Sustainable Models for Funding Equipment

Introduction

This thought- paper was prepared for the Association of Hospital Groups by David French FCCA of Delta C Health Solutions Ltd as a follow on to 'The Burgeoning Equipment Crisis in Irish Hospitals | An Accident Waiting to Happen'[1]

The author is an advocate of fully informed decision-making in procurement; modernising the transactional purchasing model by exploring more innovative solutions, such as the one described below. These are more collaborative, engage a greater range of stakeholders and thus bring greater benefits to patients, providers and payers

The experience of the author, having worked at a senior level with many hospitals, is that clinical capital equipment is rarely subject to progressive and patient-oriented procurement programmes, yet, alongside clinical staff, he regards it as the most important common factor in the treatment of patients. There is no obvious reason for this systemic oversight (other than a commonly held view that equipment assets can be run into the ground), but it is a mistake to downplay the importance of clinical equipment. The author has successfully concluded several successful capital equipping partnerships in the UK (success being measured not only financially, but by consistently high partner satisfaction).

The high cost of clinical equipment replacement is commonly cited as the reason why clinical assets are sweated – often beyond their useful life. This cost-based argument has no foundation in reality – equipment being a vital component of patient pathway. There is overwhelming evidence that old equipment is inefficient and a contributor to sub-optimal healthcare. At the current time, capital markets providing cheap funding options may be seen as an opportunity to invest. This is equally invalid unless one can demonstrate that *all* options, including partnership models, have been fully appraised. The benefit of lower cost of capital for clinical equipment is negligible compared to the potential benefits of a well-constructed partnership model.

Over many years, healthcare capital planning has been given limited focus, leading to dysfunctional decision-making, resulting in a dire situation for hospitals and patients.

This paper describes one successful integrated approach to sustainable capital and revenue cost planning; one which leverages benefits for hospitals by positioning both parties into a 'win-win' scenario.

Sustainable Integrated Capital Planning (SICP) is the creation of a long-term approach by utilising the expertise of partners to enhance the impact on patients. An impact focus enables partners to better understand the drivers of impact and build a partnership based on each other's skills - mutually boosting that impact. Whilst this requires a great deal of thought and planning, the concept has been brought to delivery by the author in less than a year, with the implementation phase being swift.

The practicality of a partnership is that hospitals must transfer some risk and reward to third-party providers who assume increased risk and reward. At some point, both parties will agree the level of risk and reward each is prepared to take, and an agreement formalised. Each party must bring skills to the table and each party must accept where they are lacking in skills. A key assumption is that the hospital remains in charge of the clinical decision-making, whilst the partner(s) assumes management of logistics.

In its simplest form, a hospital will bring their own skilled clinical teams and patients, whilst the supplier will bring cash, a clinical consumables supply chain, business & logistical expertise and an appetite for risk.

There is some skill in creating this model and it works best when an independent person sits between the potential partners, which allows for enriched dialogue between parties.

Several UK and EU hospitals are operating a managed service model and it is important to stress that although the core model is the driver, there is flexibility built into the assumptions that allow it to be tailored to the needs of individual hospitals. Flexibility is outlined in the goals section at the end of this paper.

[1] IMSTA 2019

Context

The managed service model described in this paper was developed to help hospitals overcome the combined issues of an ageing asset base and financial pressures on their annual budget. This has been achieved by leveraging the potential of the purchasing of clinical consumables to address strategic, clinical and financial pressures on clinical pathways. Traditionally, measures of success have been pigeon-holed – a procurement department will typically measure success as reduced unit cost - with little consideration of overall benefit to healthcare e.g. if a reduced unit cost results in reduced quality, then the overall cost to healthcare may increase: success for procurement does not necessarily equate to overall hospital success. Unlike supplier-led models, the primary driver of this approach is not to improve industry's bottom line, but to leverage the competitive advantage for hospitals.

An important point to reinforce about an integrated managed service model Is that it incentivises both parties – and that dictates that the incentives must be broadly (but not necessarily exclusively) aligned. Essentially, the hospital must be able to decrease its unit cost, whilst the supplier would be allowed to increase its profits.

Case Study

A fully integrated managed service was implemented by the author at the Cardiology Department in Imperial College Healthcare NHS Trust[2] in 2013, in partnership with Medtronic, delivering

- ✓ a total Cardiology capital replacement program. Medtronic took on the responsibility for funding five new Cath Labs (including the clinical equipment) over a seven-year period.
- ✓ contributing to significant financial savings, through reduced unit cost of consumables and reducing staffing costs and through the provision of logistical expertise to reduce wastage in consumables and staff time.
- ✓ a long-term improvement in patient throughput by approx. 20% (caseload adjusted). This increase was achieved in reduced operating hours by reducing over-runs and weekend working and was achieved by the supplier led project focused on better planning which increased patient volumes each day across all five labs).

The industry partner financed the replacement of the five Cath Labs over the period and the Trust funded this through:

- a commitment to consumables volume e.g. pacemakers and ICD's, resulting in lower year on year prices
- increased clinical efficiency e.g. reduced times between patients, allowing extra patients on each Theatre List, reducing the staffing costs recurrently
- increased patient volumes (volumes equal greater income in UK) e.g. increased lab uptime has allowed the hospital to treat more patients (the UK operates a mechanism whereby hospitals are paid for each patient treated). It has also allowed more of the relatively attractive private patients to be treated.

Most of these benefits are universally available and result directly from partnership working. There have been other benefits in addition, as the logistical management of the department has improved significantly.

The hospital also found that their industry partner was prepared to make unilateral investment decisions which improved the working environment e.g. the provision of extra staff, new staffing facilities and minor equipment that would facilitate the effectiveness of the hospital. The hospital would have struggled to get these approved otherwise due to financial constraints. The decision-making process has therefore been streamlined, which has benefited

[2] https://www.imperial.nhs.uk/

the hospital clinical staff, who can focus on patient treatment.

The design of the model stemmed from an acute need to replace Cath Labs that were nearing obsolescence amidst a climate of limited capital funding, which, due to the centralised view, put Cardiology some way down the list of priorities. The ageing capital infrastructure was threatening to make the clinical environment less safe, leading to increased delays and inefficiencies and this solution has addressed a variety of issues, having a profoundly positive impact on patient volumes and outcomes. Significantly, there has been a 10% decrease in the annual revenue budget, which has been used to fund the capital replacement program, reinvest in a more effective clinical pathway (including greater volumes) and support the Trust's financial reduction program.

The manifestation of regular equipment breakdowns and higher patient cancellations resulted ultimately in reduced clinical efficiency (especially staff) but importantly reduced the volume of consumables purchased, resulting in higher unit prices. The relationship between Imperial and Medtronic has been recognised as a total success by both parties.

The model has been successfully replicated to drive similar transformation projects at other hospitals in UK and many in Europe, e.g. Karolinska University Hospital, Stockholm, Sweden[3]. Variations of the managed service are operated by several other providers as well; this is a growing market with several very credible partners.

Leveraging Finance

Traditional thinking is not strategic – focusing on capital assets and consumables separately. During the model planning phase, this was identified as the biggest mistake. The focus should not be on the commodity, but the finances – the driver for this being the clinical pathway. This approach helps bring down the overall cost of healthcare, not simply the cost of the equipment being purchased.

Broadly the clinical pathway consists of staff, clinical equipment, facilities and consumables.

From a capital perspective, the challenge is to 'sweat' the assets to demonstrate efficiency – in basic terms, to treat as many patients as is possible within the confines of (overall HSE) affordability.

From a revenue perspective, the same principles apply to staff, which should be considered as a fixed cost for the purposes of planning. The greater the patient volume, the lower the unit cost of staff.

Consumables are different because their unit cost is leveraged through purchasing agreements.

However, all hospitals will have one thing in common – their revenue budget will be many times greater than their capital budget.

For HSE this is roughly €17bn (revenue budget) v €30m (capital budget) – a factor of 566 to 1,

the annual revenue budget being 566 times greater than the annual capital budget.

A reduction in the revenue budget of 1/566 (0.18%) will fund the entire capital budget for a year (note: at this stage ignore any economic or political capital financing considerations).

If this principle is further developed by assuming that the entire capital equipment asset base in Ireland is around €700m and average asset life is seven years, then the revenue budget for seven years is €17bn * 7 = €119bn.

*i.e. €119bn (€17bn * 7) v €700m (entire capital budget) - the factor is reduced to 160 to 1,*

the annual revenue budget being 160 times greater than the annual capital replacement requirement[4]

[3] https://www.philips.com/a-w/about/news/archive/case-studies/20190128-patient-first-how-karolinska-university-hospital-is-transforming-to-meet-future-demands-of-healthcare.html

[4] It is important to note that the annual capital equipment budget is insufficient to fully replace the equipment on a 7-year rolling basis. To achieve this the annual capital equipment budget would need to be €100m. The 160 times factor is based on the 7-year rolling replacement program.

Both scenarios are valid and the numbers are less important than the concept. Using the 160:1 factor, it means that Ireland could theoretically fund the entire capital equipment program of €700m by repurposing the 7-year revenue budget by 1/160, i.e. by 0.63%.

The concept of the model was created using the both the principle of a planned rolling capital equipment replacement program and the inefficiency of the revenue budget.

Capital Asset Leveraging

There's generally a mismatch between clinical wants and financial ambition – clinicians want the best/newest equipment whilst accountants prefer the lowest cost item.

Clinicians therefore need to go through a process whereby their wants are married up with the needs of the organisation (both current and future needs). That requires a different dynamic to a traditional purchasing process. Centralised processing functions, e.g. nationally managed frameworks, do not accommodate this very well as they are geared to standardised 'call off' based on little local input.

Another factor is the 'whole-life cost'. Most procurement focuses on the cost of the equipment rather than the cost of maintenance. A rule of thumb is that over the average life of an asset the maintenance costs are equal to the purchase cost. There needs to be as much a focus on the cost of ownership as on the price of the physical asset.

Putting in place the appropriate maintenance contract is another factor – based on risk and knowledge of the market. It is not a given that third tier i.e. bronze maintenance is the cheapest model.

The benefits of local knowledge input are several-fold.

- The way a price is negotiated, i.e. the price of the equipment, can help frame a locally managed service. It is important that the 'price' is reflective of the requirements of both the hospital and that of the HSE, i.e. to ensure that HSE doesn't overspend against its capital budget. This cannot be a process led through a central framework.

- The actual price of equipment is determined by the level of risk/reward the OEM[5] is prepared to take. This is not something that can be centrally led without explicit local support.

- Equipment choice must be made in conjunction with local clinical requirements. The variation between suppliers is much greater than a 'framework' suggests. It is imperative for a long-term approach to have clinicians on-board from day one. Managing them through a process that gives their services the most appropriate equipment is vital.

- Because the equipment pricing is correlated to other factors, such as consumable requirements and hospital efficiency, each hospital needs the space to have a conversation with suppliers about how best to optimise a financial agreement. Several leading suppliers have all indicated a willingness to go beyond traditional purchasing i.e. some sort of risk/reward partnership. Currently this is not being hospital led.

Finally, any discussion about leveraging of capital equipment must look at the ability to increase efficiency. The average lifecycle of equipment has been reducing sharply over the past 50 years and it is fair to say that it may soon be around the 5 to 7-year mark. For various reasons (that require scoping locally) one can assume that equipment manufactured today is around 20% more efficient than equipment manufactured 15 years ago.

These efficiency levels could mean that 120 patients can be treated with new equipment for every 100 with old equipment. Any procurement process must consider the effectiveness of equipment – as that is a factor that drives significant value on the revenue budget.

[5] Original equipment manufacturer

Equipment efficiency was another fundamental principle of the previous managed service analysis. Depending on what a hospital wishes to achieve, they can either see 20% more patients within the same timeframe, staffing volumes etc., or have the potential to reduce costs by 20%. In practice it's a combination of both – but given an annual budget of €17bn, the prize is massive.

Revenue Cost Leveraging

There are five key factors in consumable purchasing that affect the pricing:

- Length of contract – the longer the contract, the lower the unit price.
- Percentage of market share – the higher the percentage, the lower the unit price
- Absolute sales volume – the higher the volume, the lower the unit price
- Quality – the higher the quality, the lower the fail rate.
- Stockholding Costs – costs of storage and security

The first two, when used together can drive considerable long-term benefits for the hospital.

- There is a need to break down the perception of longer terms as being bad for a hospital – a perception that mainly comes from clinicians. Similarly, for market shares; evidence from a lot of hospitals shows that year-on-year market share changes are minimal – so by inference hospitals should not be resistant to committing to market shares of consumables.

- On the flip side, one supplier's gain is another's loss and therefore market share consideration must look at the impact on all suppliers to get the best unit price. Market share will be dependent upon consumable types – specialist consumables will have 2 or 3 main suppliers, with generic consumables usually more, but a hospital should be able to consolidate around 1 or 2.

- The third of these is the factor seldom negotiated with suppliers on a formal basis but is viewed by many as the most effective as suppliers will offer big unit price discounts for 'bulk' sales. The problem is that this increases the cost of stockholding. This model stays well away from these types of deals as it has a direct impact on stockholding costs – which can tie up considerable sums of money and can be a false economy.

Quality should never be underestimated and there have been many cases of the negative impact of procurement decision-making based on unit cost without proper scrutiny of the impact on quality.

Revenue to Capital Ratio

This should always be seen in the context of the lifetime of the equipment. Typical lifecycle for specialist equipment should be considered as 5 to 7 years. For best effect, any agreement should broadly tally up to this, although the primary focus is not the equipment itself, but the financing model.

Hospitals need to be careful to ensure they aren't locked into a deal simply on a monetary basis through unplanned residual value of equipment. Some managed services incorporated a 'balloon fee' payable on termination which should be resisted.

Marginal Cost of Treating Patients

A benefit of greater efficiency is the unit cost of treatment reduces because of the fixed cost element (in staffing and overheads). In any financially constrained healthcare setting, this should be a great influencer. Simple economics should support any model which has the potential to drive up efficiency through increased volumes as there will be other financial benefits e.g. greater ability to manage unit cost of consumables through long-term commitment.

Summary of Model

Discounted cost of consumables used to fund (or part fund) capital equipment. Long-term approach to ensure that there is a capital replacement plan and the upfront cash commitment by the hospital is minimised.

Currently risk and reward sits with hospital. This model shares both. The risk to hospitals under traditional purchasing has been significant and the reward minimal. Where the model has been embedded in hospital services, they can demonstrate that input from third-parties has been considerable in supporting significant improvements in unit cost reduction and overall financial efficiency. This is due to alignment of incentives.

An outline tender advert would look something like

"The hospital wishes to partner with a supplier to provide a 'pathway solution' to support clinical efficiencies. The supplier will be expected to provide clinical equipment, clinical consumables and any staffing expertise to support this strategy. The supplier will be expected to provide innovative and sustainable solutions, which will include elements of risk share. It is expected that the supplier will be able to demonstrate a good track record in the provision of partnerships".

The advert is deliberately vague, with the last sentence designed to restrict opportunists, as in reality there will be fewer than ten suppliers capable of delivering. This will save time.

APPENDIX

Managed Service: Goals & Objectives

The key goals are outlined below. These are in no way meant to be seen as the aim, as that is for each hospital to articulate, but can be seen as concepts for successful delivery.

GOALS

1. **To increase access to new capital equipment in a planned fashion**
   Objectives
   a) To reduce the effective cost of equipment
   b) Access to financing that would allow for a planned approach – balance between 'sweating' assets and managing obsolescence
   c) To outsource the management risk through a contract

2. **To make revenue expenditure more efficient**
   Objectives
   a) Reducing the unit cost of consumables
   b) Reducing the unit cost of staffing
   c) Reduce/eliminate working capital tied up in stock
   d) Enable higher patient throughput with same resources
   e) Improve business support through partnership

3. **To enable hospital teams to focus on patient-centric healthcare**
   Objectives
   a) Outsource management and maintenance of capital equipment
   b) Outsource purchasing and stock management function
   c) Improve pathway efficiency using capital equipment as a driver
   d) Allow hospital staff to focus on patient by transferring peripheral roles to managed service provider

4. **Retain Control over Decision-Making**
   Objectives
   a) Retain choice over capital equipment decision-making
   b) Retain control over, for example, clinical engineering and radiation protection
   c) Retain choice over non-pay consumables
   d) Retain control over patient volumes
   e) Make third-party accountability for service delivery standards through agreed contract process

5. **Create a risk & reward environment**
   Objectives
   a) Create mutually aligned goals that recognise enhanced performance levels and share risk of below performance levels.
   b) Enhance our knowledge base to implement improvement measures by bringing in outside expertise.