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## Even in tough times: investing in hospitals of the future

Bernd Rechel, Stephen Wright, Barrie Dowdeswell, Martin McKee

Hospitals are of crucial importance for health systems. In the WHO European region, the hospital sector absorbs 35–70% of national health expenditure.<sup>1</sup> Although capital investment accounts for only 2–6% of total health expenditure<sup>1</sup>, how hospitals (by far the dominant capital asset) are built predestines a large stream of operational and medical costs for decades to come – roughly the equivalent of the original capital costs every two years. This means that the way that the many billions of euros that are being invested annually across Europe in new and refurbished health care facilities has major consequences for the financial sustainability of the whole health system. This investment offers a remarkable opportunity to maximize health gain. It can also ensure that services are responsive to the legitimate expectations of users. Yet too often, these opportunities are missed.

There are a number of key dimensions of capital investment about which there is only sparse evidence. Which financing mechanisms are most appropriate for investing in hospitals? How can the entire lifecycle of health facilities be taken into account at the initial design stage? How can hospitals be enabled to adapt appropriately to future changes? What is the impact of systematized models of care on hospital functioning? How should hospitals be structured conceptually (as an entity responding to service needs) and as an actual building? How can hospitals be made more environmentally sustainable? How can services be translated into capital assets? These are the questions that matter to those

involved in the planning, design, financing and management of new hospitals. This article is based on a two-part study undertaken in 2006–2009. The first part was a series of case studies from across Europe, illustrating innovative approaches to hospital planning and design.<sup>2</sup> The issues that emerged included flexible design, a focus on clinical pathways, integrated regional planning and integration of models of care into design.\*

The second component was an analytical treatment of the key issues identified in the first stage, based on a review of published literature, as well as the findings of the case studies. We explored the diverse approaches to capacity planning in Europe, the emergence of new models of care, new capital financing models, the application of lifecycle economics, facility management, and innovations in sustainable design.<sup>3</sup> Some of the key findings are outlined below.

### New approaches to capacity planning

Although revenue for hospital services in many European countries is increasingly being based on measures of activity, such as diagnosis-related groups (DRGs), a review of international practice found that bed capacity continues to be the preferred unit for planning hospital care in Finland, Germany, Italy, New Zealand, and most Canadian provinces. Of the countries included in the review, only England and France were moving towards planning based on service volume and activity.<sup>4,5</sup> Bed occupancy and the ratio of beds per

\* The selection of case studies, from Finland, Germany, Italy, The Netherlands, Norway, Poland, Spain, Sweden and the United Kingdom, was based on the potential to learn generalizable lessons, while maintaining geographical diversity.

population also remain the predominant metrics in hospital capacity planning.<sup>6-8</sup>

This approach creates a number of problems. Most importantly, neither bed numbers nor bed occupancy provide a good measure of the services provided inside hospitals, given the wide variation in case mix and associated treatment costs of those occupying the beds<sup>6</sup>, nor are they suitable for predicting future demand.<sup>9</sup> The measure implies that the bed is the core piece of capital stock in the hospital, constraining the performance of the other assets around it. The near universal trend to growing numbers of day cases and shorter lengths of hospital stay further invalidates beds as a measure of capacity. The continued use of 'bed numbers' also fails to consider the trade-offs and complementarities from investing in different types of health capital. Thus, while bed numbers have the benefit of convenience, as they are one of the few indices of hospital capacity routinely collected, there is a growing recognition of the intrinsic limits of this measure.<sup>10</sup>

Hospital capacity planning should be based on the ability to deliver processes. This requires a much more sophisticated reading of the true capacity of a hospital. In this context, lean thinking draws attention to the value that different processes add for the primary customer. In health care, this is the patient, for the treatment of whom 'beds' amount to little more than a method of inventory; they are very rarely the constraint on hospital functioning. It is beneficial to look at the hospital, not from the perspective of beds, or specialties, but rather from the path taken by the patients who are treated in them, the respective processes delivered by health professionals, and the facilities appropriate to those processes.<sup>10</sup> Some of the case studies examined in this issue, the Coxa Hospital in Finland or the Alzira model in Spain, illustrate different approaches towards achieving these aims.

### Ensuring future flexibility

One of the major factors that makes it so challenging to invest effectively in capital in the health sector is the changing context within which hospitals operate in

Europe. Hospitals have to adapt to many shifting but inter-related factors, including ageing populations, changing patterns of disease, a mobile health care workforce, the introduction of new medical technologies and pharmaceuticals, increasing public and political expectations, and new financing mechanisms. Flexibility is a key aspect: how can hospitals be built and financed so that they can adapt easily to changing needs? How is it possible to 'keep capital supple'?<sup>11</sup>

In terms of the design of new hospitals, the importance of incorporating future flexibility is now well established among hospital architects. Ideally, buildings should be adaptable, allowing for changes in layout, function and volume. Architectural solutions include easily removable inner walls and partitions, the inclusion of 'soft space' next to complex areas, and incorporating scope for outward expansion. Standardization of hospital components can help, for example where modular structures reduce the cost of production and assembly. It is also becoming more important to look beyond the lifecycle of the hospital, recognizing the potential value of the estate and the scope for later conversion of some elements to offices, hotels or apartments.

### Taking a lifecycle perspective

A key lesson is the importance of taking a lifecycle perspective.<sup>12</sup> In recent decades, capital assets have been virtually free for most health care providers in Europe, as they were financed by government budgets, with little or no risk to providers. There are two pernicious consequences. On the one hand, this can lead to simple over-provision of capital stock. On the other, there is no incentive for the investing institution to bear in mind the long-term consequences of investing. Given the dominance of this mechanism of capital financing, there is often little awareness of the real costs of capital assets, with concepts such as lifecycle economics remaining underdeveloped. This is changing. In the Netherlands, for example, the government has included the cost of capital in output pricing mechanisms<sup>13</sup>, while in the United Kingdom, hospitals pay annual capital charges to the Treasury.

From a lifecycle perspective, it is apparent that the initial investment is only a small proportion of the costs of the building over its full lifecycle, from the early design phase to planning, construction, use, and – possibly – demolition. The Norwegian government now calculates the lifecycle costs of all major public infrastructure projects.<sup>14</sup> Such accounting practices reveal that a considerable part of hospital costs are not related to 'primary' medical processes, but to ancillary 'secondary' services, such as facility management. Hospital design that takes explicit account of facility management costs is likely to result in significant efficiency gains, with cost savings of up to 20% being readily achievable.

### Systematizing care pathways

The primary function of health facilities is to enable health care workers to deliver high quality care that meets the health needs of the population being served. This requires the integration of facility design with clinical pathways of care. Attention to clinical pathways began to develop in the 1980s, leading to standardization of procedures based on the recognition that in many areas, patients had, at least initially, similar needs. Examples include the management of acute chest pain or hip fracture.<sup>15</sup> Of course, a significant number of patients will need to depart from the standard care pathway. It is essential to incorporate sufficient flexibility to meet the needs of those who have particular needs and, especially, the many who have multiple co-existing disorders. Nonetheless, it is often possible to create simplified channels for large numbers of patients that provide opportunities for improved co-ordination, and thus patient experience.

The need to think in terms of systematized care is increasingly reinforced by looking at hospitals (and health care generally) as settings for managing processes. As in many other complex process areas, we believe that something like an 80:20 rule applies, where 80% of activities can be standardized and subjected to cost-minimization protocols.<sup>16</sup> This has implications for capacity planning, since spare capacity needs to be built into the system

to cope with the 20% of care which is non-standard and to allow for inevitable surges in demand. Here it is important to recall that demand for health care is not constant and spare capacity will always be needed to cope with surges in activity, with the appropriate amount to be reserved varying according to the nature of the service being provided.

### Taking account of the whole health system

Investing in hospitals, particularly in the current context of economic recession, requires strategic reflection on the future role of hospitals in health care systems. The hospital treatment episode often forms only part of a much longer or wider care pathway for the patient. There have been significant changes in the configuration of health services in recent decades. Much care previously provided in hospitals has been shifted to other settings and the potential for substitution by primary, social, and free-standing ambulatory care is increasingly being recognized. The move towards community settings has largely been driven by financial considerations (although with little evidence that this leads to demonstrable cost savings), but it has also followed the growth of opportunities to provide more complex and sophisticated diagnosis and treatment in primary care settings. Rehabilitation and palliative care are also increasingly provided nearer to the patient.

These trends have triggered increasing interest in planning on a system-wide basis, as expressed in terms such as 'territorial health care', 'continuity of care', 'integrated care pathways' and 'care networks'. New networks of care are emerging that are not confined to hospitals, e.g. packages of care for those with chronic conditions such as diabetes, asthma, heart disease or cancer that are based on integrated clinical pathways that cut across primary, secondary and social care. An example of health services linked closely with community services is regional planning in Northern Ireland (see the case study in this issue). Overall, the spectrum of services provided for a designated population is gaining more attention than the details of where they are delivered.

### Conclusions

While recognizing that the evidence base for many key dimensions of capital investment is still very sparse, we believe that our study offers a number of lessons that increase the chances that capital projects will be successful. These include a variety of approaches for matching payment systems to investment, ensuring future flexibility of buildings, taking a whole system perspective, building on systematized care, considering the life-cycle of health facilities, and ensuring the environmental and other sustainability aspects of new buildings. Although there are often no easy answers to the specific requirements of capital investment projects, there are clear pointers as to where to direct policy attention and future research.

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# The Alzira Model: PPP in an Integrated Health Services Organization

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The Spanish National Health Service (NHS) is a centrally tax-funded system which is universal and free at the point of delivery. Its total health care expenditure in 2007 was 6.1% of GDP.<sup>1</sup> Between 1978 and 2002, responsibility for the management and delivery of health services was transferred from the central government (the national Ministry of Health) to the 17 Autonomous Regions (known as Autonomous Communities), although the majority of funding still comes from central government.

In 1991, the Abril Commission, created by the Spanish parliament to evaluate the NHS, reported that the health service suffered from a lack of efficiency and administrative rigidity, excessive centralization and staff apathy and lack of involvement in formulating health policies. The Commission recommended reforms that included a purchasing-provider split, the adoption of new management tools and enhanced participation of staff. Subsequently, two laws (in 1994 and 1997) were approved to allow a purchaser-provider split in health structures and the introduction of management and governance models within the Regional Health Services.\*

## The Valencia Autonomous Community

The Valencia Regional Government organizes health services through its Ministry of Health (*Conselleria Sanitat*), with a health care budget that is more

than 40% of the total regional government's annual expenditure. An aging population, a reduction in the working population, immigration, investment in new technology and rising citizens' expectations are all factors that have driven a continuous yearly increase in health spending.

La Ribera Health Department is one of the region's 22 such departments and had 240 000 inhabitants in its catchment 'health area' in 1997. At the time, it was the only health department without a district general hospital. Due to high levels of health expenditure and new powers resulting from the reform law passed in 1997, the Valencia Government explored alternative management models to finance hospital services with private investment. Thus, the Alzira model was initially conceptualized as a *Concesion Administrativa* ('administrative concession') along the lines of a public-private partnership (PPP) whereby a public hospital would be managed privately.

## The Alzira model

The Alzira model emerged as an agreement between the Valencia Government and a private company, UTE (Temporal Union of Companies), which was created by ADESLAS (51% share), the largest private health insurance company in



Hospital La Ribera, Valencia, Spain (copyright La Ribera hospital, 2010)

Spain, Ribera Salud (45%) a regional building society and Lubasa (4%), a construction company that built the hospital.

This model was financed by the Valencia Government through a capitation-fee system: for each inhabitant of La Ribera Health Department an agreed annual fee would be paid by the Valencia Government to the private partner. UTE would be responsible for building and equipping a new hospital, and managing and delivering all hospital services, initially for 10 years. The capitation fee was increased every year in line with the Consumer Price Index, CPI (Figure 1 and Box 1)

A 'money-follows-the-patient' system was created, so if La Ribera Health Department patients were treated anywhere other than the Hospital de la Ribera, UTE had to pay the full DRG cost. If patients from other health departments were treated in la Ribera, UTE charged 80% of the DRG cost (this difference was established to discourage UTE from attracting too many out-of-area patients to the hospital).

The Valencia Government is responsible for ensuring that La Ribera Health Department patients receive the same health care services\*\* and levels of quality as the rest of the region's inhabitants. For this reason the role of a special local government inspector (*Comisionado*) was

\* Law 30/1994 of 24 November 1994 on Foundations and Tax Incentives for Private Collaboration in General Interest Activities and Law 15/1997 of 25 April 1997 Enabling New Management Models in the National Health System.

\*\* Including new health policies, for example, those in the Valencia Community Health Plan: 2000–2004.

created. *The Comisionado*, a Valencia Government representative, is based at the hospital and is responsible for managing, inspecting, approving and imposing sanctions if standards are inadequate.

At the end of the Concession's contractual period, hospital premises and medical equipment revert to the Valencia Government (Figure 2).

Since La Ribera, other *Concesiones Administrativas* have been granted in Valencia: Torrevieja (2003); Denia (2004); Manises (2006) and Crevillent (2007) and also in the Madrid Autonomous Community: Valdemoro (2005) and Torrejon (2009).

### The model's development

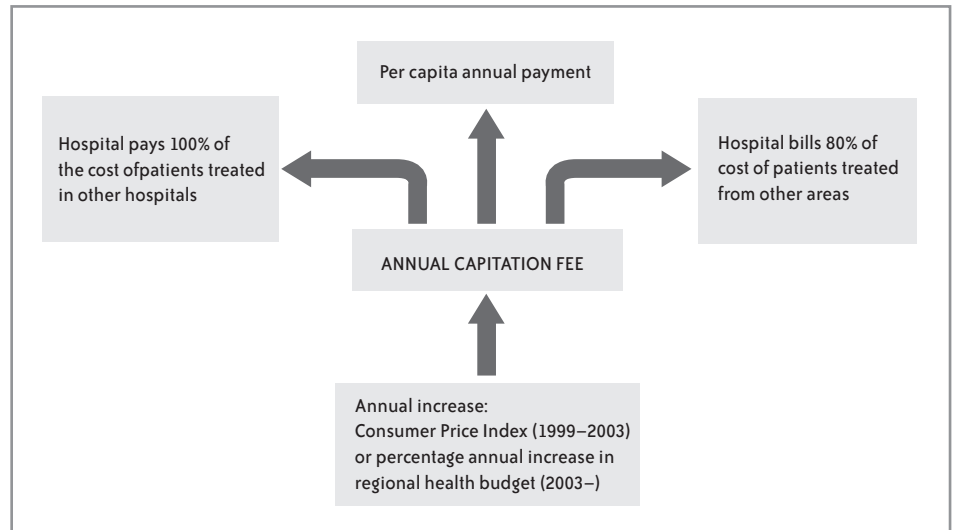
Initially, Alzira's *Concesion Administrativa* was only responsible for delivering hospital care. However, it was soon realized that there were potential problems with cost shifting between primary care and hospital care, and it was necessary to consider the overall needs of the population, particularly as there was duplication of medical services and a lack of coordination between primary and secondary care.

It was also recognised that the model's budgeting was inadequate as the CPI was far lower than the increases in the health care budgets of all Spanish regional governments. In view of this, a new Alzira model was designed in 2003: UTE assumed responsibility for managing and delivering hospital as well as primary health care services and the financing model was reviewed to link the annual capitation increases to the Valencia Government's health budget rather than the CPI (Box 1).

### Risk transfer

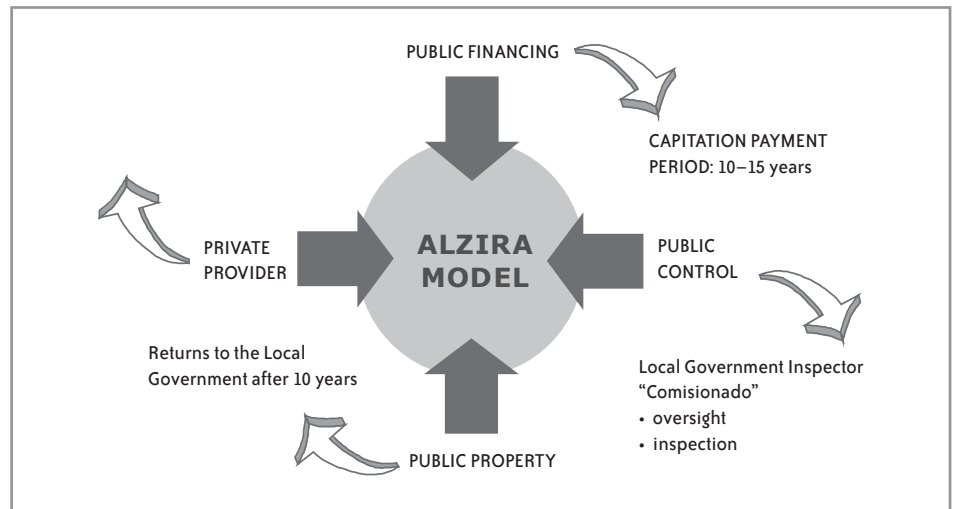
UTE has an annual budget based on the capitation system to deliver health care services. It is responsible for its expenditure and the management of the services it delivers. If at the end of the year UTE has overspent its budget, it has to cover the difference. Conversely, prior to 2003, there was unease among policy makers and the government regarding what would happen to any budget surpluses. The possibility of private operators

Figure 1: Alzira model – capitation fee system



Source: Hospital de la Ribera<sup>2</sup>

Figure 2. Basic principles of the Alzira model



Source: Hospital de la Ribera<sup>2</sup>

#### Box 1. Development of the Alzira model

Alzira Model I: 1999–2003
Granted for 10 years, extendable to 15 years for the management of specialist medical care for the health area
Capitation fee: €204 + consumer price index (1999)
Building a new hospital: Hospital de la Ribera
Private investment of € 61 million
“Money follows the patient”
Alzira Model II: 2003–2018
Granted for 15 years, extendable to 20 years, for the management of hospital and primary care
Capitation fee: €379 (€603 in 2010) + percentage of yearly increase in the Valencia Government health budget.
Private investment: € 68 million
Internal profit rate limit: < 7.5%

making inappropriately high financial gains from public health services has been one of the most controversial aspects of this PPP. Therefore, changes in 2003 now limit the profits that the hospital is allowed to retain to 7.5% of turnover and any over this threshold are returned to the Valencia Government (Box 1). In fact, UTE has an investment plan every year to avoid reaching the profit threshold and nowadays profits tend to hover around 1–2%.\*

Thus, a difference between the more common Private Finance Initiative (PFI) and the *Concesion Administrativa* is that it is funded by public funds (capitation fees) and is responsible for actually managing and delivering the health care services. In this way there is a total and real transfer of financial risk.

## Conclusion

The Alzira model is a form of PPP with public financing, control and ownership but with private management and delivery. Initially created to give hospital services to a Health Department covering 240 000 inhabitants it later became an Integrated Health Services Organization providing primary and hospital care. This partnership has proved to be beneficial for patients, health staff, the regional government and private companies.

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\* This measure was taken to show others who were reluctant to use the Alzira model that the private sector was not involved solely to generate surplus profits.

# Coxa Hospital Ltd

## Barrie Dowdeswell

In health care we have come to accept the lexicon of Public Private Partnerships (PPPs) as describing various forms of joint enterprise for the delivery of health care. But is this the truth? In reality we often see a picture of outsourcing, conventional service contracting, and in some instances leasing – which is the reality of the UK Private Finance model. Arguably, the recent phenomenon of the trading of these contracts as securities in a manner that is alarmingly close to the discredited debt transaction models lying at the heart of the credit crisis may indicate the lack of a true partnership ethos.

It is all the more encouraging therefore when the genuine article emerges: a public private partnership that, whilst embracing the realities of the underlying business nature of the model, does so with demonstrable shared values, flowing possibly from Nordic society but also from the joint-venture nature of the PPP and the buy-in from the rest of the district health care system. It is also a PPP built on the progressive ideas described in this issue's Overview article.

## Context

The Coxa Hospital for Joint Replacement is located in Tampere, Finland and serves almost 450 000 inhabitants in the Pirkanmaa (Tampere) District (with 28 municipalities). It also provides a national referral service for more complex cases. It functions within a national health care system characterized by tax-based funding, direct public provision of most services, and a high degree of decentralization.

Health care is organized at the level of



Coxa Hospital for joint replacement, Finland (copyright Coxa Hospital, 2010)

the municipalities; however, in view of the small size of many, they have been brought together to form 20 hospital districts responsible for providing and coordinating specialized care within their area. These hospital districts are federations, with political power residing in the constituent municipalities. Hospitals are mostly publicly owned by one of the municipalities within a hospital district, which negotiate the provision and pricing of hospital services annually with each other. There is an equalization mechanism within hospital districts to spread the risk of high cost patients between the municipalities.<sup>1</sup>

A major catalyst for change in Tampere emerged in the 1990s, when a national study of endoprosthetic surgery revealed problems of quality.<sup>2,3</sup> The study recommended that services should be concentrated in fewer and more specialized provider units. Furthermore, the study projected that there would be a need for a doubling of hip replacements between 1997 and 2015 as a consequence of an ageing population. The two key messages for the health district were clear: first, the need for significant improvement in quality and second, a growing demand for facilities specializing in joint replacement surgery.

A further stimulus for change was provided by new government legislation that encouraged municipalities to purchase



more procedures from the private sector in order to reduce waiting times in the public sector. This also reflected in part the shortage of capital availability within the public sector necessary to create additional capacity.

These significant public pressures opened a window of opportunity for the Pirkanmaa hospital district. It argued that, by concentrating services and introducing new models of care for joint replacement surgery at Coxa, capacity could be significantly enhanced, costs reduced, and quality improved. Furthermore, the shift in attitudes towards private sector growth opened up opportunities for Coxa to break away from public ownership and forge a new service and business relationship with its constituent municipalities; one which would also provide additional freedoms including access to commercial capital.

### The Coxa Concept

The technical solutions of the Coxa concept are innovative. The business culture of the Pirkanmaa hospital district already had an open mind about outsourcing. The question therefore became not whether outsourcing would take place, but what form of organization, structure, capital financing, and procurement route should be taken. The choice for the corporate Coxa vehicle was an adapted version of a limited company, which included as shareholders the local municipalities, and some of their constituent hospitals (providing the public ownership element), one local private Finnish hospital (no longer a shareholder) and a significant private equity shareholding, now held by Terveysrahassto Oy (a commercial offshoot of Sitra, the Finnish state venture capital company). Coxa Ltd was officially established in February 2001. The full shareholding structure is shown in Table 1.

The model contrasts with many other public-private partnership models, which are governed by contract agreements whereby a purely private sector vehicle provides public services under licence. In Coxa, the corporate strategy is shaped by public and private interests and influence. The independence associated with limited

**Table 1: Coxa Shareholders**

Shareholders	Shareholding %
Tampere University Hospital District	35.5
Terveysrahassto Ltd (Sitra)	26.4
City of Tampere	20.6
Cities of: Mänttä, Valkeakoski and Vammala Central Hospital Districts of Kanta-Häme	17.5
<b>Share capital of € 2 860 000</b>	

**Table 2: Key elements of the Coxa model**

Concept	Actions
Evidence based analysis and interpretation of future need, including demographic and epidemiological transitions, to map capacity and patient flow requirements.	Withdrawing services from five district hospitals and concentrating them at the new Coxa hospital.
Creating whole systems care pathways as the new basis for reshaping service and capital strategy and unifying operational delivery across the districts.	Implementing systemized care pathways, involving general practitioners and other local orthopaedic specialists in a network of care: Coxa focussing on operative procedures. Preadmission diagnosis and postoperative rehabilitation undertaken in the primary care sector (including some local hospitals) close to patients' homes.
Focusing on staff engagement and motivation by delegating ownership of the process to employees.	Providing comprehensive ICT and outreach diagnostic systems and support.
Applying these principles to the planning, design and procurement of the new hospital facilities.	Guaranteeing a quality and cost package that was efficient and competitive.

company status was seen to confer a greater ability to adapt to changing market circumstances. Furthermore, Coxa hospital would need to compete for health care workers, and private status consequently allowed the freedom to set its own terms and conditions of service. Limited Company status also freed the hospital from the bureaucratic strictures often ascribed to public institutions. It would no longer need to queue for public sector capital and to negotiate any constraints associated with public financing. However, the Coxa team also acknowledged the risks associated with Limited Company status, and having no State safety net.

The subsequent development of the Coxa concept illustrates important lessons for any large-scale PPP-related capital investment project. The development team started with a clean slate and designed the service and capital concept to ensure optimal synergy between the workforce, the patients and the hospital building and its technologies. The key elements are shown in Table 2.

### Some capital and design considerations

The Coxa team made considerable efforts to incorporate translation of service needs into design solutions in a more

**Table 3: Key financial indicators**

	2003	2005	2006	2007	2008
Turnover (m €)	12.7	21.3	29.5	25	27.9
Profit (€)	736 000	1 570 000	3 000 000	600 000	214,000

Source: Coxa Hospital<sup>4</sup>

**Table 4: Clinical and performance indicators**

Performance	Quality
The number of endoprosthetic surgeries has increased from 1494 in 2003 to 2740 in 2007.	Coxa gives its patients a form of 10 year guarantee; if a revision operation is needed during this time, the patient (or the municipality) receives it at a 50% reduction in price.
Hospital-acquired deep infection rates are exceptionally low. The Finnish hospital average is 1–2% while the rate at Coxa hospital is less than 0.1%.	Coxa ranked fourth in the Best Workplaces in Finland survey. It has achieved “exemplary” ratings in the STAKES (the Finnish government research agency for health care) patient satisfaction survey.
Design synergy and effectiveness – Coxa takes 19 minutes to prepare an operating theatre between sessions, as compared to 1.5 hours when it was still a unit of Tampere university hospital.	The average length of stay has been reduced to three days. 90% of patients receive operations on the day of arrival. 90% of patients are transferred for rehabilitation directly to primary care-led facilities and services.

effective manner than is usual. Architects tendering for the design contracts were provided with all of the hospital’s proposed (systemized) care pathways, with an emphasis on current and anticipated service dynamics. This resulted in very different interpretations of workplace synergy and adaptable design characteristics. The successful design was produced by architect Pekka Koivula, and the construction awarded to Engel Ltd in March 2001.

The project, developed on the Tampere university hospital site, was completed on time and on cost through a turnkey operation, and the hospital opened in September 2002. A further feature of the project was the integration of information and communication technologies (ICTs) into the design and construction of the building. In many cases, ICT considerations are often grafted in late, with predictable problems of fit and effectiveness. The ICT development was outsourced.

## Making it happen

The real breakthrough in changing mindsets and gaining comprehensive commitment to the project came not through formalized processes but through an intricate and time-consuming series of conversations, briefings, negotiations and persuasions undertaken away from the public spotlight. These processes prepared the ground for the publicly visible agreements with key stakeholders.

This is a process often underestimated by strategists, planners and politicians, who are often driven by the need for quick tactical success rather than long-term sustainable strategic benefit. It is noteworthy that politicians involved in the Coxa project stood back and only where necessary took visible action to consolidate progress or open doorways. The leadership role of Coxa’s then CEO Matti Lehto was paramount throughout.

## Performance

The hospital has been operating since late 2002, long enough to form a realistic judgement about its sustainable performance. Overall, Coxa exhibits many characteristics of success. Financially, the hospital seems to be secure (Table 3). Clinical and performance indicators are also promising (Table 4).

Coxa hospital has made a successful transition from the public to the public-private sector. The organizational model is novel and is based on a unique partnership among a group of institutions: local government (municipalities), hospitals, universities and commercial interests, all with strong intertwined strategic interests.

## Conclusions

The experience of the Coxa hospital illustrates the importance of focusing on quality and well-defined processes, and integrating those into patient pathways and facility design, as well as ensuring staff engagement and well-being. The Coxa experience suggests how this can be embedded in briefs and tenders for new health care facilities.

Some observers may suggest that Coxa is not much different from initiatives such as the Independent Sector Treatment Centres parachuted into in the United Kingdom NHS (which are now quietly being dropped as a future growth area). However, it is fundamentally different in that it forms a fully integrated and networked part of the district health system providing leadership in its field, it does not have a guaranteed fixed term contract (irrespective of demand) linked to debt amortisation (as in the UK model) and is designed to fulfil an exacting research and teaching role.

It will be interesting to observe whether state or private sector operators throughout Europe are patient enough to consider all these factors when rolling out this type of model, or whether the interest of generating short-term returns on their investment will prevail. Evidence from some PPP models in the United Kingdom and elsewhere suggests that commercial interests predominate where



**Box 1 Services moving to the Coxa model**

Eye Centre (ophthalmology care)

"Vascula" (vascular surgery and interventional radiology)

Neuro-centre (neurology and neurosurgery)

Bone and Joint Centre (traumatology, hand surgery and reconstructive plastic surgery)

the investors have little intrinsic subscription to health care values.

Meanwhile Tampere has no such concerns. Plans are well advanced for further provision of public acute health care by PPPs with a number of services moving to independent limited company status (the Coxa model) within the next two years (Box 1).

Not content with Tampere being an important reference centre for clinical research it may well become one of the leading reference centres in Europe for innovative structural and cultural change in the way future health care services are organized and delivered

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## Strategic planning of health facilities in Northern Ireland

John Cole

This case study describes the planning response to a strategic review of health provision in Northern Ireland, focusing on the location and type of health and social care facilities required. The strategic planning policy discussed here has evolved and been refined over a number of years and a number of changes in administration. Given the rate of change in the demand for and the delivery of health services it is the subject of regular review to ensure its ongoing appropriateness and effectiveness.

### Background

The Department of Health, Social Services and Public Safety (DHSSPS) has overall responsibility for the organization and delivery of health and social services in Northern Ireland.

Approximately 98% of health and social services are directly funded by the DHSSPS and are free to the recipient at the point of delivery. Until April 2007, these services were provided by 17 Health and Social Services Trusts (service provider organizations) as agents of the DHSSPS, consisting of:

- Six Acute Hospitals Trusts
- Six Community Trusts
- Five Combined Acute and Community Trusts

A series of reviews of the health service in Northern Ireland over recent years concluded that there was a need for significant change in both the current organizational structures and service configurations. In this context, there have been separate reviews of primary care services, acute services, and the overarching 20-year strategy for health care in the whole region, but the key document that links the new service model with the capital programme is "Delivering Better



*Hollywood Arches Community Health Centre, Belfast, Northern Ireland (copyright Dennis Gilbert, 2010)*

Services: Modernising Hospitals and Reforming Structures".<sup>1</sup> This recognized the need to reconsider the concept of the stand-alone acute hospital as the main provider of clinical and related services. It argued that the strategic capital development programme should no longer focus predominantly on the acute sector, but rather should seek to create a more integrated continuum of facilities, ranging from the home through primary, community and sub-acute facilities up to acute hospitals and regional centres of excellence. The model for the future delivery of services had two main strands:

1. Enhanced services in the community
2. Concentration of complex services in fewer higher quality hospitals.

### Enhanced services in the community

The first of these, and the more significant, was the decentralization of less specialized activities away from the larger acute centres towards community-based facilities. A key driver for this is the desire to improve accessibility to earlier diagnosis and preventative therapies, thus

reducing the need for hospitalization. It is intended that, increasingly, most people should be able to attend a community-based health centre for outpatient appointments and a range of diagnostic tests and treatments, which up to now have only been available in acute hospitals and for which waiting times can be considerable. This approach will be facilitated by the on-going advances in information technology and by the interest of an increasing number of primary care general practitioners in developing greater skills in specific specialist services for out-of-hospital delivery.

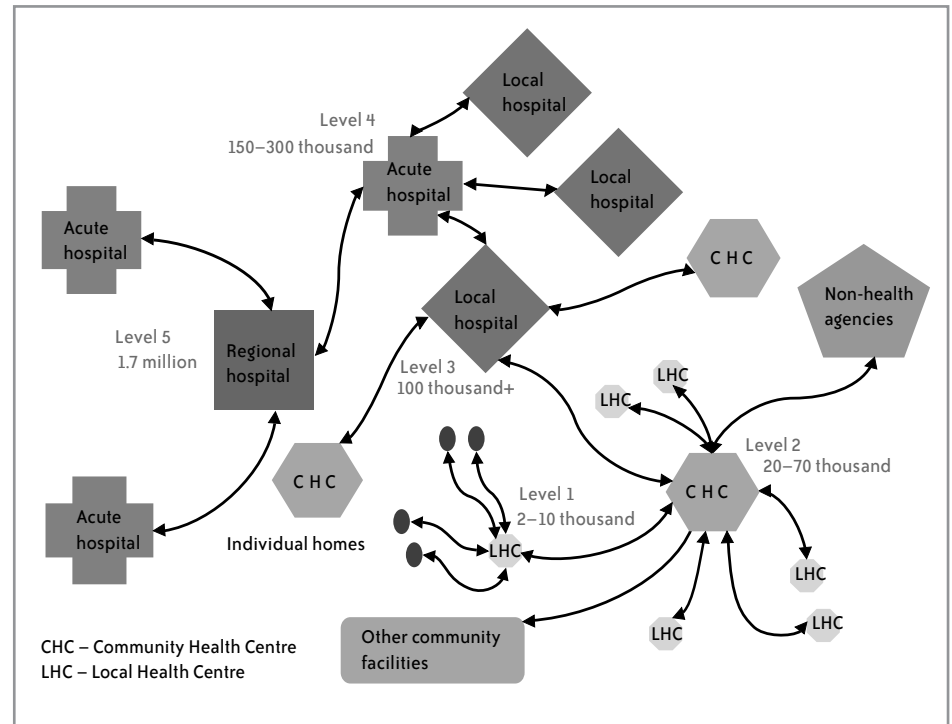
It is also increasingly recognized that much of the pressure being experienced in acute hospitals is generated by the significant proportion of beds occupied by patients with chronic diseases who are repeatedly admitted to hospital to stabilize their condition. Trials of new processes, including technology-based home-monitoring systems, have demonstrated significant benefits, both in terms of quality of life and overall cost of health resources, of bringing a new focus to chronic disease management in community facilities, thus preventing inappropriate hospital referrals and recurrent admissions.

Additionally, a focus on the importance of personal responsibility for health and well-being has emphasized the contribution of non-health-specific support, advice and interventions which can be co-located within community facilities. These aim to improve lifestyle, physical fitness and diet, to provide education and information on the management of chronic diseases and other conditions, including access to community-based support groups, and to support members of the community in managing stress-generating issues such as financial, housing and employment problems which can directly or indirectly lead to health problems.

These analyses have identified the need for new models of care, have highlighted the importance of fundamentally reviewing patient pathways through the total system, and have reinforced the need for new types of community health facilities aimed at bringing an improved integrating mechanism to the delivery of services.

Based on a detailed and comprehensive

Figure 1: Integrated Services Model



Source: DHSSPS, 2002<sup>1</sup>

region-wide planning exercise, the decision has been made to develop 42 new community health centres located at population centres throughout Northern Ireland to act as a significant catalyst for this major reform. In April 2007 as a further system response to the need for a more integrated model of care across the sectors, the then existing 17 Trusts, with predominantly single sector responsibilities, were replaced by five new Health and Social Care Trusts, each responsible for provision of the full continuum of health and social services within its own geographical area.

### Greater centralization of acute services

The second objective was greater centralization – from local general hospitals to acute centres or to regional centres of excellence – of those services that required specialized skills and expertise that cannot easily or affordably be replicated in local hospitals. An important argument for this approach has been the recent difficulty in attracting specialists and junior doctors to smaller hospitals that do not

have the critical mass of demand or the necessary quality of facilities to support the maintenance or development of the highest level of expertise.

It was also concluded that full specialist-led accident and emergency services, with the necessary range of support, could not be maintained effectively at smaller hospitals and should only be located at a reduced number of acute hospitals that would still meet a maximum travel time of one hour from anywhere in Northern Ireland to an acute facility.

Smaller local hospitals will be reconfigured in terms of clinical profile and physical form to play an important role in the delivery of services, as an integral part of a network, with the larger acute hospitals providing:

- step-down beds for those patients requiring further inpatient care or rehabilitation after having completed the acute phase of their treatment ;
- intermediate care beds and general practitioner-managed beds;
- outpatient services, day-surgery, diagnostics and ambulatory care.

## The new service model

The key elements of the redesigned system are:

- five Health and Social Care Trusts, geographically based, each providing a full continuum of health and social care services to its local population;
- the designation or development of regional centres of excellence as the sole providers of a range of tertiary services that will benefit from centralization;
- the reduction in the number of general hospitals providing the full range of acute services from 18 to 9;
- the redevelopment of seven of the remaining nine hospitals as new non-acute step-down facilities with a focus on their local communities and the ability to provide a wider range of intermediate care services;
- the creation of 42 new one-stop Community Health Centres (without

bed accommodation) with the key objective of preventing unnecessary hospitalization.

The new system comprises five levels of facility to form an integrated system of service delivery (Figure 1):

- Level One Local Health Centres
- Level Two Community Health Centres
- Level Three Local Hospitals
- Level Four Acute Hospitals
- Level Five Regional Centres of Excellence

It is intended that all levels will be linked by clinical and information technology networks and will have clearly established protocols for patient access to, and pathways through, the total system

## Conclusion

A number of the projects at all levels have been completed and are operational.

More are currently either under construction or in design or procurement stages. The remaining projects have been brought together to create a regional capital investment programme for phased delivery over the next ten years.

The response to the initiative to date has been very positive and the continued development of more services in community settings and outside of hospital facilities forms a key element of the strategy for health and social services in Northern Ireland.

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## Investing in hospitals of the future

Edited by Bernd Rechel, Stephen Wright, Nigel Edwards, Barrie Dowdeswell and Martin McKee



Despite considerable investments in health care facilities worldwide, little systematic evidence is available on how to plan, design and build new facilities that maximize health gain and ensure that services are responsive to the legitimate expectations of users.

This book brings together current knowledge about key dimensions of capital investment in the health sector. A number of issues are examined, including new models of long-term care, capacity planning,

the impact of capital investment on the health care workforce, markets and competition, systems used for procurement and financing, the whole lifecycle of health facilities, facility management, the wider impact of capital investment on the local community and economy, how care models can be translated into capital asset solutions, and issues of therapeutic and sustainable design.

This book is of value to those interested in the planning, financing, construction, and management of new health facilities. It identifies critical lessons that increase the chances that capital projects will be successful.

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## Capital investment for health: case studies from Europe

Edited by Bernd Rechel, Jonathan Erskine, Barrie Dowdeswell, Stephen Wright and Martin McKee



When decision-makers in the European health sector are faced with the issue of capital investment, there are few internationally-comparative information sources to which they can turn. Written in collaboration with the European Health Property Network, this volume of case studies and the accompanying volume analysing key themes and issues (*Investing in Hospitals of the Future*) attempt to fill this gap.

The case studies are varied, including seven individual projects, two health systems, one corporate investor and one financing approach. They cover nine separate countries across Europe. The main findings focus on the critical nature of systematized care processes; the importance of the 'people factor' (involvement of health professionals in decision-making, and the role of inspired leadership); the steadily growing role of 'marketization' in health care (including public-private partnerships); the tension behind deciding on the proper setting of care and the need to look at 'whole-system' perspectives; and the unsolved question of measuring the true capacity of a hospital.

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## The Observatory Venice Summer School 2010

### EU integration and health systems: challenges and opportunities for patients, professionals and policy-makers

This event, which is jointly organized with the Veneto Region – one of the Observatory's partners – will take place from 25 to 31 July 2010 on the island of San Servolo in Venice.

It will explore different EU policy fields to identify links with health and assess their impact on health systems.

The Summer School is targeted at senior to mid-level policy-makers, planners, and health professionals as well as a limited number of junior professionals making careers in policy and management. The Summer School aims to have a participative approach involving the sharing of insights and experiences, together with formal sessions to review the evidence. The working language will be English. We are accepting application forms and recommend early submissions as places are limited.

Please send your application or any question regarding the Summer School to: [summerschool2010@obs.euro.who.int](mailto:summerschool2010@obs.euro.who.int)

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For more information: [www.observatorysummerschool.org](http://www.observatorysummerschool.org)

Policy Brief, No 13, 2008

### Capacity Planning in Health Care: A review of the international experience

By **Stefanie Ettlet, Ellen Nolte, Sarah Thomson, Nick Mays and the International Healthcare Comparison Network**

Health systems in most high-income countries aim to provide a comprehensive range of services to the entire population and to ensure that standards of quality, equity and responsiveness are maintained. Although approaches vary widely, responsibility for developing the overall framework for financing and organizing health care usually lies with the central government, while governance of the health system is often shared by central and regional authorities.

This policy brief reviews approaches to capacity planning, a crucial component of health care governance. By concentrating on a selection of countries as diverse as Canada, Denmark, England, Finland, France, Germany, Italy, the Netherlands and New Zealand, it aims to show a range of approaches to health care financing and organization, since both of these factors have an impact on approaches to capacity planning.

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