

Financial & Economic Appraisal Modelling Assumptions

GENERAL

Activity and costs are modelled for the period 2001/2002 to 2009/2010. For the purposes of the economic appraisal (which takes place over a 60 year period), it is assumed that activity and revenue costs remain constant after 2009/2010.

All options use the profile and volume of activity identified in the capacity work undertaken to size the preferred option. The only activity variables between the options are:

- Average length of stay for inpatient FCEs,
- Ratio of new : return outpatient attendance's.

Activity Profile:

Activity Measure	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10
Daycase FCEs	16,849	18,685	20,625	22,425	23,682	25,202	27,646	29,809	32,889
Elective FCEs	11,642	11,964	12,264	12,297	12,093	12,043	12,376	12,514	12,850
Emergency FCEs	33,609	34,336	35,059	35,572	36,314	37,006	37,805	38,448	39,197
Total FCEs	62,100	64,986	67,948	70,294	72,089	74,251	77,827	80,771	84,936
Outpatient New Attendances	65,671	69,516	71,507	75,767	78,654	81,638	84,939	87,941	91,268
A&E Attendances	52,975	54,829	56,748	58,734	60,790	62,918	65,120	67,399	69,700

The level of activity used for OBC revenue modelling in the year 2002/03 is less than the actual figures agreed for that year's SaFF. It has been agreed with Essex Health Authority that the original activity profile should continue to be used, as it is felt that the calculations for 2009/2010 remain robust. As such, the variations in the actual SaFF agreement for 2002/2003 represent timing differences in reaching the agreed end-point.

If the existing, historical level of demand were used the Trust would require 1,014 beds in 2009/10.

In all models it is assumed that emergency activity must be performed in-house. Only day case and elective work offer an opportunity for outsourcing into the private sector. Where work is outsourced it is assumed to be at the average cost per case incurred by the Trust during 2001/2002.

Revenue costing for staffing related to outpatient clinics is based on average consultation times of 15 minutes for a first attendance and 7 minutes for a follow-up.

The further impact of reductions in Junior Doctor hours has not been allowed for in the revenue costing.

The impact of 'Agenda for Change' has not been allowed for in the revenue costing.

The impact of the new Consultant contract has not been allowed for in the revenue costing.

The revenue projections exclude the costs of future inflation and other cost pressures (prices calculated at 2001/2002 levels).

Capital charges are calculated as:

- Straight-line depreciation of capital asset value over the life of the asset,
- Achievement of a 6% Capital Cost Absorption Duty on the capital value of the asset.

The following asset lives have been utilised in the depreciation calculations:

Asset	Life
New buildings	60 years
Refurbished buildings	40 years
Equipment	10 years
IM&T Equipment	5 years

OPTION ONE - DO MINIMUM

The provision of acute hospital services will continue in the same format, and within the existing environment. Current care models continue and average length of stay does not improve.

ACTIVITY

DAY CASE BEDS

The separate, approved capital bid for Day Case Theatres provides an additional 20 spaces. These provide sufficient capacity up to and including 2006/2007.

Beyond 2006/2007, there is no further available theatre capacity meaning that increased theatre activity from 2007/2008 onwards is outsourced (along with the associated beds) into the private sector.

ELECTIVE BEDS

The baseline position provides maximum capacity of 143.50 beds. This capacity would not be forecast to be utilised until beyond 2006/2007, by which time theatre space will have been fully utilised. As such, some excess elective capacity can be transferred to emergency beds from 2006/2007 onward.

Elective length of stay increases as the daycase rate rises and day cases are transferred from electives.

EMERGENCY BEDS

Emergency activity can be contained within the baseline position of 501 beds until the end of 2004/2005.

From 2005/2006 it is necessary to utilise 24 beds in B17 for emergency purposes.

For 2006/2007 additional emergency capacity is achieved by the transfer of surplus elective beds.

New build beds would be required from 2007/2008, at which point the temporary use of B17 would cease. New build would need to be sufficient to achieve the 2009/2010 requirement of c. 582 beds.

From 2008/2009 bed occupancy would be assumed to move to 85% from c. 90%, but there would be no improvement in the average length of stay from that experienced in 2001/2002.

SPECIALIST BEDS

New build sufficient to move capacity from 96 to 116 would be required from 2007/2008 onwards.

GENERAL THEATRES

A shortfall in theatre capacity for 2002/2003 would be met by weekend working, pending the creation of new facilities.

New day case facilities (subject of a separate capital bid) come on stream from 2002/2003. These provide sufficient capacity up to and including 2006/2007.

From 2007/2008, temporary planning permission for endoscopy facilities will expire. In addition, there will be the need to ensure spare maintenance and training capacity (subject to use for additional emergency activity) is created. As such, additional day case and elective activity will be outsourced into the private sector from this point onward.

SPECIALIST THEATRES

Loss of planning permission for temporary endoscopy facilities will require new build to be available from 2007/2008 onward. New build will be required at the forecast capacity of 3 theatre suites.

OUTPATIENT ATTENDANCES

	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10
New Attendances	65,671	69,516	71,507	75,767	78,654	81,638	84,939	87,941	91,268
Follow ups	197,155	210,649	213,645	226,344	235,462	244,921	255,380	265,009	275,667
Total	262,826	280,165	285,152	302,111	314,116	326,559	340,319	352,950	366,935

The ratio of new : follow up attendance's does not improve over the period.

CAPITAL

Continue to operate the baseline 792 beds across Broomfield and St. Johns Hospital.

Build 93 new beds to accommodate growth in emergency activity, plus refurbish 15 beds for Oncology.

Undertake all outstanding backlog maintenance at St. Johns and Broomfield Hospitals.

REVENUE

Revenue costs continue as per the baseline position, adjusted for relevant changes in activity.

OPTION TWO - DO MINIMUM

A two-site service will continue with all inpatient services, including maternity, gynaecology, paediatrics and ENT, centralised on the Broomfield site. Outpatient services currently provided at St Johns would remain there.

There will be no redesign of the emergency service model and the day surgery facilities will remain split on the Broomfield site.

This option will allow some rationalisation and land disposal of St John's Hospital. In addition, all backlog maintenance problems will be addressed at St. John's and Broomfield.

Breast Screening services (together with a mobile facility) and pathology will continue at Chelmsford and Essex.

ACTIVITY

DAY CASE BEDS

The separate, approved capital bid for Day Case Theatres provides an additional 20 spaces. These provide sufficient capacity up to and including 2006/2007.

After 2006/07 there is no further theatre capacity available. All excess activity would be undertaken at weekends for the year 2007/08, prior to the opening of new facilities forecast for the third quarter of that year. Weekend working is assumed feasible as it is resolving a short term problem since new facilities will be shortly available.

The new build will be sufficient to achieve the forecast 2009/2010 capacity requirement of c. 92 beds, which will be at an assumed occupancy level of 85%.

ELECTIVE BEDS

The baseline position provides maximum capacity of 143.50 beds. This capacity would not be forecast to be utilised until new facilities are available from the third quarter of 2007/2008.

Elective length of stay increases as the day case rate rises and day cases are transferred from electives.

From 2008/2009 onward the occupancy rate would be assumed to be 85%, but operating at average lengths of stay that represent the benchmarked top 25th percentile of Trust's performance.

EMERGENCY BEDS

Baseline capacity of c. 502 beds would be sufficient to cope with activity requirements until the end of 2004/2005.

During 2005/2006 the East Wing of Broomfield Hospital would be demolished as part of the centralisation process, removing 89 beds from available capacity. Some of this loss would be mitigated by the temporary opening of 24 beds on ward B17. In addition, temporary decant facilities of c. 91 beds would need to be provided. This would create sufficient capacity for 2005/2006 through to 2007/2008.

During 2007/2008, new facilities would be available (assumed from the third quarter onward), allowing for the closure of B17 and the removal of the decant facilities. New build would need to be sufficient to achieve the 2009/2010 forecast capacity of c. 582 beds.

From 2008/2009 it is assumed occupancy would switch to 85%, but average length of stay would remain at 2001/2002 levels.

SPECIALIST BEDS

New build sufficient to move capacity from 96 to 116 would be required from 2007/2008 onwards.

GENERAL THEATRES

A shortfall in theatre capacity for 2002/2003 would be met by weekend working, pending the creation of new facilities.

New day case facilities (subject of a separate capital bid) come on stream from 2002/2003.

From 2005/2006 the centralisation process will remove 1 day case theatre. This will create a shortfall in theatre capacity, requiring weekend working of approximately 0.30 theatres from 2006/2007.

New facilities will be available from the third quarter of 2007/2008, requiring weekend working equivalent to approximately 0.75 theatres to continue for the first six months of that year. New build will provide sufficient capacity to allow 1 theatre to be utilised either for training or maintenance.

SPECIALIST THEATRES

New build will be required from 2007/2008 onwards, both to replace facilities lost at St. Johns and to meet the forecast increased capacity requirement for endoscopy.

OUTPATIENT ATTENDANCES

	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10
New Attendances	65,671	69,516	71,507	75,767	78,654	81,638	84,939	87,941	91,268
Follow ups	197,155	210,649	213,645	226,344	235,462	244,921	255,380	265,009	275,667
Total	262,826	280,165	285,152	302,111	314,116	326,559	340,319	352,950	366,935

The ratio of new : follow up attendance's does not improve over the period.

CAPITAL

Cease operation of all beds at St. Johns.

Reprovide current Out Patient facilities at St. Johns.

Demolish Broomfield East Wing.

Continue to operate 467 beds at Broomfield.

Build 273 beds to replace those demolished, plus a net 52 beds to accommodate reconfiguration of existing wards.

Build 154 beds to accommodate growth in activity.

Provide 91 beds for decant purposes between 2005/2006 and 2006/2007.

Refurbish 15 Oncology beds.

REVENUE

Decant costs are assumed to be a non recurring lease-based revenue cost, which is factored into the revenue model for the relevant years.

In addition to the costs of medical equipment included within the capital scheme, further revenue cost has been assumed relating to the leasing of further medical equipment.

OPTION THREE – CENTRALISATION WITHOUT PROCESS CHANGE

The centralisation of all services at Broomfield but retaining the existing models of care. Emergency services are not redesigned, the day case provision remains a split facility on Broomfield site and elective processes and models remain as current practice dictates.

All outpatient facilities, breast screening services and pathology move to Broomfield site.

ACTIVITY

DAY CASE BEDS

The separate, approved capital bid for Day Case Theatres provides an additional 20 spaces. These provide sufficient capacity up to and including 2006/2007.

After 2006/07 there is no further theatre capacity available. All excess activity would be undertaken at weekends for the year 2007/08, prior to the opening of new facilities forecast for the third quarter of that year. Weekend working is assumed feasible as it is resolving a short-term problem since new facilities will be shortly available.

The new build will be sufficient to achieve the forecast 2009/2010 capacity requirement of c. 92 beds, which will be at an assumed occupancy level of 85%.

ELECTIVE BEDS

The baseline position provides maximum capacity of 143.50 beds. This capacity would not forecast to be utilised until new facilities are available from the third quarter of 2007/2008.

Elective length of stay increases as the day case rate rises and day cases are transferred from electives.

From 2008/2009 the occupancy rate would be assumed to be 85%, but operating at average lengths of stay that represent the benchmarked top 25th percentile of Trusts performance.

EMERGENCY BEDS

Baseline capacity of c. 502 beds would be sufficient to cope with activity requirements until the end of 2004/2005.

During 2005/2006 the East Wing of Broomfield Hospital would be demolished as part of the centralisation process, removing 89 beds from available capacity. Some of this loss would be mitigated by the temporary opening of 24 beds on ward B17. In addition, temporary decant facilities of c. 91 beds would need to be provided. This would create sufficient capacity for 2005/2006 through to 2007/2008.

During 2007/2008, new facilities would become available (assumed from the third quarter onward), allowing for the closure of B17 and the removal of the decant facilities. New build would need to be sufficient to achieve the 2009/2010 forecast capacity of c. 582 beds.

From 2008/2009 it is assumed occupancy would switch to 85%, but average length of stay would remain at 2001/2002 levels.

SPECIALIST BEDS

New build sufficient to move capacity from 96 to 116 would be required from 2007/2008 onwards.

GENERAL THEATRES

A shortfall in theatre capacity for 2002/2003 would be met by weekend working, pending the creation of new facilities.

New day case facilities (subject of a separate capital bid) come on stream from 2002/2003.

From 2005/2006 the centralisation process will remove 1 day case theatre. This will create a shortfall in theatre capacity, requiring weekend working equivalent to approximately 0.3 theatres from 2006/2007.

New facilities will be available from the third quarter of 2007/2008, requiring weekend working of up to 0.75 theatres to continue for the first six months of that year. New build will provide sufficient capacity to allow 1 theatre to be utilised either for training or maintenance.

SPECIALIST THEATRES

New build will be required from 2007/2008 onwards, both to replace facilities lost at St. Johns and to meet the forecast increased capacity requirement for endoscopy.

OUTPATIENT ATTENDANCES

	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10
New Attendances	65,671	69,516	71,507	75,767	78,654	81,638	84,939	87,941	91,268
Follow ups	197,155	210,649	207,236	212,763	214,270	215,530	217,073	217,307	226,047
Total	262,826	280,165	278,743	288,530	292,924	297,168	302,012	305,248	317,315

The ratio of new : follow up attendance's improves by 18% over the period.

CAPITAL

Cease operation of all beds at St. Johns.

Reprovide all out patient facilities from St. Johns to Broomfield.

Reprovide Pathology services from New Writtle Street to Broomfield.

Reprovide Breast Screening Services from C&E Centre to Broomfield.

Demolish Broomfield East Wing.

Continue to operate 467 beds at Broomfield.

Build 273 beds to replace those demolished, plus a net 52 beds to accommodate reconfiguration of existing wards.

Build 154 beds to accommodate growth in activity.

Provide 91 beds for decant purposes between 2005/2006 and 2006/2007.

Refurbish 15 Oncology beds.

REVENUE

Decant costs are assumed to be a non recurring lease-based revenue cost, which is factored into the revenue model for the relevant years.

In addition to the costs of medical equipment included within the capital scheme, further revenue cost has been assumed relating to the leasing of further medical equipment.

OPTION FOUR – CENTRALISATION WITH PROCESS CHANGE

The centralisation of all services at Broomfield Hospital, with accompanying new models of care and process flows. Modernisation of emergency and elective processes, introducing changes to the estate in line with the new models of care.

ACTIVITY

DAY CASE BEDS

The separate, approved capital bid for Day Case Theatres provides an additional 20 spaces. These provide sufficient capacity up to and including 2006/2007.

After 2006/07 there is no further theatre capacity available. All excess activity would be undertaken at weekends for the year 2007/08, prior to the opening of new facilities forecast for the third quarter of that year. Weekend working is assumed feasible as it is resolving a short term problem since new facilities will be shortly available.

The new build will be sufficient to achieve the forecast 2009/2010 capacity requirement of c. 92 beds, which will be at an assumed occupancy level of 85%.

ELECTIVE BEDS

The baseline position provides maximum capacity of 143.50 beds. This capacity would not forecast to be utilised until new facilities are available from the third quarter of 2007/2008.

Elective length of stay increases as the day case rate rises and day cases are transferred from electives.

From 2008/2009 the occupancy rate would be assumed to be 85%, but operating at revised average lengths of stay.

EMERGENCY BEDS

Baseline capacity of c. 502 beds would be sufficient to cope with activity requirements until the end of 2004/2005.

During 2005/2006 the East Wing of Broomfield Hospital would be demolished as part of the centralisation process, removing 85 beds from available capacity. Some of this loss would be mitigated by the temporary opening of 24 beds on ward B17. In addition, the first of the new build c. 87 beds would become available. This would provide sufficient capacity for both 2005/2006 and 2006/2007.

From 2007/2008, new facilities would be available (assumed from the third quarter onward), allowing for the closure of B17 and the removal of the decant facilities. New build would need to be sufficient to achieve the 2009/2010 forecast capacity of c. 528 beds.

From 2008/2009 it is assumed occupancy would switch to 85% and that average length of stay would move to the levels of the benchmarked top 25th percentile of Trusts.

SPECIALIST BEDS

New build sufficient to move capacity from 96 to 116 would be required from 2007/2008 onwards.

GENERAL THEATRES

A shortfall in theatre capacity for 2002/2003 would be met by weekend working, pending the creation of new facilities.

New day case facilities (subject of a separate capital bid) come on stream from 2002/2003.

From 2005/2006 the centralisation process will remove 1 day case theatre. This will create a shortfall in theatre capacity, requiring weekend working from 2006/2007.

New facilities will be available from the third quarter of 2007/2008, requiring weekend working to continue for the first six months of that year. New build will provide sufficient capacity to allow 1 theatre to be utilised either for training or maintenance.

SPECIALIST THEATRES

New build will be required from 2007/2008 onwards, both to replace facilities lost at St. Johns and to meet the forecast increased capacity requirement for endoscopy.

OUTPATIENT ATTENDANCES

	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10
New Attendances	65,671	69,516	71,507	75,767	78,654	81,638	84,939	87,941	91,268
Follow ups	197,155	210,649	200,827	199,182	193,079	186,140	178,766	169,605	176,427
Total	262,826	280,165	272,334	274,949	271,733	267,778	263,705	257,546	267,695

The ratio of new : follow up attendance's improves by 36% over the period.

CAPITAL

Cease operation of all beds at St. Johns.

Reprovide all out patient facilities from St. Johns to Broomfield.

Reprovide Pathology services from New Writtle Street to Broomfield.

Reprovide Breast Screening Services from C&E Centre to Broomfield.

Demolish Broomfield East Wing.

Continue to operate 467 beds at Broomfield.

Build 273 beds to replace those demolished, plus a net 52 beds to accommodate reconfiguration of existing wards.

Build 100 beds to accommodate growth in activity.

Refurbish 15 Oncology beds.

REVENUE

Decant costs equivalent to a capital spend of c. £6M are included as lease based revenue costs within the financial model.

In addition to the costs of medical equipment included within the capital scheme, a further £300K revenue cost has been assumed relating to the leasing of further medical equipment.