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Sheffield Teaching Hospitals NHS
NHS Foundation Trust

# BOARD OF DIRECTORS

## 20th APRIL 2011

## BUSINESS CASE FOR THE CENTRAL CAMPUS CRITICAL CARE UNIT

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### 1. INTRODUCTION

This paper explains the rationale for investing in a new Critical Care Unit at the Central Campus and provides a summary of the information presented in the business case that has been supported by both CIT and TEG.

### 2 BACKGROUND

The case for a new Critical Care Unit at the Royal Hallamshire Hospital is complex and involves a number of different drivers.

### 2.1 Service Reconfiguration

Prior to clinical reconfiguration General Critical Care on the Central Campus comprised of 6 ITU beds on R Floor and 8 HDU beds on A floor. The net effect of the service moves approved under the Service Reconfiguration Programme was a significant shift of surgical and medical activity from RHH to NGH. The General Critical Care support to the transferring surgical and medical activity equated to 3 ITU beds and 4 HDU beds. Thus, at the point of reconfiguration in November 2010, these critical care beds transferred to NGH also.

The General Critical Care beds required to support the specialties remaining on the Central Campus was calculated as 2.3 ITU beds and 4 HDU beds. However, R Floor was no longer viable as a stand alone unit and therefore provision was made to transfer 2 ITU beds from R Floor to join the remaining 4 HDU beds on A Floor as a temporary measure pending a permanent solution.

### 2.2 Sheffield Clinical Skills Unit

In addition, there was a further driver to vacate R Floor in order to create the Sheffield Clinical Skills Unit by March 2011. The SHA had allocated funds for this scheme which would be lost if implementation was not achieved on schedule.

### 2.3 Neurosciences

The changes on R floor had significant implications for the Neurosciences Critical Care Unit, comprising 6 ITU and 13 HDU beds, located on N1. Neurosciences ITU activity routinely overflowed onto R Floor and, despite this, Neuro were still in a position whereby they had insufficient capacity to accept all referrals from the surrounding DGH's. There is no physical space to increase the number of beds on N1 and therefore in anticipation of the closure of R floor one HDU bed on N1 was converted to an ITU bed. The unavoidable consequence of this was a net reduction of 1 HDU bed within the overall Neuro Critical Care complement which has further increased the pressure on beds.

## 2.4 Health & Safety

Another driver for change is the non-compliance with certain regulatory requirements for Health & Safety. There have been long standing concerns for many years about the status of both R Floor and N1 in terms of meeting a wide range of regulatory requirements, such as fire prevention & evacuation, infection control and infrastructure to support appropriate medical gas supplies. Facilities on both floors do not meet HBN requirements, especially in terms of space per bed. Over the years various options had been explored to re-locate the R Floor beds, but no suitable location was ever found. N1 suffers from the same constraints and remains non compliant, with the situation worsened by the pressure to increase the number of beds to meet demand.

## 2.5 A Floor

The unit on A Floor was originally designed as a Post Operative Surgical Unit although the clinical environment and services have been modified where possible over time. All bed areas can now deliver oxygen at a higher flow rate but extraction is a problem in the isolation room. There is only one isolation room, which in itself is too small to meet the needs of complex patients (usually Haematology and Infectious Diseases) requiring a lot of additional equipment around the bed. There is no natural light and insufficient space for storage or any space for facilities for relatives. Further modifications are not possible and there is a strong and unanimous view that the current arrangements on A Floor are inappropriate as a permanent solution for General Critical Care patients. At this point in time, the majority of patients on the Central Campus requiring ITU beds are being transferred to NGH. Again, this is not sustainable in the long term with Haematology and Infectious Diseases requiring ITU facilities on site. For Haematology this is a mandatory requirement to maintain accreditation for the Bone Marrow Transplant service.

The combination of all these factors resulted in the identification of a workstream within the STH Service Reconfiguration Programme to ensure the provision of adequate capacity and clinically appropriate critical care facilities for the Central Campus. A project board was established in June 2009, it's responsibility being the production of business case for a new integrated critical care unit on the central campus. A provisional sum of £8 million was subsequently identified within the Trust's 2010/11 5 year capital plan.

## 3. OPTIONS

A number of options were explored as a potential location for a new integrated critical care unit at RHH. These were limited by the physical space required, the need to ensure service continuity throughout the period of the scheme, the identification of a location that minimized the number and scale of enabling schemes and which was also capable of meeting the various regulatory requirements. After a detailed option appraisal, K Floor at RHH emerged as the preferred location. The key benefits to K Floor are:

- Wards K1 and K2 became vacant in November 2010 as a result of clinical reconfiguration thereby giving unlimited construction access to all the accommodation in a single phase.
- Close proximity to the plant on J Floor
- K Floor wards are the next set of wards scheduled for refurbishment, At approximately £1.6million per ward this provides the opportunity for the ward refurbishment programme to provide a substantial contribution to the capital cost of the scheme.
- No requirement to decant any other services
- Physical space exists to build a new unit with a maximum capacity of 29 beds

## 4. DEVELOPMENT OF THE BUSINESS CASE

Having decided upon K Floor as the preferred location a business case was developed and subsequently presented to TEG in November 2010. At the time the capital cost was expected to be £7.7million (excluding the MetaVision clinical information system at a further cost of £235k) and therefore within the £8million then identified within the Trust's 5 year capital plan. The incremental revenue costs were £402k, inclusive of £629k capital charges.

The response from TEG was that, although the scheme remained a high priority, £8million was no longer affordable in the current economic climate and the Critical Care Project Board was asked to review the scheme with a view to achieving a significant reduction in cost. Immediately after the TEG discussion, the Project Board learned that the pre-tender estimate for the scheme was in fact £8.8million, therefore presenting a significant challenge to achieve a final cost likely to be accepted.

Between November 2010 and February every element of the scheme has been reviewed to identify opportunities for reducing cost whilst still achieving the principal objectives of the business case. The case has now been re-presented to both CIT and TEG with a reduced capital cost of £6.55million. The main components of this cost reduction are:

- The original business case planned to locate the new critical care plant in the existing plant room on J Floor. To achieve this required extremely complex works at both a high cost and with a high risk of meeting severe technical difficulties which could further increase the cost and cause serious time delays. An alternative option to locate the plant on ward J1 has been identified and will deliver a cost reduction of £800k and significantly less risk. This option will occupy approximately 40% of J1 with the remaining 60% being available for use as clinical or non clinical accommodation. Although this means the loss of some accommodation currently available for clinical use, this is considered acceptable given the several wards are becoming vacant at RHH. This has been supported by both CIT and TEG.

- A large number of smaller modifications to the building and engineering works have reduced the cost by a further £850k

- The equipment list has been reviewed and reduced by £550k

The £6.55million assumes a unit is built with a maximum capacity of 29 beds. At this stage it is recommended that the unit should open with 26 beds (20 Neuro and 6 General). Co-operation between the two directorates will ensure best practice for all patients and maximize the efficient use of available beds at times of high operational pressure. Installing MetaVision for Neurosciences is not included at this stage but it remains a very high priority and a separate case will be submitted to CIT.

A precise recalculation of the final revenue costs of the new unit has proved very difficult given the ongoing discussions regarding directorate P&E plans, particularly those involving General Critical Care. However, the revenue savings assumed in the original business case will still be made, although an element of these will now be realised against OSCCA's 2011/12 P&E plan rather than directly contributing to this business case. In addition, further revenue savings of £237k have now been identified which reduce the incremental revenue costs to £165k, inclusive of £505k capital charges.

## 5. CONCLUSIONS

- The drivers for the development of a new integrated critical care unit are strong and remain unchanged.

- The current General and Neuro Critical Care facilities on the Central Campus are not fit for purpose.

- A thorough review of the original scheme has been undertaken achieving a cost reduction of £2.2million.

- Further review will not yield additional savings.

- Assuming the scheme proceeds to tender in May 2011, it will be May 2012 before the new unit will be operational.

## 6. RECOMMENDATIONS

The Board of Directors is asked to:

- Approve the business case for the new Critical Care Unit at the Central Campus

- Approve the sum of £6.8million currently earmarked in the 2011/12 Capital Programme/ 5 Year Capital Plan

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