



## Do PPP hospitals support long-term health service needs?

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### The certain future

While current policy discussions on health funding and governance arrangements are sure to continue well into the future, there remain a number of certainties for health services in Australia and similar developed nations. Most certainly:

- costs will rise faster than GDP
- the population will increase
- the proportion of population aged 65 and over will substantially rise
- patients will have increasing rates of chronic disease and co-morbidities
- new clinical treatments and medical technology will be developed
- workforce attraction and retention will continue to be issues
- the service expectations of the public will continue to rise.

All these factors will increase demands on our health services and the hospitals in which the services are delivered. Equally certain – to meet health service needs over the long term – hospitals will need to:

- be flexible to accommodate changing functions over time
- be efficient in terms of both health service operational costs and infrastructure costs over the whole lifecycle of the building
- support the provision of quality healthcare.

### How to meet these needs

For key decision makers in the health services sector the question remains: what procurement method will deliver hospitals that can best meet these needs?

An increasingly used and much discussed procurement method for larger hospitals is the Public Private Partnership (PPP) model. Much has been written about procurement efficiency and project outcomes for this model throughout many sectors of the Australian economy and its infrastructure. But is it a suitable model for Australian health services?

At Arup we believe it very much depends on the extent to which PPP hospitals can properly support the identified long-term needs in a cost-effective way. In short, we do believe that PPP hospitals have the potential to support long-term health service needs – as long as such large projects are properly briefed and scoped, and equally well managed on both sides of the partnership.

### The PPP model

In a PPP contract the private sector provides infrastructure and services to the State over the long-term (which can be up to 60 years). The State only pays once the infrastructure becomes operational.

In the case of social infrastructure PPPs (hospitals, schools etc), the State's payment covers an availability charge for the infrastructure and a service charge for the services provided. The payment is subject to performance standards, which, if not met, will result in deductions to the payments.

The private sector is responsible for financing, design, construction and maintenance of the infrastructure, as well as the provision of operational services throughout the life of the contract and finally returning the infrastructure asset to the State to a specified condition standard.

**Risk Sharing**

In the PPP contract, risk is shared between the State and the private sector on the basis of which partner is best able to manage that risk. In the health services sector involving PPP hospitals, the private sector typically bears the risk of:

- design that is 'fit for intended purpose' ie meets the output specification
- construction delays and increased costs
- variations to financing costs
- maintaining the hospital to the specified standard, and within budget, over the life of the contract
- provision of operational services within the contract to the specified standard and to budget.

The State typically bears the risk of:

- demand risk eg catchment population demographics and health needs
- service and clinical provision changes that impact on infrastructure requirements
- provision of clinical and other services not within the contract to the specified standard and within budget
- legislation or policy changes.

Often shared between the parties is:

- planning risk
- ground conditions
- force majeure.

**Operational Services**

The extent of operational services provided by the private sector in hospital PPPs varies considerably and can include:

- hard Facilities Management (FM) services such as building and grounds maintenance
- soft FM services such as security and cleaning
- non-clinical support services such as catering, and orderly services
- clinical support services such as pathology and sterile services
- clinical services.

The most common services provided in Australian PPP hospital contracts are currently hard and soft FM services.

The PPP model of procurement is becoming increasingly common across the developed world. It was first extensively used in the UK government's PPP equivalent, the Private Finance Initiative (PFI), since 1992.

Country	No. of Hospitals	Capital Value of Hospitals
<b>UK</b>	76*	6bn GBP
<b>Australia</b>	8**	5,172m AUD

\*operational by April 2009

\*\*reached Financial Close to date

**Advantages for the State**

Generally, the reasons for the State deciding to use a PPP form of procurement include:

- not having to begin payment for the infrastructure asset until it is operational
- greater certainty of delivery of the infrastructure asset to time and budget
- ensuring that maintenance is carried out to a required standard over the life of the contract
- obtaining value for money in terms of whole of life infrastructure asset cost
- transparency of service provision cost
- encouraging innovative approaches to building design and service provision.

Giving evidence to the House of Commons Treasury Committee on 18 March 2008, UK Chancellor of the Exchequer, Alistair Darling, said:

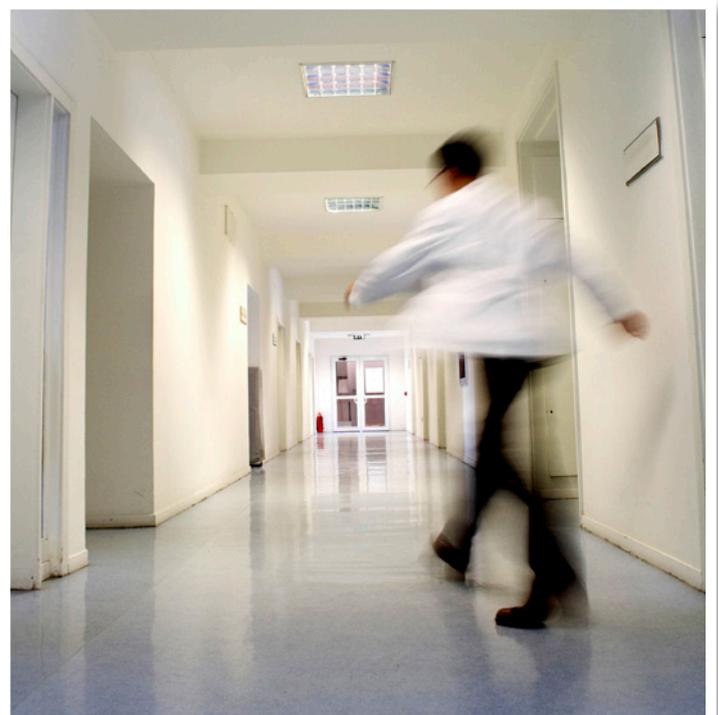
*“What I would say to you is that the PFI has enabled us to do a lot of building of schools and hospitals and so on that we would not otherwise have been able to do.”*

**What do Health Services need from hospitals?**

How do such reasons for using a PPP model relate to the long-term needs of health services, if indeed they do?

In terms of hospital infrastructure, the Arup view is that long-term health service needs can be dealt with within three broad areas:

- health outcomes
- flexibility
- efficiency.



## Supporting health outcomes

The over-riding purpose of our health service is of course to achieve the best possible health outcomes for the population through the provision of high quality, patient-centered and safe care. How can these health outcomes be supported by hospital buildings?

### The healing environment

Evidence exists (ref 5) that the environment within which a patient is treated can influence their health outcomes.

*For example, a patient is more likely to recover quickly if they benefit from:*

- privacy and dignity
- reduced noise enabling a good night's sleep
- interesting views
- natural light
- easy access to green space
- some control over their environment (eg openable windows)
- visitors staying with them
- an environment that supports quality of interaction with clinicians and nurses (eg fewer distractions).

### Safe care

As well as healing patients, health services aim to minimise the risks to patients in hospital from:

- hospital acquired infections
- trips and falls
- risks while moving patients
- medical errors.

The above factors are all significant drivers on the configuration of hospitals and the design of the spaces within them. Key design responses include narrow plan buildings with a high proportion of single rooms.

### Flexibility: how to build for the future

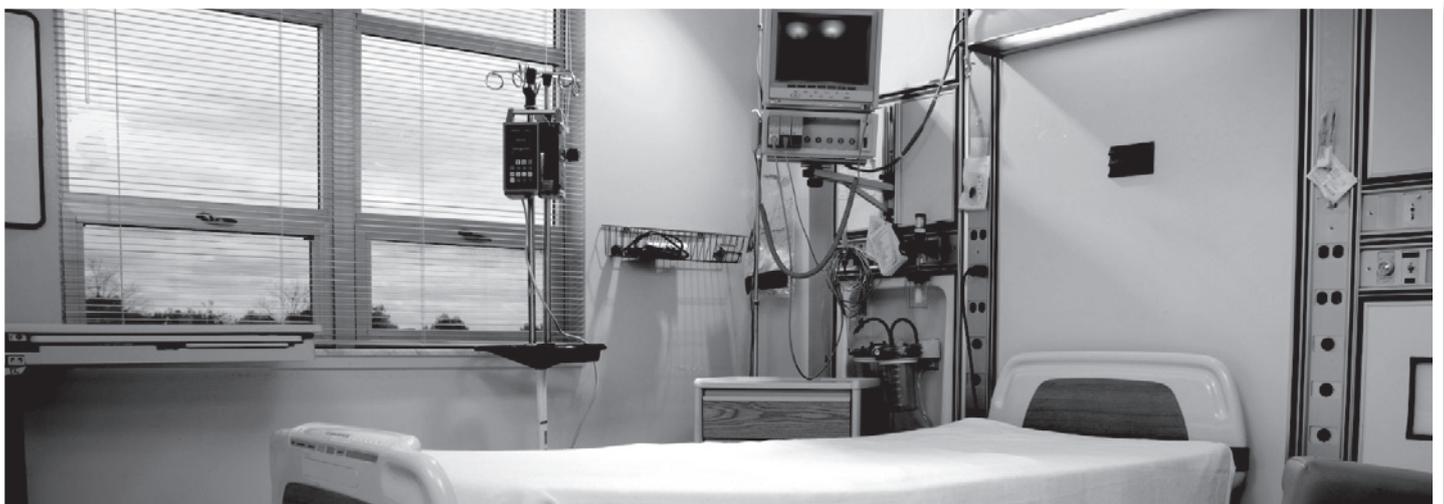
The wide range of variables potentially affecting future health service needs means that their prediction is a very imprecise art. It is extremely challenging to anticipate new models of care, new clinical treatments and medical technology, and changed ways of working or staff roles.

If the approach to planning a new hospital does not 'build in' flexibility this could result in a hospital that is both the incorrect size and designed to support obsolete clinical practice by the time it opens, and cannot be altered without considerable cost.

## What does flexibility mean?

Building on existing work (ref 6), flexibility can be considered in four broad categories and in terms of spatial and support service requirements, as shown in the following table:

	Space	Services
<b>Day-to-Day Use</b>	Use rooms for differing functions, eg an acuity adaptable bedroom in which a wide variety of treatments can be provided without having to move the patient.	Provide varying services with the same personnel, eg, a hospital orderly that can move patients, deliver meals, or provide ad hoc localised cleaning at different times of the day according to need.
<b>Adaptability</b>	Accommodate ongoing operational changes within spaces with no or minimal building work required, eg changes to specialised consulting clinics.	Adjust support services to match the needs of changing clinical services, eg change a bulk distribution service to a just-in-time delivery service through increased use of ICT systems.
<b>Convertibility</b>	Convert rooms to different functions over time – some building work required, eg the conversion of two theatres into an interoperable MRI theatre.	Convert support services to support improved health services, eg part replace orderly service with mechanised logistics solution – automatic guided vehicles
<b>Expandability</b>	Expand or contract the overall building envelope and increase/decrease capacity for specific clinical functions – major building work required, eg the expansion of the Emergency Department.	Expand or contract the support services in relation to the relevant clinical functions.





There are various potential design responses to the above categories that include:

- consistent grid and floor-to-floor height throughout
- modular layouts
- positioning 'soft space' adjacent to departments likely to change
- design of the building as shell and core, base then specialist fit-out
- minimum number of standard room types
- interstitial floors
- capacity in engineering services
- open-ended corridors/hospital streets.

However, designing for ultimate flexibility is not a cost-effective solution. At Arup, we believe that in the briefing stage, it is beneficial to spend time considering future scenarios; and focusing on what is most likely to change and how, using the above framework.

Such an approach will result in a brief that defines flexibility in a way that designers can respond to appropriately.

It is also important to include consideration of scenarios where a hospital size is reduced. Over the last few years in the UK, certain areas of the country have found themselves facing an over provision of acute sector beds, due to reductions in waiting times and lengths of stay and improvements in primary sector care.

### Efficiency

Efficiency needs to be viewed in terms of the costs of services provided by the private sector and the value to the State in terms of recurrent health service delivery costs and the overall life of the hospital. The cost of finance is not considered here.

One of the reasons for selecting the PPP procurement route outlined is to harvest as much innovation as possible from the private sector to improve efficiency and value for money. In the context of hospitals, we believe that innovation does not mean risking the well-being of patients through the use of untested concepts, but rather through the use of proven designs and systems successfully used in other industries or overseas.

#### *For example:*

- the use of a variety of mechanised logistics systems to move materials and waste around the hospital (eg pneumatic tubes, or automatic guided vehicles)
- the real-time tracking of the location of materials, equipment, staff or patients
- handheld communication devices wirelessly connected to the various clinical and non-clinical ICT systems
- automated dispensing systems for a variety of items ranging from pharmacy to laundry.

These examples show that the efficiency of services delivered by the private sector and those delivered by the health service become heavily inter-reliant.

Defining, measuring and predicting efficiency in the delivery of clinical services is always complex and challenging. Currently, process measures are used such as staff travel distances, time with patients by nursing staff, the number of times a patient is moved, occupancy levels and length of stay.

The UK National Health Service (NHS) governance framework is currently moving to implement outcome quality indicators such as cost per procedure and clinical success factors through the Quality, Innovation, Productivity and Prevention (QIPP) program.



## Opportunities and constraints in the PPP model

### Procurement Stage

#### Capital vs lifecycle

Typical relative costs of design, capital investment, maintenance and operating cost are shown here:



Most procurement routes separate capital from lifecycle costs and focus exclusively on design and capital cost. This leads to a strong motivation to reduce capital cost to a minimum. However, doing so could well lead to additional expenditure over the lifecycle, such as reduced durability of finishes, higher cleaning requirements or equipment that requires more frequent maintenance.

The PPP model seeks to obtain value for money in terms of whole-of-life costs over the term of the contract, for the private sector's scope, through comparison of bids against a Public Sector Comparator (PSC). Private sector consortia include building design and construction organisations and FM service provider organisations who are motivated to work together to obtain the best whole-of-life cost over the contract period.

Old habits die hard however. Most messages from the State during the planning and procurement process are expressed in terms of capital cost. Once the PSC is produced, there is often a process of value engineering to meet a budget and obtain the necessary approvals to proceed with procurement, which is also capital cost driven.

Most private sector consortia are made up from organisations far more familiar with traditional procurement methods and their associated behaviours. Despite the overall motivation for the FM provider to be integrated into the design process, in practice this has yet to be fully optimised.

In order to counter these old habits, and optimise the benefits of the PPP model, there are key roles for the State decision makers and for the private sector.

#### *The importance of a good brief*

The PPP model is based on obtaining as much certainty as early in the process as possible, to enable the private sector to effectively price the scope. The output specification contains a set of minimum requirements which, in order to be competitive, the competing consortia are incentivised to not exceed. The risk of delivering a building that is fit for intended purpose and services to exacting and consistent performance standards rests primarily with the private sector. This can act as a disincentive to introduce innovation and result in using only locally tried and tested designs and service delivery methods.

It is also extremely risky to provide a fixed price for unknown future technological developments. However, for the health service, consideration of just the 'here and now' will only result in hospitals with built-in obsolescence and greater inefficiency. Against this background, generalised or aspirational statements about flexibility, efficiency of clinical service delivery and health outcomes that cannot be clearly defined in terms of building form or service requirements can get overlooked.

What is required are clear definitions of:

- healing environment, patient-centred care and safe care requirements of the hospital
- what types of flexibility are required and where
- what services are appropriate to include in the private sector's scope (ie what can be defined)
- the interfaces between private sector delivered services and core clinical services
- key indicators of clinical service efficiency as they relate to the private sector scope.



The PPP model is no ‘silver bullet’, but has the benefit of forcing a clearly defined set of minimum requirements, which are difficult for stakeholders with differing agendas to subsequently change. Health services can use this to their advantage by:

- developing a range of functional use scenarios
- incorporating best practice in evidence-based design
- allowing sufficient time in the briefing stage to review and analyse flexibility and efficiency requirements
- thinking carefully before using current guidelines and practice as a basis for output specifications.

### Operational Stage

Evidence does not yet exist to link PPP hospitals directly with health outcomes, but UK studies (ref 12) have shown that patient satisfaction levels with the environment of PFI hospitals are significantly higher than non-PFI hospitals of a similar age in terms of their perceived cleanliness scores.

The UK National Audit Office (NAO) (ref 9) has shown that:

- cleaning, laundry and portering costs are about the same whether delivered through PFI or not
- catering is on average slightly cheaper in PFI hospitals
- hospitals with PFI buildings spend more on maintenance annually.

However, there is some doubt over the robustness of cost information for NHS provided services. The disparity in cost of maintenance is due to the requirements of the PPP contract for higher standards of maintenance and a specified condition of the hospital building at the end of the contract.

The NAO also looked at PFI contract management and whether the NHS was realising the full ‘value for money’ in each PFI contract.

It considered the skills and resources of individual NHS Trusts, the support from the Department of Health and the mechanisms within the PFI contracts themselves and found that:

Managing PFI contracts is a challenging task. We found four main areas where Trusts are trying to defend value for money in their interactions with contractors:

- a) Interpreting the scope of the contract to defend the Trusts’ position in any contractual disputes.
- b) Managing the change process to ensure changes to the building and services are value for money and timely.
- c) Fulfilling their obligations to ensure intended risk transfer.
- d) Ensuring that the expected level of performance is delivered.

For a PPP hospital, given the typical distribution of risk, there is little incentive for the private sector provider to work with the health service to accommodate service change, because the availability of the hospital has to be paid for in full, independent of the actual use made. The modification regime in the contract can tend to encourage adversarial behaviours where the private sector seeks to extract maximum payment for any change requested. The UK NAO (ref 7) did not find evidence of true partnering between the NHS and the private sector aimed at driving down costs and producing mutual benefits.

In order to meet changing health service needs a genuine long-term partnership is needed, where the private sector remains engaged throughout the life of the contract, helping the health service to maximise the potential for convertibility and expandability in the hospital design and the support services and for continuous performance improvement in the delivery of services.

This would be assisted by mechanisms within the contract for the private sector to share in future benefits. Also required are appropriate organisational arrangements and commitment by all to a partnering relationship.

### The end of the Contract

Hospital buildings have long lives – often hundreds of years – and will be in use far beyond the PPP contract period. In terms of costs over the whole life of a hospital building there is clearly a benefit in receiving back a building that has been fully maintained and is in good condition at the end of the PPP contract. However, as no PPP contract involving a significant building asset has as yet reached this stage, it is not a benefit that currently can be quantified.



### Arup's viewpoint

Arup's strategic viewpoint is PPP hospitals do have the potential to support long-term health service needs, but care needs to be exercised to ensure that health services realise this potential in the long run.

**Decision makers** procuring PPP hospitals need to consider:

- that value for money is explored in terms of the trade off between capital and operating costs
- that procurement, evaluation and selection is linked to whole-of-life value for money
- what is appropriate to include within the PPP scope and what is best provided by the State
- contracting mechanisms that explicitly support partnering around cost efficiency and flexibility.

**Health services** need to consider:

- further development of clinical outcome measures
- strategic vision, roles and functions that are required both from the hospital building and the ProjectCo services
- sufficient time and effort is spent in the briefing stage and in development of the output specification
- personnel with the right knowledge and experience, especially in contract management.

**Private sector** consortia need to consider:

- governance and management structures that will improve integration across the consortium, particularly between design, construction and FM
- the long-term benefits of incorporating proven innovations
- the benefits of developing long-term partnering relationships with health services.

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