Sheffield Teaching Hospitals
NHS Foundation Trust

Full Business Case for the Expansion of the Emergency Department at the Northern General Hospital

Emergency Medicine
June 2012

Contents

1. Executive Summary

This Business Case seeks approval for a scheme to extend the clinical space in the Emergency Department at the Northern General Hospital. The case refers to the growth in Emergency Department attendances over recent years, highlighting local changes and national initiatives, which have impacted on the number and acuity of presentations to the department. The case also discusses the challenges in meeting the access target for emergency presentations, given the current space limitations and the rising demand.

A summary of the current facilities in the Emergency Department highlights areas of concern, noting in particular that resuscitation provision is currently limited, and needs to expand to address the impact of becoming a full Major Trauma Centre. The rise in demand for admission avoidance services has placed significant pressure on the available clinical decisions unit space. The current design of the main department does not support the flow of patients from the front door, and leads to bottlenecks, resulting in cramped and chaotic conditions. This is unsatisfactory for patients, carers and staff alike.

In evaluating options for improvement, the project group was cognisant of the fact that close physical links with Diagnostic services, Critical Care and Theatres and the Medical and Surgical Assessment Units were vital to the Emergency Department. This severely limited the options available. In selecting the preferred option of extending the existing department, the group sought a solution that would offer high quality clinical space, value for money and would be deliverable within a tight time schedule.

2. Introduction

This business case is written to request funding for the expansion of the Emergency Department (ED) based at the Northern General Hospital (NGH). The existing ED at NGH was originally designed and resourced to accommodate approximately 250 attendances per day. In 2008 it was expanded to incorporate a 6 bedded Clinical Decisions Unit (CDU), improve the space for the Minor Injuries stream and marginally increase trolley space in the main department.

The scheme proposed in this business case will build on that expansion. By relocating the administration and support functions to the now vacated CSSD facility, space at the front door will be made available to increase capacity and improve the facilities in this prime clinical area.

As the ED is effectively “land-locked” the actual footprint of the department is difficult to increase and therefore the available options for appraisal are limited.

3. Unscheduled Care in Sheffield

Adult emergency services in Sheffield are provided by Sheffield Teaching Hospitals NHS Foundation Trust (STHFT). The Trust was formed in April 2001 following the merger of the Northern General Hospital NHS Trust and the Central Sheffield University Hospital NHS Trust. The configuration set in place at this time was determined by the Health Authority in consultation with partner agencies in 1995 following the Purchasing Balanced Services (PBS) review. Significantly for this case, a centralised adult Emergency service at NGH was established.

In 2003/4 national changes to the GMS contract allowed General Practitioners (GPs) to transfer the responsibility for providing out-of-hours care to their Primary Care Organisation (PCO). Although local arrangements were put in place to provide an out-of-hours service, one result of this change has been to increase the level of attendances to the ED, especially in the evenings and at weekends. These rises have been significant and in the past 3 years increases of between 3.7% and 4.3% have been experienced. (Appendix 1)

In April 2011 following public consultation, NHS Sheffield closed the Walk in Centre primary care service at Royal Hallamshire Hospital and re-provided those services with enhanced GP support in a city GP Health Centre at Broad Lane.

Within STHFT a number of Care group reconfigurations have taken place over the last 4 years which have resulted in NGH taking all of the adult emergency medical and surgical admissions in Sheffield, the majority of which are initially assessed in the ED.

4. Strategic Context

There are a number of factors that have and will continue to influence the level of and complexity of presentations to the NGH ED.

4.1 Growth in general ED Attendances

Appendix 1 shows the growth in annual ED attendances over the past 15 years. It is notable that daily expected attendances have risen from an average of 250 per day in 2003/4 to an average of 310 per day in 2011/12. This year to date there have been average daily attendances of 315. A further impact of the growth has been the peaks in presentations to the department. Daily attendances levels exceed 310 every 2 days (based on activity over the past 8 months) and have peaked in June at 391, a level unexpected for a summer month.

Attendance levels of this magnitude result in the existing clinical space being overcrowded, with patients being assessed and nursed in unsuitable areas.

If demand were to follow it's current trend the ED could expect attendances rising to an average of 335 per day in the next 5 years. However, using last years out-turn figures and adding population growth it is probable that these levels will be reached in the next one to two years (source Finnamore Emergency Pathway Discovery Report, May 2012). This projection does not take account of any additional activity as a result either of MTC status or as a result of the introduction of the 111 number.

4.2 Major Trauma Centre status

From 1st April 2012 STHFT gained interim Major Trauma Centre (MTC) status. There are 3 MTCs in Yorkshire and Humber SHA, Leeds, Sheffield and Hull. Initially this status means that Priority 1 trauma, (i.e. the most severe cases) from South Yorkshire and Humberside will bypass the local District General Hospitals and be bought to a MTC. Clinical pathways have been established to cater for both the increase in numbers and the complexity of presentations. In the space of 2012/13 there will be a gradual build up to full implementation. Phase 2 is to be operational by 1st April 2013 when Yorkshire Ambulance Service (YAS) will extend the triage criteria at MTCs to full acceptance of all trauma cases.

Phase 1 of MTC implementation requires consultant presence in the ED for 16 hours per day. Consultant numbers have been increased under separate business cases. Between 4 and 9 wte additional consultants are part of the business case for Major Trauma to allow the department to move to 24 hour consultant presence.

It has been difficult to estimate the changes in activity that this will mean to STHFT, especially as there will be collateral cases bought to Sheffield who could have been dealt with at local Trauma Units. It is clear however that this additional workload will require initial care and treatment in a Resuscitation setting, equipped to nationally defined standards and having access to support services and a full trauma team. The business case drawn up in October 2011 estimated an additional 642 cases per annum to STHFT including "over triage". This is to be reviewed in July 2012 based on the first three months of data collected by YAS both on the priority 1 bypass patients and those patients that would have been taken to a MTC under the full triage system.

4.3 City Centre reconfiguration

The GP Health Centre facility at Broad Lane has been operational for a full year. It reports a high number of adult attendances annually (c 66,500) and is experiencing similar a rise in demand to those of STHFT unscheduled services. It has not however realised the commissioning intent of reducing attendances to the ED.

The ED continues to see and treat a number of minor illness presentations. In response to this workload a number of primary care stream trials have been carried out by the ED in conjunction with the GP Collaborative and NHS Sheffield. Work of this nature needs to be appropriately managed close to the ED in order to release capacity for true emergency activity. Further work in refining and financing such a provision is underway, but not yet close to conclusion.

A Finnamore review is currently being undertaken to establish the future of unscheduled primary care in Sheffield and the role of STHFT, in that future model.

4.4 Access target

STHFT has managed to meet it's obligations in respect of the 4 hour target on a recurrent basis although significant micro-management at challenging times has been required. The 4 hour target applies to patients seen in the ED, the Minor Injuries Unit (MIU) and the Emergency Eye centre (EEC). Collectively the activity for these areas is termed "Type 3".

Appendix 2 has a summary of performance for both Type 1 (ED only) and Type 3 activity.

The considerable level of Trust central involvement and individual commitment required to achieve the 4 hour target does not constitute a consistent and sustainable solution.

Recent commissioning indications are that a focus on Type 1 (ED only) performance will be introduced in the future. It was suggested that this would be the case from 1st April 2012, but difficulties nationally in achieving the 4 hour standard led to a relaxation to Type 3 for a further year. STHFT has struggled to consistently achieve the target for Type 1 attendances. The proposed extension to clinical space would help alleviate this problem, by facilitating efficient clinical pathways in a less congested space. The doubled triage and PITSTOP areas are designed to increase capacity early in the patient journey and promote flow through early decision making.

5 Inadequacy of current facilities

The impact that less than optimal accommodation has on patients and staff is summarised below in bullet point format. A sample of patient feedback comments are included in Appendix 3

5.1 Quality of general accommodation for patients and staff

- Patients are assessed and treated in uncomfortable and crowded areas
- A lack of storage capacity means that equipment overflows into corridors
- Staff work in over-crowded conditions with little space to write notes and access computer screens
- Office accommodation is cramped and insufficient for growing consultant numbers.

5.2 Security

- As there are no controlled access points, patients and relatives can wander throughout the clinical area unchecked
- The ED is used as a thoroughfare for staff from other areas and for patients wishing to avoid a longer route

5.3 Infection Control

- Monthly infection control and domestic services reports identify lack of storage space for clinical equipment and laundry as an area of concern in the ED.
- Cramped working conditions in Blue bay represent a significant infection risk as patient assessments are carried out in close and open proximity.
- A macerator is not available in the ED.

5.4 Privacy and Dignity

- A high proportion of complaints regarding the ED centre around crowding in the department. The need to perform assessments in corridors and the indignity of being nursed on a corridor are cited as particular areas of dissatisfaction.
- Cubicles are currently divided by curtains which do little to cut off sounds and smells from neighboring areas. Again, this is cited as an area for concern in patient feedback and a common theme of patient and relative complaints.

5.5 Resus

- The journey from Resus to the imaging facility (CT/MRI) involves moving a critically ill patient through the busy department, a public corridor and a waiting area.
- Rapid access to CT forms part of the MTC guidelines and the current pathway does not meet the expected levels.

5.6 PITSTOP

- Consultants currently carry out initial assessment and categorization of 999 ambulance arrivals in an open corridor space.
- The queue of ambulance staff and patients awaiting PITSTOP assessment lead to bottlenecks around the main staff base

5.7 ED Medical Records

- The ED filing room occupies prime clinical space
- ED cards are frequently misplaced or damaged, leading to the use of clerical time in searching for and replacing cards
- The IT equipment used to produce the ED card is of old design and subject to frequent downtime.

6 Capacity Issues

6.1 Resus

The existing 4 Resuscitation bays are insufficient to deal with attendance levels at certain times. This has been particularly noticeable following the medical and surgical reconfigurations, which have resulted in all 999 patients arriving at NGH. Appendix 4 illustrates the rise in 999 attendances to the ED over 3 years.
A higher than average number of ambulance patients with correspondingly higher acuity levels results in more patients requiring resuscitation or higher levels of care.

The current resuscitation room is far too small for the patient load and case mix (m^2). This leads to premature transfers, suboptimal monitoring and logistical problems with re-prioritising ill patients. This is demonstrated by a higher than average bed occupancy, with temporary resuscitation bays being utilised twice as often as 5 years ago.

The HBN 22 (Department of Health, 2005) schedule recommends a minimum of 5 resuscitation bays (each approx. 29 m^2) for annual attendances up to 90 000. It recognises that the number of patients requiring resuscitation is likely to increase. Given that STHFT ED is currently experiencing attendance levels of 112,000 it is clear that the minimum requirement for resuscitation bays is 5 based on figures before MTC roll out. Furthermore, HBN22 recommendation is based

on a mixed population including paediatrics, (which has a low resuscitation rate). It is therefore, a conservative recommendation at best.

Finally, the transfer of critically ill patients from the resuscitation room to diagnostic imaging (CT) is time limited under the new MTC guidelines. The current pathway through the ED, a public corridor and a waiting area does not provide a route which meets the demands of the new guidelines, and the patient's privacy and dignity must be improved when they are at their most vulnerable.

6.2 Clinical Decisions Unit

The CDU currently houses 6 trolley spaces, a treatment area and an area for Chest Pain Rule out. Occupancy runs at 100% or more, particularly when the main ED is experiencing busy periods and difficulties in moving patients into the wider hospital. The CDU offers an area where patients can be appropriately monitored, nursed and cared for whilst they await a decision regarding admission. Given this use, the CDU does not provide a sufficient level of privacy and dignity to it's patients. The waiting area is part of the main clinical area and overlooks patients under active care, the area cannot be divided to separate patients by gender and there are no disabled toilet facilities. Equipment is stored in the centre of the clinical area or on it's back corridor. Finally, there is no provision for IT and workplace access so that the audit data and returns required for the rule out work streams can be collected and submitted.

Recent developments to the community teams have seen the multi-disciplinary DRT working from this area to avoid admissions from the ED. This has further strained the limited capacity.

The admissions avoidance work carried out in CDU, notably DVT and Chest Pain rule out has become increasingly popular with local GPs and presentations for rule out are increasing (Appendix 5). It is currently a struggle to match demand for these services with capacity that is competing for space in an over-crowded area.

6.3 Main area

6.3.1 Red/Blue Bays.

The main clinical area in the ED is separated into 2 teams, Red and Blue. Blue bay currently has 10 curtained trolley spaces and Red bay has 11 cubicles and 4 curtained spaces. Both of these areas are frequently full during the day. Recent profiling work carried out with Finnamore for the Emergency Pathway Discovery report found that at peak times the ED housed the equivalent of a 15 bedded ward in the main area (source Finnamore Ltd). This leaves little capacity for a

patient arrival rate of between 8 and 19 per hour at core times (minor presentations excluded).

6.3.2 Nurses station

All activities in the department are monitored by a senior nurse co-coordinator, based at the nurse station. The nurse station also houses PCs for accessing the laboratory systems, the main tracking board, an ambulance C3 screen and the working whiteboard for the department. Telephone lines to the clinical department are routed here and PITSTOP assessments run from this area. Clerical support is based here in the form of a tracking desk, and access to the reception and filing area is here too. It is an area of intense activity, noisy and very busy. It can be difficult to negotiate a way through this, a problem for the ambulance staff, who traverse this area in order to bring patients to the department and then again to get back to their vehicles.

6.3.3 Triage

Nurse triage is carried out for most presentations. Currently there is one triage room with doors onto the waiting room and the main department. As a result of the rising presentation rate, a second triage nurse has been introduced at key times. There is not however a second triage area and currently that process is carried out from the police box, which has only one door opening on to the waiting room. Triage from this area presents both flow and staff safety issues.

6.3.4 Storage

The department currently has one store room for consumables. Equipment is stored in the aisle of that area or on corridors in the main department.

Daily linen deliveries are currently kept in cages on the ambulance entrance. This has been highlighted by the control of infection team as a risk, and is also a hazard to arriving ambulance crews.

7 Future Developments

7.1 111 Number

The 111 number is set to replace NHS Direct in autumn 2013 for the Yorkshire and Humber area. Introduction of the 111 number in other regions has resulted in a net growth of A&E attendances. Whilst this is not the intent of this new scheme, it has been an unintended consequence in many of the early adopter sites, where A&E presentations have risen by between 4% and 9%.

7.2 Primary Care Stream

It has long been the aim of STHFT to provide a primary care stream, accessed via the same entrance as the Emergency Department. Section 4.3 explains the ED need to offset minor illness presentations, and if the predictions around 111 introduction are to be believed then this need will only increase. Longer term plans to convert the fracture clinic to such a facility will be submitted in due course, forming a phase 3 to the ED expansion scheme.

7.3 MTC

As discussed in section 4.2, the trauma workload is set to increase as ambulance protocols expand to bring trauma cases of all category to NGH. Should a larger helipad be constructed, this will further increase the trauma presentations, incorporating the higher injury severity cases.

7.4 Ambulatory care

The Ambulatory Care Directory, published in 2007 gave a list of 49 conditions that could cared for at the front door without requiring an admission. In the STHFT ED we already have a flourishing DVT and Chest Pain service running from the CDU (see section 6.2). It is felt that this could be grown to incorporate other presentations such as Urinary Retention and Loin pain. The potential to expand ambulatory care is limited by available capacity, space on CDU being the heart of this limitation.

8 Business Case

8.1 Objectives

8.1.1 The Emergency Department is essential to enable STHFT to deliver safe, high quality care to the unscheduled patient.

8.1.2 Services provided by the ED cater not only for the population of Sheffield, but also for the wider health community incorporating Barnsley, Rotherham, Doncaster, Bassetlaw and Derbyshire residents.

8.1.3 There is an absolute requirement for the team of highly trained staff to work in a well equipped and modern facility. The security of those staff is paramount to the Trust.

8.1.4 The accommodation should be of good quality and achieve the required standards of:

- NHS Estates guidance
- Health and Safety
- Infection Control

- Privacy and Dignity
- Disability Discrimination Act

8.1.5 The accommodation should have sufficient capacity to deal with the growing number of presentations, and provide adequate resuscitation facilities for this population.

8.1.6 The admissions avoidance work of the ED is supported, maintained and can expand to incorporate a wider range of presentations.

8.1.7 Existing physical links to Critical Care services, Diagnostic services and the admission assessment units are retained

8.2 Constraints

8.2.1 STHFT is required to maintain financial balance and demonstrate value for money in respect of the capital and revenue funding available.

8.2.2 The need to continue to meet access targets and remain functional throughout a capital scheme

8.2.3 Compatibility with other Trust capital schemes, especially Diagnostic Imaging plans to extend MRI capacity.

8.2.4 Compatibility with the Ambulance service turnaround targets.

8.2.5 Availability of alternative physical accommodation, particularly as the proximity to so many linked services is required.

8.2.6 Time for the development to become available, given that MTC status will be full from 1st April 2013.

8.3 Evaluation criteria

8.3.1 Quality of Care/Clinical Risk Management

- Does the area meet established clinical standards
- Does the area provide a service which promotes good practice and efficient use of resource
- Does the area meet infection control standards

8.3.2 Physical Environment

- Does the scheme provide an area that is conducive to the well being of both patients and staff
- Is the area accessible to users
- Does the area provide adequate security for staff, patients and equipment
- Does the area meet the standards for privacy and dignity
- Are there adequate storage facilities
- Does the area meet the guidelines for MTC status

8.3.3 Needs of Service Providers

- Does the scheme offer adequate capacity in all areas
- Is the proposed scheme configured to promote efficient working and facilitate improved flow through the ED
- Will the scheme allow for further development to respond to potential future changes

8.3.4 Deliverability

- Can the scheme be completed whilst the current service is maintained
- Will the scheme meet the defined time constraints
- Will the scheme be affordable
- Will the scheme provide a value for money solution

8.3.5 Relationships

- Will the scheme provide or maintain access routes to linked services and areas
- Will the scheme meet the demands of stakeholder organisations,

8.3.6 Staffing

- Does the scheme provide an improved working environment
- Does the scheme provide an area which will promote efficient use of staff time

8.4 Requirements of the scheme

The requirements of a capital solution would be:

- New or improved accommodation which will address the deficiencies of the current accommodation
- Sufficient capacity to deal with general projected levels of demand
- Sufficient capacity in specialist areas to deal with projected levels of demand
- Creation of a secure, modern and well equipped workplace for the ED staff
- Creation of sufficient office accommodation for increased consultant staff
- Focus the “front door” area on clinical use, whilst locating the support services adjacent but back from the main area.

9 Option Appraisal

Given that the ED is effectively land locked and that its current location, with easy access to admission units, diagnostics, critical care and theatres is vital for the presenting patients, the options available for expansion are limited.

9.1 Option 1 – Do nothing

The current ED, located on the D floor of Huntsman has excellent access to MAU 1, 2 and 3 and to SAC. It houses a small dedicated diagnostic facility and is adjacent to the main diagnostic department with CT and MRI facilities. Ambulance routes are established, and patients transferring to Critical Care or theatres can move easily from the rear of the department to either facility.

However, the current ED has a number of capacity deficiencies, resuscitation space being of prime importance with the development of MTC status. The department offers little security to its patients and staff and is frequently cramped, noisy and chaotic.

Demand for trolley space on CDU frequently outstrips capacity, and the rule out services are often displaced to accommodate trolley patients. This situation will worsen as attendances rise.

This option is therefore not seen as a way forward.

9.2 Option 2 – Expand current facilities by moving support services away from clinical areas

This option includes an enabling scheme to relocate the staff changing rooms, offices, seminar room and stores to a new area, built into the old CSSD housing. Once vacated, the space left can be re-developed for clinical use.

The existing links to Diagnostics, Critical Care, Theatres, MAUs and SAC are retained and improved, as is existing ambulance access. Capacity in Resuscitation and CDU is increased, with an improvement to and a small increase in the cubical space in Red and Blue teams.

Security to the clinical area is improved in this option, and the PITSTOP/nurses station is re-designed to improve privacy and flow for ambulance arrivals.

This option was felt by the project group to be the most appropriate way forward. It combines a range of improvements and expansion but maintains the links associated with the current location. It is also the more economically viable of the two options.

9.3 Option 3 – New build on Sorby Wing site

This option would address the deficiencies of the current department. The proposed location, Sorby Wing, is close enough to the old ED for it to retain relatively good access to support services and the wider hospital, and as a new build, the design would incorporate the required structural and security levels.

In order to proceed with this scheme, an enabling scheme to re-house the Metabolic Bone Unit and the support services that are located in Sorby Wing at present would be required.

This option meets many of the requirements and allows a high degree of future proofing for the Emergency Department. It would however take a considerable time to develop. A newly built ED would not be ready for the April 2013 MTC roll out, and would likely take at least 5 years to realise, time in which the workload to the ED would continue to rise.

In addition, this scheme would be the more costly of the remaining two options, coming in at over three times the cost of Option 2. The new build plan was however retained as an option for evaluation, to give a benchmark for expansion.

10 Evaluation Scores

10.1.1 Options 2 and 3 have been considered and evaluated against the criteria set out in section 8.3 above. A weighting has been assigned to the criteria, adding up to 100% and scores of 1 to 5 allocated against each section. A score of 0 would mean the option does not meet the criterion at all, and a score of 5 would mean that the option fully meets the criterion. The results of this evaluation are listed in the table below:

		Option 2		Option 3	
	Weight	Score	Weighted	Score	Weighted
Quality of Care/Clinical Risk Management	23%	3	69	5	115
Physical Environment	14%	4	56	4	56
Needs of Service Providers	18%	3	54	4	72
Deliverability	28%	4	112	0	0
Relationships	8%	4	32	4	32
Staffing	9%	4	36	4	36
Total			359		311

10.2 Option 3

Option 3, as a new purpose designed build, scores highly against the Quality of Care and Service Needs elements. It also performs well against the other criterion excepting Deliverability. The project group believe that Option 3 does not meet the timeliness and value criteria and given the tight time constraints associated with MTC status it is not the preferred option.

10.3 Option 2

Option 2 scores in the medium to high rank against all criteria. It's strength is that it is an option which could be commenced almost immediately and would yield benefit by mid year 2013.

Reservations regarding the future proofing of Option 2 have been discussed at project group level. It is acknowledged that concerns around expansion to provide a primary care scheme and further expand cubical space could still be addressed in the future with a third phase to the ED scheme encompassing the Fracture Clinic area.

11 Financial Implications

11.1 Capital Costs

The indicative capital costs of the options are summarised in Appendix 6. The figures are stated inclusive of non-recoverable VAT and reflect the total capital expenditure for full business case purposes.

There are no capital costs associated with Option 1: the Do Nothing option.

11.2 Revenue Costs

11.2.1 Workforce

A bid to extend the consultant workforce to meet the criteria for consultant led major trauma team 24/7 is part of the business case for the development of major trauma.

A detailed acuity analysis is being undertaken on the ED nursing workforce profile. This is being developed with Keith Hurst as part of the Shelford Group.

An expansion in nursing workforce is required for three reasons:

- current activity and workload
- expanded clinical space as a result of the capital scheme
- development of major trauma centre.

Early results have confirmed the immediate need to improve staffing levels to cater for current increased workload. The 201l/2012 agency spend (12.0 wte) is to built into an increased establishment through the increase in contract income baseline for 2012/13.

The second increase relates to the enlarged clinical space required as part of the ED capital expansion. 5 wte Band 5 nurses have been included in the revenue consequences of the scheme to reflect the extended footprint necessary to cater for current and future activity.

The third increase relates to the development of major trauma and 5.5 wte Band 5 are part of the business case for the full designation of STH as a Major Trauma Centre.

Further review of the workforce profile may be necessary following the conclusion of the Shelford Group acuity work, better understanding of the impact on the major trauma development, and the potential development of a primary care stream.

11.2.2 Estates

For Option 2 the estimates are currently based on work undertaken for the CSSD/Super Centre business case. It is expected that this value could reduce following validation therefore is a prudent estimation in comparison to option 3 which is based on ERIC returns.

11.2.3 Hotel Services

Hotel services revenue costs include domestic, waste and other charges and is calculated on the additional square metres.

11.2.4 Equipment

Maintenance costs for both medical equipment and additional IT hardware have also been identified and included in the case.

Appendix 7 gives full details of the Revenue consequences of Option 2.

11.2.5 Capital Charges

The income stream is not sufficient to cover the capital charges £304,807 (Full breakdown in Appendix 8) and it is requested that this is met centrally.

11.3 **Economic Analysis**

A financial appraisal of each of the options has been undertaken. All whole life/net present cost calculations of the relevant capital and revenue cash flows have been undertaken at a discount rate of 3.5%.

Full details of the net present cost calculations are provided in Appendix 9 and Appendix 10 with the results summarised below:

	Option1 £000	Option 2 £000	Option 3 £000
Net Present Cost	0	14,624.2	21,067.6

11.4 **Identification of the preferred Option**

Based on the non-financial benefits scores as noted at section 10 above and the net present cost the following cost per benefit point can be established.

	Option 2	Option 3
Benefit Score	359	311
Net present cost (£000)	14,624.2	21,067.6
Cost per Benefit point (£000)	40.74	67.74
Ranking	**1**	**2**

11.5 **Sensitivity of the Economic Analysis**

Given the relative scores of Options 2 and 3, the following scenarios would need to occur before Option 3 proved better value for money than Option 2.

- The net present cost of Option 2 would need to increase by £24.3m or 66.3%
- The benefit score of Option 3 would need to increase by 517 points or 66.3%

Detail of the sensitivity analysis is in Appendix 11.

11.6 **Affordability**

There are five A&E tariffs for A&E activity/ services and Minor Injury Units, based on investigation and treatment (or casemix), the following table illustrates the income growth since 2010/11 and estimates the future income based on projected increase in attendances.

A&E Attendance - Increase in Contract Income		
	Total Income	**A&E TiFF Share**
	£	**£**
2013/14 - Est @ 3% growth	377,336	245,457
2013/14 - Est @ 3% growth	366,346	238,308
2012/13 - Based on YTD actuals	353,232	231,367
2011/12	350,896	229,837
2010/11	394,000	256,297

The funding for all the revenue consequences of the capital scheme (excluding capital charges) is set against 2012/13 and 2013/14 anticipated increases in activity income above the contract baseline. A review of the annual activity increases (Appendix 1) has been undertaken together with the increase in April and May 2012 attendances to establish the estimated minimum 3% growth

12 **Scheme Description**

The preferred option provides the following:

CSSD Area

- Office accommodation for 7 Acute Medicine Consultants and the Acute Medicine Specialist Registrars
- Office accommodation for 14 Emergency Medicine Consultants, with the option to expand.
- Office accommodation for the ED matron and Nurse Consultant
- Office accommodation for the administration and secretarial staff
- A print and photocopying room
- A seminar room for teaching and meetings
- A store room to house bulk stores which will re-equip the smaller storage areas in the main ED.
- A store room for the ATLS resources
- A staff room with dining and beverage facilities
- Male and female staff changing, with lockers and showers
- Toilet facilities, including disabled access.

CDU Area

- A covered walkway which will connect the CSSD facility to the public access corridor running between the Huntsman wing and the Diagnostic reception area.
- An expansion to the CDU trolley space of 5 bays
- A reception point and seated area for ambulant patients
- A second treatment area for ambulant patients
- Clean and dirty utility rooms
- Disabled toilet facilities
- A storage space for equipment
- Office space for Paediatric Liaison, Independent Domestic Violence Advocates and Clinical Educators
- Office space for specialist nurse audit

Main Department

- A Blue team area with 10 cubical spaces, a small nurses base and an equipment store, with links into the resuscitation area
- An 8 bay resuscitation area with a nurse base and storage area
- A link corridor from the end of resuscitation to the Diagnostic department to facilitate rapid transfer of trauma cases to both CT and Critical Care
- A Red team area with 13 cubical spaces and 4 curtained trolley bays. A small nurses station (away from the main access routes).
- A drug preparation room
- Two storage areas for equipment and consumables
- A second triage room
- An area for the PITSTOP assessment away from the access route
- A plaster room to support the minor injuries area
- A document scanning system for the ED cards
- A storage area for linen
- A small administration office away from public view
- An office for the ED sisters
- A beverage and toilet area for out of hours staff and for use by visiting ambulance crews
- A covered walkway and door from the waiting area leading to the fracture clinic.

All areas

- Security doors with swipe card access for designated personnel

13 **Risk Analysis**

In respect of the preferred option, the following risks have been considered :

Risk	Mitigation
Attendances will rise at a level greater than predicted (NB impact of 111 number)	A primary care stream solution is being actively sought by Emergency Medicine to offset presentations that do not meet the "Accident" or "Emergency" criteria. In the long run it may be that a Phase 3 build to house such a facility will be required.
The expansion scheme will have an adverse impact on the	A very careful project plan will be required, which will limit the downtime of key clinical

4 hour access target	areas. Decant arrangements within the ED will also be put in place to ensure provision of as much capacity as possible. Timing is a key element here.
The expansion scheme will have an adverse impact on ED capacity	As above
There will be revenue consequences (especially staffing) associated with the expanded working area	A phased plan of nurse expansion is planned which can take into account changes in anticipated activity

14 Project Management

The team identified to ensure successful delivery of this project is as follows

Capital Budget Holder	Stuart Hindmarch
Project Director	Janette Watkins
Project Lead	Sally Weir
Project Manager (Design & Construction)	Daniel Hattersley
Project Manager Implementation	Richard Kemp/ Sally Weir

Project teams will be formed to concentrate on implementing each of the specific clinical areas. It is anticipated that these will consist of clinical, nursing and administration staff from relevant areas, with potential input from the Service Improvement Team and Patient representatives.

Review will be carried out at the completion of each phase to learn from the process and determine the impact of the work on the 4 hour access target.

An evaluation of the new working areas and working practices will be carried out following the completion of the project to determine whether the capacity is being used as effectively as possible. Patient feedback is monitored on a quarterly basis for the A&E Quality Indicators and this will form part of the evaluation, along with a study on the 4 hour breaches.

A draft timetable for implementation is suggested below.

- July 2012 – ED scheme out to tender
- August 2012 – CSSD refurbishment commences
- December 2012 – CSSD refurbishment complete
- January 2013 – ED scheme commences
- July 2013 ED scheme complete

15 **Conclusion**

This business case is about restructuring services to allow the focus of Emergency clinical activity at the front door, where it is required.

The Capital Investment Team is requested to

- Approve the business case
- Commit a funding allocation of the capital costs and capital charges associated with Option 2
- Authorise the commencement of the CSSD enabling scheme as soon as possible