KCE REPORT 250

Federaal Kenniscentrum voor de Gezondheidszorg
Centre Fédéral d'Expertise des Soins de Santé
Belgian Health Care Knowledge Centre

# IMPLEMENTATION OF HOSPITAL AT HOME: ORIENTATIONS FOR BELGIUM

KCE REPORT 250
HEALTH SERVICES RESEARCH

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MARIA-ISABEL FARFAN-PORTET, ALAIN DENIS, LUT MERGAERT, FRANÇOIS DAUE, PATRIEK MISTIAEN, SOPHIE GERKENS

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# COLOPHON


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- **The external experts were consulted about a (preliminary) version of the scientific report. Their comments were discussed during meetings. They did not co-author the scientific report and did not necessarily agree with its content.**
- **Subsequently, a (final) version was submitted to the validators. The validation of the report results from a consensus or a voting process between the validators. The validators did not co-author the scientific report and did not necessarily all three agree with its content.**
- **Finally, this report has been approved by common assent by the Executive Board.**
- **Only the KCE is responsible for errors or omissions that could persist. The policy recommendations are also under the full responsibility of the KCE.**

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# LIST OF ABBREVIATIONS

| ABBREVIATION | DEFINITION |
|---|---|
| ALOS | Average Length of Stay |
| AP-DRG | All Patient Diagnosis Related Group |
| AR-DRG | Australian Refined Diagnosis Related Group |
| ARS | Agence Régionale de Santé / Regional Health Agency |
| AWBZ | Algemene Wet Bijzondere Ziektekosten / Exceptional Medical Expenses Act |
| COPD | Chronic obstructive pulmonary disease |
| CVZ | College Voor Zorgverzekeringen / Health Care Insurance Board |
| DBC | Diagnose Behandel Combinatie / Diagnosis Treatment Combination |
| DOT | DBC's op weg naar transparantie / DBCs On the way to transparency |
| FFS | Fee-for-service |
| FTE | Full-time equivalent |
| HAH | Hospital at home |
| HAS | Haute Autorité de Santé / National Authority for Health |
| HITH | Hospital in the home (term used in Australia) |
| ICD | International Classification of Diseases |
| MSVT | Verpleging in de thuissituatie, noodzakelijk in verband met medisch- specialistische zorg |
| NZA | Nederlandse Zorgautoriteit / Dutch Health Care Authorit |
| PMR | Patient medical record |
| RCT | Randomized controlled trial |
| SHI | Statutory Health Insurance |
| SR | Systematic review |
| SR(s) | Systematic review(s) |
| T2A | Tarification à l'activité / French DRG-based payment system |
| UHD | Hospital at home unit |
| VAED | Victorian admitted Episode Data |

# SCIENTIFIC REPORT

## INTRODUCTION

How to use this document?

This Scientific Report is not intended to be read as a stand-alone document, but as a complement to the Synthesis of this study. It gives a detailed account of the methods and results of each of the scientific building blocks underpinning the messages rendered in the Synthesis.

The context, problem description, as well as the discussion of the results and the conclusions are to be found in the Synthesis.

The Synthesis is published as a separate document on our website. It can be accessed from the same referral page as the current document.

## 1 NARRATIVE LITERATURE REVIEW ABOUT EFFECTIVENESS AND SAFETY

### 1.1 Objective of the chapter.

The objective of this chapter was to analyse the effectiveness and the safety of hospital at home (HAH) from systematic reviews. In addition, we paid attention to whether a specific target population could be identified.

### 1.2 Method

Effectiveness and safety were assessed based on a review of existing systematic reviews (SR).[a] Reviews were identified through a systematic literature search in four databases (Medline, Embase, Cinahl and Cochrane library). The databases were searched in June 2014 without language or date limits. Inclusion criteria are depicted in Table 1.

[a] Initially, we sought for all types of studies, but due to the large amount of references, we restricted the inclusion criteria further to systematic reviews only and dating from 2004 or more recent.

**Table 1 – Inclusion and exclusion criteria**

| | Inclusion | Exclusion |
|---|---|---|
| **P** | All type of patients that are indicated for/ require specialized medical care, that usually is given in a hospital environment | • Patients requiring pre-, peri- or postnatal care<br>• SRs focusing on terminally ill |
| **I** | • Hospital at home care=specialized medical care that usually is given in a hospital environment, but now is given in the home environment (including care homes)<br>• The intervention can be both of the early discharge type or admission avoiding type | All types of intermediate care facilities, such as revalidation centres and units in hospitals or nursing homes, hospital hotels, day care centres, etc. |
| **C** | Usual hospital care | Historical data |
| **O** | • Length of hospital stay<br>• Readmissions<br>• Adverse events/ patient safety<br>• Mortality/survival | |
| **T** | • Primary research: (cluster)randomized controlled trial<br>• Review articles that included randomized studies; furthermore, search strategy has to be reported and at least two databases were searched (of which one is certainly Pubmed/Medline) | • Pre-post comparisons<br>• Non-randomized comparative studies<br>• Historical comparisons<br>• Editorials<br>• Letters<br>• Conference proceedings |

Inclusion criteria were tested on a set of 100 references by two reviewers independently (PM and SG), after which some small clarifications were made. Then all titles/abstracts of references were screened by one reviewer (PM). Full-text of possible relevant references were obtained and again screened on inclusion criteria by one author (PM); in case of doubt a second reviewer (SG) was asked to check the study on inclusion criteria.

Included systematic reviews were methodologically assessed with Amstar[1] and conform to the KCE-process notes (http://processbook.kce.fgov.be/node/359) by one reviewer (PM).

Search date, searched databases, type and number of included studies, analysis and funding were recorded for each systematic review. Next to this, from each SR, applied **definition** of HAH was extracted as well as the **conclusions** the review authors stated.

Data from the systematic reviews were extracted and categorized along different axes:

1. Type of diseases included in SR (following the main categories of ICD-10)
2. Type of treatment applied in hospital
3. Type of treatment aim – disease phase
4. Type of age group
5. Type of HAH
6. Type of treatment/technique applied in HAH
7. Type of HAH-organization
8. Type of professionals involved (and required training; responsibilities; financing)
9. Country
10. Type of outcome

Data-analysis and synthesis was descriptive, along above axes.

## 1.3 RESULTS

### *1.3.1 Search and inclusion*

A detailed search strategy can be found in the first section of the supplement. Table 2 shows the number of hits obtained in the four databases. All 2477 references were checked on title/abstract by PM to see if they fulfilled inclusion criteria. One hundred forty five references were possibly relevant (of which 82 possible randomized controlled trials (RCTs) and 63 possible SRs.

Remarkable in the inclusion flow is that >900 references were about HAH, but were not RCT or SR; many of these references concern uncontrolled feasibility studies with HAH and most of them concluded that HAH is a feasible, safe option that is appreciated by patients (a few examples [2-6]).

As mentioned before, we sought for all types of studies, but due to the large amount of references and the limited time to perform this study, it was decided to restrict the inclusion criteria further to systematic reviews only and dating from 2004 or more recent and to exclude SRs focusing specifically on terminally ill and peri or postnatal care. Reviews focusing on terminally ill were excluded since the palliative care in Belgium is already well organized in inpatient and outpatient setting.[7] Peri or postnatal care were also excluded as another recent KCE project [8] discusses possible new care arrangements for these patients.

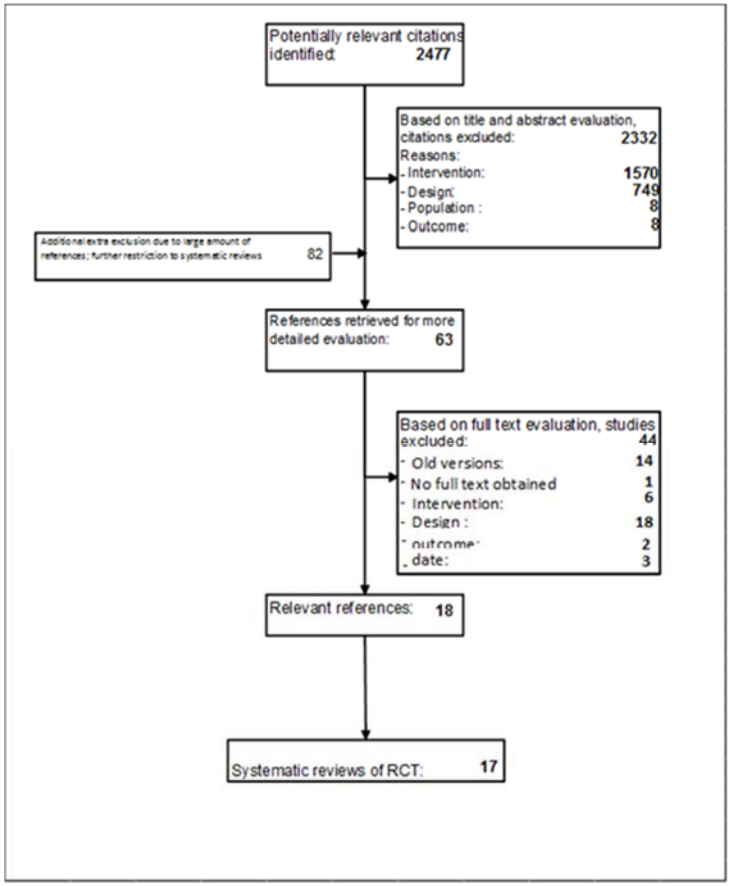
As next step, a closer look was taken at the 63 possible systematic review references. Some references concerned the same study with several updates. Older reviews on the same topic were removed and only the most recent update was kept. This reduced the number to 49 possible systematic reviews. Hereafter, full texts of these 49 SR were requested; one [9] could not be obtained.

The 48 obtained full-text SR were then screened on inclusion criteria and 18 references [10-27] were retained. One study was published in 2 manuscripts [23, 24], bringing the total of studies to 17. Inclusion flow of the full text assessment of the possible relevant systematic reviews is depicted in Figure 1 below.

**Table 2 – Obtained studies per database**

| Database | N hits |
|---|---|
| **OVID_MEDLINE** | 1166 |
| **EMBASE** | 1395 |
| **CINAHL** | 636 |
| **COCHRANE LIBRARY** | |
| **Cochrane-Econ** | 22 |
| **Cochrane_central** | 161 |
| **Cochrane_reviews** | 17 |
| **Cochrane_dare** | 6 |
| **TOTAL** | 3403 |
| | |
| **after deduplication** | 2477 |

**Figure 1 – Flow Chart**




### *1.3.2 Methodological assessment*

The following Box the items of the Amstar-instrument.[1]

**Box 1 – AMSTAR measurement tool to assess the methodological quality of systematic reviews.**

1. Was an 'a priori' design provided?
2. Was there duplicate study selection and data extraction?
3. Was a comprehensive literature search performed?
4. Was the status of publication (i.e. grey literature) used as an inclusion criterion?
5. Was a list of studies (included and excluded) provided?
6. Were the characteristics of the included studies provided?
7. Was the scientific quality of the included studies assessed and documented?
8. Was the scientific quality of the included studies used appropriately in formulating conclusions?
9. Were the methods used to combine the findings of studies appropriate?
10. Was the likelihood of publication bias assessed?
11. Was the conflict of interest stated?

Table 3 shows in green the criteria of the Amstar instrument that were met, and in the most right column the number of met criteria per included SR. The number of criteria met varied from 0 to 11; 4 systematic reviews [17, 21, 22, 26] had a score of 3 or lower and can be considered as reviews with high risk of bias; on the other hand 6 reviews [10, 13, 15, 19, 20, 27] scored 10 or more and can be regarded as very well performed systematic reviews.

**Table 3 – Evaluation of studies according to the Amstar instrument**

| Author | year | ams1 | ams2 | ams3 | ams4 | ams5 | ams6 | ams7 | ams8 | ams9 | ams10 | ams11 | AMS_TOT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Balaguer [10] | 2012 | | | | | | | | | | | | 10 |
| Caplan [11] | 2012 | | | | | | | | | | | | 5 |
| Damiani [12] | 2006 | | | | | | | | | | | | 5 |
| Fearon [13] | 2012 | | | | | | | | | | | | 10 |
| Hansson [14] | 2011 | | | | | | | | | | | | 6 |
| Jeppesen [15] | 2012 | | | | | | | | | | | | 10 |
| McCurdy [16] | 2012 | | | | | | | | | | | | 8 |
| McKernan [17] | 2008 | | | | | | | | | | | | 1 |
| Mowatt [18] | 2004 | | | | | | | | | | | | 8 |
| Othieno [19] | 2007 | | | | | | | | | | | | 10 |
| Parab [20] | 2013 | | | | | | | | | | | | 10 |
| Pironi [21] | 2012 | | | | | | | | | | | | 3 |
| Schmidt [22] | 2010 | | | | | | | | | | | | 2 |
| Shepperd [24] | 2008 | | | | | | | | | | | | 9 |
| Shepperd [25] | 2009 | | | | | | | | | | | | 9 |
| Tinker [26] | 2006 | | | | | | | | | | | | 0 |
| Vinson [27] | 2012 | | | | | | | | | | | | 11 |

### 1.3.3 Content-analysis SRs

#### 1.3.3.1 Type of diseases included in SRs

Some reviews focused on a particular disease group, like cystic fibrosis [10], chronic obstructive pulmonary disease (COPD) [15, 16, 26], deep vein thrombosis [19], kidney failure [18], stroke [13], pulmonary embolism [27], (different types of) cancer [14] or (different types of) cardiac pathologies [22]. Other reviews included studies in mixed patient populations [11, 12, 17, 20, 21, 24, 25]. Two reviews were restricted to children suffering from different types of diseases [14, 20].

In the SRs with mixed populations it was not always clear what types of patients were included or what exact type of intervention/technique was applied. But it can be stated that hospital-at-home has been applied to patients with many kind of diseases (respiratory, gastro-intestinal, cardiac, renal, surgical, infection, oncological, and many others) and varying from neonatal patients, children, adults, and elderly, to terminally ill patients.

#### 1.3.3.2 Type of treatment applied in hospital

Hospital at home studies were done in both surgical and non-surgical patients, as well in patients that visited the emergency department. For instance, the Caplan review [11] included at least 20 studies on "medical" patients and at least 10 studies on "surgical" patients.

#### 1.3.3.3 Type of treatment aim – disease phase

The HAH arrangements included in the reviews had in general a curative aim, but could also be applied to patients in a palliative phase. It has to be remarked that we excluded reviews that had a central focus on terminally ill (e.g. the Shepperd-review [28]).

#### 1.3.3.4 Type of age group

Two reviews [14, 20] were specifically targeted at children, the others included studies with patients from all age groups.

#### 1.3.3.5 Type of Hospital at Home

Some reviews gave a definition of hospital at home, while others did not.

Here are some of the definitions from the reviews:

- "Hospital in the home" (HITH) provides acute or subacute treatment in a patient's residence for a condition that would normally require admission to hospital.[11]
- A service that provides medical treatments relevant for childhood cancer by hospital- or community-based healthcare professionals who take an active part in the care in the patient's own home as an alternative to a hospital admission. [14]
- Hospital-at-home programs offer an alternative for patients who present to the emergency department (ED) with an exacerbation of COPD and require hospital admission for their treatment. Hospital-at-home programs provide patients with visits in their home by medical professionals (typically specialist nurses) who monitor the patients, alter patients' treatment plans if needed, and in some programs, provide additional care such as pulmonary rehabilitation, patient and caregiver education, and smoking cessation counselling. There are 2 types of hospital-at-home programs: admission avoidance and early discharge hospital-at-home. In the former, admission avoidance hospital-at-home, after patients are assessed in the ED, they are prescribed the necessary medications and additional care needed (e.g., oxygen therapy) and then sent home where they receive regular visits from a medical professional. In early discharge hospital-at-home, after being assessed in the ED, patients are admitted to the hospital where they receive the initial phase of their treatment. These patients are discharged into a hospital-at-home program before the exacerbation has resolved. In both cases, once the exacerbation has resolved, the patient is discharged from the hospital-at-home program and no longer receives visits in his/her home. In the models that exist to date, hospital-at-home programs differ from other home care programs because they deal with higher acuity patients who require higher acuity care, and because hospitals retain the medical and legal responsibility for patients. Furthermore, patients requiring home care services may require such services for long periods of time or indefinitely, whereas

patients in hospital-at-home programs require and receive the services for a short period of time only.[16]

- Admission avoidance HAH is a service that provides active treatment by health care professionals in the patient's home for a condition that otherwise would require acute hospital in-patient care, and always for a limited time period. In particular, HAH has to offer a specific service to patients in their home requiring health care professionals to take an active part in the patients' care. If HAH programs were not available then the patient would be admitted to an acute hospital ward.[24]
- 'Early discharge HAH' is a service that provides active treatment by health care professionals in the patient's home for a condition that otherwise would require acute hospital in-patient care. If HAH were not available then the patient would remain in an acute hospital ward. HAH is a service that provides active treatment by health care professionals in the patient's home for a condition that otherwise would require acute hospital in-patient care, and always for a limited time period. In particular, HAH has to offer a specific service to patients in their home requiring health care professionals to take an active part in the patients' care. If HAH programs were not available then the patient would not be discharged early from hospital and would remain on an acute hospital ward. [25]

Two reviews [24, 25] made a distinction between HAH interventions as 'hospital avoiding' or as 'early discharge', but most others did not so. As far as there is a distinction between the two, the reviews mostly did not contain sufficient information to categorize them into one of the two.

More important is that all systematic reviews start or end with some remarks about the encountered heterogeneity, ill-defined concepts and unclear described interventions and control conditions in their included studies; the heterogeneity concerned patient groups, organization and type of interventions and ways of measuring outcomes. This difficulty was found in systematic reviews that included all type of patients but also in reviews that focused on a single type of patients.

This heterogeneity can be illustrated by some quotes from the reviews:

> *"The literature is confusing because many studies on Hospital In The Home (HITH) do not use the term HITH (or any similar terms) and some studies use the term HITH but do not involve substitution for inhospital care." (mixed review [11])*

> *"the hospital at home schemes used in different primary studies differ considerably with regard to the organisation of health professionals and follow-up visits." (review specific on COPD-patients [15])*

#### *1.3.3.6 Type of treatment/technique applied in HAH*

Some reviews had a particular technique as main starting inclusion criterion, such as home haemodialysis [18], intravenous infusion/injection [17], home telemonitoring [22] or home parenteral nutrition [21]. Although the reviews had different starting points, they have in common that they included studies in which an intervention took place at the patients' home that normally would have been done in a hospital setting.

It is clear that many different types of "hospital care" were applied in the home situation, such as intravenous infusions of antibiotics or chemotherapy, haemodialysis, (tele)monitoring, wound care, blood transfusion, oxygen therapy, ventilator, rehabilitation or parenteral nutrition.

#### *1.3.3.7 Type of HAH-organization*

The reviews did not contain enough details about the organization of HAH and included studies in the SRs should here to be analysed. However, it appears that HAH could be organized as hospital based with hospital professionals giving care at home, or that HAH could be community based with community professionals giving care at home, with or without supervision and cooperation of hospital professionals. Many reviews state that there is wide variation in how HAH is organized, see also next paragraph.

#### *1.3.3.8 Type of professionals involved (and required training; responsibilities; financing)*

Most reviews did not gave exact specifications on the health care professionals that were involved in the hospital-at-home interventions and how they were organized. But it is anyhow clear that many different health care providers were involved, either hospital or community based, and in most nurses have a coordinating role. Also the reviews did not contain information about required training, responsibilities or the way hospital-at-

home was financed. Below four quotes to illustrate the diversity in hospital-at-home arrangements that was encountered in the reviews:

> *"There is variation in the way admission avoidance hospital at home is organised and how it relates to local health care providers. In the trials included in this review, seven transferred patients to hospital at home care from the emergency room and three directly from the community following referral by their primary care physician. Care was provided by a hospital outreach team, by a mix of outreach and community staff or by the general practitioner and community nursing staff. In two trials, the intervention was provided by an independent association of GPs. Physiotherapy care was provided in six of the interventions and occupational therapist care in four of the interventions. A social worker was part of the hospital at home team in six of the interventions. Access to a speech therapist was described in three of the interventions. One trial described access to a cultural link worker"* [24]

> *"The hospital at home schemes used in different primary studies differ considerably with regard to the organisation of health professionals and follow-up visits"* [15]

> *"In 13 trials care was provided in the patients' homes by a hospital outreach service, in nine trials by community services and in four trials care was coordinated by a hospital based stroke team or physician in conjunction with community based services. In each trial the care provided by the intervention was primarily nursing, but with additional care sometimes being provided by care assistants or home helps. Hospital at home interventions in 14 trials described employing specialist and dedicated nurses. Physiotherapy care was provided by 15 of the interventions and occupational therapist care by 15. A social worker was part of the hospital at home team in five of the interventions and two interventions included a dietician. Access to a speech therapist was described in four of the interventions. In one trial rehabilitation was provided by trained Red Cross volunteers."* [25]

> *"The HITH services varied from full multidisciplinary team care and care by partial teams to services with a single health worker, most often a nurse with doctor supervision. Some services included outpatient care and some involved parenteral self-administration of medications (such as antibiotics or heparin), but all involved health practitioners visiting the home and the control group being in hospital."* [11]

#### *1.3.3.9 Country*

It was not always clear from the reviews where the included studies originated from and for an exact overview included references should be checked. As far as the reviews contained country information, we can say that HAH studies have been performed in at least 23 different countries scattered around the world on every continent. It can be concluded that HAH is a worldwide phenomenon.

#### *1.3.3.10 Outcomes*

**Length of the hospital stay**

Effects of HAH on the length of the hospital stay was analysed in 9 reviews [10, 11, 13, 16, 19, 20, 24, 25, 27]. Due to heterogeneity most reviews could not meta-analyse the data and gave narrative descriptions. In two cases, meta-analyses on at least two included studies were performed:

- Fearon [13] (stroke) found a significant reduction in the length of hospital stay in the early discharge support group, which is approximately equivalent to seven days;
- Shepperd [25] meta-analysed four trials in stroke patients and found a significant reduction in hospital length of stay (mean difference in days - 6.68, 95% CI -10.19 to -3.17), four trials for patients recovering from orthopaedic surgery with a significant mean reduction in hospital length of stay of-4.44 days (95% CI -6.37 to -2.51), both in favour of the HAH group.

In the other reviews, the description of the studies are in general towards a shorter length of stay in the HAH-groups.

**Readmissions**

Readmissions was an outcome in 12 reviews [10, 11, 13, 15-18, 20, 22, 24-26]. Six reviews performed meta-analyses on at least two included studies:

- Caplan [11] (mix) states "The reduction in readmission rates (OR, 0.75; 95% CI 0.59 to 0.95; P = 0.02) in favour of HITH was associated with significant heterogeneity by one test ($\chi^2$ = 73.27; P = 0.001) but not the

other (I2 =45%) owing to larger reductions in readmissions in psychiatric (OR, 0.29; 95% CI 0.05 to 1.65; P = 0.16) compared with medical (OR, 0.76; 95% CI 0.60 to 0.97; P = 0.02), surgical (OR, 0.66; 95% CI 0.36 to 1.22; P = 0.18) and rehabilitation studies (OR, 0.96; 95% CI 0.70 to 1.31; P = 0.79). The absolute reduction in readmissions was 2.09%";[11]

- Fearon[13] (stroke) found that readmission rates were very similar (31%versus 28%) between the early supported discharge group and conventional care groups
- Jeppesen[15] (COPD) found "a small but significant reduction in hospital readmission in favour of hospital at home (risk ratio (RR) 0.76; 95% CI 0.59 to 0.99; P = 0.04)";[15]
- McCurdy[16] (COPD) states that "there is a non-significant reduction in the risk of hospital readmissions during the overall follow-up period (2 to 6 months) in the hospital-at-home group compared with the inpatient hospital group (RR, 0.90; 95% CI 0.70–1.16; P = 0.41);"[16]
- Shepperd[24] (mix/admission avoidance) states "A non-significant increase in admissions was observed for patients allocated to hospital at home (HR 1.49, 95% CI 0.96 to 2.33)";[24]
- Shepperd [25] (mix/early discharge) found no significant difference in readmission rates in stroke patients between those allocated to HAH rather than to in-patient care and a significant increase in readmissions for mixed elderly allocated to HAH rather than in-patient care (adjusted for age and sex,HR1.57; 95% CI 1.10 to 2.24).

So, the results on readmissions are mixed and the two reviews on COPD come to conflicting results.

It can be concluded that there is no firm evidence that HAH has positive effects on readmissions.

### Mortality

Mortality was an outcome in 13 reviews [10-13, 15, 16, 18, 21, 22, 24, 25, 27]. Eight reviews performed meta-analyses on at least two included studies:

- Caplan[11] (mix) states: "There was a clinically significant reduction in mortality (OR, 0.81; 95% CI 0.69 to 0.95; P = 0.008) in favour of HITH, giving a 19% relative reduction and 2.01% absolute reduction in mortality; the number needed to treat at home to prevent one death was 50. No significant heterogeneity was observed in the mortality data (P > 0.99), and there were similar reductions in mortality in medical (OR, 0.79; 95% CI, 0.65 to 0.97; P = 0.02), surgical (OR, 0.78; 95% CI 0.29 to 2.10; P = 0.62) and rehabilitation studies (OR, 0.83; 95% CI 0.63 to 1.08; P = 0.17), with no significant heterogeneity in these subgroups. Analysis by degree of substitution, age of patients and year of publication did not reveal marked shifts, although there was a significant reduction in mortality in the middle age group (OR, 0.70; 95% CI 0.51 to 0.95; P = 0.02)".[11]
- Damiani[12] (mix) found no difference in terms of mortality (Risk Difference: -0.01 95% CI -0.03, 0.02);
- Fearon[13] (stroke) found no significant difference in case-fatality between the Early Supported Discharge group and conventional services;
- Jeppesen[15] (COPD) found no significant difference in mortality rates;
- McCurdy[16] (COPD) states: "The pooled results show a non-significant reduction in the risk of death during the overall follow-up period (range, 2–6 months) in the hospital-at-home group compared with the inpatient hospital group (RR, 0.68; 95% CI 0.41–1.12; P = 0.13)";[16]
- Othieno [19] (deep vein thrombosis) found a lower non-significant mortality for the HAH group;
- Shepperd [24] (mix/admission avoidance) found that patients allocated to HAH had a significantly reduced risk of death at six months follow-up;
- Shepperd [25] (mix/early discharge) found no significant differences in mortality.

So most reviews found no differences in mortality, but Caplan [11] and Shepperd [24] found significant lower mortality in the HAH groups.

### Safety

Ten reviews looked at safety outcomes; heterogeneity inhibited review authors to perform meta-analyses. In general, there were too few complications or adverse events in most trials to find differences between groups.[10, 14, 16-19, 21, 24, 25, 27]

### Quality of life

Quality of life in patients was analysed in 13 reviews [10, 13-20, 22, 24-26]. Also here, heterogeneity prevented most authors to perform meta-analysis. In general, no differences in quality of life of patients was found, except for the review on home hemodialysis [18] that, based on 16 studies, concluded that people on home hemodialysis generally experienced a better quality of life.

Quality of life in carers was assessed in 5 reviews [11, 13, 14, 20, 25]. In general, no differences between groups were reported; 1 review [11] performed a meta-analysis with 7 studies and found no statistical difference.

Therefore, HAH seems not to affect quality of life more or less than in control groups; except maybe for home hemodialysis for which it seems that HAH improves the quality of life of patients.

### Satisfaction

Patient satisfaction was analysed in 15 reviews [11-20, 22, 24-27]. All found that patients in the HAH group were even or more satisfied than in the control group. Also patients preferred most of the times HAH above hospital. However, the reviews stressed that it was difficult to interpret these findings, since in most included primary studies only patients that consented were included in the HAH, causing bias towards the most HAH-favorite patients in the HAH-group.

Carer satisfaction was assessed in 9 reviews [11, 13-16, 18, 20, 24, 25]. Most reviews found no differences, although the review of Parab et al. [20] found that parents of children with a chronic illness were more satisfied with the home condition and Hansson et al [14] found that most parents and children preferred the home setting. But also here, reviewers warned for possible selection bias in the HAH-group.

So, the general picture is that there are no data from the reviews that showed that HAH impedes patient or carer satisfaction.

## 1.4 Discussion

A striking finding was that all systematic reviews started or ended with some remarks about the encountered heterogeneity, ill-defined concepts and unclear described interventions and control conditions in their included studies; the heterogeneity concerned patient groups, organization and type of interventions and ways of measuring outcomes. This difficulty was found in systematic reviews that included all type of patients but also in reviews that focused on a single type of patients.

So it looks that the HAH concept contains much diversity. Another way to illustrate the diversity is by the number of included studies varying from 1 [10] to 61 [11] in the different SRs. Although the number and type of included studies were not always explicitly clear, at least 197 articles were included in one or more of the 17 SRs. Most of these articles were included in only one review and only a few were included in two or more reviews; 1 reference was included in 6 reviews and only 9 have been included in at least 4 reviews.

It is surprising that SRs that had a specific technique as starting point, rather than a general 'HAH' concept included studies that are not always included by the more general reviews. Probably this is caused by the way the search strategies were developed and if the more general queries were sensitive enough to find studies on specific techniques. Similarly, the review [10] that focused on cystic fibrosis included a study in which home intravenous antibiotics was applied, but that reference was not included in the review [17] that focused on home intravenous therapy and in only one [11] of the mixed reviews. At least it can be stated that all reviews, especially the more general ones on mixed populations, have a rather high chance that they missed relevant studies. It is not clear however to what extent the missed studies would change the conclusions either in another direction or rather in firmer effect sizes.

Even in the disease specific SRs the number of included references may vary, e.g. the review of Jeppesen 2012 [15] and the review of McCurdy 2012 [16] are both on acute exacerbations of COPD-patients: both are well performed systematic reviews, both ran their searches until October 2010 and August 2010 in almost the same databases: Jeppesen included 8 (RCTs) and McCurdy 13 studies (6 SRs and 7 RCTs); both reviews had only 5 included RCTs in common; this may be due to slightly different inclusion criteria or to different interpretation of the inclusion criteria. But more worrying is the fact that these two reviews come to different conclusions (see Table 4).

**Table 4 – Conclusions of two reviews on COPD**

| Jeppesen 2012 [15] | McCurdy 2012 [16] |
|---|---|
| Selected patients presenting to hospital emergency departments with acute exacerbations of COPD can be safely and successfully treated at home with support from respiratory nurses.<br>We found evidence of moderate quality that hospital at home may be advantageous with respect to readmission rates in these patients.<br>Treatment of acute exacerbation of COPD in hospital at home also show a trend towards reduced mortality rate when compared with conventional inpatient treatment, but these results did not reach statistical significance (moderate quality evidence).<br>For other outcomes than readmission and mortality rate, we assessed the evidence to be of low or very low quality. | The following conclusions are based on low to very low quality of evidence. The reviewed evidence was based on RCTs that were inadequately powered to observe differences between hospital-at-home and inpatient hospital care for most outcomes, so there is a strong possibility of type II error. Given the low to very low quality of evidence, these conclusions must be considered with caution:<br>• Approximately 21% to 37% of patients with acute exacerbations of COPD who present to the ED may be eligible for hospital-at-home care;<br>• Of the patients who are eligible for care, some may refuse to participate in hospital-at-home care.<br>• Eligibility for hospital-at-home care may be increased depending on the design of the hospital-at- home program, such as the size of the geographical service area for hospital-at-home and the hours of operation for patient assessment and entry into hospital-at-home.;<br>• Hospital-at-home care for acute exacerbations of COPD was associated with a non-significant reduction in the risk of mortality and hospital readmissions compared with inpatient hospital care during 2- to 6-month follow-up.<br>• Limited, very low quality evidence suggests that hospital readmissions are delayed in patients who received hospital-at-home care compared with those who received inpatient hospital care (mean additional days before readmission comparing hospital-at-home to inpatient hospital care ranged from 4 to 38 days).<br>• There is insufficient evidence to determine whether hospital-at-home care, compared with inpatient hospital care, is associated with improved lung function.<br>• The majority of studies did not find significant differences between hospital-at-home and inpatient hospital care for a variety of health-related quality of life measures at follow-up. However, follow-up may have been too late to observe an impact of hospital-at-home care on quality of life.<br>• A conclusion about the impact of hospital-at-home care on length of stay for the initial exacerbation (defined as days in hospital or days in hospital plus hospital-at-home care for inpatient hospital and hospital-at-home, respectively) could not be determined because of limited and inconsistent evidence.<br>• Patient and caregiver satisfaction with care is high for both hospital-at-home and inpatient hospital care. |

These different conclusions from the disease specific SRs also holds true for the SRs with mixed populations; hereto the recent reviews of Shepperd 2008 [24], Shepperd 2009 [25] and Caplan 2012 [11] are taken as example in the Table 5 below.

Earlier Leff[29] remarked that "*Many disparate models have been labelled as hospital at home in the international literature. These include outpatient infusion centres, physician office-based intravenous infusion services, early discharge programs, and substitutive or admission avoidance models. This variety has engendered controversy about the definition of hospital-at-home care, as well as its perceived overall effectiveness*".[29]

Although there are differences in SR-conclusions and a lot of heterogeneity in all kind of respect, none of the reviews come to the conclusion that a HAH modality leads to worse patient outcomes than a classical hospitalisation.

**Table 5 – Conclusions from reviews on mixed population**

| SR | Shepperd 2008 (admission avoidance) | Shepperd 2009 (early discharge) | Caplan 2012 |
|---|---|---|---|
| **N included studies** | N=10 | N=26 | N=61 |
| **conclusion** | There is no evidence from the analysis to suggest that admission avoidance hospital at home leads to outcomes that differ from inpatient hospital care. | Despite increasing interest in the potential of early discharge hospital at home services as a cheaper alternative to in-patient care, this review provides insufficient objective evidence of economic benefit or improved health outcomes. | HITH is associated with reductions in mortality, readmission rates and cost, and increases in patient and carer satisfaction, but no change in carer burden |

**Key points: Narrative literature review**

- **HAH is not a well-defined concept and has overlap with other interventions/concepts that fit in the general topic of reducing, shortening and replacing hospital stays and keeping care close to home, such as “discharge planning”, “nurse-led care”, “care pathways”, “intermediate care” and “readmissions reduction interventions”.**
- **HAH can be applied to all kind of patients and pathologies.**
- **HAH may contain many different techniques and interventions.**
- **HAH can be organized in many different ways, depending on local circumstances and opportunities.**
- **HAH is a worldwide spread phenomenon.**
- **HAH seems to have similar (with some tendencies to better) outcomes as in hospital treatment regarding length of stay, readmissions, mortality and safety. However, in the many studies and the several systematic reviews there is large heterogeneity regarding many aspects (i.e. ill-defined concepts and unclear described interventions and control conditions in their included studies; patient groups, organization and type of interventions and ways of measuring outcomes). As a consequence, evidence must be considered with caution and future studies should try to overcome this limitation.**

## 1.5 Limitation

- **This literature review was limited to search for information on the effectiveness and the safety of HAH in systematic reviews and not directly in primary research studies. Moreover, the focus was on systematic review of RCTs and not of other designs. This choice was done mostly for pragmatic reasons, related to the limited time to perform the study.**
- **Cost-(effectiveness) studies were out-of-scope of this reasearch because this will depend on the way HAH will be organized and financed in Belgium and it is premature to assess such a question now (results in other countries are not transferable to Belgium).**

# 2 INTERNATIONAL COMPARISON

The objective of this section is to identify what lessons can be learned from international experience in HAH. The objective is to understand the ways in which other countries have acted upon the challenge of redesigning healthcare systems to organize acute hospital care at home. This chapter summarizes the findings from a review of the organizational models for HAH in a selection of countries/regions. For a detailed overview per country/region selected and detailed references, the reader is referred to the supplement of this report.

## 2.1 Methods

### *2.1.1 Analytical framework*

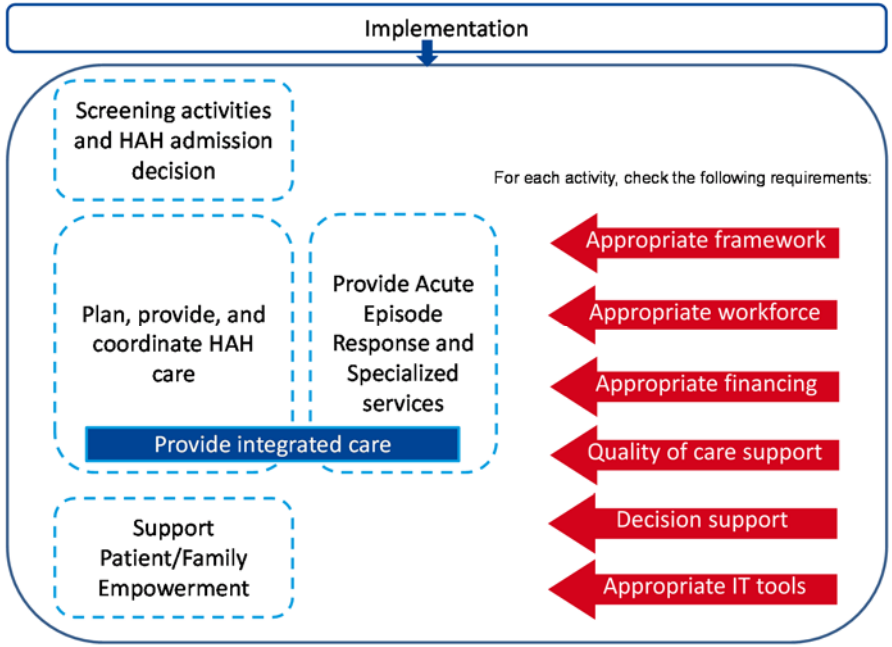
The first step of this international comparison was to determine which information was needed to have a complete view of how HAH is organized and implemented in other countries. Elements of HAH organization were classified according to the list of functional activities and requirements that are necessary to provide high-quality and adapted services to patients, developed in a previous KCE study[30] and adapted for this report (see the supplement of this report for more details and Figure 2).

A scoping review was performed to find information for all aspects determined in the analytic framework. Information for this section was identified in a three step procedure:

- Websites of government institutions and professional associations were screened (sources can be found in the report supplement).
- National experts with large experience in HAH delivery (field actors who also had a large knowledge of the legislation) or who worked as policy advisors in the HAH sector validated data found in the previous step. Contacts with these national experts were not only used to validate the information but also to obtain more precise or additional data. Persons/organizations contacted can be found in the report supplement.
- Third, the comparison and discussion between the different countries' policies was submitted to experts in the field.

Evaluation reports of HAH programs emanating from authorities were also reviewed. When available, lessons learned from these evaluations are reported for each section.

**Figure 2 – List of functional activities and requirements to provide high-quality services to patients in HAH**




### *2.1.2 Selection of countries*

The selection of countries was based on the following criteria:

- The country has developed a model of care that corresponds to the concept of HAH found in the literature (see Chapter 1 for more details);
- This model of care has a long history in the country.

Policies in four countries were reviewed. France and Spain were selected because a recent European report on home care[31] pointed out that HAH has a long history and is a growing alternative to hospital care in both countries.

Outside Europe, Australia and the United States are often cited in papers on HAH. Between these two countries, it was chosen to select Australia because HAH started from pilot projects in a way that corresponds to the current situation in Belgium (financing for pilot projects will be launched in 2015 to gather experience on the feasibility of "alternatives to hospitalization").

The Netherlands was also included for their long experience with the delivery of complex care at home. The Netherlands has not implemented HAH structures as such, but the provision of complex care is built around acts or interventions that required the involvement of different actors and was an interesting example for Belgium.

The analysis of HAH in Spain and Australia was limited to its organization in selected federated authorities. Giving the time constraints of the project and the decentralized organization of HAH, it was not possible to review the policies in all regions within these countries. Final selection included:

- At country level, France (FR) and The Netherlands (NL).
- At a regional level, the Autonomous communities of Valencia (VAL) and the Basque country (BAS) in Spain, and the state of Victoria in Australia (VIC).

## 2.2 Health systems in brief

This section aims to provide the reader with some general information on the health care system of the countries included in this international comparison. Information presented was selected in order to help the reader better understand the place of HAH in the health care system. A more detailed description of the health care system in the different countries can be found in the report supplement.

The countries selected for this report can be classified into different systems according to their financing mechanism: 1) National Health Service (NHS) with general tax revenue as the main source of financing, high involvement of the state in regulation and provision of health services (Spain), 2) National Health Insurance system similar to NHS in financing but relying more in the private sector for provision of services (Australia) and Social Health Insurance (SHI) with social security contributions as the main financing source (France and the Netherlands).

### 2.2.1 *Hospital financing*

The hospital financing in France, the Netherlands and Victoria includes activity-based payments (ABP) that are linked to the resources used during the care episode of a homogenous groups of patients (clinically meaningful groups) and specific payments for a limited number of activities (e.g. teaching and medical education). The ABP covers hospital's activities but their scope varies both in terms of what is included and in the definition of the homogenous groups of patients (see Table 6).
In the AC of Valencia and the Basque Country, public hospitals receive a global budget that reflects the hospital's structural characteristics (namely its equipment, size, etc.,) and historical cost. Hospital managers have some flexibility when allocating resources within the hospital but must respect the service provision agreements established with the health care authorities.

### 2.2.2 *Home nursing care*

This section illustrates the organization of home nursing care (curative). The description does not encompassed the organization of long-term care. However in practice, actors involved in home nurse curative health care often are involved in providing long-term care.

In all countries, home nursing care is usually provided by non-for-profit community organizations or independent nurses and to a lesser extent by private (sometimes for-profit) organizations. Independent nurses often work in collaboration with established community organizations. In France and the Netherlands, community organizations mostly include nurses and aid-nurses and in limited cases allied health care providers or physicians. In Victoria and in the Autonomous communities of Valencia and the Basque country, different networks of services providers encompass home nursing activities. Organizations providing home nursing care are usually integrated in health care networks that include hospitals in Victoria and in primary care centres that include general practitioners in the autonomous communities.

In France, the financing of the "service de soins infirmiers à domicile (SSIAD)" is based on lump-sum per place and per day that encompasses expenses relating to nurse care time, salaries for the service employees, travel costs, required medical supplies and other general services. The SSIAD only provide services to people aged 60 years or older or to disable persons. SSIAD are medico-social facilities organized by public or private, for-profit or non-for-profit groups. The fixed price per place does not vary with the patient's socio-economic characteristics or their health status. Additional services provided to patients are separately financed by the health insurance. The payments for nurse acts delivered by independent nurses and by groups of independent nurses take the form of fee-for-service.

In the Netherlands, the coverage of nurse activities is currently being reorganised and will be centralized under the Health Insurance Act (Zvw). The exact financing for home nursing care is being discussed. Before 1 January 2015, financing of home nursing was shared between the Health Insurance Act (Zvw) and the long-term care insurance (Exceptional Medical Expenses Act (AWBZ)). Providers of home nursing care were mostly financed using fee-for-services based on the services provided and the patient' care needs. Health care authorities establish maximum fee-for-service per hour for the different types of care provided. In addition, health insurers negotiate and contract services from home care providers.

In Victoria, financing of the community organizations (Community health services (CHSs)) delivering nurse care is based on a unit price per contact hour (fee-for-service per hour). In addition, annual targets based on contact hours and cash-flows funds throughout the year up to the target are set per service. The community organization can receive additional funding for service provision relating to specific programs. These programs may include post-acute or sub-acute services required following a hospitalization as well as follow-up to avoid hospital admission for chronic care patients. Funding arrangements include population-needs-based approach with an activity/output-based (for post-acute care services (PAC)) as well as block grants (for sub-acute ambulatory services (SACS) and hospital admission risk program (HARP)). Delivery of care for these specific programs may also be provided by separated service providers.

The Department of Health of the autonomous community in Spain designates a yearly budget to cover the costs of "primary health care centres"[b] that are in charge to provide primary care services within defined catchment area. The budgets allocated to each catchment area are calculated based on a capitation system. Delivery of primary care services, including home nursing care is the responsibility of the primary care teams working in the centres. All of the staff working in the centre are employees and their salary depends on their qualification level. The primary care team is composed by general practitioners, nurses and other care providers (e.g. social workers). The team performs a need's assessments and establishes the amount of time to be dedicated by nurses in order to cover care needs at home. Nurses are responsible to provide a large array of services that vary from curative care, chronic care, preventive care, support, etc.

### 2.2.3 General practitioner (GP)

Organization of general practice differs in the countries included in the international comparison. In France, 68% of all GPs are self-employed and those who are salaried most often work in hospitals. Self-employed physicians are paid by patients on a fee-for-service basis for the services they provide. Most GPs work in private practices. However, more group practices and to lesser extent multidisciplinary practices are seeing the light of day in France in the last two decades.

In the Netherlands, primary care have a strong position and the GP, as gatekeeper, play a pivotal role in primary care and in the health care system in general. Even if in the past GP used to work alone, since the 1970s, group practices have become popular. The remuneration of GP is a combination of capitation fees, fee-for-services (consultation fees, contributions for activities that either increase efficiency of GP or substitute for secondary care, and compensation for out-of-hours care (mainly per hour). Some GP are salaried in GP practice or primary care centre.

[b] Primary care centres are called "Centro de salud – Osasun Zentroa" in the Basque country and "Centros de salud – Centre de Salut in the AC of Valencia"

In Victoria, GPs can work in private practices as well as in the CHS's (see previous section). About 40% of all CHS's offer general practice services. The Medical Benefits Schedule (MBS) fixes different fee-for-services schedules according to patients' needs (e.g. required time for consultation) and on the tasks performed by the physician. GPs can be self-employed or salaried. CHSs can directly employ GPs or contract services with those working as self-employed.

In Spain, GPs work in primary health care centres along with nurses and other care providers (e.g. social workers). The GP and other professionals working in the primary healthcare centre deliver different types of curative and preventive care. As mentioned in the previous section, payment to primary health care centres is based on a capitation system.

In Spain, the Netherlands and Australia, the GP are key gatekeepers in the access to other healthcare services. In France, a semi-gatekeeping system is in place, i.e. financial incentives are provided to people to visit their "*preferred doctor*" (usually a GP) prior to consulting a specialist (called the preferred doctor scheme).

**Table 6 – Selected characteristics of the health care system in 2014**

| | France | Spain (AC Valencia – Basque country) | Netherlands | Australia (Victoria) |
|---|---|---|---|---|
| **Health care system** | SHI | NHS | SHI | NHI |
| **Hospital system** | | | | |
| **Funding** | • Activity based budget<br>• Additional funding (e.g. teaching and research, new technology, etc.). | • Global budget based on hospital structural characteristics and historical costs.<br>• Contract-programme (similar to bloc-grants) attach financing to specific objectives (Basque country). | • Activity based budget<br>• Additional funding (e.g. teaching and research, new technology, etc.). | • Activity based budget<br>• Additional funding (e.g. teaching and research, new technology, etc.).<br>• Capped annual budget throughput target |
| **Remuneration for medical specialists** | • Public and private non-profit hospitals: salaried<br>• Private for-profit hospitals: Fee-for-service | • Public and private non-profit hospitals: salaried<br>• Private for-profit hospitals: Fee-for-service | • Salaried<br>• Self-Employed medical specialist: produced DBCs/DOT with normative tariff and time | • Public and private non-profit hospitals: salaried<br>• Private for-profit hospitals: Fee-for-service |
| **General practitioner** | | | | |
| **Providers** | • In general working in private practice | • Primary healthcare centre | • Private practice | • Private practice |

| | | | | |
|---|---|---|---|---|
| | | | • Group practice / primary healthcare centre | • Community health services (CHSs) |
| **Employment status** | In general, self-employed | In general, salaried | Self-employed and salaried | Self-employed and salaried |
| **Gatekeeping** | Financial incentives | Yes | Yes | Yes |
| **Funding** | Fee-for-service[3] | Capitation for primary healthcare centres | Mix of a capitation and fee-for-service system | Fee-for-service established according to different criteria and depending on the type of practise (e.g. working in CHS) |
| **Home nursing care** | | | | |
| **Providers*** | • Independent nurses (Infirmiers Diplômés d'Etat Libéraux (IDEL))<br>• Local non-profit organisation (Centre de Soins infirmiers – CSI)<br>• Public and private, for/non-profit home nursing care services (service de soins infirmiers à domicile (SSIAD)). | • Primary healthcare centre | • Independent nurses (*Zelfstandig verpleegkundige*)<br>• Non-profit community nursing organization operating under nationally organised umbrellas (*kruisverenigingen*).<br>• Small scale local nursing initiatives (*team van wijkverpleegkundigen)* | • Community health services (CHSs) |
| **Funding** | • Fee-for-service<br>• Lump-sum per place and per day | • Capitation for primary healthcare centres | • Fee-for-service per hour based on services and patient's needs (maximum amount is established)<br>• Contracts and negotiations between health insurers and community organizations | • Fee-for-service per hour<br>• Annual targets<br>• Additional funding depending on care delivery relating to specific programs (e.g. block grants, activity-based funding). |
| **Organization of a catchment for service provision** | No | Yes, for both inpatient and outpatient care | No | Yes, for both inpatient and outpatient care |

*[1] T2A= Tarification à l'activité (Activity based tariff) [1] DBC= Diagnose Behandel Combinatie (Diagnosis treatment combination) DOT= "DBC's Opweg naar Transparantie" (DBCs On the way to Transparency) CSI= Non-profit organisation of nurses (Centre de Soins infirmiers – CSI).*Outside HAH programs.[3]Only applies to self-employed GP*

## 2.3 Objectives of HAH implementation

Reasons highlighted by health authorities to develop HAH can be grouped into two categories:

- On the supply side, HAH can be seen as tool to overcome bed shortage in overcrowded hospitals. In line with this, HAH are also seen as a way to reduce the length of stays and/or avoid patient's admission in a hospital as well as reduce healthcare expenditures.
- On the demand side, HAH is seen as a way to allow patients to stay longer at home and to better respond to their care needs and preferences. A general assumption for HAH is that patients prefer to receive care as close to home as possible.

In addition, a reason and a driver to envisage transferring care from the hospital to the patient's own environment was also that technological progress in the healthcare field may facilitate the delivery of medical care beyond the hospital's walls.

**Key points: Objectives of HAH implementation**

- **For health care authorities, HAH is expected to help overcome bed shortage in overcrowded hospitals and to be a "less costly" alternative than inpatient care. For patients, HAH is expected to allow them to stay longer at home and to better respond to their care needs and preferences.**

## 2.4 Various models of HAH organization

**From a pilot project to a structured delivery of HAH**

The development of HAH was progressive in each country, usually beginning with pilot initiatives mostly funded by health authorities. The evolution from pilot projects into permanent programs has required to progressively built bridges with other health care providers and to a large extent depends on health authority's willingness and capacity to introduce new regulations to incentivize their development. So HAH is not something that was "dropped from above" but grew from the bottom.

**Multiple organization structures for delivery of HAH**

There is great variability in the way HAH are organized. Different models of organization of HAH were identified:

- Between countries/regions, but also
- Within the same country/region.

A variety of tries to categorise HAH organization models can be found in Australia. The first try dates from 1999-2000 and was based on a selection of organization characteristics (e.g. ownerships; specialization level; etc.). The latest intend was rather based on objectives (admission avoidance and early discharge).

HAH programs may have a generalist or specialist profile. Unlike generalist programs, HAH specialised programs usually provide a more limited array of interventions that respond to the needs of specific groups of patients.

In France, the AC of Valencia, the Basque Country and Victoria, HAH is organized within the boundaries of a facility while in the Netherlands it is built around acts or interventions that required the involvement of different actors.

In France, HAH programs are recognised under a specific definition/status by the Law, namely as "a hospital care facility without accommodations". This specific definition is accorded to a HAH program, independently of its organizing authority (e.g. public, private). They can be autonomous or be attached to a health care structure (about 60% of all HAH programs depend directly of a hospital). HAH programs in HAH have a generalist profile (see also section 2.6.1).

In the AC of Valencia and the Basque country, HAH programs are hospital-based medical units providing a wide array of services (generalist profile) established in public hospitals. This hospital-based medical unit works as any unit of the hospital. In the AC of Valencia hospitals are managed by private groups (five hospitals, each with one accredited HAH program) and few private organizations provide HAH under the request of the authorities.

In Victoria, all HAH programs are also directly linked to a hospital. Different types of arrangement exist including HAH programs established as a hospital-based medical unit with a generalist profile (much like in Spain), as an extension of a specific unit in the hospital and to a lesser extent organized via specific arrangements with community care providers. HAH programs working as an extension of a hospital unit provide services required to cover

care needs of the patients coming from the unit to which they are attached to.

In the Netherlands, specialised "technical teams" working as a part of the community nursing organizations provide HAH following a demand (prescription) of the hospital medical specialist. Noteworthy, for reimbursement purposes the same intervention may be considered hospital-based care when prescribed by the medical specialist and not when prescribed by the general practitioner.

**Table 7 – Basic characteristics of HAH in selected countries**

| | France | AC of Valencia and Basque Country (Spain ) | The Netherlands | Victoria (Australia) |
|---|---|---|---|---|
| Terminology | Hospitalisation à domicile (HAD) | Hospitalización a domicilio, Hospitalización domiciliaria | Multiple terms have been used including: *Ziekenhuisverplaatste zorg, Medisch Specialistische verpleging thuis (MSVT)* | Hospital in the home |
| Planning of HAH | Centralized regulation, but actual organization at regional level (Regional health care authorities – "*Agences Régionales de Santé (ARS*)") | Regulation and organization at regional level (Autonomous communities *"Comunidades autónomas"*) | Centralized regulation, but actual organization at regional level | Regulation and organization at regional level (Six states and the two territory governments) |
| Design | HAH organized within the boundaries of a facility that may or not be linked to a hospital.<br>• Status defined as a hospital care facility without accommodations.<br>• Most structures depend directly of a hospital (60%). | HAH organized within the boundaries of a facility always directly linked to a hospital.<br>• Hospital-based medical unit | HAH organized around acts or interventions that required the involvement of different actors.<br>• Require a prescription from a hospital-based medical specialist<br>• Delivery mostly via community nursing organizations | HAH organized within the boundaries of a facility always directly linked to a hospital.<br>• Most often organized as hospital-based medical unit or extension of an existing hospital unit;<br>• Limited cases organized via agreements between hospitals (small size) and community nursing organizations. |
| Type of profile | Generalist | Generalist | – | Generalist and specialist |

**Key points: Development of HAH**

- **Development of HAH programs is linked to a proactive attitude of health care organizations, health care professionals and solitary individual initiatives. In all countries, there were first scattered experiments and legislation/structural financing were progressively developed. Integration of HAH programs with different care providers (e.g. hospitals, community nursing organization) is linked to both the first initiatives as well as to the proactive position of health care authorities.**
- **There is a great variability in the way that HAH is organized between and within countries/regions. HAH design and evolution remains dependent of managers of services to which they are attached to as well as on health authorities' regulations.**

## 2.5 Screening activities and HAH admission decision

### *2.5.1 Screening activities and patient referral process*

Table 8 illustrates the rules regarding patient referral in the different countries. Medical specialist and usually GPs (except for the Netherlands) can refer patients to a HAH program. In the Netherlands, prescription and patient referral are closely linked as an intervention may be classified as hospital-based care only if prescribed by the medical specialist. The referral model in the AC of Valencia is even more open as any health care provider or individual (patient and family) may initiate an admission demand to HAH.

Data on patient referral illustrate that few health care professionals working outside of the hospital refer patients to HAH (see Table 8). Efforts, in France, the AC of Valencia and Victoria work towards increasing referral from emergency services and from outside the hospital. In order to do so, early screening initiatives in emergency departments are being put in place. An interesting example of this effort concerns the close link established between HAH units and emergency services in Valencia. HAH "beds" are attributed in priority to patients from these services in order to attain objectives related to the reducing of the length of stay.

**Table 8 – Actors intervening in patient referral**

| | France | Valencia & Basque country | The Netherlands | Victoria |
|---|---|---|---|---|
| **Patient referral** | | | | |
| • Medical specialist | Yes | Yes | Yes | Yes |
| • GP | Yes | Yes | No | Yes |
| • Community services (nurses) | No | Yes | No | No |
| • Request from the patient or the family | No | Yes[1] | No | No |
| **% of patient referral from a hospital service or medical specialist** | 70% (2011) | 81.4% (2013) | *100%*[2] | N.A. |

*[1]For the AC of Valencia only.[2] Only medical specialist can refer patients .N.A. not available*

### 2.5.2 Admission decision

Even in countries with explicit selection or exclusion criteria, there is an important room for interpretation and evaluation of the patient by a HAH team member and in some cases by the HAH coordinator remains the ultimate and the most important tool when assessing the complexity of the intervention, and their subsequent admission. Table 9 includes an overview of elements taken into account in the patient's assessment that takes place before HAH admission. Assessment of patients clinical, social an environmental living conditions always precedes admission to HAH. Neither patient's age or gender nor a specific pathology are included among criteria for HAH admission. However, in Victoria some HAH programs may work as an extension of a specific ward within the hospital. In this case, their scope of action may be limited to provide care to patients following a specific intervention (e.g. knee replacement) or to continue a specific treatment. As mentioned above, medical criteria required to enter a HAH program refers to the need for complex-care similar to that provided in inpatient settings. In addition, it usually mentioned that the patient's condition must be stable.

Beside medical criteria, social and environmental conditions are assessed before patient's admission. Living conditions and the presence of informal caregivers are assessed and often, the presence of informal caregivers is required. In addition, access to a telephone or any other way of direct communication with the patients is usually required to be admitted. Last but not least, admission to HAH depend upon whether patients accept to be cared for at home. Patients sign a consent that is recorded in their patient file.

**Table 9 – Summary of main elements taken into account upon patient assessment**

| | France | Valencia | Netherlands | Victoria |
|---|---|---|---|---|
| **Does admission depend on patient's age or gender?** | No | No | No | No |
| **Is patient assessment required for admission?** | Yes, includes clinical, social and environmental elements | Yes, includes clinical, social and environmental elements | Yes | Yes, includes clinical, social and environmental elements |
| **Does HAH admission require patient consent?** | Yes | Yes | Not specified[1] | Yes |
| **Is the place of the intervention defined?** | Broad: patient place of residence (e.g. include care homes) | Broad: patient place of residence (e.g. include care homes) | Broad: patient place of residence (e.g. include care homes) | Broad: patient place of residence (e.g. include care homes)In some cases, care can be provided in an inpatient facility ("clinic") |
| **Clinical requirements** | | | | |
| **Defined requirements for care complexity** | Yes, national requirements defined by mode of care. | No, but established by each unit. | Not specified[1] | Yes, in some cases. Minimum requirements for wound care, drain tube, venous access |

| | | | | |
|---|---|---|---|---|
| | The level of care must be intensive: i.e. treatments must be complex/technical, frequent and have a multidisciplinary character. | The level of care must be intensive and require daily visits. | | device maintenance and trial of void are mentioned.<br>The level of care must be intensive and similar to that provided in an inpatient setting. |
| **Stable condition** | Can be unstable | Usually | Not specified[1] | Yes |
| **Guidelines to define eligibility criteria** | Yes, at national level for some interventions (e.g. chemotherapy). | Yes, mostly at the level of the HAH associations. | Not specified[1] | Admission respecting the Victorian Hospital admission Policy. |

*[1]In the Netherlands, no specific references to these aspects were identified within the context of nursing care at home linked to the medical specialist (Medisch Specialistische verpleging thuis (MSVT)). The medical specialist remains responsible of the care provided in this context.*

### Box 2 – Bottle necks and solutions: patient screening and admission decision

**Misinformation about requirements for admission, lack of fine tuning in the definition of what hospital-based care are and lack of clear eligibility requirement for patients** hinders the capacity of HAH to substitute inpatient care. In the Netherlands, HAH interventions are divided into low and high complex nursing care. Currently, it remains not clear whether both types of interventions are effectively substitutes for hospital-based care. In France and Victoria, lack of clear eligibility rules to access HAH combined with poor financing for some community services, has led to mobilize HAH resources for interventions bellow their potential and know-how. Review of eligibility criteria to access HAH are now progressively put in place.

While the **type of residence** does not limit the access to HAH, reports in different countries (France, AC of Valencia and Victoria) have highlighted that there is a wide room for improvement in the use of HAH in medico-social institutions (e.g. care homes).

**Key points: patient screening and admission decision**

- **HAH is defined around multiple aspects including intensity of care needed (need for complex-care and frequent interventions/visits), needs for coordination and involvement of multiple actors. This reflects the large clinical scope addressed by HAH.**
- **Access to a HAH program is linked to prior assessment of the patient's clinical, social an environmental living conditions. HAH care is not limited to specific patients' groups or pathologies.**

## 2.6 Planning, provision and coordination of care

### 2.6.1 Which "HAH" activities are provided?

Each country uses different ways to encompass the activities or interventions provided by HAH providers. A definition of what HAH is and what it implies, in terms of provision of services, is always subject to some interpretation. A basic definition can be found in all countries and is usually built around the fact that in the absence of a HAH program, the level of complexity of the intervention would require for the patient to be hospitalised. In addition, in all countries, the range of actions of HAH providers is limited by the supply of care available from other health care professionals or networks. Health care professionals or networks that may play a role in delimiting a boundary for HAH interventions include:

- Community care services that are considered as being in charge of providing less complex interventions (not requiring a hospitalisation) (e.g. home care community nursing organizations in France, Valencia and Victoria).
- Specific programs that may provide complex care to patients but that are already funded via specific sources (e.g. renal dialysis in France and palliative care at home in the Netherlands).

In addition to the elements mentioned above, HAH interventions are also considered to involve:

- Daily contacts between patients and the HAH team either via face-to-face visits (France, Valencia and the Basque country), indirect monitoring (in Victoria face-to-face contacts are not required) or both.
- Short span between admission and discharge for one HAH episode, with the possibility to have multiple admissions for one patient. In **France, continuous care for** an indefinite period **for patient with a progressive disease may also be considered (e.g. palliative care).**

In France and Victoria, the definition of HAH activities has been closely associated to the financing system used to pay for HAH interventions (see section 2.11.3). In Valencia, a catalogue for HAH procedures was developed in 2006 and provides a listing of different activities that are usually performed in HAH units. In these countries HAH interventions include medical care as well as patient support and education. In the Netherlands, two lists (for low and high complexity care) include different interventions under the supervision of the medical specialist.

### 2.6.2 Care coordination and the care plan

References on needs to provide care coordination were identified in France, Valencia, The Basque Country and Victoria. However, it is not always clear what coordination of care implies and how it should be achieved. Coordination for HAH is up to a certain level ensured in all countries as a part of the HAH program and includes:

- the definition of a care plan by clearly designated HAH member,
- sharing of medical information between the health care providers directly involved in HAH care, including supervision of activities and medical follow-up (see section on workforce for details on medical follow-up),
- a person responsible for pharmaceuticals or medical devices,
- planning for both patient's admission and discharge.

Other aspects that may be taken into consideration, but that seem to depend more on the HAH internal functioning include:

- inclusion in the care plan of activities performed by the patient or the family,
- coordination of community health and social care providers who usually provide care to the patient (before HAH admission) or that are required to provide additional care during the intervention,
- arrangements to support informal caregivers which may include respite care.

In Victoria, the care plan may be linked to a specific clinical pathway or as an episode of care between different but interlinked actors. In the Netherlands, no specific requirements concerning coordination of care for HAH were found. However, coordination of care is usually provided upon patient's discharge (transfer nurse) or by the technological nurse's team of the community nursing organization. The requirements for care coordination are therefore not specifically linked to HAH but related to the requirements or policies established for actors involved during the intervention.

**Box 3 – Bottle necks and solutions: plan, provide and coordinate care**

Even in countries where health authorities (i.e. France, AC of Valencia and the Basque country) have provided a defined framework or a preferred model for the organization of HAH structures, **working of HAH programs exhibit wide variations**. HAH programs funded in the same way but managed by different hospitals provide different services and cover different types of patients. While this may be in part due to the local demand of services, evaluations point out that the differences in demand do not explain the variability in service delivery.

**Compared with specialized HAH programs, general HAH programs** depend less upon referral for their patients from a limited number of health care services (e.g. one unit in the hospital) and usually deliver treatment across a larger range of common conditions. Specialized programs require that the primary referral source is able to provide sufficient caseload of patients to ensure a minimum occupation rate. **General over specialized HAH programs are** encouraged by health care authorities in France, the AC of Valencia and The Basque Country. Most programs in Victoria also follow a generalist model of HAH.

Enhancing communication between structures to develop optimal care models have progressively been put in place (AC of Valencia, Victoria and France).

**Key points: plan, provide and coordinate care**

- **HAH usually provide a large range of activities and have usually more a generalist character.**
- **The range of activities of HAH providers may be limited by the supply of care available from other health care providers or networks, including existing care pathways providing hospital-based care for specific groups of patients.**
- **In every country, the presence of multiple actors during the HAH intervention and the setting of appropriate treatment in the home environment is reported to require: Coordination, definition of a care plan and the sharing of medical information between health and social care providers. Involvement of the patient and the family may be included in the care plan.**

## 2.7 Provide response in case of emergency

HAH programs must ensure continuity of care twenty-four hours a day, seven days a week and 365 days a year. Access to emergency services are intended to complement and not to substitute the activities of the HAH team. In Valencia, the Basque Country, France and Victoria, patients and their families receive a detailed protocol to be followed in case of emergency. The organization of the response in case of emergency will vary according to:

- The organization of the emergency services (e.g. unit in hospital, out-of-hours services)
- The specific structure of the HAH program.

In the Netherlands, the medical specialist from the hospital is responsible for the care provided to a patient during a HAH intervention, as such the medical specialist may organize a plan to respond to an emergency. However, no reference to a standardized emergency plan during the HAH intervention was found.

Protocols for care provision in case of emergency may be differentiated according to the access to services during business hours and out-of-hours. In general terms, in all countries studied, the response in case emergency responds to the following rational:

- The first contact in case of emergency involves the HAH program. The HAH team treats the emergency call and establishes whether a home care visit must take place or whether the patient should be remitted to another service.
- In cases where a HAH structure has not the capacity to provide a 24h/24 availability, the structure must enter into an agreement with another structure providing these services (e.g. hospital unit).

In the case of Valencia, the emergency plan is built in collaboration with the emergency services. In Valencia, the hospital emergency unit and the community emergency services are informed about patients that are admitted to HAH. In general, the HAH unit makes direct arrangements with the emergency departments of the hospital to which they are attached to.

Whether an emergency intervention is considered as a part of the HAH regular working or whether it leads to patient's discharge may depend on program's specific pre-establish criteria. For instance in Valencia, a patient admitted to a hospital emergency unit may remain under observation until that a health care professionals from the HAH unit assesses her/his condition. If the patient returns home, the episode is considered as a part of the events included during the HAH intervention.

**Box 4 – Key points: Response in case of emergency**

- **Upon admission to HAH, emergency protocols are made available to patients and their families.**
- **HAH programs ensure continuity of care, therefore emergency services do not substitutes the activities of the HAH team.**

## 2.8 Patients and families satisfaction, empowerment and support

### *2.8.1 Patients and families empowerment and support*

Providing information and support to the patient, the family or both was found to be included among the activities of HAH programs. In Valencia, the Basque country, France, and Victoria, it is acknowledge that a HAH intervention requires to enhance collaboration between health care professionals and patients and their families.

In the context of a HAH intervention, the patient and the family's empowerment may include to provide training and education allowing them to perform some interventions. However, HAH providers must monitor self-administration of pharmaceuticals or other procedures and include relevant information in the care plan.

Support to patients and their families can be provided by physicians and nurses as well as by other health care professionals. The level of support provided by psychologists or social care workers may depend not only on patient's need but also on the organization and on the workforce of the HAH program. Examples of empowerment and support provided to patients include:

- In Valencia, patient's satisfaction and informal caregivers' burden is systematically assessed by the HAH team. In the Basque country patient's satisfaction is systematically appraised.
- In France, providing information to patients and their families is included among the modes of care ("*mode de prise en charge*"). For chemotherapy, a nurse should assess how well the patient has mastered the skills needed to implement the protocol safely. Non-acquisition or partial acquisition of these skills is not in itself a reason for refusing at-home chemotherapy. Skills should routinely be monitored
- In Victoria, it is recommended to document in the care plan any foreseeable risk to the patient in participating in some activities.

### *2.8.2 Patient satisfaction*

Positive results for HAH services are reported in surveys on patient's satisfaction (performed or commissioned by the health authorities (Victoria, the AC of Valencia and the Basque country). Patients and their families reported being satisfied with the services received during the intervention. Surveys also seem to report greater service satisfaction among patients in HAH services than among patients in inpatient services. It should be pointed out that these positive results may be subjected to some bias as HAH is delivered to patients who accept and who can receive this type of care at home.

**Box 5 – Lessons learned from existing evaluations**

Existing evaluations at a country level (France and Victoria) point out that the **cost of informal care** need to be considered when analysing the impact of HAH programs.

**Key points: patients and families empowerment and support**

- **Providing support and information to patients and their families may be considered as one activity that needs to be performed by HAH providers. Self-administration of pharmaceuticals requires careful monitoring and education for patients and families.**
- **HAH providers must provide sufficient training to patients and their families when self-administration of pharmaceuticals or other procedures is putted in place. Regular supervision of such interventions must be ensured.**
- **Patient and informal caregivers assessment should done using adapted measures of burden.**

## 2.9 Integration of activities within the health system

Health authorities in all countries are working towards providing more clear rules and incentives to increase integration of services at all levels of the health care system. Of course, those efforts also cover HAH programs. However, it is difficult to find evidence on how much integration is taking place.

**General practitioners**

Except when health care professionals from primary care are directly involved in providing HAH (e.g. GP for medical review see details section 2.11.2), there seems to be a weak link between HAH providers and GP. For instance, GPs seldom refer patients to HAH (see section 2.4). As was previously mentioned, effort towards integration of HAH and other primary care providers are being put in place. For instance, in the AC of Valencia HAH units must support primary care teams (e.g. contact in case of questions) and GP can request to be accompanied by the HAH team during a home visit.

**Home nursing and social care providers**

In France, the AC of Valencia, the Basque Country and Victoria, it is usually considered that HAH interventions do not cover services provided by community nursing organizations. Since 2006, in France, it is possible to create joint structures or "platforms" enhancing the collaboration between SSIAD and HAH. SSIAD and HAH can work under the same legal entity (*entité juridique*) and can share a single management. The latter seems to be an interesting solution for private non-for-profit initiatives that are able to join financing for services that come from different sources (funding for medico-social facilities such as the SSIAD and for healthcare facilities such as HAH). In the Netherlands, need for continuity of care and collaboration between those services is usually expected. However, there remains a large margin for interpretation on who and how should services be coordinated. The latter also holds when considering the coordination with social care services.

**Medico-social facilities[c] (nursing homes, assisted living facilities, etc)**

In all countries, HAH may be delivered in different places therefore opening possible collaborations with medico-social facilities. In Valencia and France, the percentage of patients admitted for a HAH intervention that were referred from a medico-social facility (mostly nursing homes) amounted to 2.5% (2013) and 0.6% (2009), respectively.

**HAH and hospital's services**

Table 10 illustrates the integration of a HAH program with the different services from the hospital to which they are attached to. Information included in the table reflects more policy guidelines or objectives than a measure of how much integration has been achieved. Integration with other health care providers depends on both the HAH's design but also into a large extent on the hospital policy. In all countries, formal (in the form of agreements and conventions) as well as informal arrangements are put in place in order to enhance coordination of activities between HAH programs and other hospital services.

[c] In France, SSIAD are recognized as medico-social facilities. However, issues on the integration with nursing services are discussed in the previous paragraph (Home nursing and social care providers)

HAH programs linked to a specific hospital may also admit patients from other hospitals or even from other HAH programs. However, little (to no) information was found about this subject. In France, HAH programs that are not linked to one specific hospital must have signed a convention with such health care facility.

**Provision of pharmaceuticals and devices**

HAH programs that are directly linked to a hospital receive pharmaceuticals and devices from the hospital pharmacy. The latter holds for the AC of Valencia, the Basque Country, Victoria and for all HAH programs that are attached to a hospital in France. Tender for specific pharmaceutical products and devices used in HAH programs follows the procedures established by the hospital.

In the Netherlands and for HAH not attached to a hospital in France, the provision of pharmaceuticals and devices requires to combine different arrangements including to sign conventions with a community or a hospital pharmacy or both. Pharmaceutical companies or wholesalers may also be contacted when requiring a specific pharmaceutical. Overall, the type of arrangement between the HAH and a third party depends on the type of pharmaceutical or device that is required.

**Table 10 – Link between different hospital services and HAH programs**

| Hospital services | France | Valencia & Basque country | The Netherlands | Victoria |
|---|---|---|---|---|
| **Does the hospital social service intervene during the HAH intervention?** | Intervention is possible. However, HAH may directly employ their own social workers. | Intervention is possible. However, HAH may directly employ their own social workers. | Intervention is possible. | Intervention is possible. |
| **Is tender and purchasing of pharmaceutical and devices linked to the hospital pharmacy?** | Not always.<br>Community pharmacies and companies can be contacted for delivery of products. | Yes | Not always.<br>Community pharmacies and wholesalers can be contacted for delivery of products. | In most cases. However specific arrangements with other community pharmacies are possible. |
| **Is there a link between wards or with a medical specialist within the hospital?** | Agreements and conventions are possible (e.g. role of the medical specialist in the care plan). | Agreements and conventions are possible. Health care professionals from other units must provide care to HAH patients (priority is given to them). | Complex home interventions can only be prescribed by a medical specialist. | Depends on the organization of the HAH structure. HAH may be integrated within a unit |
| **Emergency department** | Agreements and conventions. | Work towards integration (e.g prioritization of HAH beds, direct referral). | Not specified. | Agreements and conventions. |

Integration with seamless care or integrated care programs is not only country dependent but also closely related to each HAH program. Health authorities may determine whether HAH plays a major role in seamless programs. In France, cooperation and integration of structures (e.g. the creation of joint structures or "platforms") to provide seamless care are recommended by the Regional Health Care Authorities (ARS). The Health Care Department of Valencia defined activities to be performed by HAH programs within the Palliative Care Plan (2010-2013). In addition, nurse managers from the hospital or from the community are increasingly working with HAH programs to develop care strategies for complex cases.

### Box 6 – Bottle necks and solutions: Integration of HAH in the health care system

**Lack of coordination and blurred boundaries between different health care services**, in particular with other community nursing organizations have been highlighted and have created incentives to use HAH care for less complex cases (as reported in reports in France and Victoria). Problems mentioned above may be outpaced by ensuring a continuum spectrum of home care (including all levels of complexity) that requires to enhance synergies and collaborations between HAH and other actors, to encourage the establishment of conventions between structures that explicitly describe their respective missions and to set appropriate financial (dis)incentives for each care provider. In addition, efforts to develop guidelines for some diseases or rules for the appropriate choice of the care setting (in HAH, in (day-) hospital, or in ambulatory care) are being implemented.

**Increasing referral from emergency departments and primary care** has been a slow process which may limit the capacity of HAH to be a substitute for hospital admission. Good screening of patients upstream (e.g. identification of patients in emergency or in homes for the elderly) and a good follow-up downstream (e.g. the organization of relays with outpatients services) is now one of the main objectives of HAH programs. In addition, low awareness and a certain amount scepticism about the added-value of HAH among health professionals reduces the chances that patients are referred for admission. In France, they also foreseen to develop a tool for hospitals about referral possibilities during a classic hospitalization and to include prescriptions targets in the conventions with hospitals.

**Key points: Integration of HAH in the health care system**

- **The provision of pharmaceutical and devices vary according to the design of HAH programs. Provision of pharmaceutical and devices for HAH seem less clear cut when there is not a direct link between the HAH program and a hospital.**
- **Integration of HAH requires a transparent communication about the responsibilities and clear guidelines to enhance collaboration with the different health care providers.**
- **Lack of clear boundaries on the type of care provided and the necessary requirements for a complex intervention combined with blurred financial incentives may lead to use HAH for interventions below their real potential.**

## 2.10 Implementation and follow-up: what is the demand for services?

The data collected on HAH varies between the different countries making it not possible to establish a direct comparison between the activities in each country. Little data for the Netherlands on HAH was obtained, therefore only hospital statistics are included in the table for this country.

### *2.10.1 Common points between countries*

- The number of “virtual beds” has increased in the last 10 years in France, the AC of Valencia and the Basque country.
- The numbers of patients admitted, the number of days and of full stays has increased in France, the AC of Valencia and the Basque Country. In Victoria, the number of admissions in HAH decreased probably following changes in the Hospital Admission Policy.
- The overall capacity of HAH programs with respect to total inpatient capacity remains low.
- Data on average length of stay is available into some extent in most countries (France, the AC of Valencia, the Basque Country and Victoria). Differences in the length of stay and activities between HAH programs within a country have been reported. This has called for a

review of services activities including analysis of coding practices. Comparison in the ALOS between countries was not possible because of the heterogeneity of the data.

- Paediatric patients are treated in most countries. However, a degree of specialization is seen in the treatment of these patients as few programs cover the totality of patients receiving HAH treatment (France and the AC of Valencia).

### 2.10.2 Differences between countries

- Little data on the socio-demographic characteristics of patients admitted to HAH was found. Concerns on equity of access for all patients was only mentioned in an evaluation of HAH programs in Victoria. However, no analysis of patient's socio-economic characteristics was available. France has the most complete data about patient's age, gender and level of autonomy. The index Karnofsky is used to measure the level of dependency. It illustrates that patients admitted in a HAH program have higher rates of dependency than in the past. The average age of patients varies substantially in the different modes of care.
- HAH programs are involved in palliative care provision in France and the AC of Valencia, while in the Netherlands and in Victoria this is not the case. Beyond the discussion on whether palliative care providers or HAH should work in close collaboration or towards integration of services it is clear that the way that services are financed determines into a large extent the relation between them. In the Netherlands, nurse care relating to palliative care is funded outside of the scope of HAH.
- Participation of HAH programs in the treatment of oncologic patients have been reported in the different countries. However, the extent of the activities and the type of interventions cannot be precisely describe from the data that was obtained. In the AC of Valencia, treatment of oncologic patients is included both in the data about palliative and medical patients. In Victoria, analysis based on the DRG did not allow to have a complete picture of the models of care being used. In France, cancer treatment at home has expanded.

**Table 11 – Selected data to describe HAH capacity in different countries**

| | France (2012) | AC Valencia (2013) | Basque Country (2013) | Victoria (2011-12) | The Netherlands (2012) |
|---|---|---|---|---|---|
| **Population** | 65 552 000 | 4 663 657 | 2 191 682 | 5 400 700 | 16 755 00 |
| **Geographical area ($Km^2$)** | 674 843 | 23 305 | 7234 | 227 416 | 41 543 |
| **Number of acute hospital beds per 1000 population** [a] | 3.4 | 2.2 | 2.4 | 2.4 | 3.3 |
| **Average length of stays for all cause in acute hospital beds (ALOS)** | 5.1 | 5.11 | 4.49 | 5.4 | 6.4 |

| | | | | | |
|---|---|---|---|---|---|
| **Number of admitted patients in HAH** [b] | 103 080 | 39 680 | 11 526 | 25 379 [c] | - |
| **Number of admitted patients in HAH** per 1000 population [b] | 0.02 | 0.31 | 0.66 | 0.27 [c] | - |
| **Number of days in HAH**[b] | 4 117 000 | 333 246 | 149 679 | 175 686 | - |
| **Number of days in HAH** per 1000 population [b] | 62.8 | 71.5 | 68.3 | 32.5 | - |
| **Relative weight with respect to inpatient activities**[b] | Percentage of discharges from HAH units over total discharges in hospitals 0.45% (2009) | Percentage of discharges from HAH units over total discharges in hospitals 9.7% | - | Percentage of admissions having a HAH component 1.7% | - |
| **Data on admission per type of patient** [b] | | | | | |
| Measure | Ranking according number of days per mode of care. | Ranking by number of patients type of patients. | - | Rank for number of days per DRG classification | - |
| 1 | Palliative Care (26.5%) | Medical care (49%) | - | Cellulitis (>59 Catastrophic or severe) | - |
| 2 | Complex dressings and special care (complicated ostomy) (23.5%) | Palliative care (42%) | - | Venous Thrombosis W/O Catastrophic or severe | - |
| 3 | Heavy nursing care (8.9%) | Post-surgical patients (7%) | - | Other factors influencing health status | - |
| 4 | Enteral Nutrition (7.0%) | Mental health care (2%) | - | Diabetic foot procedures | - |

| | | | | |
|---|---|---|---|---|
| 5 | Intravenous therapy (4.8%) | - | Pulmonary Embolism W/O Catastrophic or severe | - |
| 6 | Monitoring of post cancer chemotherapy (3.3%) | - | Postoperative & post-traumatic infections age >54 or W Catastrophic or severe | - |

*Source: [a] France and the Netherlands[32], AC Valencia and Basque Country[33] and Victoria[34] [b]Detailed sources for HAH activities can be found in the country appendix. [c]Number of admissions having a HAH component. "–" was used when data was not available*

**Key points: Implementation and follow-up**

- **Since 2000, there has been an increase in available "virtual-beds" in HAH programs. However, targets with respect to the development of HAH capacity have not always been reached.**
- **The overall capacity of HAH programs with respect to total inpatient capacity remains low.**
- **Gathering more data on patient's socio-economic status, complexity, costs and the length of stay for full care episode (classical hospitalization and HAH together) is required to better understand its impact on acute hospital care substitution.**

## 2.11 What requirements must be met?

### *2.11.1 Framework*

**Norms and conditions**

HAH programs are usually integrated in networks of different health care providers. Therefore, norms and conditions that apply to these health care providers also encompassed HAH programs.

HAH programs in all countries implement internal rules concerning their organization, in particular for care coordination with other community care providers, constitution of patient medical file and organization of discharge planning. In France and Victoria, organization of medical review is also subject to the internal running of each program.

In France, defined norms and conditions for HAH programs are described in the law (public health code) and include to have a remote communication system, to ensure a permanent liaison between the patient, its family and the workforce of the HAH unit, to dispose of an office, and to ensure a minimal staffing (e.g. at least 1 medical auxiliary per 6 patients and 1 nurse manager per 30 places). In addition, strategic objectives targeting the development of HAH by ARS are defined such as to move towards a rate floor of 30-35 patients per day in HAH per 100 000 population. In the AC of Valencia and the Basque country, authorities have targets concerning 100% of the population (allowing HAH interventions to cover the assigned geographical area) as well as to have a HAH program in every public hospital.

### Geographical boundaries for care provision

Geographical boundaries for HAH provision include whether the patient lives in an area covered by a HAH program and to a certain extent the travel distance between the patient and the HAH office. Fixing a maximum travel distance (express in time or in kilometres) may be a necessary condition to ensure an appropriate response in case of emergency.

In Valencia, the Basque country and Victoria, health care providers are responsible for delivering services to patients living in a specific geographic area, the so called “catchment area”. In these countries, the catchment area for HAH programs corresponds to that of the hospital to which they are attached to. While it may be possible to access a HAH program outside of the patient’s designated catchment area, it may require a transfer of the patient to another hospital having a HAH program.

In France, regional health agencies assign a geographical area to the HAH program. Except for highly densely populated areas, only one HAH structure encompasses services per geographical area.

In the Netherlands, a geographical boundary is not mentioned. The medical specialist prescribes HAH and usually community nursing organizations in the area of residence of the patient are contacted to deliver the requested care.

### Box 7 – Bottle necks and solutions: Framework

Determining the extent to which HAH services have attained their initial objectives is not straight forward. Country evaluations point out that HAH is a widely accepted and appropriate option for inpatient care. However, despite a proactive position of health care authorities in developing HAH services, mixed results in terms uptake and creation of “virtual-beds” have been reported. In France, while HAH represent an increasing proportion of inpatient admissions the objective to create 15 000 places in 2010 was not reached, despite that since 2003 it is no longer required to close two inpatient hospital beds when creating one HAH virtual bed. In Victoria, a change in the admission policy for HAH patients appears to have reduced the overall number of HAH admission. However, the Department of Health recently publish guidelines (2011) to help guide the future development of HAH services. In the last decade, the Ministry of health of the AC of Valencia and the Basque country have clearly defined the role of HAH units in the delivery of services in different areas (e.g. chronic care, palliative care) and have aimed to cover 100% of the population (enhance geographical access). In line with this, all public hospital have developed a HAH program. However, while population coverage has been reached in most areas, **remote geographical are still not fully covered by HAH programs**.

**Geographical boundaries,** including inexistent HAH programs in the usual place of residence of the patient and particular or travel distance between HAH’s offices and patients’ residence **may limit access to HAH interventions**.

A wide array of solutions have been put into place. To reduce travel time and associated costs, HAH teams are assigned to different geographical areas within a catchment area in the AC of Valencia and the Basque country. Because HAH were mostly concentrated in urban areas in France, health authorities defined strategic objectives per care area (ARS) as well as the creation of extensions and antennas. The latter also holds for Victoria, as creation of HAH programs in rural regions was also recommended. In some cases**, outsourcing activities** to community nursing organizations or to GP for medical review working in the area of residence of the patient is foreseen. However, HAH programs must ensure that subcontracted health care professionals have sufficient experience with HAH delivery.

**Key points: Framework**

- **Geographical boundaries for access to services are related to the availability of HAH programs as well as to the travel distance between HAH offices and patient's residence.**

### *2.11.2 Workforce*

**Nurses**

Without doubt nurses play a large role in the provision of care in HAH programs. Nurses are in charge of providing the hospital-level care in the patient's home, under the supervision of the physician. When data on the employed members of HAH programs was found, nurses accounted for at least half of the total staff (AC Valencia, the Basque country, France and Victoria). The vast majority of nurses in the AC of Valencia, France and Victoria were directly employed by HAH programs. However, HAH programs also use other working arrangement such as subcontracting services or agreements with self-employed nurses.

In the Netherlands, provision of complex-care is usually arranged by community nursing organizations. The community nursing organization provides a technological team of nurses that are in charge of giving hospital-based care to patients.

Concerning the nurses' education background, few references to whether nurses require a specific specialization (e.g. advanced practice nurses or specialization in hospital in the home) were identified. However, a common point in every investigated country is that HAH units are obliged, at least to some extent, to provide continuing training for all their staff. In the Netherlands, health care insurers may require additional conditions regarding the level of education of nurses and experience in delivering complex nursing interventions. Also it is mostly required that the nurses of the technological team have experience in a hospital environment with advanced techniques and may oblige continuous training.

**Physicians**

There is a large variability concerning the physician who follows-up patients during the HAH intervention. In Valencia and the Basque country (more broadly in the HAH Spanish model), physicians are employed by the HAH program in order to follow-up the patient during the intervention. The HAH programs in these regions build "teams to deliver care" composed by one physician (usually a general practitioner or an internist) and two to three nurses. The physician of the HAH team provides medical review in the patients home.

In France and Victoria, the physicians following up the patient may not be employed directly by the program. In France, the general practitioner (GP) of the patient plays a central role and is linked to the HAH program by a convention. The participation of the GP is mandatory in order to be admitted in a HAH program.

In Victoria, multiple arrangements exist concerning the following physician during the HAH episode: They vary from having a dedicated physician (more often being a specialist) in the HAH program to look out after the patient or to consult a specialist in their office or in another unit of the hospital. In addition, a GP allowed to admit and manage a patient in the hospital may provide the medical review. GPs generally do not have admitting rights in metropolitan hospitals. They have such rights in regional, sub-regional and rural hospitals.

In the Netherlands, the medical specialist who prescribed the complex care intervention is in charge of the patient follow-up. However, this accountability may be delegated to a GP. There were no references on whether, home visit are provided during the HAH episode.

In all countries, medical specialists (belonging to the HAH program) can also have a role of expert (be consulted by the HAH team), providing guidelines for specific patients or diseases.

**Coordinator or manager role**

Physicians or nurses can also have a coordinating role in the HAH program. The coordination role is usually separated from that of the treating physician or nurse in the unit. The coordinator participates in filling administrative procedures, reviewing schedule of planned activities for HAH team members and may manage the patient care plan (In France, the AC of

Valencia and the Basque country). In France, the role of the medical coordinator is explicitly defined in legal documents (*"circulaire"*) and the presence of a head nurse *("infirmier cadre"*) is required. The head nurse is required to have additional education in management. In Victoria, the manager may be the head nurse of the program or the divisional manager responsible at hospital executive level for the program. The divisional manager has a health background (nurse or physician).

### Pharmacists

In Valencia, the Basque country, Victoria and France (mostly HAH linked to a hospital), HAH rely on the hospital's pharmacist for support and for the preparation of pharmaceuticals. In Victoria, however, about one third of HAH programs employ (mostly on a part-time basis) a pharmacist. In the Netherlands and in some HAH in France, the community or the hospital pharmacist may be contracted (see section 2.9 for details).

In France, the community pharmacist may be responsible for the provision of pharmaceuticals (with the exclusion of pharmaceuticals of hospital use) and some medical devices. A specific remuneration is foreseen for a personalized pharmaceutical follow-up (e.g. participation to a coordination meeting or the delivery of a drug at the patient home).

### Allied professionals[d]

In most HAH programs, other health care professionals are contracted based on patient needs. In France, other professionals involved in HAH care are either salaried (for a minority and usually only in important structure) or are contracted and must sign a convention with the program (as for the GP). In Valencia, activities in some HAH units include specific programs (e.g. paediatric patient or mental care) which has led to employ different professionals directly in the program.

### Social workers

Because the assessment of the conditions of daily living in the patient home and of the capabilities of the social and family network (informal caregivers) are always necessary to ensure HAH in suitable conditions, social workers are involved in HAH programs in Valencia, the Basque country and France. In Valencia, the Basque country, Victoria and the Netherlands, the social worker may be that of the hospital to which the program (the medical specialist for the Netherlands) is attached to. In France, they can either be self-employed or employed by the structure. In the Netherlands, assessment of the home situation can also be done by hospital's health care personnel (transfer-nurse or social worker).

### Technicians

In France, these providers are divided into two categories: a) the staff who deliver the device and the associated services *("personnel intervenant")* which must have followed a specific training and b) the person who is responsible of the compliance with professional standards and best practices ("*personnel garant*"). This person must be a health professional for some categories of medical devices and must have followed a specific training (see country appendix for more details). The role of technician was not mentioned in the other countries. It is likely that technicians linked to the hospital are contacted for any enquiry.

[d] Allied professionals include. health care professions distinct from nursing, medicine, and pharmacy such as physiotherapists, psychologists, and occupational therapists). It should be noted that in France, psychologists are not legally recognized as health professionals. To facilitate the international comparison, we nevertheless include them in this category

**Table 12 – Characteristics of professionals providing care during a HAH intervention**

| | France | Spain | Netherlands | Victoria (Australia) |
|---|---|---|---|---|
| Who coordinates HAH activities? | Coordinator physician assisted by a head nurse. | Coordinator physician or coordinating nurse | No specific coordinator is designated.<br>Coordination may occur with a transfer-nurse, a community nursing organization but is not exclusively related to the coordination of the HAH intervention. | Head nurse of the program or division manager (nurse or physician) |
| Who is responsible of the medical follow-up during the HAH intervention? | Variable arrangements: arrangements with the GP of the patient are preferred | A GP or a medical specialist of the HAH program | The medical specialist prescribing the intervention. In some cases the GP. | Variable arrangements: a medical specialist from the HAH program, a medical specialist from a ward or a GP |
| What is the training of different professionals involved in HAH interventions? | | | | |
| • Physician | GP + medical specialist if needed | A majority of GP and internist. | Hospital based medical specialist | Mostly medical specialist but also GP |
| • Nurse | Head nurses: specialization in management given by a recognized institute (*Institut de formation de cadre de santé*).<br>No specific level for other nurses except a continuing training in HAH specificities | No specific level for nurses except a continuing training in HAH specificities | Additional education and experience in a hospital setting is required. | No specific level for nurses except a continuing training in HAH specificities and ensuring that nurses have followed some specific training. |
| Is continuing education for health care professionals provided the HAH programs | Yes | Yes | Yes, organized through the community nursing organizations | Yes |
| Are there norms or recommendations with respect to the staff? | Yes<br>One medical auxiliary is needed per six patients<br>One head nurse per 30 authorized places<br>Half of the full-time-equivalent (FTE) must be nurses | Yes<br>Teams are composed by one physician and two nurses. Ideally each HAH program has at least two teams<br>A team can visit 12 to 18 patients per day. | Not specified | Not specified |

### Box 8 – Bottle necks and solutions: Workforce

**Recruitment of health care professionals** to work in HAH programs can be an issue of concern. HAH is not always perceived as an attractive field of work (in particular in the first implementation stages in the AC of Valencia). Health care professionals reported that the added value of their work is not always recognized by colleagues from other fields, that colleague's fear that HAH will reduce the patients in their own wards. It may also be perceived as an activity requiring a too high workload (France and Victoria).

**Adapting skills to provide complex care in the home environment** requires that HAH programs invest in training and continuing education for their staff. Providing HAH also requires skills and expertise gained in the field. Need for specific skills and expertise is reported to limit the extent to which HAH care may be subcontracted from community nursing organizations (AC of Valencia and Victoria). GP may also feel reluctant to care for HAH patients and in some cases require special accreditation to be able to provide medical review (Victoria). HAH providers must ensure that subcontracted staff have the required skills to provide required care.

In order to enhance HAH visibility and to improve acquisition of skills in France, Valencia and the Basque country, HAH programs actively participate in the education program for nurses and physicians.

**The participation of allied healthcare professionals** in HAH seems to evolve in the different countries. This is related to both the diversification of activities of HAH programs as well as to the objective of providing a more holistic approach in care delivery. The structural participation of allied health care professionals in HAH programs seems to be a work in progress.

**Administrative procedures and patient management** may represent a high workload for HAH team members and reduce the amount of time required to provide patient care.

Lack of clearly defined responsibilities concerning **patient's medical review** may limit the capacity of HAH programs to deliver complex care at home. In Victoria, lack of physicians dedicated to provide medical review is also perceived as an obstacle to develop the potential of HAH.

However, a recent review of HAH programs shows that more programs are directly employing physicians, and medical directors have been appointed in major hospitals in the area of Melbourne to provide leadership and direct management of patient care.

Lack of **information**, also linked to a lack of **attractiveness** may also limit HAH development. In France, some GPs are reluctant to accept to participate in HAH because of a miss knowledge of the HAH concept, scepticism about the added-value, fear of the associated constraints, and filling of inappropriate remuneration.

In order to reduce barriers in the participation of the GP, their remuneration is currently under review. Conflictual relationships between self-employed health care professionals and salaried within the HAH in France were also reported.

Health care authorities try to improve **the visibility and the attractiveness of HAH** by providing proactive information and creating links between different health care providers (in the hospital and outside the hospital). To improve knowledge of HAH, the following measures were also taken (involvement of the representatives of health professionals in the reflection about HAH development and increase of stages in HAH during the physician training).

**Key points: Workforce**

- **Nurses are the main providers of health care interventions. Nurses can also be in charge of coordinating activities during the intervention.**
- **The coordinator is usually not directly involved in providing care to the patient.**
- **Defining who is in charge of the medical review and how often it is required is needed. Lack of clearly defined responsibilities concerning patient's medical review may limit the scope of action of the HAH program.**
- **To improve the attractiveness of HAH, an appropriate remuneration and an adequate information about HAH in the health care profession is important.**

- **HAH programs are usually required to provide continuous education to their staff. Few specific requirements in terms of specialization for professionals working in HAH programs were identified. However, experience based "on-the field", such as knowledge on technical care is essential for all health care professionals involved in HAH.**
- **The inclusion of allied health care professionals in HAH programs may reflect a diversification in the care provided to some patients.**

### *2.11.3 Financing*

In each country, the financing modalities of HAH programs depend on the payment mechanism of hospitals and of health professionals (see Table 13). In AC of Valencia, the Basque Country, Victoria and into a lesser extent in the Netherlands, payment for HAH activities is attached to the hospital financing system. In the AC of Valencia and the Basque country, financing for HAH programs is included in the global hospital budget. Hospital managers have some flexibility when they allocate the hospital budget but they remain accountable to provide resources according to the characteristics of the different hospitals services. In principle, the budget allocated to a HAH program covers salaries of the team's members, pharmaceuticals and devices and other running costs.

In Victoria, financing of HAH activities is included in the regular activity based payment system of the hospital (*Weighted Inlier Equivalent Separation (WIES)*). The payment per DRG calculated during the average length of stay, covers both the inpatient and HAH days. Specific reimbursement for HAH activities is foreseen only when the length of the total stay of a patient transferred to a HAH program exceed the average length of stays of patients in the same DRG. In this case, HAH activities are reimbursed for "outlier days" by a per diem sum, set at 80% of the usual amount for outlier days in inpatient settings.

In the Netherlands, there is less clear cut picture of the financing for HAH as it is linked to the payment of the different actors and supplies required during the intervention. Remuneration for the medical specialists as well as for some pharmaceuticals and devices is integrated in the activity based payment system of the hospital (DBC/DOT payment system). Pharmaceuticals or devices may also be purchased in the community pharmacy. In this case, the patient may be accountable for their costs and the health insurer may provide a separate and direct reimbursement. The current policy makes it possible that the payment for nurse care is directly invoiced to the patient or to his insurer. Payment for nurse activities takes the form of a fee-for-service payment that varies according to the duration of the intervention but that is capped to a maximum amount per hour. Separate nomenclature codes currently exist to differentiate whether a staff from the hospital or a community nurse perfume the intervention. However, in practise the interventions are mostly performed by community nursing organizations.

In France, as other health care facilities, the payment system of HAH activities is done under the principles of the activity-based payment system *("Tarification à l'activité"* (T2A)), i.e. a daily tariffs according to the homogeneous group tariff ("groupe homogène de tariff" (GHT)), set annually by decree. The classification of each day in a GHT depends on the main mode of care (*"mode de prise en charge"* specifically defined for HAH), the associated mode of care (if any), and the degree of dependency. These tariffs only aim to cover a part of the cost associated to a HAH intervention (e.g. functioning costs, pharmaceuticals and devices not included in the list of expensive drugs). Additional funding is given for the remuneration of the GP or other self-employed physicians doing the medical review (except for public HAH programs), fees for medical specialists consulted for advice, medical imaging (radiology, MRI, Scans) and pharmaceuticals included in the list of expensive drugs, via a fee-for-service/cost reimbursement payment system. It should also be noted that in France, when a patient need day hospital care during the HAH stay, both the day hospital and the HAH will receive a financing for this day. A differentiation of payments between HAH for continuous, punctual or rehabilitation care, and more coherence between the different payment system (i.e. between (day-) hospitals, medico-social facilities, SSIAD, rehabilitation care, HAH) is currently in discussion. Whenever HAH takes place in a medico-social facility (e.g. nursing home), the tariff per day is reduced by 13%

In Victoria, HAH staff must be reported a "leave day" when the patient is not visited. Leave days can also occur when the patient attends a procedure in another health services.

Compared to a classical hospitalization, countries try to keep HAH cost neutral for the patients and their families. For instance, in Victoria it is expected that HAH programs organize, if necessary, meal delivery and even accommodation (e.g. hotels) whenever the patient's home is not adapted. In addition, cost for pharmaceuticals and devices should not be borne by the patient due to the place where care is provided. In practise, it is not always clear the extent in which HAH programs make arrangements to cover non-medical needs and whether this creates additional costs for the patients.

**Table 13 – Financing system and patient's co-payments**

| | France | Valencia | Netherlands | Victoria |
|---|---|---|---|---|
| **Payments for HAH programs** | • Activity based payments (T2A / Mode of care)<br>• Additional payments (e.g. for expensive pharmaceuticals and devices) | • Allocation of resources from the global hospital budget | • Activity based payments (DBC/DOT)<br>• Additional payments (e.g. for expensive pharmaceuticals and devices) | • Activity based payments (WIES)<br>• Additional payments (e.g. for expensive pharmaceuticals and devices) |
| **Are there specific activity based payments for HAH?** | Yes. Based on cost and set according to the mode of care, the degree of dependency of the patient and the length of stay. | N.A. | No | Partly. Specific reimbursement is developed for outliers. |
| **Reduction of activity based payments foreseen with the LOS?** | • Regressive payment according to the length of stay | N.A. | N.A. | • Yes, per diem for outliers in HAH established at 80% of the usual per diem sum for outliers in hospital<br>• Payments possible within a maximum range |
| **Sources of funding for** | | | | |
| **GP or medical specialist** | Mostly, fee-for-service[1] | Budget allocated to the program | Activity based payment | Activity based payment |
| **Nurses** | Activity based payment | Budget allocated to the program | Fee-for-service | Activity based payment |
| **Pharmaceuticals and Devices** | Activity based payments except for expensive pharmaceuticals and devices. | Budget allocated to the program | May be included in the DOT system or directly reimbursed by health insurers (for reimbursable products in the GVs).<br>Expensive pharmaceuticals and devices is excluded from DOT. | Included in the (WIES) system except for expensive pharmaceuticals and devices. |
| **Transport cost** | Activity based payments | Variable, specific budget may be allocated by the hospital or included in the HAH budget. | Not specified | Variable |

*[1]GP payment is included in the DRG system of payment in public HAH facilities.* T2A= "Tarification à l'activité". FFS = Fee-for-services. DBC= Diagnose Behandel Combinatie DOT = "DBC's Opweg naar Transparency". GVs=Geneesmiddelenvergoedingssysteem .MSVT=Medisch Specialistische verpleging thuis . N.A. stands for nor applicable*

### Box 9 – Bottle necks and solutions: financing modes

Using **homogenous groups of activity for HAH payments** similar to inpatient stays is a matter of discussion as classification systems used for inpatient settings may not capture the patterns of care for HAH services. For instance, it has been mentioned that traditional patient's classification into homogenous groups fails to take into account the need for care coordination and the travel cost during the HAH intervention. Only France has developed a specific classification system reflecting HAH activities (*mode of care*). This model reported limits include that it does not sufficiently assess the patient's level of dependency and that there is room for interpretation in the determination of the mode of care.

**The payment for HAH interventions must be consistent with that of hospitals.** In line with this, activity-based payment for HAH were implemented in France and Victoria. In France, it improved the equity in the distribution of resources among HAH structures and reduced the risk of patient selection. As is the case for all activity-based payments, reported unexpected consequences include up-coding of patients or patient selection if tariffs are disconnected from costs. In France and Victoria policies towards optimising resource allocation and avoid unintended consequence of the payment system have been put in place. The latter included audits and review of tariffs to reflect practices.

Other reported limits of current activity-based payments include that they do not sufficiently cover the transport costs and of commonly used pharmaceuticals and medical devices (for some HAH in France and Victoria). Finally, there seems to be room for improvement in the extent to which **activity-based payments reflect the full cost of an acute care episode that involves classical hospitalization and an HAH intervention** (early discharge episode). In Victoria, a recent evaluation pointed out that the activity-based payment may not cover the cost for HAH if significant costs were incurred during the in-hospital phase and if the length of stay does not outpace that established per DRG. However, the existence of a HAH outlier provides a financial incentive to extent the length of stay outside of the hospital settings. In France, the cost for a full episode (part classical hospitalization, part HAH) have not been sufficiently assessed and payments for HAH providers and for the hospital are disconnected.

This has open questions regarding whether a HAH stay could be longer or could be a substitute of ambulatory care and not of a hospital stay. In the Netherlands, there is a current discussion on how to better integrate payment for HAH in the hospital activity based payment.

**Differentiation in the level of payment between different community care providers combined with lack of clear eligibility rules to access HAH** has led to mobilize HAH resources for interventions bellow their potential and know-how. Health care providers may have incentives to avoid defining a clear line between HAH programs and other post-acute services (Victoria). The latter may be particularly problematic when overlap in the organization of different programs exist (e.g. shared staffing, lack of specific management units). Poor funding for home care or post-acute services might incentive care providers to admit or refer patients into the better funded HAH program.

**The level of the fee-for-services** for GPs in France is currently considered as inadequate in relation to their workload. Their remuneration is currently being evaluated.

Limiting the **HAH capacity through the general financing system** was pointed out in Victoria. A significant factor identified as a barrier to the development of HAH programs is the capped throughput target for hospitals. HAH services have increased hospital capacity but further development is constrained in the context of capped volume activities that limit the reimbursement from the health care authorities. In addition, competition in allocation of capped budgets within the hospital may also hinder service development.

The fact **that transport costs (or cost of the transport fleet)** do not have a specific financing is considered as problematic in some HAH programs. Activity-based payments fail to include these cost and therefore may create a financial risk for some HAH providers (e.g. France and Victoria).

HAH programs may need to **make contracts and financial arrangements with other health care providers**. Finding, appropriate financial arrangements for all parties may prove to be an issue of concern when fee negotiations take place between HAH services and subcontracted parties. In Victoria, there is some evidence that higher rates per episode are billed to HAH programs.

In addition, transfer to other HAH programs (or hospitals) may be an issue of concern if a single payment is paid per care episode (activity based payment systems) and is not shared between different institutions or care providers.

Compared to a classical hospitalization, **HAH is not always cost neutral for families and patients.** In general, it is expected that HAH does not create additional cost for patients and families compared to classical hospitalization. Some HAH programs make arrangements to cover non-medical cost (e.g. meals) and other unexpected cost during the HAH intervention (e.g. support by informal caregivers). This must nevertheless be monitored as it has been showed that HAH may transfer a part of the cost to the families.

**Clear rules on who is responsible to cover the cost of pharmaceuticals and devices** must be established. This implies to determine whether their payment (or invoicing) is done according to the principles that govern the reimbursement of products delivered by the hospital or by the community pharmacy. In the Netherlands, multiple parties pointed out that clear rules are required to understand whether the cost of a device is borne by the hospital (under the activity based funding scheme) or directly by the health insurer. In addition, HAH programs have pointed out that in some cases purchase and maintenance of devices (in France and Victoria) and high cost pharmaceuticals (only for Victoria) are not appropriately recognized within HAH payments. The latter seems to be related to how delivery and purchasing of equipment for HAH is organized by different programs.

**Key points: Financing of HAH**

- **Design of a financing system for HAH must take into account the specific requirements for care delivery: need for coordination between actors, travel cost, workload and definition of clear payment mechanism for the different actors involved in the intervention.**
- **The financing structure of HAH programs must be consistent with their cost but also with the financing of other hospital and community care providers to avoid shift between setting (avoid that one setting becomes more favourable than another).**
- **Attention must also be paid on the risk of multiple payments during the same care episode. This risk can for example arise when the patient change "momentarily" of setting during the HAH stay (e.g. for day hospital care), he can be considered to be cared in two settings during this period, implying a double payment. The risk is also present for classical hospitalizations followed by a HAH stay, or when admission and discharge from HAH are not clear.**
- **Monitoring of cost for patients and families involves measuring whether differences exist when comparing a HAH intervention or a classical hospitalization. Patients' participation in the cost of care should not differ in function of the place where care is provided.**
- **Modalities for the reimbursement of pharmaceuticals and medical devices must be clarified to avoid inconsistencies in the payment of the same product in inpatient and outpatient settings.**

### *2.11.4 Processes in support of quality of care*

As mentioned in section 2.11.1, norms and conditions that apply to different health care providers also encompassed HAH programs. As a consequence, quality indicators for different health care networks (e.g. hospitals) may also be used by HAH programs. Attention on quality indicators varies between countries and collection of data can be mandatory or voluntary as well as publicly available per HAH or not. In addition, there seems to be a large variability on how indicators are collected by HAH programs within countries. Specific indicators for HAH were identified in some countries (see Table 14). Identified indicators concerned both process indicators and outcome indicators. We found little references to financial incentives to promote quality in HAH programs (e.g. P4P programs or payments based on the evidence).

**Table 14 – Example of quality indicators identified in different countries**

| France | Ac of Valencia and Basque country | Australia |
|---|---|---|
| 1. The maintenance of the patient file<br>2. The deadline for sending the information at the end of the hospitalization<br>3. The screening of eating disorders<br>4. The traceability of the assessment of pain with a scale<br>5. The traceability of the assessment of the risk of pressure ulcers<br>6. Optionally, the compliance of the prescription of medical imaging.<br>7. Nosocomial infection | 1. The number of visits by the different team members<br>2. Duration of the visit<br>3. Number of deaths during the HAH stay<br>4. Unplanned hospital readmissions | 1. Patient safety and selection (Process indicator)<br>• HAH admission – ≥1 unexpected telephone<br>• HAH admission – 1 unscheduled staff<br>2. Program interruption<br>• Unplanned return to hospital – patient not returning to HAH program<br>• Unplanned return to hospital – patients returning to HAH program ≤24 hour<br>• Unplanned return to hospital – patients transferred back to HAH program<br>3. Unexpected deaths<br>• Unexpected deaths during HAH admission<br>Unexpected deaths following unplanned return to hospital during HAH admission |

### *2.11.5 Decision support*

Efforts from health care authorities and HAH associations are increasingly surfacing in order to publish specific guidelines for HAH. Specific guidelines for HAH are being develop to take into account the impact of providing hospital-based care in a different setting and therefore to ensure high quality and safe treatments for patients. In addition, guidelines also aim to clarify rules concerning patient's eligibility for HAH programs. In France for example, guidelines on patient selection criteria for HAH have been developed for at-home chemotherapy, ante and post-partum care, parenteral nutrition, and rehabilitation care. More discussion on existing guidelines is beyond the scope of this report. However, references to identified guidelines in each country can be found in the supplement of this report (in the related section for each country).

### *2.11.6 IT tools*

Development of IT tools for HAH is linked in each country to:

- the level of development of the health care information system,
- the use of tools within networks to which HAH are related, and
- the requirements of health care authorities concerning recording patient's data (according to safety and confidentiality requirements).

Patient's medical record during a HAH intervention can either be included in the hospital file or in a separate file created by the HAH program (see Table 15). The file may either be accessed in the patients' home via a remote access, or can be kept in the patient's home, in the hospital only, or in the HAH offices.

Little (or no) specific information was found regarding the use of telemedicine by HAH programs. In Valencia, some HAH programs have developed specific programs for remote monitoring of patients.

IT tools can also be developed to better identify patient that could be eligible for HAH. In France for example, to promote HAH prescription, the Technical Agency on Information about Hospitalization ("*Agence technique de l'information sur l'hospitalisation*" (ATIH)) is currently trying to analyse information available in current databases to help in the identification of hospital stays that could be shortened or that are potentially inadequate. In Victoria, the Health Department is currently studying the use of IT tools by HAH providers. In the AC of Valencia, it is expected that in 2016 all HAH programs will use the specific module for HAH included in the hospital's patient file.

**Table 15 – Patient medical record during a HAH interventions**

| | France | Valencia | Netherlands | Victoria |
|---|---|---|---|---|
| **Method or record collection for patient data** | HAH specific file | Hospital file record includes a specific module for HAH | Hospital file record upon patient's discharge<br>Regular record of the community nursing organizations | Hospital file record (patient's transfer from one service to a HAH services)<br>Multiple possibilities: recording methods: HAH specific file or hospital file |
| **Where can the file be accessed and how?** | HAH office | Hospital and possible in patient home (remote access) | Depends on each community nursing organizations (office or patient's home) | Depends on each HAH structure: Hospital, HAH office or patient's home |

### Box 10 – Bottle necks and solutions: IT Lesson learned from existing evaluations

**Development of computerised system of information** in each country determines into a large extent the use of IT tools during a HAH intervention. Management of the patient's medical record (PMR) may be challenging in the absence of appropriately configured electronic health data. Need for better management of patient medical record during HAH was reported in evaluations for HAH programs in France and Victoria. Recommendation for improvement include that the PMR is accessible in different locations and for different actors (either by remote access or by keeping files in different devices), to develop common tools for all HAH programs and establishing a minimum set of information that needs to be registered (e.g. informed consent, eligibility criteria for admission). An example of latter can be found in the AC of Valencia, a specific module for HAH was developed and is included in the hospital medical file (will be fully adopted by all HAH programs in 2016).

**Key points: Decision support, quality indicators and IT tools**

- **Specific HAH guidelines have been developed. This is a step forward towards improving HAH care as guidelines can help in defining target populations as well as to define the best care settings for different patients.**
- **Use of IT tools and data collection for HAH follows the general principles established by each health care system.**
- **Access to the patient file from their place of residence is dependent on the IT resources of HAH programs as well as of the overall development of IT tools in the health care system.**
- **Development of IT tools in hospitals (e.g. in emergency services) could also help in better identifying patient eligible for HAH**

## 2.12 Limitations

- **We focused on the organizational aspects of HAH programs observed abroad. Cost aspects were only reported concisely because, as already mentioned, they are influenced by the way HAH is organized and financed in the country and are therefore not transferable for Belgium.**
- **An analysis of guidelines for specific target groups or interventions was also beyond the scope of this report. However, references to identify current specific guidelines in each investigated country can be found in the supplement of this report.**

# 3 BELGIAN SITUATION

## 3.1 Objective of the chapter

This chapter aims at identifying key issues and potential recommendations from previous published Belgian reports that may play a role in the organization of HAH in Belgium.

## 3.2 Methods

Again, the structure of the research was based on the list of activities and requirements that are necessary to provide high-quality and adapted services to patients described in the international comparison.[30] In a first stage, all KCE reports were screened by two KCE researchers (SG, MF). Each report having a link with one element of this list and that allowed us to identify key points that will need to be considered when developing HAH in Belgium were selected. Reports identified during the interviews of Belgian experts (see chapter 4) were also analysed. Additional relevant Belgian reports were then consulted using the snowball method.

## 3.3 Belgian health system in brief

### *3.3.1 Hospital financing*

Hospitals in Belgium receive their revenue from various sources, with hospital budget and physician fees for consultations and technical procedures as the main revenue sources (around 80%). Other income sources are payments for ancillary products and pharmaceuticals (partly reimbursed on a product-by-product basis and partly by a lump-sum amount), lump sum payments for day care and rehabilitation conventions, and supplements paid by patients.

A dual payment system is therefore in place:

- Consultations and technical procedures are remunerated through the variable reimbursement system of fee-for-service (FFS). Physicians cede part of their fees to the hospital to pay for (part of) the costs directly or indirectly linked to the provision of medical activities.
- Non-medical activities, such as the services of accommodation, accident and emergency services and nursing activities are paid for via a budgeting system partially based on pathologies (see the KCE report 229 for more details).[35]

### *3.3.2 Home nursing care*

In Belgium, two levels of nurses (bachelor-level [A1] and diploma-level [A2]) comply with the EC directive and different nursing specialties are recognized. All bachelor-level nurses can undertake specialized and complementary training in fields such as oncology, geriatrics, etc. To promote the specialization of nurses, a gross annual premium was given for nurses with a professional title in intensive care and emergency medicine, geriatrics or oncology and for nurses with a specific qualification in geriatrics. Professional titles and specific qualifications are obtained after a complementary training of 900 hours and 150 hours, respectively. To preserve these titles or qualifications, nurses also have to undergo continuous training and work in the corresponding sector. For nurses working in home care, two specializations are recognized by the NIHDI after completion of a postgraduate course: specialist nurses in diabetes and specialist nurses in wound care. The financing of home nurses is nevertheless not differentiated in function of these qualification levels, with the sole exception that some interventions of care for diabetics or wound care are only reimbursed when they are performed by these specialized nurses.[36]

Healthcare assistants (sometimes also called nurse aids (aide-soignant/zorgkundige) can also relieve nurses of some basic tasks. A protocol agreement has been concluded to improve the structural organization and collaboration between (i) the services of home assistance and support given by family aids and (ii) home care given by health professionals (e.g. nurses). Some specific “care” activities (defined in the protocol agreement) can now be performed by a family aid if there is a clear agreement between a health care professional and the service of assistance and support.[36]

Home nursing in Belgium is funded at the federal level (NIHDI). Different payment systems contribute to the financing of home nursing:[37]

- For nondependent patients or patients with minimal dependency, a fee-for-service system covers nursing interventions (reimbursed nursing activities are included in the so-called nomenclature). All technical nursing interventions, except hygienic care, require a doctor’s

prescription. In order to limit supply-induced care provision in the fee-for-service financing, a maximum day-limit was fixed, at the level of the lowest lump sum. The same nomenclature apply for employed or self-employed home nurses.

- For patients with high deficiencies in the activities of daily living (ADL), a lump sum payment system covers nursing interventions. Patients' dependency is assessed by the Belgian Evaluation Scale for Activities of Daily Living (BESADL), which is adapted from the Katz scale. For technical interventions, a prescription of the physician is needed.
- For palliative care and diabetic patients, additional per diem lump sums apply.
- Specific arrangements also cover particular nursing activities (e.g. nursing assistance in peritoneal dialysis and hemodialysis at the patient's home, see the section on home dialysis in the supplement).

Moreover, there is additional financing for home nursing organizations, for costs related to information and communication technologies (e.g. premium for the use of licensed software), as well as social agreements and reduced social tax contributions.[37]

Since 2009, home nurses can also charge for a consultation once a year per patient. This nursing consultation, which is entirely supported by the NIHDI (i.e. no patient co-payment), aims to assess the patient's condition, identify nursing needs and define care objectives. Measures to improve the remuneration of multiple services of home nurses were also taken (e.g. financing recognition for the preparation of oral medication or for the third and fourth visits in home care for patients under lump sum).[36]

### 3.3.3 General Practitioner

In Belgium, GP operate either in solo or in group practice. Medical houses (maison médicale/wijkgezondheidscentra) in Belgium are group practices that operates with a multidisciplinary team including GPs, administrative and reception staff, nurses, a physiotherapist and a psychotherapist.

GP working in group practice can either be paid by a fee-for-service payment system like other GP working in solo, but also by a capitation system. GP in Belgium have no gatekeeping role but several measure have been taken to strengthen primary care. For example, patients have financial incentives to use their GP as preferential entry and to open a Global Medical File with one GP.[36]

### 3.3.4 Current structured programs providing (acute) home medical or transmural care

Beyond initiatives that labelled themselves as HAH programs, different structured programs already providing (acute) home medical care or transmural care currently exist in Belgium:

- Home dialysis services;
- Home oxygen therapy;
- Palliative care services at home;
- Care pathways (zorgtraject/trajet de soins);
- Clinical pathways;
- Care programs (e.g. paediatric liaison and geriatric liaison);
- Other networks initiatives, among which the organization of a mental health care circuits around the patient (article 107) and financing of innovative projects to keep older persons longer in their own home (Protocol 3);

A description of these services can be found in the supplement of this report. The related problems and recommendations are then reported by topic in the next sections (e.g. financing, etc.).

Concerning home nursing, specialization are recognized for diabetes and wound care, i.e. some interventions of care for diabetics or wound care are only reimbursed when they are performed by these specialized nurses (see also the supplement of this report for more details).

## 3.4 Objectives of HAH implementation in Belgium

In the international experience, HAH capacity grows from pilot initiatives that usually aimed at filling gaps in care provision (see Chapter 2 for details). One often cited gap leading to create HAH services is bed-shortage in hospitals. In Belgium, there seems to be an overall overcapacity of acute-care hospitals beds and a lack of division of tasks between hospitals leading to a multiplication of highly specialized services. Nevertheless, at the same time, there is a deficit in the number of geriatric (G)-care beds and a lack of appropriate services to care for patients outside of the hospital setting.[35]

Lack of appropriate alternatives for patients is also cited as major reason for having inappropriate hospitalization days on adult acute non-intensive care units.[38]

Beyond the question of the hospital capacity (in terms of beds), Belgian reports highlighted the need to develop alternatives allowing to provide (complex) care in the least complex environment that is clinically appropriate, and to expand services that allow care in the patient's living environment when possible.[30]

**Key points for reflexion: Objective**

- **HAH initiatives can be seen as a way to respond to the need of providing care in the least complex environment that is clinically appropriate.**

## 3.5 Screening activities

There must be a moment where the physician (GP or medical specialist) decides that a person will from now on be considered as a patient who will benefit from a HAH program.

In the report on palliative care, the problem of an infrequent call of health professionals for specific palliative services for their patients was reported, showing the need to improve and develop information and screening tools.[7]

GPs and other healthcare workers (including hospital emergency services) should have broad detection skills and tools for the screening of potential candidate for HAH (links with sections 3.10.2, 3.10.5 and 3.10.6).[30]

**Key points for reflexion: Early identification**

- **There is the need to develop screening skills and tools (guidelines, training, and IT tools) to identify potential candidate for HAH**

## 3.6 Planning, provision and coordination of care

### *3.6.1 Which pathologies – patients?*

Potential pathologies covered by HAH can be found in the description of the four analysed countries. The aim of this section was to identify, from Belgian reports, for which pathologies/patients the development of alternatives to hospitalization has been recommended. Some experts have begun projects in order to define which target groups would better benefit for HAH (and also for whose hospitals would be interested to transfer them in HAH).[39, 40] No target group list is nevertheless currently available.

### *3.6.2 Specificities of a care plan*

A Belgian report has highlighted the need of a care plan in case of teamwork and recommended that this care plan should:[30]

- Rely on the evidence when available (linked with the section 3.10.5 on decision support);
- Be patient-oriented;
- Be used to guide the interventions of the whole team and encompass the input of all professionals implied; and
- Give attention to the psychological and social needs.

This report also highlighted the need to better train the health professionals for the implementation of a care plan and the work within a multidisciplinary team (link with the section 3.10.2) and to better develop effective IT tools (sharing information on the medical history and care plan are essential) as well as common evaluation tools to support the follow-up of the patient by the team (link with the sections 3.10.5 and 3.10.6). The knowledge of the available services that might be offered to the patient is also important.[30]

### *3.6.3 Coordination of care and case management*

The accumulation of several waves of reform, at different jurisdiction levels, in different sectors and of additional private initiatives resulted in an intricate tangle of coordination structures with limited articulation between them: Integrated Services for Home Care (Geïntegreerde Diensten voor Thuisverzorging, GDT - Services Intégrés de Soins à Domicile, SISD), SEL (Samenwerkingsinitiatief EersteLijns gezondheidszorg), CCSSD (Centres de Coordination de Soins et Services à Domicile), CPAS/OCMW, RML/LMN

(Réseaux Multidisciplinaires Locaux/ Lokale Multidisciplinaire Netwerken), ONE/ K&G (Office de la Naissance et de l'Enfance/ Kind en Gezin).[30]

It was therefore recommended to streamline coordination structures and networks and to optimize the working of the existing coordination structures in order to avoid an overlap between coordination initiatives that may limit the access to health and social care services.[30]

Moreover, in case of multidisciplinary teams,[30] the role and responsibilities of all professionals should clearly be described.

A Belgian report also highlighted the requirements for a successful case management integrated in a primary care team:

- "A trustful relation with the patient, and effective support from the GP who will recognize the role and the importance of this new partner in the fulfilment of the care plan;
- Structural shifts: new organisational models need to be developed, defining the respective roles, responsibilities and other collaboration modalities;
- Training of the healthcare professionals involved to help them to acquire a set of required skills, also for multidisciplinary work;
- All required case management competences and skills should also be integrated into the existing or new curricula leading towards this role;
- A good knowledge of all locally available resources and services is also an important prerequisite;
- The shared use of an adapted electronic medical record (see also recommendation 1 on the 'chronic care module);
- Quality assurance procedures, with special reference to the level of realisation of the patient goals;
- Official recognition of this role and financing mechanisms offering incentives to collaborate and share responsibilities;
- A legal framework defining competences and responsibilities."[30]

**Key points for reflexion: Planning, provision and coordination of care**

- **A care plan should be based on the evidence, be patient oriented, concern the whole team and encompass the input of all professionals implied, and include social needs.**
- **To improve care coordination, it is recommended to streamline coordination structures and networks.**
- **The role and responsibilities of all professionals should clearly be described.**

## 3.7 Provide acute episode response and specialized services

As recommended in some Belgian reports, transition between settings should not disrupt the continuity of care along the lines of the individual care plan of the patient, especially in case of emergency.[30, 41] The quality of HAH care will therefore also depend upon their network with other, specialized services, including hospitals. It was therefore recommended to develop and promote the use of shared protocols across settings. The international comparison also highlighted the necessity to be linked with or to conclude conventions with hospitals to be able to ensure the continuity of care in case of emergency and to have shared protocols.

Again, as recommended in a report on seamless care[41] and in a position paper on chronic care,[30] the role and responsibilities of all professionals should clearly be described.

An example of acute response was also found in a report on the quality and organization of the care for patients with diabetes, where GPs have a central coordinating role for routine care of type 2 diabetic patients and medical specialists are mainly involved in case of complications (acute response).[42]

**Key points for reflexion: Provide acute episode response and specialized services**

- **Networks with other specialized services, including hospitals, should be developed to ensure the continuity of care.**
- **In case of emergency/acute episode response, the role and responsibilities of all professionals should clearly be described.**

## 3.8 Patients and families satisfaction, empowerment and support

A report on the organization of chronic dialysis illustrated the importance of self-empowerment of patients. Chronic dialysis has a significant impact upon a patient's life, depending on the type of dialysis: hospital HD occurs typically three times a week in a hospital unit while peritoneal dialysis occurs daily at home. The patient preferences are therefore an important element in the choice of dialysis modalities and they should be able to make a well-informed choice.[43] In this report, it was recommended that:[43]

- Every patient starting on dialysis should be informed timely, fully and objectively about the different dialysis modalities.
- Patient participation should be a key element in the process, in particular in final choice of dialysis modality.
- Patient counselling should be a requirement for all pre-dialysis patients in the existing ambulatory care trajectories and for end-of life renal disease.

The KCE report on palliative care also highlighted the necessity to perform a needs (including need for information and social support) assessment at regular intervals. It should also be noted that for palliative care at home, even if most patients wanted to die at home, family members do agree only to some extent.[7]

To support patients' and informal caregivers' empowerment, another Belgian report recommended:[30]

- To develop specific educational and training programmes on patient empowerment and include this topic in the curricula for physicians, nurses and other healthcare professionals to make them more sensitive to the role of patients/informal caregivers as partners (link with the section 3.10.2).
- To develop intervention programmes and tools for the empowerment of the patient that are:
  - Tailored to the specific needs of each patient, also taking into account his/her cultural background.
  - Comprehensive, i.e. using a wide range of self-management approaches. e.g. for asthma, successful interventions consisted of patient education, self-monitoring, regular medical review and a written asthma plan.
  - Using multiple delivery strategies. e.g. face to face sessions with follow-up phone calls or additional educational materials.
  - Involving not only the patient, but also the informal caregivers.
  - Intensive (e.g. intensive education sessions).
- To provide timely, accurate and comprehensible information to the patient on the treatment, the evolution of the disease, and the availability of services and support (financial, material).
- To integrate patient and informal caregiver empowerment in routine care.
- To develop adequate strategies adapted to the patient's situation, in particular for more vulnerable groups (for example other cultures, mental disease).
- To revise regularly the therapeutic goals and of the care plan, in partnership with the patient.

**Key points for reflexion: Support patient and informal caregiver empowerment**

- **There is the need to develop skills (training) and tools (decision support and IT tools) for patients and informal caregivers empowerment.**
- **A special focus to relatives / informal caregivers is also needed in order to prevent their exhaustion**

## 3.9 Integration of activities within the health system

### 3.9.1 Improving the coordination between settings

By definition, HAH services are rooted in the boundaries between primary, secondary and tertiary care. Building bridges between different levels of care is a necessary step to be able to provide person-centred care.[44] The current discussion on whether (and how) to develop a regulatory framework for hospital-at-home services must consider how to provide integrated care within healthcare system that is mature and well-developed but highly fragmented. Fragmentation of health care services exist between different levels of care as well as within healthcare professionals from the same level. Smoothening the transition between primary, secondary and tertiary care, has been regularly addressed as one of the areas that needs attention in Belgium.[30, 35] In order to enhance coordination, federal and federated entities (sometimes also municipalities ("commune"/"gemeente")) provide structural funding for certain organized initiatives. Initiatives may be differentiated into two broad groups. First, "coordination structures" (refereeing to persons, teams) have the responsibility to coordinate healthcare and/or social care (e.g. Centres de Coordination de soins à domicile, Samenwerkingsinitiatief EersteLijns gezondheidszorg). Second, "coordination programmes" work towards achieving a specific objective in healthcare through a defined set of activities implemented (e.g. care trajectories for diabetes and renal failure).[e] In addition, different pilot or innovative experiences (Protocol 3) have also aimed at improving coordination between settings (hospital and home care).

In reports that illustrate the lack of care coordination between the first, second and third lines of care, the complex organization of health care services (e.g. by different authorities) and financing mechanisms were two major brakes on this coordination.[45.Stordeur, 2008 #50]

### 3.9.2 Ensuring the continuity of care

The quality and in particular the continuity and efficiency of the HAH health care services depend upon the quality of the HAH teams but also upon the network of other, specialized services, including hospitals. The HAH should help people to navigate in the health system in the most appropriate way. The different actors and setting should operate in a continuum. Transition between settings should not disrupt the continuity of care along the lines of the individual care plan of the patient, especially in case of emergency.

In line with this, a Belgian report recommended to:[30]

- Develop and promote the use of shared protocols across settings.
- Share an electronic medical record between settings.

### 3.9.3 Seamless care with regard to medications

A report on seamless care with regard to medications at admission and at discharge from the hospital highlighted that problems were encountered for between 20% and 60% of hospitalized patients and related to:[41]

- The communication at hospital admission (e.g. incomplete list of medications).
- The communication when returning home (e.g. lack of communication with GP).
- Health care professionals (e.g. lack of assistance to the patient with regard to medications management).
- Patients and families (e.g. non-compliance).

They did not identify any scientific evidence on interventions to enhance seamless care but an analysis of the situation in other countries and in Belgium led to the following recommendations:[41]

- To compile, publish and circulate good practice guidelines on seamless care with regard to medication.

[e] For a detailed description of different coordination initiatives, we refer the reader to the Chapter 8 of the KCE report 190 – Organisation of care for chronic patients in Belgium : development of a position paper.[30]

- To draw the attention of care providers and patients to the importance of the continuity of medications at the time of transition between care sites.
- To emphasize the shared responsibility of all in this matter.
- To formulate clear procedures for seamless care focusing on medications at the admission and discharge from hospital.
- To share the patient data in electronic form (medical data of interest, updated list of medications) while respecting the rules of safety and confidentiality.

### 3.9.4 Rethinking boundaries in primary care provision

The challenge of improving coordination between different care levels is increased by the fragmentation and sometimes isolation of community care providers. In Belgium, integrated primary care practices involving professionals from different backgrounds (e.g. GPs, nurse, etc.) are quite uncommon. More than two thirds of general physicians (GP) work in single practices or small group practices. While coordination in the delivery of care is an important aspect in improving interaction between different care levels, it does not ensure that the different actors involve in a healthcare delivery process are able, or wish, to participate. Lack of appropriate financing incentives accompanied by clearly defined roles during the care process have been pointed out as limiting the extent to which new models of healthcare delivery may pierce boundaries between different levels of care.[35, 43, 46, 47].

### 3.9.5 Building bridges between different levels of governance

Fragmentation also arises given the distribution of responsibilities on healthcare and social care between the federal and federated entities[f]. This needs to be taken into account when considering a shift in provision of care in hospital towards alternative environments.

Because responsibilities on planning of hospitals and community services, including primary healthcare and social care are not interlinked, the creation of alternatives to classical hospitalization such as HAH structures may necessitate negotiations between multiple actors and creation of new rules to transfer separated budgets.[35] In addition, for some matters (e.g. personal care) there is a grey zone between healthcare and social care. Social care is financed via budgets from the federated authorities while nursing care is financed under the federal rules of the INAMI – RIZIV. For some matters, notably personal care the two sectors may work in parallel.[37]

## 3.10 What requirements must be met

### 3.10.1 Framework

**From pilot projects to a structured delivery of HAH: The need for a recognized definition/status**

While there is currently not a recognized status of HAH in Belgium, it became apparent during the development of the project that many different actors deliver healthcare interventions that they labelled as *"hospital at home"*.[39, 50-53] As in other countries, current HAH initiatives in Belgium are something that is growing from the bottom and that need for a more regulated framework in the years to come. Indeed, at the European level, the guarantee for quality and safety in any healthcare setting has been a matter of concern for years. In line with this, the 2011 Directive on patients' rights in cross border healthcare imposes that member states should have a minimal framework of quality and safety norms for healthcare provided in the respective state (Directive 2011/24/EU, March, 9th 2011). Member States need for example to make sure that providers give relevant information (e.g. on treatment options, clear information on prices and insurance cover, the availability, quality and safety of the healthcare that they provide) to help their patients to make an informed choice. A legislative framework guaranteeing quality and safety for HAH initiatives is therefore needed.

[f] For a detailed description of different responsibilities between federal and federated entities, we refer the reader to the Chapter 2 section 4 of the Belgium: Health system review [48] and for a description on the 6th state reform to [49]

Avenues of reflexion on a regulation framework for these initiatives will be determined by whether their articulation within the healthcare system will depend on the regulation of hospitals, of community care providers or both. HAH initiatives does not fall under the current definition of "hospital" in the sense of the hospital law (see Table 16), which could induce some challenges to think about (inspired by the KCE report on extramural centres).[8] Indeed, market entry for hospital services is restricted by government regulation, i.e. hospital has to fit into the national planning, which is then translated into programming standards and criteria. Hospitals have also to fulfil several recognition criteria, for example concerning hygiene, safety and quality of care, before they are allowed to operate. If HAH initiatives do not fall within the scope of the definition of "hospital" in the sense of the hospital law (see Table 1), they do not have to comply with the national planning or with hygiene, safety and quality norms and other rules that apply to hospitals, such as among others the proactive control of norms, or the "centralized liability" so that patients know to whom they can address a claim in case of presumed violation of their rights.

The following questions nevertheless should be raised, i.e. to what extend HAH initiatives should followed the same rules than hospitals and which interventions or interventions for patients with particular characteristics (e.g. high BMI, young age) should solely be carried out in a hospital setting. In the preceding legislature, a bill of law setting a minimal framework for quality and safety of medical practice, regardless of the setting, was elaborated (see the KCE report 225 for more details).[54] This bill aimed at putting the responsibility in terms of quality and safety on the caregiver regardless of the setting and defined for example which kind of patients should absolutely be hospitalized or which minimum criteria should be respected for surgical interventions (in every settings so also in extramural centres). This bill of law could therefore also respond to the questions related to quality and safety of care in HAH.

Moreover, the non-application of hospital specific legislation does nevertheless not imply that current HAH initiatives operate in a legal vacuum. Generic legislation that relates to safety and quality such as for instance CE marking of medical devices, ISO norms, etc. is applicable. Quality of care is also to some extent, indirectly guaranteed by general rules applying to all physicians in Belgium such as patients' rights, duties included in the deontological code, the Royal Decree concerning the exercise of healthcare professions and the law on processing of personal data. Of course, general civil and criminal liability rules also apply.

**Table 16 – Legal definition of "hospitals" in Belgium**

*"Hospitals are legally defined in the Belgian hospital law that outlines criteria for official recognition and hence grants the right to operate and claim reimbursement of intramural healthcare services by the compulsory national health insurance (Coordinated Hospital Law 10 July 2008). Hospitals, public or private not for profit, need to meet two general conditions: they need to fulfil official recognition criteria (e.g. hygiene, safety, quality of care) and they need to fit in the national planning, the programming. Programming is an estimation of the necessary capacity for a particular care establishment.*

*The notion 'hospital' is described in the hospital law. Key characteristics of hospitals are continuity of care, provision of basic care in medicine and surgery, multidisciplinary setting, appropriate organization and infrastructure, possibility to stay overnight, ability to react timely to the care needs. Furthermore, hospitals are required to provide care accessible for all citizens, independent of their age, gender, philosophical or religious belief, race or sexual orientation and without discrimination based on individual financial status (art. 3 § 1 Decree 17 October 2003 related to the quality of health care and wellbeing establishments)."*[54]

**Discussions on geographical care area**

In the international comparison, a two level geographical boundary for HAH delivery was identified. First, HAH providers may work within defined catchment areas that establish the access to healthcare for patients living in that area. Second, HAH professionals usually define within a catchment area whether they can deliver care to all the population. Reasons to set this second boundary may include to be able to provide a rapid response in case of emergency, limiting travel costs, etc.

In Belgium, there are currently discussions on the possibility of redesigning the healthcare landscape, with a service offer tailored to population needs and within the larger context of a regional strategic care organisation plan encompassing all levels and aspects of the cure, care and welfare sector, leading to a much more integrated care system where the services are provided to the patient in the least complex environment that is clinically appropriate.[35] The necessity to plan care on the basis of population needs

of well-defined geographical areas holds for hospitals but also for primary care and transmural care initiatives such as HAH initiatives. In opposition with some strict role of catchment area identified in other countries, the objective in Belgium is not to limit the choice of the patient or the referring physician, nor to restrain completely any form of initiative and competition among the hospitals, but rather to design a public health framework within which the actors can deploy their services offer.[35]

**Key points for reflexion: Framework**

- **Current HAH initiatives should be submitted to an official recognition process, granting them a license to operate. The recognition norms should ensure that minimum requirements for safety and quality of care are met. Further norms applying to HAH will depend on whether their articulation within the healthcare system will depend on the regulation of hospitals, of community care providers or both.**
- **The fact that current HAH initiatives does not fall under the national planning for hospitals increase the importance of redesigning the healthcare landscape and the necessity to plan care on the basis of population needs that would holds not only for hospitals but also for primary care and transmural care.**

### *3.10.2 Workforce*

The literature review (Chapter 1) and the international comparison (Chapter 2) highlighted the importance of the human factor in the appropriate delivery of HAH. Hereafter we summarize a list of issues tackling the labour force that will need to be considered when developing HAH in Belgium.

**Potential deficit in human resources**

Ensuring an adequate supply of highly skilled healthcare professionals is a necessary condition to deliver high quality and accessible healthcare. While available data on the labor force are insufficient to evaluate whether the labor force supply can cover the care needs of the population[55], a potential deficit in nurses and GP has still been highlighted. This possible deficit is related among other aspects to the lack of recognition and of clear visibility of the role of GPs and nurses, the excessive workload related to the patient's care needs (curative interventions) and to the need to deal with administrative and clerical tasks and the difficulty to establish a work-life balance (e.g. out-of-hours demands).[37, 56-59]

For other healthcare professionals, a similar situation may exist.[60] It has been pointed out that a shortage of clinical pharmacists[60] combined with high workload in hospital pharmacies [61] main limit the extent to which pharmacists may be able to fulfil new roles.

**Need for new roles and specialization in primary care**

Several studies have pointed out that the training of GPs and nurses needs to be reshaped to prepare them to face the ever-changing care needs of their patients.[30] For complex interventions at home, primary care providers may need to gain expertise that are usually held by hospital-based professionals. This calls to elaborate new training modules during their baseline training as well as providing continuing education (e.g. basic training in palliative care[7], dementia [62], pharmacological intervention of nurses[63]) and to facilitate multidisciplinary collaborations. Another report also described initiatives abroad to enhance the role of the pharmacist, e.g. implied in patient medication management.[30]

Reflections on either creating new titles or changing the function description of existing title should also be done. Potential barriers to the implementation of new titles in Belgium have been highlighted in a previous report and concern a.o. the potential resistance of (other) health professionals, the difficulty to adapt the legislation, the need for financing these new title, the lack of adequate training and the nurse shortage. Critical points that should be considered before the implementation of any new title in Belgium have also be raised:[30]

- The legislation must be adapted;
- Responsibility, supervision and other regulatory arrangements must be defined;
- An agreement with the health professionals on the shift of their competences to other professionals must be find.
- Financial arrangements are needed (e.g. financing system);
- Recognized training programmes in accordance with the Bologna Declaration must be provided;

- Competences and tasks must be defined;
- The new functions must be introduced within the existing networks of health professionals;
- The number of health professionals with special attention for the nurse shortage must be monitored;

It should also be noted that recommendations to overcome deficit of healthcare professionals and the need for new roles in primary care are often interlink. Notably it calls for action in different fronts:

- To enhance the visibility of the profession during the education at the medical and nursing faculties [58]
- To develop new highly specialized function descriptions for the primary and allied healthcare professionals [30, 37, 42, 64, 65] and to better distribute administration tasks according to their education level[37]

Steps towards the recognition of specific skills and delegation of tasks are already taking place. For nurses working in home care, the INAMI – RIZIV recognizes two specializations (care for diabetics and wound care)[g] and nurses can delegate, under certain condition, tasks towards nurses-aids[66] Planning of new tasks and roles for healthcare professionals needs to be accompanied with appropriate financial incentives. Implications of the latter are discussed in the section 3.10.3.

While primary healthcare providers should be granted the possibility to acquire highly specialized skills, it is probably not realistic that they all may be able or wish to do so. As pointed out in the KCE report on the organization of aftercare for patients with severe burn injuries, it is therefore necessary to ensure that patients can easily find a list of primary care providers possessing the right skills to cover their care needs.[65]

**Fulfilling the function of coordinator**

A previous KCE report[30] highlighted the need and the possibility of further developing coordinating functions, such as case manager and liaison nurses. To ensure an improvement of the coordinating function at the individual level (professional), the following recommendations were made:[30]

- The role of case manager should be officially recognized, with a legal framework that defines competences, training and responsibilities. All required case management competences and skills should also be integrated into the curricula leading towards this role.
- The case manager should have a good knowledge of all locally available resources and services.
- The patient electronic medical record should be able to be shared between all health professionals (link with section 3.10.6, IT tools).
- Quality assurance procedures should be implemented, with special reference to the level of realisation of the patient goals.

**The importance of a multidisciplinary approach**

It is not always straight forward to facilitate the implementation of multidisciplinary collaborations or multidisciplinary teams in a setting dominated by single-handed GP practices, sub-optimal transition between primary, secondary and tertiary care and a strong attachment to allow the patient to choose their preferred care provider.[30, 35]

Even in the light of this challenging environment, positive experiences with multidisciplinary teams are being developed and it has been recommend to incentive this type of collaboration.[7, 30, 42, 67, 68] Examples of currently existing multidisciplinary initiatives include among others a limited number of primary care centres [69], the care trajectories for diabetes and renal failure[47], sharing of tasks between healthcare professionals trough home oxygen therapy "conventions"[46], the multidisciplinary palliative home team [7], multidisciplinary teams working around care pathways developed by hospitals[70] and the multidisciplinary oncological consultation (MOC)[68] (see also the report supplement for more details).

[g] Specialization for nurses working in hospitals are recognized by (other specialization cover only the hospital framework e.g. oncology nurse)

Avenues for improvement leading to an efficient multidisciplinary approach include:[30]

- Having a common and agreed care plan, as well as defining the role and responsibilities of all professionals (including reflexions on the integration, coordination, and delegation of tasks).
- For highly complex medical situations, the medical specialist might also become a full member of the team, even for the routine care of the patient.
- Sharing information through effective communication strategies (e.g. patient's record) including meetings at the patient's bed (or telemonitoring).
- Empowering the patient.

**Key points for reflexion: Workforce**

- **Planning of capacity for new models of healthcare delivery need to consider:**
- **Whether there is shortage in the number of healthcare professionals that may be called upon to participate in a new care process.**
- **That early and adapted transfer of know-how to healthcare professionals facing new care demands should be ensured. This requires both to develop and review baseline education, to provide continuing education and to facilitate collaboration with healthcare professionals having an expertise in the field.**
- **Whether new highly specialized functions for the primary healthcare profession are required should be assessed. If this option is chosen, any new role or functions must be officially recognized, with a legal framework that defines competences, training and responsibilities.**
- **That care coordination remains a key point to ensure appropriate healthcare delivery for complex cases.**
- **That care coordination and the establishment of a multidisciplinary approach requires to define clear rules on the roles of responsibilities of all professionals and to develop effective communication strategies.**

### *3.10.3 Financing*

The international comparison (Chapter 2) highlighted that different financing mechanisms are used for HAH. Shortcomings of these financing mechanism seem to be related to the fact that they do not always rely on an appropriate estimation of cost and that there is a lack of alignment with the financing of hospitals and community care providers. Points of consideration concerning financing aspects in Belgium are highlighted hereafter.

**The remuneration of the healthcare professionals: adapting the payment system to better reflect workload and specialization**

Several reports have highlighted that the list of reimbursable medical services (nomenclature) does not fully reflect the current nature of activities performed by nurses and physicians.[37, 53, 57, 58, 71, 72] For home nursing, the current payment system does neither incentive coordination of care, communication and patient education nor distinguishes between basic care (that might be delegated) from specialized nursing care. In line with the latter, the tariffs used do not capture the complexity of activities (e.g. technical acts, holistic approach to the patient) and the skills (e.g. education level) required to perform some interventions. Some interventions are also missing from the list of billing acts leading to no financial remuneration and the rules avoiding cumulative reimbursement lack consistency.

For general physicians, similar problems have been encountered, notably the lack of appropriate compensation for care coordination. [30] A previous report also stressed that the remuneration schemes should adequately compensate for training and supervision tasks linked to patient empowerment to promote it.[30]

**A need to simplify the system and avoid overlap**

In the KCE report on the financing of home nursing, it was reported that stakeholders disapproved the fact that too many different mechanisms and financing sources currently contribute to the financing of home nursing, leading to complexity and overlap.[37]

Issues around the payment for home oxygen therapy have also been highlighted in a KCE report.[46] The fact that multiple reimbursement pathways exist for the delivery and reimbursement of home oxygen therapy in Belgium was criticized. Indeed, as reported in the supplement of the report regarding to the description of home oxygen therapy in Belgium, it depends on whether the prescription is performed (i) in a department of pulmonology

of a hospital (or a campus of a hospital) admitted to the INAMI – RIZIV and hospital convention system or (ii) in the context of an agreement between a community pharmacist and the INAMI – RIZIV.[46]

**Financial incentives for the best setting**

According to the KCE report on the financing of hospitals,[35] there are not enough incentives to optimize the choice between different therapeutic settings (hospital, day-hospital, and outpatient care).

In line with this, the KCE report on dialysis[43] showed that the substitution of the more expensive haemodialysis in a hospital setting to the less expensive alternatives such as low-care haemodialysis in satellite centres and chronic peritoneal dialysis at home has been slower in Belgium than in other countries. Cleemput et al. (2010)[43] pointed out that this may be related to the working of the current payment system for different haemodialysis modalities. Presumed positive financial incentives for the use of alternative dialysis modalities might be neutralized by the profits generated by hospital:

- The honoraria and lump sums for hospital HD are an important source of revenues. Because both are paid per hospital HD session, they are purely variable financing mechanisms while the corresponding costs are often fixed or semi-fixed (e.g. the costs of the equipment and personnel do not increase proportionally to the number of patients). This might create financial incentives for the use of hospital HD if medically a choice is possible.
- Moreover, for hospital HD, the reimbursement consists of 2 parts, a fee for the medical specialist and a lump sum for the hospital, while for satellite HD, home HD and for PD, only a lump sum can be asked. Therefore, physicians might not be given the right financial incentives to promote alternative dialysis modalities.

The KCE report on dialysis therefore recommended that the financing mechanisms between the different settings should be more neutral to avoid any incentive against a specific care modality and that a financing via a lump sum and fees for the medical specialist in one setting and only with a lump sum in another setting should be abandoned.[43]

**Financing of long term nursing care**

For nursing care, the KCE report on the financing of home nursing highlighted that long-term care payments needed disentangle basic care and follow-up of chronic conditions from technical care. They recommended that payments for the follow-up of chronic conditions should be based on an evaluation of patient dependency for lump sum financing and that technical or specialised care should be based on a fee-for-service payment system with adequate tariffs (related to the workload).[37]

**A refinement of the activity-based financing and a financing of the whole episode of care**

As reported in section 3.10.1, there have been a number of bottom-up initiatives with integrated care pathways across care settings. Nevertheless, the KCE report on the financing of hospitals[35] reported that the current payment system is perceived as a strong barrier for this kind of project but that these experiences could offers the opportunity to start experimental prospective pathology-based payment schemes that cover the whole episode of care (i.e. also including the pre- and post-acute care activities). This KCE report recommended to first refine the existing system of DRG-based payment per admission, based more on actual costs and then to test via pilot projects the extension of this system to the whole episode of care across settings (transmural pre-, acute and post-acute care). To refine the DRG-based payment system per admission, they also insisted on the fact that:[35]

- DRG tariffs should be based on the average cost[h], which require a system of cost collection based on a representative sample of hospitals, with recent and of quality cost data.
- The grouping system should be extensively tested on Belgian data to check the homogeneity of groups in terms of resources consumption. A distinct financing should also be foreseen for patients with a long stay or high costs such as expensive medicines or medical devices.

[h] And not anymore on the length of stays (“activité justifiée”) as it is done currently.

Finally, they added that after several years of experience, the average costs could be progressively adjusted on the basis of justified care (evidence-based financing).[35]

The KCE report on the financing of nursing home care also proposed that some specific post-acute care could be financed via the DRG-based payment system of hospitals and that this could enhance the collaboration between hospitals and home care providers.[37]

**Financial accessibility**

In the international comparison, there was some evidence that a priori patients and their families should not bear additional cost when choosing for HAH. Yet, there is some evidence that compared to classic hospitalization, HAH may induce a transfer of cost to the patients (hostelry costs, etc.). It is not always clear whether patients pay higher out-of-pocket payments when choosing to receive care at home in Belgium instead that in a hospital. For instance, in the case of home oxygen therapy, the patient does not necessarily receive a financial compensation for additional electricity cost.[46] In the case of different modalities of dialysis, no important or consistent differences on patient's out-of-pocket payments were identified. However, estimations did not include "hostelry cost" and the cost of non-reimbursed services.[43]

Out-of-pocket payments in Belgium may remain high in some situations and may depend on the care setting.[73] For instance, supplement of fees in day care are important for patients in single room (4/5 of the invoice) and patient out-of-pocket payments for medical devices can be important for some day care interventions.

A closer look to patient out-of-pocket payments in the pilot projects should therefore be done. Moreover, the question of supplement of fees should also be discussed.

**Financial initiatives for quality**

Some previous reports suggested introducing financial incentives to improve the quality of care.[37,42,30, 41, 63] This mechanism is called Pay for Performance (P4P) or Pay for Quality (P4Q), if the objective exclusively focuses on the quality component of performance.

The advantages, disadvantages and feasibility of the introduction of 'Pay for Quality' programmes in Belgium were the subject of a KCE report.[74] This report did not identify Belgian initiative that fits the definition of P4Q (i.e. financial incentive based on quality measurement). The main conclusion of the literature review performed in this report was that there was a strong variation in the results measured after the introduction of P4Q programmes and that most of them had only a moderate effect.

When thinking about the introduction of a pay-for-performance system, this report recommended:[74]

- To develop quality measures that are supported by evidence.
- To reward the achievement of quality targets rather than the providers and organizations with the best results.
- To implement P4Q programmes gradually.
- To use accurate, validated and already available data.
- To set up, from the start, a monitor system of the overall impact, effectiveness, cost-effectiveness and potential unintended consequences.
- To provide a feedback to the health professionals.

**Key points for reflexion: Financing**

- **The FFS payment system needs to be adapted to achieve an adequate remuneration of health professionals differentiated according to the level of specialization and the workload. The payment system should also enable to develop holistic approach in patient care. The latter involves payment for the coordination of care as well as education of the patient and the informal caregivers.**
- **Financing mechanisms between the different settings should be more neutral for similar care modalities. This may require to improve the data available on true cost of an intervention in different settings (see also the next point). The possibility to provide financial incentives (or disincentives) to optimize the choice of the best clinical setting could also be analysed.**

- **The financing of HAH activities in Belgium will depend on the definite choice on the nature of the medical activity that will be performed in HAH (i.e. considered as hospital care, community care or specific status of HAH care) and will need to be integrated in the larger scope of the future reform of the hospital financing. According to previous Belgian reports, the introduction of a mixed financing systems could be considered, with the following possibilities:**
  - **A lump sum payment system based on real cost (which implied data collection and the determination of homogene groups in terms of resources consumption);**
  - **Additional payments for some specialized services or expensives pharmaceuticals and medical devices;**
- **Pilot tests could also be implemented on the development of (i) a financing for the whole episode of care across settings; (ii) a financing system linked to the quality of care (i.e. a pay-for performance system which requires e.g. the development of (evidence-based) quality indicators, the collection of valid data, a definition of possible consequences and a feedback to professionals) or (ii) an evidence-based financing.**
- **For long term nursing care of chronic patients (if considered as part of HAH care), basic care and follow-up of chronic conditions could be disentangled from technical care. Payment for chronic conditions could be based on an evaluation of patient dependency for a lump sum financing and technical or specialized care could be based on a fee-for-service payment system with adequate tariffs.**
- **An attention should be paid to the financial accessibility of all patients: monitoring of the patient out-of-pocket payments (also for non-medical care such as hostelry costs), with an attention for vulnerable groups, and an analysis of the question of supplements. In addition, it should be considered whether insurance policies for a classical hospitalisation need to be adapted to cover patients admitted to HAH.**

### *3.10.4 Processes in support of quality of care*

**Framework for the measurement of clinical quality indicators**

A report on clinical quality indicators proposed a framework to develop sets of clinical indicators and to implement a system for the measurement of quality of care in Belgium. As specified in this report, the development of this framework at policy level requires a national health policy with clear health care goals and priorities and has to take into account the impact on public health, the availability of data and the potential for improvement. Clinical quality indicator systems should also take into account the technical characteristics of the indicators such as validity, reliability, sensitivity and specificity. Characteristics related to the use of the indicator, such as feasibility and interpretation are also important. Process indicators are more sensitive to differences in the quality of care whereas outcome indicators are indirect measures and reflect all aspects of the processes of care (even those which are not directly measurable).[75] This report recommended the development of a system for the measurement of quality with a special attention to:[75]

- The definition of clear objectives and consequences of the measurement.
- The involvement of health professionals.
- The set-up of a valid data collection that takes into account the existing databases.
- The search for evidence-based clinical quality indicators.
- The improvement of the collection of hospital data to allow further analyses in relation to the quality of care (IT tools).

Another report on the quality in general practice also identified these key elements:[76]

- IT developments for the data collection and quality measurement, discussed within the Be-Health Programme.
- New budgets or reallocation of the current ones to support quality initiatives.

**A national plan on quality**

A previous report also concluded that coordination was needed to harmonize the multiple quality initiatives and data collections in Belgium. The coordination between the different level of authorities and the different agencies should be improved to avoid the duplication in data collections. Moreover, a national quality plan, with all quality initiative embedded in an integrative global quality system should be developed.[77]

**The quality of medication management**

The quality of prescribing and of medication management is of utmost importance for some group of person such as the elderly. Since 2000 each nursing home / home for the elderly has a medical coordinator (GP), who is responsible for the coordination of quality initiatives, for the training of the staff and for the development and use of a formulary for the medication policy (legally regulated since 2004). However, a previous report on medication use in nursing homes and homes for the elderly shows a large variation in the quality of the medication management systems. The quality of prescribing depends on the location of the care home. A lower quality is found with a lower number of residents per GP. A higher quality is associated with greater activity of local pharmacist, higher activity of coordinating GP, a better implementation of the formulary and a higher ratio of nursing staff versus the number of residents. The medication management system focuses more on the distribution process than on the quality of prescription, with a poor implementation of the formulary.[63] This report recommended:[63]

- To improve the implementation of a formulary by giving a more important role to a coordinating physician.
- To adapt the training of nurses and pharmacists to the new roles within the medication management systems.
- To consider other financing systems for medications (case-mix budgeting, reference prices), rather than a fee-for-service basis.

**Key points for reflexion: Quality**

- **Common recommendations related to quality are:**
- **The major role of the authorities for launching and supporting quality initiatives (leadership, quality policy, definition of objectives and consequences) and the need for a global vision and the definition of a global quality plan**
- **The development of quality indicators based on the evidence;**
- **The involvement of the profession (scientific associations and individuals);**
- **Adequate IT developments;**
- **A training of the professionals to take new roles in the quality system;**
- **An adequate financing (or reorientation of the current budget) to support quality initiatives.**

### *3.10.5 Decision support*

The KCE publish a series of guidelines in relation to the care in oncology and many other conditions. Other Belgian institutions also publish guidelines and there is an effort today to rationalize this offer on the net (i.e. EBMPracticeNET) and to integrate this information into the medical file. Nevertheless, no guidelines currently address (or not enough) the problem of the best setting of care.

According to the KCE on the financing of hospitals,[35] a framework should be created, defining for each type of care where they should be preferentially be provided (classic hospitalization, day hospitalization, outpatients care). Based on scientific opinion or international trends, target could also be set. The choice of the best settings should also be supported by financial incentives (see section 3.10.3). The KCE report on dialysis also highlighted the need to develop Clinical guidelines to improve the choice between the different dialysis modalities, including indications and contra-indications of the different modalities.[43]

**Key points for reflexion: Decision support**

- **There is a need to create a framework defining for each type of care where they should preferentially be provided.**

### *3.10.6 IT tools*

Many recommendations outlined in the previous sections required an IT investment:[30, 42]

- Access to the medical record for all professionals involved in the multidisciplinary team requires IT-systems compatible between organizations and between professionals.
- IT systems should also allow the extraction of data relevant to monitor the quality of patient care.
- IT systems could be used for the financing and to set up pay-for-quality initiatives.
- Automated reminders (decision support) could improve the compliance with guidelines.

It should also be noted that in December 2012, an action plan on eHealth was presented, with the objective of having a widespread use of online health services around the patient for 2018. The plan is based on five pillars: (i) “develop data exchange between caregivers on a common architecture; (ii) achieve a greater engagement and a better knowledge of e-Health by the patients; (iii) develop a terminology of reference; (iv) simplify and improve the efficiency of administrative tasks and; (v) establish a flexible and transparent governance structure in which all authorities and relevant stakeholders will be involved”.[78]

**Key points for reflexion: IT tools**

- **Investments in clinical information systems are required to fulfil the requirements above i.e. to share information between professionals, to collect accurate data for financing and for the measurement of quality of care, to offer a decision-support for the clinicians.**

## 3.11 Limitations

- **Evidence in this chapter is based on the findings from previous Belgian reports and not on a detailed analysis from primary sources or data. However, results from these other reports were critically appraised by two researchers in order to reduce the risk of using non-reliable information.**

# 4 DISCUSSION OF POSSIBILITIES FOR THE IMPLEMENTATION OF HAH IN BELGIUM

## 4.1 Introduction

The main objective of this part of the study was to explore views from the Belgian health care field about whether and how HAH could be implemented in Belgium. The Belgian landscape is very fragmented in terms of structures, models and actors. There can also be significant differences at the regional level, both due to the policy framework that is marked by different institutional levels involved in health care as well as the freedom left in terms of how some policies can be implemented. An underlying aim of this part of the study was to look for "generic solutions" independently of these differences.

This chapter of the report is based on the consolidated findings from the different activities that have been undertaken: face-to-face interviews and a workshop with field actors. As such, it **reflects the views and opinions of the respondents** and stakeholders and not verified facts. The first section in this chapter presents the methodology that was followed. Subsequent sections present the findings per theme that was addressed in the interviews. For the four themes that were discussed more in depth during the stakeholder workshop, the respective sections below report first on the results from the interviews and then zoom in on the results of the workshop. The last section is a brief discussion on the results.

## 4.2 Methodology

### *4.2.1 Step 1: Preparation*

Before consulting the stakeholders, the results from the literature review and the international comparison were used to develop interview questions around key dimensions for the definition and implementation of alternative HAH models (semi-structured interviews) and potential models for implementation of HAH in Belgium. This was done in a workshop mixing team members of KCE who had performed the literature review and the international comparison and the team in charge of the stakeholder consultation.

One of the insights during this workshop was that there is no clear and agreed definition of HAH in the literature, to serve as the basis for comparing experiences. Options were considered and a definition agreed which is in line with the scope of the KCE research project and its design.

The following definition was used in the stakeholder consultation and included in the document introducing the different models to the respondents:

*A hospital at home intervention provides care in the patient's place of residence that would otherwise need to be delivered in an acute hospital.*

The key dimensions selected to describe the different models are:

- overall organisation principles
- who is in charge of prescribing HAH
- who has the main responsibility for the medical follow-up during HAH
- who is in charge of delivering care services at the patient's home
- who is in charge of the overall coordination

The financing was consciously kept out of the alternative model descriptions to avoid this would become the most important element for preferring or choosing one of the models. It is expected that financing will follow the type organization and not the other way around.

It was decided to not fully inform interviewees' about findings of the previous chapters and to only send in advance a concise 'background note' describing three potential models identified internationally. The objective was to give free rein to the unbiased opinion of the interviewee and avoid influencing its content (see section 4.2 of the supplement for more details). One proposed model was 'hospital-based', another model proposed separate, dedicated entities to take on HAH care provision, and a third model consisted of a mixed approach whereby care services provided by hospital-based teams are combined with care by teams from existing first line care providers. The definition of the models was inspired by the international review and therefore existing national models. The first, hospital-centric, is inspired by the situation in the autonomous communities of Valencia and the Basque Country (Spain) and Victoria (Australia), the third model with dedicated entities, by France, and the mixed model by the Netherlands.

### 4.2.2 Step 2: Face-to-face interviews

The second stage consisted in interviewing face-to-face a sample of expert-stakeholders. These persons were selected taking into account a spread over different types of stakeholders, but also their experience or knowledge about HAH.

The stakeholder groups represented in this sample comprised (in no particular order): policy makers, hospitals, health insurance organisations, patients, general practitioners, industry and organisations providing care services at home. The table below shows the distribution of the interviews over the different stakeholder groups.

**Table 17 – Overview of interviews done per stakeholder group**

| Stakeholder group | Planned | Done | Number of persons |
|---|---|---|---|
| **Policy makers** | 1 | 2 | 4 |
| **Insurers** | 1 | 2 | 3 |
| **Hospitals** | 5 | 7 | 12 |
| **Industry** | 2 | 2 | 3 |
| **GP** | 3 | 3 | 3 |
| **Patients** | 3 | 2 | 2 |
| **Homecare** | 5 | 5 | 8 |
| **Total** | **20** | **23** | **35** |

Because a number of interviews took place with several respondents present, 35 persons have been interviewed in total, at the occasion of 23 interviews. The high number of persons interviewed in hospitals is explained by the ambition to speak to various functions inside hospitals: management, specialist physicians and pharmacists mainly. Individual patients with HAH experience was a difficult target to identify, explaining the lower number than intended. Identification of interviewees for this specific target group was done through existing initiatives that label themselves as HAH[i] and through patient organisations. In general, the identification of respondents was done through identified initiatives and grey literature mentioning experiences in Belgium, participants in meetings on HAH or related subjects.

It is worth nothing that inclusion of professionals from HAH initiatives in the interviews aimed at shedding some light at the “reality in the field” and not at making a comprehensive inventory of what exists. Neither was it the purpose of making a formal evaluation[j]. For each of the three organization models (see the box below), at least one initiative that could fit its description was invited. However, not all identified initiatives could be included in our sample, because of the limited number of interviews that could be organized within the time allocated for this project.

[i] [i] As mentioned in the previous chapter, currently HAH does not designate a specific care provider or service in Belgium.

[j] At the start of the project, identification of initiatives was expected to be aligned with the inventory that was foreseen at the launch of the pilot-project in 2014. As this program was delayed, a snow-ball method was used to identify initiatives. Some informal meetings with actors from different initiatives took place throughout the project.

Initiatives which can be qualified as HAH do exist in Belgium. These include e.g. parenteral nutrition, medication for rare diseases, wound treatments, IV antibiotics, chemotherapy …

A small number of respondents are involved in such existing experiences. These experiences can be grouped into three different organisational models

1) a hospital-based model : a model applied for mono-pathologies treatments like oncology or cardiology. The treatment moves to the home of the patient but with the hospital staff due to the complexity and the need for specialised knowledge.

2) a model based on autonomous organisations independent from hospitals that disposes mainly of primary care professionals : this model is applied by one of the interviewed organisations and concentrates on IV antibiotics, complex wounds, parenteral nutrition.

3) a mixed model where primary care professionals/homecare coordination centres work in close cooperation with the hospital: this model is not used for specialised mono-pathologies but rather for palliative care, geriatric care, prolonged antibiotherapy.

Interviewees received in advance the description of the three potential models. Interviews were spread geographically and had an average duration of one and a half hour. The interview started with their spontaneous reactions on these models, their preference and motivation. The semi-structured questionnaire used for these rather open interviews is added in the report supplement (section 4.1). The following subjects were covered:

- spontaneous opinion on the three proposed organizational models
- roles and tasks of different actors
- target groups
- expected impact and objectives to be pursued
- barriers and difficulties for implementation
- conditions of success
- financing
- operational support to be put in place
- planning for implementation

Individual interview reports were made of each interview following the structure of the checklist.

A first analysis was performed using the main subjects of the checklist as an analysis grid.

All thematic sections below are based on the results of interviews. “Respondents” or “interviewees” are used when describing opinions or results from the interviews. When results come from the stakeholder workshop, the text refers to “stakeholders”.

### 4.2.3 Step 3: Workshop with stakeholders

The third stage was a workshop with stakeholders, which took place on 26 February 2015 and was hosted by the KCE in its offices in Brussels.

The same stakeholder groups as for the interviews were considered and contacted for participation in the workshop. Representative organisations of stakeholders were invited to participate, and it were the organisations themselves which decided who to send to the workshop. Twenty-three persons participated in the workshop of which approximately a quarter had been interviewed earlier in step 2. Participants in the workshop can be considered as representing a stakeholder group, and persons interviewed in the previous stage as selected based on their experience, expertise or function.

The workshop consisted of three parts:

- A presentation in plenary of the results of the interviews. The points on which a broad consensus seems to exist were identified, as well as points on which views and opinions diverge among stakeholders.
- Discussions in small groups around specific themes. Three different working groups were formed to discuss specific themes on which opinions seemed to vary significantly: the options for overall coordination of care in a HAH setting (including medical as well as non-medical care); the options for the role of the GP in the medical follow-up of a HAH patient; the options for the provision of nursing services in a HAH setting; and finally the options for financing HAH, including the medical and non-medical care. Each of the three groups addressed one

of the first three themes mentioned above, while the financing question was discussed in all three groups. In terms of process, the participants in the discussions were invited to write their ideas about advantages and disadvantages of various options on sticky notes, which were subsequently organised on posters and discussed.

- After the parallel discussions (which took 1,5 hours), results on each theme were presented and (briefly) discussed in a plenary session. Each participant had at this time the opportunity to react and to bring in additional points of view.

Both the parallel discussions and the plenary discussion have been audio recorded. In addition, notes have been taken of all discussions by note takers from the KCE study team.

Four of the thematic sections below are based partly on the results of the workshop: sections 4.3.4.3 (medical follow-up), 4.3.4.4 (nursing services), 4.3.4.6 (coordination) and section 4.3.6 (financing).

## 4.3 Results

### *4.3.1 Expected impact and objectives to be pursued*

Interview respondents were asked which types of impact they expect HAH to bring. Overall, significant impacts are expected. These can be grouped in four domains, of which the three first were most often evoked: 1) economic, more specifically cost savings and therefore a positive effect on the budget; 2) impacts for the patients and those around them; 3) quality, security and continuity of care; 4) strengthening the first line of care.

**Economic impacts**

- The following elements of economic impacts were frequently mentioned:
- Positive economic and budgetary effects (on the overall budget of RIZIV/INAMI)
- Reduction of the duration of the stay in hospital
- Release of hospital beds
- Also mentioned were:
- Increased (economic) efficiency
- less institutionalisation

A clear point of divergence of views concerns the question whether HAH would yield savings on the overall budget in comparison to hospitalisation or not. The explanation for this diverging opinion is the way hospitals are being financed. The expectation is that HAH would have little impact on many of the fixed costs of hospitals. If and when there would be savings in terms of hospital budget, they could be compensated by the additional costs of HAH. This opinion was expressed by a minority of persons interviewed, the majority believing in net savings.

**Patients and those surrounding them**

Respondents expect to see important positive effects of HAH for the patients and their entourage. While there is some concern that the financial impact for the patient would be negative, the belief also exists that any financial disadvantages of HAH for patients (e.g. more expensive medicines) would be compensated by advantages (like an increased level of well-being for the patient).

Other expected positive effects are:

- Increased patient satisfaction and, related to this, patients' preference to stay in the home environment. Respondents who are not patients themselves take it for granted that patients (and their family) prefer to be at home instead of in the hospital. Interviewed patients, on the other hand, expect fear to be a barrier for many patients.
- It reduces risks associated with taking persons out of their own environment and comfort zone (e.g. risk of confusion).
- Reduced waiting time, reduced loss of time and lower levels of stress as most of the waiting would be "at home" (e.g. for chemotherapy treatments)
- Mobility: less trips, limiting travel expenditures and time for the patient and the informal caregiver.
- Absence of stress or concern amongst patients and their entourage.

**Quality, security and continuity of care**

- One important positive effect that respondents expect from HAH is the reduction of risks for hospital acquired infections.
- Improved security of care provided at home if and when HAH would be a reality in comparison to the existing situation of homecare when patients leave the hospital (early).
- Evolution towards more patient-oriented care, without 'fights' between the first and the second lines of care, between the hospital and the home setting
- Better complementarity between the second line of care and the first line of care and 'care hotel' (mentioned as an alternative to HAH)
- Better understanding of the therapeutic plan by the patient and his/her entourage
- Better compliance with the treatment. On the negative side, it is believed that there can also be a higher risk for therapeutic non compliance (i.e. patients not respecting their care plan) in a HAH setting.
- Faster healing, resulting in less need for care.

**Strengthening the first line of care**

- Valorisation of the staff in the first line of care
- Strengthening the importance and image of the GP, which will allow to attract more people to the profession

Asked which specific **objectives** should be pursued when a HAH system were introduced, interview respondents tended to refer to the expected impacts: cost reduction, release of hospital beds, improved quality of life and patient satisfaction, risk reduction, etc. However, also new elements were offered as objectives for HAH (in no particular order):

- Avoidance of re-admissions to the hospital and of medical complications
- Improve the quality of care: a 'culture of quality' has to be adopted by everybody
- Strengthen patient empowerment
- Ensure the cost for the patient is not higher than when hospitalised in a shared room
- Pursue a holistic view of the patient, including medical care and social needs
- Offer a wider choice to the patient.

### *4.3.2 Target groups for HAH*

The respondents were asked whether they believe HAH should aim at certain types of patients or certain pathologies or certain techniques, and which should be the criteria or conditions for selecting patients for HAH.

Based on the responses received, it can be concluded that there is broad agreement about the importance of using criteria for the decision whether or not to let a patient access HAH. However, views diverge when it comes to target groups for HAH.

#### *4.3.2.1 Specialised versus generalist HAH*

Across the board, the respondents believe that a HAH programme should target all pathologies, or in other words, should not be restricted to certain pathologies. However, those respondents who are currently involved in HAH initiatives tend to target the scope of action more narrowly and to restrict HAH to certain pathologies.

The following comments were added in relation to the preference for targeting all pathologies:

- HAH allows to respond to all the needs patients may have.
- HAH allows to avoid re-admissions to the hospital, which is not a pathology-related objective.
- The decision for referring a patient to HAH or not is the responsibility of the prescriber, and (thus) it should not be decided upfront to limit HAH to certain pathologies.
- It depends on the knowledge and expertise required and available. The patient should be treated where the highest level of expertise is, either in the hospital or in a HAH setting.

The other opinion is that the programme should target certain pathologies, certain types of patients or certain needs. As mentioned above, persons involved in an on-going HAH initiatives share more often this opinion and

refer to their own experience for targeting HAH more strictly: to e.g. intravenous antibiotics; complex wounds, including wound dressings with negative pressure; parenteral nutrition; treatments for patients with rare diseases.

It is worth noting that not all respondents have expressed themselves on this subject, as they consider they lack the information to have a clear opinion on the subject.

#### *4.3.2.2 Admission criteria to enter HAH*

When taking a position on the question of targeting respondents spontaneously listed criteria that are to be considered when deciding on HAH. Most often, it is a set of criteria that will allow to make an assessment. Were mentioned (in no particular order):

- The patient's capacity to help him-/herself; the patient's autonomy
- The available professional human resources in the first line of care.
- The willingness of the GP to commit
- The competence of the first line
- The psycho-social context
- The presence of an informal caregiver
- Training of the actors involved; quality indicators; multidisciplinarity
- Age of patient, distance, technical features of the building, healthiness of the place, hygiene

As to who should decide on the eligibility of a patient for HAH, the opinions of the stakeholders were mixed. Were mentioned: the GP (alone); the medical specialist (alone); the GP together with the specialist; or also the GP with the specialist and with the patient (and with informal caregiver, and with other care providers). Other answers included: coordinating physician with medical specialist; in a coordination meeting; coordinating centre with the hospital. More views on this discussion are presented below in the sections on the prescription and decision of HAH (sections 4.3.4.1and 4.3.4.2).

### *4.3.3 Organisation of HAH*

As mentioned above, three potential models were proposed to respondents during interviews to get their reactions on options. No clear preference appeared for one of the models proposed, although the direction most often taken is for a mixed model.

While opinions diverged about which model would best be suited, more convergence appears when it comes to the modalities of organising HAH, notably as regards the following four items:

- No new structures should be created physically nor juridically. The basic idea should be to work with what exists. This is a clear direction, explained by the complexity of the present system. Respondents fear that a new HAH-structure would add to the complexity. Still, divergences appear as to the use to be made and the potential roles of the existing structures (homecare coordination centre; hospital …).
- It would be good to organise HAH within clear geographic zones.
- There should be norms or specific conditions, while these should not be too strict, but sufficiently flexible.
- The agreement of the patient and the family is very important. There is broad consensus on this point. However, the idea was also expressed that one should not hand over too much responsibility to the family.

Opinions are more diverging on two subjects:

- A majority of the respondents believes one should rely on what exists, train the existing human resources and not create distinct teams of care providers. Still, four respondents (of which three have experience with HAH) are of the opinion that distinct teams of care providers must be created to realise HAH. In their understanding, distinct teams are teams of staff that do only HAH and are not involved in other home-care related activities. Such teams could possibly come from the hospital.
- The creation of a new patient status – different from the hospitalised status – is considered as useful from the point of view of reimbursement and financing.

Different dimensions of the potential model are developed more in detail in the next sections.

### 4.3.4 Roles and responsibilities for the different actors

The definition of roles and responsibilities of the different actors is a key element of any model. Opinions of respondents were influenced by their own profile / role or organisation. Experience, and also own interest (of one's own professional group or organisation) has an influence.

The main findings from the interviews are summarised in the bullets below. Each of these elements is further elaborated in the different sub-sections that follow: prescription (of HAH), taking the decision, medical follow-up when at home, nursing and other medical care services, supply of medication, installation of medical equipment, care for daily (non-medical) needs, coordination services (coordinating both medical and non-medical care).

- Distinct views were expressed as regards prescription, decision and responsibility for medical follow-up.
- As regards the different topics of supply of medication, the installation of technical equipment and the care for the daily (non-medical) needs, similar opinions exist.
- Opinions are opposed when it comes to the use that can or should be made of the existing nursing resources. While there is agreement that training is paramount, there exists no such agreement on who should provide the nursing services: either dedicated teams that only work on HAH (or in hospitals), or the 'regular' primary care providers having received advanced training for HAH care.
- Also in relation to the coordination of both medical and non-medical care, the points of view and the suggestions made vary widely.

#### 4.3.4.1 Prescription of HAH

Most respondents are of the opinion that no distinction should be made between prescription and decision for HAH, as these decisions are taken together. The prescription follows a substantive medical reflection.

The majority believes that both the specialist and the GP are the ones to take on the roles of prescription and decision. If it is the specialist who prescribes, the GP has to agree because it is generally assumed that it is the GP who will have a major responsibility to ensure the continuity of the care (e.g. at night) (see also below). There is consensus that most HAH situations cannot take place without the agreement of the GP.

Still, the opinion to attribute the role of prescriber in the first place to the specialist does exist as well. This opinion is not coming from one specific profile of respondent or stakeholder;

#### 4.3.4.2 Decision for HAH

As mentioned above, the dominant opinion is to consider prescription and decision as one, and the responsibility of specialist and GP. Still, a group of respondents are of the opinion that the decision for HAH is to be separated from the prescription and be taken by a more extended group, with variants that include all or certain of the following actors, together forming a 'four-leaf clover':

- The hospital physician (specialist)
- The (patient's) GP
- The patient and his/her entourage
- The structure that is responsible for providing the care services at home, the coordination centre, or the care team

A suggestion was made to appoint, from within each 'circle' of GPs, one physician who would be responsible for HAH and who would decide whether or not to let a certain patient into HAH.

#### 4.3.4.3 Responsibility for medical follow-up

As to who should be responsible for the medical follow-up of the patient in HAH, two views were most often expressed during the interviews:

- The sharing of responsibility between the GP and the medical specialist
- The responsibility of the GP

Another possibility that was mentioned is to put the responsibility for follow-up with a "referent physician", as is the case in palliative care or group practices.

**Results of group discussion in stakeholder workshop**

Considering that views diverged about the role and responsibilities of the GP for medical follow-up at the patient's home, this topic has been further explored in the stakeholder meeting that followed the interview stage. In this meeting, a separate parallel session has been devoted to a discussion about this subject.

Participants have been asked to compare and discuss the advantages and disadvantages of three options:

1. Patient's GP with support of a specialised home care team: Model based on the present system used for palliative care; GP needs to register; gets a training; GP accepts to adapt 'service concept' for these patients, mainly in terms of availability and communication
2. GP grouping with multi-disciplinary team: Model based on the availability of a team around a group of GPs, ensuring availability of GP as well as possibility for GP to delegate to specialised nurses and even paramedics. Only GP (groups) guaranteeing a multi-disciplinary approach could be in charge of HAH and GPs who followed an ad hoc training.
3. Specialist with the GP: Model whereby responsibility lies with the hospital specialist who may delegate or share responsibilities with the GP. A necessary condition is that both physicians agree at the start of the HAH.

These options have been formulated based on results of interviews (and diverging opinions expressed) and to serve as a basis of discussion, therefore formulated in a way to stimulate the expression of opinions.

A table in section 4.3 of the supplement reflects the results, listing all advantages and disadvantages mentioned.

After having explored all advantages and disadvantages, the participants in the group discussion came to the conclusion that the first option (to put the responsibility of the medical follow-up with the patient's GP, with support of a specialised home care team) would be the best. This model is as a matter of fact based on the present system used for palliative care: the GP needs to register and gets a training. The GP accepts to adapt the "service concept" for these patients, mainly in terms of availability and communication (available in extended working hours, and through mobile phone).

In comparison to other possible options, the participants in the discussion emphasised the advantages of attributing this role to the GP: the trust of the patient in his/her doctor, the speed of decision-making in case of problems, the continuity of the care, the centralization of all medical data in the patient's medical file and the clear definition of the responsibility for the medical follow-up. Moreover, the GPs already know how this functions within the palliative care model and this experience is very positive.

Several success factors have been mentioned: the possibility for the GP to call upon a colleague in case of absence or attendance of a conference, the necessity to keep a close link with the medical specialist and the existence of an efficient coordination of the medical care, social care and support services.

#### *4.3.4.4 Nursing care services*

During the interviews, the focus taken by respondents when talking about delivery of care was on nursing. Two potential ways to organise the provision of nursing care services can be identified based on respondents' answers on this subject. These were mainly based on respondents' personal experiences and their confidence (or lack thereof) in the ability of the existing home care providing structures to take on this role:

- The use of existing nursing resources in the field (primary care), pending a training in HAH or for the delivery of certain, well-defined acts within HAH. This is the most commonly shared opinion among the respondents.
- The creation and mobilisation of dedicated nursing teams, either because it concerns very specific pathologies that require very specialised services to be provided, or because there is no confidence in the existing training, in the interest of the nursing teams to deliver these acts and to be trained. These teams could be, but not necessarily, hospital-based.

It is to be noted that all interviewed persons, except for two, have only considered the nursing services, while the other professions around the patient's bed are also important (e.g. the physiotherapist and other paramedical professions).

**Results of group discussion in stakeholder workshop**

Considering that divergent views about who is to deliver the nursing care services at the patient's home arose from the interviews, this topic has been further explored in the stakeholder meeting that followed the interview stage.

In this meeting, a separate parallel session has been devoted to a discussion about the subject of who should deliver the nursing care services.

Participants have been asked to compare and discuss on advantages and disadvantages of three options:

1. Dedicated HAH nursing team: Model based on a separate (independent of hospital) and dedicated nursing team for HAH
2. Homecare nursing team: Model building on a team from first line homecare, ensuring appropriate training of the staff to take on this additional care tasks
3. Mixed model: Dedicated team from hospital for heavy pathologies. First line homecare with appropriate training for other pathologies / interventions requiring HAH

These options have been formulated based on results of interviews (and diverging opinions expressed) and to serve as a basis of discussion. The proposed options aimed at stimulating the expression of opinions and triggering ideas for further options.

A table in the section 4.3 of the supplement provides an overview of the results, listing all advantages and disadvantages mentioned.

After having explored all advantages and disadvantages, the participants in the group discussion somehow agreed that first and foremost, the existing first line nursing structures should be mobilised for HAH, albeit with proper training. Such teams could/should be trained by the hospital services and in a first instance supported in their role by these services. It is believed that in such scenario, which promotes the continuity of the care as well as partnership between the first and second line of care, the need for support from the hospital would gradually decrease. And in cases where very complex care services are required and/or for which the required expertise is not available (e.g. for rare diseases), the hospital nursing teams could step in. However, a difficulty would be how to define 'complexity' and consequently how to divide the workload.

The question has also been raised how the coordination responsibility would be organized in case of a mixed model.

#### *4.3.4.5 Medication, technical equipment, meals and cleaning services*

As regards medication, technical equipment and meals and cleaning services, the respondents largely shared the same views.

- The delivery of medication, be it done by the hospital pharmacy or by the local pharmacy, has to be ensured in the best interests of the patient - notably ensuring that the costs for the patient would not be higher than when hospitalised,. This is considered as an essential point which is not to be neglected, considering that some pharmaceuticals can be delivered only via the hospital pharmacies and that reimbursement modalities may be different between hospital and local pharmacy. Another element to bear in mind is the responsibility and control of potential risks performed by hospital pharmacies: in the hospital, the prescription and medication delivery can be fully controlled, while this is not (always) the case anymore when the patient is at home.
- The technical equipment that is needed has to be installed and maintained by external partners (like private companies or health insurance organisations), as is the case already today.
- The non-medical (social care) services linked to the daily needs, like meals and cleaning, have to be covered by the traditional local actors. There is no need to set up new structures of service providers for a HAH setting.

#### *4.3.4.6 Medical and non-medical coordination*

While all respondents agree that the coordination of medical and non-medical services to be provided is a very important role, the views regarding how and by whom the coordination is to be ensured diverge.

- The existing centres in charge of coordination of homecare services can ensure both the medical and the non-medical dimension. These "coordination centres" themselves point out the following advantages of this model:

  - The continuity of the care is guaranteed, as they can ensure the care for patients both before and after the HAH; HAH being a well-defined and limited period of time.
  - The coordination is not limited to the nursing services, but covers the totality of needs: physiotherapy, family support, cleaning services, meals …
  - The capacity to identify the right staff from among their human resources, capable to be trained and to deliver the required acts.
- Organise a coordination for nursing. Two options are proposed: either an independent nursing coordination or a nursing coordination employed by a (to be created) HAH structure.
- Call upon a medical coordination on top of a nursing coordination / mobilise a case management function. Again, two options are proposed: either an independent nursing coordination or a nursing coordination employed by a HAH structure.

**Results of group discussion in stakeholder workshop**

Considering the diverging views that emerged from the interviews, the subject of coordination has been addressed in a separate discussion during the stakeholder meeting. Four options were proposed in the discussion:

1. "Case manager": A case manager function is envisaged for chronic patients with complex needs. This same function could take on the responsibility of coordinating the complex care needs of patients in HAH.
2. GP grouping with multi-disciplinary team: Model based on the availability of a multi-disciplinary team around a group of GPs. A staff member of such group could take on the coordination role for the complex needs of HAH patients.
3. Coordinating nurse with coordinating physician: Duo team with specialised nurse and a physician who share the coordination. This physician is not the patient's GP, who has a supportive role.
4. First-line homecare organisation: Coordination could be taken up by first line homecare organisations that can offer a combination of nursing and non-medical care.

Again, these options were based on interview results (taking into account diverging opinions expressed) and served as a basis of discussion.

The table in the section 4.3 of the supplement presents the results, listing all advantages and disadvantages mentioned.

The option to use the same "case management" function that is considered for chronic patients with complex needs was regarded as very attractive. Still, a major concern is related to the high level of uncertainty as to how this will be actually implemented in practice (for chronic diseases).

For this reason, when having to make a choice regarding a preferred option, participants opted to organise the coordination at the level of "GP groupings which have developed a multi-disciplinary team". This is considered as feasible at short term compared to the option above. This option also guarantees the approach is multi-disciplinary as well as the proximity of the care given to the patient.

The coordination done by a duo team was not been withheld as a preferred option by any of the participants.

The coordination taken up by first line homecare organisations that can offer a combination of nursing and non-medical care was a clear choice for one of the participants, and equal to the "GP grouping" for another.

### *4.3.5 Conditions for the implementation of HAH*

During the interviews, the respondents were asked: which are the main difficulties they perceive that may act as a barrier for a successful implementation of HAH and which are the elements that could facilitate the implementation.

There is general consensus about the necessity to train all the actors involved, about the need for a motivating financing and a new way of working together.

Opinions were also shared about the importance of the reaction of certain interest groups, although views diverged about which lobby group would constitute the main barrier for HAH implementation.

**Human resources and training**

Respondents share the opinion that a special training for all involved in HAH is crucial in order to acquire the necessary technical competences, to manage the fears of the patients and those surrounding the patient, and to detect any concerning signals. One interviewed hospital reported to have interrupted the collaboration with an external company precisely because of

the lack of training of its staff involved. Various suggestions have been made: to use e-learning and to set up short, well targeted trainings; accreditation and the creation of a new status of 'clinical nurse'; for newly graduated nurses to have several experiences in a hospital before starting to work in a HAH setting; to set up interdisciplinary training.

While the need for training for the nursing staff has been expressed, also for the generalist and specialist physicians, training is regarded as necessary.

> *"The GP must have the freedom to decide whether or not to engage in HAH. But if GP does it, he/she must be able to devote time to it and be reachable by mobile phone, as is the case with palliative care where this is explained as from the training. Those involved must be competent, have the time and be available."*

Even for the family involved and the patient, the need for training has been put forward.

There is a broadly shared view among the respondents that HAH should rely on existing functions that are being financed already, although the need for reconsideration of the existing function descriptions has been underlined. Respondents also see a need to clearly define the HAH period with a very clear and precise structural model (in terms of number of days). It is believed that the revision of the roles will allow to make certain professions more attractive.

Some see a problem of shortage of nurses and family aids. Others do not see a recruitment problem.

> *"We are overwhelmed by job applications from nurses who are demotivated by the pressure at the hospitals and elderly homes, and who would like to become independent workers."*

> *"If the financing is arranged, the human resources are very motivated for innovative projects. Two examples: 1) the early return home 24 hours after birth giving: the project is very rewarding for the nurses and we have too many candidates; 2) the enthusiasm for hemato-onco HAH for which new nurses apply because hemato-onco exists. These projects allow them to get out of the hospital which is sometimes experienced as a 'prison'."*

Respondents underline the need for great flexibility in the time schedules of those involved (because of the need for around the clock surveillance and because there is variability over time in the number of patients in HAH). Furthermore, they must have the ability and the willingness to be alone with the patient. The quality of the team and the motivation to work together are seen as crucial.

**The interest groups**

Respondents expressed concerns and views related to expected reactions to the realisation of HAH from certain interest groups or 'lobbies' who represent stakeholders. The mentalities and attitudes of the different parties have been evoked.

- Most mentioned is the *hospital* lobby as HAH has to be acceptable to hospitals and set up in a way that takes into account their interests. HAH should not be perceived as 'competition' for the hospital but as a complement to the hospital stay for patients who find themselves in a sub-acute or chronic stage. Confidence is paramount. And in order for the hospital to have trust, it is necessary to ensure a transfer of knowledge, a specialised technical training for a certain number of nursing and/or medical acts.
- Belgium is regarded as a 'system of silos' where it is difficult to innovate and to think 'out of the box'. This situation leads to conservatism among the traditional players (stakeholders) and was mentioned as a barrier not only for innovation in general but also for HAH.

**Financing**

Respondents consider correct financing as an indispensable element of a successful HAH.

Adequate financing is considered as a necessary element to motivate the physicians whose interest is required, and it is necessary to motivate the nurses.

> *"The RIZIV – INAMI nomenclature is insufficient for the complex technical care acts. On week days, the daily flat rate for antibiotic care is reimbursed at 39.97 euro, against 59.66 euro in the weekend. But this requires two to three or even four visits. This is insufficient to motivate the nurses."*

Avoid the pitfalls of home hospitalisation as in France, where a transfer from "normal" homecare to HAH was noticed, similar to the Belgian experience with day hospitalisation where there was a transfer out of the polyclinic.

**The cooperation**

The need has been expressed by the respondents to work together instead of against each other, as is the case today. Cooperation is necessary between the functions (GP, nurse, paramedical, homecare …), but also between the first and second line care providers.

**Miscellaneous**

Some other conditions for the implementation of HAH were also put forward:

- The ultimate driver should be quality and not economy. Do not push everything to the end of the chain for economic reasons. If the objective is purely economic, HAH will be a failure.
- Fear was expressed by a few respondents relating to what could be called a "loss of control" of the patient. The risk of less compliance to the treatment by the patient is one of the elements.

  *"The patient who returned home will very quickly feel at the steering wheel and might go shopping."*

  *"The time which the GP devotes to educate the patient is crucial to reduce risks."*
- The care plan needs to be well defined and the GP has to commit to it.

### 4.3.6 Options for the financing of HAH

The respondents were asked which solution they would propose for the financing of HAH. Three ways to finance HAH have been proposed: lump sum payment (possibly with different 'levels' of lump sum, depending on the complexity of the case); fee for service (according to a nomenclature), or a mix of lump sum and fee for service. The model used for psychiatry was also mentioned (article 107).[k]

While a few interview respondents are in favour of fee for service, others prefer a lump sum, while the largest group proposes to work with a mix of both systems. However, different forms of 'mixed model' were suggested and no clear directions appeared from the interviews.

**Results of group discussion in stakeholder workshop**

For this reason and in order to further clarify the options and opinions, the question of how HAH should be financed has been discussed in the stakeholder meeting, in each of the three sub-groups. Three options were proposed for the discussion. These options have been formulated based on results of interviews, as described above.

1. Lump sum payment: HAH would be paid based on a flat rate. The flat rate level could be based on the complexity of the case and would be shared among the service providers.
2. Fee for service: Each specific service performed would be paid based on a nomenclature number.
3. Mix of both systems: Part of the services for HAH would be paid with a flat rate; services not included in the flat rate would be paid per performed service.

A table in annex in the section 4.3 of the supplement lists all advantages and disadvantages mentioned.

From the three separate discussions, a preference appeared for a financing with a lump sum, although various difficulties were identified. Alternatively, a mixed financing model could be considered. The general idea that was expressed is that if HAH requires a shared commitment to the care plan, this also means it requires a sharing of the revenue.

The advantages people see in a lump sum financing for HAH are:

- The budget is better controllable; budgeting is easy; gives stability in financing; the amount of spending is fixed
- The system is easy and clear
- Continuity is more guaranteed

[k] The so-called article 107 allows to close hospital beds and use the savings to develop new services of the hospital, which has been the case in psychiatry to develop new ambulatory services.

- It can be implemented at short term

The difficulties seen and questions raised for the scenario of a lump sum model are:

- The difficulty to motivate all the people involved – so the suggestion of a mixed model
- The difficulty to define what is and what is not included in the lump sum
- The difficulty to monitor exactly which care and which acts are being delivered to patients in HAH
- Monitoring and adjustment of expenses is difficult
- How to control and guarantee the quality of care?
- Whose responsibility would it be to manage and control that budget? Could it be the patient's?
- How many 'levels' of lump sum are needed, and how to define these? How to differentiate between types and content of HAH care?
- The budget for medication could be separated from the lump sum. Medication is an issue that has to be solved in itself, a.o. because the price of medicines is not the same in the hospital as for patients at home.

One participant suggested that an assessment of the estimated costs in view of the needed care, against the available budget in a lump sum model can be one of the criteria to decide whether or not a patient should enter into HAH. In cases where the estimated cost would be higher than in the hospital setting, the patient should not be treated in HAH. This opinion is driven by an economic motivation to introduce HAH rather than a quality of care motivation (see above).

Advantages that are seen in a fee for service system are that it is clear what is happening and that it may constitute an incentive to move care out of the hospital. The main disadvantages are that there is a higher risk for exceeding the (overall health care) budget and this payment system does not encourage pluri-disciplinarity.

Other relevant points were raised by both the interview respondents and the stakeholders:

- Whatever type of financing, HAH may never cause extra costs for the patient. When organising HAH, budgets of hospitals and of primary care must be taken into account and tuned to each other.
- The 'pay for quality' aim has been underlined. The model chosen should promote quality of care and payment should therefore be linked to quality indicators.
- Attention has to be paid to avoid double payments for delivered services (covered under a flat fee and charged per service).
- The issue of how insurers would reimburse HAH costs (and to whom) has to be addressed as well.

It is to be noted that throughout the discussions the stakeholders tended to regard only the medical care (including its coordination and including nursing) in the financing question. Still, in relation to non-medical services, it has been pointed out that these costs may depend on the patient's situation and that settling payments for non-medical care poses issues that need to be addressed by the competent authorities (federal and regional).

### *4.3.7 Operational support*

Upon the question which operational support is needed for the implementation of HAH, the respondents mentioned a broad range of operational instruments. Three of them were mentioned most often spontaneously: the need for ICT solutions, particularly to share information among care providers; the emergency mechanisms to be put in place and the clarification of the responsibilities. These three subjects are addressed here below. A further four subjects related to operational support on which respondents had opinions and contributions are also mentioned below.

- There is consensus that specific informatics tools or programmes should be developed (for example a global medical file of the patient version for HAH - DMG in French / GMD in Dutch) and even that an e-health based system is an essential pre-condition for HAH. The following suggestions and clarifications were added to this:
  - The file has to include the medical file, the nursing file and the data on the vital parameters

- An application (software) to coordinate the shifts, match the available service providers with the request of the patient, organise the logistics and the resources
- A real telemedicine, tele-expertise, teleconferencing should be developed and financed, similar to what exists in Canada. Everything should be included in one and the same ICT file.
- Specific HAH ICT will allow a faster transmission of the prescriptions for medicine
- It should be based on what exists already
- The financial means to develop the ICT system need to be foreseen
- A dedicated HAH website could be set up or a HAH part could be included in the website of SSMG (the scientific society of GPs).

- As regards which mechanisms should be put in place to respond to emergency situations, the respondents emphasise the importance of ensuring around the clock the possibility to alert someone who can intervene. The following suggestions were made (in no particular order):
  - A permanence by a physician on duty in the hospital
  - A referent emergency service
  - Availability of the mobile phone number of the physician or GP, who has accepted to be available also outside working hours
  - An emergency 'red button' (like in the hospital), linked to a call centre or internet based emergency service
  - A call centre which can make an assessment, based on a well-defined procedure
  - Around the clock emergency service with emergency procedure to be followed when e.g. the temperature is elevated
  - Organise a link from the nurse to the physician
  - A nursing service on duty
  - Around the clock contact should be possible from the GP to the hospital and guaranteed access around the clock from the patient to a structure to be put in place by the GP 'circle'
  - A green 0800 number that is accessible around the clock, and that gives access to somebody from the service who can provide assistance – a surveillance role with several coordination centres; the existence of such a 'green number' for palliative care was mentioned.
- The division of responsibilities between the different health professionals - of all disciplines - involved has to be defined in detail. This is necessary to avoid any ambiguities.
  - It is commendable to define more clearly the legal responsibilities, the framework and the limitations.
- Specific measures are needed to inform the patient and to encourage patients' empowerment. This is considered as an important element for the success of HAH. The following possibilities for information provision were suggested:
  - Information can be given by the GP or the specialist. A meeting could be organised with the GP and the nurse at the patient's home at the start of the HAH period, as happens in cases of palliative care.
  - Information can also be provided via the software. And the patient can enter data (like his/her weight, blood pressure …) into the system.

  *An empowered patient becomes a partner.*
  - A standard folder could be provided to the patient and family which can be complemented with information 'on demand'.
- Respondents agree that adapted guidelines have to be made available for the care providers.
  - For the technical aspects of the care
  - For the different care service providers
  - A 'template' for the GP, while leaving enough space for some flexibility
  - Modular, to follow the wishes of the medical specialist (e.g. on whether or not sterile gloves are to be used in HAH)
- There is agreement that specific quality indicators have to be put in place. These will be necessary to evaluate what is done and to justify the costs made. Also, considering that important responsibilities are involved with HAH, quality indicators will allow to verify that the necessary techniques have been acquired and applied.

- There is broad agreement that a specific nomenclature for HAH has to be developed, both for the nursing and the physician's interventions. It is believed this will contribute to motivate those who are involved.

### 4.3.8 Planning the process

The related questions asked to the respondents were the following: Do you think our country is ready for HAH? Which could be the time span for the realisation of HAH? Which should be the main stages for the implementation of HAH?

There is general consensus among the interview respondents that Belgium is ready for the evolution towards HAH and that it should be operationalised gradually. There are however some differences in views as regards the short to medium term (3 years) for implementation. Opinions were expressed on the need for a pilot phase because HAH is a complex matter. These respondents, making the comparison with e-health and taking into account the need for e-health to be operational for HAH to succeed, would see HAH operational within a time frame of 3 to 10 years. This opinion is not shared by all. Indeed, the majority of respondents is of the opinion that HAH can be implemented immediately.

As concerns the stages to be followed, the following suggestions have been provided:

- In terms of the scope of the HAH activities:
  - Start modestly: with a limited shortening of the hospital stay
  - Do not take on everything at once, but gradually expand
  - Start with certain target groups, then enlarge
  - First information, then training, followed by progressive implementation
- Regarding structures and modalities:
  - Ensure time to set up the teams
  - Allow each group, each region to evolve at its own pace
  - Dedicated information channels for HAH should be put in place (like a website) and strict conditions for the care and therapeutic follow-up by the different service providers have to be defined.
- As regards building up experience and knowledge:
  - Launch training programmes before launching the project of HAH
  - An evaluation of the existing HAH-related initiatives should be done first and lessons drawn from these.
  - Launch pilot projects in 2015, and roll them out via article 107
  - Run pilot projects during a 3 year period, evaluate them, roll out
  - Pilot projects should examine what is important to be put in place according to the pathologies. Therefore, the pilot projects should be in different domains. This should also be reflected in the basic and continued training that is necessary per pathology. The time horizon will depend on the pathology. A progressive evolution per pathology could be envisaged.
- Relating to finances:
  - Foresee the budgetary impact
  - Change tariffs rapidly, otherwise the on-going projects will lose impetus
  - Avoid financing pilot projects which are run just for the sake of receiving subsidies

## 4.4 Discussion

During the interviews, the fact of proposing models led to a form of polarisation of opinions, based on the background of the respondents. This was much less the case when getting more in depth into all the different elements of a HAH system. The analysis of interviews showed there exists a large convergence of opinions on many aspects relating to what needs to be taken into account to provide HAH, but not necessarily on how should it be organized. This led also to the choice to concentrate the limited time available in the stakeholder workshop on four main subjects, where divergence of opinions was more pronounced during the interviews.

Persons interviewed and who participated in the stakeholder workshop have limited knowledge on HAH. Even if they do have prior knowledge, during the interview, they discovered issues or dimensions to HAH about which they never had thought before.

Most of the opinions expressed are as a consequence not based on evidence. These opinions are difficult to compare as the level of knowledge

on the subject is very diverse among those who have contributed their views during this research (in interviews and workshop).

The motivation to consider HAH is linked to different types of expected impacts: 1) economic, more specifically cost savings and therefore a positive effect on the budget; 2) impacts for the patients and those around them; 3) quality, security and continuity of care.

No information is available on saving potential and the lack of objective information explains that fears do exist that actual savings might not be delivered.

There are clear expectations of a reduction of hospital-based infections through HAH, as one of the examples of improved quality of care. But, as for most of the opinions expressed, this is not based on objective data.

The patient is not always placed at the centre of the discussion. The shared opinion is that the patient and the family have to be involved, but HAH is still looked at from a medical and an organisational point of view by most stakeholders. The emotional side, especially the fears that can be associated with HAH, are brought into the discussion nearly only by the patients themselves. Only few participants do see HAH as a means to promote a more holistic and integrated care.

The interviews and the workshop revealed a high level of openness to change. HAH is considered as one of the elements that will contribute to a process of change that is ongoing and necessary.

HAH being at the borderline of second and first line of care, the discussion and opinions are influenced by other on-going change processes or debates:

- more cooperation between first and second line (information exchange, seamless transition, …)
- care integration in general and more specifically multidisciplinarity
- new roles to be taken up by care professionals, like care coordination
- e-health (taken for granted by most respondents and stakeholders even if not yet fully operational)

HAH is considered as a way to strengthen the first line of care and to make careers in the first line more attractive. However, this requires that the first line of care will be a key actor in its organization.

HAH is not considered as a separate subject, but rather as a piece of the puzzle in a new health care system. It is directly linked to the financing system of hospitals which is under revision.

A generic approach to HAH was followed during the different activities. The Belgian context is however complex and can influence the way HAH can be operationalized. The generic solutions proposed in this chapter could take different forms in different parts of the country due to policy setting which are different. A potential example is the overall coordination (medical and non-medical), which could be based on different models in the North and South of the country.

## 4.5 Limitations

- **This report only assess one alternative to hospital care, i.e. the concept of HAH. This does not mean that other alternatives (such as medical hotels), mentioned by some Belgian actors during the interviews, should not be investigated but in the timeframe of this report, it was not possible to assess more alternatives. An inventory of current initiatives and their evaluations (including cost aspects) was also out-of-scope (as decided in concertation with the National Institute for Health and Disability Insurance and the Federal Public Service Pubic Health).**
- **Results from this chapter is based on face-to-face interviews, workshops and the stakeholder consultations and therefore reflect the perceptions of the persons who participated. Parties were not equally informed on HAH. During the face-to-face interviews participants were asked to react to a short description of theoretical models based on the findings from this report but participants did not receive in advance the complete results of the first three chapters. A more detailed presentation of the findings of this report was nevertheless presented to all involved parties during the stakeholder consultation.**

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