

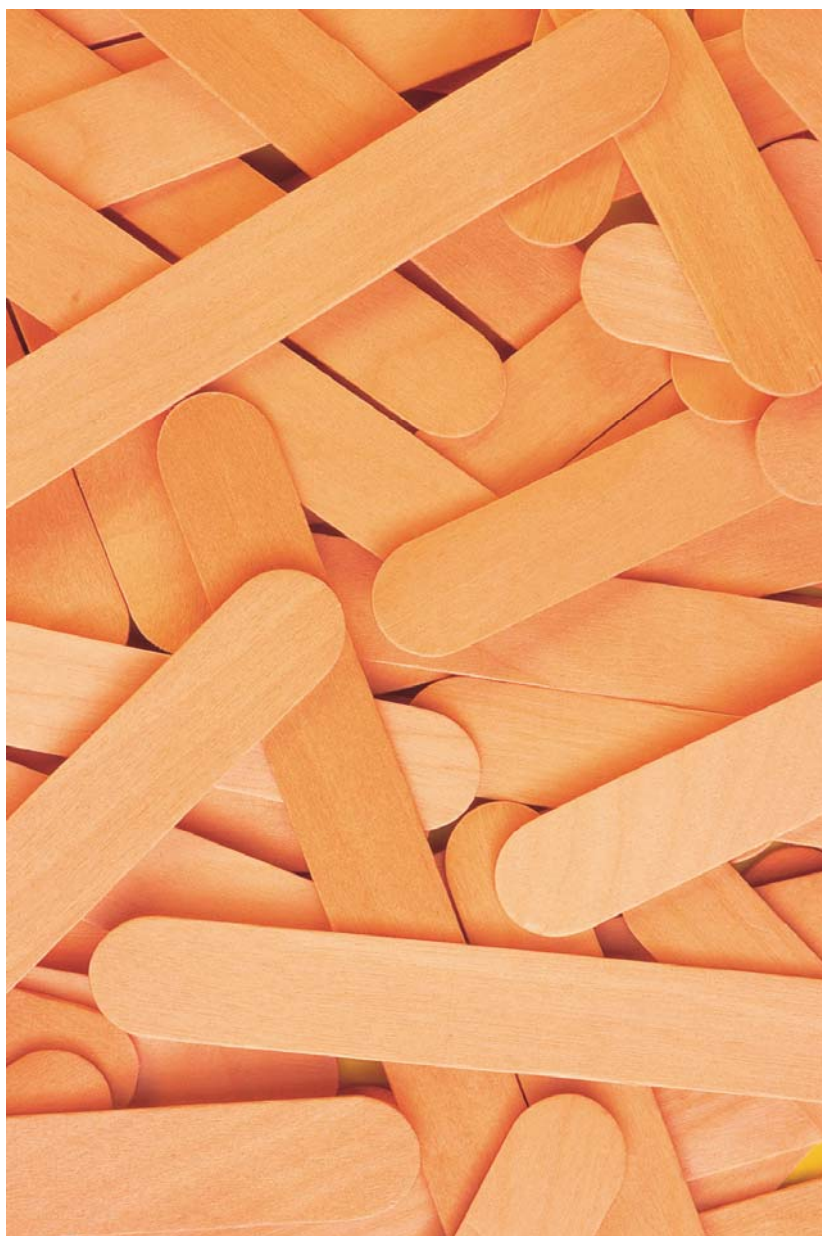
# Innovation in the Public Sector

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## Hospital-Managed Advanced Care of Children in their Homes

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**PUBLIN**



***Hospital-Managed Advanced Care of  
Children in their Homes***

***a new type of health care for seriously ill children***

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# 1. Summary

The innovation studied is the unit for “Hospital-Managed Advanced Care of Children in their Homes” (SABH). Today SABH is a section of Astrid Lindgren Children’s Hospital (ALB) at the Karolinska University Hospital in Stockholm County. The choice of SABH as the case to study was that SABH was “known” to us as an organisational innovation that also included technological innovations. We had heard that SABH was an example of how technological innovations in ICT and telemedicine can induce organisational innovations (which however turned out to be wrong). A study of such an innovation may give insights on the relation of public health care and private ICT enterprises in the context of innovation.

The instigators primary rationale for the innovation was to improve the quality of care for seriously ill children as well as improving the wellbeing of the child’s parent’s brothers and sisters. The innovation idea arose in a context that facilitated the generation of the idea. The prime instigator (the head of almoners at S:t Görans Hospital) saw SABH as a logical next step in a process that had made hospital paediatric wards more “homelike”. The “second” instigator (the head of paediatric department at S:t Görans Hospital) saw the SABH-idea as a important part of a larger process of renewal of childcare within the Stockholm County Council that resulted in the creation of ALB. An important element in the vision of this process was to improve the quality of childcare by minimising their time spent in hospitals.

The SABH-innovation was an organisational innovation that would profit from technological innovations e.g. in telemedicine. “Secondary” technological innovations were searched for in the private sector but the needed technology was not available in the market. Hence, the project group initiated a few collaborative development projects with private companies. However the technology goals formulated in 1997 by the project group had not been achieved when SABH started its activities in November 1998. A key problem in developing the technology needed was the fact that the hospital had not allocated financial resources in the budget for such work.

The organisation of public health care in Sweden influenced the implementation of the SABH-concept. At the County Council level politicians and civil servants were important players in the implementation process and at the hospital heads at different management levels influenced both the design and the implementation processes.

The project group interpreted some incidents as if hospital management at different levels and County Council administration set themselves against the SABH-concept and its implementation. On the other hand the County commissioner for health care in Stockholm County Council actively supported the implementation. The study indicates that the delayed implementation of SABH was due to the lack of financial resources in the County Council and the Karolinska hospital for development work combined with a period of cutbacks, which explain the resistance to implementation of the SABH-concept. The pressure of budget cutbacks in health care all through the 1990s in Stockholm was an important element in the innovation context, i.e. cutbacks delayed the implementation of SABH.

The study pictures a complex process of interaction due to the many levels of decision in public health care. The SABH project group had to search and apply for financial resources for implementing the concept as well as for acquiring and developing technologies needed. They had to anchor the concept at different management levels in the hospital and at the County Council among politicians and civil servants. They

also had to convince the responsible politician for health care in the County Council to act/fight on their behalf in the administration and among politicians. They also had to convince the head of ALB to act/fight on their behalf towards hospital management.

The innovation process described can partly be characterised as “innovation by fighting”. The project group experienced that management was set against the innovation. They fought the resistance within the hospital with the help of media and the County Commissioner (and the head of ALB although they thought him to be resisting the idea). The County Commissioner took the fight with County Council administration and politicians among other things with the help of media. The head of ALB had to fight with the management of the hospital to push the implementation of SABH forward. An interpretation to why fighting was necessary is that the economic regime of cutbacks put heavy restrictions on County Council administration and on hospital management. This regime promoted cost saving innovations but hindered innovations that improved the quality of health care and at the same time increased cost.

In the opinion of one of the Heads that were involved in the innovation process the elaboration and implementation of the SABH-concept was rather smooth and quick compared to innovation process in general in the public health system. According to this head there are two major reasons to why innovations processes are sluggish. The first is the lack of financial resources for developing and implementing organisational innovations. The second reason is the shortsightedness of hospital management at different levels (which probably is a consequence of the long period of budget cutbacks)

Lack of financial resources for organisational innovation was the biggest problem both in the phase of elaborating the SABH-concept and when it came to implementation of the concept. The rationale for decision makers not to implement the SABH-concept was one of budget constraint not of content. Due to cutbacks during the period financial resources were lacking. The study indicates that in order to support and increase innovativeness the County Council should make budget allocations for the development of new activities. This would also improve the management of innovation processes. Allocation means to give a certain management level in hospitals the responsibility for managing innovation processes. The study indicates that this was a problem that obstructed and delayed the innovation process. In spite of the small investment needed (around 10 million SEK) implementing the concept involved many individuals from different management levels in the hospital as well as involvement from County politicians.

The study also indicates that individual incentives to engage in innovative activities in public health care to a large extent are found in values and belief systems of employees. The rationale for the instigators was to improve the quality of care. The public health system does not use individual economic incentives to promote innovations. Using economic incentives may increase innovativeness among hospital staff.

## 2. Context

This paper will describe the birth and development of the concept of Hospital-Managed Advanced Care of Children in their Homes (SABH) as well as its implementation. The idea emerged in 1995 and the new SABH-unit was inaugurated in the year 1999. The SABH-innovation took place within the Swedish health care system, which is described in the next section.

### 2.1. Swedish public health care

As formulated in the Swedish Health and Medical Services Act of 1982:

“Health and medical services are aimed at assuring the entire population of good health and of care on equal terms.

Care shall be provided with respect for the equal dignity of all human beings and for the dignity of the individual. Priority for health and medical care shall be given to the person whose need of care is the greatest”.<sup>1</sup>

The costs for Swedish health care in 2002 amounted to SEK 213 billion, which corresponds to 9.1% of GDP.<sup>2</sup> Of this, public financing constitutes 83% and private 17%. Patient fees are low in hospital (80 SEK per night) in comparison to consulting a doctor (SEK 100-300). Patients pay 60% of the cost of dental care and 25% of the cost of medication. To limit personal expense there is a high-cost ceiling – a patient who has paid a total of SEK 900 in patient fees is entitled to free medical care for the rest of the following twelve-month period. Patient pays the entire cost of prescribed pharmaceutical preparations up to SEK 900. Above this, a rising scale of subsidy applies, with a high-cost ceiling, which means that the patient never has to pay more than SEK 1 800 in any twelve-month period.<sup>3</sup>

All three political and administrative levels that operate in Sweden - central government, county councils and local authorities (municipalities) - play important roles in the health care system. The role of central government is to establish basic principles for the health services through laws and ordinances. The most important of these is the before mentioned Health and Medical Services Act, but there are other laws that regulate the area, e.g. the obligations and responsibility of health care personnel, professional confidentiality, patient records and health profession qualifications.<sup>4</sup>

The most important organisation for health care at central government level is the Ministry of Health and Social Affairs, which apart from health care issues, also handles social insurance and social issues. The Ministry draws up terms of reference for government commissions, drafts proposals for Parliament on new legislation, and

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<sup>1</sup> <http://www.sweden.gov.se/content/1/c6/02/31/25/a7ea8ee1.pdf>.

<sup>2</sup> National Board of Health and Welfare, *Health Care, Status Report 2003*, p. 5. <http://www.socialstyrelsen.se/NR/rdonlyres/1DA644DE-5036-43C5-A186-3DC31171F021/2519/summary.pdf>

<sup>3</sup> Dental care is excluded from all descriptions, financial figures etc. that are presented in this paper. Paragraph source, unless otherwise specified, is *Health Care, Status Report 2003*, published in 2004 by the National Board of Health and Welfare, <http://www.socialstyrelsen.se/NR/rdonlyres/1DA644DE-5036-43C5-A186-3DC31171F021/2519/summary.pdf>

<sup>4</sup> In recent years, the number of detailed regulations seems to be diminishing, corresponding to a shift in the central government's focus, from how health care services are organised, towards their results and performance.

prepares other government regulations in the health care area. To ascertain that governmental health policy is implemented, a governmental agency called the National Board of Health and Welfare follow up and evaluate the services provided by Swedish health care. The Board is also responsible for national guidelines for good medical practice. A further government agency engaged in evaluation is the Swedish Council of Technology Assessment in Health Care, evaluating both new and established methods from medical, social and ethical standpoints.<sup>5</sup>

At operational level, the County Councils and Municipalities provide health services. Both County Councils and Municipalities are represented by directly elected political bodies, which have the right to finance their activities by levying taxes and fees.<sup>6</sup> The municipalities care for elderly and support patients recently released from hospitals, while the county councils provide all other care. Of the 9,1% of GDP that Swedish health care cost in 2002, 8,4% corresponded to the county councils and only 0,7% to the municipalities.<sup>7</sup> The Health and Medical Services Act is the main tool for regulating their responsibilities. The Act gives the county councils much freedom in organising the health care, and as they operate almost all services and levy taxes and patient fees to finance them, they are rather independent. Hence, health services are largely in the hands county council politicians, which can make decisions even on structural issues.<sup>8</sup>

There are twenty county councils and one local authority (Gotland) under the Health and Medical Services Act. The population of these twenty-one areas varies between 60 000 and 1,9 million people. The county councils decide on the allocation of resources to the health services in their respective region and are responsible for the overall planning of these services, as well as financing them. Apart from taxes and patient fees, central government also provide some subsidies, e.g. for increasing access to health care and reducing medication costs. It is the county councils that own and run the hospitals, health centres and other health institutions. Private health care providers supplement this, though they however usually have contracts with the county councils to do so.<sup>9</sup>

For highly specialised care, and, to a certain extent, research and medical training, the county councils co-operate in six medical care regions. The population of these regions varies from 1 to 1,9 million and in each there is at least one university hospital. This collaboration is based on agreements between the county councils in the region, for example on the prices that shall be charged for highly specialised care. The

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<sup>5</sup> <http://www.sweden.gov.se/sb/d/2061.jsessionid=aruLQiG1wytf>, <http://www.sos.se/sosmenye.htm> and <http://www.sbu.se/www/index.asp>.

<sup>6</sup> Elections are held at the same time as parliamentary elections, that is, every fourth year.

<sup>7</sup> National Board of Health and Welfare, *Health Care, Status Report 2003*, p. 5. <http://www.socialstyrelsen.se/NR/rdonlyres/1DA644DE-5036-43C5-A186-3DC31171F021/2519/summary.pdf>

<sup>8</sup> The county councils are also responsible for certain issues related to education, culture, public transport and regional development, but health care is by far their most important activity. There is currently some debate in Swedish press about the county councils. Some people claim that Sweden does not need an intermediary level and could manage with central government and municipalities alone. Others are concerned with the low interest voters take in county councils, arguing that it might cause county councils to become bureaucratic and even un-democratic. A parliamentary committee is presently engaged in evaluating the structure and activity division between central government, county councils and municipalities. Health service questions are one of four main areas in the study. The committee is due to present its work in the beginning of 2007.

<sup>9</sup> [http://www.sweden.se/templates/cs/BasicFactsheet\\_6856.aspx](http://www.sweden.se/templates/cs/BasicFactsheet_6856.aspx).



county councils also collaborate at national level through the Federation of County Councils.<sup>10</sup>

Currently, Sweden has nine regional hospitals, around sixty-five county hospitals and more than 1 000 local health care centres in so called primary care. Since the 1990s, there have been cut-backs due to financial imbalance. The number of 24-hour casualty departments has decreased, as well as in-patient care at hospitals in terms of number of patients, care episodes and bed days. This is partly because more treatment is given in non-institutional forms made possible by new medical technology (such as day surgery) and partly because a productivity increase made possible by new financial management systems. Still, more than half of the county councils are planning to change the structure of their health care organisation to remove financial imbalance. The changes will centre on extended primary care and centralisation and concentration of specialised hospital care.<sup>11</sup>

## **2.2 Stockholm County Council**

Stockholm County Council (SCC) is the largest of the Swedish county councils, serving around 1,86 million inhabitants, or approximately twenty percent of the Swedish population. The region population grows fast by Swedish standards, at a rate of one percent per year. SCC is comprised of twenty-six municipalities of varying size and grade of urbanisation, from the City of Stockholm itself to rural, sparsely populated municipalities. Apart from providing health and medical care, SCC's most important task lies in the area of public transport.<sup>12</sup> The cost structure varies between different county councils, depending on the services they provide and the health care needs of its populations. In 2002, SCC had the fifth highest health care cost per inhabitant in Sweden: around 15 000 SEK.<sup>13</sup>

The Stockholm County Council Assembly has 149 members who appoint the County Council Executive Board, that is, the SCC government, as well as the committees and boards that are responsible for running the different activities. The county council decide about overall structures, priorities and resources, while the heads of the different areas of responsibility decides detailed prioritising and distribution of resources. The political governance of activities (volume and content) is achieved by assignments. The county council discuss with different health care producers and reach agreements concerning direction, volume, and quality etc. of activities. Because of the size of SCC and its operations, it plays an important role in the economy as purchaser of different services such as private health care and transport. The county council also monitor and evaluate activities of health care producers.<sup>14</sup>

SCC's finances are far from good, in spite of an increase in income between 1999 and 2003. During those years, costs rose with 30%, while income (revenue, taxes and state contribution minus VAT) rose 46%, mainly as the result of a 59% growth in tax

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<sup>10</sup> Ibid.

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[www.sweden.se/upload/Sweden\\_se/english/factsheets/SI/SI\\_FS76y\\_Health\\_Care\\_System\\_in\\_Sweden/FS76y.pdf](http://www.sweden.se/upload/Sweden_se/english/factsheets/SI/SI_FS76y_Health_Care_System_in_Sweden/FS76y.pdf) and *Health Care, Status Report 2003, 2004.*

<sup>12</sup> [http://www.sll.se/w\\_sll2/135726.cs?dirid=135729.](http://www.sll.se/w_sll2/135726.cs?dirid=135729)

<sup>13</sup> National Board of Health and Welfare, *Health Care, Status Report 2003*, p. 5. <http://www.socialstyrelsen.se/NR/rdonlyres/1DA644DE-5036-43C5-A186-3DC31171F021/2519/summary.pdf>

<sup>14</sup> [http://www.ls.sll.se/docs/L\\_LKinfo/Infobroschyr\\_eng.pdf.](http://www.ls.sll.se/docs/L_LKinfo/Infobroschyr_eng.pdf)

intake. SCC has however been unable to benefit from this due to a national scheme that transfers funds from richer to poorer regions.<sup>15</sup> The annual cost for this plan is huge (in 2003, SCC transferred almost 5,4 billion SEK out of the county) and has increased with 267% between 1999-2003, leaving SCC in a bad financial situation. In 2003, SCC showed a deficit of 1,8 billion SEK. This deficit is large, representing some five percent of total costs, but is still an improvement to the year 2002, when it was 4,5 billion SEK, or eleven percent of total costs. Also, the deficits are of long standing: in the years 1999, 2000 and 2001, the negative figure was around 2 billion SEK each year.<sup>16</sup>

Financially, the cost and income structure of SCC in 2003 can be described as follows. SCC's total costs amounted to 43,8 billion SEK (44,5 billion SEK including depreciations).<sup>17</sup> Its income was some 48,8 billion SEK, divided between direct revenues of 8,5 billion SEK, a tax income above 38 billion SEK and a state contribution of 2 billion SEK. As SCC however had to contribute 5,4 billion SEK to the income and cost levelling scheme mentioned previously, the total result was a deficit of 1,8 billion SEK (including financial net balance).<sup>18</sup>

As previously mentioned, health care is only a part of the tasks of the county councils, albeit by far the largest. In the end of 2003, ninety-one percent of SCC's 42 400 employees worked with health care, i.e. 38 600 people.<sup>19</sup>

Due to the strain in its finances caused by the large deficits, SCC has been forced to cut back the last few years. Until 2004, SCC operated seven hospitals out of which two, Karolinska Hospital and Huddinge University Hospital, were so called university hospitals that provided highly specialised care, as well as conducted research and education. In a bid to save money, these two hospitals merged in 2004, creating Karolinska University Hospital.<sup>20</sup>

## **2.3 Karolinska University Hospital**

Karolinska University Hospital is located in both Solna and Huddinge in Stockholm County. Its several units perform medical work, alongside clinical research and such day-to-day health care operations can benefit fully from the ongoing research. The merger joining Karolinska and Huddinge hospital took place 1/1 2004, so the hospital has only been established for a little more than one year in its present form. The merged entity is huge. Karolinska today employs 15 393 people, which corresponds to thirty-six percent of the total SCC staff and forty percent of all health care personnel

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<sup>15</sup> The scheme, called 'Income and cost levelling', was devised by the Social democratic government to level out differences between richer and poorer areas of Sweden (usually urbanised vs. rural areas). The goal was to ascertain equal social services to all. It operates on both county council and municipality level. The scheme has been criticised, partly because no consideration is taken to the fact that the cost of living is higher in highly urbanised areas and as it may hamper expansion of the economically important Stockholm region.

<sup>16</sup> *Landstingsfakta 2004* at [http://www.sll.se/docs/w\\_lke/fakta/landstingsfakta2004.pdf](http://www.sll.se/docs/w_lke/fakta/landstingsfakta2004.pdf). All figures in this paragraph and the next refer to Stockholm County Council, not to the group.

<sup>17</sup> These figures exclude the financial net balance, which was almost 800 million SEK.

<sup>18</sup> *Landstingsfakta 2004* at [http://www.sll.se/docs/w\\_lke/fakta/landstingsfakta2004.pdf](http://www.sll.se/docs/w_lke/fakta/landstingsfakta2004.pdf)

<sup>19</sup> *Ibid.*

<sup>20</sup> [http://www.sll.se/w\\_pressinfo/77275.cs](http://www.sll.se/w_pressinfo/77275.cs).

within SCC. Around fifteen percent of the personnel are physicians. The hospitals turnover is currently 10,3 billion SEK, or 40% of SLL's total health care cost.<sup>21</sup>

In total, Karolinska University Hospital has a capacity of 1 800 hospital beds. Its surgeries receive 1 339 574 visits per year. Nineteen million laboratory analysis and around 60 000 operations are performed each year. Karolinska University Hospital is both physically and organisationally close to Karolinska Institutet, one of Europe's largest medical universities and Sweden's largest centre for medical training and research.<sup>22</sup> Around 130 of the professors at Karolinska Institutet are also employed by Karolinska University Hospital and 5 000 students receive their clinical education there. During a three year period, Karolinska University Hospital had 8 924 scientific articles cited in international research magazines.<sup>23</sup>

Karolinska University Hospital has eight divisions:

- Div. of Laboratory – 1 810 employees
- Div. for Emergency Diagnostics and Treatment – 2 100 employees
- Div. for Cardiovascular and Pulmonary Diseases – 1 170 employees
- Childrens Div. – 2 040 employees
- Div. for Medicine & Surgery 1 (transplantation) – 1 315
- Div. for Medicine & Surgery 2 (infection) – 2 285 employees
- Div. for Neurology and Head – 1 880 employees
- Div. for Oncology and Haematology – 1 810 employees.

The Children's division is the third largest. Within it, there is a unit called Astrid Lindgrens Children's Hospital (ALB). ALB was established in March 1998 and is located in Solna. A section within ALB is SABH (hospital-managed advanced care of children in their homes).<sup>24</sup>

## ***2.4. The Innovation: Hospital-managed Advanced Care of Children in Their Homes***

At the Astrid Lindgren Children's Hospital (ALB), situated at Karolinska Hospital in Stockholm, a unit for Hospital-managed Advanced Care of Children in Their Homes (SABH) was formally established in the year 1999. As a project, SABH had however already existed since 1995 and performing health care activities since 1998. The essence of this organisational innovation was to make it possible to care for seriously ill children at home instead of at the hospital. SAHB particularly aims at young children, with the lion's share of the patients being younger than six years old.<sup>25</sup>

SABH provide hospital-at-home health care 24 hours a day according to the needs of the child. Mobile care teams based on advanced information and communication

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<sup>21</sup> Landstingsfakta 2004 at [http://www.sll.se/docs/w\\_lke/fakta/landstingsfakta2004.pdf](http://www.sll.se/docs/w_lke/fakta/landstingsfakta2004.pdf) and <http://www.karolinska.se>.

<sup>22</sup> Karolinska Institutet accounts for thirty percent of the medical training, and forty percent of the medical academic research, that is conducted nationwide in Sweden. Karolinska Institutet is also the organisation responsible for awarding the Nobel Prize in Physiology or Medicine, giving it a valuable network throughout the medical scientific community.

<sup>23</sup> <http://www.karolinska.se>.

<sup>24</sup> Ibid.

<sup>25</sup> <http://www.sabh.nu/>.

technology are always accessible to make the resources of the hospital accessible to the patients in their homes. It is an alternative and supplement to hospital in-patient care. Families may themselves choose between this type of care and hospital care, as long as the illness of their child allows for it with full medical assurance and quality.<sup>26</sup>

The patient groups cared for are:<sup>27</sup>

- Infants
  - infants with jaundice that demands phototherapy
  - premature infants with need of nutrition support or tube feeding
  - premature infants with chronic lung diseases in need of oxygen therapy, sviktbehandling and nutritional support or tube feeding
  - infants with congenital malformations or diseases
- Children with malignant diseases in curable states
- Home rehabilitation after surgery, for example hypospadias operations, appendicitis abscesses, mobilisation after orthopedic procedures
- Previously healthy children with acute complications, for example severe pneumonia, septicaemia, gastrointestinal diseases, nutritional problems, severe burn injuries and osteomyelitis.
- Children with severe chronic conditions where a complication has occurred which requires hospital care, for example severe infections.
- Palliative care.

SABH-staff take care of the following tasks:<sup>28</sup>

- Various check-ups, e.g. growth charts.
- General care such as nursing and weighing
- Feeding for example support for breast-feeding
- Nutrition support, for example tube-feeding (gastrooesofagal, gastrostomy, jejunostomy) or Total Parenteral Nutrition (TPN).
- Injections, central vein catheters, port-a-caths, broviac catheters, peripheral intravenous catheters etc
- Neonatal monitoring including sleep apnea monitors
- Oxygen treatment, suction treatment of upper and lower airways, O<sub>2</sub> saturation monitoring
- Dressing of large sores/burns that would otherwise have been done at a specialist hospital
- Training, advice and support to parents on the child's illness and nursing requirements.
- Crisis management/support therapy.
- Ordering and maintenance of medical/technical apparatus and aids.

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<sup>26</sup> Ibid.

<sup>27</sup> Ibid. Translations of Swedish-English medical terms can be found at <http://mesh.kib.ki.se/swemesh/swemesh.cfm?tool=karolinska>

<sup>28</sup> <http://www.sabh.nu/>.

To be eligible for SABH treatment, the following criteria need to be filled:<sup>29</sup>

- Safe from a medical standpoint.
- The alternative is a hospital bed.
- The parents want this kind of care and are capable of taking care of their child at home.
- Distance from the hospital (maximum 30 minutes away).

SABH enables:<sup>30</sup>

- early discharge after hospital treatment
- rehabilitation at home after certain operations
- care of new-born and premature babies with at-home monitoring
- emergency treatment of chronic illnesses such as asthma, diseases of the blood to avoid being admitted to hospital

SABH health care means that:<sup>31</sup>

- Each child is offered care according to their needs at home.
- The care is managed by multi-faceted, professional mobile medical care teams, consisting of a paediatrician, a medical social worker, a senior nurse and a assistant nurse/paediatric nurse.
- The work is organized and co-ordinated from a management centre at the hospital.
- The care is supported by modern IT for mobile use.
- A knowledge bank for care providers and relatives is created.

The advantages of SABH are:<sup>32</sup>

- SABH gives a better quality of life for sick children and their families. Care in the safe and assured hands of parents in the home environment often leads to children feeling and getting better more quickly.
- SABH makes the resources of a specialist hospital accessible in the child's home.
- SABH is the expressed wish of both parents and staff.
- SABH is a natural link in the healthcare chain, both inside and outside the hospital.
- SABH makes beds available and brings greater flexibility to how the hospital's resources are utilized.
- SABH enables an earlier homecoming and benefits not only the family but also the Astrid Lindgren Children's Hospital and Stockholm County Council.

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<sup>29</sup> Ibid

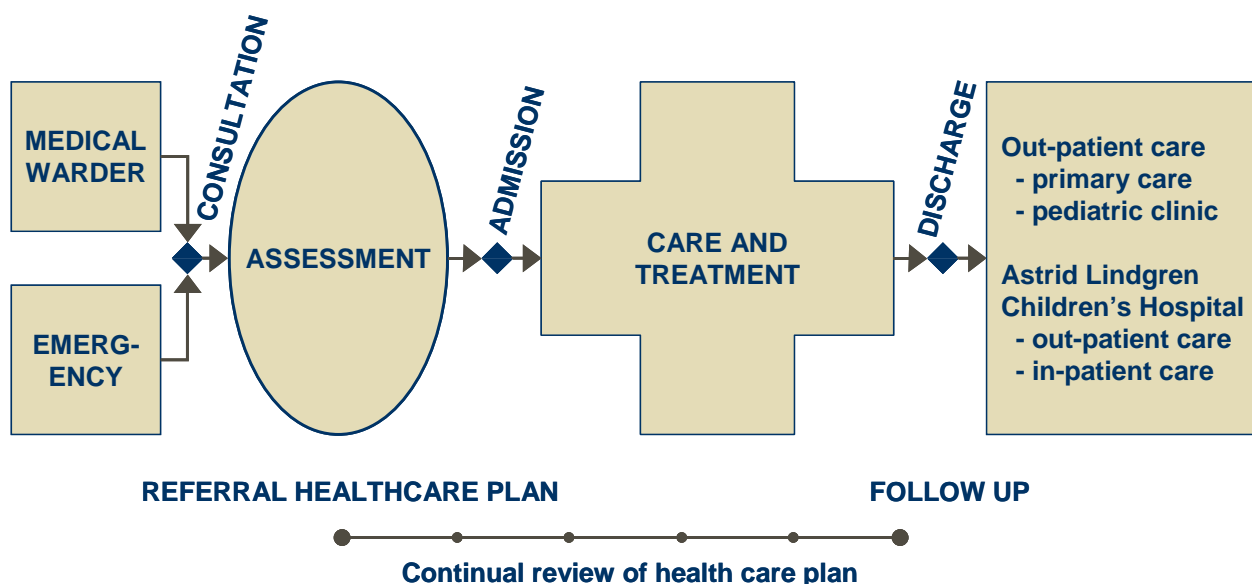
<sup>30</sup> Ibid

<sup>31</sup> Ibid

<sup>32</sup> Ibid

### 2.4.1 Medical care process within SABH

Both hospital wards and casualty departments can refer patients to SABH. When a referral reaches SABH, an assessment is made based on the admission criteria. A care plan is designed together with the responsible physician and nurse on the referring ward. A treatment program and follow-up plan are included in the care plan. During treatment period, the care plan is continually updated/reviewed. Discharge from SABH is either to out-patient care or back to a hospital ward, depending on the needs of the patient. Even alternating care between SABH and a hospital ward may occur.<sup>33</sup>



Source: [www.sabh.nu](http://www.sabh.nu)

The capacity of SABH is to care for 15 to 22 patients at the same time. The number of “beds” can easily and in a short time be increased or decreased which make it possible to use the resources of the ALB efficiently. The “care time” varies a lot but in average the time is 8-9 days and median care time is 3-4 days.<sup>34</sup>

### 2.4.2 Staff and mobile teams<sup>35</sup>

The mobile medical care teams consist of paediatricians, nurses and paediatric nurses/assistant nurses. There is also a co-ordinator that can always be reached at the SABH management centre at the hospital. In addition, the teams have access to paramedical staff and IT technicians. SABH also has access to consultants such as occupational therapists, nutritionists, play therapists, medical technicians and physiotherapists. There is also access to vacant hospital beds if necessary. The medical care team can be reached 24 hours a day every day.

All those who are part of the staff group have many years' experience of caring for ill children at hospitals. Staffs have experience from a variety of fields within paediatric care. Patients have very varied diagnoses and cover a wide range of ages in children. The concept demands that the staff work on their own to a higher degree than they

<sup>33</sup> Ibid

<sup>34</sup> Interviews with head and assistant head of SABH

<sup>35</sup> <http://www.sabh.nu/>.

would at a hospital ward. In addition, the workplace by and large becomes the patient's own home where the rules of the family apply, not those of the hospital. A lot of work has been put into creating a common base concerning: medical knowledge, nursing models, work routines and above all a feeling of teamwork. Multi-faceted, professional care teams consist of paediatricians, nurses, paediatric nurses/assistant nurses, medical social workers and medical secretaries.

In order to utilize the staff resources in the best possible way, SABH has developed its own working hours model, mostly with mixed schedules of both daytime and night time service. This means that everyone will be involved in the project work and can participate in continuous training that has been scheduled. All staffs that have a mixed schedule of both daytime and nighttime service work fewer hours than normal. Flexible working hours have also been introduced. Each shift may vary from day to day, for example day 1, 9 a.m. to 5 p.m.; day 2, 7 a.m. to 4 p.m.; day 3, 4 p.m. to 11 p.m. The need for staff is greatest in the mornings and late evenings and the work schedules have been adapted to satisfy this need. SABH has a minimum of staff to cover around-the-clock activities and with 15 – 22 patients. The work schedule is under constant scrutiny and at present work both to introduce individual work schedules and to increase weekend manning within the existing financial framework is underway.

### 3. Process<sup>36</sup>

#### **3.1. The SABH-idea is born and the concept developed**

In the beginning of the 1990s the head of paediatric cardiology at S:t Görans Hospital in Stockholm Bo Lundell investigated the possibility of homecare for his patients. At this time the northern part of the Stockholm County had three hospitals with paediatric care, Karolinska, Danderyd and S:t Görans. He made the investigation on his own initiative because he viewed home care, as a possibility to improve the quality of care for seriously ill children i.e. the quality issue was the rationale for the study. He identified the number of child patients that could be cared for in their homes and how homecare would influence recovery. He reached the conclusion that the number of children was enough to justify homecare and that homecare would increase quality of care for the child as well as the family. In 1993 Stockholm City Council initiated a cost cutting process, which among other things led to cutbacks in the budget of S:t Görans Hospital. The cutbacks “killed” the idea of child home care for the moment as the head of the hospital regarded it as impossible to establish a new activity that would generate increasing costs (at least in the first year).

In the beginning of the 1990s a large change in paediatric care in the northern part of Stockholm County began to be planned, which in 1998 resulted in the establishment of Astrid Lindgrens Children’s Hospital (ALB). Anita Aperia, a paediatrician and head of paediatric department of S:t Görans Hospital, was responsible for the planning process of a renewed and reorganised paediatric care. An important element in the new vision was to minimize the time spent in hospital wards by home care. Bo Lundells investigation had no connection to this planning process. His study and the planning of renewed paediatric care were two parallel strains.

A couple of years after Bo Lundells study head of almoners Margareta Fagerberg at S:t Görans Hospital raised the idea of home care for seriously ill children (i.e. the SABH-idea). She had worked at the same unit as Bo Lundell but was not engaged in his investigation in the early 1990s and was not aware of it. When she discussed the idea of home care with him she was handed the report he had finished a few years earlier.

Margareta Fagerbergs starting point was the need of ill children and quality of care. Care at the hospital should not be more devastating than the illness itself. She started working at S:t Görans in 1978. As time passed more and more children were saved due to medical progress and introduction of new equipment e.g. respirators, but as a consequence their stay in hospitals increased. During the first years of the 1990s Margareta Fagerberg had been running a project at the hospital aiming at making children wards more “home like”. A logical next step, according to her, was to introduce homecare closely linked to the hospital.

In 1994 the number of premature infants with illnesses increased. Such infants have to grow before they are fit for surgery. This means that they have to stay in the hospital a rather long time, which affect the wellbeing of parents, brothers and sisters. Margareta Fagerberg saw the possibility to care for them in their homes in awaiting surgery,

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<sup>36</sup> The sources of information that this chapter is based on are interviews with individuals involved in the innovation process (see appendix)



which would improve the wellbeing of families. Other patient groups that ought to be possible to care for in the homes were children with chronic diseases that demand recurrent treatment in the hospital and patients with incurable diseases (palliative care) e.g. deadly heart diseases.

Anita Aperia first heard of the SABH-idea at a personnel meeting in which the new paediatric care in Stockholm County was discussed. Margareta Fagerberg raised the idea of caring for seriously ill children in their homes. The idea was in line with the new vision for the renewed paediatric care, in which care time in the hospital should be minimised. SABH was a potential element in reaching the vision and Anita Aperia found the idea attractive.

As a consequence of the personnel meeting Anita Aperia and Margareta Fagerberg met in the autumn of 1995 to discuss the SABH-idea. They were both convinced that home care of children was a way to minimize the trauma associated with a child's stay in hospital. They firmly believed that advanced hospital managed home care was a realistic possibility and thus decided to investigate how such health care could be designed. They discussed among other things patient groups / diseases that could be treated in homes. A possible candidate to start with was chronic illnesses but also other illnesses could be included. The discussions resulted in the decision to establish a project group for preparing the start of SABH. Anita Aperia had two demands. Firstly an experienced paediatrician had to be part of the group. Secondly paediatric assistant nurses were partly to be used in staffing SABH since they had experience in supporting families with seriously ill children. The idea comprised the notion that SABH should be expanded to hospitals in the southern part of the Stockholm County.

Their first step was to identify possible paediatricians that could take part in the work. Together they reached the conclusion that the senior paediatrician Emma Rylander at S:t Görans would be a suitable choice. Anita Aperia asked Emma Rylander if she would be interested in together with Margareta Fagerberg leading the work of developing a design of paediatric care in children's homes and she was.

The role of Anita Aperia was to plant the idea of ALB and SABH, as an important part of the new vision of childcare in Stockholm County, among politicians in the County Council. It was especially important to get the responsible politician of health care (County Commissioner Elaine Kristensson) "on board" and to get her to promote the idea among fellow politicians. Anita Aperia presented the rationale for SABH as improving quality of childcare and thus the idea as a part of the new vision. SABH would probably not save costs in the short run but in the long run. In a societal perspective it also would create benefits e.g. parents of seriously ill children would be able work, number of divorces would decrease etc.

In autumn of 1995 a project group was formed at St. Görans Children's hospital. The mission of the group was to investigate the need for hospital-managed advanced care of children in their homes and to elaborate and design a concept and a work-model for such care. The focus was on how to enable highly specialised pediatric care in children's homes with the aid of multi-professional medical care teams and modern telemedicine. The group included Emma Rylander and Margareta Fagerberg as well as 3 assistant paediatric nurses and 3 paediatric nurses recruited to the group on basis of interest in home paediatric care, expertise and abilities. The six nurse's participation was to be a part of their ordinary employment. They were to function as a reference group to Emma Rylander and Margareta Fagerberg, which both had to carry out the mission on an idealistic basis in their spare time since there were simply no financial resources available for development work in the hospital budget.

The issues for the project group to elaborate on were: Is advanced hospital managed home care of children possible? Which patient groups/diseases could be included? How should SABH function in practice? How should care be organised? How could telemedicine be used? Which resources are needed (make a budget)? The group started exploring the SABH-idea. The concept the group should elaborate on included the following aspects:

- the care should be a part in the hospitals activities to create high quality in the care of children
- the care should make it possible to shorten the care period at the clinic and thus lead to a more efficient use of resources, beds at the hospital
- the care should make it possible for children to get home earlier and thus improve their well-being and getting better more quickly
- the care should be a link of the health care chain: children's hospital – "home paediatric care" – out-patient care – child welfare centre/well baby clinic – general practitioner.
- the care should use modern telemedicine and telecommunication technology

Home care was to be an alternative to hospital care. The care should be organised as a department within the paediatric unit of a hospital and mobile teams were to supply the same quality of care to patients in their homes, as they would get in a ward. One important prerequisite was that the child in home care must be a patient of the hospital and have access to a bed in a ward if home care did not work out.

The concept of home care is not unambiguous. Home care can be directed towards different patient groups, conditions etc. One objective of the group was to identify which diagnoses and conditions that could be treated in the homes of children. Also, the project group was to design working routines for advanced care of children in their homes conducted by a multi-professional team of paediatric physicians, nurses and assistant nurses, which should be available to patients every day around the clock. The expected consequences of the innovation were improved quality of care and children getting better more quickly. In addition the innovation was expected to lead to higher quality of life for the families and reduced costs for society.

In January of 1996 the need of hospital-managed advanced care of children in their homes was assessed by mapping the potential number of children in hospital beds that could be taken care of in their homes. The group surveyed the staff of paediatric clinics at the three hospitals S:t Göran, Karolinska and Danderyd in the northern part of Stockholm. The questionnaire included questions concerning possible patient groups for home care and the number of patients in need of care. The group concluded that there was a possibility and a need for hospital-managed advanced care of children in their homes, i.e. the supposed need was confirmed. The group also visited a number of home care programmes (e.g. hospits and geriatric programmes) for adults in Sweden. In this part the conclusion reached was that there was no organisation resembling the concept neither in Sweden nor abroad.

The intended new form of care demanded other working routines than care at a hospital ward. Design of these routines was a very important part in of the work. Manuals and checklists were developed for a vast number of activities. Another important part of the work was specifying staff requirements. All employees had to be prepared to work independently. They had also to be open-minded and ready to do things differently compared to work in hospital wards. The first step taken was to define the health care process, which formed the basis for a proposal regarding

staffing, work routines, checklists and working schemes. In the summer of 1996 the SABH-concept had been elaborated and the group were ready to start activities. Around 10 million SEK was the estimated amount needed for setting up a SABH-unit and the group presented the concept to the new head the paediatric division (Anita Aperia had left the post). The new head believed in the concept, but due to lack of financial resources induced by new cutbacks the group was not allowed to implement the concept.

Since the lack of financial resources was the problem the group continued to call on hospital management, politicians and civil servants at the County Council administration and also the National Board of Health and Welfare. Almost all individuals that were approached were positive to the idea but there was simply no money available for implementing the SABH-concept.

In October 1996 the Public Health Committee (HSN) at the County Council was approached concerning financial support for implementing the SABH-concept. This contact lead to cooperation in spring of 1997 since HSN and its laboratory of medical technology found the project interesting but only as a research project for telemedicine. In April of 1997 the project group was expanded with two IT-consultants from the enterprise Enator Trigon. A project board was constituted in the same month. The board had members from different organisations. It included the head of paediatric unit, representatives from the development unit of HSN, head of the hospitals IT unit, a representative from a company within telemedicine and from the project group Emma Rylander and Margareta Fagerberg participated as well as one of the above mentioned IT-consultants.

An investigation of available technology for “mobile home care” had to be carried out since the idea of home care should be facilitated by an integrated and mobile IT-support system and telemedicine. The intention was to use modern IT with mobile communication technology. The technologies needed, if one is to carry out advanced health care of children in their homes, were identified during spring of 1997. However, the available technology was not up to the needs, i.e. an integrated and mobile IT-system as well as appropriate telemedicine equipment was not available in the market. The group realised that the technology needed had to be developed and approached the Knowledge Foundation and was granted around 0.5 million SEK for the development of telemedicine. In spring of 1997 collaboration started with department of telemedicine (at HSN) aiming at developing hospital care in homes supported by telemedicine. In this development a company was contracted to develop the technology. However the company failed. A result of the process was that the project group and the SABH-concept got a broader anchoring within the hospital as well as in the County Council administration.

In the summer of 1997 the head of the paediatric department of S:t Görans Hospital once more said no to the groups wish to implement the SABH-concept due to lack of financial resources. So in the summer of 1997 the group had not moved an inch in one year, they were back at square one and were on the edge of giving up. But in their daily work they saw the suffering of children and their families and they knew that SABH would alleviate the suffering so the group continued trying to raise the financial resources needed.

In December of 1997 Emma Rylander presented the elaborated SABH-concept of “advanced hospital managed children’s home care” at a conference arranged by the County Council. Margareta Palmberg, who in 1998 became the head of ALB, was in the audience and she became very interested in the concept. Later she told Emma

Rylander that the project was a contributing factor to her decision to accept an offer from Karolinska Hospital as head of ALB.

In January 1998 a second investigation was carried out concerning the number of children among those admitted to hospital beds that could be taken care of in their homes. The group visited all paediatric clinics in the northern part of Stockholm County. During a day they checked all admitted children and assessed the possibility of home care, i.e. medical security and care needs. Also, parents to the admitted children were asked about their interest in the concept. The conclusion of the study and the surveys was that there was a need and also a big interest among parents for advanced hospital managed care of children in their homes.

The planning of the renewal of paediatric care in the northern part of Stockholm mentioned earlier and headed by Anita Aperia eventually led to creation of ALB. It implied closing down paediatric care at S:t Görans and Danderyds Hospitals and moving them to Karolinska Hospital and the new ALB. The creation of ALB meant an investment of 500-600 million SEK among other things a new building. The SABH-concept played a role in the political decision to realize the new vision of child care i.e. ALB. It was an example of how to renew paediatric care, which impressed politicians.

In February/March 1998 Anita Aperia, who at this time was part of hospital management, granted some resources 0.8 million SEK to the project that was used for management and IT-support. She had applied for financing the implementation of the SABH-concept at the County Council. The project group could for the first time take a partial leave of absence from their regular posts. Also some laptops were acquired.

In spring of 1998 the Astrid Lindgrens Children's Hospital was inaugurated. At the opening ceremony a politician, i.e. the county commissioner Elaine Kristensson, in the County Council expressed a very positive opinion about the concept of advanced hospital managed care of children in their homes, i.e. the SABH-concept. Elaine Kristensson was the responsible politician for health care in Stockholm County Council from 1994 up to 1998 when social democrats lost the election to the County Council. The creation of ALB had been on the agenda during her time as commissioner and she agreed with the rationale behind the ALB-idea i.e. putting the need of the child and its parents in the centre of care. The reason for her to mention SABH at the inauguration was that its activities were in line with the ALB-vision. Another reason for doing it was that, based on her experiences of politics, it takes time to implement new ideas within public health care. One step in implementing new ideas is to go public with them so that media start paying attention to coming proposals. A consequence of going public in this case was that it became almost impossible for other politicians to say no to the SABH-concept, which would improve the wellbeing of seriously ill children.

Many politicians from all parties as well as civil servants in the County Council had been hesitant to ALB-concept since it meant a large investment for the County Council. Like ALB the SABH-concept put the needs of children and their parents at the centre of focus and could be seen as an experiment in line with the ALB-vision. SABH could be seen as an element of the ALB-vision. This made it "easier" for the commissioner to argue in the County Council for implementing the SABH-idea when ALB was in existence.

Emma Rylander and Margareta Fagerberg presented the SABH-concept to the commissioner Elaine Kristensson in 1996 with the aim of getting her support. The

commissioner took a positive stand to the idea since it was in line with ALB-principle. Another reason to be positive, according to the commissioner, was that Margareta Fagerberg and Emma Rylander made a trustworthy impression. She also knew that similar care of adults gave very positive results: the quality of care improved for the patient as well as for the family. She was also quite interested in the plans of using telemedicine (remote electronic monitoring of patient). She decided to push the SABH-concept among fellow politicians in the county council and among civil servants. Her main reason was that home care is good for the child, its parents and brothers and sisters. She was also convinced that it would save costs in the long run.

In spring of 1998 when the Astrid Lindgrens Children's Hospital was inaugurated Margareta Palmberg was appointed head of ALB. She was offered the post and one reason for accepting it was that ALB had a new vision for child care in which the SABH-concept was an important element. Emma Rylander and Margareta Fagerberg discussed with her how to raise the resources needed for starting SABH (around 10 MSEK). The decision of Margareta Palmberg was to go ahead, i.e. to try out the concept in practice. Financing the activities could be taken care of later. This happened in June and meant that they could start recruiting personnel. A prerequisite for recruitment, which Margareta Palmberg admitted, was that the recruited personnel got a leave of absence from their ordinary posts. The group began preparing for recruiting staff. Recruitment was not a problem since many paediatricians and paediatric nurses at hospitals in Stockholm were very interested in the concept.

In October the same year the design of the new unit for advanced care of children in their homes (SABH) was presented at a plenary for the paediatric staff at ALB. Very strong negative reactions were voiced by some of the staff during the meeting. Some regarded the concept as medically risky and others expressed the opinion that the concept was "luxury paediatric care".

From spring/summer of 1996 up to the establishment in November of 1998 the project group primarily used its time to get SABH financed. The heart of the problem was that County Council did not have development funds in their budget. They lost 2 years due to the lack of money combined with a situation of budget cutbacks.

### ***3.2 Implementation of the SABH-concept***

The first of November 1998 the new unit labelled SABH started its operations and the first patients were admitted. Margareta Fagerberg was head of SABH until October / November 2000 when Emma Rylander took over. SABH was explicitly said to be an experiment by all stakeholders (management of SABH, ALB and Karolinska), which should be facing continuous evaluations.

At this point in time SABH was a new form of health care within the Karolinska Hospital with mobile health care teams and a management centre at the hospital. The teams were able to visit patients at any time night or day. Each employee of SABH was responsible for contacts with a ward at ALB, in order to look for patients that could be transferred to SABH (today the clinics themselves propose new patients to SABH.). Their role was also to inform ward staff and parents about SABH and the way home care worked. The management centre coordinated visits of patients, contacted patients/parents and clinics, assessed proposed patients for home care, administered staff etc. Compared to traditional care at hospital wards SABH employees had to work independent in the home of the patient where the "rules of the family" and not the hospital applied.

In the management centre, the heart of SABH, health care activities were planned and managed. Patients and their parents could get in touch with the centre by phone 24 hours a day. Monitoring of patients was done in the homes by SABH staff and by their parents. SABH gave parents instructions of how to use monitoring equipment and they also got instructions of what to do if the child's condition is changed. A wish at the start was remote monitoring of patients from the management centre but that demanded technology not available in the market.

At least 4 cars were needed to be able to carry out the health care at SABH. The patients had to be reached within 30 minutes from the hospital i.e. a patient must live within 25-30 kilometres from the hospital. A car company sponsored two of the cars and two were leased.

All SABH-staff attended an introduction course that apart from the medical aspects and information about the concept also involved telephony and the use of computers. SABH acquired ten laptops, one computer, one server, two printers, two computers connected to the network of the hospital for reading of patient journals, 10 cell phones and 10 pagers.

Margareta Palmberger left the post as head of ALB after half a year and was replaced by Bo Lundell around turn of the year 1998/1999. He was the head for 18 months and left the post in summer of 2000. He had two major missions, 1) to get ALB to work at full capacity and 2) to turn a deficit of 100 MSEK into a surplus. When he left he had accomplished both missions.

In 1993 three hospitals, S:t Göran, Karolinska and Danderyd, had units for paediatric care in the northern part of Stockholm. In 1998 the units were merged into ALB and located at Karolinska Hospital. ALB that opened in 1998 had about one third fewer beds than previous children's clinics had at their disposal. From the start in 1998 ALB was underdimensioned with its 35 000 square meters. This meant that ALB had problems with meeting the demand for beds. The pressure on beds and on medical care that cutbacks had induced should be alleviated, was the thinking of hospital management, by increased use of paediatric specialists in out-patient care, who, at the same time, were to become more closely attached to the children's hospital.

When Bo Lundell took over as head of ALB Margareta Fagerberg and Emma Rylander approached him and asked for his support in implementing the SABH-concept. He agreed and one reason was the result of his own investigation in the beginning of the 1990s that had convinced him that it was better for the child that it was cared for in the family home. His problem was that he had to turn a deficit of 100 million SEK into a surplus and SABH would increase the deficit with around 10 million SEK the first year. The head of the Karolinska had the opinion that the hospital did not have the resources to implement SABH. Bo Lundell gave the ultimatum that if he should continue as head of ALB he must be allowed to go ahead with implementing the SABH-concept. However, he promised to turn the new deficit (100 million SEK + 10 million SEK for SABH) into a surplus. The head of Karolinska agreed to his terms. As it turned out Bo Lundell turned the deficit to a surplus in one and a half year. He was able to do this by increasing revenues not by saving costs. Through negotiations the County Council, who paid for the care, agreed to pay a price that covered the costs of producing care.

The head and management of Karolinska Hospital had a "negative" view of SABH since SABH would increase the deficit, i.e. it affected the economic result of the hospital negatively. Hence, their opposition was of an economic character and not one

of content. At this time media (newspapers and TV) pictured the SABH-concept as a good example of health care of children. It was the project group that had presented the concept to media. The exposure of SABH in media was very good PR for Karolinska Hospital and management was proud of the publicity. But it also made it much harder to stop the start of SABH (When the economy of the hospital recovered a few years later SABH was no longer a problem since it covered its costs. Then the head of Karolinska Hospital changed his mind about SABH). Heads of other departments at Karolinska were irritated on the head of ALB since he was allowed to increase his costs when he as everybody else should cut costs. They changed their minds later on, when an evaluation (see next page) showed that SABH was efficient, produced high quality care of children and was less expensive compared to in-patient care.

The first year around 10 million SEK was invested in starting up the SABH-unit. This increased the deficit of ALB with the same amount. The SABH care was however less expensive than the alternative, i.e. increasing in-patient beds (which on the other hand was impossible due to the lack of space) but more expensive than not giving any care (i.e. longer waiting times). The next fiscal year SABH was incorporated in the revenue system of Karolinska Hospital and no longer an economic burden to the hospital.

It is the opinion of Bo Lundell that SABH “saved” ALB during the first years with its “new beds” for paediatric care. These years the number of newborn babies in Stockholm increased but the number of hospital beds did not. ALB had long waiting times and over-crowded wards. SABH alleviated the pressure on in-patient beds and was hence necessary for ALB to fulfil its medical mission.

SABH was to be housed in the ALB- building. The plan was to allocate 2 rooms of 40 square meters for SABH, but this was not to be. Instead SABH was allocated in barracks outside the ALB building. The reason was that the ALB-building lacked space for its needs of in-patient care. The head of ALB tried to get the management of Karolinska to rebuild the ALB-building but he was unsuccessful. He changed his tactics and moved SABH to barracks outside the ALB-building. To use these barracks were contrary to the Swedish work environment act and he hoped that management of Karolinska should realise that a rebuilding of the ALB-building was necessary. This tactic also failed, at least in the short run. It was not until the Swedish labour court judged the barracks unfit that management decided to rebuild ALB.

In the beginning of 1999 SABH moved into barracks that were equipped with “left over” from the hospital. The barracks were old and in bad shape and located apart from the ALB. The space was very limited as well as storing possibilities. Although these barracks made the work difficult the personnel was enthusiastic and believed in the activities. It was not until October of 2003 that SABH moved to new premises close to ALB.

SABH was inaugurated the 1<sup>st</sup> of April 1999. Two politicians, the new commissioner (a conservative) and the former commissioner (Elaine Kristensson), both held very appreciating inauguration speeches. Also the media reports were very positive to SABH. The same month a film that presented SABH was finished. The film became very important in marketing, describing and creating an understanding of SABH among politicians, colleagues and patient families.

A week after the inauguration the SABH staff was given notice by the head of ALB. The reason was that he had been ordered to cut costs by the managing director of

Karolinska. The notices were a strategic decision according to the head of ALB. The choice of the SABH staff was due to the fact that SABH had gotten positive publicity and his angle was that dismissing its staff would create a harsh public reaction and in that way put pressure on hospital management and politicians. What he did was not to prolong the leave of absence of SABH-staff from ordinary post at other departments, which in practice meant closing down SABH.

The “dismissals” were not carried out. Instead the SABH-staff was employed for half year at a time, i.e. their employments were prolonged with 6 months at a time. During 1999 the staff was given notice three times. This uncertainty of employment meant that SABH had a hard time keeping its personnel and many left. It also made it impossible to recruit new personnel. In January of 2000 19 out of originally 25 employees remained.

All from the beginning the project group had planned for continuous evaluations of SABH medical as well as economical aspects. The group got County Council administration to turn to external evaluators. In the beginning of 2000 the administration engaged a consultancy enterprise to carry out an evaluation of SABH. In June the evaluation was finished and presented to HSN. The evaluator’s conclusions turned the tide for SABH. Among other things they found that a “care day” at SABH was cheaper than at hospital wards since SABH had fewer employees per patient and no ward costs. Other conclusions presented in the report were that the goals of SABH had been achieved as far as medical quality, patient satisfaction and cost efficiency was concerned. The goals of using telemedicine had however not been achieved since there was simply no IT technology that met the demands of SABH in the market. The personnel turnover had been high due to the uncertainty whether or not the project would be transformed into an organisation for regular health care, insecure terms of employment and new work routines (that did not fit all). It also provided a foundation for calculating the price of a SABH-bed.<sup>37</sup>

One reason for the timing of the evaluation was that hospital management still questioned SABH. The main reason however was that in order to get SABH into the revenue system of ALB the County Council administration had to know the cost of a “bed” in SABH. Hence the evaluation was also to deliver a foundation for calculating a price of SABH-care.

In the summer of 2000 a new head of ALB was appointed. Before the appointment he declared that he wanted to close down SABH. However, after his appointment his opinion turned around and became a proponent of SABH within the hospital. He was supportive in many aspects, e.g. he encouraged all paediatric wards to admit patients to SABH.

In November 2000 it was decided by the hospital, to which the findings of the evaluation contributed, that SABH should be a department within ALB and that the staff would be employed on a permanent basis. SABH became one of 15 units within ALB. In 2004 Karolinska Hospital merged with Huddinge Hospital and a Children division was created including ALB and a paediatric department at Huddinge. The children division was organised in 8 areas of activities, which in turn are structured in sections. SABH became one section.

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<sup>37</sup> [www.sabh.nu/pdf/SABH\\_Vasco\\_rpt.pdf](http://www.sabh.nu/pdf/SABH_Vasco_rpt.pdf). The evaluation found that care at SABH was at least 30 per cent less expensive than similar care at the hospital. A calculation showed that SABH care meant a saving of around 10 MSEK a year compared to care at the hospital.



For some years the hospital management viewed SABH as a very successful form of children's health care. However in October of 2004 the existence of SABH was once more questioned. In beginning of November 2004 the big Swedish morning papers reported that SABH was going to be shut down. It was the management of children's division that planned to close down the unit as one of several ways to balance the hospital budget due to cut backs decided by the red-green majority of the county council. The close down would save eleven out of forty-three million SEK of cuts. The children admitted to SABH should be moved to hospital wards. The decision to close down SABH arose protests among parents to children admitted to SABH and among the political parties in opposition in county council. The consequence of protests was that the county council appointed a committee to investigate the future of children's health care in the county. The commission will report its findings the 31 of May 2005.

## 4. Discussion

### 4.1 Initiation

#### **Statement 1: Public sector innovation at the service level is problem driven.**

In this case the innovation idea was born out of the need to “solve a problem”, i.e. minimize the trauma associated with a child's stay in hospital and improve the quality of paediatric care by caring for children in their homes. The innovation and the idea were developed proactively i.e. there was no articulated need from patients and their families or from hospital management or County Council politicians.

The instigators primary rationale for the innovation was to improve the quality of care for seriously ill children as well as improving the wellbeing of the child's parent's brothers and sisters.

The innovation idea arose in a context that facilitated the generation of the idea. 1) The prime instigator (head of almoners at S:t Görans Hospital Margareta Fagerberg) saw it as a logical next step in a process that focused at improving care quality for seriously ill children. The first step that she had achieved before coming up with the SABH-idea was making hospital pediatric wards more “homelike”. 2) The “second” instigator (Anita Aperia head of paediatric department at S:t Görans Hospital) saw the SABH-idea as a important part of a larger process of renewal of childcare within the Stockholm County Council. An important element in the vision of this process was to minimise a child's stay in the hospital. 3) A similar idea had some years earlier been investigated at the hospital with the result that home care of children was a possibility.

One could also say that the prime instigator had a supporting rationale, i.e. she believed that at least in the long run “home care” would be less expensive than “ward care”. However the second instigator was more sceptical about the cost saving effect and did not argue for the SABH-idea in terms of cost saving.

An important element in the context was that health care all through the 1990s in Stockholm was being under the pressure of budget cutbacks. The SABH-idea could have been argued for in terms of less expensive pediatric care at least in the long run, but was argued for in terms of improved quality of care.

The studied innovation was an outcome of a possibility recognised and a process initiated at the operational level. Interviews conducted with management representatives (see work package 3) also show that many innovations are an outcome of processes initiated at the operational level and that the governing context for many innovations during the 1990s has been budget cutbacks. Innovative ideas aiming at manage the cutbacks arose at operational level i.e. instigators were those who saw a possibility to change that would result in cost saving innovations. Management at higher level did not have enough knowledge of work processes to see these opportunities.

The experience of the former commissioner of health care in the Stockholm County Council Elaine Kristensson is that there are many ideas of how to improve health care and the way it is organised at the operational level. But there is also resistance to change due to hierarchical way hospitals are run. Renewal of activities is hampered by the way care is organised in drain-pipes which hamper collaboration between clinics.

It was and is very common that innovative ideas are stopped as they climb the hierarchical ladder of decision. Individuals that had ideas to improve care sometimes contacted the commissioner. If she became convinced that the idea would improve health care she tried to push it through administration of the County Council. She was also often visiting clinics to get information of how things worked and to listen to ideas of improvement.

**Statement 2: A) Performance targets are a driver for innovation. B) Performance targets are a facilitator for innovation.**

Performance targets in the strict sense were not the driver for or facilitator of the studied innovation. One could however say that performance targets in the form of a new vision for the new health care for children in Stockholm County played an important role in the generation and implementation of the SABH-idea. An important element in the vision (a performance target) was to improve the quality of pediatric care by minimising the time spent in hospitals.

At the individual level the incentive for the instigators was “altruistic”. They were driven by the wish to improve the situation for seriously ill children. Public health care has as one target improvement of health care. The rationale and incentive for public health care is not to make a profit. In a sense this means that the incentive to create innovations that aim at improving the situation for patients are structurally driven. However this structural driver could be combined with individual incentives, e.g. financial rewards. That is and was not the case in Swedish health care. There was also another structural driver for innovation in the public health care at work in the 1990s. Budget cutbacks in health care in the Stockholm County stimulated the generation of cost saving innovations although the studied innovation was not driven by this force or rationale. Instead the cutbacks could at a number of times have stopped the innovation. On the other hand interviews (see work package 3) with management in hospitals showed that many innovations in the 1990s were driven or induced by the need to cut costs.

**Statement 3: This innovation is “top-down”(i.e. policy-led) as opposed to “bottom-up”(i.e. practice led).**

The innovation was practice-led or bottom-up, i.e. the statement is incorrect. The innovation idea was generated at service level. It was developed and implemented at service level. However, both hospital management and the policy level (County Commissioner of health) were involved in designing and implementing the idea. The County Commissioner acted as a facilitator in the implementation process.

## **4.2 Design and Development**

**Statement 1: This innovation is developed through imitation of private sector practice.**

*The statement is incorrect. The idea was new and it arose in a hospital at the service level. Home care of seriously ill children did not exist anywhere else in the world. At least the project group did not find any similar organisation when they searched for it at a world scale. Home care for adult patients did exist but did not resemble the idea so the working group could not learn that much from it. They had to develop their own model for home care.*

*The SABH-innovation was an organisational innovation and it was not developed outside public health care and transferred to it by imitation. However secondary technological innovations in for instance telemedicine were searched for in the*

*private sector. The needed technology was not available in the market. Hence, the working group initiated a few collaborative development projects with private companies. A key problem for developing the technology needed was the fact that the hospital did not have allocated financial resources in the budget for such work. In order to promote innovations in public health care such resources has to be budgeted.*

The technology goals formulated in 1997 by the working group had not been achieved when SABH started its activities. Even today this has not occurred. One reason is that in the market available technology did and do not meet the SABH demands. Another reason is that there was and is not enough funding sources in County Council for renewal of activities and development of new forms of health care or technology. Listed below are the technology wished for in 1997.

- Mobile medical multimedia PC for each medical care team
- Multimedia PC in the child's home for the use of both medical care providers and families
- Cable TV-based videoconferencing in the home
- Optimized transportation and healthcare plans
- Telematics equipment in the home
- Access to an interactive knowledge center for both healthcare providers and relatives
- Telediagnostic service available in the home
- Mobile phones
- Integration with the clinic's different base systems

GPS was wished for but it was too expensive. Laptops were acquired in 1998 but it is still today impossible to have a mobile connection to the system for patient documentation at the hospital. The mobile teams also have 3G cell phones, which SABH have been testing for the Swedish operator 3.

During 2000 SABH became a participant in a EU-project. Monitoring of patients from the management centre was a wish of SABH in order to increase medical security and to increase parents feeling of security. The EU-project was supposed to and did develop a prototype for that purpose. The prototype has not been launched in the market and SABH are not yet using such a remote monitoring system.

Scientists at Linköping University together with the enterprise TietoEnator tried to develop IT-system for planning and optimising resources and car routes to patients. Equipment for positioning was tested in 1999-2000 but these tests were unsuccessful and the tests were ended after 6 months. SABH has still a need and a wish to develop this technology.

In 2002 technology collaboration was started with the Swedish operator 3. SABH tested its mobile video telephony and the new 3G cell phones to see if they could be used for accessing patient journals over the Internet. These cell phones are in use today. A problem is insufficient 3 G coverage. In 2003 the operator 3 arranged a charity auction where cell phones were auctioned out. The surplus was given to SABH. The surplus (1.5 million SEK) was used create a SABH webb-site, a knowledge bank etc.

Some other enterprises have contacted SABH to help to develop technology needed. e.g. the telecom company Ericsson and the bank SEB.

If the “right” technology were developed SABH probably would be able to take on more patients. Whether or not new patient groups would be possible to take care of in homes remains to be seen. Also an IT-system for navigation and positioning of mobile teams would facilitate for the mobile teams and for the management centre.

**Statement 2: The choice and features of this innovation is influenced by underlying organisational politics, dominant values and beliefs systems.**

This was true in the studied case. The organisation of public health care in Sweden influenced the implementation of the SABH-concept. At the County Council level politicians and civil servant were important players in the implementation process and at the hospital heads at different management levels influenced the design and implementation processes.

It is the experiences of the instigators that hospital management at different levels and County Council administration set themselves against the SABH-concept and its implementation. In their interpretation the two-year delayed start of SABH is one example of such resistance. They also interpreted some incidents after the decision to establish SABH as attempts to “kill” it. For instance SABH was preliminary to be housed in the ALB-building. However SABH had to move into barracks not suited to the units needs. The SABH-staff interpreted these incidents as distrust of the new form of children’s health care from the head of ALB. According to the head of ALB these incidents should not be interpreted in terms of distrust in SABH. Instead they were consequences of his fight with the management of Karolinska Hospital concerning the housing of SABH in the ALB-building. The reason for the move of SABH to unsuitable barracks was to put pressure on the Hospital so that management would recognize the need of rebuilding ALB. Ultimately his strategy was successful but the move took much longer than he hoped.

Another incident that SABH-staff interpreted as resistance to SABH was the notice given to SABH-staff a week after inauguration. According to the head of ALB this was not an attempt to close down SABH. The notices given were a tactic in his fight for SABH with hospital management. What the head of ALB did was not to prolong the leave of absence of SABH-staff from their ordinary post in other departments. This put pressure on management since it meant closing down SABH, which could not be done due to the positive publicity SABH had gotten in media. A close down would create a harsh public reaction and in that way also put pressure on politicians. Eventually the personnel were not dismissed but the personnel’s leave of absence was only prolonged with 6 months at a time. This uncertainty of employment meant that SABH had hard keeping its personnel and many left. It also made it impossible to recruit new personnel.

A third incident that seemed suspicious to the SABH-staff was the timing of the first evaluation. The SABH staff interpreted the timing as an attempt to get arguments for closing down SABH. According to the head of ALB the timing of the evaluation was primarily due to the need to get SABH into the revenue system of ALB. However, it is his opinion that if the evaluation had shown that a bed at SABH was more expensive than in a ward at the hospital SABH would have been closed down.

According to head of ALB the reason to the fight with management of the hospital was the economic regime of cutbacks and not the content of the SABH-concept. His decisions led to protests both from SABH-staff and parents as well as to “bad” publicity for the hospital in media. This put pressure on hospital management. Hence, media had an important “pressuring role” in the process.

Another problem and hindering factor that delayed the start of SABH was that heads of the paediatric division and the hospital often were replaced. The project group had to “anchor” the concept with 5 new heads of division and 3 new heads of hospital up until the start of SABH.

The instigators Emma Rylander and Margareta Fagerberg also met resistance from colleagues in other ALB departments. For instance when SABH was presented at a plenary for the paediatric staff at ALB in October 1998 very strong negative reactions were voiced by some of the staff. Some regarded the SABH as medically risky and others expressed the opinion that SABH was “luxury paediatric care”.

At the political level in the County Council the County commissioner foresaw resistance to the SABH-concept, which had to be counteracted. According to the commissioner it was important to go public with the proposals in order to be able to be one step ahead of the political opposition. The opposition would have difficulties in saying no to an appreciated proposal among media/citizens. Media also reported that SABH meant a huge improvement for seriously ill children. The experience of the commissioner is that the logic of politics is that every time an issue is publicly addressed the solution takes a step forward. Going public was about keeping the issue of SABH alive in the political debate and among politicians. Those against or hesitant to the proposal had an impossible task since the proposal of SABH was an improvement for seriously ill children. Which politician can oppose such a proposal?

The bottom line in the analysis of the delayed start of SABH is the lack of financial resources in the County Council and Hospitals. From spring/summer of 1996 up to the establishment in 1998 the design group primarily used its time trying to get SABH financed. The project group lost 2 years due to the lack of development resources combined with a situation of budget cutbacks. Also from the start and up to November of 1998 the work had to be conducted on an idealistic basis. The group did the work in parallel with their ordinary employment, which meant delaying the concept design and the implementation of SABH.

According to Anita Aperia, who was involved in the SABH-process, inertia in public health care is bigger than in the private sector, which makes it harder and more time consuming to renew activities compared to the private sector. One reason is of structural character, i.e. the lack of budget reservation for developing and implementing organisational innovations. Another reason is that management in public health care are short sighted and do not have a strategically long-term thinking. In Anita Aperias opinion implementing the SABH-idea went rather smooth and quick in relation to how ideas of organisational change normally is implemented in public health care. The SABH-idea was helped by the planning of the “ALB idea”, i.e. without ALB probably no SABH. However the SABH-idea was also promoted the ALB-idea.

### **Statement 3: The end user was involved in the innovation process.**

The end users in the studied case are parents with seriously ill children. Their role in the innovation process was primarily “a source of acceptance” for the SABH-concept, i.e. they were respondents in a questionnaire that investigated the interest for home care and part of the evaluation where they were asked to express their satisfaction with SABH and its home care. Another role of end users was a “source of improvement”, i.e. they provided ideas (identified problems) of how to improve the care of SABH.

### **4.3 Selection, Diffusion and Utilisation**

#### **Statement 1: The diffusion of the innovation required effective 1) networking 2) competence building 3) alternative thinking**

Today SABH covers the needs of children's home care rather well within the northern part of Stockholm County. Families situated less than 30 minutes by car away from Karolinska Hospital can be served by SABH. In the original idea was the notion that the SABH-model should be diffused to hospitals in the southern part of the Stockholm County. This has not happened. The instigator of the SABH-idea supposed that the reason for non-diffusion was the so called "not invented here" syndrome. It should be said that diffusion of the innovation within Stockholm County might occur in the future.

The SABH-model demands rather large populated areas to be effective. In Sweden it is only the towns of Malmö and Gothenburg that have the necessary number of children patients to make a SABH reasonable. Hospitals from both towns have visited SABH to learn about the concept. SABH was first on a world scale with advanced care of seriously children in their homes. The model have however been transferred to other parts of the world. Today there are similar care organisations in Toronto (Canada) and Mariehamn (Åland/Finland) which have had representatives visiting SABH and learning from their experiences.

#### **Statement 2: The diffusion of this innovation required co-ordination between different governmental institutions and/or departments**

Since the innovation has not been diffused within Sweden the case study gives no information in regard to the statement.

### **4.4 Evaluation and Learning**

#### **Statement 1: Evaluation played a critical role in the innovation process.**

#### **Research institutions played a critical role in the innovation process. Interaction with other institutions/firms played a critical role in the innovation process.**

Evaluation played a critical role. When SABH was set up it was explicitly said that SABH was an experiment and as such it should be facing continuous evaluation. All stakeholders agreed upon the evaluation criteria. The first evaluation was carried out about a year after SABH started its operations. The evaluator's conclusions turn the tide for SABH. Before the evaluation SABH was questioned at all management levels within ALB and also among County Council politicians and civil servants. After the evaluation the questioning disappeared since it showed that SABH had achieved its goals in regard to medical quality, patient satisfaction and cost efficiency (a care day at SABH was less expensive than at hospital wards).

Research institutions did not play a critical role in the innovation process. There was no involvement of such institutions in the process.

Interaction with other institutions/firms played a role in the process but not a critical role. Other departments within the ALB helped in investigating the possibility/need of home care for seriously ill children. After starting its activities other departments transferred patients to SABH. Firms were involved in the process in a number of ways, i.e. SABH collaborated with firms in trying to develop technology that would facilitate home care (see 4.2. statement 1), firms also sponsored SABH e.g. with cars and cell phones.

## **4.5 Other Issues**

### **Statement 1. “Entrepreneurs” played a central role in the innovation process**

“Entrepreneurs” was really important for implementing the innovative idea of SABH. The instigator (head of almoners) and the paediatrician heading the group that designed and implemented the innovation were the intrapreneurs in this case. Without their persistency and hard work in getting acceptance and a go ahead from hospital management the innovation would never had seen the light of day.

The instigator was assigned to implement the SABH-concept by the head of children’s department. The instigator and the head of children’s department assigned the pediatrician that headed the implementing group.

The two intrapreneurs had control of designing the content of the SABH-concept. When it came to starting activities they did not have control. They had to convince and form alliances with politicians (County Commissioner of health) and management at different levels within the hospital in order to get the go ahead and to survive.

It is hard to pinpoint the key qualities of the intrapreneurs. It seems to me that their conviction that home care would really improve care of seriously ill children as well as of their parents was their driving force, which made them fight for a number of years with hospital management. They must also have had credibility among their peers as well as among politicians and media in order to be successful. Lastly persistence was also an important characteristic.

### **Statement 2. There was no interaction between policy and service level (feed back)**

This statement is incorrect in regard to this innovation. The story told is a story of complex processes, interaction and power struggles due to the many decision levels in Swedish public health care (Hospitals and County Councils). The instigators of the SABH-innovation were motivated by a vision, they were enterprising and not sensitive to setbacks, which were many. They had to search and apply for financial resources for implementing the concept as well as for acquiring and developing the technologies needed. They had to anchor the concept at different management levels in the hospital and at the County Council among politicians and civil servants. They had to convince the responsible politician for health care in the County Council to act/fight on their behalf in the administration and among politicians. They had to convince the head of ALB to act/fight on their behalf towards hospital management. As if that was not enough they had to present their case to media and try to get media to present the concept to citizens.

The innovation process described can partly be characterised as “innovation by fighting”. The instigators of the innovation experienced that management was set against the innovation due to cutbacks in hospital budgets. They fought the resistance within the hospital with the help of media and the County Commissioner (and the head of ALB although they thought him to be resisting SABH). The County Commissioner took the fight with County Council administration and politicians among other things with the help of media. The head of ALB had to fight with the management of the hospital to push the implementation of SABH forward. An interpretation to why fighting was necessary is that the economic regime of cutbacks put heavy restrictions on County Council administration and on the hospital management. This regime promoted cost saving innovations but hindered innovations



that improved the quality of health care and at the same time increased cost in the short run.

Regarding the questions relating to evaluation see section 4.4.

#### **4.6 Policy recommendations**

It is impossible to generalize from a case study and thus to draw lessons as well as to give policy recommendation. The following comments relate to the issue of how the innovative capacity of public health care can be improved.

In the opinion of one of the heads that were involved in the innovation process the elaboration and implementation of the SABH-concept was rather smooth and quick compared to how the general innovation process in the public health system. According to the head in question there are two major reasons to why innovations processes are sluggish in public health care. The first is the lack of financial resources for developing and implementing organisational innovations. The second reason is the short-sightedness of hospital management at different levels (which probably is a consequence of the long period of budget cutbacks)

Lack of financial resources for organisational innovation was a big problem both in the phase of elaborating the concept and when it came to implementation of the concept. The instigators of the innovation had to use their spare time for developing the SABH-concept. Almost all of those who was informed about the concept and had the power to facilitate or decide about its implementation, e.g. heads of hospital at different management levels, politicians etc. found the concept promising. Their rationale for the decision not to implement the SABH-concept was one of economics not of content. Due to cutbacks during the period financial resources were lacking. The regime of cutbacks promoted cost saving innovations in existing activities but hampered development of new activities like SABH. The lesson is that in order to support and increase innovativeness the County Council should make budget allocations for the development of new activities, i.e. organisational innovation.

Allocating financial resources for innovative activities would overcome resistance to change from management levels within hospital, at least resistance that are founded in the lack of resources. In the case studied the rationale that delayed the implementation of the concept was lack of resources.

Allocating financial resources for innovative activities would also improve the management of innovation processes. Allocation means given a certain management level in hospitals the responsibility for managing innovation processes. The case study indicates that this was a problem that obstructed and delayed the innovation process. In spite of the small investment needed (around 10 million SEK) implementing the concept involved many decision makers from different management levels in the hospital as well as involvement from County politicians.

The case study indicates that individual incentives to engage in innovative activities in public health care to a large extent are found in values and belief systems of employees. The rationale for the instigators was to improve the quality of care. The public health system does not use individual economic incentives to promote innovations. Using economic incentives might increase increased innovativeness among hospital staff.

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# Appendix

## 1. Research design

Lennart Norgren and Kristina Larsen, who have carried out the case study, are both analysts at the Swedish Agency for Innovation Systems (VINNOVA). In a first step we discussed with colleagues at VINNOVA knowledgeable about innovations in the Swedish health sector possible innovations to be studied. In the end we found the SABH-case at Karolinska Hospital the most interesting among several alternatives. The choice of SABH as a case to study was that SABH was “known” to us as an organisational innovation that also included technological innovations. We had heard that SABH was an example of how technological innovations in ICT and telemedicine can induce organisational innovations (which however turned out to be wrong). A study of such an innovation may throw give insights on the relation of public health care and private ICT enterprises in the context of innovation.

The next step was to contact the head of the SABH-unit and ask her if they would be interested in taking part in the study. We got a positive answer to this question and we decided a date for our first meeting.

In the first meeting with the head and the assistant head of SABH we got information of the innovation, its content and some written documentation of the innovation. We also got a brief description of the innovation process and of critical incidents during the process as well as the names of those involved in the generation and implementation of the idea. We were lucky in the sense that the head of SABH was the paediatrician that headed the group that designed and implemented the concept and the assistant head had joined the implementation group after a few years but well before the innovation was launched.

We then made a first outline of the innovation process starting with idea generation. We also identified heads of the children’s department over time as well as the head of the hospital and county commissioners. When studying this sketch and a first written process description based on our interview notes and the written material a number of questions turned up, which needed clarification in order to be able to understand the process.

We also defined the environment of the innovation, which included the hospital and the Stockholm County Council. We described the Swedish health care system as well as the Stockholm County Council and Karolinska Hospital.

Our understanding of the process grew slowly over time when we identified questions and met with the head and the assistant head of SABH at several times. The case description grew with each meeting. The both interviewees got written description before each meeting, which we discussed thoroughly in the meeting. When the two interviewees were content with the description we still had some unresolved questions, which they could not answer (but they pointed to the individual able to give us the information). The description contained several critical incidents that could have stopped the innovation and their understanding of the rationale behind each incident.

We then turned to the other individuals involved to get our questions answered as well as checking the process description, its critical incidents and the rationales of

individual actions. We interviewed the instigators of the idea and hospital heads and policy makers that were involved in critical incidents in the implementation process. The results of these supplementing interviews were that it revised the picture especially in terms of rationales for actions that were critical to implementing the concept.

In a last step we compared the description to the statements agreed upon by the Publin group.

## 2. Key documents

Most of the information on SABH activities was found on the web (i.e. [www.sabh.nu](http://www.sabh.nu)). Currently there is only a Swedish version of SABH-information. A year ago there was also a English version which has been used here. An important document that also can be found on the web-address is the evaluation of SABH in the year 2000 ([www.sabh.nu/pdf/SABH\\_Vasco\\_rpt.pdf](http://www.sabh.nu/pdf/SABH_Vasco_rpt.pdf)).

## 3. Interviewees

The case description is based on interviews. Sources of information were individuals taking part in generation of the innovation idea and that participated in the implementation of the idea. The following individuals were interviewed.

Margareta Fagerberg, head of almoners at S:t Görans Hospital, instigator and participator in the group responsible for implementation of the of the SABH-innovation.

Emma Rylander, Paediatric physician at S:t Görans Hospital, head of the group responsible for implementing the SABH-idea and later head of the SABH-unit.

Helena Bergius, Paediatric nurse at Karolinska Hospital, participated in implementing the SABH-idea and later assistant Head of SABH-unit.

Anita Aperia, Head of Childrens Division S:t Görans Hospital, instigator of the innovation.

Bo Lundell, Head of Childrens Divison at S:t Görans Hospital and Karolinska Hospital

Elaine Kristensson, County Commissioner at Stockholm County Council 1994-98.

## On the PUBLIN case studies

*The following general presentation is based on the PUBLIN guideline report for case study researchers. See also the introduction to the case study summary report.*

The overall aim of this PUBLIN study has been to gain insights into the processes of innovation and the associated policy learning in the public sector. These should contribute to the development of a theory (or theories) of innovation in the public sector, and contribute usefully to policy analysis. Within this study framework, the aims of Work Packages 4 and 5 (the case studies) have been *to understand the interplay between policy learning and innovation at the policy level, and innovation at the service level within the public sectors under study.*

More specifically, the objectives of each Work Package are:

1. To understand the innovation processes present within national public health systems/social service systems.
2. To understand the learning processes underlying policy development in publicly regulated health/social service sectors.

### ***Innovation***

Green, Howells and Miles (2001), in their investigation of service innovation in the European Union, provide a suitable definition of the term innovation which denotes a process where organisations are

“doing something new i.e. introducing a new practice or process, creating a new product (good or service), or adopting a new pattern of intra – or inter-organisational relationships (including the delivery of goods and services)”.

What is clear from Green, Howells and Miles’ definition of innovation is that the emphasis is on *novelty*. As they go on to say,

“innovation is not merely synonymous with change. Ongoing change is a feature of most... organisations. For example the recruitment of new workers constitutes change but is an innovative step only where such workers are introduced in order to import new knowledge or carry out novel tasks”.

Change then, is endemic: organisations grow or decline in size, the communities served, the incumbents of specific positions, and so on. Innovation is also a common phenomenon, and is even more prominent as we enter the “knowledge-based economy”.

An innovation can contain a combination of some or all of the following elements:

- New characteristics or design of service products and production processes (*Technological element*)

- New or altered ways of delivering services or interacting with clients or solving tasks (*Delivery element*)
- New or altered ways in organising or administrating activities within supplier organisations (*Organisational element*)
- New or improved ways of interacting with other organisations and knowledge bases (*System interaction element*)
- New world views, rationalities and missions and strategies. (*Conceptual element*)

## **Case study statements**

In an effort to define a common methodological framework within which to study innovation in the public sector, several research orientation statements were put forward and related policy questions suggested.

These give a '*problem driven view*' of the issue under study. It should be strongly emphasised that this list was only intended to be indicative of what propositions might be tested and it was revised during the course of the PUBLIN study.

For instance, the following statements were added to the ones listed in the table below:

Entrepreneurs played a central role in the innovation process

- Was there a single identifiable entrepreneur or champion?
- Was the entrepreneurs assigned to the task?
- Had the entrepreneurs control of the project?
- What was the key quality of the entrepreneurs? (management, an establish figure, position, technical competence, access to policy makers, media etc)
- Incentives

There was no interaction between policy and service level (feedback)

- To what extent was the policy learning a result of local innovation?
- Are local variations accepted, promoted or suppressed?

- To what extent does the innovation reflect power struggles at the local and central level?
- Was there dissemination of the lessons learned, and was this facilitated by specific policy instruments?
- Where there evaluation criteria? (When?)
- Who were the stakeholders that defined the selection criteria? Did problems arise due to the composition of this group of stakeholders?
- How did the interaction and/or the interests of the stakeholders influence the selection of the indicators used?

### **Policy recommendations**

Based on your experience from case studies, give concrete policy recommendations.

1. Present also policy recommendations given by the respondents
2. Are there any examples of “good practice”?

The case study reports all try to comment upon these statements.

Moreover, all participants were also asked to use a comparable design for the case study itself and for the case study report.

Service Innovation		Policy Learning	
Statements	Questions	Statements	Questions
<b>Initiation</b>		<b>Initiation</b>	
Public sector innovation at the service level is problem driven	<p>What was the primary rationale for the innovation under study?</p> <p>Were there supporting rationales?</p> <p>Was the innovation developed proactively or reactively?</p> <p>Where did (recognition of) the need for the innovation originate?</p>	Public policy learning innovation is problem driven.	<p>How can specific problem-orientated policy innovations be transformed into more general forms of policy learning?</p> <p>Is policy learning largely a reactive or proactive process?</p>
<p>Performance targets are a driver for innovation.</p> <p>Performance targets are a facilitator for innovation.</p>	<p>What are the most appropriate incentives and drivers for innovation in the public sector system under study?</p> <p>Be aware that it may be a driver and not a facilitator</p>	<p>Policies directed at performance measurement are a driver for policy innovation</p> <p>Policies directed at performance measurement are a facilitator of policy innovation</p>	<p>What are the most appropriate incentives and drivers for innovation in the public sector system under study?</p> <p>Be aware that it may be a driver and not a facilitator</p>
This innovation is “top-down” (i.e. policy-led) as opposed to “bottom-up” (i.e. practice-led).	<p>Does the location of the pressure for the introduction of an innovation impact its diffusion and development?</p> <p>Each country case should describe to what extent it is a top-down or a bottom-up innovation</p>	This innovation is “top-down” (i.e. policy-led) as opposed to “bottom-up” (i.e. practice-led).	<p>Does the location of the pressure for the introduction of an innovation impact its diffusion and development?</p> <p>Each country case should describe to what extent it is a top-down or a bottom-up innovation</p>
<b>Design and Development</b>		<b>Design and Development</b>	
This innovation is developed through	Where did the innovation arise?	This innovation is developed through imitation of private	Where did the innovation arise?



imitation of private sector practice.	Does it have models outside or inside the public sector?	sector practice.	Does it have models outside or inside the public sector?
The choices and features of this innovation is influenced by underlying organisational politics, dominant values and belief systems	To what extent have the choices and features been driven by conflicts (specify: power, funding, belief systems ... etc) between different stakeholders?  How did the introduction of the innovation overcome the resistance to change at the service level?	The choices and features of this innovation is ° influenced by underlying politics, dominant values and belief systems	To what extent have the choices and features been driven by conflicts (specify: power, funding, belief systems ... etc) between different stakeholders?  How did the introduction of innovations overcome the resistance to change at the policy level?
The end user was involved in the innovation process	What was the role of the end user? Were they involved in order to improve the design features or to increase acceptance of the innovation and/or for other reasons?  If they were not involved, explain why.	The end user organization was involved in the innovation process	What was the role of the end user organisation?  Were they involved in order to improve the design features or to increase acceptance of the innovation and/or for other reasons?  If they were not involved, explain why.
<b>Selection, Diffusion and Utilisation</b>		<b>Selection and Deployment</b>	
The diffusion of the innovation required effective  1. networking,  2. competence building and  3. alternative thinking		The selection and deployment of the innovation required an environment that encouraged effective  1. networking ,  2. competence building and  3. alternative	

		thinking	
The diffusion of this innovation required co-ordination between different governmental institutions and/or departments	<p>How can inter-governmental roadblocks be bypassed?</p> <p>To what extent does intra-governmental co-ordination depend on direct political interaction?</p> <p>To what extent does intra-governmental co-ordination depend on stimulus from a crisis situation?</p> <p>Does fragmentation of government create a barrier?</p>	The most challenging public policy innovation takes place at the intra- governmental (inter-functional) level.	<p>How can inter-governmental roadblocks be bypassed?</p> <p>To what extent does intra-governmental co-ordination depend on direct political interaction?</p> <p>To what extent does intra-governmental co-ordination depend on stimulus from a crisis situation?</p> <p>Does fragmentation of government create a barrier?</p>
<b>Evaluation and Learning</b>		<b>Evaluation and Learning</b>	
<p>Evaluation played a critical role in the innovation process</p> <p>Research institutions played a critical role in the innovation process</p> <p>Interaction with other institutions/firms played a critical role in the innovation process</p>	<p>Did the innovation meet the expectation of the stakeholders at various stages of the innovation process?</p> <p>Did the innovation have unintended consequences (e.g shifting bottlenecks)?</p> <p>Did the innovation induce other innovations?</p> <p>Is there evidence of policy learning and any associated structure?</p> <p>Had lessons been drawn from earlier innovation processes?</p>	<p>Evaluation played a critical role in the innovation process</p> <p>Research institutions played a critical role in the innovation process</p> <p>Interaction with other institutions/firms played a critical role in the innovation process</p>	<p>Did the innovation meet the expectation of the stakeholders at various stages of the innovation process?</p> <p>Did the innovation have unintended consequences (e.g shifting bottlenecks)?</p> <p>Did the innovation induce other innovations?</p> <p>Is there evidence of policy learning and any associated structure?</p> <p>Had lessons been drawn from earlier innovation processes?</p>