

Economics of Incontinence



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Why do we need to talk about economics when dealing with health?

Demographics

In 2050 in EU
1 out of 5 will be old
1 out of 10 will be very old

Why do we need to talk about economics when dealing with health?



Epidemiology

Rapid increase of chronic-degenerative diseases

Why do we need to talk about economics when dealing with health?



Why do we need to talk about economics when dealing with health?

Technological Innovation



The economic perspective

- Given the scarcity of resources there is an opportunity cost in allocating resources in alternative ways:
 - Priorities must be set and choices must be made
- Economic analyses supports decision-makers:
 - prioritising diseases (COI) that deserve most attention
 - pointing to choices that maximise health benefits with given budgets (HTA)



Cost of Illness studies

- Cost of Illness (COI) studies aim at: *
 - valuing **resources consumption** because of the illness from a societal perspective
 - analyzing the **composition** of the burden of disease
 - **supporting evidence-based decision** in (re)allocating of resources amongst and within diseases



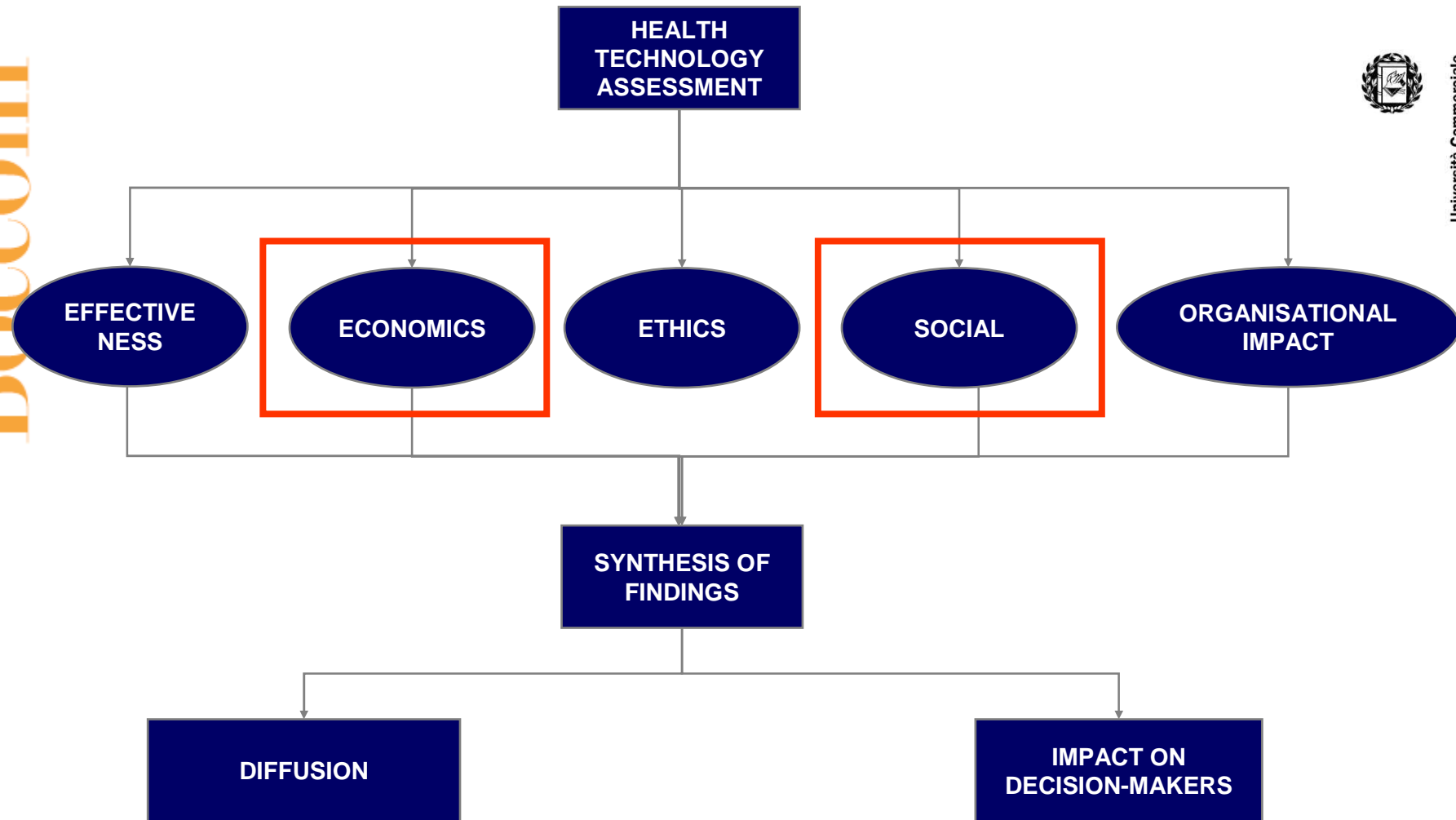
(*) Tarricone R Health Policy 2006

Health Technology Assessment

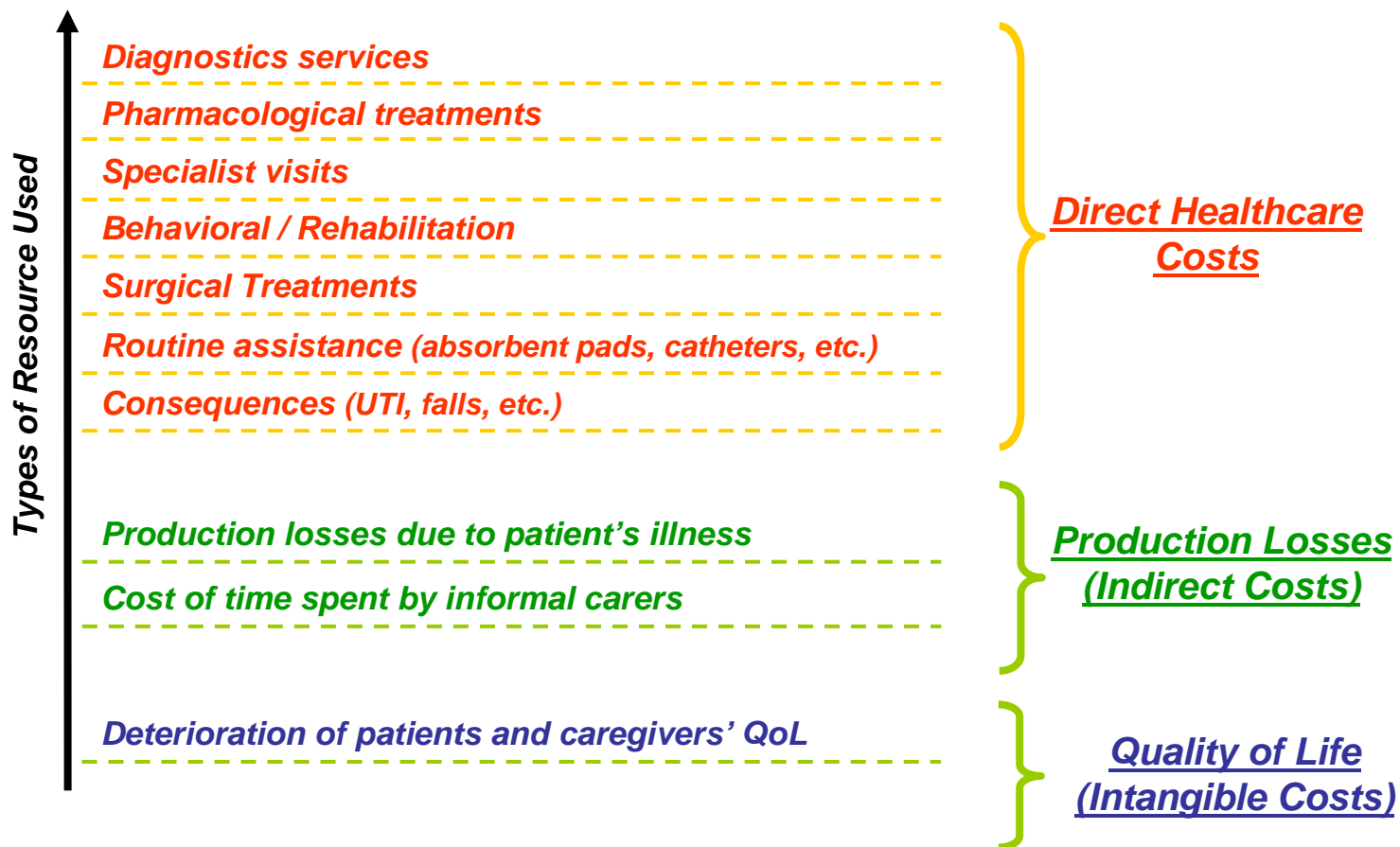
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UI/OAB from an economic perspective



COI of UI and OAB: Findings from a systematic literature*

- Systematic Review of Health Economics Literature was performed in 2008
- Retrieved abstracts were screened according to the following **eligibility criteria**:

INCLUSION CRITERIA

- UI and/or OAB cost analysis (direct, indirect, intangible)

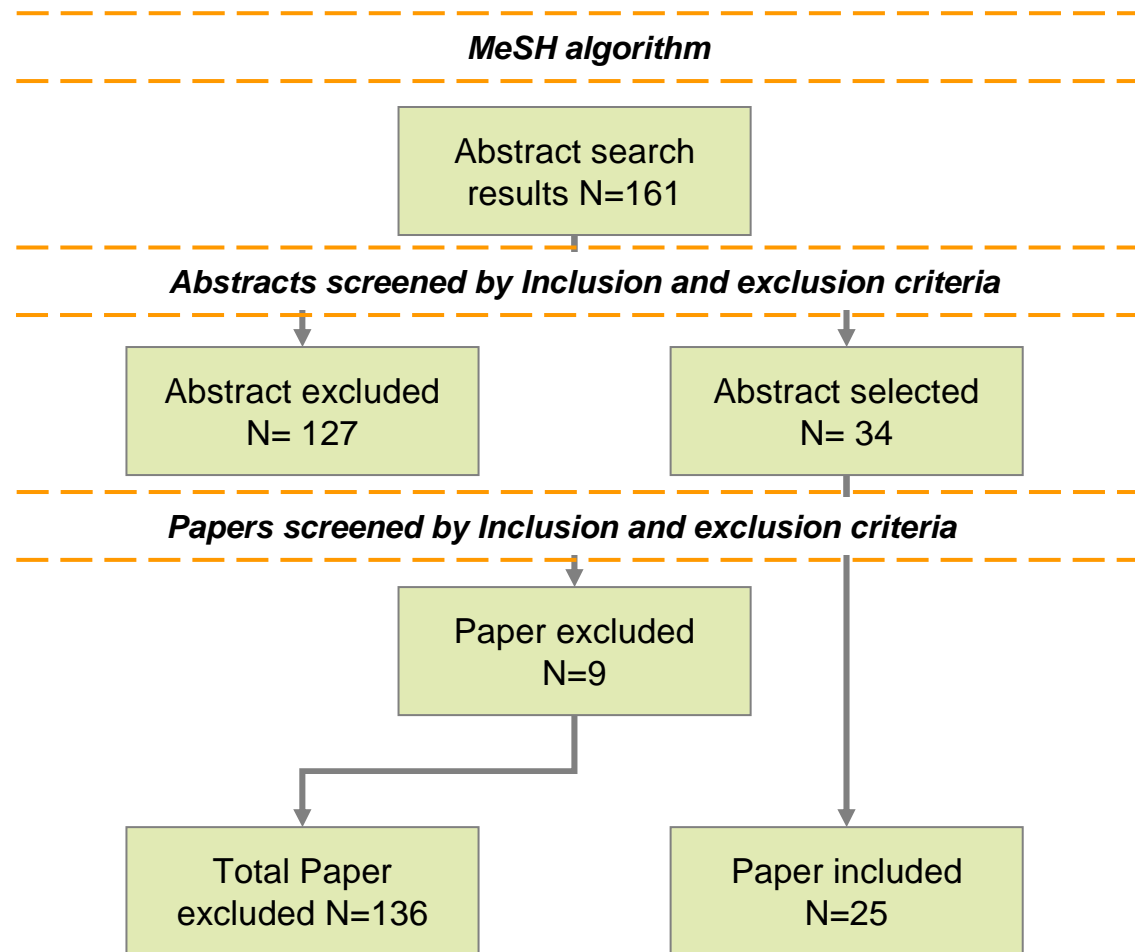
EXCLUSION CRITERIA

- Economic evaluations of specific services (eg, cost-effectiveness analyses)
- Faecal and urinary incontinence costs without distinctions
- Details concerning only some specific direct costs (eg, drug, or specific intervention only)
- Study population referring to a very specific and limited sub-group only (eg, severely handicapped children)
- Language different than English



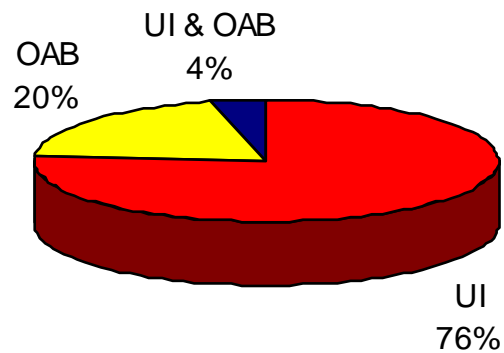
Aguzzi G, Bartoli S, Tarricone R. “Systematic review of urinary incontinence and overactive bladder cost-of-illness studies”. The Open Pharmacoeconomics and Health Economics Journal, 2010, in press.

Systematic Literature Review: Results

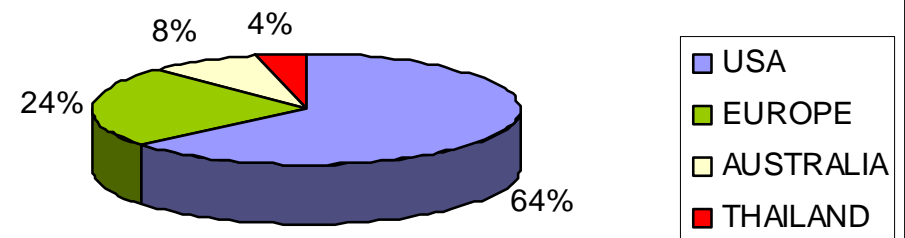


Systematic Literature Review: Selected Studies

COIs of UI and OAB

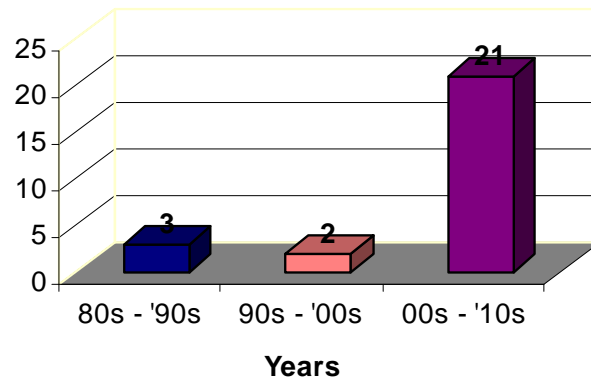


COIs by Regions

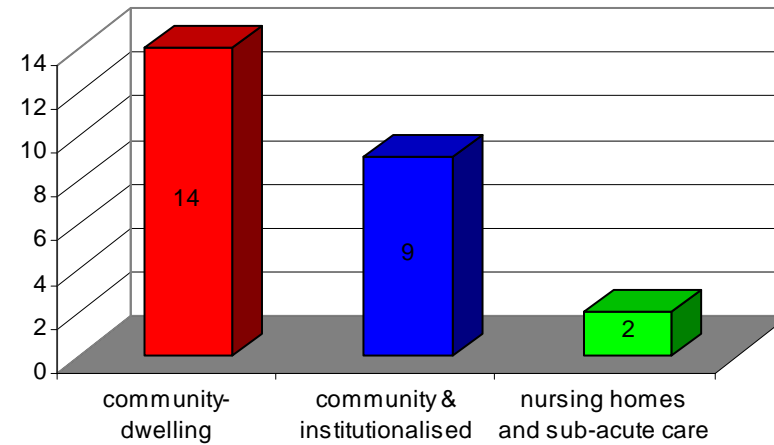


Systematic Literature Review: Selected Studies

COIs by Year of Publication

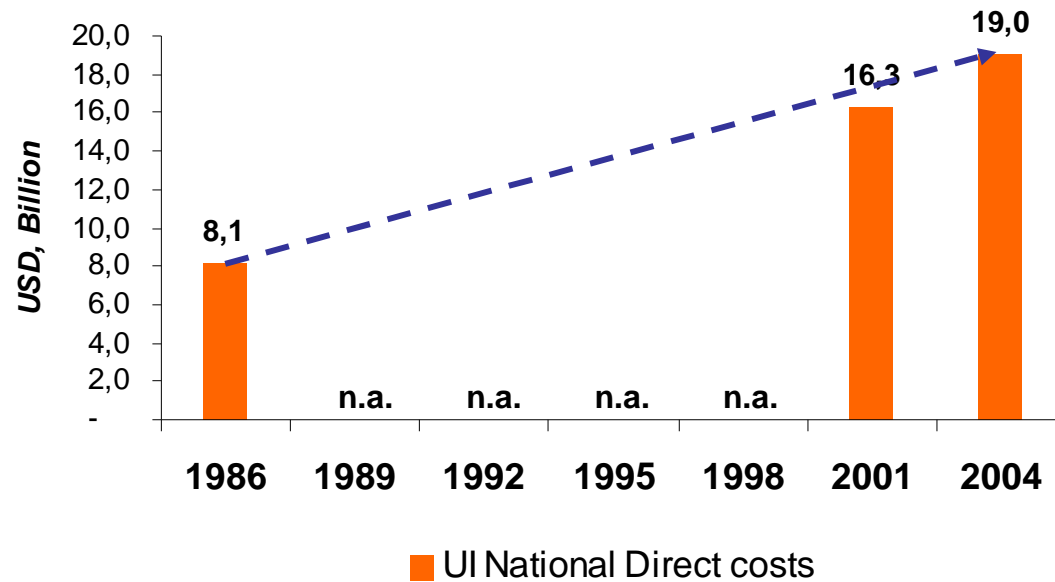


COIs by Setting of Care



Evidence from Health Economics Literature: **UNITED STATES**

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- UI (only) direct national costs are **steadily increasing** in the USA
- This kind of evidence is absent in **Europe for UI**

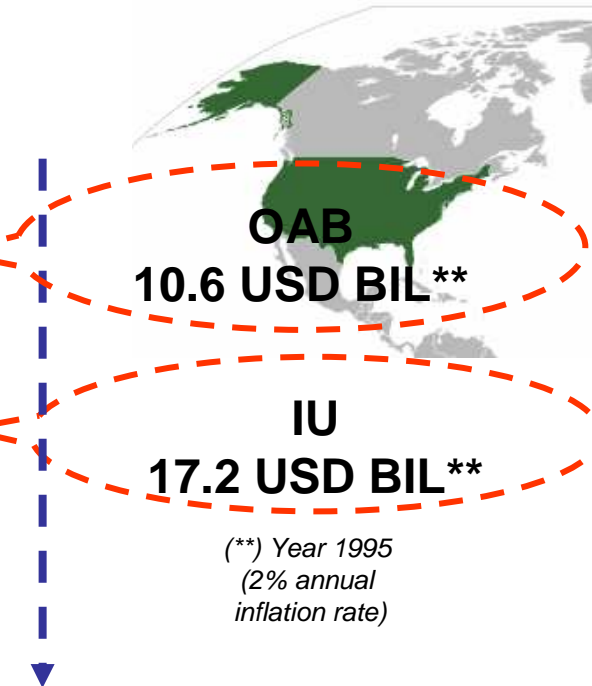
Hu TW Clin Geriatr Med 1986

Wilson L Obstet Gynecol 2001

Hu TW Urology 2004

Evidence from Health Economics Literature: **UNITED STATES**

COST OF ILLNESS		USD billion
Reference Year		1995
HAY FEVER		1.6
BREAST CANCER		8.9
EATING DISORDERS		10.8
OSTEOPOROSIS		13.8
PNEUMONIA/INFLUENZA		15.8
ARTHRITIS		17.6
STROKE		25.5
DEMENTIA/ALZHEIMER'S		25.8
SMOKING		27.0
DIABETES		41.4
CONGESTIVE HEART DISEASE		46.0



- Data would suggest that UI and OAB burden of disease for society is **relevant** and comparable with other important illnesses

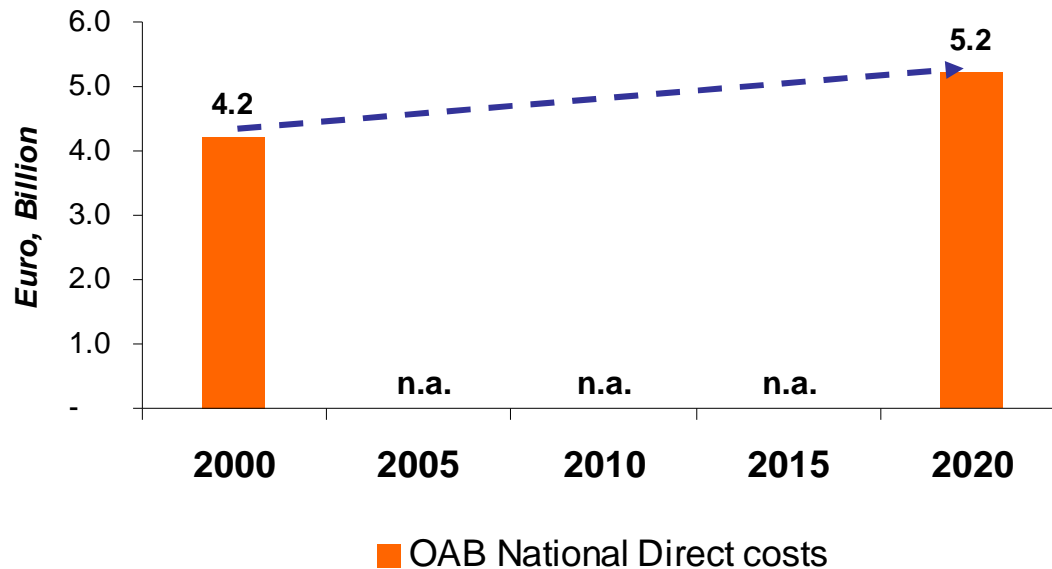
(*) Adapted from:

National Institutes of Health, US Public Health Services, 1997

Wilson L Obstet Gynecol 2001

Evidence from Health Economics Literature: **EUROPE**

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- In 2000, **20.2 million people over the age of 40** in five European countries (in Germany, Italy, Spain, Sweden and UK) experienced OAB
- By 2020 the expected total cost for OAB would increase by +26% (*quite conservative projection*)

Reeves P Eur Urol 2006

Evidence from Health Economics Literature: **UI in EUROPE**

UI annual cost per case	Community-dwelling women							
	2004 EU		2004 GER		2004 SPA		2004 UK/IRE	
Year of data - Country	Euro	%	Euro	%	Euro	%	Euro	%
Direct healthcare costs								
Diagnostics services	83,0	16%	48,0	9%	177,0	27%	24,0	7%
Pharmacological treatments	66,3	13%	77,0	15%	41,0	6%	81,0	23%
Specialist visits	106,3	20%	56,0	11%	162,0	25%	101,0	28%
Behavioral / Rehabilitation	14,4	3%	0,2	0%	11,0	2%	32,0	9%
Surgical Treatments	79,3	15%	95,0	18%	103,0	16%	40,0	11%
Routine care	179,0	34%	261,0	51%	179,0	27%	97,0	27%
Consequences	n.r.		n.r.		n.r.		n.r.	
Direct non-healthcare costs	n.r.		n.r.		n.r.		n.r.	
Travel								
Informal care								
Indirect costs	n.r.		n.r.		n.r.		n.r.	
Production losses								
Societal costs	528,4	100%	515,0	100%	655,0	100%	359,0	100%



- Big variations of resource consumption amongst countries for UI
- In all the three countries amongst the highest costs are the **routine care** costs, with more than half of the patients paying for them *out-of-pocket*, and **specialist visits**

(*) Papanicolaou S Maturitas 2005

Evidence from Health Economics Literature: OAB in EUROPE (GER)

OAB annual cost per case	Klotz et al	
Year of data - Country	2006	
	Euro	%
Direct healthcare costs		
Diagnostics services		
Pharmacological treatments	13.1	3%
Specialist visits	100.2	23%
Behavioral / Rehabilitation		
Surgical Treatments		
Routine care	105.5	25%
Consequences	208.5	49%
Direct non-healthcare costs	n.r.	
Travel		
Informal care		
Indirect costs	n.r.	
Production losses		
Societal costs	427.2	100%



- OAB evidence on costs of different categories is only available for **community-dwelling** people in **Germany**
- These results would confirm that when **consequences cost** are taken into account, these represent the highest cost component

(*) Klotz T Eur Urol 2007

Evidence from Health Economics Literature: **UI aggregate evidences**

Cost categories	Cost categories (%) - UI					
	Institutions			Community		
	%	%	%	%	%	%
Direct healthcare costs	<i>Min</i>	Mean	<i>Max</i>	<i>Min</i>	Mean	<i>Max</i>
Diagnostics services	0,1%	0,2%	0,5%	0,3%	7,6%	15,7%
Pharmacological treatments	0,0%	0,1%	0,1%	0,1%	3,6%	12,6%
Specialist visits	<i>n.r.</i>	n.r.	<i>n.r.</i>	0,0%	12,3%	22,8%
Behavioral / Rehabilitation	0,0%	0,8%	2,3%	0,2%	1,7%	4,5%
Surgical Treatments	0,0%	0,1%	0,4%	4,2%	11,1%	16,7%
Routine care	40,7%	63,1%	97,2%	9,9%	45,4%	79,1%
Consequences	2,3%	35,7%	58,7%	0,0%	18,2%	53,9%
Direct non-healthcare costs						
Travel	<i>n.r.</i>	n.r.	<i>n.r.</i>	1,0%	1,0%	1,0%
Informal care	<i>n.r.</i>	n.r.	<i>n.r.</i>	<i>n.r.</i>	n.r.	<i>n.r.</i>
Indirect costs						
Production losses	0,0%	0,5%	1,0%	3,9%	3,9%	3,9%

} $\Sigma = 36\%$

- There is evidence of a **large variability between costs of the same categories** resulting from different studies – this fact would question the robustness of the mean as a correct indicator
- Community-dwelling people:
 - **Routine care** represents the highest cost, followed by **consequences** costs and specialist **visits** costs
 - **Costs for diagnosis and treatment** of UI amount together to more than 1/3 of the overall costs

Evidence from Health Economics Literature: **OAB aggregate evidences**

Cost categories	Cost categories (%) - OAB					
	Institutions			Community		
	%	%	%	%	%	%
Direct healthcare costs	<i>Min</i>	Mean	<i>Max</i>	<i>Min</i>	Mean	<i>Max</i>
Diagnostics services	0,5%	0,5%	0,5%	0,0%	0,5%	0,9%
Pharmacological treatments	0,1%	0,1%	0,1%	3,1%	12,9%	20,0%
Specialist visits	<i>n.r.</i>	n.r.	<i>n.r.</i>	0,0%	10,4%	23,4%
Behavioral / Rehabilitation	<i>n.r.</i>	n.r.	<i>n.r.</i>	0,0%	1,7%	3,4%
Surgical Treatments	<i>n.r.</i>	n.r.	<i>n.r.</i>	0,0%	3,4%	6,7%
Routine care	97,1%	97,1%	97,2%	18,8%	22,7%	28,7%
Consequences	2,3%	2,3%	2,3%	46,7%	48,4%	51,3%
Direct non-healthcare costs						
Travel	<i>n.r.</i>	n.r.	<i>n.r.</i>	22,5%	22,5%	22,5%
Informal care	<i>n.r.</i>	n.r.	<i>n.r.</i>	<i>n.r.</i>	n.r.	<i>n.r.</i>
Indirect costs						
Production losses	0,0%	0,0%	0,0%	6,6%	8,3%	9,2%

} $\Sigma = 29\%$

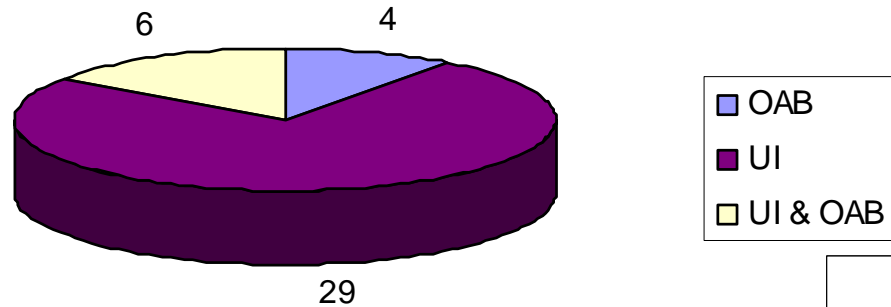
- For OAB-affected community-dwelling people **consequences** represent the **major component** while routine care switched to the second place
- Production losses account for almost 10% of societal costs for OAB, while only 4% on average for UI

Does Incontinence affect Quality of Life?

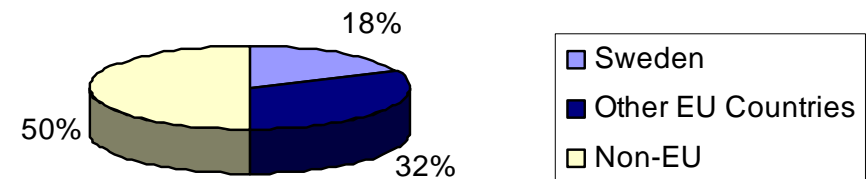


Findings from a Systematic Review on QoL in UI and OAB patients*

Systematic Review on Incontinent patients' QoL



Papers by Regions



(*) Bartoli S, Aguzzi G, Tarricone R. *Urology*, 2010

Findings from a Systematic Review on QoL in UI and OAB patients*

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- Emotional dimensions:
 - Limiting behaviour
 - Social embarrassment and isolation
- Physical dimension:
 - Mobility
- The form of UI/OAB is a key-determinant of QoL impairment:
 - the urge component is the most disabling



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(*) *Bartoli S, Aguzzi G, Tarricone R. Urology, 2010*

Results: scaling evidence*

Author	Publication year	Disease	Approach	Scale		Score
Johanesson et al	1997	UI	HRQoL score	SF 36 transformed Scale	0 (death) - 100 (best imaginable health state)	65.56
Simeonova et al	1999	UI	Rating scale	Visual Analogue Scale	0 (best) – 10 (worst)	Continent 1.2; 2.5 (SUI); 3.8 (UUI); 3.9 (MUI)
Margalith et al	2004	UI	Rating scale	Visual Analogue Scale	0 (absence of suffering) - 10 (most severe suffering)	5.04
Monz et al	2005	UI	Rating scale	Euroqol- Visual Analogue Scale	0 (worst health state) - 100 (best health state)	70.0
Subak et al	2006	UI	HRQoL score	Health Utility Index	0 (least desirable state-death) - 1 (best attainable health)	0.82
Monz et al	2007	UI	Rating scale	Euroqol- Visual Analogue Scale	0 (worst health state) - 100 (best health state)	69.3 (SUI); 67.4 (MUI); 69.0 (UUI)
Coyne et al	2008	OAB	HRQoL score	Euroqol- EQ-5D Index Score	0 (least desirable state-death) - 1 (best attainable health)	0.85



the HUI (Health Utility Index) of Alzheimer's disease, Stroke and Diabetes are 0.58, 0.68, 0.79 respectively (Mittmann, 1999)

(*) *Bartoli S, Aguzzi G, Tarricone R. Urology, 2010*

Conclusions

- The **prevalence of UI/OAB varied widely** amongst studies, depending on the sub-age groups of population / settings of care considered, and the case definition (e.g., episode within the past two weeks, episode within the last month)
 - This specific point imposes high attention while comparing data from different studies.
- Correct estimates of direct healthcare costs for incontinence must take into account the fact that most affected individuals **do not seek treatment** (about a third of those affected):*
 - **lack of knowledge** (on the part of the patient or the provider) about available treatments
 - patients' **embarrassment** about revealing their "lack of control"



Conclusions (2)

- Despite the limitations of existing research, UI and OAB are associated with **significant burden to the individual, institution and society**, in terms of:
 - Suffering as measured by impaired QoL
 - Economic costs affecting patients, providers, and payers
- The burden is expected to increase in terms of:
 - **Size** (rise dramatically with the rapidly expanding of older population, who are at highest risk from the development of any form of incontinence)
 - **Composition** (consequences, informal caregivers, productivity losses)
- HTA of alternative options would be key to support decision-makers' choices



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thanks for your attention

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