

questions

d'économie de la santé

Issues in health economics
analysis

Background

In the perspective of planning for the increasing needs of an ageing population, IRDES was asked to estimate the cost of creating an at-home hospitalization (AHH) place, compared to a bed in a follow-up and readaptation care (FRC) facility, for comparable activity and taking into account the different possible clinical situations. This study was funded by the Directorate of Hospitalization and Healthcare Organisation (DHOS) of the Ministry of Health, Family and Disabled persons.

An ad hoc survey was conducted with AHH structures for obtaining their creation costs (CCHAD 2006 study), while the DHOS data were used for the FRC component.

Hospital at home, an economical alternative for rehabilitative care

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The need for dedicated beds for rehabilitative care (RC) shall increase over the coming years, in particular for the elderly. This type of care, dispensed mainly by inpatient hospital structures, is also being developed recently in the context of at-home hospitalization (AHH). In the current political context, which is favourable to the creation of new AHH places, our study compares the costs of these two overlapping healthcare methods. We estimate that half of the care provided as inpatient rehabilitation can be performed in AHH.

For those types of care that we consider «comparable» the average daily cost, for public funding bodies, is €263 for inpatient RC compared to €169 for AHH. The difference goes down for elderly and/or highly dependent patients, but the daily cost for inpatient RC remains higher, whatever the patient's age, level of dependency and medical profile.

In order to face the needs of an ageing population, the creation of, for example 10,000 AHH places would represent, in the long-term, a saving of nearly 350 million euros per year for public funding bodies. AHH therefore represents an interesting economic alternative. It cannot, however, be considered for all patients as it virtually always requires the presence of a supportive entourage.

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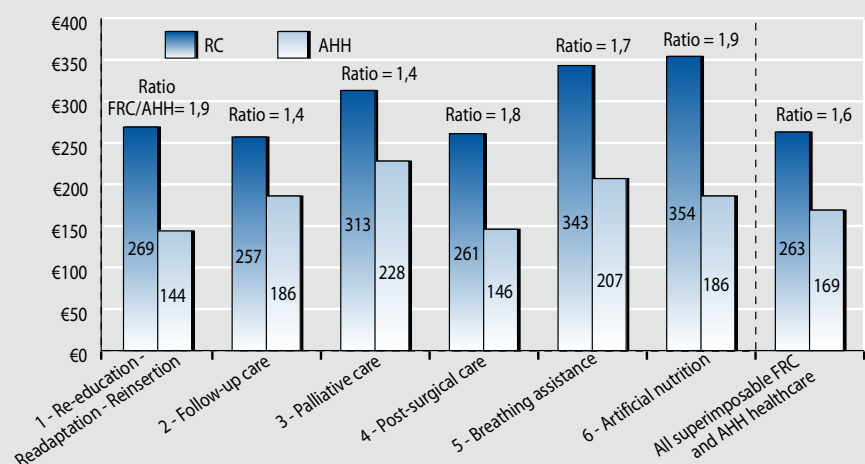
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Mean daily operating cost for an AHH place
and an RC bed by to patient medical profile



Source: ENC SSR 2001 (2005 updated costs); Activity pricing (T2A) HAD 2006

Remark: Six medical profiles were defined, grouping patients receiving comparable treatments. For RC, medical profiles 1 and 2 covered 96% of days performed in the context of superimposable activities. For AHH, profile 2 covered 62% (cf. graph p. 6).

Overview of RC and AHH activity in France

	RC (2003)				AHH (2005)			
	Installed beds and places*		Days performed		Installed positions		Days performed	
Legal status**	Number	%	Number	%	Number	%	Number	%
Public	39 427	41 %	11 625 276	40 %	1 443	29 %	453 124	30 %
Private ex-GB	31 599	33 %	8 865 287	31 %	1 049	21 %	630 705	42 %
Private ex-OQN	24 844	26 %	8 293 782	29 %	2 458	50 %	427 028	28 %
Overall	95 870	100 %	28 784 345	100 %	4 950	100 %	1 510 857	100 %

Source : SAE 2003

Source : ATIH 2005

* Number of beds for full hospitalization and places for day care.

** The data are presented according funding methods before the introduction of activity based payment in 2005 global budget (GB), or per day payment (OQN).

Part of comes pending care in inpatient RC and in AHH

	Public hospitals* (2003)				AHH (2000)			
	AWS**		Days performed		Patients		Days performed	
	Numbers	%	Numbers	%	Numbers	%	Numbers	%
Comparable activity	2 143 403	63 %	11 989 679	64 %	1 069	58 %	110 531	84 %
Overall	3 411 060	100 %	18 865 290	100 %	1 844	100 %	131 079	100 %

Source : PMSI-SSR 2003 public

Source : ENHAD 2000 IRDES

* Including private not for profit.

** The Anonymous Weekly Summary is an anonymous summary generated at the end of each calendar week of a patient's stay. Describes the patient's days of presence, morbidity and dependence characteristics, along with certain re-education-readaptation medical procedures and activities.

Following the ageing of the population, the rise in the numbers of dependent elderly people with multiple illnesses is generating an increasing need for healthcare, both acute and longer term, in particular of the rehabilitation and support type. Hospital resources need to be planned accordingly, ensuring that there is a sufficient and accessible offer for the years to come. Initially conceived as a substitute for short-stay acute care, at-home hospitalization (AHH) also represents an alternative to follow-up and rehabilitation care (FRC). In this field,

the services most frequently proposed for AHH relate to orthopaedic or neurological re-education, along with follow-up or post-surgical care.

In this context, our study opposes those costs generated by comparable healthcare provided in classic hospital setting and AHH, defining a scope of activities which are common to both types of structure. Our estimation are based on the operating costs during the first year of activity, then as routine and includes, for AHH, the cost of creating new places. We take into

account the diversity of clinical situations to which patients are currently exposed in such establishments.

AHH: a significant development potential

Follow-up and rehabilitative care covers the treatment or medical surveillance of patients requiring continuous and relatively long-term care. They represent a large facet of the French hospital sector, with 91,000 full hospitalization beds and 4,900 beds dedicated to day care. In 2003, the FRC activity represented nearly 20% of total hospital activity in France (more than 28 million days of hospitalization). The private for-profit sector encompasses one quarter of, all beds and places.

The aim of at home hospital, on the other hand, is to provide at-home care for patients suffering from serious, acute or chronic illnesses who, without such a service, would be hospitalized in an establishment. According to the official definition, AHH provides global and coordinated care for patients at home by providing them with a better quality of life in a familiar environment. It aims to avoid or cut down hospitalisation for acute and rehabilitative care, when care at home is possible.

AHH has been developed rapidly over the past years, thanks to the relaxation of the regulatory conditions for opening AHH structures¹ and the lifting of payment barriers. The private not-for-profit sector is predominant. Total AHH capacity has nearly doubled over the past five years: by the end of 2006, there were nearly 7,500 authorized positions and more than 6,200 effectively

¹ Via DHOS memorandum no. 2000-295 of May 30th 2000 first of all, then within the context of the Hospital 2007 plan and the regional plans for 3rd generation healthcare organisation.

installed places, distributed over 160 establishments in metropolitan France. Despite this growth, AHH still possesses a significant development potential; the current government has set the goal of 15,000 places by 2010, i.e. a deployment of almost 10,000 places in five years.

Comparing medical costs has a meaning only for those patients who can be cared for in hospital RC or in AHH indifferently. It is therefore essential to define the scope of «equivalent activity», that is a group of treatments that can technically be provided in either two types of hospital structures.

For this, we reviewed all the treatments provided in both types of structures. For RC, only those treatments which are already dispensed in AHH, or those could be, were considered. For AHH, we kept only those patients whose main treatment protocol and/or treatment goal corresponded to treatments traditionally provided in RC in hospital. The selection criteria are described concerning RC at hospital in the box opposite.

Definition of the scope of comparable RC and AHH activities

In order to identify RC patients that could be treated in either at home or at hospital we used data from two databases describing AHH and RC activities respectively: ENHAD 2000 and PMSI SSR 2003 (cf. box below).

For AHH treatment, we used as selection criteria «main treatment protocol» applied to the patient, along with the hospitalization «treatment objective» for identifying comparable activities:

- as a general rule, in terms of main treatment protocols, neurological or orthopaedic re-education, palliative care and patient education constitute the main part of comparable activities, chemotherapy and complex dressings, on the other hand, were excluded. They may nevertheless appear as associated treatment protocols for certain patients;
- in terms of treatment objectives, the continuous treatment, terminal phase treatment, at-home

readaptation or resumption of relatives' autonomy were retained, contrary to «one-off treatments». Some specific clinical situations were dealt with on a case by case basis.

RC treatment selection was conducted according to an exclusion approach, successively considering classifying medical procedures performed, associated classifying diagnoses and procedure times as necessary for re-education -readaptation.

Our priority was to exclude all patients who had received highly technical procedures, or procedures requiring specific equipment and resources that could not be transposed to AHH. We also excluded all hospitalizations involving re-education activities that could not be performed by AHH (collective re-education, check-ups, balneotherapy).

The list of comparable treatments were defined by medical experts, based on clinical and activity data provided in

the available data sources: the ENHAD 2000 and PMSI-SSR 2003; therefore contains a degree of subjectivity.

Data sources

	Creation costs	Operating costs during ramp-up	Routine operating costs
RC	No data available	DHOS 2005 study Study counting the number of FRC bed and position creations and conversions for 2005 (AWS data) and providing operating cost estimated for 2005 and 2006	PMSI SSR 2003 National database providing an exhaustive summary of the rehabilitative care activity in public and private non-profit sector in 2003. The private for profit sector is not considered as only one semester of activity were available. ENC SSR 2001 National RC costs study, associated a single cost to each Homogeneous Day Group (HDG) based on age, dependence and extent of patient care.
AHH	CCHAD 2006 Ad hoc survey of AHH creation costs, designed by IRDES and conducted with the support from the FNEHAD (presented in detail in the box p. 4).		ENHAD 2000 Survey conducted by the IRDES describing patients' clinical characteristics and assessing healthcare costs based on a sample of 29 AHH structures in 2000 (out of 62 existing)... Prices for AHH services Official rates for 2006; these rates are dependent upon Homogeneous Healthcare Groups (HHG) based on the main and associated treatment protocols, dependence and length of stay.

Six patients out of ten in AHH receive rehabilitative care

We estimate that 58% of patients cared for in AHH received treatments related RC. These patients - having generally longer stays than the average AHH patients - accounted for 84% of total days realised in 2000.

Similarly in 2003, 64% of days spent in public RC establishments were for treatments that could be provided in AHH, from a medical - technical point of view.

The degree of overlap between hospital care and AHH for rehabilitative care highly significant. Hence AHH may display an important development prospects. Unfortunately, we were unable to take into account patients' psychosocial characteristics, as data were not available, but they are central to clinicians' decision to direct patients. Therefore potential for AHH follow-up and readaptation care, in particular

for elderly patients, can only be considered here in theoretical terms.

Given the pressures from population ageing, it is important to compare the costs, from the public payer point of view, in two alternative settings. But both of these two types of hospitalization also generate costs not borne by the public institutions, but rather by the patients themselves or their surroundings: costs of absence from home in the case of hospitalization and, for AHH, personal assistance and sometimes a proportion of the medical care costs. We were not able to account for these costs in our work.

Distinguishing the creation and operating costs

In our analysis, we broke costs down into three categories:

– **creation costs**, that is personnel, logistics and equipment expenditures committed before receiving the first patient;

– **operating costs** during ramp-up, that is the mean annual cost during the first year of operation, from the first patient to achievement of operating balance, or, by assimilation, the first twelve months of operation;

– **routine operating costs**, stabilised healthcare activity, supported by public funding bodies.

Since there were no specific data on the cost of creating a AHH place, IRDES implemented a survey with the support of the National home hospitalization association (FNEHAD). The CCHAD 2006 survey questioned AHH sponsors concerning the expenditure incurred for the creation of new places in 2004-05. The cost of creating an AHH place is obtained by adding the means invested during project definition to the cost of implementation of the structure per se.

Identification of creation costs is more complicated for hospital RC, for which investments are difficult to identify within the global hospital budgets. A survey conducted by the DHOS in 2005 provided an estimate of the operating costs for newly created RC beds and places. This study failed, however, to provide any information concerning prior investment costs, in particular property costs. Consequently, only the operating costs for the first twelve months of AHH operation could be directly compared to the operating costs of these new RC beds (cf. table p.7).

The routine operating costs are calculated from the public funding bodies perspective. For AHH, we applied the current tariffs, which differ according to the homogeneous healthcare groups (HHG). For hospital RCs, we calculated the public costs using national cost study

CCHAD 2006 AHH position creation costs survey

The IRDES polled by questionnaire all AHH structures created between 1 January 2004 and March 2006 in view of collating all costs generated by the process of opening an AHH position, distinguishing three phases:

- **the project definition and dossier creation phase**, finishing with the agreement from the ARH Executive Committee (COMEX). Expenses accounted for pertain to project steering, market study, equipment and logistics expenditure and fringe expenses;
- **the installation phase per se**, starting after receipt of the COMEX agreement and ending on the day care starts for the first patient. This phase genera-

tes specific management and personnel expenses related to the acquisition and standardization of the structure's premises and, finally, equipment and other fixed expenses (medical equipment, vehicles, etc.) ;

- **the AHH activity ramp-up** period during the first year of operation. In addition of the volume of activity performed by the structure (number of days performed, admissions and releases), the expenses and income specific to this phase were also collated.

Of the 33 eligible structures identified by the FNEHAD, 13 answered the CCHAD 2006 survey, all being AHHs newly created ex nihilo since 2004.

(ENC 2001) that provides data according to homogeneous day groups (HDG). These costs are updated by applying the nominal public hospital healthcare cost index between 2001 and 2005.

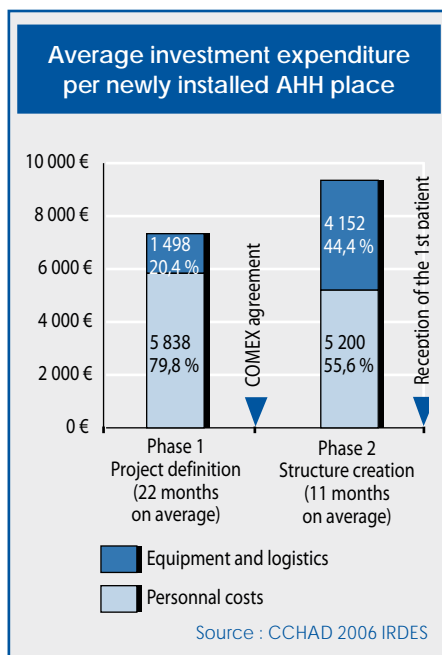
We first estimated the daily cost per place or bed using all the corresponding activity of these two types of structure, then we refined comparisons for more comparable homogeneous patient categories.

An AHH place requires an investment of about 16,000 euros

On average, it takes more than two and a half years to set up an AHH structure. This duration takes into account the time spent preparing the creation dossier, to obtain the agreement of the Regional Hospitalization Agency (ARH) and to set up a structure ready to receive the first patient.

The total average cost of investment required for creating a new place is of 15,800 euros in AHH, with significant variations among hospitals. Personnel costs account for two thirds of investment expenditure, i.e. nearly 10,500 euros on average per place. Expenditure on equipment and logistics per installed place represent, on average, a little less than 5,300 euros in total (cf. graph opposite for phase 1 and 2 amounts).

No data are available to perform such an estimation for hospitals where, in addition to the above type of expenditure, it would be necessary to include property construction and renovation costs for patient accommodation. These costs are significant and do not exist for AHH.



Average annual cost per bed/place in AHH and RC during the 1st year of operation

		Average annual cost per bed/place (expressed for a full year)
AHH	Places created <i>ex nihilo</i>	39 831 €
RC	Additional beds*	57 487 €
	incl. beds incl. places	56 764 € 66 885 €
	Beds arising from conversion	45 200 €

* Availabilities are counted in numbers of beds for full hospitalization and in places for day hospitalization.

Sources : DHOS 2005 (RC) et CCHAD 2006 IRDES (AHH)

The cost varies significantly from one structure to other during ramp-up, but the comparison remains difficult

During its first year of operation, a new place installed as AHH generates a healthcare cost of 39,800 euros on average, compared to more than 57,000 euros for a new RC bed/place in hospital (cf. table above). High variations of cost (from 28,000 to 58,000 euros) and of occupation rate could be obser-

ved amongst AHH structures during this ramp-up period.

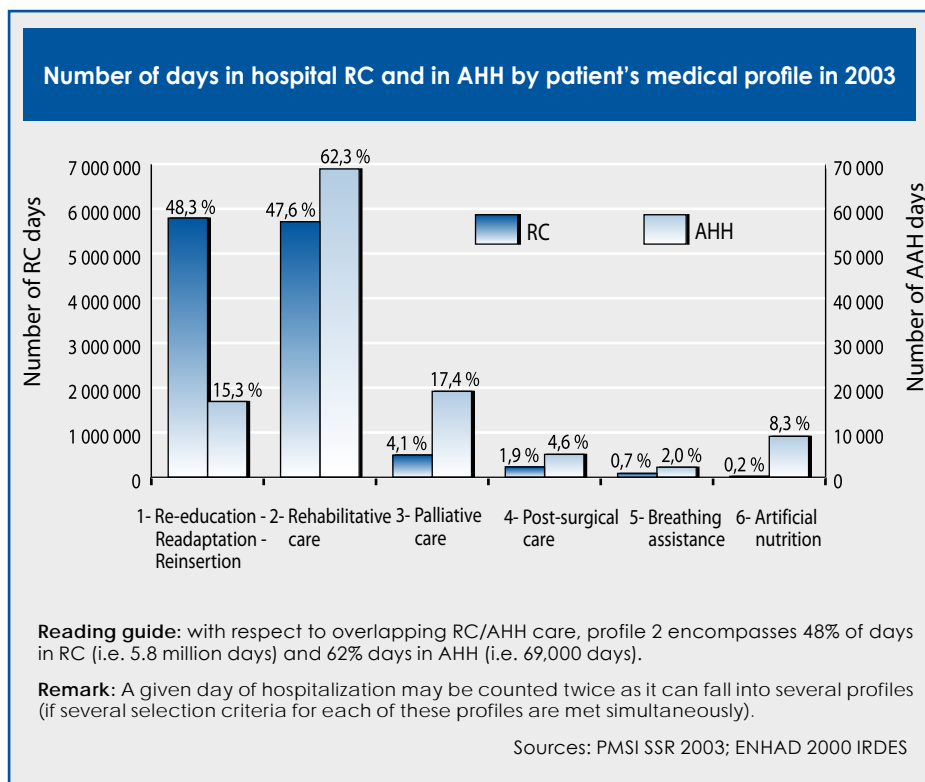
Indeed, the estimated costs for this first year of operation are highly dependent upon the medical profile (illnesses, dependence, treatment protocol) of the patients cared for. But we do not possess sufficient information to take this factor into account when calculating creation costs. The variety of patient cases treated (case mix), on the other hand, is controlled during the comparison of routine operating costs.

Cost of rehabilitative care in AHH is about 40% lower than in hospital

For those treatments considered as comparable, the average daily operating cost is established at 263 euros on average per bed/place for RC, at hospital compared with 169 euros for AHH, i.e. a ratio of 1.6 between these two types of structure (cf. graph page 1). This comparison does not, however, integrate the case mix for RC and AHH. Indeed, the costs vary according to patients' characteristics, in particular their age, degree of dependence (limitations of activity) and their medical profile.

To refine the cost comparison, we therefore defined, within the comparable scope, a series of more homogeneous patient categories, first taking into account main factors such as age and level of dependence², and then more detailed clinical criteria.

² The level of dependence was assessed according to the daily life activities scale (AVQ: dressing, movements and locomotion, eating, continence, behaviour, relations and communication) using a score ranging from autonomy to total dependence. The global score was assigned to four classes: totally autonomous (AVQ score of 6), slightly dependent (7 to 12), moderately dependent (13 to 18) and highly or completely dependent (19 to 24).



Average daily cost increases with the degree of dependence, but only weakly with age

6

The impact of the level of physical dependence was similar in both settings, significantly increasing the average daily cost per bed/place. For patients receiving AHH care, this daily cost ranged from 123 euros for autonomous patients to 190 euros for the most highly dependent. For patients receiving RC care, it ranged between 229 and 325 euros.

In any case, the average daily RC cost at hospital is higher than for AHH, with a cost ratio varying between 1.6 and 1.9 according to the dependence level. This ratio is highest for autonomous patients, reducing for the most dependent ones.

Whereas the cost difference between RC and AHH dropped slightly as age increased for adults, it peaked notably for children: the average daily costs for patients aged under 15 years old was 2.5 times higher at hospital (331 euros compared to 130 euros for AHH). It is

worth remembering that, in AHH, the dependence score is calculated relative to the care provided by health personnel, and most of care for children are performed naturally by the parents. This tends to minimise costs relative to complete hospitalization in which the medical staff provide all medical treatments and assistance. Hence, it is no surprise to observe that in children, considered as weakly dependent towards care providers, the cost difference between RC and AHH is high, as our analysis did not account for the costs borne by the patient's family in the context of AHH.

Cost differences are sensitive to the type of care provided

In order to improve further the comparison of activity in these two settings, we developed six major medical profiles, as homogeneous as possible, based on the clinical data available. These six main profiles encompass virtually all relevant healthcare activities (cf. graph opposite). For AHH, the main fraction of activity concerns the basic medical profile «Rehabilitative care», with 62%

of days realised in 2003, whereas in hospital «Re-education-Readaptation-Reinsertion» and «Rehabilitative care» represent equal amounts, with 48% of days each. Other medical profiles: «Palliative care», «Post-surgical care», «Breathing assistance» and enteral or parenteral «Artificial nutrition» represent a very small part of the comparable activity.

Whatever the patient's medical profile, the average daily cost was systematically higher in hospital, but the cost difference varied from one profile to another: 1.4 times higher for follow-up care or palliative care and nearly twice as high for re-education-readaptation-reinsertion or artificial nutrition (cf. graph page 1).

At hospital, the average daily cost was about 260 euros for the two most common basic medical profiles (re-education-readaptation-reinsertion and rehabilitative care) and for post-surgical care; it was 313 euros for palliative care and peaked at for highly specific treatments such as breathing assistance (343 euros) and artificial nutrition (354 euros).

For AHH, the re-education-readaptation-reinsertion and post-surgical care profiles were also the least costly (approximately 145 euros per day), but the cost of rehabilitative care was equivalent to that of artificial nutrition (186 euros). The patients cared for breathing assistance and palliative care generated the highest costs for AHH with 207 euros and 228 euros respectively.

Illness leading to hospitalization also affects the cost differences

Breakdown by basic medical profiles was not sufficient to account for the diversity of clinical cases encountered and to explain the resulting cost heterogeneity. For this reason, we created even more homogeneous patient groups by successive refinement of each basic medical profile

according to initial diagnosis that led to hospitalization (called aetiology), the level of physical dependence³ and age⁴. This enabled us, in particular, to better identify elderly and dependent people with multiple illnesses which represent an important population for funding bodies and health system regulators. Indeed, patients aged 65 and over represented, for RC, 64% of all hospital days and 71% of the comparable scope; for AHH, they represented 60% and 62% respectively. We therefore focused on this sub-category in our medical profile-based analysis (cf. table p.7).

On average, the cost difference between hospital RC and AHH is highest for re-education-readaptation-reinsertion care (RC/AHH ratio: 1.9). It is equally high for cardiovascular and nervous system diseases, representing the most frequent diagnosis (ratio of 2.0), in particular for moderate to highly dependent elderly people (physical dependence score > 12).

Conversely, for follow-up care, the cost difference between hospital and AHH is lower than that of the total comparable activity (ratio of 1.4 compared to 1.6). For most diagnosis, this ratio varies between 1.3 (for tumours) and 1.5 (for cardiovascular and nervous system diseases). The cost difference increases for highly dependent elderly people of 80 years and over in the case of tumours (1.5) and in the majority of patients suffering from cardiovascular diseases (up to 1.9).

* * *

³ The physical dependence score was obtained by adding the individual dependence scores for dressing, eating, daily movements and continence, measured by the Daily life activities (AVQ) scale. This score ranged from 4 (fully autonomous) to 12 for weakly dependent individuals and to 13 to 16 for highly dependent individuals.

⁴ In this case, we only considered the physical dimension of dependence because, in the ENC SRR as in the ENHAD 2000, it accounted for virtually all cost variability.

Average operating costs per type of healthcare according to the disease leading to hospitalization, patient's degree of physical dependence and age

	Days		Average daily cost (€)		H/AHH ratio
	Hospital	AHH	Hospital	AHH	
Whole overlap scope	11 989 679	110 531	263 €	169 €	1,6
Re-education-Readaptation-Reinsertion (RRR) care					
All RRR care, including :	5 792 683	16 927	269 €	144 €	1,9
	1 794				
65-79 years	2463	7 071	259 €	145 €	1,8
≥ 80 years	1 873 155	4 215	260 €	158 €	1,6
Cardiovascular diseases					
All, including :	997 791	4 437	287 €	142 €	2,0
Physical dependence ≤ 12					
65-79 years	242 263	1 481	257 €	138 €	1,9
≥ 80 years	184 054	833	241 €	141 €	1,7
Physical dependence > 12					
65-79 years	144 855	501	333 €	173 €	1,9
≥ 80 years	141 073	956	322 €	157 €	2,1
Diseases of the nervous system					
All, including:	709 618	3 809	310 €	157 €	2,0
Physical dependence ≤ 12					
65-79 years	92 348	160	267 €	135 €	2,0
≥ 80 years	67 338	195	247 €	155 €	1,6
Physical dependence > 12					
65-79 years	72 138	1 718	331 €	150 €	2,2
≥ 80 years	57 354	141	319 €	164 €	1,9
Rehabilitative care					
All rehabilitative care, including:	5 710 889	68 913	257 €	186 €	1,4
65-79 years	1 924 897	23 979	250 €	183 €	1,4
≥ 80 years	2 648 380	20 319	257 €	189 €	1,4
Tumours					
All, including:	934 487	12 692	258 €	200 €	1,3
Physical dependence ≤ 12					
65-79 years	284 629	3 434	224 €	174 €	1,3
≥ 80 years	176 833	1521	220 €	187 €	1,2
Physical dependence > 12					
65-79 years	126 775	1 929	327 €	228 €	1,4
≥ 80 years	110 182	1 622	323 €	209 €	1,5
Cardiovascular diseases					
All, including:	907 836	13 430	256 €	175 €	1,5
Physical dependence ≤ 12					
65-79 years	214 694	1 850	226 €	130 €	1,7
≥ 80 years	347 451	2 839	224 €	120 €	1,9
Physical dependence > 12					
65-79 years	84 956	2 764	322 €	184 €	1,7
≥ 80 years	192 636	5 425	314 €	216 €	1,5
Diseases of the nervous system					
All, including :	489 265	22 186	292 €	193 €	1,5
Physical dependence ≤ 12					
65-79 years	78 129	1 193	241 €	154 €	1,6
≥ 80 years	95 799	310	239 €	192 €	1,2
Physical dependence > 12					
65-79 years	64 469	6 597	322 €	204 €	1,6
≥ 80 years	81 383	1 792	316 €	201 €	1,6

Reading guide: For RC, RRR care represented 5.8 million days (i.e. 48% of RC/AHH overlap scope days) and close on 17,000 AHH days (i.e. 15% of AHH/RC overlap scope days). For RC, patients aged 80 and over consumed close on one third, i.e. approximately 1.9 million days (or 16% of the overlap scope). Within this age group, for patients suffering from cardiovascular diseases and highly dependent in physical terms, the cost was 2.1 times higher for RC than for AHH.

Sources: PMSI SSR 2003 (activity) and ENC SSR 2001 (2005 updated costs); ENHAD 2000 IRDES (activity) and T2A HAD 2006

Rehabilitation and follow-up care represent an important of hospital stays and hospitalization days in France. From a medical technical point of view, nearly two thirds of days in RC establishments in 2003 could have been performed in AHH. For the totality of the comparable activities between these two modes of care, and for each of the basic medical profiles we defined, the operating costs were systematically lower for AHH, both during the first year of activity and during routine operation. This is verified, in particular, for dependent elderly people. Creation of, for example, 10,000 AHH places for patients requiring rehabilitation or follow-up care would eventually represent a saving of nearly 350 million euros per year. AHH therefore represents an interesting alternative in economic terms to be taken into account in planning for future needs.

However, we should call for caution in interpreting these results.

Whatever the medical criteria used to define homogeneous patient categories, this may not eliminate all the differences in case-mix of patients treated in hospital and in AHH. This may explain part of the observed cost difference.

Furthermore, our comparisons of daily cost ignores differences in average length of stay (ALOS) between these two healthcare models, whereas from a macroeconomic perspective, it is important to control for this, as total costs would depend on length of stay. While our estimations from the available databases suggest that the differences in ALOS is not really significant, it is important to follow-up their evolution given the recent changes in payment of AHH, (by daily tariffs). Our analysis did not integrate either the direct and indirect costs borne by the pa-

tients and their relatives during hospitalization at home.

In any case, patient's orientation within the healthcare system cannot be only based on economic and technical arguments. The decision on the appropriate type of hospitalization must take into account patients social and family environment, their ability to provide assistance if necessary and, most importantly, patients and their family's demand. And this, on a case by case basis, even though the humane aspects of AHH have been broadly acknowledged by satisfaction surveys. For elderly people in particular, the choice of an appropriate hospitalization method may be difficult. On the one hand, the need for supportive relatives may limit the possibility of referring these patients to AHH but, on the other hand, hospitalization «behind walls» may cause desocialization.

Finally, given the increasing need for rehabilitation and follow-up care for an ageing population, the creation of hospital beds and AHH places should not only be part of healthcare expenditure management, at macro level, but also be decided locally in terms of complementarity, rather than of substitution, taking into account the existing local hospital supply and changes in medical and paramedical demography. Furthermore this development must be accompanied by training of healthcare professionals, which may be a problem in the current context of limited supply of healthcare professionals.

It is also important to think of therapeutic education of patients and their relatives. These latter must have access to respite solutions if necessary; in this respect, the hospital RC and AHH can and must be complementary over time.

Further information

At-home or at hospital a comparative cost analysis for rehabilitation and support care. Report IRDES, forthcoming.

ATIH (2004), *Étude nationale de coûts PMSI SSR 2000/2001. Rapport* en ligne sur le site de l'ATIH (www.atih.sante.fr)

Com-Ruelle L., Lebrun E. (2003), Indicateurs d'état de santé des patients hospitalisés (EN-HAD 1999-2000). *Questions d'économie de la santé*, n° 77, 6 p.

Com-Ruelle L., Dourgnon P., Perronnin M., Renaud T. (2003), Construction d'un modèle de tarification à l'activité de l'hospitalisation à domicile. *Questions d'économie de la santé*, n° 69, 6 p.

Aligon A., Com-Ruelle L., Renaud T. (2003), Le coût de la prise en charge en hospitalisation à domicile (HAD). *Questions d'économie de la santé*, n° 67, 6 p.

Aligon A., Com-Ruelle L., Renaud T. (2003), *Évaluation du coût de la prise en charge globale en hospitalisation à domicile*. Rapport IRDES n° 1484, 268 p.

Bulletin officiel (1997), *Guide méthodologique de production des résumés hebdomadaires standardisés PMSI, soins de suite et de réadaptation*, Fascicule spécial.