

Evolution of french classification for non-acute activity

Nicolas Dapzol, Meriem Saïd, Fabrice Elegbede,
Axelle Menu, Marie-Caroline Clément & Joëlle Dubois

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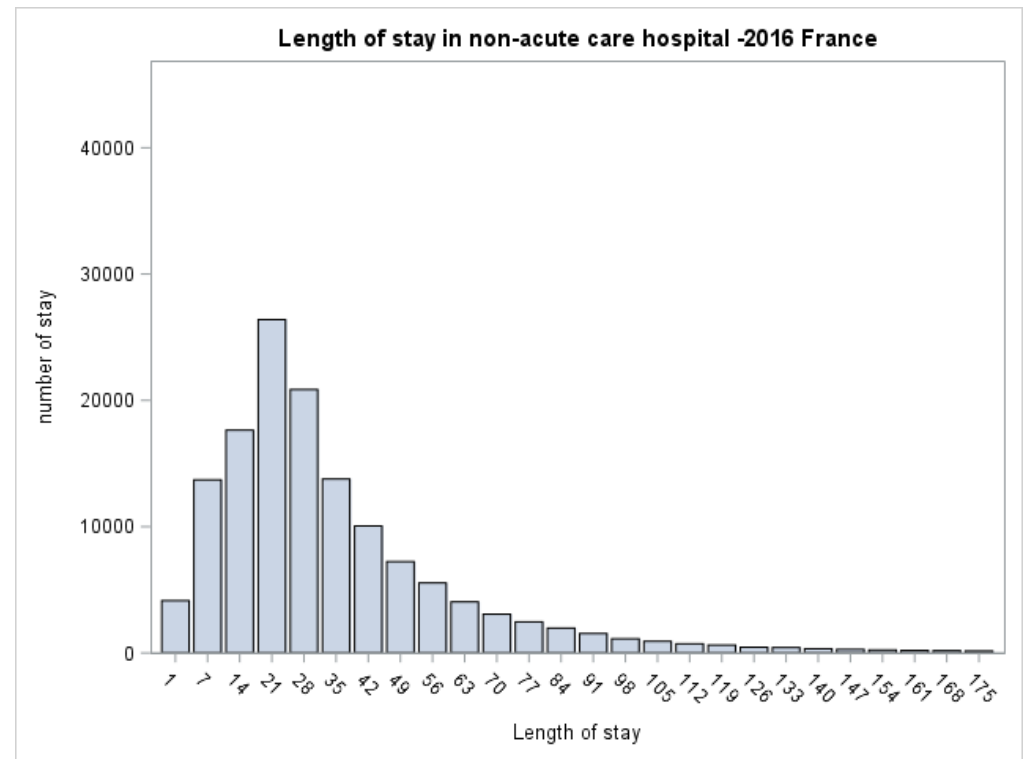
- 1. Non acute activity in France : overview and brief history of classifications**
- 2. Limits of the current classification**
- 3. GME 2018 : a classification built to answer key questions**
- 4. Some statistical results & Conclusion**

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Non acute activity in France : hospital

- 8 billions budget
- ~1 million stay /year
- 1700 hospitals divided between
 - Specialized units with rehabilitation platform
 - But with no strict definition
 - Unspecialized
 - Public / private / private with no profit
 - Historical budget
 - → heterogeneous cost per stay
- Very variable length of stay
 - From 1 day to 1 year



Non acute activity in France : database

- A stay unit but with a weekly recorded
- Diagnosis (principal / associated) → ICM10
- Disability measurement : → ~ADL
 - Physic : hability to be autonomous for certain activity (dressing, toilets).
 - Cognition : hability to communicate
- Post chirurgical status
- Physician Procedure → CCAM
- Rehabilitation procedure → CSARR
 - Done by physiotherapist, psychologist,... nurse ...

⇒ All the factors are important to understand activity
 The classification problem :
 How to take into account all the factors while having a reasonable number of groups ?

A brief story about classification for non acute care in France

- 1997 GHJ : Group of Homogenous hospitalization Day
Levels of resource defined by experts
- 2000 First cost study
- 2009 GMD : Group of Main Morbidity of hospitalisation Day
Patient characteristics are taken into account by a big and complex formula

Day Cost evaluation = Function (
 medical group
 + physic and cognitive disability,
 + age, +
 severity level
 + number of procedures +...)

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Patient characteristics are taken into account by a big and complex formula

Good economic performance but not really understandable

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Patient characteristics are taken into account by a big and complex formula
- 2013 GME v1 Medical & Economic Group for inpatient stay
 - First French classification for inpatient stay in subacute care
 - Patient characteristics are taken into account by parsimonious subdivision

*Reference : N. Dapzol, C. Prodom, S. Gomez, A. Patris, Y. Lefebvre, J. Dubois
"The French classification in non acute care" PCSI 2013 ([abstract](#))*

GME v1 : example 1

Traumatic Brain Injury

Nosology group

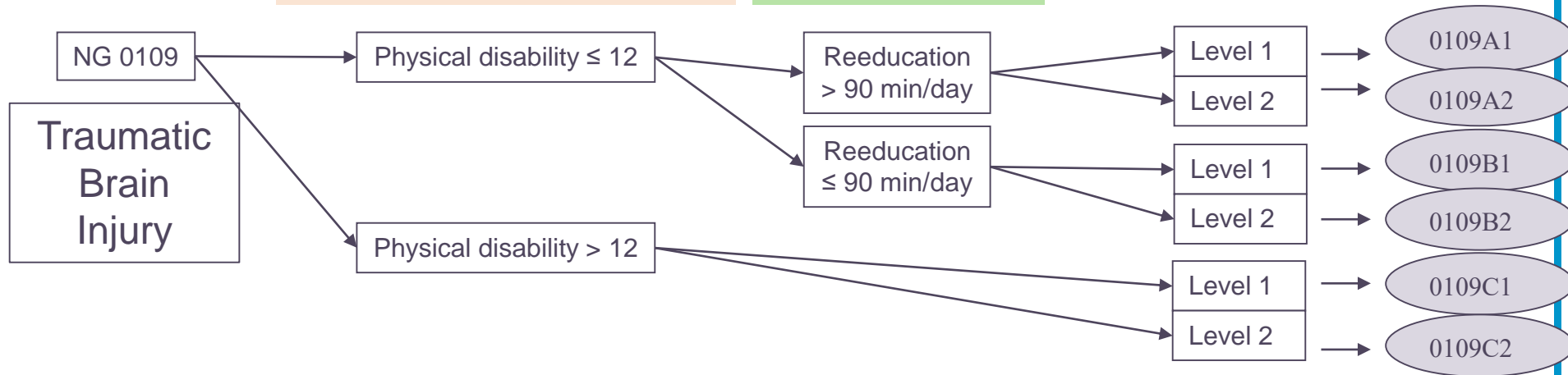
Subdivision by patient's characteristics and procedures

Severity level

Severity by patient's characteristics (age, disability, post chirurgical status...)

Reeducation procedure

Severity by secondary diagnosis



GME v1 : example 2

Multiple fractures

Nosology group

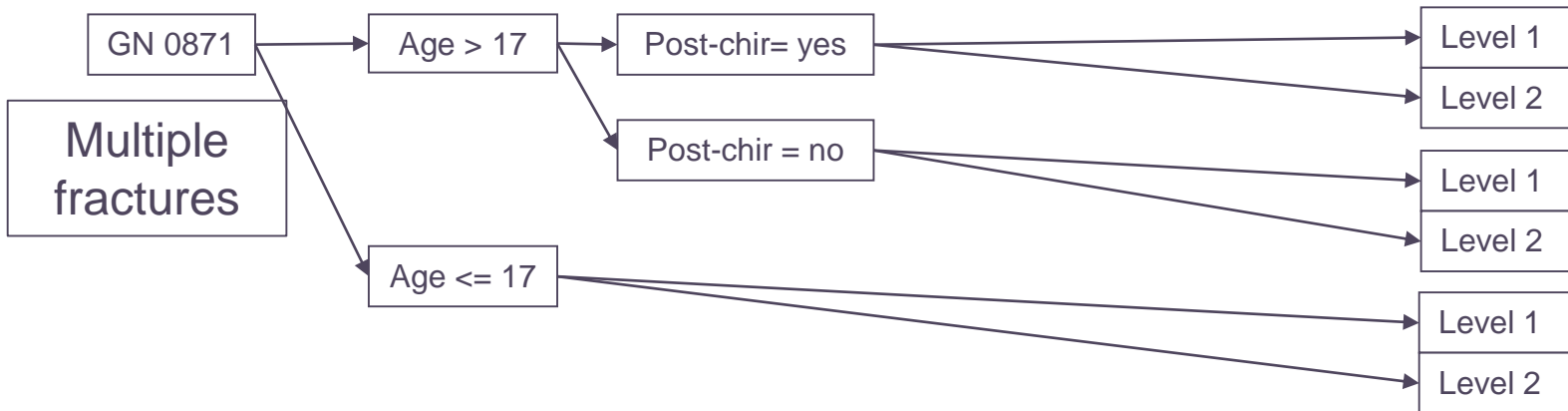
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2. **Limits of the current classification**
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The GME v1 classification is not suited to answer key questions :

What's the economic weight at equal pathology ?

Subdivision by patient's characteristics and procedures

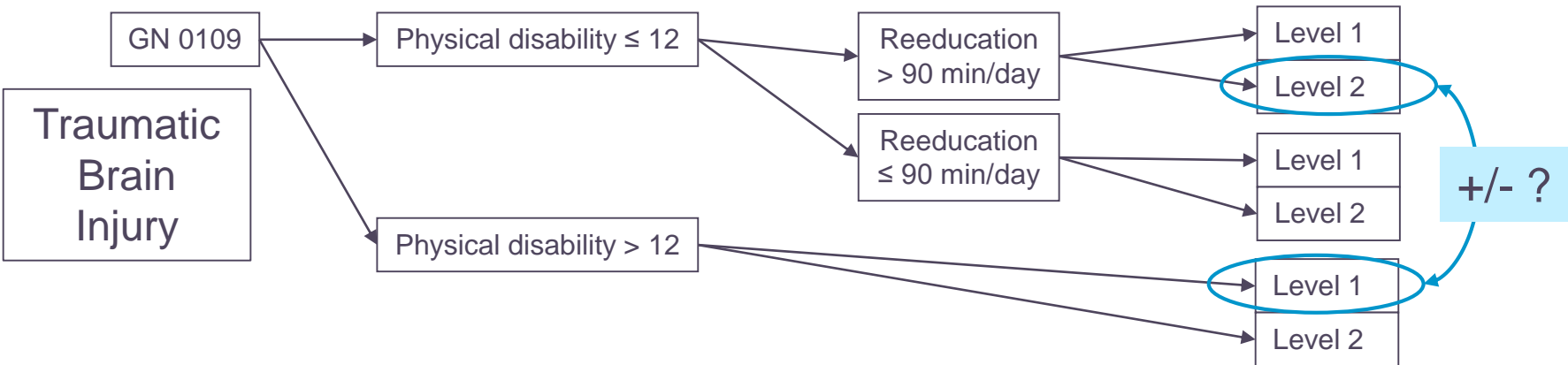
Severity level

Severity by patient's characteristics (age, disability, post chirurgical status...)

Reeducation procedure

Severity by secondary diagnosis

Nosology group



From a global point of view, it's difficult to know which stay has the highest cost :

- a stay with a low physical disability and a level 2 severity
- or, a stay with high physical disability and a level 1 severity

The GME v1 classification is not suited to answer key questions :

How to analyze rehabilitation ?

Subdivision by patient's characteristics and procedures

Severity level

Severity by patient's characteristics (age, disability, post chirurgical status...)

Reeducation procedure

Severity by secondary diagnosis

Nosology group

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Traumatic Brain Injury

Physical disability ≤ 12

Physical disability > 12

Reeducation > 90 min/day

Reeducation ≤ 90 min/day

Level 1

Level 2

Level 1

Level 2

Divided on rehabilitation

Not Divided on rehabilitation

All the groups are not divided on rehabilitation. Therefore, from a global point of view, it's difficult to analyze rehabilitation activity via the GME classification.

Limits of GME classification

- **The GME v1 classification is not suited to answer 2 main questions :**
 - From a global point of view, what's the economic weight of the group at equal pathology ?
 - What is the reeducation received by the patient ?

⇒ Some hospitals can't understand their activity with the casemix
- **High number of groups**
- **Groups are medically difficult to interpret**

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All the factors are important to understand activity

But if we use all the factors explicitly in the classification, it will lead to create more than 40,000 groups.

How to take into account all the factors while keeping a reasonable number of groups ?

Organize the classification to be more informative by using all the factors to answer 3 key questions



GME v2018

Key questions

Answers into distinct levels

Using different variables

What is the main disease ?

Nosology group

Principal Diagnosis

Sub-NG

Age and some typical procedures

At fixed disease, what is the patient's complexity ?

Complexity level

Age, disability, post surgical status , secondary diagnosis

At fixed disease and fixed complexity, what is the rehabilitation received by the patient ?

Rehabilitation level

Rehabilitation procedures



GME v2018

Key questions

Answers into distinct levels

What is the main disease ?

At fixed disease, what is the patient's complexity ?

At fixed disease and fixed complexity, what is the rehabilitation received by the patient ?

Nosology group

Sub-NG

Complexity level

Rehabilitation level

These levels aim at being medically meaningful

These last two levels are designed to offer a macro-economic view

GME v2018

**Nosology
group**

Medical groups based on
diagnosis

Sub-NG

Subgroups are introduced to describe
pediatric activity and some specific
rehabilitation.

Complexity level

Example

Amputations

and cicatrization and with use of prosthesis

with use of prosthesis

other

**Rehabilitation
group**

GME v2018

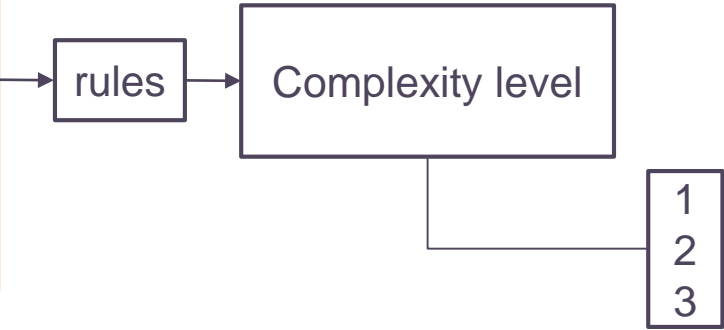
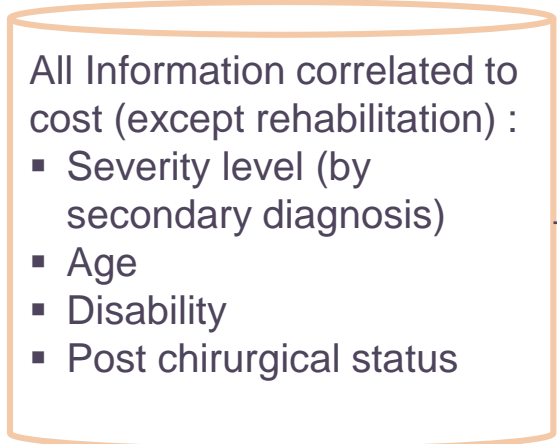
Nosology group

Sub-GN

Complexity level

Rehabilitation group

Definition: indicator with 3 levels reflecting the economic weight at equal pathology due to different characteristics of the patient and the stay



Construction constrains :

- simple and easy to understand rules
- compromise between statistical power and medically meaningful

⇒ 6 rules
 EG : if patient is under 3 years old, then complexity level is maximum

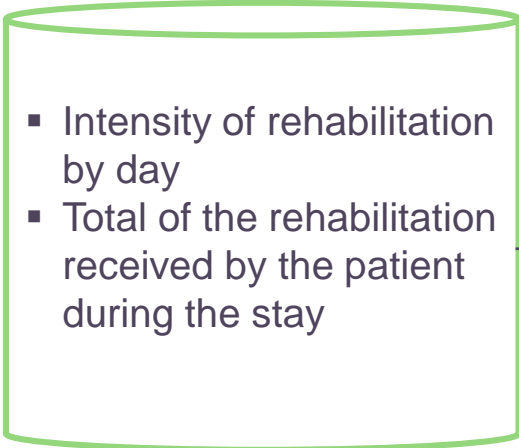
Nosology group

Sub-GN

Complexity level

Rehabilitation group

Definition: Groups reflecting the different levels of rehabilitation at equal pathology and equal complexity



rules

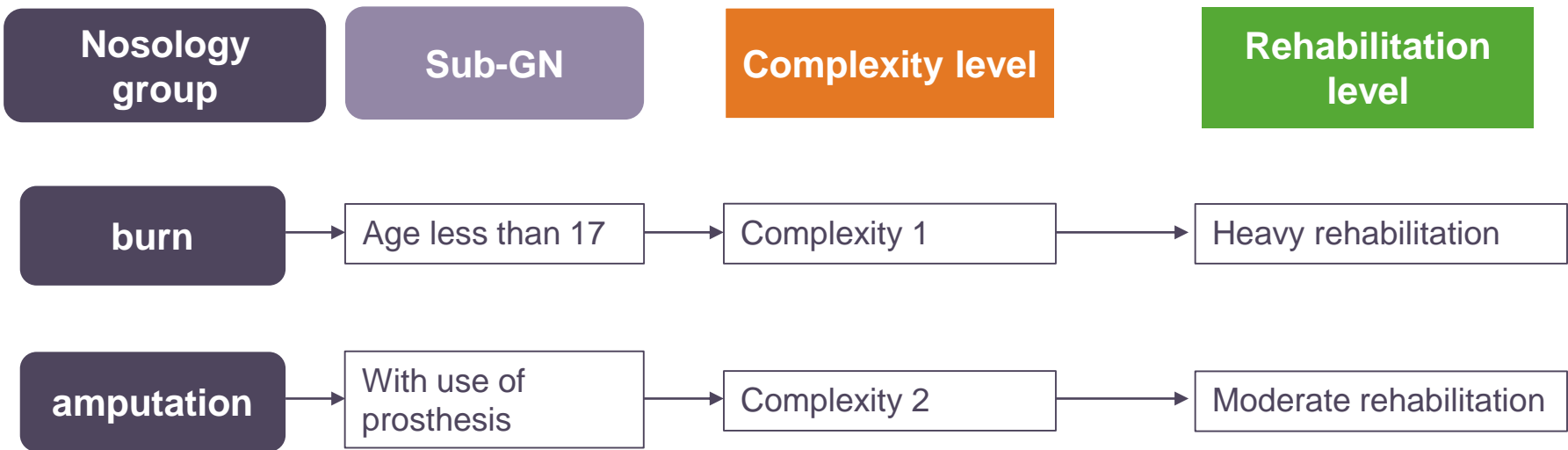
Rehabilitation level

Moderate/
Heavy

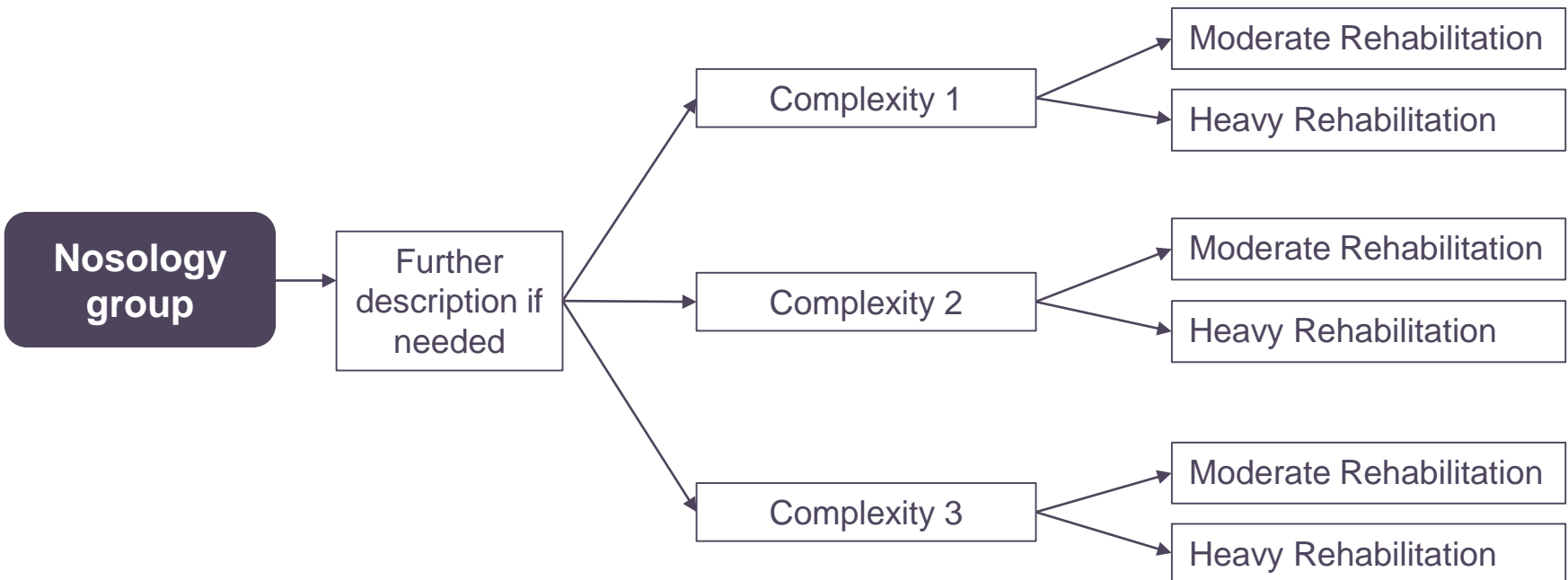
Construction constrains :

- near recommendations (when exist)
- heavy group are defined by a minimum of rehabilitation per day (eg 1h/day) and a minimum during the stay (eg 10h/ stay).

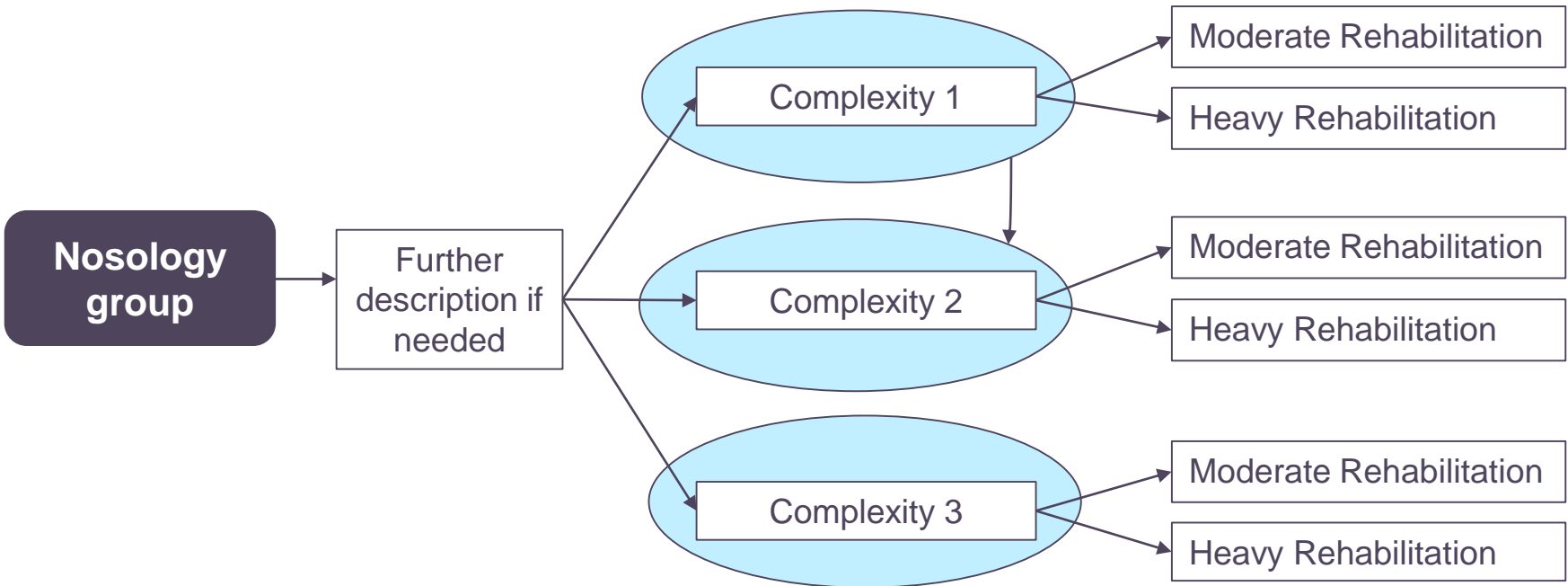
Example



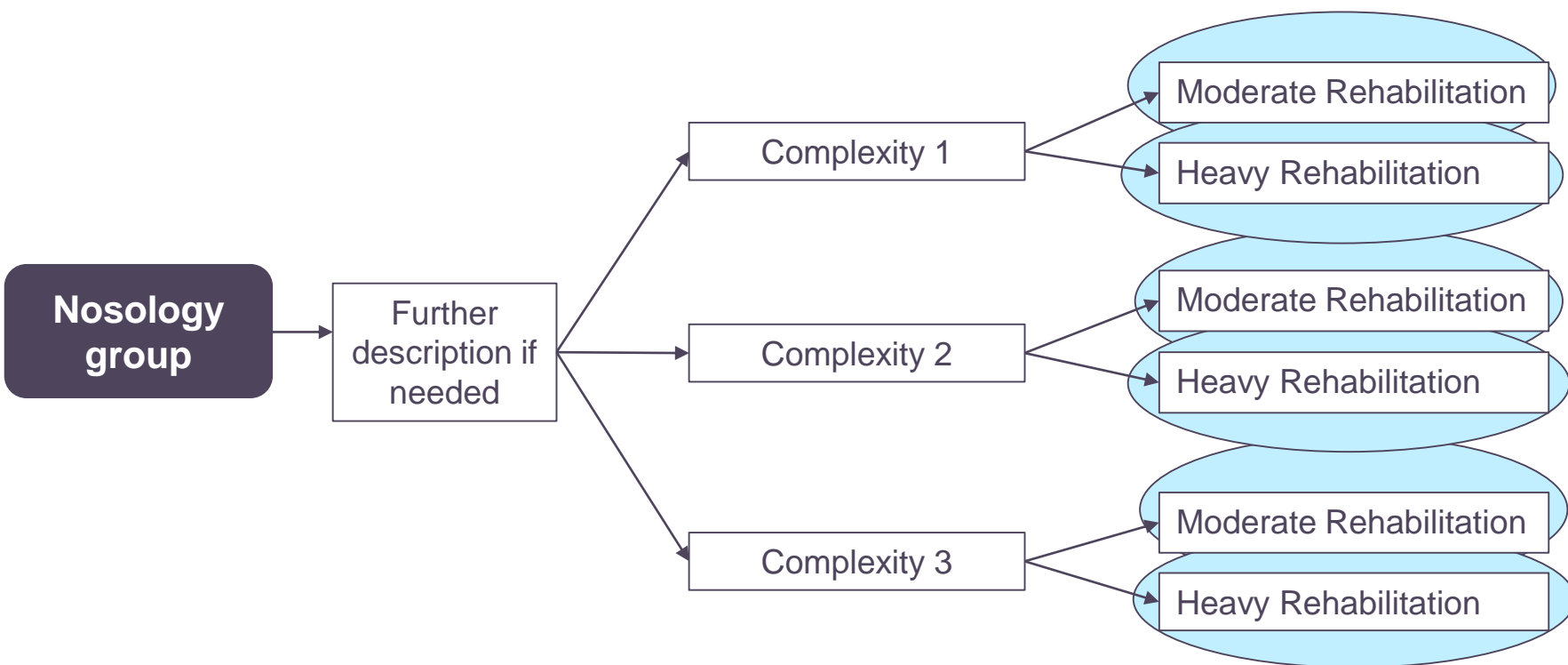
What happen to key questions ?



What's the economic weight of a stay at equal pathology ?



How to analyze rehabilitation ?



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Statistical results

Complexity level

	level	%	LOS	Patient characteristics		
				age	Physical disability	Cognitiv disability
Complexity level	1	45%	27	66	6	3
	2	37%	36	75	11	4
	3	18%	48	72	13	5

LOS with clear difference (> 1 week)

Patients with complexity level 2 or 3 are older and more dependant

Rehabilitation group

	level	%	Patients characteristics			rehabilitation	
			age	Physical disability	Cognitiv disability	Per day (hours)	Per stay (hours)
Rehabilitation group	Heavy	18%	63	9	3	1,6	60
	Moderate	60%	70	9	3	0,5	13
	Indifferanciaded	23%	77	10	4	0,5	12

Patients in heavy rehabilitation group have 1,6h/day and 60h/stay of rehabilitation on average.

Patients in moderate rehabilitation group have 0,5h/day and 13h/stay of rehabilitation on average.

Statistical results :

Number of groups

Nosology Group

92

Sub-NG

108

Complexity level

323

**Rehabilitation
group**

581

Number of groups : 581

R² Cost 28%
 Length of stay 14%

- Can be improved !
- But better than the previous classification (25,9% / 13.7%)

Conclusion

○ The new classification

- Answer key questions with 2 indicators
- Each indicator is based on the utilization of many variables simultaneously
- Allow an easy interpretation of casemix
- Make the classification algorithm less easy to understand

○ Big change and some critics

- « Will the complexity group be enough understandable by physician ? »
- « It's better to place the reeducation group before the complexity group »

○ At this time, no political choice

Thanks for listening

contact

Nicolas.dapzol@atih.sante.fr

**Agence technique de l'information
sur l'hospitalisation**

117, bd Marius Vivier Merle 69329 Lyon cedex 03

Téléphone : 04 37 91 33 10

Fax : 04 37 91 33 67

www.atih.sante.fr