

How to prevent “avoidable” disability

How to avoid it ?

Samuel Périvier MD
Geneva University Hospitals



Outline

Clinical case: Mrs D.

Natural history of disability with aging

How to prevent “avoidable” disability

- In community
- During hospitalization
- At the moment of prescribing

THM

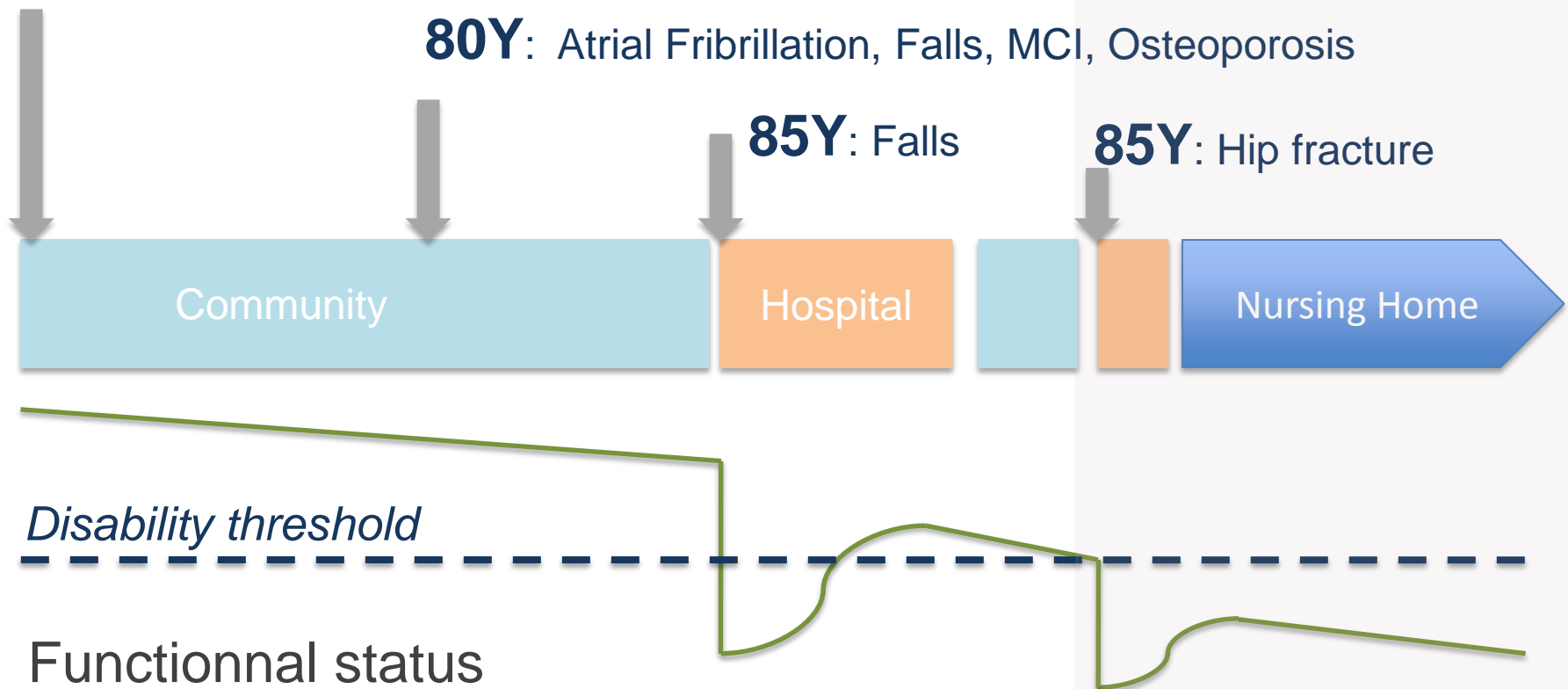
Clinical case: Mrs D.

70Y: Hypertension, Arthritis

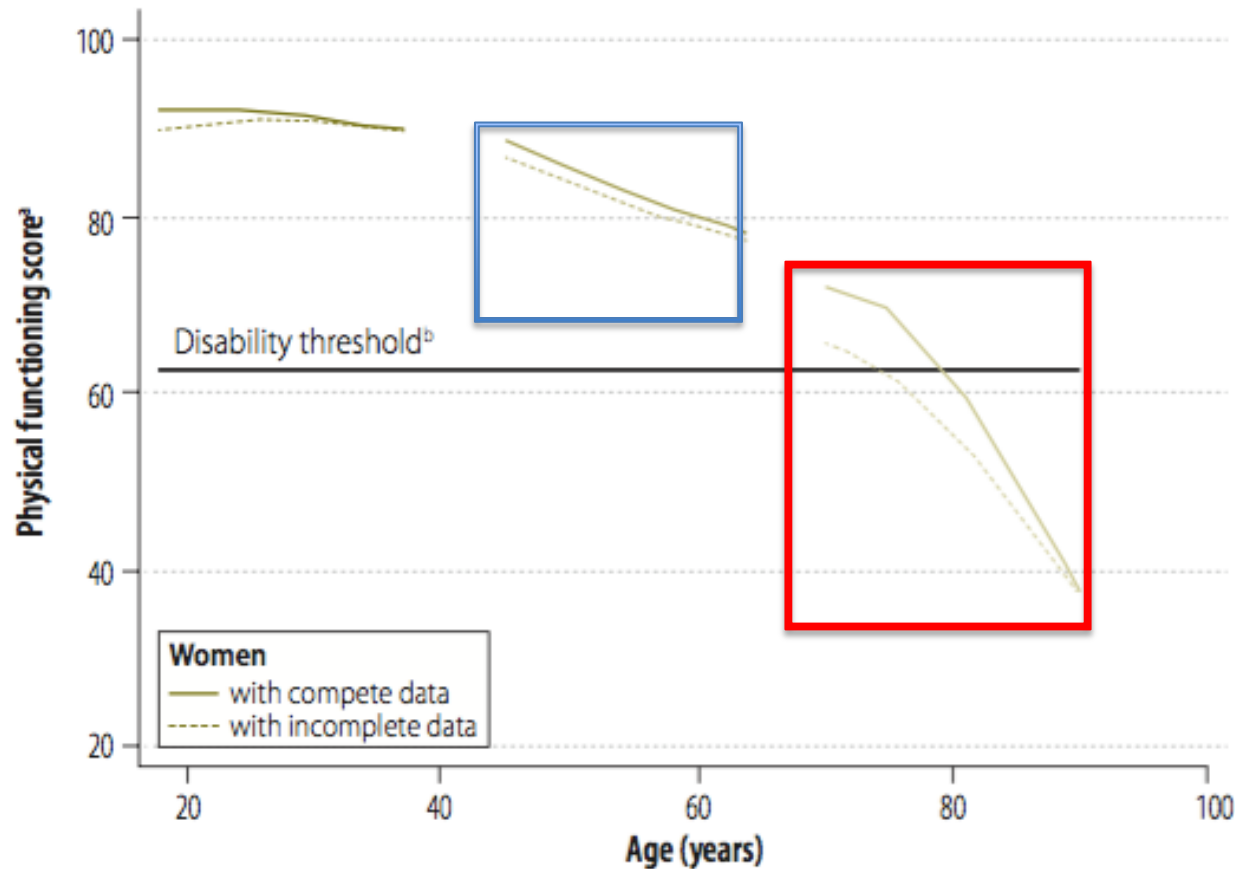
80Y: Atrial Fibrillation, Falls, MCI, Osteoporosis

85Y: Falls

85Y: Hip fracture



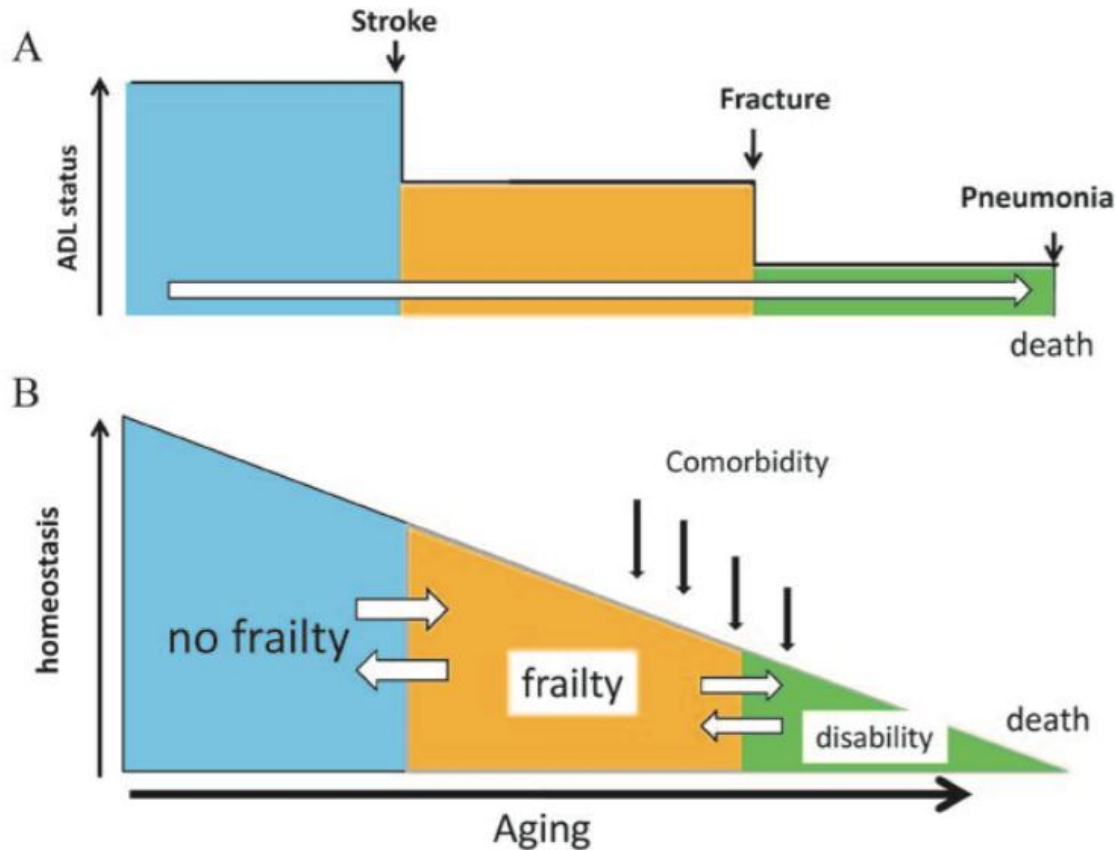
Natural history of disability with aging



A life-course perspective on physical functioning

Peeters G, et al.
Bull World Health
Organ. 2013 Sept.

Frailty and disability (disabling cascade)



Disability models for the elderly. A: Medical (disease) model of disability.
B: Frailty model of disability.

Nagoya J. Med. Sci.
74. 31 ~ 37, 2012

Geriatric syndromes

« The Number of geriatric impairments is more strongly associated than number of chronic diseases with subsequent ADL disability »

Table 3. Adjusted Association Between Impairments and Diseases and Onset of Disability in Activities of Daily Living (ADLs) and Mobility

Number of Impairments and Diseases	HR (95% Confidence Interval)	
	ADLs	Mobility
Geriatric impairments		
0 (n = 2,639)	Reference	Reference
1 (n = 1,836)	2.12 (1.63–2.75)	1.48 (1.27–1.73)
2 (n = 896)	4.25 (3.30–5.48)	2.08 (1.77–2.45)
≥3 (n = 517)	7.87 (6.10–10.17)	3.70 (3.09–4.42)
Chronic diseases		
0 (n = 1,631)	Reference	Reference
1 (n = 2,378)	1.75 (1.41–2.19)	2.06 (1.76–2.40)
2 (n = 1,276)	2.45 (1.95–3.07)	2.80 (2.36–3.31)
≥3 (n = 603)	3.26 (2.53–4.19)	4.20 (3.44–5.14)

Chaudhry SI, et al. J Am Geriatr Soc. 2010 Sep;58(9):1686–92.

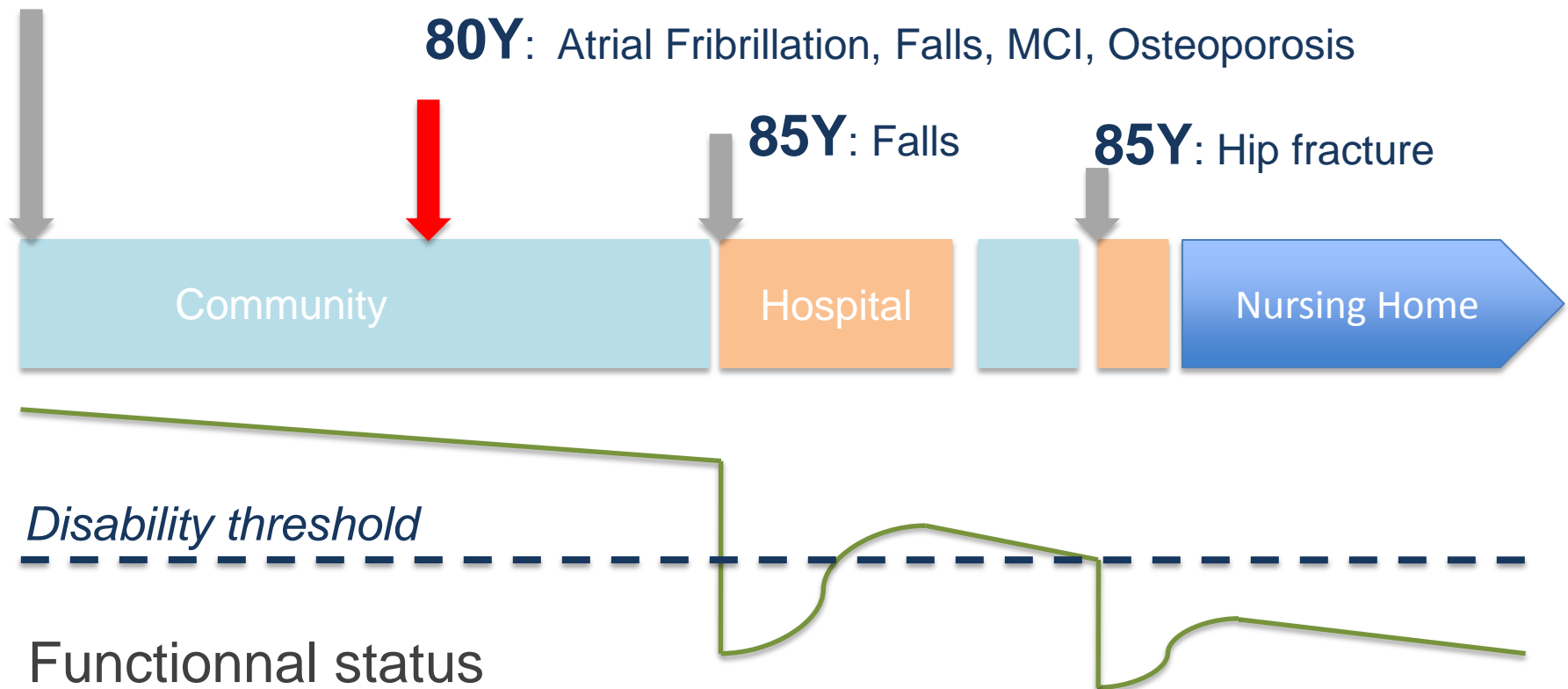
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Complex intervention in Community (review & meta-analysis)

COMPREHENSIVE
GERIATRIC
ASSESSMENT

+

MULTIDISCIPLINARY
APPROACH

Patient discharged from hospital, fallers, frail:

- Physical function SMD (-0,08, -.011 to -0.06)
 - RR risk of falling (0,9, 0,83-0,93)
 - RR of hospital admission
- No difference between different forms

Beswick AD, et al . Lancet. 2008 Mar 1;371(9614):725-35

Integrated care in community focus on frailty

- **Review (14 RCT & 2 cohorts)**

M. T. E. Puts et al. Age and Ageing 2017, Beswick

9 studies : positif effects



number of markers or prevalence of frailty

- **Perspectives : SPRINTT project**

Marzetti E, Calvani R, Landi F, Hoogendijk EO, Fougère B, Vellas B, et al. J Frailty Aging 2015;4(4):207.

« *Sarcopenia and Physical frailty in older people: multi-component Treatment strategies* »

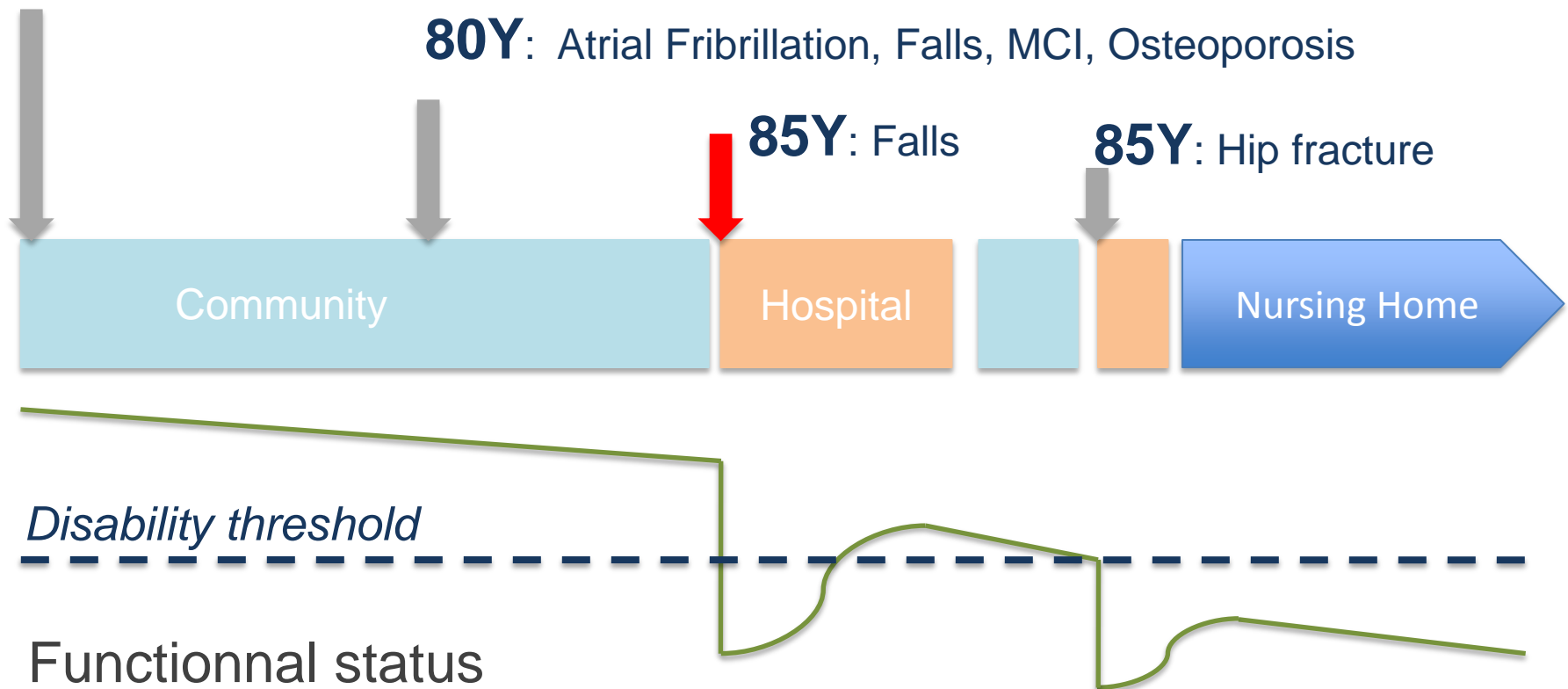
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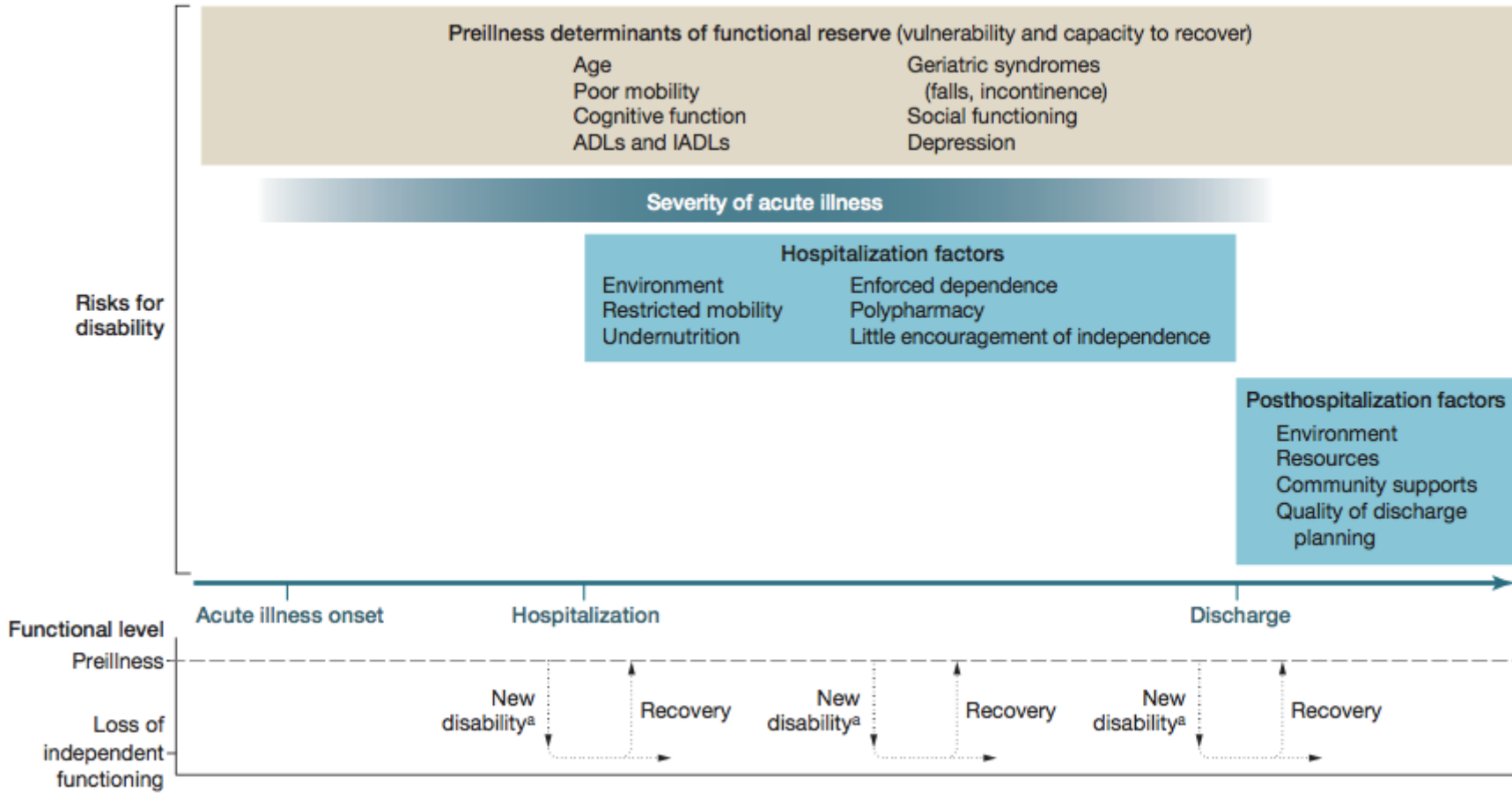
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Iatrogenic disability



Hospitalization-associated disability

Covinsky KE, et al. JAMA [Internet]. 2011 Oct 26

Hospitalization-associated disability

30 to 60% Functional decline in basic activities of daily living

Lafont C, et al. J Nutr Health Aging. 2011 Aug;15(8):645-60. Review.

In-hospital CGA programmes :

→ Geriatric evaluation + long-term management

_ Simple geriatric consultation teams

_ Hospital geriatric evaluation and management unit (GEMU)

➤ Survival and function

Stuck AE,. The Lancet. 1993;342(8878):1032–1036.

CHEOPS (CHutes Et OstéoPoroSe)

→ Multifactorial fall-and-fracture risk-based intervention program:

- _ Exercices, with, 3-5 days a week, Jacques Dalcroze Eurythmic,
- _ Risk factors of falling screening and management (with sensory evaluation, review of prescription, etc.)
- _ Osteoporosis evaluation and treatment
- _ Nutritional assessment
- _ Education groups

Trombetti A, et al Osteoporos Int. 2013 Mar;24(3):867–76.

CHEOPS (CHutes Et OstéoPoroSe)

122 geriatric patients (mean \pm SD age, 84 \pm 7 years)

Fall, history of recurrent falls, gait and/or balance impairments

- Timed Up and Go (0–3.7s; 95 %)**
- Tinetti (–1.4; 95 %)**
- Functional Independence Measure (6.5; 95 %)**

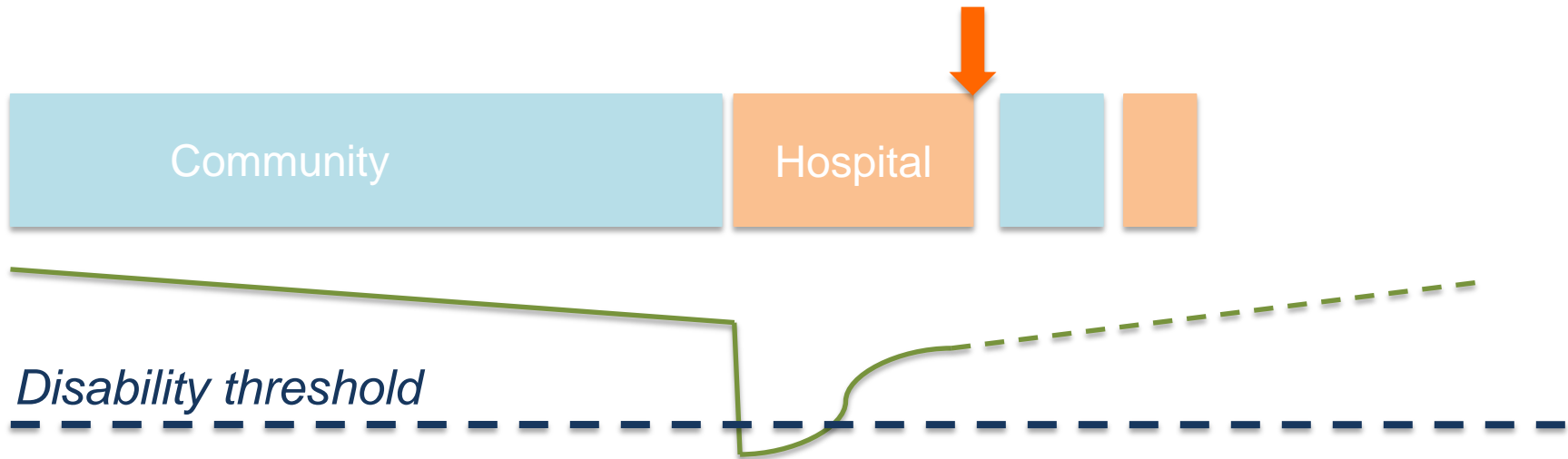
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Functionnal status

Inappropriate prescribing STOPP/START*

- 27 %** Hospital admissions related to inappropriate prescribing in frail persons
 - Related to inappropriately prescribed medication (STOPP)**
 - ✓ 1/6 fall with a major fracture
 - ✓ 67 % Fall-risk increasing drugs (Benzodiazepin, opiate)
 - Related to prescribing omission (START)**
 - ✓ Fall with a fracture (calcium, D vitamin and bisphosphonates)
 - ✓ Cardiovascular disease (Aspirin, Antithrombotic agents)
- 18 %**
- 13 %**

Dalleur O, et al. Drugs Aging. 2012 Oct;29(10):829–37.

• Screening Tool of Older Persons' potentially inappropriate Prescriptions/Screening Tool to Alert doctors to the Right Treatment

Improving prescription

Polypharmacy is a risk factor of fall and functional decline

Wang R, et al. PLOS ONE. 2015 Nov10;10(11):e0142123

Effectiveness of the STOPP/START criteria (systematic review and meta-analysis)

Hill-Taylor B, et al. J Clin Pharm Ther. 2016 Apr;41(2):158–69.

STOPP criteria reduced potentially inappropriate medication rates

- Falls, Delirium episodes, hospital length-of-stay, care visits (primary and emergency)
- Functional status ?

Prevention begins in adulthood

Identify early condition at risk

Frailty and Geriatric syndrome

Multimodal intervention

Prescribe wisely

CONFLICT OF INTEREST

"I have no potential conflict of interest to report"

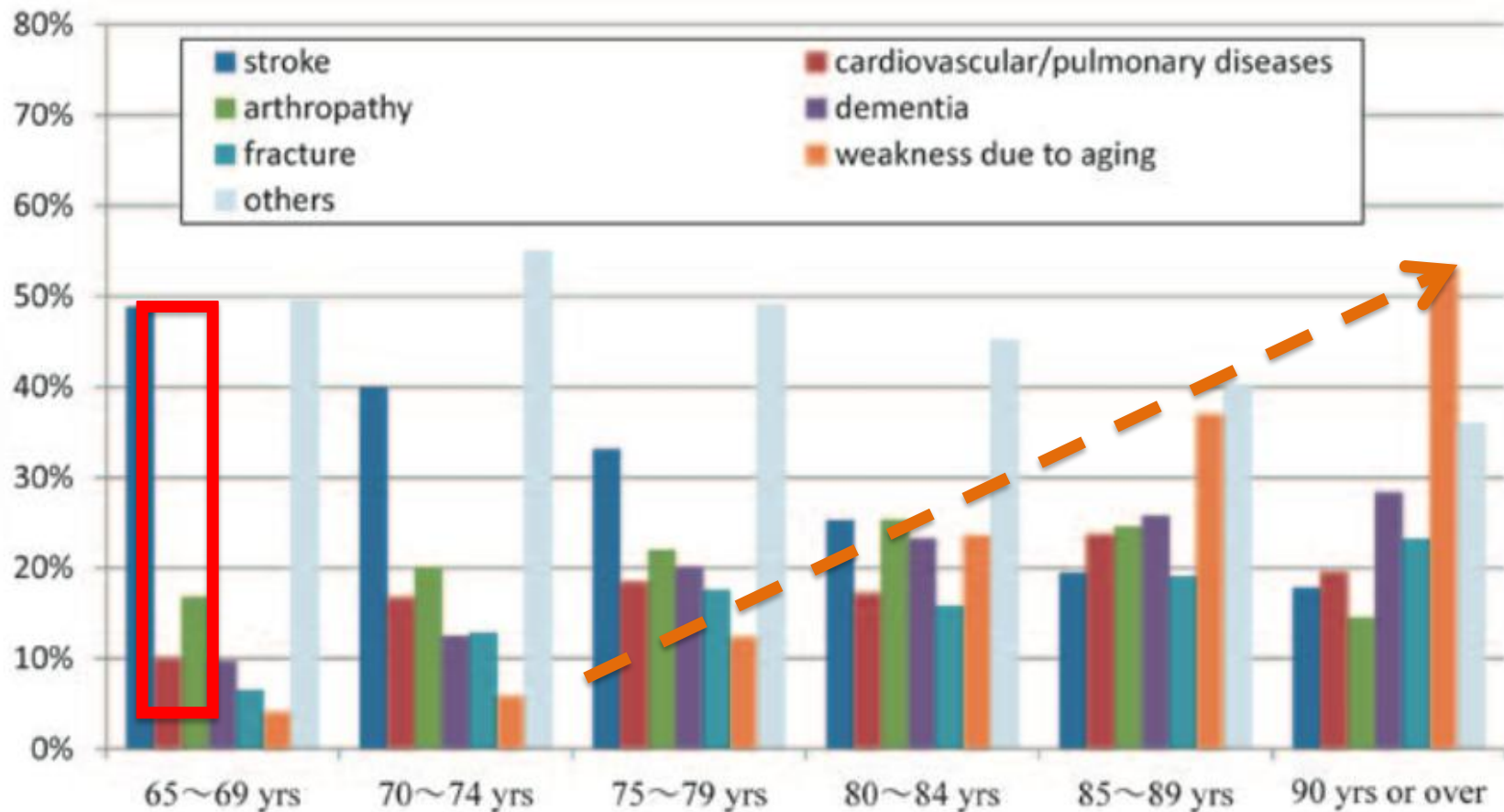


@ Sisyph, Titan

*Thank you
for your attention.*

QUESTIONS

Major causes of disability in elderly



Nagoya J.
 Med. Sci.
 74. 31 ~ 37,
 2012

Tools

Barthel index activity Katz Index of Independence in Activities of Daily Living

Katz S., Downton T.D., Cash H.R. Gerontologist 1970 ; 10 : 20-30

Instrumental Activities of Daily Living Scale of Lawton

Lawton M., Brody E.M. Gerontologist 1969 ; 9 : 179-186.

Functional independency measure

Keith RA, et al. Adv Clin Rehabil. 1987;1:6-18. PubMed PMID: 3503663.

Screening screening tools in primary care :

Patients Aged 65 Years and Older Without Both Functional Disability (Activities of Daily Living score $\geq 5/6$) and Current Acute Disease

	Yes	No
Does your patient live alone?	<input type="checkbox"/>	<input type="checkbox"/>
Has your patient involuntarily lost weight in the last 3 months?	<input type="checkbox"/>	<input type="checkbox"/>
Has your patient been more fatigued in the last 3 months?	<input type="checkbox"/>	<input type="checkbox"/>
Has your patient experienced increased mobility difficulties in the last 3 months?	<input type="checkbox"/>	<input type="checkbox"/>
Has your patient complained of memory problems?	<input type="checkbox"/>	<input type="checkbox"/>
Does your patient present slow gait speed (i.e., >4 seconds to walk 4 meters)?	<input type="checkbox"/>	<input type="checkbox"/>
Yes		
If you have answered YES to one or more of these questions:		
Do you think your patient is frail?		<input type="checkbox"/>
If YES, is your patient willing to be assessed for his/her frailty status at the Frailty Clinic?		<input type="checkbox"/>

(Vellas et al. J Nutr Health Aging 2013;17:629-631).²⁶

Gérontopôle Frailty Screening Tool (GFST)

Cesari M, et al. J Am Med Dir Assoc. 2016 Mar;17(3):188–92.

(SPRINTT) project

- ✓ *clear operationalisation of the concept of frailty;*
- ✓ *identification of a target population with unmet medical needs;*
- ✓ *evaluation and validation of methodologies for implementing preventive and therapeutic strategies among frail elders at risk of disability*
- ✓ *definition of an experimental setting as a template for regulatory purposes and pharmaceutical investigations*
- ✓ *identification of biomarkers and health technology solutions to be implemented in clinical practice.*

The identification of frailty as a target for implementing preventive interventions against age-related conditions is pivotal.