

## Hospital at home (HAH), a structured, individual care plan for all patients

An exploitation of data from the 2006 HAH Medical Information Systems Program

Anissa Afrite<sup>a</sup>, Mylène Chaleix<sup>b</sup>, Laure Com-Ruelle<sup>a</sup>, Hélène Valdelièvre<sup>b</sup>

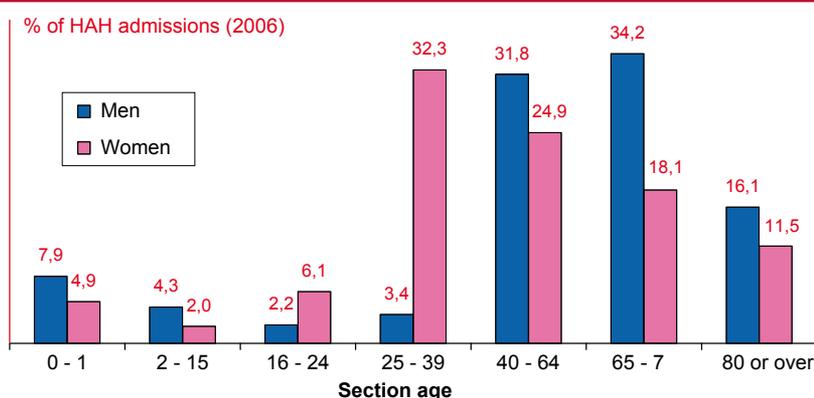
This study examines the patient profiles and medical treatments administered in 2006 to define the place of HAH in patients' care pathway.

In 2006, over two million days of hospitalization at home (HAH\*) were realised in metropolitan France. Majorities of patients were elderly men and just delivered women. HAH admissions primarily concerned palliative care, cancer treatment and perinatal care. The clinical conditions dealt with vary largely and three patients out of ten are moderately to highly dependent. HAH permitted to shorten or avoid a stay in health care institution for one out of three patients. Around 7% of HAH stays ended with the patient dying at home.

The hospital at home (HAH) structures aim to provide hospital-level care for patients with serious, acute or chronic illnesses in the comfort of their home. In the absence of such a service, these patients would be hospitalized in a health establishment. According to its official definition, HAH provides total, coordinated medical care to patients in their home thereby offering them a better quality of life in familiar surroundings. As an alternative to inpatient hospitalization, the vocation of HAH structures is to offer coordinated and graduated care between town and hospital. Intended as a general, polyvalent care plan, its aim is to shorten, delay or avoid inpatient stays in acute wards or in follow-up or rehabilitation wards whenever an admission into HAH is considered feasible.

Encouraged by the government in order to adapt the health care system to the growing needs of an ageing population, hospital at home has been expanding rapidly over the last few years. Since the regulations and pricing conditions applicable to opening HAH structures have been lifted, HAH has become a mandatory section in the third Regional Strategic Health Planning\* (RSHP III\*)

Age and sex of patients hospitalized at home in 2006



**Reading guide:** In 2006, patients aged between 25 to 39 years represent 3.4% of HAH admissions amongst men and 32.3% amongst women.

**Field:** HAH structures situated in metropolitan France.

**Source:** MISP HAH 2006 (AIHC) - Exploitation Drees-Irdes.

<sup>a</sup> Institut for research and information in health economics (Irdes)

<sup>b</sup> Directorate for Research, Studies, Assessment and Statistics: (Drees)

thus giving it greater visibility at national level and within the health service as a whole. In six years, the number of HAH places has thus been multiplied by 1.7: in 2006, 164 HAH structures offered near 6,700 places functioning (approximately 3,900 in 2000) and produced almost 85,000 stays in metropolitan France. Almost all are shared out between the public service and the private for non-profit sector, essentially associations. Despite this expansion, the HAH offer remains marginal within the health care system. Its development potential is thus significant and efforts must be maintained if the announced government goal of 15,000 HAH places available by 2010 is to be achieved: in other words creating a further 11,000 places in ten years.

This study analyses the profiles of hospital at home patients in 2006 and the medical care they received. Where do these patients come from and where do they go on discharge?

The results are the outcome of statistical analyses effectuated on data provided by the Medical Information Systems Program (MISP) for 2006. All the hospitals, both public and private, authorized to carry out an HAH activity, have to fill in this program.

### HAH patients, of all ages, are mainly elderly men and just delivered women

HAH is a structured, individual care plan aimed at patients of all ages needing coordinated medical and paramedical care.

In 2006, children aged 15 or under accounted for 9% of HAH stays and infants (under 2 years old) for 6% between them. In comparison, children aged 15 or under accounted for 5% and infants for 2% of short-term inpatient hospital stays in medical, surgical and obstetric wards. The elderly constitute a significant population in HAH stays and even if HAH did not specifically target their needs when it was established in 1957, individuals aged 65 or over accounted for four out of ten HAH stays and individuals aged 80 or over alone accounted for over 10% of stays.

The human interest in offering HAH is widely recognized and confirmed by all the satisfaction surveys, notably those carried out amongst patients and their family circle<sup>1</sup>. For the elderly in particular, the choice of hospitalization must take into account, on the one hand, the risk of alienating them socially as inpatients “within the walls of a hospital” and, on the other, the need to protect the caring family members, often elderly themselves, on the HAH side.

Women receiving medical treatment through HAH account for 60% of stays, and men 40%; women are on average younger than men. Three out of ten women hospitalised at home are aged between 25 and 39 (Cf. graph p.1). Within this age range, 93% of the total number of HAH stays concern women, essentially for short or very short duration perinatal care (high risk pregnancies and *post-partum*).

Amongst the men, recourse to HAH is essentially from 40 years of age: 82% of stays concern men aged 40 or over, 50% concern men aged 65 or over and 16% concern men aged 80 or over.

<sup>1</sup> Aligon A., Com-Ruelle L., Raffy-Pihan N. (2000), 'L'hospitalisation à domicile: un patient à satisfaire?' In Informations Hospitalières, n° 52, 2000/03, pp. 16-21.

## DATA SOURCES

### The HAH Medical Information Systems Program (HAH MISP)

In view of fixing prices specific to the HAH activity on March 1st 2005, the Medical Information Systems Program (MISP\*) was extended to include this activity in the aim of collecting data necessary for billing HAH bed days to the French National Health Insurance. Requested by the Ministry of Health Directorate for Hospitalization and Organisation of Care\* and organized by the Agency for Information on Hospital Care\* (AIHC\*), this data collection program is applicable to all health establishments, both public and private, authorized to practice HAH as from January 1st 2005 (decree of 31st of December 2004).

Besides information concerning tariffs, it provides a description of patient characteristics and treatments delivered in HAH on a yearly basis at regional and national level as well as providing more overall information on HAH structure activities.

Data collection on HAH activities began in 2005 but the 2006 data is more complete in terms of participating structures. Prior to exploiting the collected data, a perimeter of HAH structures with places created and functioning in 2006 was defined and statistical analyses were carried out. Furthermore, the data was enriched with additional information relative to setting-up HAH structures (administrative data and number of places functioning) obtained from the 2006 Annual Statistics of Health Organizations\*.

The field of research is limited to public and private health establishments situated in metropolitan France having declared an HAH activity in 2006; that is 164 structures.

Consequently, the statistical results presented in this research may be slightly different to the summaries presented in the national management tables produced by the AIHC (2006 national tables available on its website).

## BACKGROUND

Hospital at home (HAH) delivers coordinated hospital-level care to patients in their home. Through a description of HAH patients' profiles, our study assesses this alternative hospitalization mode in the overall healthcare supply in France. We use data provided by the 2006 HAH Medical Information Systems Program (HAH MISP\*).

In addition to individual characteristics, this exhaustive data set describes the major and associated components of medical treatment, as well as patients' level of dependency and the length of stay. This study was effectuated in partnership with the Ministry of Health Directorate for Research, Studies, Assessment and Statistics\*.

### Morbidity of patients hospitalized at home

As well as the main medical diagnosis justifying HAH, additional morbidity indicators describing patients' clinical situation are collected in the MISP HAH (Cf. Definitions insert p.5). In approximately eight out of ten cases, this clinical situation, defined by means of the

specific combination of the major and the associated components of medical treatment together with the level of dependency, does not vary during the course of a HAH stay whereas it does in other cases. The following description is based on the patients' medical characteristics on their admission into HAH.

**Cancer treatment, palliative care and perinatal care are the main reasons for admission into HAH**

Patients are referred to HAH to receive one or several types of medical treatments prescribed prior to their admission. Called "component of medical treatment" they are based on the initial diagnosis established, for example, during inpatient hospitalization in medicine, surgery or obstetrics (MSO\*). Medical follow-up is nevertheless carried out under the supervision of the hospital doctor, in liaison with the coordinating HAH doctor.

The major component of medical treatment is defined as the one requiring the most complex and technical medical care with the most demand on resources (personnel costs, equipment hire, medication...). Patients may benefit from successive major component of medical treatment sequences during the course of a HAH stay if their clinical condition changes. The medical care prescribed at the time of admission reflects the reasons for admission into HAH.

In 2006, perinatal care was the group of major components of medical treatment prescribed on admission which totalled up most of HAH stays (Cf. table opposite). This group accounts for 22% of HAH stays: 15% concerns *post-partum*, 2% monitoring high risk pregnancies and 5% care for newborn babies. Here, educating the mother and her family circle constitutes the associated component of medical treatment in one out of three cases (32%). In the case of an ill baby, for example, the main aim of educating the parents is to help them recovering their autonomy.

Otherwise, almost one out of five stays concerns cancer treatment, notably

Major components of medical treatment delivered on admission into HAH				
	Stays		Days	
	Number	%	Number	%
<b>Perinatal care</b>	<b>19,073</b>	<b>22.4</b>	<b>144,708</b>	<b>6.8</b>
Early return home after giving birth	7,213	8.5	29,956	1.4
Pathological <i>post-partum</i>	5,837	6.9	37,373	1.8
Care for newborn babies	3,990	4.7	24,555	1.2
Monitoring high risk pregnancies	2,033	2.4	52,824	2.5
<b>Technical oncology treatments</b>	<b>16,142</b>	<b>19.0</b>	<b>137,398</b>	<b>6.5</b>
Chemotherapy	13,393	15.8	78,960	3.7
Post-chemotherapy monitoring	2,677	3.2	55,748	2.6
Radiotherapy	72	0.1	2,690	0.1
<b>Palliative care</b>	<b>12,428</b>	<b>14.6</b>	<b>417,549</b>	<b>19.7</b>
<b>Respiratory or nutritional assistance</b>	<b>7,160</b>	<b>8.4</b>	<b>341,670</b>	<b>16.2</b>
Home parenteral nutrition assistance	2,852	3.4	85,690	4.1
Enteral nutrition assistance	2,600	3.1	163,890	7.8
Respiratory assistance	1,708	2.0	92,090	4.4
<b>Intravenous treatments</b>	<b>6,628</b>	<b>7.8</b>	<b>100,315</b>	<b>4.7</b>
<b>Complex dressings and specific treatments</b>	<b>6,167</b>	<b>7.3</b>	<b>389,123</b>	<b>18.4</b>
<b>Re-education-re-adaptation-education</b>	<b>3,174</b>	<b>3.7</b>	<b>130,764</b>	<b>6.2</b>
Education of the patient/family	1,527	1.8	47,248	2.2
Orthopedic re-education	876	1.0	32,204	1.5
Neurological re-education	771	0.9	5,312	2.4
<b>Heavy nursing care</b>	<b>2,936</b>	<b>3.5</b>	<b>195,992</b>	<b>9.3</b>
<b>Other motives</b>	<b>11,275</b>	<b>13.3</b>	<b>257,082</b>	<b>12.2</b>
Post-surgical treatment	5,039	5.9	112,479	5.3
Other treatments	4,300	5.1	103,734	4.9
Pain management	1,266	1.5	35,514	1.7
Blood transfusion	212	0.2	382	0.0
Aplasy monitoring	458	0.5	4,973	0.2
<b>Total</b>	<b>84,983</b>	<b>100.0</b>	<b>2,114,601</b>	<b>100.0</b>

**Reading guide:** During the course of 2006, 84,983 distinct stays were totally or partially observed in the MISP HAH database, generating 2,114,601 days effectuated in HAH. The major component of medical treatment 'Palliative care' was the reason for admission for 14.6% of HAH stays corresponding to 19.7% of all the days produced in 2006.

**Field:** HAH structures situated in metropolitan France.

**Source:** MISP HAH 2006 (AIHC) - Exploitation Drees-Irdes.

chemotherapy. Palliative care accounts for 15% of stays and, in three out of ten cases (32%), pain management is the most frequently declared associated component of medical treatment. Home parenteral nutrition assistance follows with just over one out of ten cases (13%). The other groups of associated components of medical treatment constitute a small minority or are rarely represented. These primarily concern respiratory assistance or nutritional support (8% of admissions), intravenous treatments (8%) and complex

dressings and specific care (7%); physiotherapy, rehabilitation and the education of patients and their families (4%) typically replace medium-term hospitalization, as is the case for heavy nursing care (3%). Finally, the group of remaining reasons for HAH admissions (13%) particularly concerns post-surgical treatments (6%).

Amongst associated components of medical treatment, the education of patients and their families together with pain management are the most frequently

provided in, respectively, 18 and 12% of the total number of admissions.

**Post-partum care involves very short stays in comparison with long-term treatments required in the case of rehabilitation, complex dressings or heavy nursing care**

The different types of medical treatment are notably distinguished by their duration. Some HAH stays replace short-term inpatient hospitalizations in MSO wards, others medium length stays in follow-up and rehabilitation care (FRC\*). Length of stay is thus determined by the type of care required (Cf. table below). Perinatal care, for example,

results in shorter HAH stays than the majority of other forms of care. The distribution of the number of HAH days related to perinatal care (7%) thus places this treatment far behind other more long-term treatments such as palliative care (20% of days), complex dressings (18%) and respiratory or nutritional support (16%) that combined, represent over half the number of days reported (Cf. table p.3).

**Three out of ten HAH patients are dependent moderately or heavily**

Besides their purely medical needs, HAH patients may be more or less dependent and require a variable degree

of additional care in the form of home assistance services. The patients' level of dependency (or autonomy) is equally assessed on admission and regularly re-assessed during the course of the stay. It completes the description of the patients' overall health status. Two indicators are used and collected in the HAH MISP: on the one hand, the scale of activities of daily living (ADL) and, on the other, the Karnofsky index (KI) (Cf. Definitions insert p.5).

The ADL score quantifies patients' locomotive limitations (the ability to walk and bed-chair transfers, dressing and personal hygiene, feeding, continence) and relational difficulties (behaviour, communication). Locomotive limitations are clearly predominant amongst long-stay patients whereas relational difficulties can affect all patients, regardless of the duration of their stay in HAH.

In locomotive terms, two out of three HAH patients are totally independent or almost at the time of their admission, whereas one out of five is totally dependent (Cf. graph p.5). As for relational dependency, the distribution operates differently. In effect, two thirds of the patients have no relational difficulties whatsoever on admission into HAH, and one out of five a slight difficulty. Conversely, 5% of admissions concern patients with serious relational difficulties.

As for HAH patients' global dependency, a generally preserved relational dependency adds up to a locomotive dependency which is on average higher. In effect, 96% of patients admitted with total locomotive autonomy are equally so from a relational standpoint. As the degree of locomotive dependency increases, however, the percentage of autonomous patients at relational level decreases to the benefit of total or almost total dependency. Thus, over one out of two patients with total locomotive dependency are moderately to heavily dependent at relational level (52%). In fine, in 2006, if four out of ten HAH admissions concerned patients that were overall totally independent at both locomotive and relational levels combined (39%), the majority of patients were more or less dependent: just over

**Lengths of HAH stays according to the major component of medical treatment prescribed on admission for stays ended in 2006**

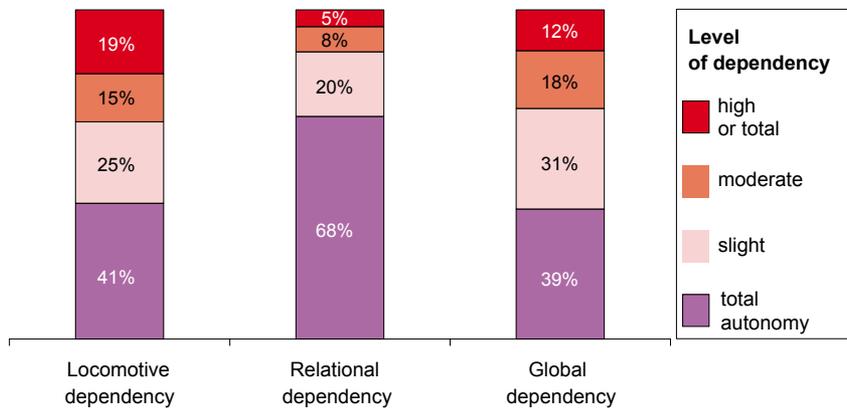
	Mediane	95 <sup>th</sup> centile	99 <sup>th</sup> centile
<b>Perinatal care</b>	-	-	-
Early return home after giving birth	4	6	8
Pathological <i>post-partum</i>	5	11	11
Care for newborn babies	4	21	35
Monitoring high risk pregnancies	19	64	91
<b>Technological oncology treatments</b>	-	-	-
Chemotherapy	3	12	60
Post-chemotherapy monitoring	7	83	182
Radiotherapy	19	146	232
<b>Palliative care</b>	<b>16</b>	<b>114</b>	<b>257</b>
<b>Respiratory or nutritional assistance</b>	-	-	-
Home parenteral nutrition assistance	16	91	182
Enteral nutrition assistance	26	189	380
Respiratory assistance	19	201	427
<b>Intravenous treatments</b>	<b>5</b>	<b>55</b>	<b>121</b>
<b>Complex dressings and specific treatments</b>	<b>30</b>	<b>211</b>	<b>445</b>
<b>Re-education-re-adaptation-education</b>	-	-	-
Education of the patient/family	14	127	316
Orthopedic re-education	22	106	266
Neurological re-education	30	218	406
<b>Heavy nursing care</b>	<b>30</b>	<b>234</b>	<b>498</b>
<b>Other motives</b>	-	-	-
Post-surgical treatment	11	63	150
Other treatments	3	93	229
Pain management	11	111	231
Blood transfusion	2	4	6
Aplasy monitoring	3	36	94
<b>Total</b>	<b>6</b>	<b>90</b>	<b>233</b>

**Reading guide:** If one considers stays where the reason for admission into HAH concerns chemotherapy: half the number of stays had a duration at the most equal to 3 days (median); moreover, the duration of 5% of these stays was equal to 12 days or over (95th centile) and 1% a duration equal to 60 days or over (99th centile).

**Field:** HAH structures situated in metropolitan France.

**Source:** MISP HAH 2006 (AIHC) - Exploitation Drees-Irdes.

Distribution of HAH stays according to patients' level of dependency assessed, on admission, with the activities of daily living scale (ADL)



**Reading guide:** During the course of 2006, 39% of HAH stays concerned patients who were, overall, totally autonomous at the time of their admission, 31% were slightly dependent, 18% moderately dependent and 12% highly dependent.

**Field:** HAH structures situated in metropolitan France.

**Source:** MISP HAH 2006 (AIHC) - Exploitation Drees-Irdes.

### HAH, a link in the patient's care pathway

HAH is medically prescribed for a limited time period which is extendable in some clinical situations but, sometimes, for an initially unspecified time period. In nine out of ten cases, it is a hospital doctor that prescribes HAH following inpatient hospitalization, a hospital consultation or after a visit to the hospital emergency service. A private practitioner, notably GPs, can equally prescribe HAH following a consultation or home visit<sup>2</sup> but, probably owing to a lack of knowledge about this type of hospitalization or on the existence of HAH structures in their area, these potential prescribers remain in the minority.

#### Three out of five HAH patients admitted from a health establishment

In 2006, three out of five patients were admitted to HAH following an inpatient stay in a health establishment (59%), essentially in a short-stay establishment

<sup>2</sup> Acts of October 2, 1992 (n° 92-1101 et n° 92-1102) stipulate that in-patient hospitalization is no longer a required condition to be admitted into HAH, and from now on private practice doctors can prescribe HAH to non-hospitalized patients.

half are slightly or moderately dependent (49%) and over one out of ten are totally dependent (12%) thus requiring a higher level of care.

The other dependency indicator, the Karnofsky index, is more adapted to monitoring a patient's overall health status through time. It combines medical care needs with the need for home assistance (for example moving around

or personal hygiene). According to this criterion, in 2006 one HAH admission out of five concerned totally or almost totally independent patients (KI = 90 - 100%) from an overall medical care plus home assistance point of view. On the contrary, 12% of admissions concerned highly dependent patients (KI ≤ 30%), with death being more or less imminent.

## DEFINITIONS

**HAH stay** corresponds to the period of time from the patient's admission day to the last day of care effectuated by the medical team. If during this period the patient is absent from home for any length of time, including a night spent in another health establishment, HAH care is considered interrupted.

**Component of medical treatment** refers to a specific group of the medical treatment prescribed and administered during all or part of a patient's stay in HAH. If necessary, the treatment is modified in accordance with any change in the patient's clinical situation. Several components of medical treatment can thus succeed one another during the course of a stay. A ministerial circular defines 23 different components of medical treatment specifying the pathologies covered and the corresponding treatment. This list is intended to be evolutionary so as to be adaptable to new technological advances permitting the externalization of inpatient hospital care. The major component of medical treatment is that which requires the most complex, technical procedures and consumes the majority of resources (staff costs, equipment hire, medication...); when it occurs, the associated component of medical treatment defined in the MISP\* corresponds to the first treatment following immediately the major component of medical treatment in terms of resources consumption.

**The activities of daily living scale (ADL)** assesses a patient's level of dependency from total autonomy (1) to total dependency (4) in six different dimensions

on a locomotive axis (the ability to walk, bed-chair transfers, dressing and personal hygiene, eating, continence) and two on a relational axis (behaviour and communication). The overall score is obtained by adding all the individual scores which are then divided into four classes: totally autonomous (ADL score 6), slightly dependent (from 7 to 12), moderately dependent (from 13 to 18) and highly or totally dependent (from 19 to 24).

**The Karnofsky index** is a synthetic indicator of the overall health status measuring, on a scale from 0 (death) to 100% (total autonomy), the patient's degree of functional dependency on the 'social' care required (activities of daily living: personal needs, dressing etc.) and the intensity of medical treatments required. Patients cared for in HAH thus indicate a level of dependency ranging from 10% ("dying") to almost total autonomy (90-100%).

**Medical treatment sequence** corresponds to a stay in HAH during which the patient presents a specific clinical situation defined by the particular combination of three morbidity criteria: the major component of medical treatment, the associated component of medical treatment and the patient's level of dependency measured in 2006 on the Karnofsky index. A stay is thus made up of either one or several successive medical treatment sequences if the patient's clinical situation changes during the course of the same stay.

Origins and destinations of HAH patients in 2006				
	Admitted in 2006		Discharged in 2006	
	Stays	%	Stays	%
<b>Health establishment</b>	<b>48,370</b>	<b>59.1</b>	<b>20,947</b>	<b>28.5</b>
Medicine, surgery and obstetrics (MSO)	46,004	56.2	19,959	27.2
Follow-up and rehabilitation care (FRC)	1,712	2.1	641	0.9
Long-term care	221	0.3	169	0.2
Psychiatry	42	0.1	34	0.1
Hospital at home (HAH)	391	0.5	144	0.2
<b>Home</b>	<b>33,491</b>	<b>40.9</b>	<b>47,461</b>	<b>64.6</b>
Healthcare and social welfare centres	125	0.2	128	0.2
Nurses home care services (NHCS)	444	0.5	1,446	2.0
Patient's home or other situations	32,922	40.2	45,887	62.5
<b>Deaths</b>	-	-	<b>5,075</b>	<b>6.9</b>
<b>Total</b>	<b>81,861</b>	<b>100.0</b>	<b>73,483</b>	<b>100.0</b>

**Reading guide:** 59.1% of patients admitted into HAH in 2006 were referred from a health establishment (56.2% in MSO, 2.1% in FRC and less than 1% in other units); 64.6% of patients discharged from HAH in 2006 remained at home at the end of their stay.

**Field:** HAH structures situated in metropolitan France.

**Source:** MISP HAH 2006 (AIHC) - Exploitation Drees-Irdes.

(56%), whereas two out of five patients were at home before their admission (41%) (Cf. above table).

For 65% of the patients concerned, remaining at home is the most frequent outcome of HAH stays against 29% of patients re-hospitalized as inpatients in a hospital structure.

**Around 7% of stays end up with the patient dying at home**

Deaths are relatively infrequent during HAH (7% of stays) despite the fact that 70% of the French population interviewed a few years ago<sup>3</sup> declared that, given a choice, their wish would be to die in their home. In effect, some end-of-life patients requiring palliative or terminal phase care wishing to die at home are probably not admitted into HAH in time. Moreover, during the palliative phase of an illness, some medical complications, such as acute pain or the approach of death, sometimes lead to the patient being re-admitted to hospital in extremis on the request of the family and/or GP: these patients invariably die shortly

3 According to an opinion poll conducted by IFOP in 1991.

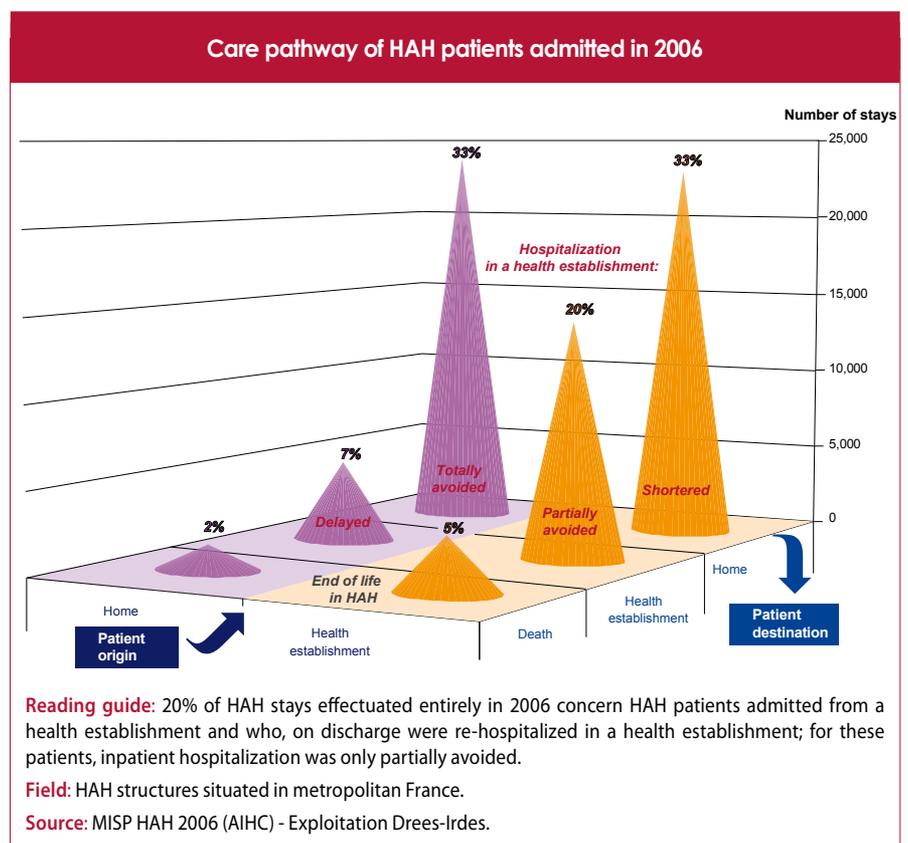
after their re-admission into a health establishment. A few indicators tend to confirm this, notably the major component of medical treatment delivered to patients at the time of their transfer from HAH to

a hospital: over one out of four patients (27%) were receiving palliative care. As a point of reference, palliative care constituted the reason for admission into HAH for almost one out of five patients (18%) admitted from health establishments.

**Hospital stay is shortened or avoided for two out of three patients**

HAH positions itself as an alternative to inpatient care in a health establishment. Its aim is to shorten, delay or totally avoid inpatient hospitalization depending on whether the HAH patient is admitted directly from home or transferred from a health establishment (private or public).

Amongst the HAH stays entirely effectuated in 2006 (i.e. beginning and ending in 2006), four out of ten patients were admitted directly from home (42%), (Cf. graph p.6). In view of the possible destinations following these HAH stays, this care plan alternative permitted avoiding hospitalization in a health establishment for one out of three patients (33%) since they remained at home after the end of their HAH stay; for at least one out of ten patients (7%), HAH delayed inpatient hospitalization since they



were subsequently transferred to a health establishment; finally 2% of patients died in their homes during the course of HAH.

The other patients, that is to say approximately six out of ten, were admitted to HAH after receiving care in a health establishment (58%): one out of three patients remained at home at the end of their stay (33%) thus cutting short inpatient hospitalization. This was not the case for one out of five patients (20%) for whom inpatient hospitalization was only partially avoided since their health status subsequently required re-admission as inpatients, nor for the 5% of patients who died at home.

So, HAH positions itself both as a link in the patient's care pathway and as one of the elements within an organized care network: both upstream and downstream, it operates in coordination with other health structures, nurses home care services (NHCS\*), as well as home care, but also with private medical practitioners operating out of hospital. In 2006, there were few transfers between HAH and NHCS: only 0.5% of patients admitted to HAH were referred by a NHCS and only 2% of patients were oriented towards NHCS following HAH. This low transfer rate from NHCS to HAH, and vice versa, indicates a significant disparity between the technical nature, complexity and intensity of care provided by the two entities: treatments are more complex and intensive in HAH and the NHCS are not accredited to provide the total care requirements.

\* \* \*

HAH provides hospital-level care covering all the necessary treatment of patients suffering from serious, chronic or progressive illnesses during acute phases or for longer periods requiring specific medical treatments that can be relocated out of hospital. Significant technical advances have contributed to offering this latter possibility. The results presented in this study confirm the vocation of HAH to be a general and polyvalent care offer.

The main reasons for admission into HAH thus concern cancer treatments, palliative care and perinatal care, notably *post-partum*. HAH prescription remains very dependent

## The evolution of clinical situations treated in HAH between 2000 and 2006

Carried out by the IRDES on the request of the Ministry of Labour Directorate for Hospitalization and Organisation of Care\*, the national survey on hospital at home\* (ENHAD 2000) covered 47% of the existing HAH structures at the time of the survey between September 1999 and January 2000, namely 81% of the places installed. The aim of this survey was to evaluate the daily overall cost of patient care in HAH taking into account the different medical treatments applied. It contributed in the elaboration of the activity-based payment model currently in use and the MISP HAH data.

The ENHAD 2000 survey comprises 1.860 patients taken from two distinct samples so as to accurately reflect the variability of lengths of stay: 1,470 patients included on admission over a period of one month and followed for a period of up to three months (amongst these, 11% had not ended their stay at the end of the three months period), and a complementary sample of 390 patients present in HAH for over three months and observed during one week.

### Limitations in the comparison between ENHAD 2000 – HAH MISP 2006

In the ENHAD 2000, only a percentage of HAH structures were interviewed whereas the HAH MISP is exhaustive. A single clinical situation combining medical treatments and dependency were declared at the end of the stay reflecting the bulk of treatments administered, whereas the HAH MISP enables a clinical follow-up distinguishing, if necessary, the sequence of different successive treatments. The medical treatments administered were coded in conformity with the 10th edition of the International Classification of Diseases\* and compiled into types of treatment according to the circular of May 2000 and its December supplement. In the same way, the level of dependency was taken from an ADL type scale, refined then compiled into a "pseudo-KI".

For these reasons, the results of the data analysis based on the admissions taken from the ENHAD 2000 are not strictly comparable with those taken from the HAH MISP 2006.

### From 2000 to 2006: what trends?

In terms of admissions and stays, HAH patient profiles have somewhat evolved.

- In 2000, persons aged 65 or over were more numerous (45% *versus* 38% in 2006) and women less present (52% *versus* 60%).
- Amongst major components of medical treatment, chemotherapy remained the most frequent (22% *versus* 16% in 2006) together with palliative care (18% *versus* 15%), complex dressings (14% *versus* 7%) and heavy nursing care (9% *versus* 3%). Obstetric cases (excluding new-born infant care), however, more than doubled (7% *versus* 18%) through an increase in *post-partum* care.
- Otherwise, pain management remains the most frequently associated component of medical treatment.
- If the proportion of moderately to severely dependent patients remains stable (three out of ten patients), the percentage of totally or almost autonomous patients at locomotive level was greater in 2000 (54% *versus* 41%) and that of slight dependency lower (13% *versus* 25%). As for relational dependency, we observe the same gap proportion between patients without difficulty and those with slight difficulties.
- Finally, more patients were admitted to HAH from hospital (seven out of ten admissions *versus* six out of ten in 2006) and only marginally fewer remained at home at the end of their stay in HAH (37% *versus* 41%). The percentage of deaths at home was higher (9% *versus* 7%).

on health establishments from whence the majority of patients are transferred. At HAH discharge, the patient more often than not remains at home with or without medical and/or social follow-up.

The HAH MISP, forming the basis of this analysis, is a particularly useful tool in providing a panoramic view of the HAH demand over the whole national territory and to follow its evolution through time.

From the variety of cases treated and treatments delivered, it provides complete patient profiles. In addition, this data enables a better understanding of how this form of hospitalization fits into the health system as a whole, and how it articulates, both upstream and downstream, with other existing medical services and different health professionals operating both in and out of hospital. Furthermore, the quality of this fairly recent database will continuously improve and be

## METHOD

### Field of analysis

In the 2006 HAH MISP, 84,983 distinct stays were observed in metropolitan France. Amongst these stays, 85.4% were observed in full (they began and ended within the same year) and 14.6% were only partially observed (12.5% began in 2006 but finished after the year end), 1.7% began before 2006 but ended during the course of the year, and 0.4% began before and ended after 2006). According to the themes broached, we thus analyse either admissions or discharges or else only the stays observed in their totality in 2006.

- **Statistic unit observed:** this refers to the notion of patient-stay. We consider that several stays carried out by the same patient count for several different stays.
- **Patient characteristics on admission:** the description of patients' individual (age and gender) and medical characteristics (type of treatments and level of dependency) correspond to the situation presented on admission into HAH if the stay began during the course of 2006, otherwise, to the first sequence of treatment administered in 2006 (corresponding to 2.1% of stays included in the data base).
- **Length of stay based on major component of medical treatment at admissions:** some types of treatments can be applied over a variable time period, which leads to more or less lengthy stays. Some stays are only partially observed as they finished beyond the end of 2006 leading to biased results in

the calculation of the average length of stay. This is why we limit our field of analysis to stays ending in 2006 for which we have the complete length of stay whilst at the same time privileging the following indicators: median 95th and 99th centiles.

- **The care pathway of HAH patients:** the description of ways of entering into HAH and where the patients come from is based on information specified on admission and therefore it only concerns stays beginning in 2006. Types of discharge from HAH and patient destinations are based on information provided on discharge and thus only concern stays ending in 2006.

In order to evaluate patients' referrals both upstream and downstream of HAH, we take into account the stays for which we simultaneously have information on where the patients come from and their destination. Our scope is thus limited to 98% of stays observed during 2006 (that is 83% of stays included in the data base). However, this restriction does not distort the distribution of patient care pathways which remains stable when we equate admission sequences and/or discharge relative to a partially observed stay to, respectively, the first and/or last medical treatment sequences administered in 2006 for a same stay. This is possible because this information is replicated on each medical treatment sequence delivered during the stay (the field is thus extended to 93% of stays included in the data base).

enriched both by additional information and the homogenisation and precision of its data coding methods. The perimeter defining the type of cases treated will continuously expand as the development of new technologies permits more and more treatments to be carried out in the home. Finally, this data quality will contribute to adapting the activity-based payment model currently in application: a field study carried by the Agency for Information on Hospital Care (AIHC) is establishing a national scale of costs specific to HAH throughout 2009. ♦

## GLOSSARY

- **Hospital at home (HAH):** Hospitalisation à domicile (HAD)
- **Regional Strategic Health Planning III (RSHP III):** Schémas régionaux d'organisation sanitaire de troisième génération (SROS 3)
- **Medical Information Systems Program (MISP):** Programme de médicalisation des systèmes d'information (PMSI)
- **Medical, surgical and obstetrics (MSO):** Médecine, chirurgie et obstétrique (MCO)
- **Directorate for Research, Studies, Assessment and Statistics:** Direction de la recherche, des études, de l'évaluation et des statistiques (DREES)
- **Directorate for Hospitalization and Organization of Care:** Direction de l'hospitalisation et de l'organisation des soins (DHOS)
- **Agency for Information on Hospital Care (AIHC):** Agence technique de l'information sur l'hospitalisation (ATIH)
- **Annual Statistics of Health Organizations:** Statistique annuelle des établissements de santé (SAE)
- **Follow-up and rehabilitation care (FRC):** Soins de suite et de réadaptation (SSR)
- **Home care:** Soins de maintien à domicile
- **Nurses home care services (NHCS):** Services de soins infirmiers à domicile (SSIAD)
- **National survey on hospital at home (ENHAD 2000):** Enquête nationale sur l'hospitalisation à domicile 2000
- **Activity-based payment model:** Modèle de tarification à l'activité (T2A)
- **International Classification of Diseases:** Classification internationale des maladies (CIM)
- **Major component of medical treatment:** mode de prise en charge principal
- **Associated component of medical treatment:** mode de prise en charge associé

## FURTHER INFORMATION

- Afrite A., Chaleix M., Com-Ruelle L., Valdelièvre H. (2009), Les structures d'hospitalisation à domicile en 2006, *Études et Résultats*, Drees, à paraître.
- DREES (2009), *Les établissements de santé: un panorama pour l'année 2006*, Collection Études et statistiques, Édition La documentation française.
- Com-Ruelle L., Afrite A. (2008), *L'HAD, une prise en charge hospitalière moderne*, Éditions Elsevier-Masson.
- Castra L., Jeanne P. (2008), *Hospitalisation et santé à domicile. Une alternative à l'hospitalisation traditionnelle*, Collection Le point sur, Édition Berger-Levrault.
- Afrite A., Com-Ruelle L., Or Z., Renaud T. (2008), *Soins de réhabilitation et d'accompagnement: une analyse comparative des coûts d'hospitalisation à domicile et en établissement*, Rapport annexe, Rapports Irdes n° 1689/1689bis.
- Sentilhes-Monkam A. (2007), *L'hospitalisation à domicile, une autre manière de soigner*, L'Harmattan
- Afrite A., Com-Ruelle L., Or Z., Renaud T. (2007), *L'hospitalisation à domicile, une alternative économique pour les soins de suite et de réadaptation*, *Questions d'économie de la santé* n° 119, 6 p.
- Com-Ruelle L., Lebrun E. (2003), *Indicateurs d'état de santé des patients hospitalisés à domicile (ENHAD 1999-2000)*, *Questions d'économie de la santé* n° 77, 6 p.

**IRDES** INSTITUT DE RECHERCHE ET DOCUMENTATION  
EN ÉCONOMIE DE LA SANTÉ  
10, rue Vauvenargues 75018 Paris  
• Tél.: 01 53 93 43 02/17 • Fax: 01 53 93 43 07  
Site: www.irdes.fr Email: diffusion@irdes.fr  
Director of the publication: Chantal Cases  
Technical senior editor: Anne Evans  
Copy editing: Franck-Séverin Clérembault and Anna Marek  
Translator: Véronique Dandeker.  
Layout composer: Khadija Ben Larbi  
ISSN: 1283-4769 • Diffusion by subscription: €60 per  
annum - Price of number: €6 - 10 to 15 numbers per annum.