

**Can the Intermed score
identify complex patients in
PMR?**

Jean-Pascal Devailly* – Laurence Josse**

* Service de MPR, Hôpital Bichat - Assistance Publique - Hôpitaux de Paris

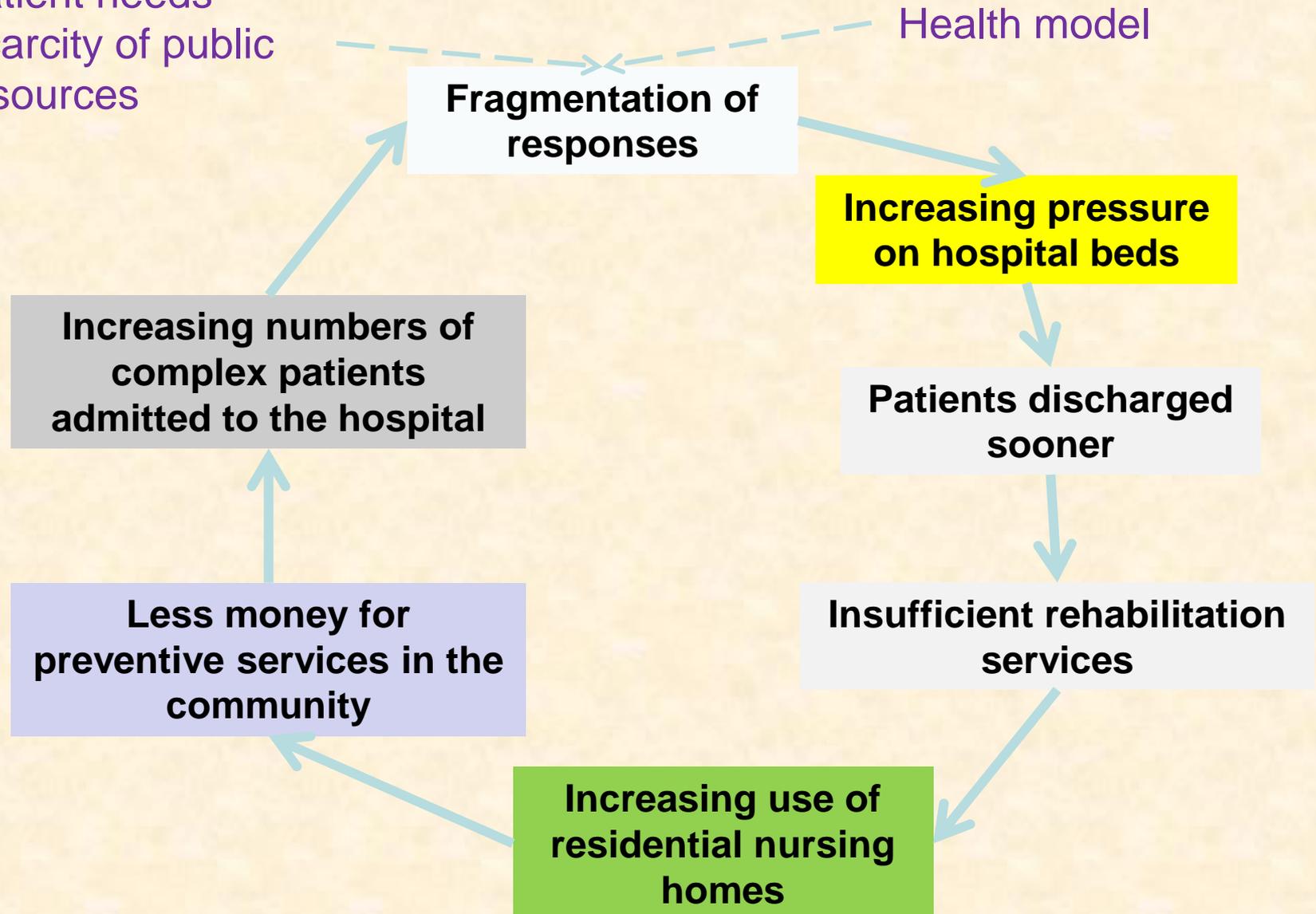
** Service de MPR, Hôpital Rothschild - Assistance Publique - Hôpitaux de Paris

Why complexity matters for PRM?

- Increasing pressure on hospital beds. Patients discharged sooner.
- Health care systems are fragmented: medical specialization, split between general health care and mental health care, rupture between primary and secondary health care settings, acute and post acute care.
- “Quality problems occur ...because of fundamental shortcomings in the ways care is organized”. (“Crossing the quality chiasm”).
- The complex medical patients are the most vulnerable to the deficiencies of a fragmented health care system and most in need: frail elderly, chronically ill with multiple morbidities, patients with functional limitations.
- There is international ambiguity around clinical definitions of post-acute care, including PAC rehabilitation, how it differs from acute care, where it is best done and what resources are required.
- This leads to inconsistent and poorly defined patient selection criteria (Eagar, Ines).

Incorrect assessment of case complexity impedes a suitable organization of rehabilitation programs

- Patient needs
- Scarcity of public resources

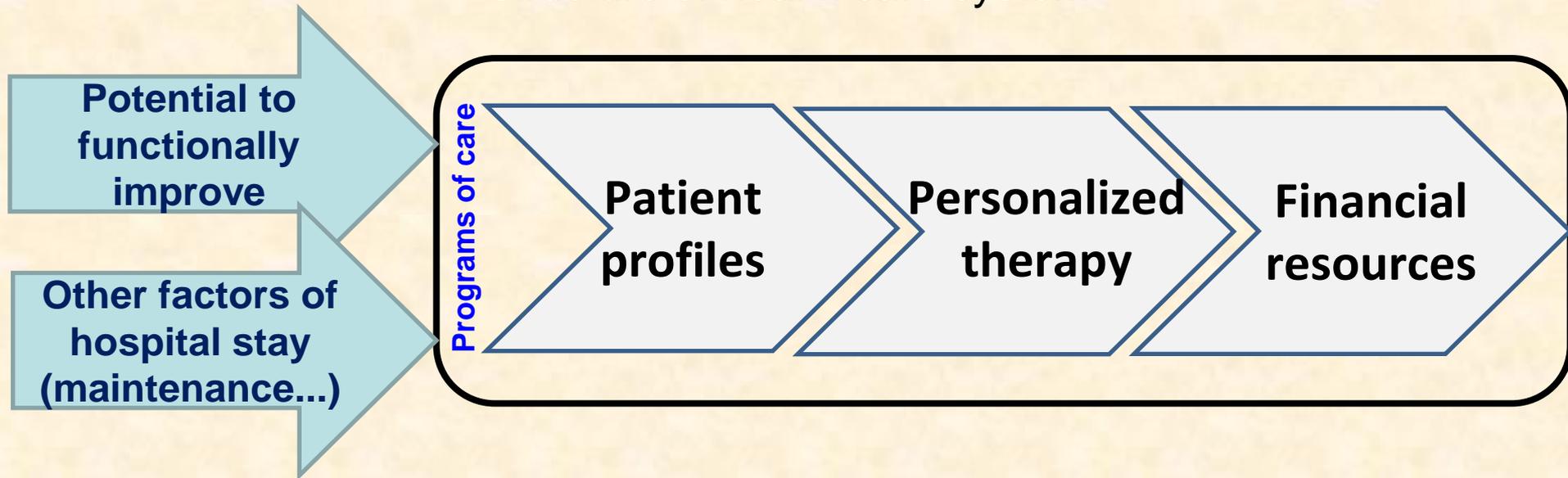


Adapté de:

[The coming of age: improving care services for older people, a review of the health and social care of older people \(Audit Commission, 1997\).](#)

Complexity affects patient selection criteria for rehabilitation programs

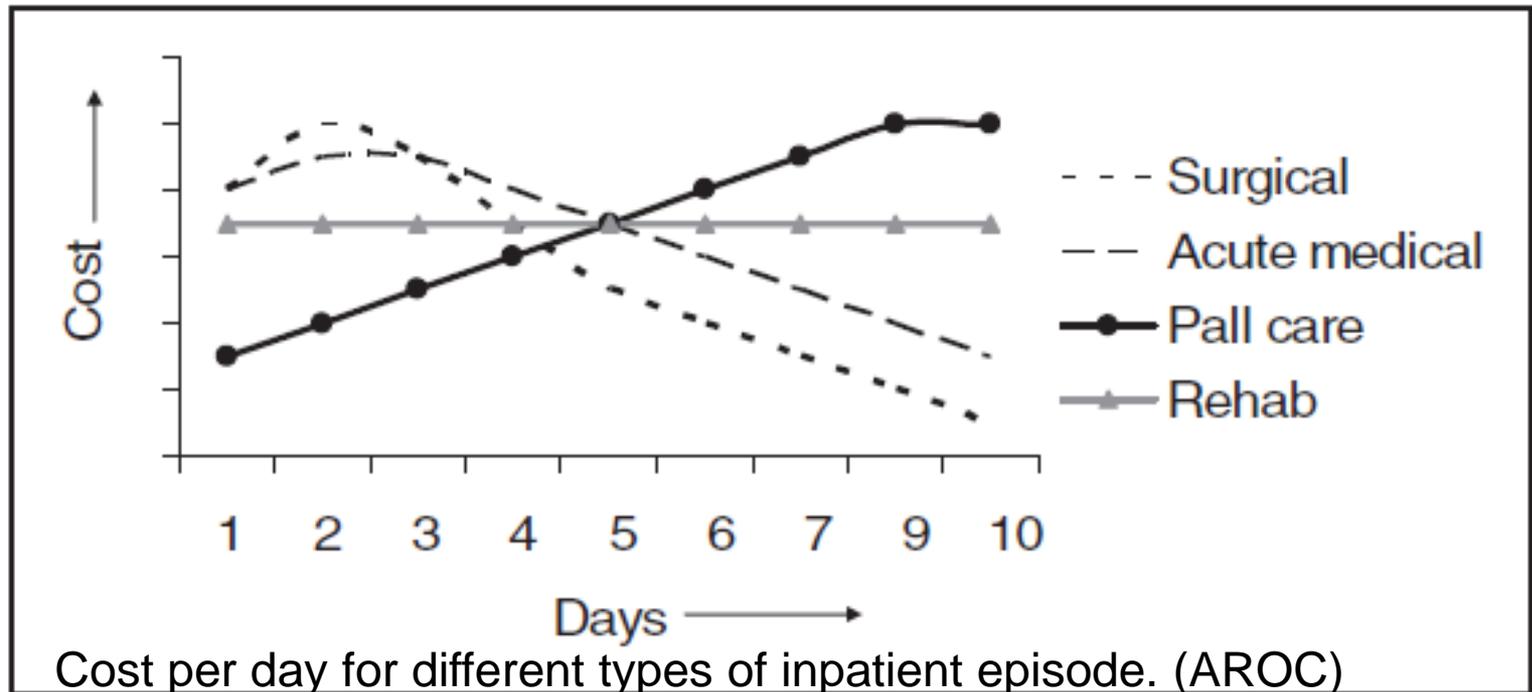
The concept of **complexity** refers to care needs of patients who have multimorbid conditions that affect a standard care in the current organizational structure of health care system



- Multiple needs, less predictable
- Poorly captured by the information system
- Substituability and vertical integration
- Instability
- Low tolerance long duration rehabilitation
- Difficulties for discharge
- Increasing length of stay
- Inappropriateness
- High cost therapeutic process
- Underpayment
- Financial risk

Cost of complexity, casemix and payment systems

1. **Diagnosis alone is a relatively poor indicator** of costs for inpatient rehabilitation; nursing and therapy staff input are the major cost indicators
2. **Cost-efficiency does not always equate with shorter stay.**
3. **Some patients need longer to achieve maximal independence**
4. **Cost saving for ongoing care can offset the initial investment in rehabilitation**



Assessment for rehabilitation program

What indicators of complexity? (ICF)

- Active medical conditions
- Functional abilities and critical activity limitations
- Family and social supports
- Psychological, cognitive, emotional and behavioral issues
- Home environment, especially regarding access, internal barriers and the toilet and bathroom set-up

[The Assessment and Selection of Potential Rehabilitation Patients in Acute Hospitals: A Literature Review and Commentary Peter W. New](#)

The Open Rehabilitation Journal, 2009, 2, 24-34

INTERMED (Huyse, Stiefel) Version 6

Intermed assesses the factors that increase the complexity of the case and the need of (early) coordinated care

	History	Current State	Vulnerabilities
Biological	Chronicity <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="text"/>	Severity of symptoms <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="text"/>	Complications and life-threat <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="text"/>
	Diagnostic dilemma <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="text"/>	Diagnostic challenge <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="text"/>	
Psychological	Restrictions in coping <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="text"/>	Resistance to treatment <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="text"/>	Mental health threat <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="text"/>
	Psychiatric dysfunction <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="text"/>	Psychiatric symptoms <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="text"/>	
Social	Restrictions in integration <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="text"/>	Residential instability <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="text"/>	Social vulnerability <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="text"/>
	Social dysfunctioning <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="text"/>	Restrictions of network <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="text"/>	
Health System	Intensity of treatment <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="text"/>	Organization of care <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="text"/>	Coordination of healthcare <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="text"/>
	Treatment experience <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="text"/>	Appropriateness of referral <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="text"/>	

www.INTERMEDfoundation.org

Huyse FJ and Stiefel FC: Preface, in Huyse FJ and Stiefel FC Eds Integrated care for the complex medically ill. Medical Clinics of North America July 2006 Elsevier.

Five categories grouped into 3 to promote graded responses of the health system

Non complex

- Score Intermed (IM)<10
- IM> 10

Patients non complexes (IM =11)
Episode court de maladie simple

Complex

- 15<IM<25
- 25<IM<30

Patients complexes (IM= 20)
Maladie chronique de modérée à sérieuse

Very complex

- IM>30.

Patients très complexes (IM=30)
Co morbidités multiples, intervenants nombreux,
Dysfonctionnements psychologiques, sociaux et financiers

Analysis of case with LOS > 4 months in a PRM unit

- Of 151 patients admitted over a year in a PRM unit with "nervous system" orientation:
 - we founded 13 brain-damaged patients whose hospitalization was no longer relevant beyond four months,
 - Intermed score was filled in the admission week for all patients on the unit and we looked for a link between the Intermed score and inappropriate hospital stay In PMR after 4 months (FEDMER criteria).
- Results:
 - of the 13 "inappropriate" patients,
 - 11 were under 60 years,
 - for 11 the Glasgow Outcome Scale was 3 ,
 - for all patients Intermed score was greater than 25 at the entrance,
 - except one patient whose GOS was 2 and Intermed score was 23,
 - for all appropriate stays, patients had a score of less than 20.

Typology of inappropriateness

- Insufficient familial or social support , pending pending institutional accommodation = 5
- Pending home adaptation = 4
- Delay in the implementation of support systems at home(*Maisons Départementales des Personnes Handicapées*, General Council) = 3
- Undecision: delay in the development of a consensus = 2 (7 times but found as a secondary cause)

Study of hospital stays > 1 month in acute-care

Hôpital Avicenne # 472 beds, 399 occupied – Juin 2010

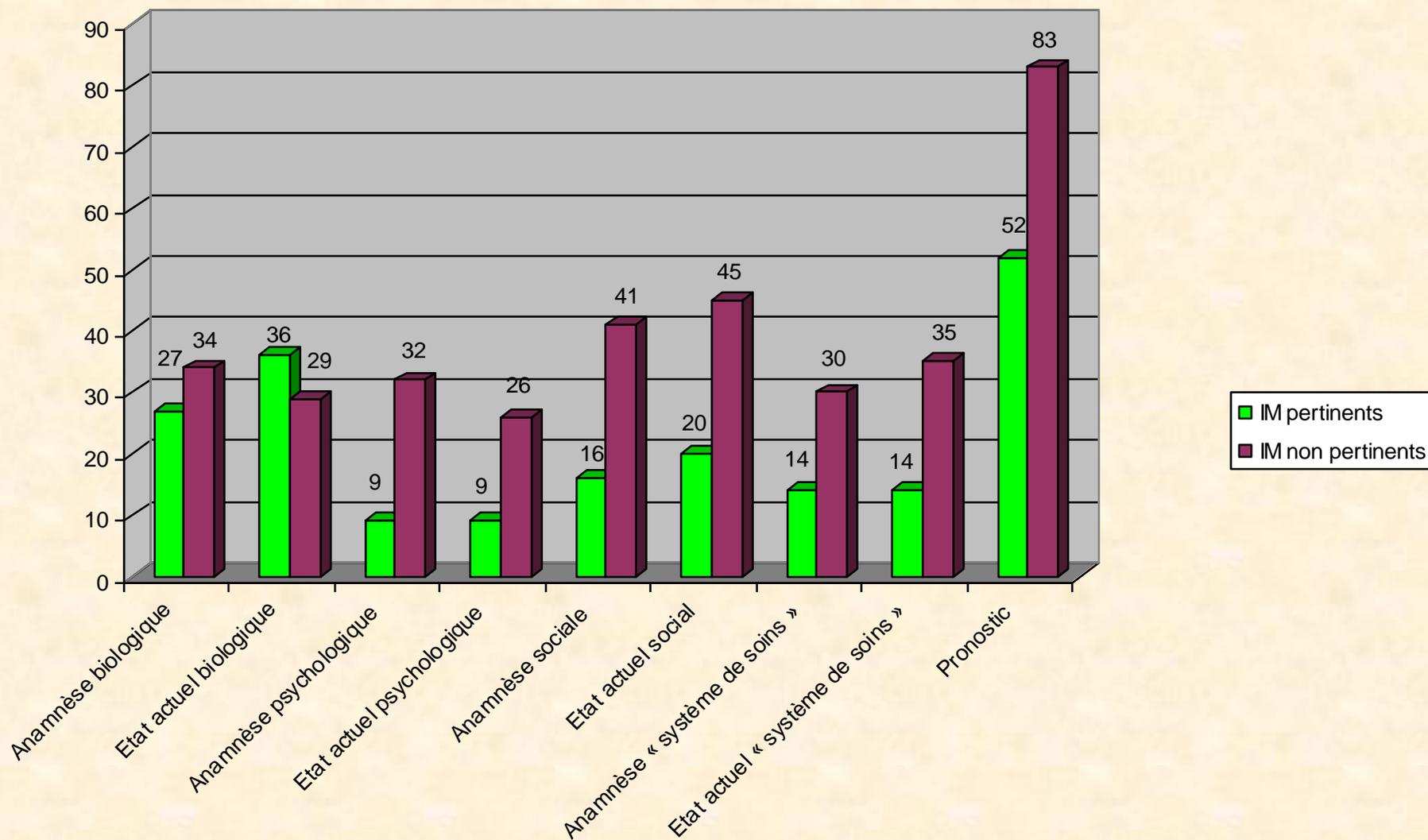
23 questionnaires completed; 17 men and 6 women ; average age: 58,69 (32 – 87); 13 patients < 60 ans

- 11 appropriate stays
- 12 inappropriate stays
- 8 M, 7 W
- 9 M, 3 W
- Average age : 59,54 ans
- Average age : 57,92 ans
- 5 < 60 ans
- 8 < 60 ans
- Intermed Score :
 - 3 simple
 - 7 complex
 - 1 very complex
- Intermed Score :
 - 0 simple
 - 3 complex
 - 9 very complex

Predominance of severe neurological disorders: stroke, SCI, PML, cerebral anoxia, ...

Patient	Age	Intermed	Diagnostic principal	Facteurs de retard de sortie
1	35	33	LEMP VIH Monoplégie	Incertitude lieu de sortie, retard à l'instruction du dossier MDPH, retard à la mise en œuvre des aides à domicile
2	40	38	Anoxie cérébrale Troubles cognitifs	Retard à la formulation du projet de sortie, refus de la famille d'instruire un dossier à la MDPH
3	41	30	AVC Quadriplégie	Retard à l'accès aux droits (coupure EDF pour loyers impayés, réouverture de compte bancaire, ...)
4	47	39	LEMP Anoxie cérébrale Troubles cognitifs Cécité corticale	Attente de place malgré procédure établie, décision d'orientation en MAS
5	49	40	AVC Paraparésie Syndrome frontal	Retard à la formulation du projet de sortie, lenteur d'instruction du dossier MDPH
6	51	41	Syndrome de Korsakoff	Attente de place malgré procédure établie, décision d'orientation en MAS
7	51	37	AVC Psychose	Attente de place malgré procédure établie, lenteur d'instruction du dossier MDPH, décision d'orientation en FAM
8	55	37	Syndrome de Korsakoff	Attente de place en structure d'accueil, dérogation d'âge, aides sécu, tutelle OK
9	77	55	Tétraplégie	Pas de domicile, en situation irrégulière, impossibilité d'accès aux droits pour problèmes judiciaires
10	79	20	Péritonite opérée Perte d'autonomie	Attente de réponse d'un SSR en province
11	83	29	Carcinome pulmonaire	Attente SSR spécialisé cardio respiratoire
12	87	19	Plaie infectée → isolement Perte autonomie	Demande de prise en charge trop tardive en SSR auprès du service social

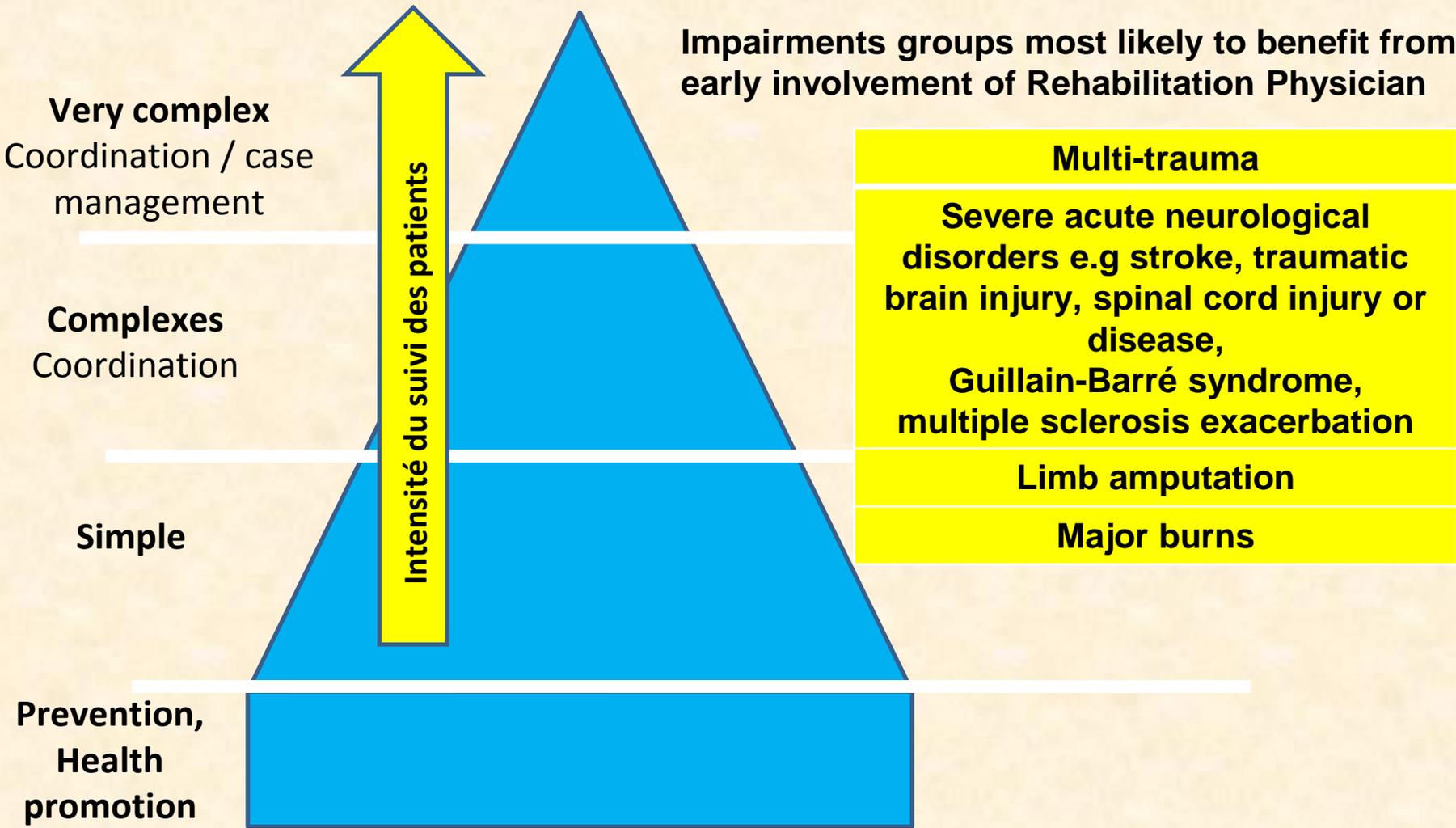
Predominance of cognitive disorders psychosocial factors, prognosis uncertainty



Three conflicting logics to concile

- **Deinstitutionalisation process (déhospitalisation):** development of ambulatory care
 - Distinction between accommodation, specific care in integrated structures and basic care,
 - Risks of assessment models and payments systems (« care factory »),
 - Canada: resulted in a dispersion of clients into the community without the necessary services and supports.
- **Rehabilitation:** Patients whose need for health care is predicted by their functional status and potential to functionally improve, rather than their principal medical diagnosis and who still require inpatient or outpatient rehabilitation program
 - Risk = selection, underuse, overuse, risks of fragmented payment systems,
 - Substituability in post-acute care.
- **Complex case management:** « patient centred » approach , outcome oriented or « pull » strategy
Risks of vertical integration, « managed care », de-differentiation of PAC, bundled payments, decrease of physician autonomy, inequalities in access to healthcare.

Operationalization of case complexity allow to reconcile fluidity of care pathway with suitable differentiation of rehab programs



Conclusion

- The Intermed score identifies patients who require early coordination of rehabilitation, orientation and integration of care pathways.
- Complexity assessment help to define three types of needs
 - Accomodation needs  response of famailial and social networks challenging loss of autonomy,
 - Specific care  integrated structures by core competencies,
 - Basic care  availability and responsiveness of networks: acute and post-acute inpatient programs, ambulatory care, medico-social sector.
- It allows to stratify the needs and intervention levels including mobile teams.
- Integrate into the routine information system reliable and reproducible tool for identifying needs, throughout the continuum of care.

Thank you for your attention