

CHRODIS-JA: WP6

EpiChron Research Group



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This presentation arises from the Joint Action addressing chronic diseases and healthy ageing across the life cycle (JA-CHRODIS) which has received funding from the European Union, under the framework of the Health Programme (2008-2013).

**Overall approach to health care use
by patients with diabetes:**

Does the type of comorbidity matter?

Objectives & hypothesis

OBJECTIVES

1. To identify patterns of health care use among diabetic patients with multimorbidity across primary and specialized care.
2. To study the impact of diabetes-related concordant vs. discordant comorbidities on “planned” and “unplanned” health care use.

HYPOTHESIS

Diabetic patients with discordant and/or mental multimorbidity receive lower quality care due to limited time and lack of specific recommendations.

This could derive in avoidable use of health care services and differentiated patterns of health care use due to this type of health problems.

Methods - Study population

- Patients with a diagnosis of DMII in 2010 in Spain (Aragón) (ICPC T90; EDC06/07)
- Patients taking antidiabetic medication in 2010 in Aragón (ATC A10A “Insulins and analogues”; ATC A10B “Oral hipoglucemiantes”)
- Patients had to be registered in the Spanish (Aragon) Public Health Service Users Database during 2010-2011 (utilization measured in 2011)
- Exclusion of patients under 15 years
- Exclusion of patients with no identifiable GP assigned (clustering effect of GPs considered)

N=73,589

Methods - Classification of comorbidities

- **Concordant comorbidity:** represent parts of the same overall pathophysiologic risk profile and are more likely to be the focus of the same disease management plan
- **Discordant comorbidity:** are not directly related in either their pathogenesis or management and do not share an underlying predisposing factor

Redelmeier et al,
NEJM 1998

Methods - Classification of comorbidities

→ 114 chronic comorbidities (EDCs®)

→ Consensus technique:

→ 4 groups of diabetic patients

- **No** chronic comorbidities
- Only **concordant** comorbidities
- At least one **discordant** (non mental) comorbidity
- At least one **mental** comorbidity

Salisbury et al,
BJGP 2011

Results

	No comorbidity	Concordant	Discordant	Mental
N (%)	8,468 (10.9%)	11,856 (15.3%)	42,246 (54.6%)	14,807 (19.1%)
Demographic and clinical information				
15-44 years, %	23.3	5.9	4.2	4.3
45-64 years, %	33.5	41.8	23.3	25.9
65+, %	43.2	52.3	72.5	69.8
Women, %	41.2	33.1	47.7	63.4
Mean # comorbidities	---	1.7	4.1	5.5
Use of Primary Care				
Mean # visits to GP (95% CI)	8.0 (7.4-8.7)	12.8 (11.8-13.7)	13.4 (12.9-13.8)	14.4 (13.9-14.9)
Mean # visits to nurse (95% CI)	5.3 (4.9-5.7)	12.8 (10.6-14.9)	11.5 (11.2-11.8)	11.4 (11.0-11.7)
Use of Specialised Care				
Mean # visits (95% CI)	3.2 (3.1-3.4)	4.4 (4.2-4.7)	5.5 (5.4-5.6)	5.2 (5.0-5.3)
Mean # specialties (95% CI)	1.5 (1.4-1.6)	2.1 (2.0-2.2)	2.5 (2.5-2.5)	2.3 (2.3-2.4)
Use of Hospital Care				
Mean # admissions/10 ind. (95% CI)	1.4 (1.3-1.6)	2.1 (1.6-2.6)	2.1 (2.0-2.2)	2.3 (2.2-2.5)
Mean # unplanned admissions/10 ind. (95% CI)	0.9 (0.8-1.0)	1.3 (0.8-1.8)	1.2 (1.2-1.3)	1.5 (1.4-1.6)
Mean # avoidable admissions/1000 ind. (95% CI)	3.8 (2.1-5.6)	3.2 (1.7-4.7)	5.1 (4.2-6.0)	6.8 (4.9-8.7)
Mean # hospital days	1.1 (0.9-1.2)	2.1 (1.5-2.7)	1.8 (1.7-1.9)	2.2 (2.0-2.3)
Use of Emergency Care				
Mean # visits/10 ind. (95% CI)	3.3 (3.0-3.5)	3.2 (2.7-3.7)	4.5 (4.4-4.7)	5.2 (4.9-5.4)
Mean # priority* visits/10 ind. (95% CI)	2.1 (1.9-2.4)	2.2 (1.6-2.7)	2.8 (2.7-2.9)	3.4 (3.2-3.6)

Results

	Concordant (ref category)	Discordant			Mental		
		IRR	95% CI		IRR	95% CI	
Use of Primary Care							
Visits to GP	1	1.08**	1.06	1.11	1.16**	1.05	1.14
Visits to nurse	1	1.04*	1.01	1.07	1.02	0.98	1.05
Use of Specialised Care							
Total visits	1	1.37**	1.33	1.42	1.28**	1.23	1.33
Visits to different specialties	1	1.35**	1.32	1.39	1.25***	1.22	1.29
Use of Hospital Care							
Total admissions	1	1.17**	1.07	1.27	1.23*	1.11	1.36
Unplanned admissions	1	1.06	0.95	1.17	1.23*	1.08	1.39
Avoidable admissions	1	0.87	0.58	1.31	1.17	0.73	1.87
Hospital days	1	1.14*	1.01	1.29	1.41**	1.21	1.64
Use of Emergency Care							
Total visits	1	1.13**	1.03	1.19	1.28**	1.18	1.39
Priority* visits	1	1.11*	1.03	1.19	1.34**	1.17	1.54

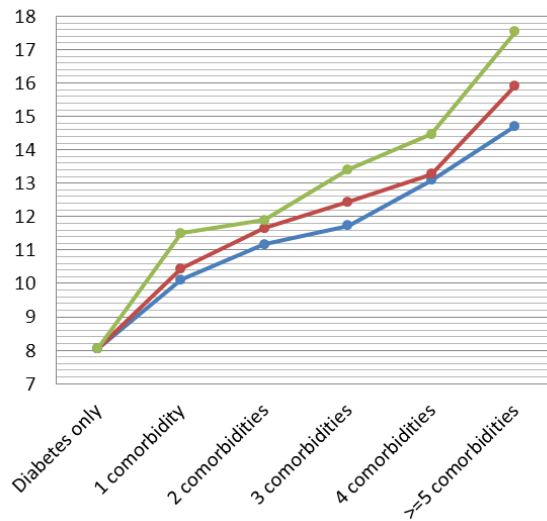
Risk of use of services by diabetic patients, according to type of comorbidity. Multivariable models of negative binomial regression. Adjusted for: **1) age 2) sex 3) # of chronic comorbidities 4) clustering by GPs**

Results

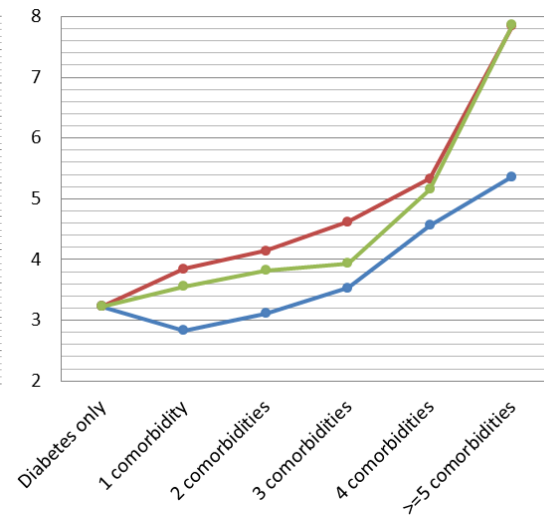


Means adjusted for:
 1) Age
 2) Sex
 3) Clustering by GPs

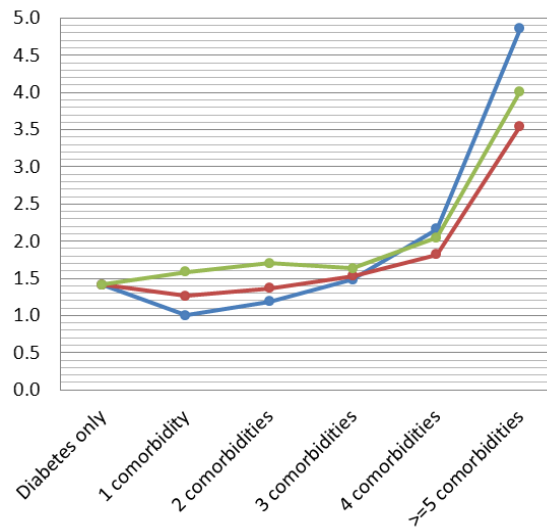
Mean # visits to GP



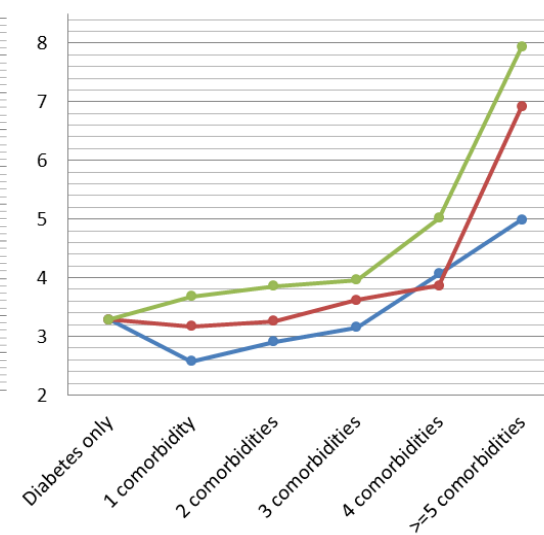
Mean # visits to specialists



Mean # hospital admissions x10

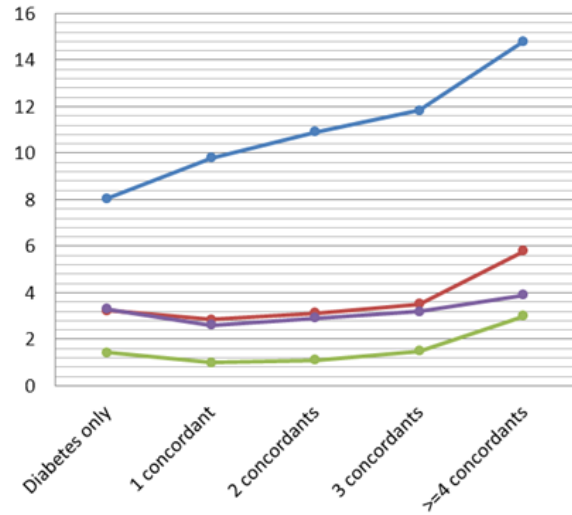


Mean # visits to ER x10



Results

Patients with concordant comorbidities

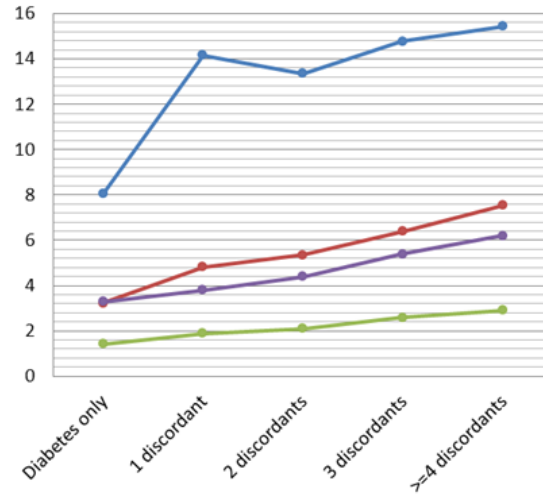


- Mean # visits to GP
- Mean # visits to specialists
- Mean # hospital admissions x10
- Mean # visits to ER x10

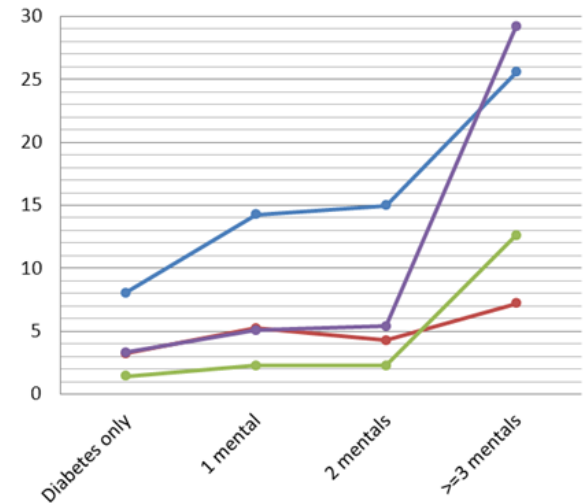
Means adjusted for:

- 1) Age
- 2) Sex
- 3) # of chronic comorbidities
- 4) Clustering by GPs

Patients with discordant comorbidities



Patients with mental comorbidities



Discussion

- ✓ Most patients with DM presents 4-5 discordant/mental conditions
- ✓ Discordant conditions strongly impact on the use of specialised care
- ✓ Mental conditions highly influence unplanned use of health services
- ✓ **To what extent are these differences expectable? justified? avoidable? related to quality of care?**
- ✓ **How are these findings useful for clinicians and researchers?**

Thank you for your attention

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