexia nervosa/bulimia
P98 Psychosis NOS/other
P99 Psychological disorders, other
R R84 Malignant neoplasm bronchus, lung
R85 Malignant neoplasm respiratory, other
R90 Hypertrophy tonsils/adenoids
R95 Chronic obstructive pulmonary disease
R96 Asthma
R99 Respiratory disease, other
S S77 Malignant neoplasm of skin
S86 Dermatitis, seborrhoic
S87 Dermatitis/atopic eczema
S91 Psoriasis
S96 Acne
T T71 Malignant neoplasm thyroid
T73 Neoplasm endocrine other/uncertain
T81 Goitre
T82 Obesity
T83 Overweight
T85 Hyperthyroidism/thyrotoxicosis
T86 Hypothyroidism/myxoedema
T89 Diabetes, insulin dependent
T90 Diabetes, non-insulin dependent
T92 Gout
T93 Lipid disorder
T99 Endocrine/metabolic/nutritional disease, other
U U75 Malignant neoplasm kidney
U76 Malignant neoplasm bladder
U77 Malignant neoplasm, urinary, other
U88 Glomerulonephritis/nephrosis
U99 Urinary disease, other
W W15 Infertility/subfertility
W72 Malignant neoplasm related to fertility
X X74 Pelvic inflammatory disease
X75 Malignant neoplasm cervix
X76 Malignant neoplasm breast female
X77 Malignant neoplasm genital female other
X99 Genital disease, other
Y Y77 Malignant neoplasm prostate
Y78 Malignant neoplasm male genital, other
Y85 Benign prostatic hypertrophy

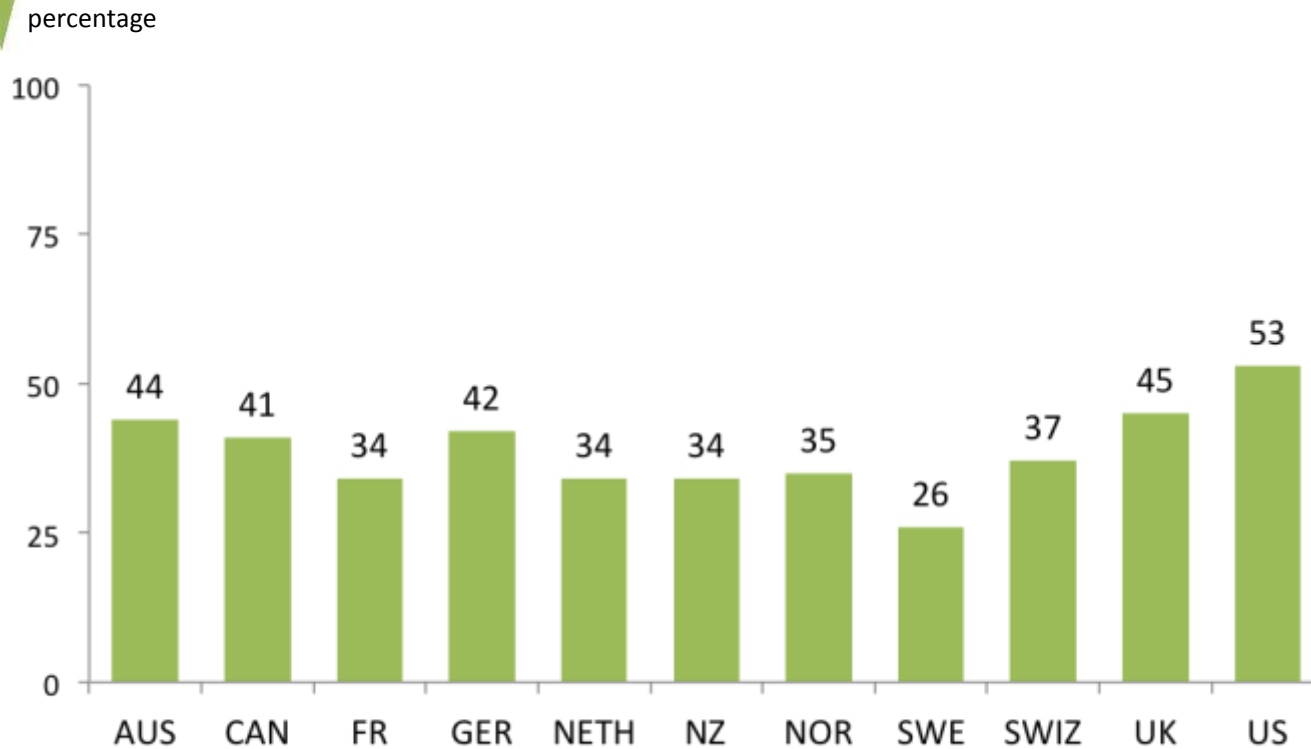


2. Prevalence, trends and more



Adults with multimorbidity

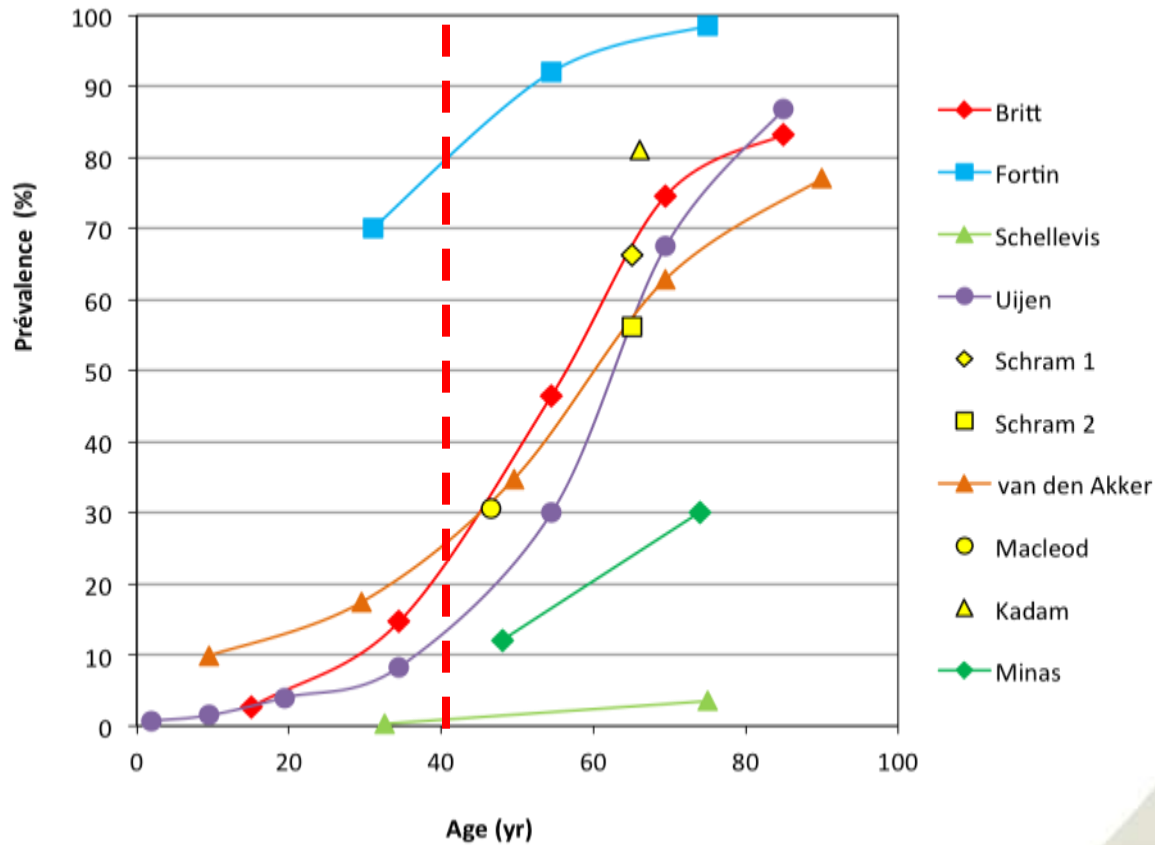
■ Two or more chronic conditions (out of 8)





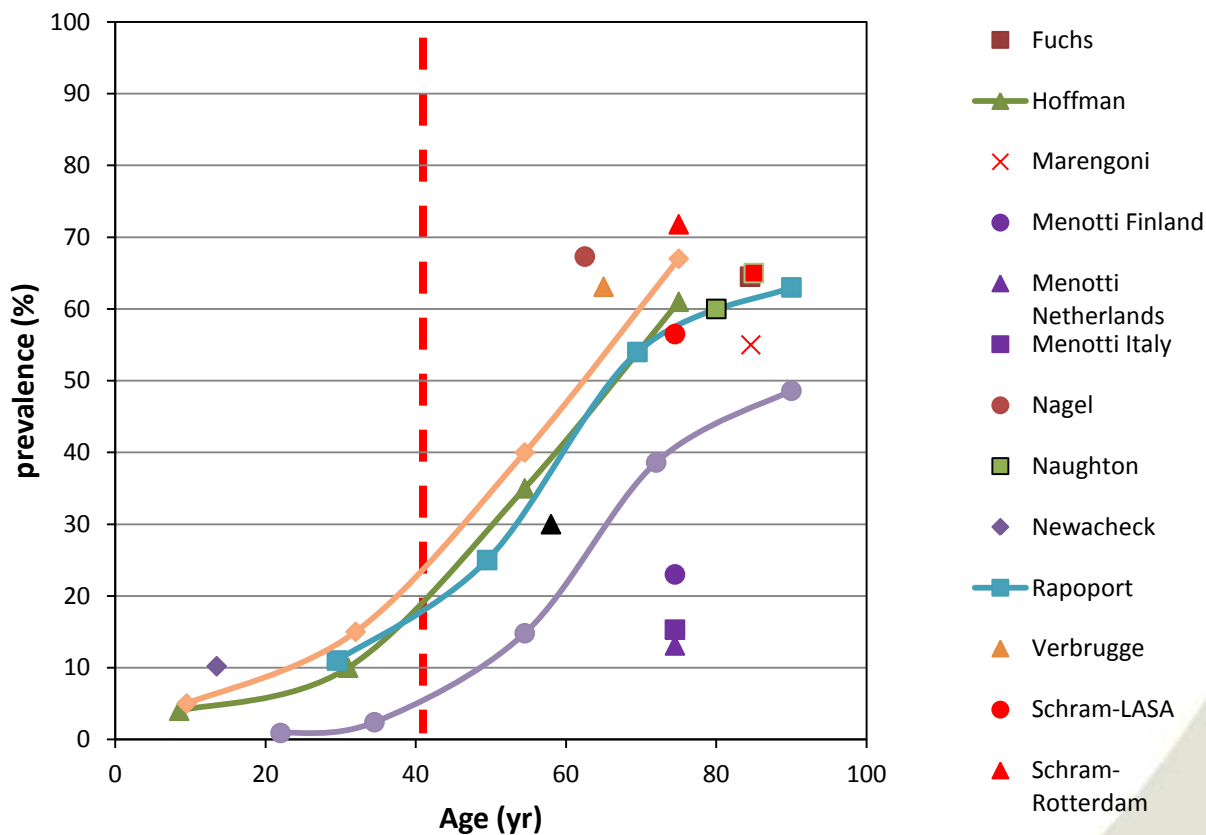
MULTIMORBIDITY IN PRIMARY CARE

Multimorbidity and age



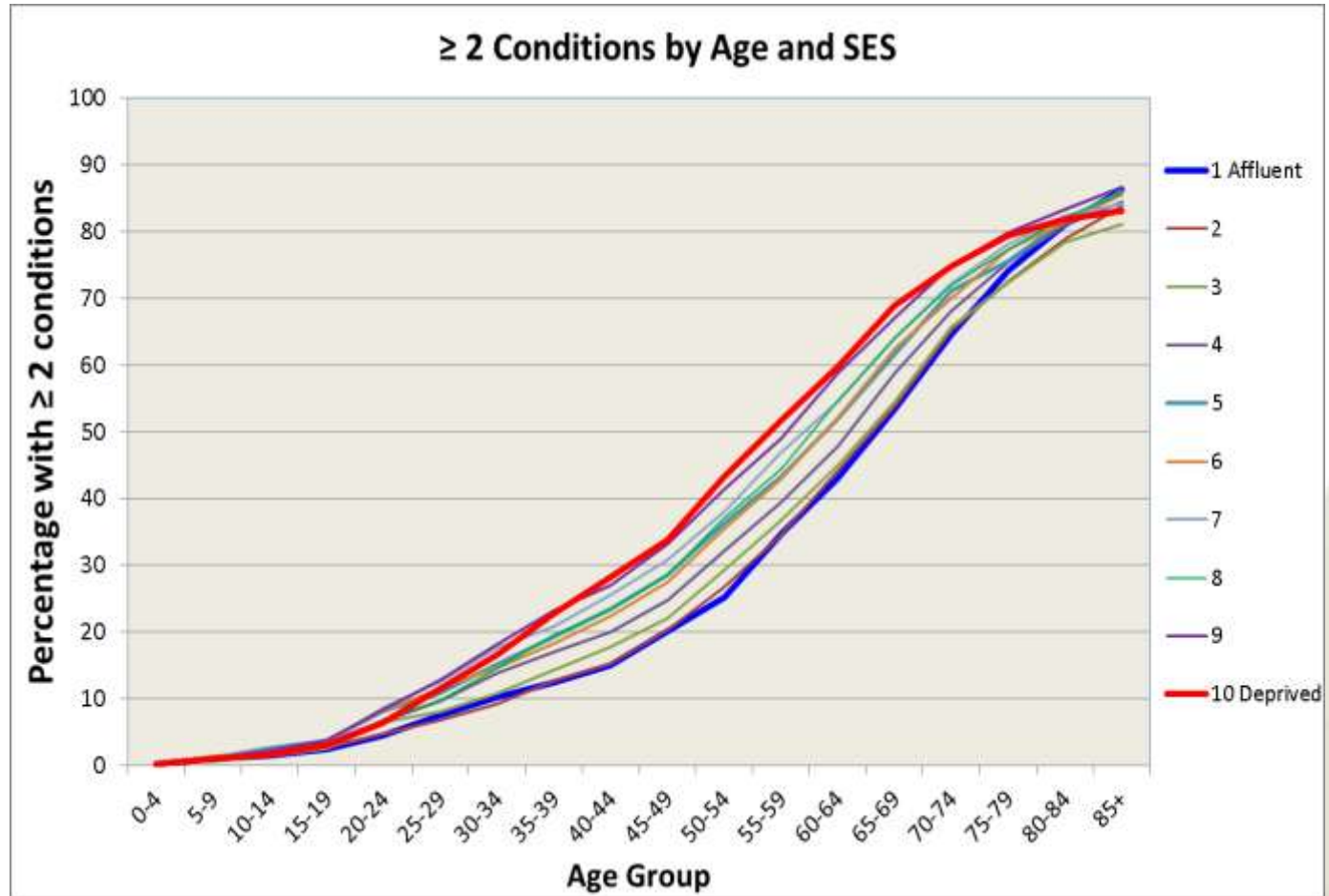
MULTIMORBIDITY IN THE GENERAL POPULATION

Multimorbidity and age





In Scotland, people living in more deprived areas develop multimorbidity 10 years earlier than those living in the most affluent areas





VARIATIONS IN THE ESTIMATION OF MULTIMORBIDITY PREVALENCE

- Population sociodemographics
- Enrollment methods
- Sample sizes
- Data collection methods
- Operational definitions of multimorbidity
- Chronic diseases or conditions considered



Multimorbidity trend over time

European Journal of General Practice. 2008; 14(Suppl 1): 28-32

informa
healthcare

ORIGINAL ARTICLE

Multimorbidity in primary care: Prevalence and trend over the last 20 years

ANNEMARIE A. UIJEN & ELOY H. VAN D

Department of General Practice, Radboud University Nijmegen

Abstract

Objective: To determine the prevalence of multimorbidity in primary care and to analyse the trend in multimorbidity over the last 20 years. **Methods:** We analysed the data from the Continuous Morbidity Registration (CMR) Nijmegen patients. To study the distribution of multimorbidity by age, we analysed the data from the CMR in 2005. To analyse the trend of multimorbidity over time, we analysed the data from the CMR 1985 to 2005. **Results:** We found that increasing age, female sex, and increasing number of patients with multimorbidity. The proportion of patients with four or more chronic diseases increased over time.

Conclusion: The increasing amount of multimorbidity in primary care leads to more complex medical care. The general practice should support this care. The registration of chronic diseases by general practitioners is consuming.

Key words: Multimorbidity, primary care, prevalence, chronic diseases

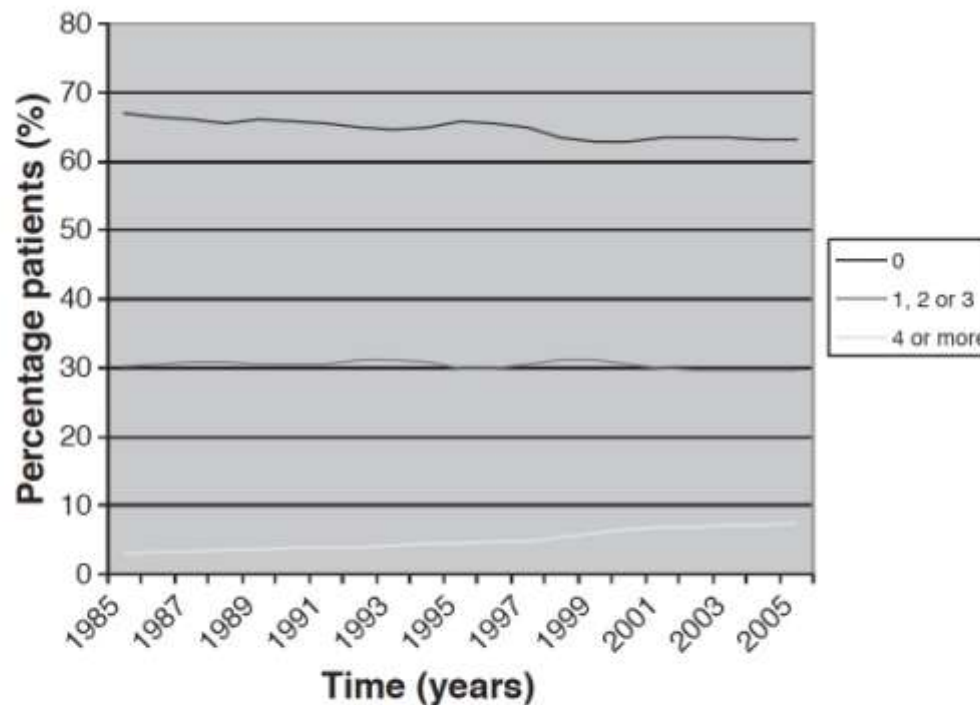


Figure 5. Trends in the number of chronic diseases per patient (1985–2005), standardized for age and sex distribution in 2000.



Prevalence of mulimorbidity in Quebec

- 2.7 million
- 45% of the adult population
- Increase of 15% since 2005

Multimorbidity on the rise





Prevalence of Obesity* Among U.S. Adults

(*BMI ≥ 30 , or about 30 lbs overweight for 5'4" person)



Prevalence of Diabetes* Among U.S. Adults

(*Includes gestational diabetes)



Mokdad AH. 2009.

Annu. Rev. Public Health. 30:43–54



Other considerations in studies on prevalence

- Epidemiological definition of multimorbidity vs clinical definition of multimorbidity
- Confidence interval of estimates: yes but?

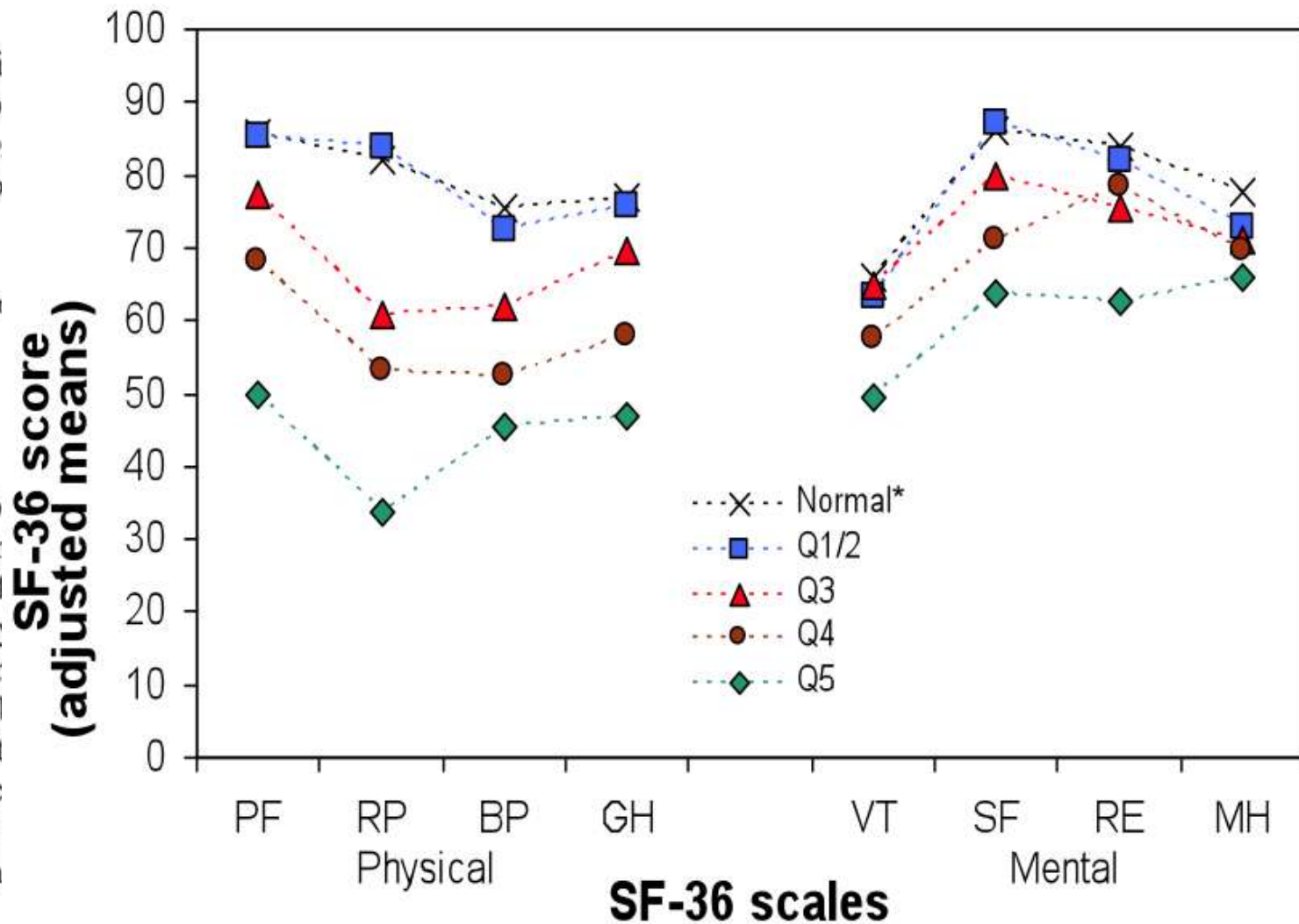
Relationship between multimorbidity and health-related quality of life of patients in primary care

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Marie-France Dub
¹Department of *Fa*
videotron.ca); ²Dep
³Research Center

Accepted in revised form

Abstract

Previous studies ab
primary-care patier
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variable. Use of th





Psychological Distress and Multimorbidity in Primary Care

Martin Fortin, MD, MSc^{1,2}

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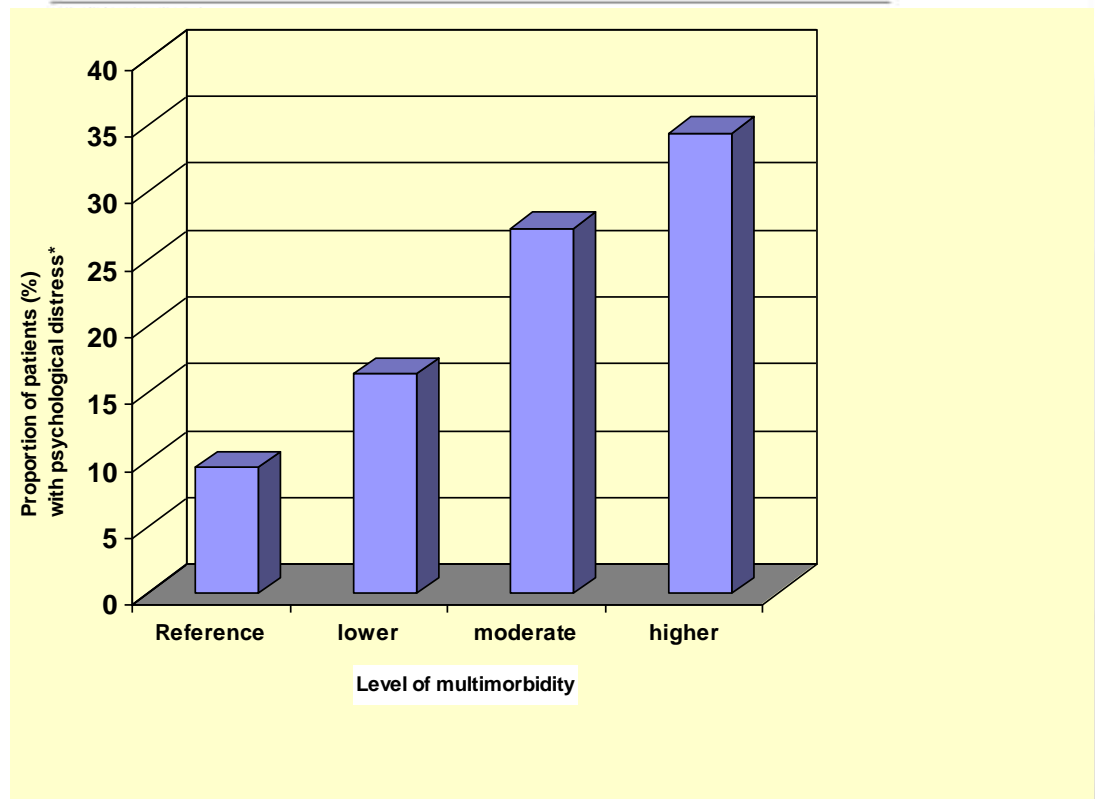
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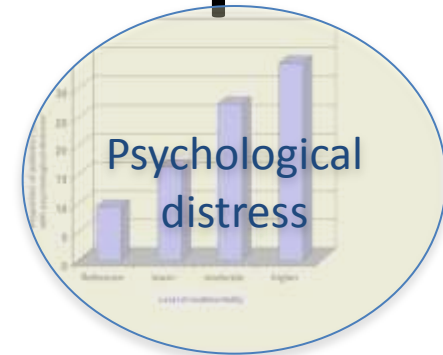
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Multimorbidity and the patient



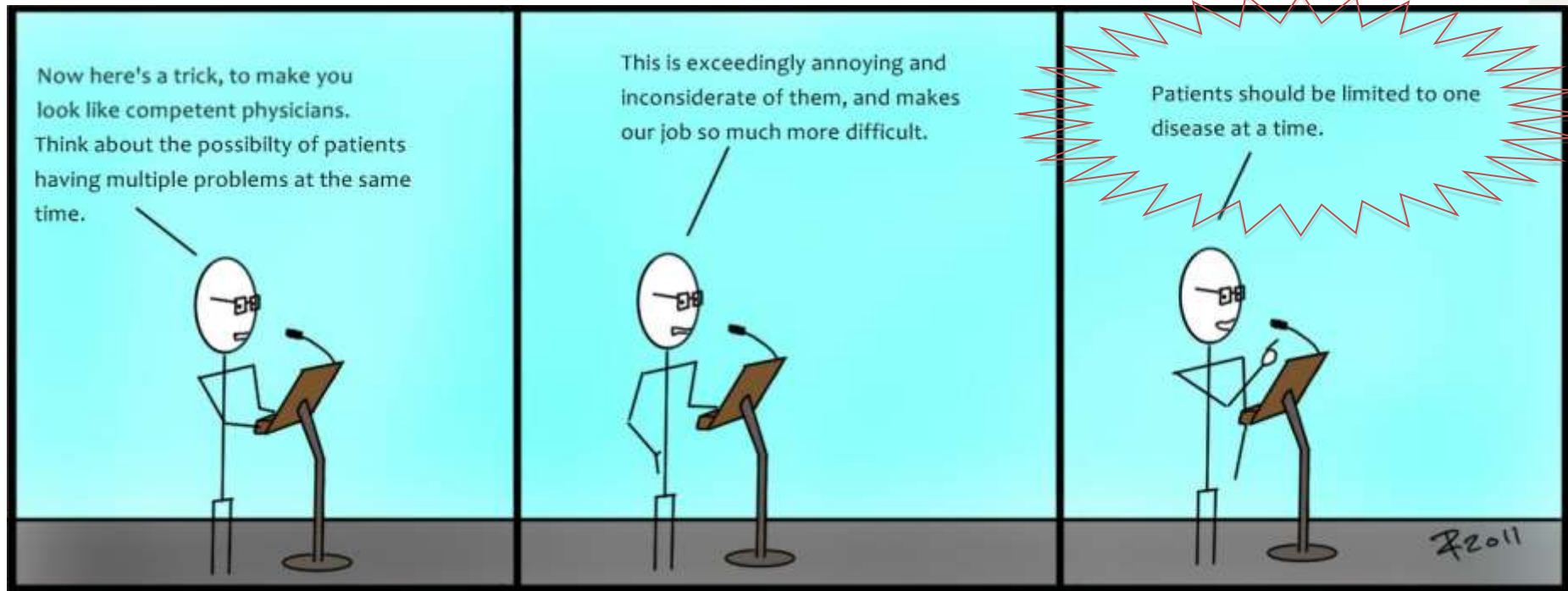


Multimorbidity and the health care system





Multimorbidity

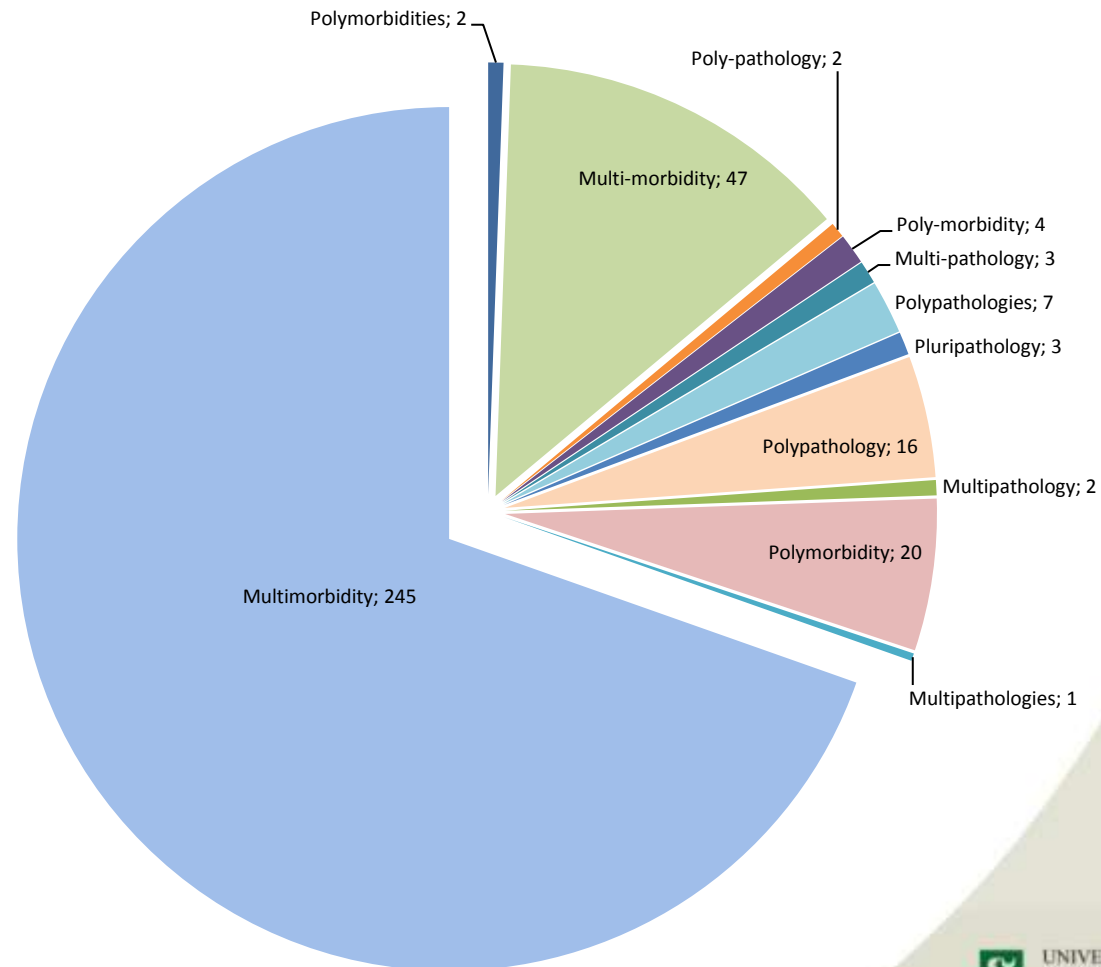




3. Publications on Multimorbidity/Comorbidity



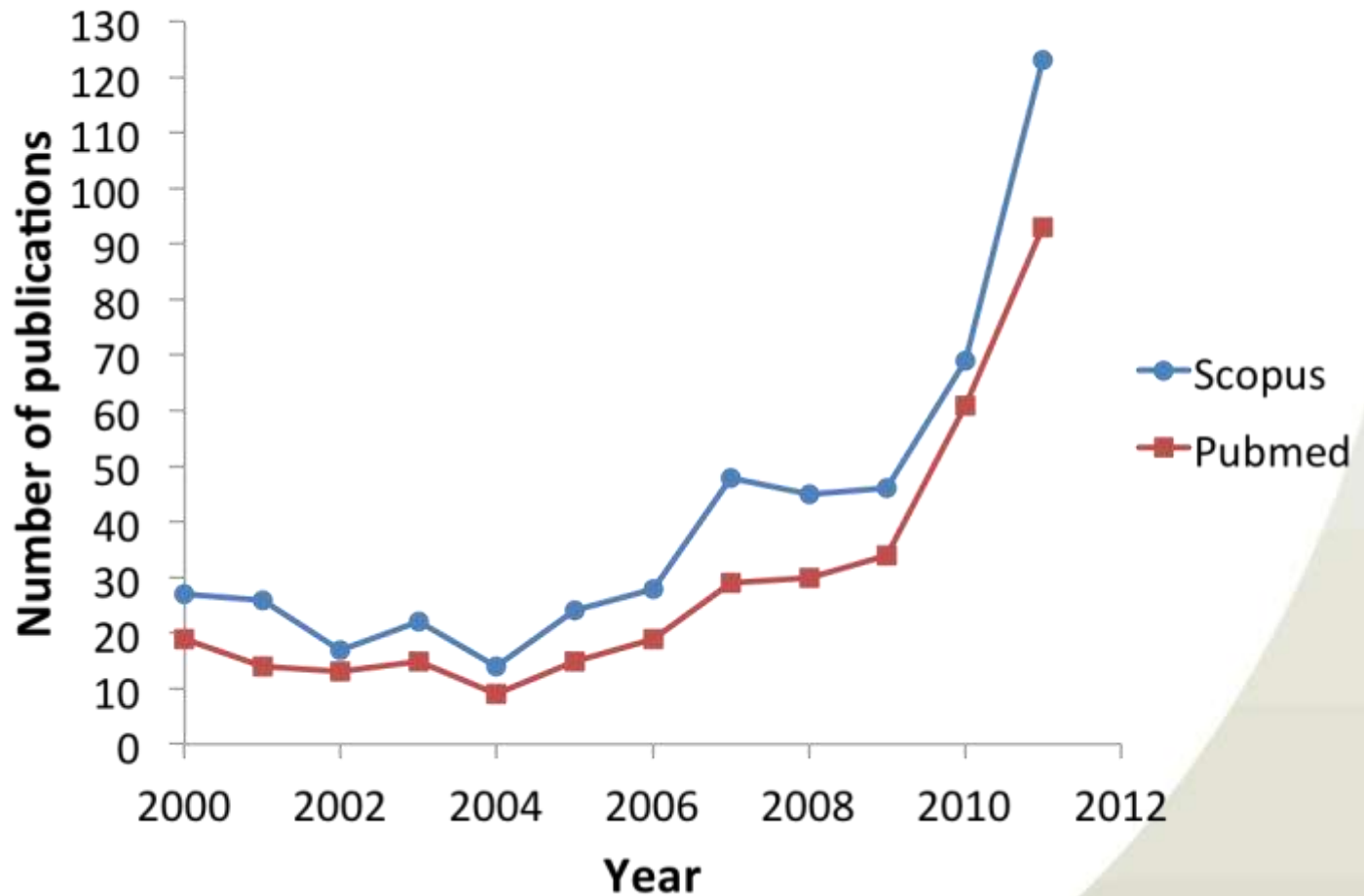
Number of publications according to the different terms used*



*The terms comorbidity and complex patients are not included.



PUBLICATIONS ON MULTIMORBIDITY





Our Research Team...

Thanks to one and to all



We write, blog and tweet about **Multimorbidity**

www.usherbrooke.ca/crmcspl

<http://pages.usherbrooke.ca/crmcspl-blog>

twitter.com/ChaireRechMC

