The overall cost of Hospital at Home (HAH)

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Hospital at Home (**HAH**) ≈ Home Health Care :

Home Care Substitue to Hospital Care

Context: To establish a link between official tariffs and the actual cost of care…

☹ Complex and non-transparent system

- *Various types of structures providing HAH*
- *Various financing methods*
- *Tariffs can cover different set of services*
- *These elements change the patterns of care*
- *Submitted to external constraints (prescribed, technological progress…)*
- *In order to balance budget: cost-shifting and adjustments of case-mix*

Objectives of the CREDES survey on HAD conducted in 1999/2000

To determine « all-inclusive » cost of a day of HAH

- *services delivered by HAH structures (included in their per diem)*
- *additional services paid by the public health insurance*

To identify the determinants of variation of that cost and measure their impact

- *Medical Condition(s)*
- *Social demographic characteristics*
- *Type of HAH structure*

Methodological Constraints

- to take the diversity of HAH structures into account
- to have a sufficient number of patients for each condition studied
- to match data from two sources
- to get reliable information on stays which vary in lengths by collecting data over a short period of time (feasibility)
- to respect anonymity

Material

➢ Two populations observed in HAH structures

1. « Newly admitted »*: included in the course of a month and followed for a max of 3.*
2. « Present for at least 3 months »*: observed for one week*

➢ Patients' medical data

- Direct medical cost per type of care
- Indicators of morbidity
- Objective of HAH and protocols:
  short term (chemo-therapy), long-term (dependency),
  terminal care (palliative care), rehabilitation , etc.

Cost construction method

A. HAH Costs

1. Individualized Direct Medical Costs of HAH [DMC-hah]

- ✓ Imputation of some missing data
- ✓ Re-weighting of DMC-hah to harmonize with expenses recorded by analytical accounting
- ✓ Standardization of all wages

2. Other Running costs of HAH structure [RC] (administration, coordination including medical, preparation of drugs, etc.)

- ✓ Identical share attributed to each patients

B. Additional services paid by the public health insurance

⇨ **Both sources are merged**

Results

Overall Cost of HAH

Sample of 960 patients – 21 400 days

- **Which are the components of the cost for one day of HAH?**
  - Costs per type of source
  - Cost per category of care
- **Which criteria could be used to price services?**

➥ Average cost and distribution across patients

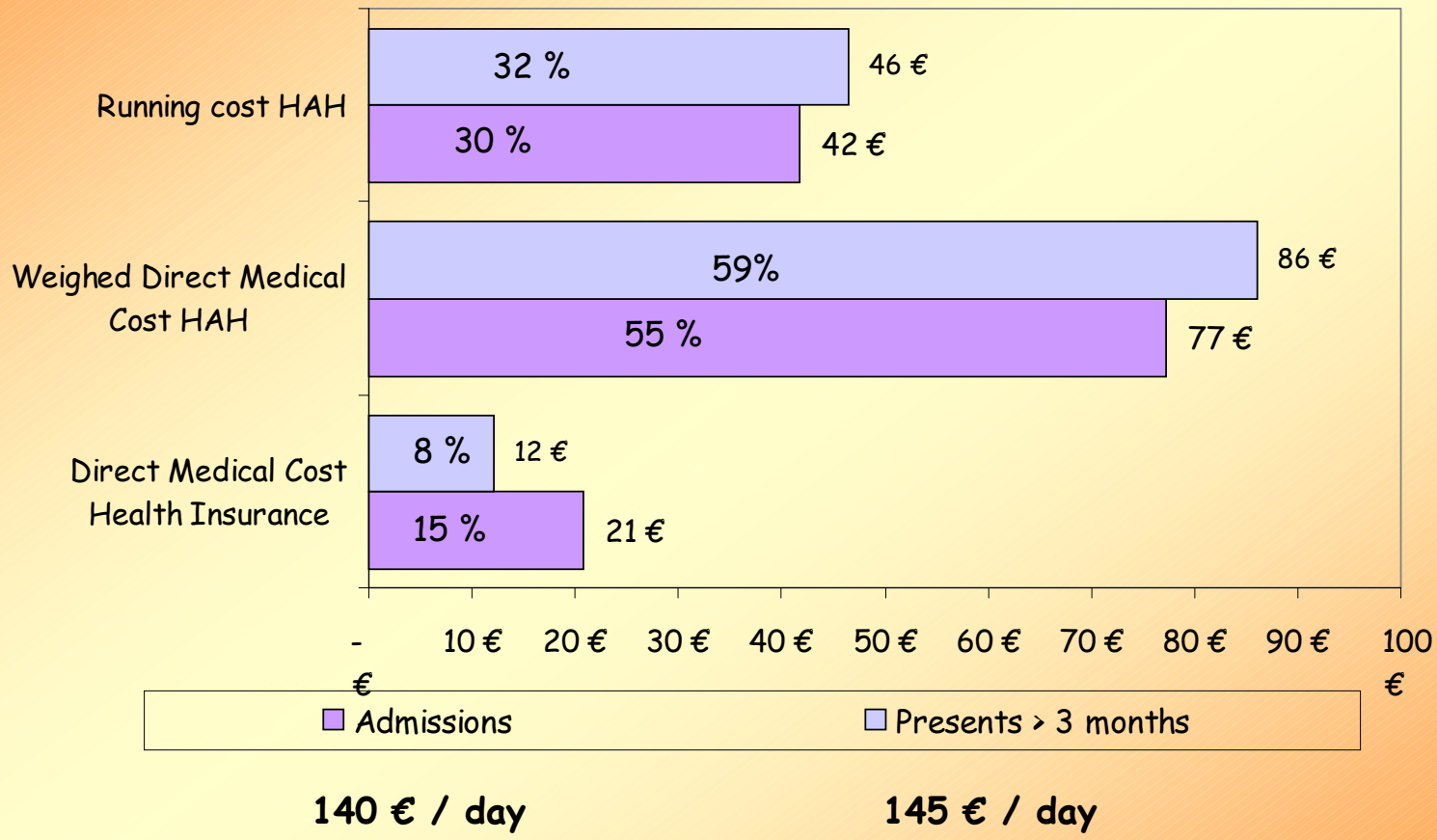
The main criteria discriminating between levels of cost are:
objective of care, length of stay (LoS) and protocol of care

We will show you that using one of these is not always sufficient to understand the variability of cost across patients

⇨ Analysis of variance (ANOVA)

Results

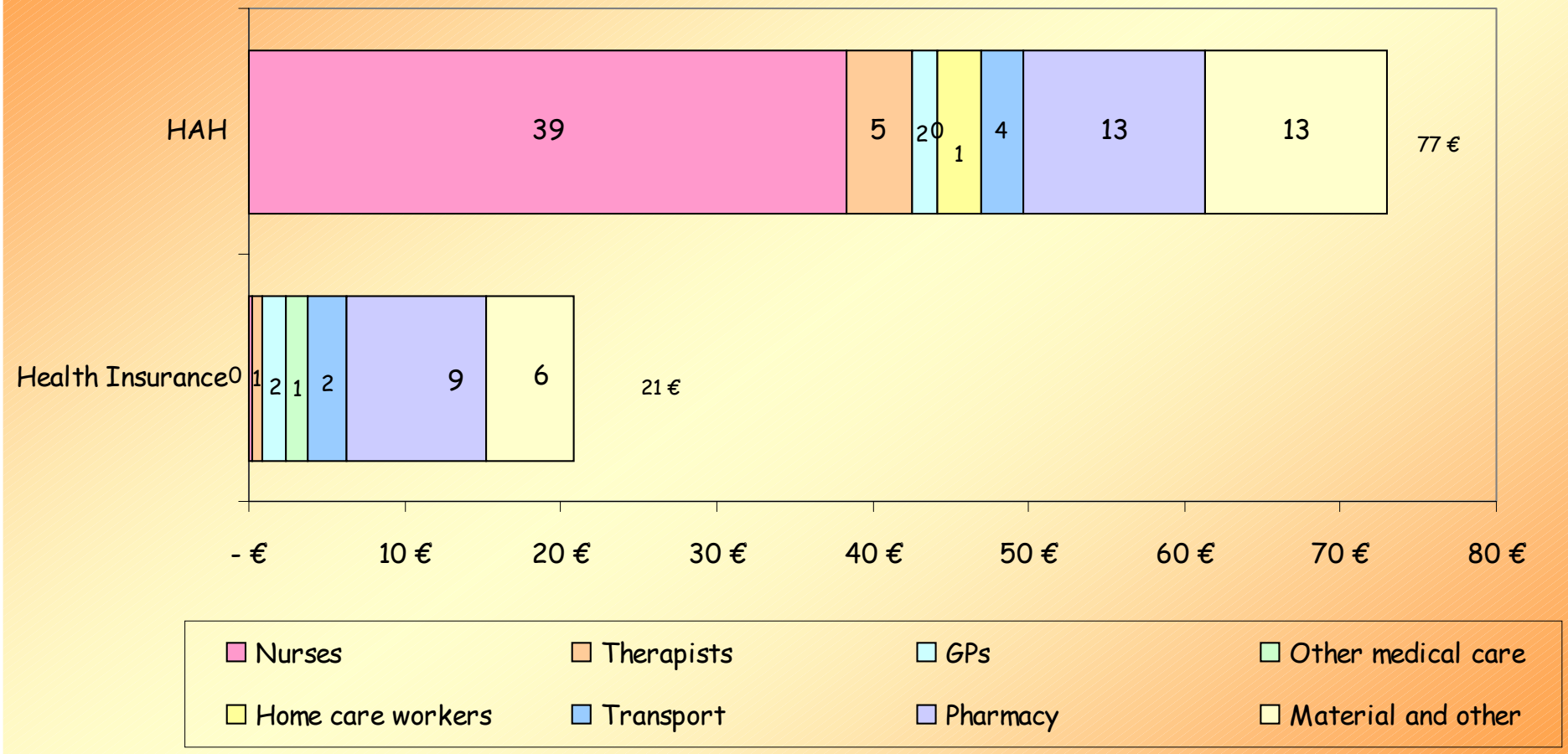
Components of the global cost for one day of HAH (all conditions)



140 € / day **145 € / day**

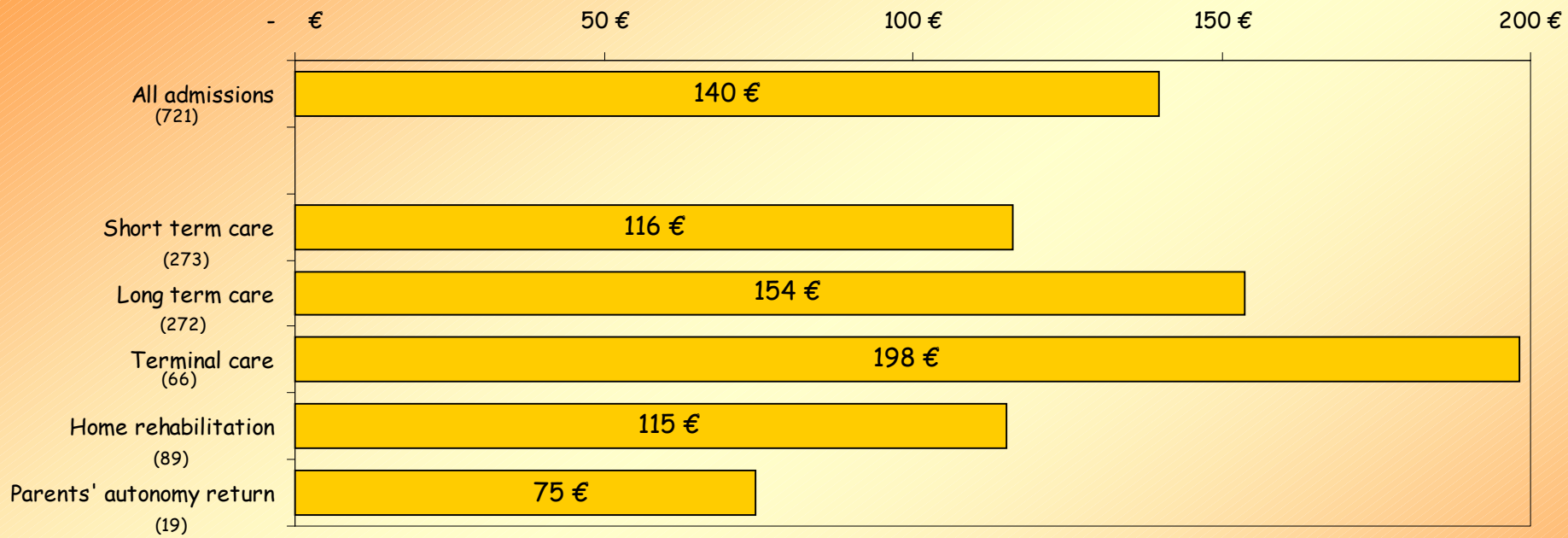
Results – Admissions - All conditions

Direct Medical Cost for one day by category of care



Variation of costs with HAH objective - Admissions

Global cost for one day

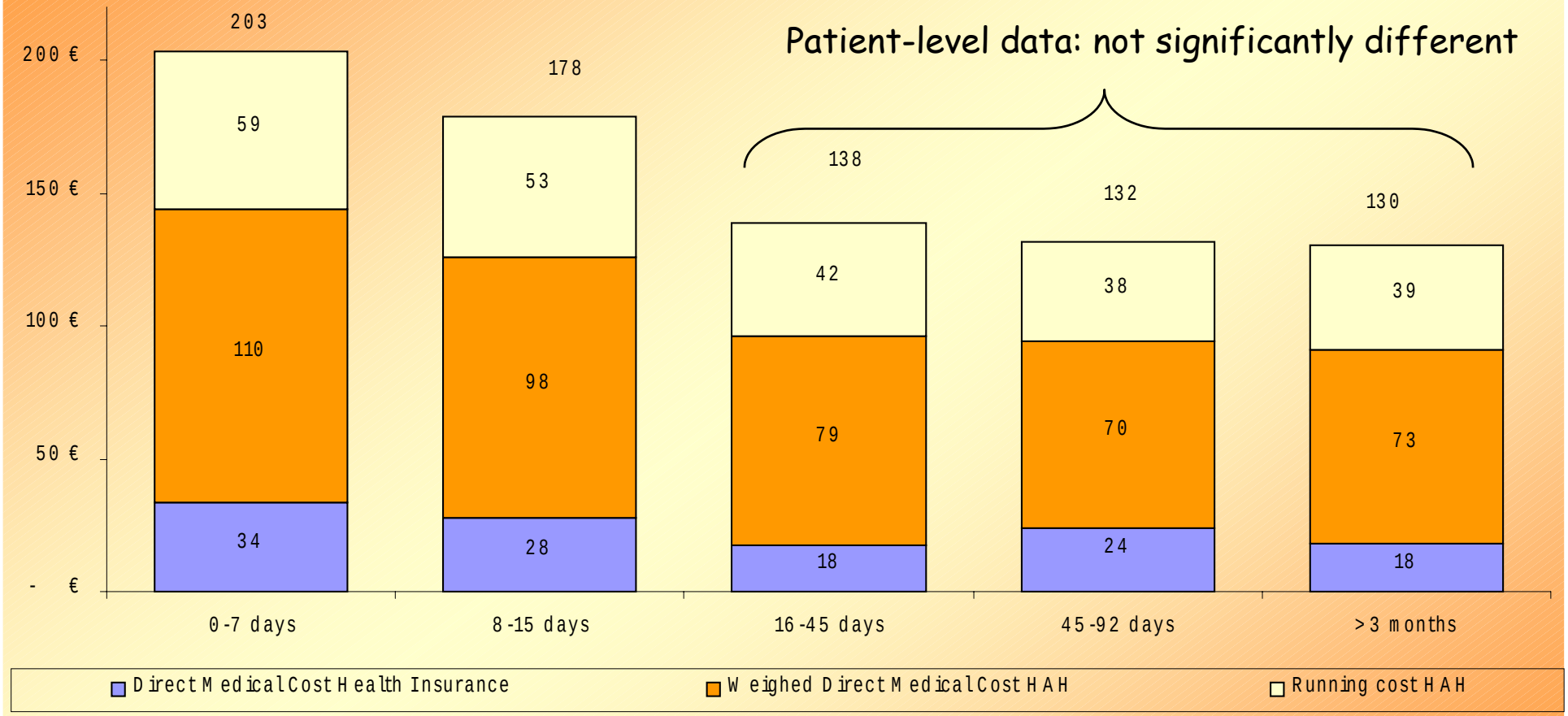


Additionally the patient-level data seems to show that :

- short-term and long-term care patients do not have significantly different costs
- on average the cost of this category lies between that of terminal care and rehabilitation

Variation of costs with length of stay (LoS) - Admissions

Global cost for one day

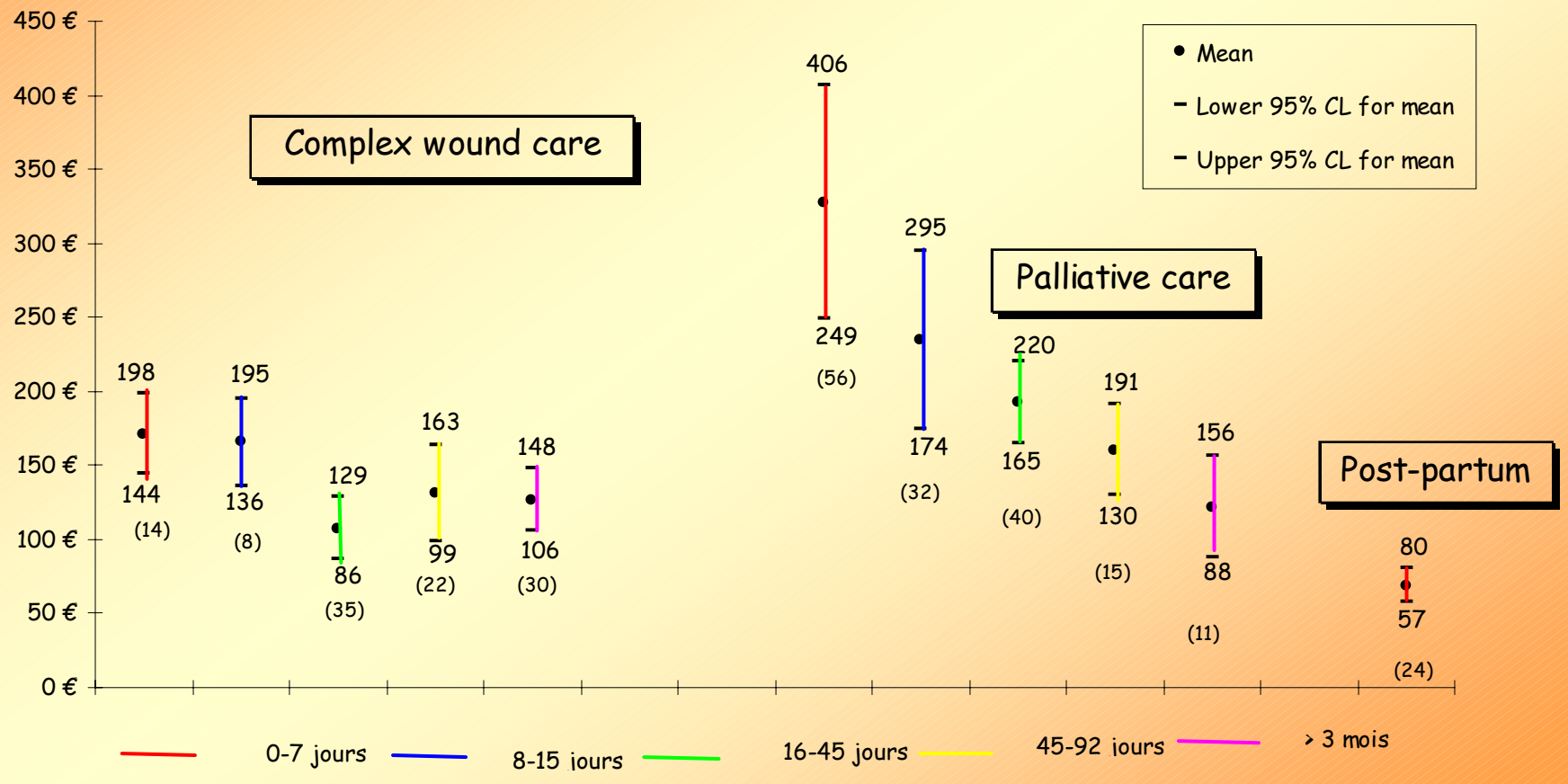


Additionally the patient-level data confirm there are three steps discriminating cost's level:

- [0-7 days] > [8-15 days] > longer stays

« A new variable: the main protocol of care »

Within a protocol of care, some of which can belong to different objectives of HAH, cost can vary with LoS



Which factors separately affected the variability of costs from one patient to another?

Significativness : 5%

COST REDUCTION		*Reference (92 €)*	COST INCREASE	
Stay Length *(most significative)*				
45-92 days	-2 €	***16-45 days***	**0-7 days**	**+ 88 €**
>= 3 months	-15 €		8-15 days	+ 28 €
Age *(2nd most significative)*				
Moins de 2 years	**-222 €**	***65 à 79 years***	[16 à 24 years]	+ 15 €
[2-15 years]	-2 €			
[25-39 years]	-13 €			
[40-64 years]	-3 €			
[80 years et +]	-9 €			
Main protocol *(3rd most significative)*				
			Intravenous antibiotics	**+ 88 €**
			Home ventilation	**+ 64 €**
			Post surgical care	+ 38 €
			Enteral nutrition	+ 38 €
			Parenteral nutrition	+ 24 €
			Chemotherapy	+ 22 €
			Palliative care	+ 21 €
		Complex wound care	Dependence	+ 3 €
Patient 's education	-11 €		Rehabilitation : nervous & orthopae	+ 0 €
Discharge Way *(4th most significative)*				
Ambulatory care	**-48 €**			
Home Care for old patients	-31 €	***Medic and surgic hospit.***	**Death**	**+ 54 €**
Home Care with paramedical care	-9 €		Not precised	+1 €
Locomotor autonomy (5th most significative)				
Complete autonomy	-5 €		Significant dependence	+ 18 €
Light dependence	-13 €	***Nearly autonomous***	**Total dependence**	**+ 103 €**
Moderated dependence	-19 €			

Discussion - Conclusion

- Study limits
  - ⇨ non representative nationally
  - ⇨ chemotherapy : experts' advices?
- Microeconomic point of view
  - Globally, HAH cost less than acute hospital care
  - Different levels of costs ⇒ several tariffs :
    - based on costs per type of main protocol, per episode?
      - ✓ Some of them are substitutes for acute hospital care
      - ✓ Other are substitutes for rehabilitation hospital care
      - ✓ One high tariff is necessary for very expensive care
    - a few patients cost less than 75 €?
  - **It would be interesting to have also same assessments of global cost for Nursing Care at home, Day hospital Care, etc. to make valid comparisons…**