

# Technology And Building: Strategic Asset Planning In The New Health Landscape

## Introduction

The informal gathering of Health Ministers in The Hague (September 2004), convened as part of the Netherlands Presidency of the EU, provided an opportunity for member countries to consider what has become universally describes as the 'demographic time bomb' - the health needs of the elderly (and by inference the needs of the growing numbers of patients with chronic diseases). It is generally considered one of the major challenges for western health systems. This has become almost a cliché term in healthcare planning but in reality masks a more complex set of issues:

- Populations across Europe are ageing at a more rapid rate
- Simple demographic assessment is no longer an adequate tool for healthcare planning
- Within an ageing population there will be widely differing health needs - age alone is not a determinant of healthcare consumption
- There is a growing population of the chronic ill of all ages - in part a consequence of lifestyle factors - who may exhibit similar characteristics of need to the frail elderly

There is a strong consensus agreement that continuing reliance on conventional health care delivery, focussed on symptomatic relief or curative principles and the centrality of acute hospitals, is not the answer nor is the cost sustainable. Ways and means must be found of improving hospital efficiency as well as redirecting more support to the growing sector of the population which needs more responsive forms of care.

This must be balanced against the other ongoing needs of the citizens:

- Guaranteed emergency service networks
- Children's services
- Women's reproductive health
- Mental health
- General acute care, and
- Public health

What is needed are new principles of healthcare planning aimed at providing more accessible care and allowing citizens to 'get back in control' of their health and health care.

There is a growing body of evidence pointing to the benefits of integrated disease management - described as care or clinical (whole systems) pathways - as a means of delivering this. It is particularly relevant for those illnesses that demonstrate high levels of life cycle support need. These are typically patients where refocusing care towards earlier, community-based (and often patient determined) support and intervention can result in better outcomes. The higher degree of multi-sectoral collaboration necessary to facilitate this potential shift in the way services are organised and funded however may seem to contradict the increasing trend towards open market economies in healthcare currently observed in many European countries. These factors and principles are endorsed in the paper 'Megatrends' discussed in Interreg Greifswald meeting.

It is axiomatic therefore that any future debate and consideration of policy initiatives aimed at the capital based development of hospitals and health facilities should be set within the framework dictated by the changing health landscape.

## Context

*"Strategic Asset Planning (SAP) maximizes the performance of fixed, physical or capital assets that have a direct and significant impact on achieving corporate objectives. Companies and organizations depend on vital assets to drive their business; however, they often see them as individual, stand-alone objects operating in the background. In reality, companies are a collection of strategic assets that exist as a single system."*

The above, from a recent Harvard Business School symposium on strategic asset planning, is important in two respects:

- Recognition of the value of assets - in corporate delivery terms
- Recognition of the 'single' whole-system philosophy

Although applied here to the commercial and industrial sector the lessons are as valuable for health services, where State and 'corporation' may be seen as synonymous, as may whole systems disease management principles and commercial 'single system' philosophies.

It is only in recent years that health policymakers in many countries have begun to identify the benefits of integrated ('single' or whole-disease systems) planning and delivery of healthcare. There are significant barriers to progress, often determined by other priorities:

- The purchaser/provider separation that introduces high degrees of contestability between different parts of the same service – a presumption that competition improves efficiency (but sometimes introduced under the banner of 'choice')
- Payment by results systems that focus on individual elements (episodes) of care
- The hierarchal separation of different forms of carers: Teaching Acute; General Acute; Primary-Care, and Mental Health – these separations can impede smooth transition of patients and resources through the system to where care can be delivered most appropriately
- Uncertainty over how to 'value' assets other than by institutional cost-efficiency and throughput terms – they are often seen (and funded/procured) as "*individual, stand-alone objects*" and measured on that basis.
- Public Private Partnerships - that unless exceptionally well structured and managed can create artificial boundaries based on differences in cultural and professional values between the public (service) partners and the private (return on investment) partners – and which may also through their inflexibility frustrate major changes in service configuration.

One of the most significant problems therefore emerges as the treatment of fixed assets (health property), with planning and ownership perhaps the most important dimensions.

During the eighties and nineties many governments adopted the principle that it was not necessary for the State to own and manage health property but instead their primary task was to focus on shaping and directing health policy. Various devices have been used to devolve management and ownership of health property:

- The introduction of Public Private Partnerships (PPP) and Private Finance Initiatives (PFI)
- The establishment of quasi-private organisations such as NHS Health Trusts (as hospital 'owners') in the UK
- Contracting for public health services - often at arms length through social insurance funds - with independent hospital owners. This can involve both for-profit private corporations and not-for-profit charitable institutions. In some instances these have been long-standing practices, e.g. the Netherlands; that from the post war period followed the so called 'Bismark' model of service structuring and financing.
- Sale of hospitals to the private sector as 'going-concerns', St. Goran's Hospital, a large acute general hospital in Stockholm, is a typical example.

These various strategies tend to reinforce the primacy of individual institutions and the self-contained nature of their functions. Any cross-setting integration of care in these circumstances necessitates boundary negotiations over issues of patient mobility and corresponding resource reallocation.

### **The Importance Of Change In Cross-setting Care Delivery In The Macro-view Of Health Priorities**

Lessons from early studies of co-ordinated (integrated) care pilot projects tended to suggest that:

- Quality of care was improved but evidence of cost saving was inconclusive; as highlighted by the 'Australian Coordinated Care Trials' of the late nineties.
- Success depended to large degree on cross-setting collaboration but this was often hampered by incompatible organisational and funding systems.

In many respects the drivers for change were insufficiently transparent and forceful to evoke the large-scale policy shifts necessary to overcome individual institutional focus and traditional vertical (self-contained) lines of accountability.

More recent research (e.g. *P. Degeling, Centre for Clinical Management Development, University of Durham, yet to be published*) has however started to review appropriateness of care and appropriateness of setting in the longitudinal support of patients – the whole systems view of quality, efficiency and cost effectiveness in disease management. The initial results here seem unambiguous:

- Large numbers of patients are needlessly occupying acute hospital beds and could, and should, be supported in surroundings more suited to their overall care needs. Many are in hospital by default; unavailability of alternative facilities or inadequate care in the early stages of the illness results in avoidable admissions. Indicative is that in England as a whole they account for most of the 5% of people who use 42% of hospital bedspace.
- Such patients tend to re-present to Emergency Departments with regular frequency, yet there is little evidence of awareness of the impact on acute services of these 'frequent flyers'.
- Service planners, particularly those who are hospital-based, can tend in these circumstances to respond to presented demand rather than qualified need as a basis for determining capital investment. The outcome is a potential over-provision of acute response facilities masking the need for better informed judgements about a more

balanced asset portfolio that acknowledges the greater potential of community-based facilities.

These are problems that are unlikely to be resolved within a 'one system fits all' health service planning structure; patients requiring single episode treatment, for example cataract removal, will need very different pathway systems than patients with multiple problems.

A typical example of the latter is Diabetes, where the individual may require ophthalmic care, podiatry and coronary care – all by-products of the same underlying illness – but where each need may be met as an individual, uncoordinated episode and funded separately. Many health systems tend to continue to fix the symptoms rather than tackle the causal effect – which almost universally will need holistic support and intervention over the full lifecycle of the illness.

There are signs this is changing. The World Health Organisation is heavily promoting the macro health and economic benefits of tackling chronic disease on a coordinated basis and is identifying the causal lifestyle risks engendered through globalisation. The OECD in their summary report '*Towards High-Performing Health Systems*' states "there is a strong case for protecting individuals against the risk of incurring long-term care costs", and a report prepared as part of the Netherlands Presidency of the EU '*Health Care in an Ageing Society – A Challenge for all European Countries*' draws attention to the questionable sustainability of traditional health care systems that fail to recognise adequately the growing needs of ageing populations.

Whilst it is easy to identify with the wider perspective – the 'eureka' moment – it is more difficult to achieve meaningful penetration on the ground. This is particularly so where it may challenge the hospital-centred logic of many health services.

It may be said that we are good at understanding the physiology (service issues) whilst not understanding the anatomy (asset implications).

## **Summary Of Key Issues In Population Based Capital Planning And Investment Appraisal**

What follows is a summary of the presentation given at the Greifswald meeting (with additional commentary) as regards the key elements that are relevant to developing a structured approach to population based strategic asset planning. It is presented in headline form for ease of assimilation.

*Capacity or whole-systems planning* – The past decades have seen the majority of capital investment predicated on 'building capacity'. Some characteristics are:

- Incremental planning – using previous models and performance as templates for future development
- A simplistic focus on cost efficiency – lowest cost options delivering highest throughput potential
- Increasing growth of often uncoordinated super-specialisation – without sufficient regard to economies of scale and efficiency/effectiveness or benefits of networking for these services
- Episode based acute procedural care taking precedent over age related and/or chronic care.

These trends are often driven by the Bismark (Insurance funds) models of health financing where the system favours short-term acute episode efficiency.



Figure 2 provides a further disaggregation identifying how services might be profiled against disease or patient category groupings – according to (local) policy determination.

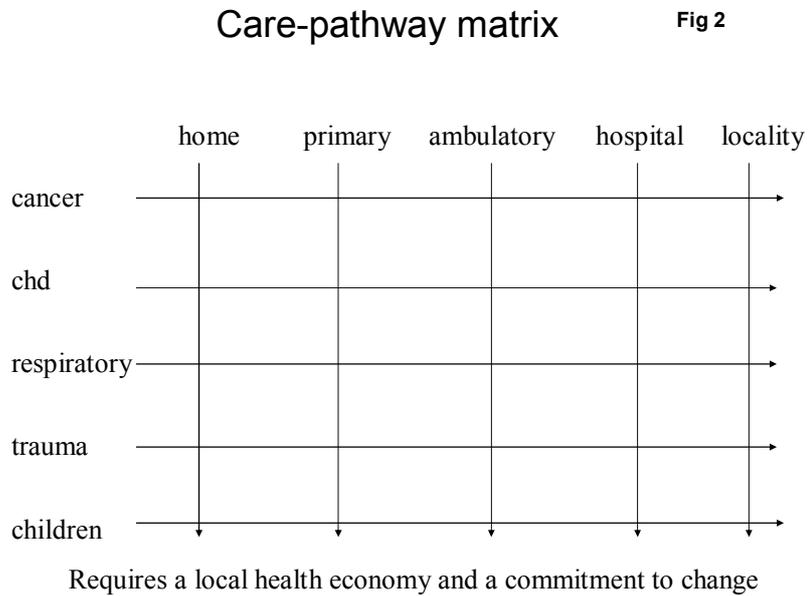


Figure 2 – Care Pathway Matrix

Figure 3 is essentially the 'practicality' matrix that cross matches all the factors that impact on capital investment decisions – e.g. the political dimension, affordability, accessibility and workforce issues.

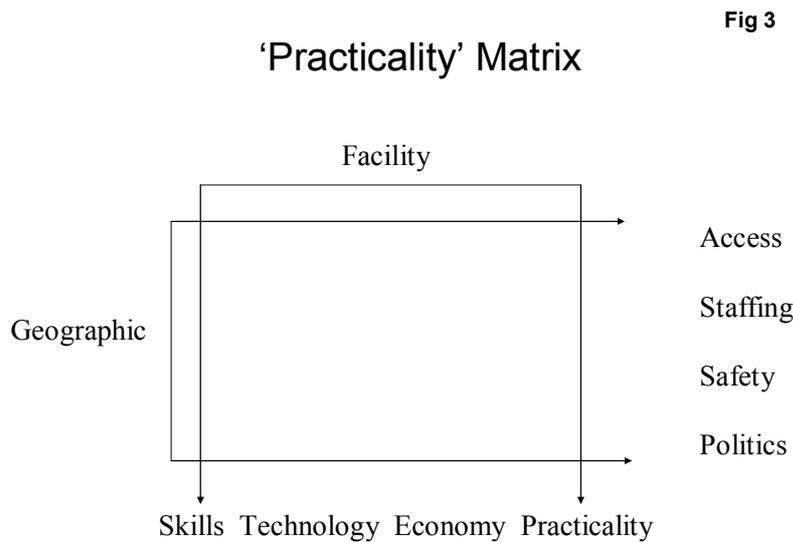


Figure 3 – 'Practicality' Matrix

The aim overall is to stimulate new thinking about planning configurations. It creates a means of cross referencing different models of delivery with different models of capital provision but set within a coherent population baseline. It builds on the potential of care pathway based planning and delivery of care that is emerging as the preferred model of service organisation throughout Europe.

Care-Pathways are:

- A predictive description of clinical/care systems - organisation, resource investment and delivery modalities
- Measurable inputs and outcomes - resource and clinical
- A means of translating demographic and epidemiological profiles into service language that is essential for strategic asset planning
- Cross setting – a means of 'accountable' clinician participation (inter-sectoral)
- A means of budget structuring – investment and cost control – and evaluating return on investment
- Redistributive (of resources) in nature and effect
- Potential enhanced by choice and payment by results.

They provide the means of translating population health needs into service language that is useful for capital planning purposes – and as the basis for the matrix planning concepts described above.

A combination of care pathway assessment (describing the processes of care and their resource requirements) and matrix planning creates a powerful means of moving from the traditional (usually uncoordinated) models based purely on capacity assessment to a model capable of driving service redesign – but more closely aligned with capital value appraisal. The transition from the conventional focus on cost efficiency as the main driver of capital value, to cost effectiveness as the main principle of capital investment, is shown in Figure 4.

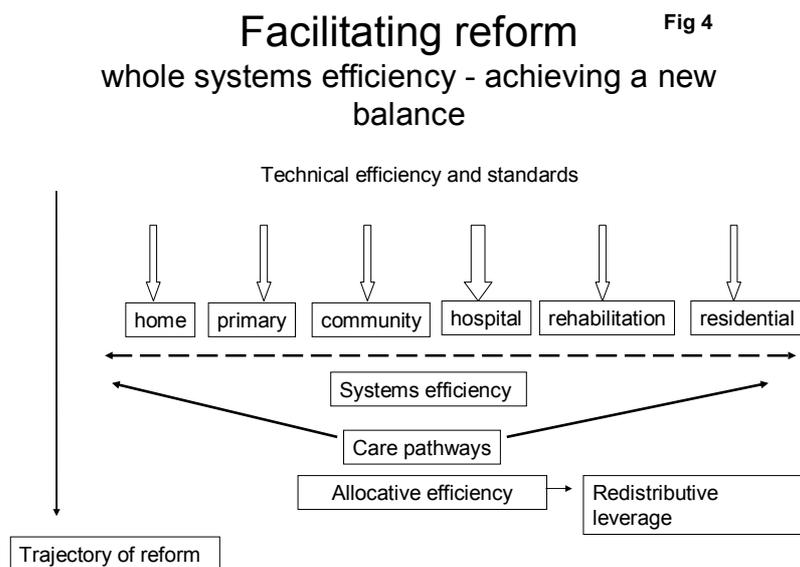


Figure 4 – Facilitating Reform

A schematic illustration of the aims of more co-ordinated and predictive based investment model is shown in Figure 5 – moving investment closer to the patient and further upstream – at an earlier and interventional stage in illness progression.

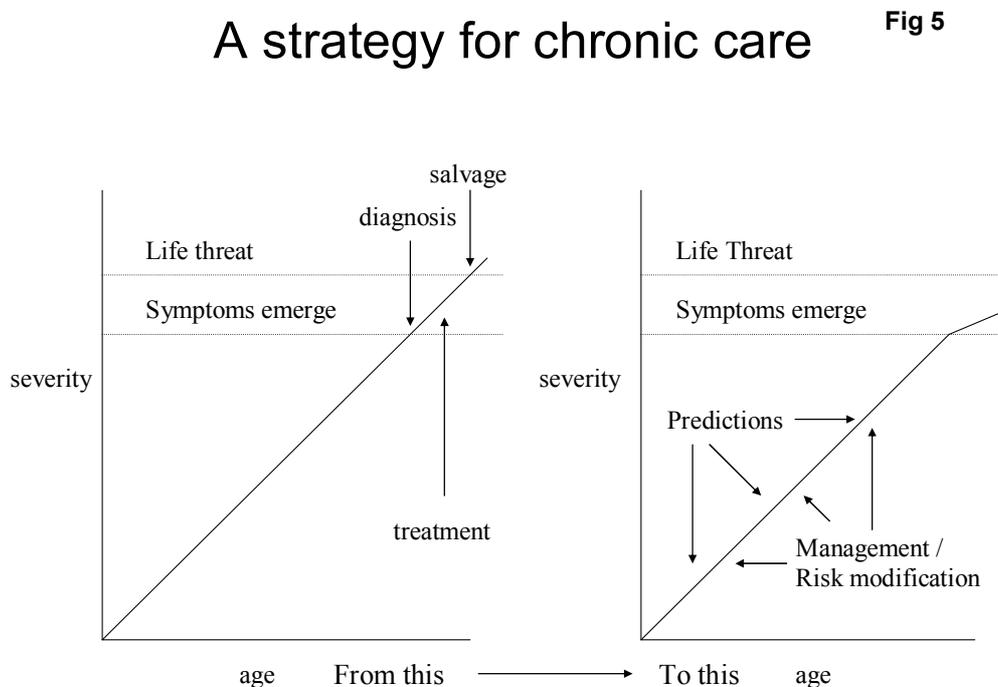


Figure 5 – A Strategy for Chronic Care

The route map for conversion of care-pathways into capital planning friendly language is shown below:

- the definition of a target population
- identification of categories of their care needs (or case types) that are worthy of targeting
- the definition of clinical pathways for each of the targeted care needs
- the design of assets that are appropriate for those care processes, and
- the determination of practical ways of moving from the existing assets to those that are suited to the desired service delivery methods.

## Diversity In Delivery – And Therefore Capital Investment Models

The past decade has seen significant growth in diversity in terms of healthcare delivery – to some degree generated by the 'liberation' of the healthcare market. Many health systems are now introducing different forms of public private partnerships, promoting the development of specialist 'niche' service centres, creating integrated hospital networks (often based on hub and spoke principles), etc.

Some of the most common forms of development are listed below:

- Campus hospitals – all interpretations – often different parts of the campus are operated (and even owned) by different specialist organisations
- Service networks – linking hospitals through integrated specialist services
- 'Niche' specialist centres – e.g. the new treatment and diagnostic centres in the English NHS that now compete for public services in competition with state hospitals
- PPP / PPS / PFI
- Co-locations – private operators sharing sites (and synergies) with public hospitals
- Community delivery – multi-sectoral social investment
- Urban integration – linking health facility investment with urban regeneration schemes
- Rural mixed economy 'public/private' centres

It is now clear that there will be a continuous cascading of new concepts of delivery fuelled by a combination of technological advance aligned with new concepts of delivery; designed to maximise the benefits of such advances. Strategic asset planners must be alive to the potential for change in outlook when making long-term investment decisions.

## Lifecycle Investment Planning

A dimension of capital planning that is only now coming to the fore is that of lifecycle investment appraisal. In conventional terms hospitals and health buildings have been treated as any other in regard to principles of depreciation and capital amortisation – usually over 25 to 40 year lifecycles. This will need to change:

- Over the past 20 years the ratio of costs for new hospitals – built environment to embedded technology - has changed from a ratio of 80/20 built environment to technology; to the opposite where technology (and its building implications) now represents 80% of cost of new hospital projects with the built environment making up the remaining 20%.
- The rate of change in medical technologies is fast outstripping the design life of equipment – obsolescence is now endemic as a factor of reinvestment decisions.
- Public expectation is rapidly developing and the design standards of hospitals are now expected to continually rise – the trend towards higher ratios of single rooms is one example.

Recent work undertaken by the Netherlands Board for Hospital Facilities (Figure 6) shows the typical decay factor for the three principal types of hospital accommodation. The inference in planning terms is clear:

- Depreciation or amortisation of capital will need to be phased at different rates for different elements of the building.
- It may be advisable to design in obsolescence to facilitate shorter-term changes in fast changing technology based areas.
- It may be better to contract out some of these technology services to external centres or invest in new forms of agency provided public private partnerships – one example is the mobile diagnostic service now readily available and increasingly adopted in remote or rural areas.

This is simply opening the debate on this dimension of planning and more work will be needed to inform future capital investment policy – it will nevertheless act as a further stimulus to service and capital diversity.

Fig 6

## Lifecycle investment

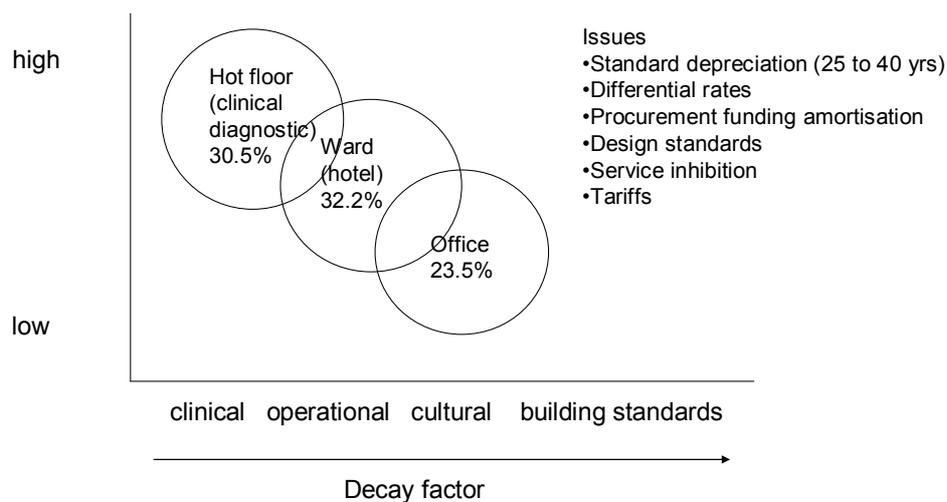


Figure 6 – Lifecycle Investment

## **Conclusion**

It is now clear that new concepts in strategic asset planning have rapidly risen to the top of the health agenda - a more systematic and predictive means of assessing future healthcare demand – but in a manner that exploits the full potential of clinical advances is clearly called for. The foundation for this new approach would seem to lie in the adoption of care pathway principles of describing and delivering healthcare, linked to a more productive way of rethinking hospital planning such as provided by matrix planning systems.

This is a challenging agenda (of change) but necessary if better value is to be derived from scarce capital resources.