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Building a new classification for non-acute care

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Non acute care in France (SSR): overview

- Approximatively 1 million stays/year
- 1800 hospitals
  - Specialized units with rehabilitation platform
  - Unspecialized
  - Public / private / private with no profit
- Very variable length of stay
  - From 1 day to > 1 year
- Very variable cost per day

Non acute care in France : a brief history of classifications

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1997
- GHJ Group of Homogenous hospitalization Day
  - Levels of resources defined by expert

2000
- First cost study

2009
- GMD: Group of Main Morbidity of hospitalization Day
  - Patient characteristics are taken into account by a big and complex formula

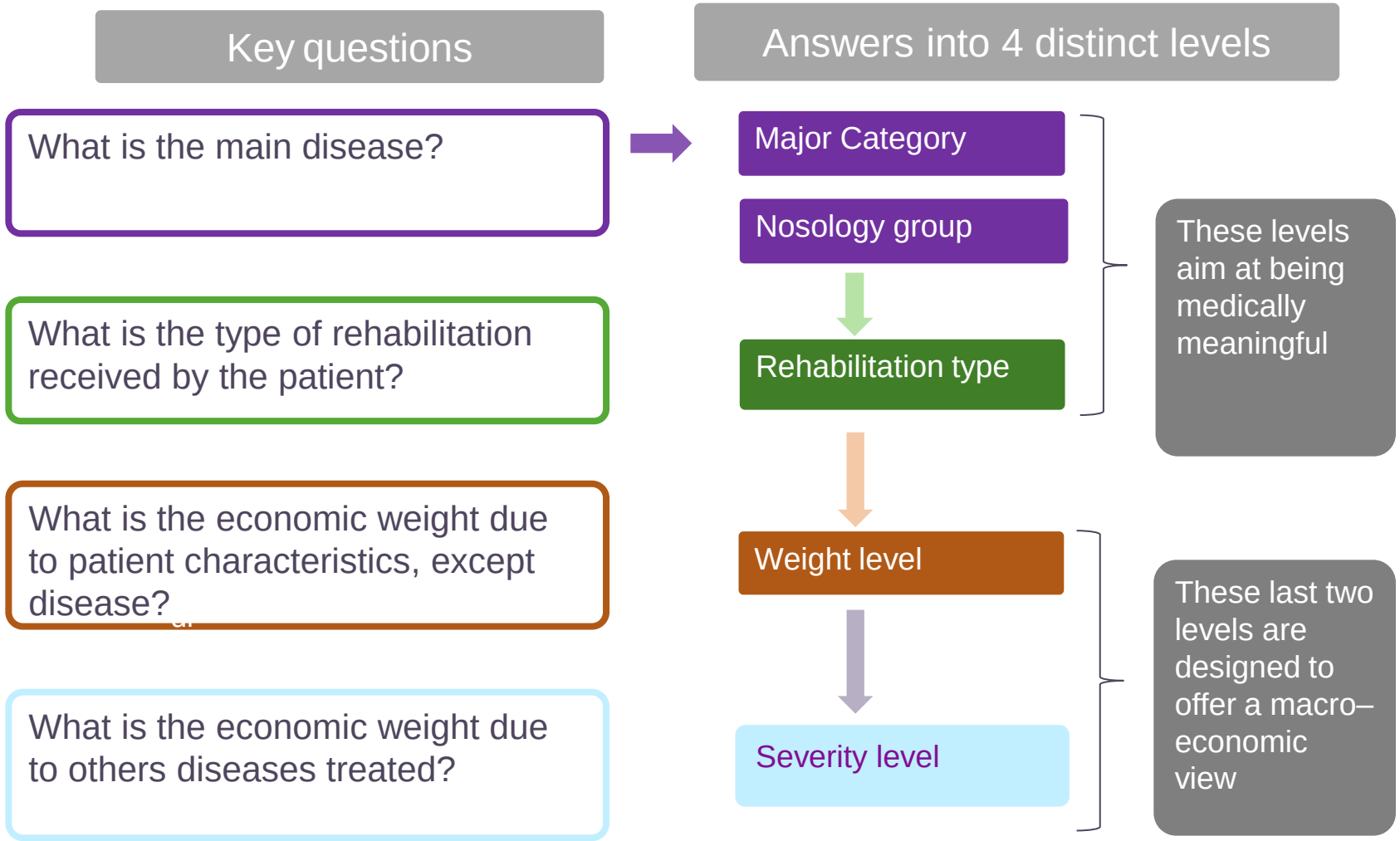
2013
- GME v1 Medical & Economic Group for inpatient stays
  - Patient characteristics are taken into account by parsimonious subdivision

2017
- Revised classification proposed (PCSI Sidney 2017)
  - Synthetic index of the complexity of the stays
    - Convincing results in terms of medico-economic relevance
    - Not retained due to a lack of medical readability of the casemix

Objectives
for new classification (GME 2022)

- Having a classification with more medical readability
- Improving medico economic relevance
- Having a reasonable number of groups

How GME 2022 is organized?



Information currently collected

Data collected each week

ICD10

Main disease

Secondary diagnosis

Post surgical status

French rehabilitation procedures classification (CSARR)

Rehabilitation

physiotherapist

Occupational therapist

Speech therapist

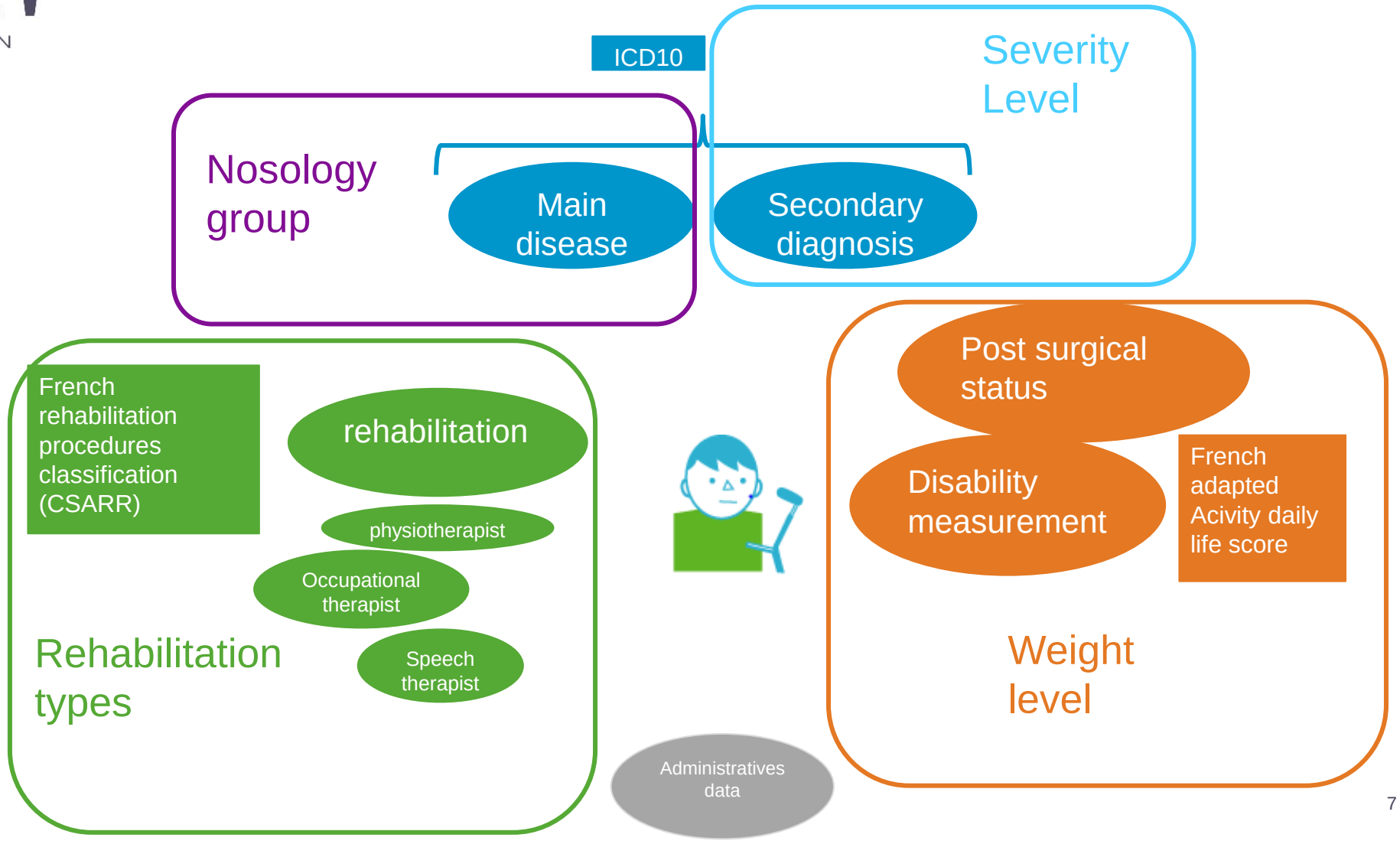
Disabilyty measurement

French adapted Acivity daily life score

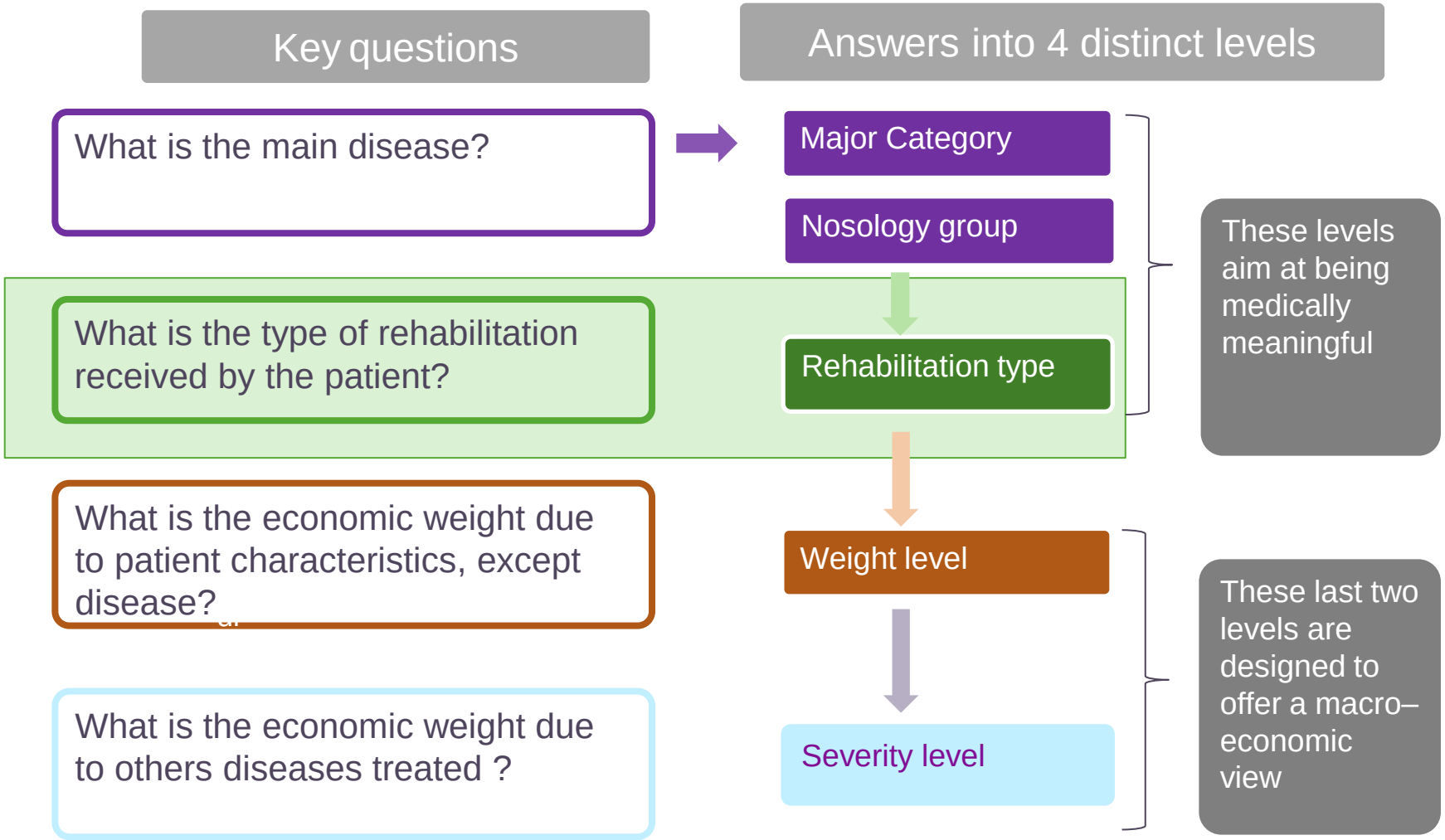
Administratives data

Unspecialized unit, specialized unit

Classification structure / variables used



How GME 2022 is organized?
Rehabilitation type



Rehabilitation types : what is the problem ?

- In the previous classification, rehabilitation is insufficiently used
  - In 1/3 of the nosology groups rehabilitation procedures are used
  - only quantitatively
- Objective for the new classification
  - Better description of rehabilitation
- To describe, for each nosology group, different rehabilitation types

Four rehabilitation types

Reahabilitation type describe rehabilitation received by the patient during the stay

Inpatients

P : Pediatric

S : Specialized important

T : Overall important

U : Other

Important specialized rehabilitation type : How it is built ?

Reahabilitation type describe rehabilitation received by the patient during the stay

Inpatients

P : Pediatric

Children < 18 years old
12 nosology groups have a pediatric rehabilitation group

S : Specialized important

T : Overall important

U : Other

Important specialized rehabilitation type : How it is built ?

Reahabilitation type describe rehabilitation received by the patient during the stay

Inpatients

P : Pediatric

S : Specialized important

T : Overall important

U : Other

Depends on quantity of **specialized** procedures realized during the stay

Specialized important rehabilitation type : How it is built ?

Specialized procedures are markers of rehabilitation deficiencies related to the main disease.

- It does not depend on unit type
- Building specialized rehabilitation procedures lists
  - With rehabilitation experts
  - Database analysis

For each nosology group

GLR+226 : abdominodiaphragmatic guided ventilation session => only for respiratory nosology groups

Specialized important rehabilitation type : How is it built ?

- Specialized rehabilitation procedures are used to calculate
  - a score per day
  - a score per stay
- Depending on this 2 scores, stay is oriented in specialized group

Specialized rehabilitation type : How it is built ?

		Stay score	
		< stay threshold	> = stay threshold
Day score	< day threshold		
	>= day threshold		Positive test

→ Important specialized rehablitation group

Important specialized rehabilitation type : How it is built ?

		Stay score	
		< stay threshold	**> = stay threshold**
Day score	**< day threshold**	Negative test	Negative test
	>= day threshold	Negative test	Positive test

→ Not specialized rehablitation group

→ Important specialized rehablitation group

↓

Not specialized rehablitation group

Rehabilitation types : How they are built ?

Reahabilitation types describe rehabilitation received by the patient during stay

Inpatients

P : Pediatric

S : Important specialized

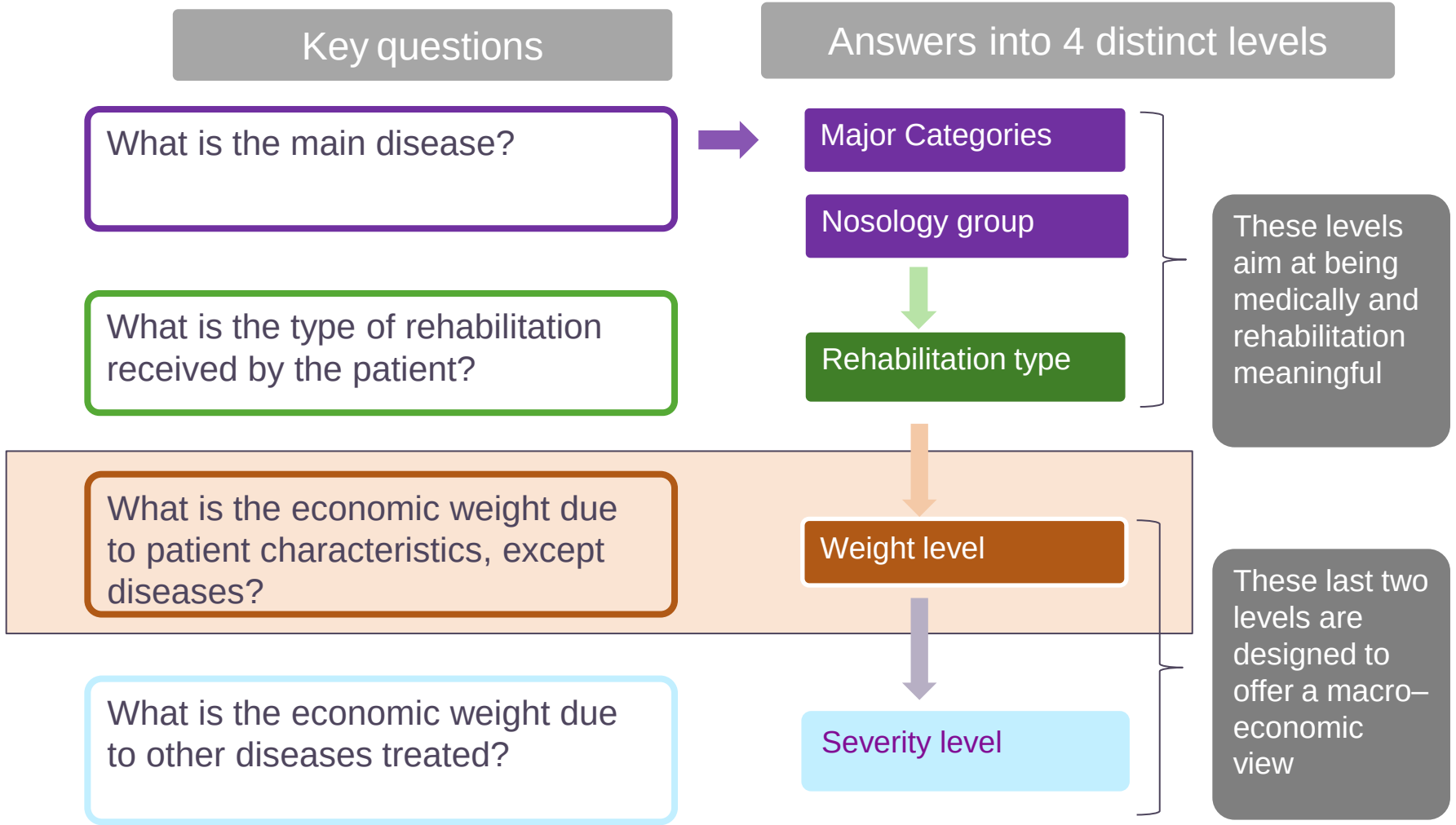
T : Important overall

Reflects an important overall rehabilitation for the patient. All procedures (CSARR) are used to calculate score per day and score per stay

U : Other

Moderate to low rehabilitation

How GME 2022 is organized: Weight level



Weight level
what is the problem ?

- In the previous classification, understanding subgroups of nosology groups is difficult
  - Subgroups are not ordered
  - Comparisons between nosology groups are impossible

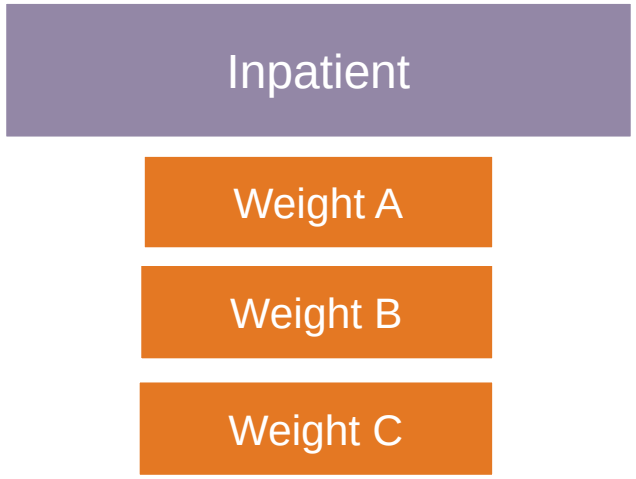
- Objective for the new classification
  - To produce simple index describing patient weight due to his characteristics

Weight level : definition

Indicator reflecting economic weight due to different characteristics of the patient, except diseases (secondary diagnosis)

Data used :

- Age
- Post surgical status
- Maximal physical disability and maximal cognitive disability



Weight level : how is it built ?

- A Weight level is associated with each variable value :
  - age, physical disability, cognitive disability, post-surgical status
- For a given stay, the final weight level corresponds to the effect of the variable with the greatest level

Example for a rehabilitation group

variables	value	Level associated
age	[18-75]	A
	[76-85]	A
	>85	A
Physical disability	[4-8]	A
	[9-12]	**B**
	[13-16]	**C**
Cognitive disability	[2-6]	A
	[7-8]	A
Prior surgery	non	A
	oui	**B**

Example for a patient :

- Age 70 years old → level A
- Physical disability 14 → level C
- Cognitive disability 2 → level A
- With surgery → level B

Stay level : level C

Severity level : how is itbuilt ?

- Economic weight related to oher diseases (secondary diagnosis)
- For a given stay, the final severity level corresponds to the effect of the disease with the greatest level

Example for a weight group

Secondary diagnosis	Associated level
Hypertension	1
Stage III decubitus ulcer	2
Obesity due to excess calories	1

Example for a patient with stroke

- Hypertension → level 1
- Stage III decubitus ulcer→ level 2
- Obesity due to excess calories → level 1

Stay level : level 2

Statistical results

Level	Inpatient groups	R^2 Length of stay	R^2 Cost	R^2 Inpatient Cost
Nosology Group	92	8.0%	12.6%	
Rehabilitation Group	222	11.5%	19.8%	
Weight Group	575	16.6%	27.4%	
GME 2022	1144	18.9%	30.3%	34.1%
GME 2021	543	14.6%	22.4%	29.3%

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Conclusion

- Improve medio-economic relevance
- Provide better medical readability
  - Type of rehabilitation
  - Hierarchy of weight levels
  - Hierarchy of severity levels

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Thanks for listening

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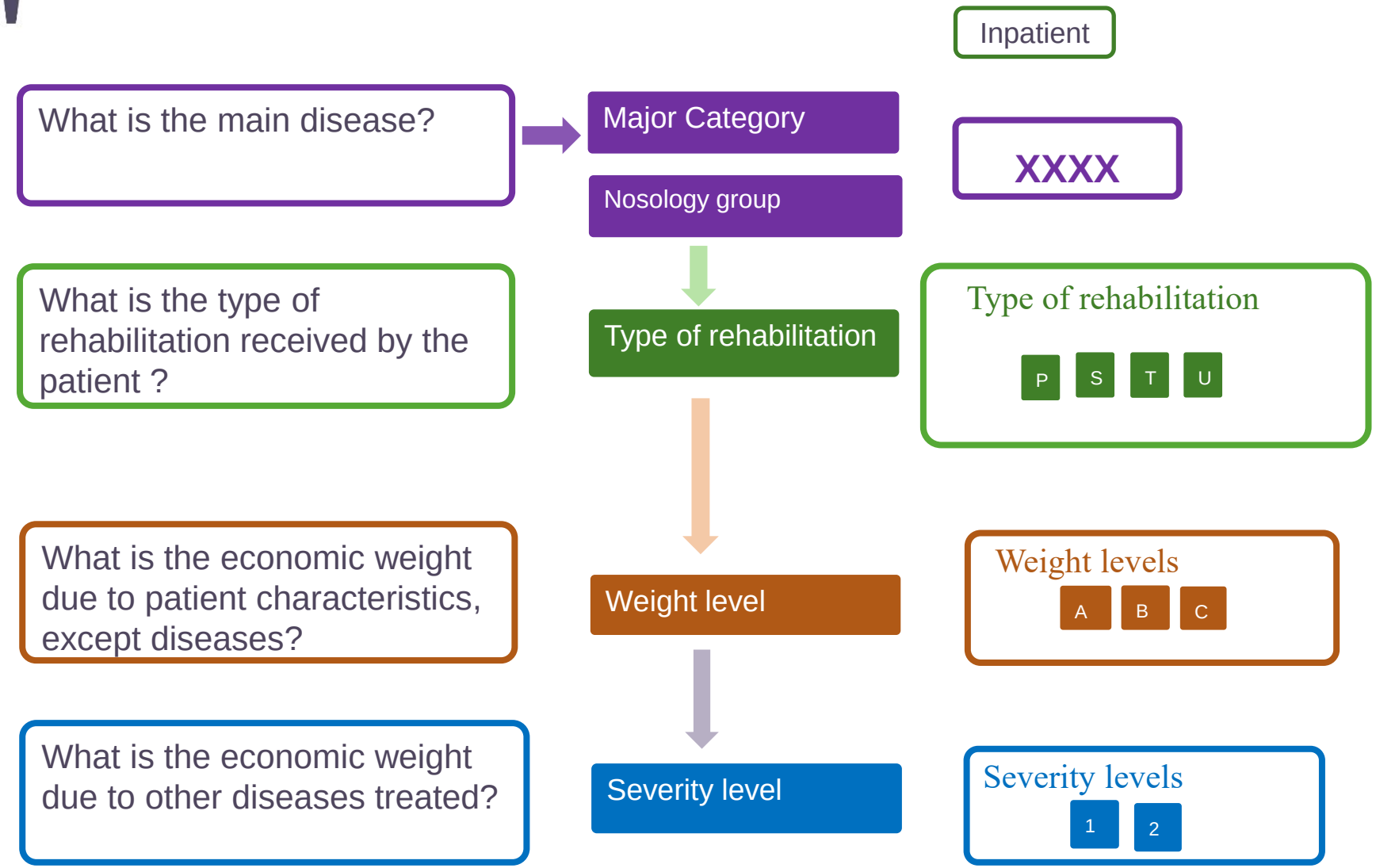
Annex

Classification GME 2022, associated nomenclatures



GME 2022 : examples, wordings

0512 S C 1

	Code	Short Wordings	Long Wordings
GN	0512	Cardiac failure	
GR	0512S	Cardiac failure / HC R spec	Cardiac failure / HC speciliazed rehabilitation
GL	0512SC	Cardiac failure / HC R spec Niv C	Cardiac failure / HC speciliazed rehabilitation level C : phy[13-16]
GME	0512SC1	Cardiac failure/ HC R spec Niv C-1	Cardiac failure / HC speciliazed rehabilitation level C-1 : phy[13-16] – without severity

Statistical results

Rehabilitation groups	Nb stay	% inpatient	LOS	*Age*	*Phy*	*Cog*	*%surg*	%severity.	unspecilized unit	specialized unit	geriatric unit
P	40 409	2%	25	12	8	4	9%	23%	37%	63%	0%
S	580 134	30%	37	63	8	3	41%	18%	16%	79%	6%
T	550 749	29%	37	78	10	4	28%	27%	46%	20%	34%
U	734 287	39%	30	78	10	4	24%	24%	56%	14%	30%

Weight level	Nb stay	% inpatient	LOS	*Age*	*Phy*	*Cog*	*%surg*	%severity.	Unspecilized unit	Specialized unit	Geriatric unit
A	713 581	37%	25	65	5	3	32%	12%	35%	54%	10%
B	638 856	34%	34	75	10	4	32%	24%	44%	30%	26%
C	553 142	29%	46	77	13	5	25%	38%	43%	21%	36%