NORTH AYRSHIRE
Health and Social Care Partnership

NATIONAL SECURE ADOLESCENT INPATIENT SERVICE

OUTLINE BUSINESS CASE

JULY 2019

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Glossary of Terms

ADHD- attention deficit hyperactivity disorder

ASD - autistic spectrum disorder

COS – Clinical Output Specification

EUPD- emotionally unstable personality disorder

FBC – Full Business Case

IA – Initial Agreement

LD - learning disability

OBC – Outline Business Case

PD - personality disorder

PTSD- post traumatic stress disorder

PBS - Positive Behavioural Support

SCIM – Scottish Capital Investment Manual

1 Executive Summary

1.1 Introduction

This Outline Business Case (OBC) details outturns of a national planning process that has been underway for a number of years, intended to provide a medium secure adolescent inpatient service based wholly in Scotland as a component of a wider model of care to support young people who are seriously unwell and at risk to others. The aim of the service will be to provide care and treatment within a highly prescribed set of physical, relational and procedural security measures. The predominant need for care and treatment will be related to the young person's assessed risk of harm to others in the context of their mental disorder.

Existing arrangements, including the current lack of appropriate facilities in Scotland, have been a source of concern for some time, meaning that this most challenging and vulnerable group of patients, continue to be referred to secure adolescent mental health facilities in England. This can result in significant additional pressure and stress, including that associated with: uncertainty; unnecessary travel; remoteness from families; disruption to education; and protracted treatment regimes.

Scotland and England also have separate legal systems with different mental health legislation, meaning that special regulations must be followed before any young person can be moved across the border in either direction. It can typically take up to a month from date of referral to a decision being made about suitability for admission to a service in England before the legal process can begin. This process for transfer is therefore often lengthy and can leave the young person, family/carers and the multi-agency team around them in a state of limbo, feeling anxious and uncertain of their destination. The challenging presentation of the young person can also be such that they are deemed inappropriate for the current NHS Scotland CAMHS inpatient settings and instead be required to wait within an adult inpatient setting.

The admissions of a young person to an inappropriate setting can place immense stress on them and their families. These admissions are also expensive in relative terms and problematic for other patients and services. In addition, young people are usually unable to access the age appropriate treatments that they require in such settings. This frequently means an increased risk of disrupted education and learning difficulties that are only exacerbated by the need to adjust to an English education system on transfer, with different curriculum and examinations. Similar problems arise on return to Scotland.

The proposed new inpatient service will address these and many other identified risks and challenges by providing safe and secure care within Scotland through a project that has been commissioned by National Services Scotland. This includes a new 12 bed medium secure facility that will be designed and built under the auspices of Frameworks Scotland 2 at an agreed location on the

Ayrshire Central Hospital Campus, Irvine. This site is immediately adjacent to the recently completed Woodland View adult mental health facility and has an estimated capital at cost of £9.862M.

When determining an appropriate number of residential places for the proposed facility, some specific challenges associated with capacity modelling were identified. These included:

- There is no single existing process for managing patients who will be cared for within the new unit in future.
- There is no single information repository to help us understand the specific care needs of this patient group that is complete and comparable.
- There is no single existing dataset relating to this patient group that would support a traditional capacity modelling methodology based on likely admission numbers over time and length of stay based on an alternative/enhanced model of care.
- There is no published data relating to patients who might benefit from the proposed unit in Scotland but who have not been referred to existing services because these are deemed unsuitable/inappropriate for whatever reason (unmet need).

These challenges have been addressed through significant additional modelling activity supported as part of the OBC process that has included the collection of new data from Scottish services and referrers. This is fully referenced in the relevant sections of this document and appendices. As well as being used to determine appropriate bed numbers, this data has also informed elements of the clinical brief, wider schedule of accommodation and costing model to ensure that the facility constructed is able to deliver the appropriate new Model of Care developed for this patient group that will ensure their optimal future management in Scotland.

Specifically, provision of a Scottish facility will result in the patients identified being cared for nearer to home in a facility that will provide appropriate care, treatment, therapies, security, and age appropriate on-going education.

This OBC further develops the proposed service model and proposals set out in the earlier Initial Agreement that was approved by Scottish Government in June 2018. It also adheres to the structure, guidance and good practice identified in the Scottish Capital Investment Manual (SCIM). As such it: clearly defines the need for the service and associated physical developments; explains the preferred option and related benefits that will be realised by the project; demonstrates best value; and clearly makes the case for the alternative investment required.

The Scottish Capital Investment Manual (SCIM) sets out a five case model for business case development and the following is a brief overview of each of the cases submitted as part of this overall OBC.

1.2 Strategic Case Overview

The proposed national development set out in this OBC is necessary to realise the vision set out in the national "Mental Health Strategy 2017-2027", specifically developing treatment pathways that prevent young people being admitted to non-specialist wards.

Since the publication of the Initial Agreement and in support of confirming the need for the national service, NHS Ayrshire and Arran have undertaken a detailed needs analysis which identified 12 young people in secure care in England and a further 15 who had been considered for referral for adolescent secure inpatient facilities.

In tandem with the needs assessment, a capacity modelling exercise has been undertaken to confirm bed numbers within the proposed facility. More detail and analysis of the need and capacity modelling is contained with the Strategic Case and associated appendices.

The model of care was well articulated within the Initial Agreement and is now supplemented by a Clinical Output Specification (COS) that describes the model of care in detail and also includes descriptions and vignettes that test the workforce model. The OBC describes how NHS Ayrshire & Arran will achieve and deliver enhanced quality of care in support of this new, national service and model.

A detailed workforce model forms part of the strategic case and confirms a revenue impact of £4.812M for the workforce and running of the proposed facility.

1.3 Economic Case Overview

For this OBC NHS Ayrshire & Arran carried out two Option Appraisals that were conducted in line with relevant guidance. The first of these was to determine the optimal configuration and size, the second a preferred location within the Ayrshire Central Hospital (Woodland View) campus. It is important to note that the earlier national process had already identified Ayrshire Central (Woodland View) as the preferred delivery location.

The outcome of the Option Appraisal relating to location within the site, identified the preferred location identified in the picture below. This site was chosen as: it is appropriately sized; able to meet current and potential future needs; accessible; available; and able to deliver the overall required service and site model in conjunction with the existing Woodland View mental health services and facilities.

The second Option Appraisal was to confirm the optimum bed configuration for the service.

It is noted that the formal Option Appraisal element of determining a long list of options has been heavily influenced by work previously carried out by national and local stakeholders in earlier phases of the national evaluation process. This has shortened the options appraisal process by effectively leaving only a very condensed list of options to be appraised.

Following a non-financial benefits appraisal workshop and subsequent financial appraisal, a preferred option to meet service objectives has been identified. This full process is set out in detail within this OBC. The preferred option is for a 12 bedded unit to be situated on the Ayrshire Central Hospital Campus (Woodland View), specifically in the location shown above. Sensitivity testing has been carried out on all elements of the option appraisal conducted to confirm that the identified option does not change significantly under a range of different scenarios, allowing the Board to conclude that the defined location and configuration proposed are appropriate.

1.4 Commercial Case Overview

The procurement method adopted was detailed within the Initial Agreement and identified that Frameworks 2 would be the procurement route followed. This has been reviewed and confirmed for this OBC. This OBC follows the guidance outlined in SCIM and describes the contractual arrangements, programme stages and control mechanisms to be employed.

1.5 Financial Case Overview

The proposed National Secure Adolescent Inpatient Service will be delivered through the Frameworks Scotland 2 procurement route and this OBC has been developed in accordance with those requirements and also the Scottish Capital

Investment Manual.

Capital Costs of the project are as follows:

Building capital cost – incl External works and Value Engineering		£6,506,793
Inflation – Tender Price and Building Cost		£228,403
PSCP Costs – incl Agreed Compensation Events only		£455,000
Lead Advisor fees – incl Agreed Compensation Events only		£143,025
Higher Ground Health + Care Planning (AECOM supply chain)		£35,269
NHS in-house staffing costs		£260,795
Optimism Bias		£637,666
Planning Fees and Building Warrant		£32,000
Furniture & Equipment Costs – VAT incl		£297,085
Sub-Total		**£8,596,036**
VAT (Currently applied to building cost, inflation and PSCP cost)	20%	£1,438,039
VAT Recovery	12%	£172,565
Total		**£9,861,510**

These capital costs will be funded by Scottish Government, with funding being available in 2018/19, 2019/20 and 2020/21. Work to define the exact requirements will be taken forward for the submission of the Full Business Case (FBC).

Total recurring annual revenue costs of £4.812M is to be funded by National Resource Allocation Committee (NRAC) with each NHS Board contributing a percentage of the recurring revenue in line with agreements in the approved IA.

1.6 Management Case Overview

The Management Case sets out the programme and governance structure; programme timelines and milestone dates; the management, commissioning and communication protocols; roles and responsibilities; change management, benefits realisation, and post programme evaluation planning.

It is particularly important to emphasise that, although this project is being hosted by NHS A&A, this is a national development that has been supported and held to account by a range of national bodies and NHS Board representatives since inception. This has included but not been restricted to:

- Scottish Govt.
- National Services Scotland
- The National Stakeholders Group established to support effective oversight and clinical governance
- A wider clinical reference group from across all relevant NHS Boards who have been informed about and influenced developments through structured clinical workshops and events held throughout the planning process

1.7 Executive Summary Conclusion

Providing a National Secure Adolescent Inpatient Service as a component of the Woodland View Mental Health facility at Ayrshire Central Hospital in Irvine will improve the outcomes for young people who are seriously unwell and pose a risk to themselves by offering complex mental health care and support services within an appropriate environment in Scotland. The proposal is a key strand of NHS Scotland's "Mental Health Strategy 2017-2027".

The Preferred Option, to build a new 12 bed medium secure facility, represents the best investment to provide the required services going forward. It is the best value option, as demonstrated throughout this document, and would deliver the benefits identified in this OBC. These new facilities will also provide a 21st century environment that will meet the needs and aspirations of the young people, their families and carers, affected.

Approval of this OBC will ensure that the project can move at pace towards the development of the Full Business Case for this critical facility that has been seen, with good cause, as a priority for NHS Scotland for many years.

2 Strategic Case

2.1 Strategic Case Introduction

There have been no changes in the current arrangements since the Initial Agreement was submitted in that young people are continuing to be referred to secure adolescent mental health facilities within England.

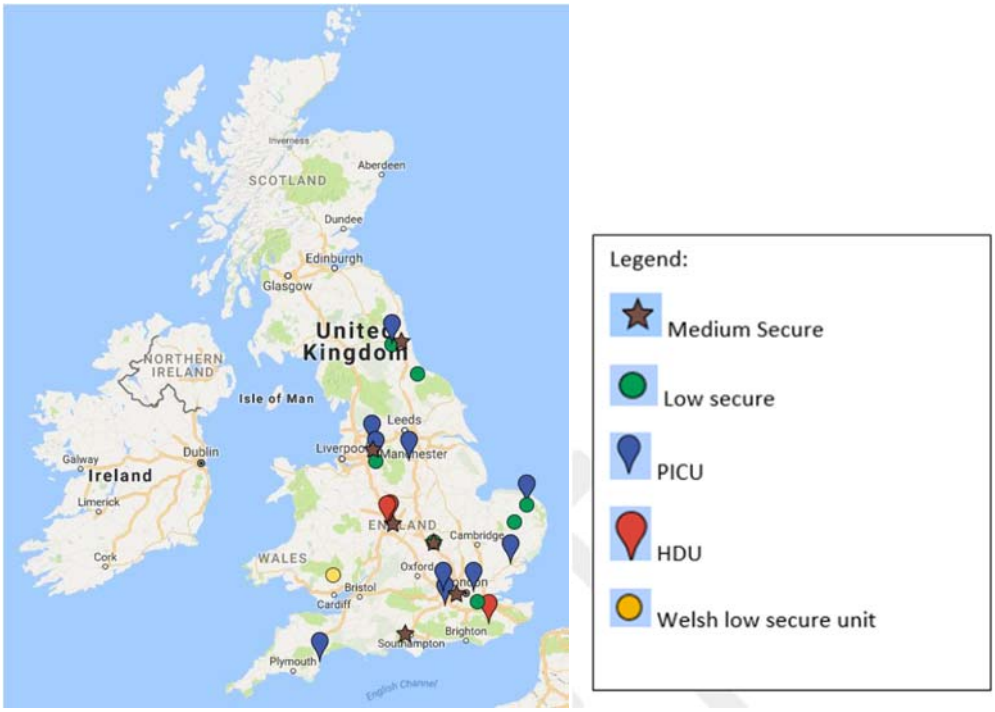
If a young person requires secure inpatient care, NHS Scotland National Services Division will consider supporting cross border referral and "spot purchase" of a bed in one of the English services. Alternatively, any Scottish Health Board may support admission to an English hospital as an "Unplanned Activity" (UNPACS or "Extra contractual Referral").

It should be noted that there are some positive elements associated with existing service provision and the facilities used to deliver this. In no particular order, these include that:

- Existing, effective pathways do currently exist.
- Access to services is supported and enhanced through robust referral processes.
- Where treatment can be/is commenced rapidly, young people with mental illness can and do recover.
- The range of facilities/units/services currently accessible through the NSD arrangements means that young people can be referred to units with highly specialised teams and facilities.
- Care, if fragmented due to the geography involved, is multi-disciplinary.
- CAMHS services receive support from adult services as/when required.
- Joint working between adult, CAMHS and forensic services is generally very good.
- The role of specialist forensic teams in the care of young people is very good.
- Prison healthcare, when required, is very good.
- Families are financially supported to travel and access overnight accommodation to facilitate visits/overall recovery programmes.
- Video-conferencing is available and used effectively.

These positive elements should all be retained, irrespective of how processes change, and must be deliverable by the new facilities provided.

The locations of existing locked inpatient units which admit Scottish adolescent patients is shown on map overleaf. This illustrates the services which are most frequently used to provide treatment for adolescents who present the most serious risk of harm to others.



Spread of NHS & Independent Hospitals (reproduced with permission from Warner et al 2018)

Since the publication of the Initial Agreement - and in support of confirming the need for this service - NHS Ayrshire and Arran have undertaken a needs analysis and capacity modelling exercise to confirm bed numbers within the proposed facility. The results of both these studies are detailed below (sections 2.2 and 2.3).

In June 2018 a national scoping exercise was published (Warner et al 2018) which detailed the nature, function and usage of locked care, custodial and hospital facilities in Great Britain which accommodated English children in 2016. The findings of the report are of particular relevance to the Strategic Case and provide key information to benchmark against the Capacity Modelling and Needs Assessment carried out to inform this Outline Business Case.

In brief, the recent Census highlighted that there is a higher prevalence of mental health and neuro-developmental disorders amongst young people in locked welfare and youth justice settings, than the general adolescent population (Warner et al, 2018). One of the key findings of the census is that, of girls under 18 years old in locked settings, the most common primary diagnosis was emotional dysregulation (33%), depression (18%) and psychosis (16%). In contrast, just under half of all males (47%) had a mental disorder and the most common condition was ADHD (12%).

22% of young people in locked settings who were identified as having a mental disorder had no prior contact with CAMHS before they were detained. In addition, a large percentage of young people with an identified mental health disorder were discharged from CAMHS whilst they were held in a secure children's home or youth justice setting. Vulnerable young people can have

difficulty accessing other services and 50% of young people in the youth justice system had no previous input from social services (Hales et al, 2018).

By definition, the volume of unmet need cannot be readily determined, due to their unique risk of social exclusion; this is especially the case for mental illness in “high risk youth” compared to other health conditions and patient groups

2.2 Needs Assessment

Since the Initial Agreement, an updated assessment of need has been undertaken in order to address significant gaps in historical data and support capacity planning. This has included the following elements:

- Retrospective 5 year survey of potential referrers to proposed service;
- Comparison with recorded cross-border transfers;
- Other NHS Scotland mental health statistics;
- Needs of young people in non-hospital locked settings (secure accommodation & custody);
- Other relevant statistics (demographics, epidemiology and offending rates);
- Interviews with experts by experience.

2.2.1 Retrospective 5 Year Survey of Potential Referrers

A previous needs assessment undertaken in 2006 on behalf of the Scottish Executive (Blower 2010) identified significant unmet need for secure adolescent inpatient services.

This new retrospective 5 year study carried out by NHS Ayrshire and Arran on behalf of NSS identified areas where unmet need can be described and quantified. A key finding is that the proposed facility will attract attention from previously “silent” referrers and “hidden” young people.

Specifically, Scottish consultants in child and adolescent or forensic psychiatry who responded to a questionnaire survey, identified 24 potentially relevant patients over the previous two years. Of the 24 patients, 5 were referred to secure inpatient services with the further 19 considered for referral. These referral’s were not pursued for a number of reasons relating to specific circumstances, such as the young person being cared for within adult inpatient services or being under an assessment order through criminal procedure legislation.

2.2.2 Method

A questionnaire was designed to collect data from 2013-2018, relating to adolescents in Scotland, who required to be transferred to a secure hospital outside of Scotland. In addition, data was collected on adolescents whom clinicians felt would have benefited from a secure adolescent hospital in Scotland.

All of the potential referrers were contacted by email. To capture all CAMHS

consultants, the questionnaire was forwarded to all members of the Royal College of Psychiatrists In Scotland Faculty of Child & Adolescent Psychiatry. A small number of forensic psychiatrists involved in prisons or secure adult hospitals were also contacted directly. The Consultant Psychiatrists were asked to complete the study questionnaire or given the option of a telephone interview to collect the information.

2.2.3 Results

The psychiatrists involved within the interviews were able to identify 12 young people who had been transferred to a secure inpatient setting out with Scotland between 2013 and 2018.

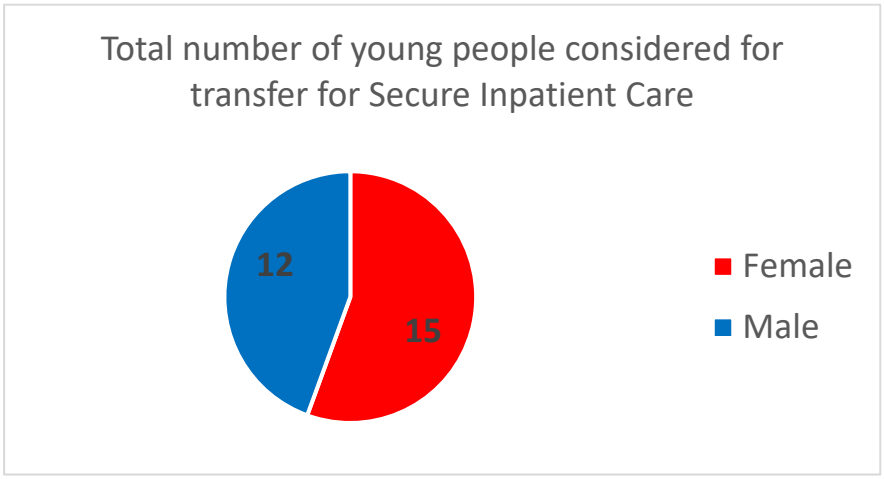
In addition to the young people who had transferred to secure inpatient facilities out with Scotland, the clinicians also identified 15 young people who had been considered for referral to adolescent secure inpatient facilities. Of the 15 young people identified:

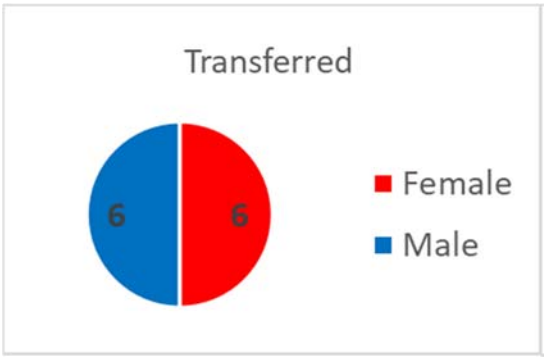
- 1 young person was referred to a secure hospital in England and accepted but did not transfer due to the time delay.
- 2 young people had been referred but had not been accepted.
- 1 young person was being referred whilst the study was undertaken.
- 2 young people had returned from secure care in England who would have benefited from on-going secure care in Scotland.

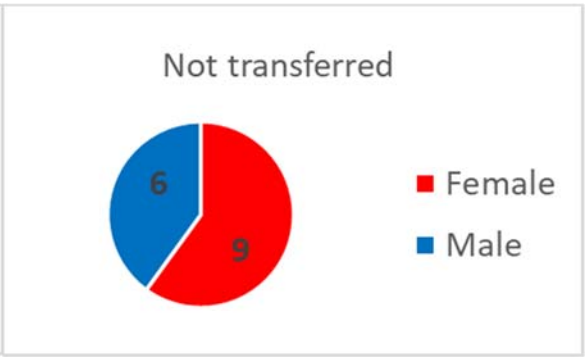
The remaining 9 young people were cared for in services within Scotland such as adult mental health inpatient facilities (mainly Intensive Psychiatric Care Unit's) or through social work placements.

As part of the study, NHS Ayrshire & Arran requested demographic data on all of the young people as well as diagnosis and information relating to risk profile and specific care needs.

The identified young people had an average age of 15.65y (range 13 – 17y) with no difference between females (mean 15.67y) and males (15.64y).

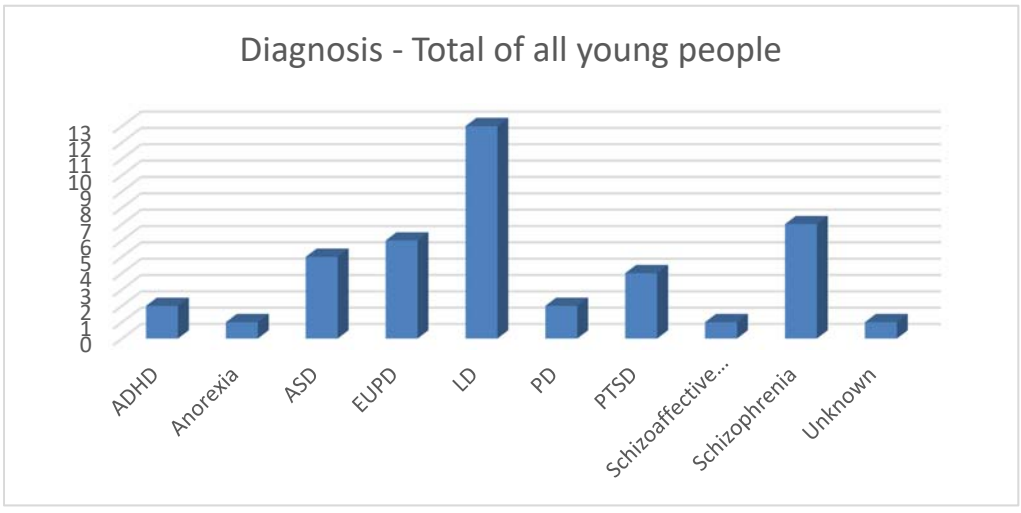


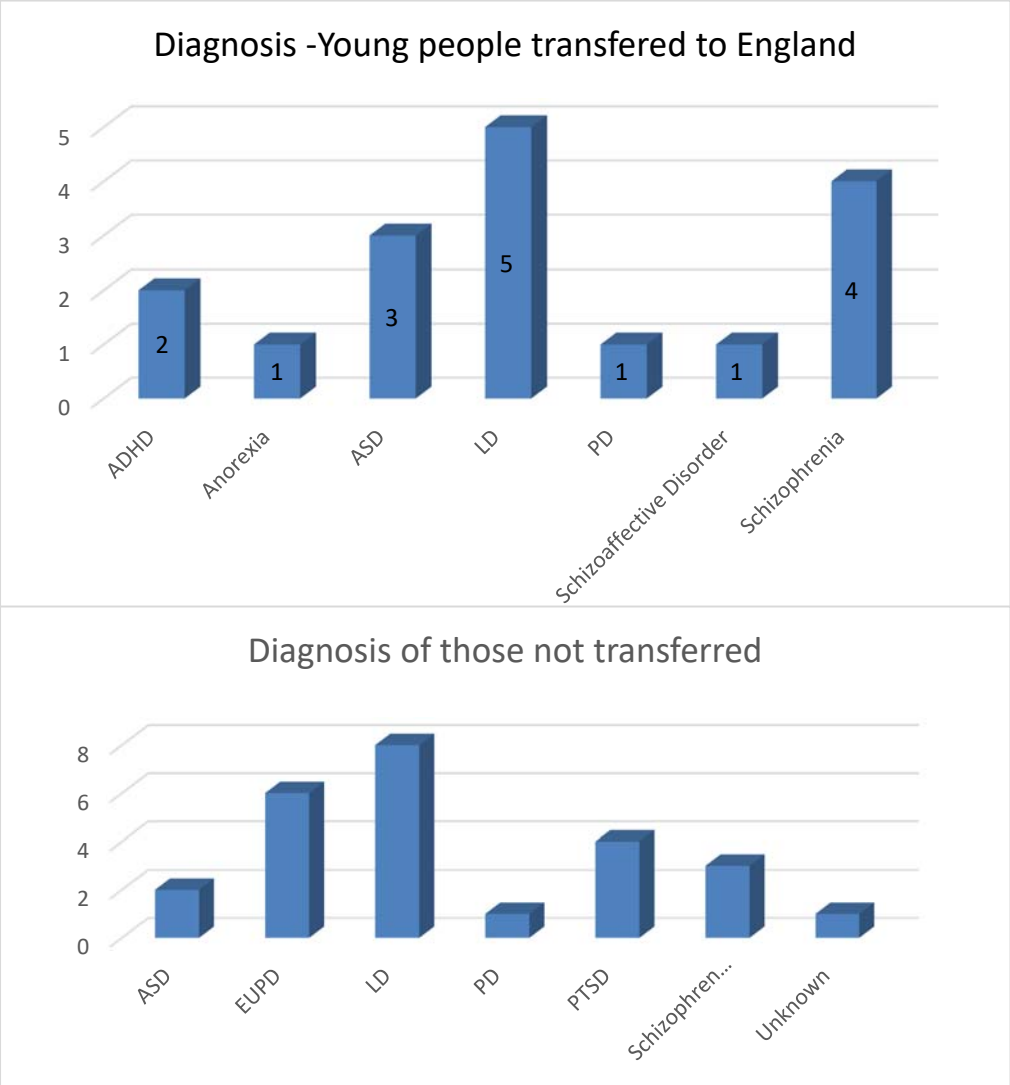




There were equal numbers of males and females transferred to secure adolescent inpatient services out with Scotland. Of the 15 young people who were considered, 9 were female compared to 6 males.

The three tables below depict the diagnostic profile of the young people transferred or considered for referral to secure adolescent inpatient settings. A number of young people had co-morbid diagnosis with nearly half of the young people also having received a diagnosis of a learning disability alongside their mental health diagnosis.





The study completed by NHS Ayrshire and Arran was cross referenced with the information held by the Scottish Government Restricted Patient Team - who provided data on the number of young people under the age of 18 years for whom a Cross Border Transfer Warrant was issued between 2013 – 2018 - and the Mental Welfare Commission for Scotland who provided information on the number of young people under the age of 18 years who were transferred to English secure adolescent inpatient hospitals for each financial year between 2013 – 2018. This included summaries of the young person's diagnosis and the hospital that they were transferred to.

In the past five years, 14 Cross Border Transfer requests were made to the Scottish Government Restricted Patient Team for young people under the age of 18 years, to be transferred to secure adolescent inpatient services. Only one young person was subject to detention under the Criminal Procedure Act, which was converted to an order under the Mental Health (Care and Treatment Act (Scotland) 2003.

By cross-referencing different sources of information, our retrospective survey questionnaire captured data on 12 of the 14 young people who had been issued with a cross border transfer warrant.

2.2.4 Needs Assessment Summary

The results from the retrospective questionnaire along with information gathered from the MWC and Scottish Government show a small but significant number of young people were transferred out with Scotland in order to access appropriate secure CAMHS inpatient care. In addition, the questionnaire highlighted that potentially a number of young people are still being cared for within an inappropriate setting or indeed not having their needs met.

The study also demonstrates a wide range of diagnosis and co-morbid illnesses for young people who need secure CAMHS inpatient care.

These young people are more likely to experience a psychotic illness and over half have intellectual disability and/or autism. The proposed service must therefore meet the educational, social and clinical needs of young people with a wide range of ability or developmental impairment.

The findings of the study, supported by relevant data from other sources, was the primary basis for the bed/capacity modelling exercise and workforce planning which is detailed in the following sections.

2.2.5 Capacity Modelling

Previous reports from Short Life Working Groups submitted to the Forensic Network Board (2010) and National Services Division (2014) proposed an 8-12 bedded medium secure unit for adolescents (aged 12 – 18). In these proposals, the young person would transition to adult services on their 18th birthday. These services were intended for patients who were detained under civil or criminal mental health legislation, where treatment in a secure in-patient setting is necessary because the patient presents serious risk of harm to others, and/or is in custody on remand/sentenced.

A key objective of the updated capacity modelling exercise was to collect new, up to date data on actual capacity required through the use of outputs from the needs assessment exercise described earlier.

The specific challenges associated with capacity modelling for this unit included:

- No single existing process for managing patients who will be cared for within the new unit in future.
- No single information repository to help us understand the specific care needs of this patient group that is complete and comparable.
- No single existing dataset relating to this patient group that would support a traditional capacity modelling methodology based on likely admission numbers over time and length of stay based on an alternative/enhanced model of care.
- No published data relating to patients who might benefit from the proposed unit in Scotland but who have not been referred to existing services because

these are deemed unsuitable/inappropriate for whatever reason (unmet need).

The planning team were also aware that the capacity planning process is further challenged by a range of issues that require on-going consideration throughout business case development. Whilst these can be seen as serious challenges to the process, some also present opportunities that it is important to explore further and capitalise on as appropriate. These include but are not limited to:

- Low patient/bed/activity numbers overall
- The high variability of care needs (Bed vs staffing capacity requirements)
- Assumptions regarding future change and growth
- Future flexibility
- Surplus Capacity vs Quality of Care
- Capital and revenue affordability

2.2.6 Low patient/bed/activity numbers

Specialist low volume, high intensity units of this kind, face inevitable difficulties meeting wide fluctuations in demand. This can lead to impediment to access when demand vs capacity is high and sub-optimal utilisation when demand vs capacity is low. In the developing service model the team mitigated against these risks by:

- using the best data available to calculate bed and staffing capacity – including the collection of additional data when required, as noted previously;
- aiming for an optimum target facility occupancy of 85%;
- exploring the opportunity to use available capacity below this optimum level for short-term interventions and defined duration interventional programmes as appropriate;
- fully realising the benefits of delivering a co-ordinated national service, with better global intelligence that is consequently better able to manage the wider referral process/network to manage peaks and troughs in activity as far as possible;
- managing pre-admission processes and lengths of stay as far as possible by planning for defined intervention periods and ensuring that effective discharge planning in place before admission.

2.2.7 The high variability of care needs (Bed vs. staffing capacity requirements)

Staff modelling activity has identified that the nurse: patient ratio within the unit is likely to vary hugely from patient to patient (range 1:1 to 5:1) which will present a very specific management challenge. This variance will also affect the physical space required to support individual patients on a day-to-day basis and challenge the traditional measure of bedrooms as the primary measure of physical capacity.

This challenge is exacerbated in this small size of the unit and means that the

clinical output specification must insist on a highly flexible design layout, able to respond to fluctuating demand within all, gender, care, risk and vulnerability groups within a defined physical area.

Staffing levels within the unit will also be flexible enough to meet the changing operational demands of the service – tailored to meet the final unit design - whether it is operating at full capacity or less.

Current modelling indicates that minimum levels of staff for 24/7 cover are unlikely to vary significantly regardless of occupancy/assessed clinical need but that upper staffing levels may vary significantly, with a consequential impact on the number of "beds" it is possible to staff. This is likely to mean occasional mis-matches between staffed and physical capacity available that will need to be managed but also presents the opportunity to re-align bedroom spaces into day areas/extra care areas for patients with the greatest need if the unit design is sufficiently flexible to realise this. i.e. Support less patients, requiring more staff input in a smaller number of domestic spaces (bedrooms) but with a higher number of related rooms.

It is thus possible to conclude that "bed numbers" in the traditional sense is far less useful as a measure of required/available capacity than "staffed" and "physical capacity" as a percentage of current patient needs.

2.2.8 Assumptions regarding future change and growth

A key element of the capacity planning process is to determine the capacity required now and in the future based on evidence-based assumptions relating to the impact of demography and planned changes in the way services are delivered. This requires a shared understanding of all of the things that will/may change (the planning team have termed 'future impact factors") and a sense of the likely impact they will have.

Based on the highly successful work previously undertaken in support of capacity modelling at Woodlands View, which accurately predicted radically different bed requirements from the historical proposition based on improved models of care, future impact factors have been identified within 4 categories:

- Demographic Change Elements
- Corporate Performance Elements
- Clinical Performance Elements

2.2.9 Future Flexibility

In reflection of the wide range of risks regarding capacity modelling identified, throughout all of the planning, modelling and early design work undertaken thus far, a key priority identified has always been the need for future flexibility – whether this is on a day to day basis or over a longer period of time.

Specifically, the project team acknowledge that, despite the detailed capacity and service modelling undertaken, it is simply not possible to guarantee the

capacity required at all times. Future facility flexibility is therefore seen as a key design challenge that is emphasised in the clinical and technical briefs developed for the project.

In addition, the developing brief includes an expansion strategy that recognises operational, service-specific and building options for short-term (operational/service-related) to long-term (strategic/buildings related) development/growth in order to further mitigate this risk.

2.2.10 Surplus Capacity vs. Quality of Care

The previous 2014 report identified that projected activity levels "appear to be broadly in line with the 8-12 beds noted in the 2009/10 report" but also warned that "with such small numbers it is challenging to be completely certain of the long term annual trends". It noted that:

"Ultimately the judgement to be considered is the risk of some surplus capacity, balanced against the quality of care issues associated with delayed access to placements".

In reflection of this consideration – which remains valid – the planning team have continued to consider the consequences of delivering alternative capacity models based on the detailed planning now undertaken.

2.2.11 The Capacity Modelling Process

The capacity modelling process as laid out in the project Initial Agreement (IA), therefore sought to:

- Collect/collate information from multiple referral sources in order to establish a historical baseline of referral numbers and patterns (the "demand" side, which was supported by the commissioned needs assessment study described previously).
- Test information from multiple existing units in order to establish a baseline relating to historic interventions (the "supply" side, which was supported by literature search, visits to other units, informal interviews and formal bench-marking).
- Consider "variables" that could change to have a consequential impact on capacity required and present these as a series of credible alternative futures with alternative capacity requirements.
- Identify/agree a preferred future scenario for capacity planning purposes that is best able to meet the challenges of these alternative futures.

The baseline scenarios subsequently developed included an agreed range of evidence-based estimates for the three key variables identified, that will have the most significant impact on the capacity required (patient numbers, length of stay and occupancy). Overall, they:

- Varied patient numbers likely to present who would benefit from admission to the unit from 23 – 31 patients over 5 years. This was based on a known

historic number of 27 patients from the needs assessment study undertaken +/- 15% based on an assessed range of factors that could change.

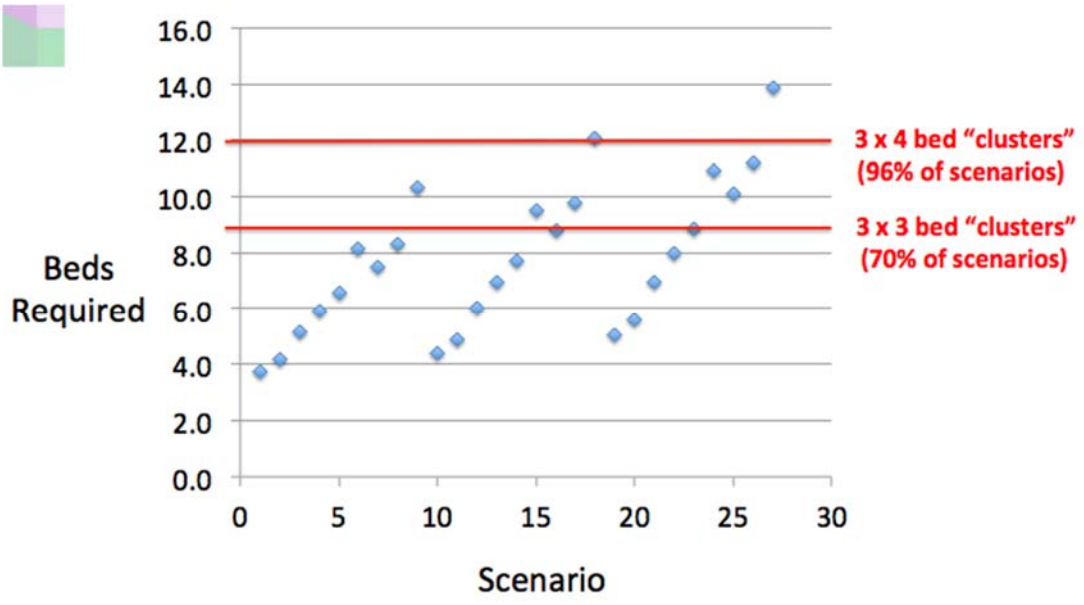
- Varied average length of stay from 9 to 18 months. This was based on published English data for an equivalent population that cited an average length of stay of 14.2 months (range 9 – 24 months) and further consideration of other factors likely to have a positive effect on duration of stay for a local unit within Scotland.

The Clinical Specification/Design being developed simultaneously with capacity modelling, determined that the optimal configuration of beds is 3 x equal bedroom "clusters". Each "cluster" will be a zone within the ward which can be separated off when required (using "swing beds"). This allowed the team to factor in the impact of economies of scale associated with capacity change based on actual alternative versions of the project's Schedule of Accommodation. Most notably the impact of varying "bed cluster" size between 3 and 4 beds (9 and 12 beds in total).

Overall, it was possible to demonstrate that increasing bed numbers by 33%, from 9 to 12 beds, can be realised based on an increase in built area of only 7%.

Furthermore, as highlighted in the table overleaf, this minimal increase in area represents the difference between a 9 bed model that is able to cope with 19 out of the 27 future bed scenarios modelled and a 12 bed model that is able to cope with 26 of the alternative future bed scenarios modelled – an increase of 37%.

It is also possible to identify that there is a more significant risk, if the facility were to offer 9 beds as opposed to 12 beds, of young people still needing to be cared for in facilities out with Scotland.



Beds Required By Scenario: Impact of Alternative Cluster Sizes

These results were discussed and debated extensively with the Project's clinical reference group who supported the rational, process and outputs generated.

2.2.12 Benchmarking

The table below summarises the outturns of bench-marking the 12 bed Scottish facility now proposed with services in England. As can be seen, the unit will mean Scotland having more medium secure beds/100,000 school age children than England, however this is offset by the absence of low secure beds. In addition, it is possible to conclude that 100% of the Scottish secure bedded estate (the new unit) will be in NHS owned and run facilities compared to just 32% in England.

Bench-marking with England:

Type of Locked IP Adolescent Unit	Units in Scotland (NHS)	Beds in Scotland (NHS)	Units in England* (NHS)	Beds in England (NHS)	Beds in Scotland/ 100,000 school age children	Beds in England/ 100,000 school age children
Medium Secure	*1*	*12 (12)*	*7*	*90 (70)*		
Low Secure	*0*	*0*	*8*	*138 (18)*		
TOTAL Secure	*1*	*12 (12)*	*15*	*228 (88)*		
PICU	*0*	*0*	*10*	*147 (18)*	*0*	*1.56*
HDU	*0*	*0*	*3*	*27 (8)*	*0*	*0.29*

*Source: [1]Warner, L., Hales, H., Smith, JG & Bartlett, A (October 2018) *Secure settings for young people: a national scoping exercise* St George's, University of London & Central and North West London NHS Foundation Trust

2.2.13 Needs Assessment Conclusion

In conclusion:

- There is a strong evidence base underpinning the need for a medium secure facility for young people in Scotland.
- This proposed facility presents a unique capacity planning challenge.
- Facility design must be sufficiently flexible to meet constantly changing needs.
- 3 x 4 equally sized bedroom "clusters" is seen as the optimal facility configuration with 12 beds overall.
- A range of operational and physical measures have been/are being developed to ensure that best use is made of the physical environment and staff associated with the service at all times, in recognition of the fact that a high degree of variation in demand should be expected.

- Beds are an important (but not the only), measure of “capacity” for this unit as the staff available on a daily basis is likely to have the biggest single impact on “space available” rather than physical bed numbers.

2.3 Workforce

2.3.1 Workforce Planning Strategy

In the Initial Agreement NHS Ayrshire & Arran outlined the staffing model and the revenue cost (£4.087M) attributable to operation of the facility. Within this OBC further detail will be provided regarding staffing and operational running of the facility.

2.3.2 Service Delivery

To provide safe, effective and person-centred care, the workforce will match workload demands. Recognition will be given to the unique patient population and presentation as defined in the Model of Care.

Since publication of the Initial Agreement there has been no significant improvement within the availability/training of healthcare staff within Child and Adolescent Mental Health Services (CAMHS) across Scotland and this is even more pronounced within Forensic CAMHS. With an ageing workforce, the development of CAMHS is based on the ability to recruit and retain a dedicated cohort of suitably trained staff.

Within the facility there will be a number of specialist roles from several professional backgrounds (psychiatry, nursing, allied health professionals, education, social work and pharmacy) all of whom will be trained to undertake highly skilled roles/tasks.

2.3.3 Workforce Model

In this section of the Strategic Case, the information provided builds upon what was detailed in the Initial Agreement, specifically:

- Confirming the workforce model;
- Updating the revenue cost of the workforce;
- Recruitment & retention;
- Training programmes.

As previously stated within this section, recruitment of suitably trained and dedicated staff will be a challenge and addressing this challenge will be a priority as the project develops to ensure that sufficient specialist trained staff will be available to take forward the proposed new Model of Care and required improved outcomes identified that will deliver this service to the young people of Scotland. The proposed location on the Ayrshire Central Hospital site, co-located with other Mental Health inpatient services (Woodland View) provides an opportunity for close working, training and development and crisis support.

2.3.4 Confirming the Workforce Model

The staffing numbers have been stress tested by using different scenarios – in line with wider capacity modelling - to ensure that there is sufficient staff on each shift. These scenarios are included within the Clinical Output Specification at Appendix MC8.

One of the outcomes of the "stress testing" is that a three-shift system demonstrated the most safe, efficient and effective method of care delivery. In addition the HSE points out that for the first eight or nine hours in a shift, the accident risk is constant, but after 12 hours, the risk approximately doubles and after 16 hours, it trebles (HSE, 2012).

Since publication of the Initial Agreement, the Project Team have undertaken a number of visits to comparable services in the UK, including:

- Alnwood;
- St Andrews;
- Ferndene:
- Ardenleigh;
- Westwood Centre
- Rowanbank
- Good Shepherd
- Kibble
- St Mary's

The visits focused on design, lessons learned and workforce. Following the visits, a number of focused workshops were held to inform the workforce model. The outcomes and changes are detailed below.

2.3.5 Security Staff Team

The need for security staff within the National Secure Inpatient Service has been reviewed through four focussed workshops. The workshops discussed:

- Reception Management;
- Perimeter Alarms;
- Key control & issue;
- Staff Attack Alarm;
- Door Alarm;
- CCTV; and
- Discreet entry & vehicle entry.

The workshops discussed the actions required for each of the tasks listed above and categorised each under monitor and response. It quickly became apparent that all of the above tasks can be contained within the existing clinical or administrative staff compliment.

It was also agreed that the security checks of the perimeter, equipment, etc,

would be subsumed into a daily nursing role with a designated member of staff having responsibility for this role during each shift. As security staff would not be clinically trained, they could not offer support to any ongoing incidents involving patients within the facility. They would also not be privy to clinical information upon which to base security decisions. As CCTV will only be used as a way of reviewing significant events (not as a live feed), there would not be a requirement for constant monitoring of CCTV.

Given this information the decision was made to remove the security team from the funding request.

2.3.6 Healthcare Assistant Band 3

Following visits to comparable sites in England and discussions with the Forensic Network and colleagues within secure services, the Project Team were advised that it would be appropriate to recruit Health Care Assistants at the higher (Band 3) level as there would be different expectations on the individuals within this role.

2.3.7 Consultant Psychologist Band 8c

The Psychologist post has been increased from Band 8b to a Consultant Clinical Psychologist (Band 8c) as the post holder will be expected to hold a leadership role in specialist risk assessment and psychological intervention. Therefore, an experienced clinician, who has held previous responsibility for service development, is essential. Benchmarking of posts with other secure services indicates that a Consultant grade would be appropriate, given the degree of responsibility and expectations for this role. It is also essential that we are able to retain this staff member in the long-term, something that a Consultant grade post will allow us to do.

2.3.8 Nurse Consultant Band 8b

The Clinical Nurse Manager post has been converted to a Nurse Consultant. Though the operational management of the service will remain under the remit of this post it was felt that it was important to acknowledge that the remit of the post was wider than that of a CNM.

The Nurse Consultant will strengthen leadership in nursing, enhance the quality of health care services and improve patient outcomes. The post will have a wide-ranging remit which includes expert practice, professional leadership and consultancy, education and service development.

2.3.9 Revenue Costs

The changes to the workforce model include the previous increases in pay and National Insurance contributions. The table overleaf provides the updated revenue expenditure model.

Revenue Expenditure Model 12 beds no outreach

		Original		Revised		Modifications to Staffing			Updated for 3% pay award			Updated for Top of	
Forensic CAMHS Inpatient Service													
REVENUE EXPENDITURE MODEL													
12 Beds - No Outreach													
		Costed at top of scale		Costed at 2nd top of scale		Costed at 2nd top of scale			and 6% NIC increase			19/20 Pay Scale	
		Forensic CAMHS		Forensic CAMHS		Forensic CAMHS			Forensic CAMHS			Forensic CAMHS	
		12	beds	12	beds	12	beds		12	beds		12	beds
		wte	cost	wte	cost	wte	cost		wte	cost		wte	cost
			£		£		£			£			£
			18/19		18/19		18/19			18/19			18/19
Inflation													
Medical													
Consultant		2.20	303,600	2.20	303,600	2.20	303,600		2.20	330,924		2.20	319,772
Paediatrician		0.10	13,800	0.10	13,800	0.10	13,800		0.10	15,042		0.10	14,535
Staff Grade		0.50	47,370	0.50	47,370	0.50	47,370		0.50	51,633		0.50	51,633
Higher Trainee (20% supplement)		2.00	77,930	2.00	77,930	2.00	77,930		2.00	84,944		2.00	48,230
Sub Total Medical Salaries		**4.80**	**442,700**	**4.80**	**442,700**	**4.80**	**442,700**		**4.80**	**482,543**		**4.80**	**434,170**
Nursing													
Band 8B Nurse Consultant		1.00	76,782	1.00	74,704	1.00	74,704		1.00	81,427		1.00	82,700
Band 7		1.00	54,785	1.00	52,966	1.00	52,966		1.00	57,733		1.00	59,032
Band 6	7 days a week 9-5	6.00	319,398	6.00	303,972	6.00	303,972		6.00	331,329		6.00	344,178
Band 5	50% days 50% evenings	33.40	1,562,235	33.40	1,500,311	33.40	1,500,311		33.40	1,635,339		33.40	1,683,794
Band 3	2/3 days 1/3 nights	12.00	401,600	12.00	393,076	12.00	393,076		12.00	428,453		24.50	884,368
Band 2	2/3 days 1/3 nights	12.50	395,683	12.50	382,479	12.50	382,479		12.50	416,902		0.00	0
Flexible Additional Hours		4.00	115,074	4.00	111,141	4.00	111,141	27,785	4.00	121,144		4.00	126,052
Sub Total Nursing Salaries		**69.90**	**2,925,557**	**69.90**	**2,818,650**	**69.90**	**2,818,650**		**69.90**	**3,072,328**		**69.90**	**3,180,125**
AHP													
Psychology - Band 8C		1.00	92,370	1.00	89,773	1.00	89,773		1.00	97,853		1.00	99,472
Psychology - Band 5		1.00	37,325	1.00	35,836	1.00	35,836		1.00	39,061		0.50	20,124
Occ. Therapy - Band 7		1.00	54,785	1.00	52,966	1.00	52,966		1.00	57,733		1.00	59,032
Occ. Therapy - Band 6		1.00	46,469	1.00	44,218	1.00	44,218		1.00	48,198		1.00	50,085
Occ. Therapy - Band 4		1.60	46,731	1.60	45,734	1.60	45,734		1.60	49,850		1.60	50,421
Speech & Language Therapist B 7		1.00	54,785	1.00	52,966	1.00	52,966		1.00	57,733		0.50	29,516
Dietetics - Band 6		0.40	18,588	0.40	17,687	0.40	17,687		0.40	19,279		0.40	20,034
Physiotherapist - Band 7		0.10	5,479	0.10	5,297	0.10	5,297		0.10	5,773		0.10	5,903
Social Worker/MHO		1.00	50,000	1.00	50,000	1.00	50,000		1.00	50,000		1.00	49,555
Sub Total AHP Salaries		**8.10**	**406,531**	**8.10**	**394,477**	**8.10**	**394,477**		**8.10**	**425,480**		**7.10**	**384,142**
Other													
Pharmacy 0.2 B8A + 0.5B5		0.70	31,421	0.70	30,295	0.70	30,295		0.70	33,022	Should this	0.70	33,868
Advocacy		1.00	30,000	1.00	30,000	1.00	30,000		1.00	32,700		0.50	30,000
Facilities	**Domestic**			3.00		3.00			3.00	0		2.00	57,489
	Portering			0.40		0.40			0.40	0		0.67	20,364
	Estates			0.40		0.40			0.40	0		0.50	22,000
	Facilities	3.80	112,088			3.80	106,612		3.80	116,207			
Sub Total Other Salaries		**5.50**	**173,509**	**5.50**	**60,295**	**9.30**	**166,907**		**9.30**	**181,929**		**4.37**	**163,721**
Admin													
Band 5												1.00	40,247
Band 4		1.50	43,811	1.50	42,876	1.50	42,876		1.50	46,735		1.00	31,513
Band 3		2.00	52,628	2.00	51,500	2.00	51,500		2.00	56,135		1.50	42,600
Band 2		1.00	23,895	1.00	23,088	1.00	23,088		1.00	25,166		1.00	25,798
Sub Total Admin Salaries		**4.50**	**120,334**	**4.50**	**117,464**	**4.50**	**117,464**		**4.50**	**128,036**		**4.50**	**140,158**
TOTAL SALARY COSTS		**92.80**	**4,068,631**	**92.80**	**3,833,586**	**96.60**	**3,940,199**		**96.60**	**4,290,316**		**90.67**	**4,302,316**
Non-Salary Costs													
Pharmacy			24,000		24,000		24,000			24,000			24,720
Catering			20,000		20,000		20,000			20,000			20,600
Domestic			3,000		3,000		3,000			3,000			3,090
Accommodation			219,489										n/a
	Rates				50,000		50,000			50,000			51,250
	Cap Charges				127,939		127,939			127,939			233,730
	Energy				31,500		31,500			31,500			65,560
	Portering				10,050		10,050			10,050			10,352
	Estates		10,000		10,000		10,000			10,000			10,300
Training			40,000		40,000		40,000			40,000			41,200
Travel			10,000		10,000		10,000			10,000			10,300
Transport			15,000		15,000		15,000			15,000			15,450
Educational Resources			10,000		10,000		10,000			10,000			10,300
Other-Laundry/Waste/Telecoms			13,000		13,000		13,000			13,000			13,390
NON-SALARY COSTS			**364,489**		**364,489**		**364,489**			**364,489**			**510,242**
TOTAL COST			**4,433,120**		**4,198,075**		**4,304,688**			**4,654,805**			**4,812,557**
						Target	**4092011**		Target	**4092011**		Target	**4092011**
					235,045								
							212,677			562,794			720,546

2.3.10 Early Recruitment of Key Staff

There is recognition across Scotland that recruiting appropriately trained and dedicated CAMHS staff will be problematic for the reasons highlighted in the previous section. It is therefore essential that early recruitment of key clinical staff to support the transition from design and build to operation is fundamental to the success and commissioning of the facility.

To facilitate the transition, key members of the Clinical Team will be recruited at the earliest possible stage. It is anticipated that the recruitment process overall will take approximately 5 months. Key appointments of the Senior Clinical Team will be in place 9 months prior to the facility being operational. The posts required and their associated funding is detailed below at 2.3.11

2.3.11 Cost of Early Recruitment

	3 months 2020/21 (£'s)	6 Months 2020/21(£'s)	Total (£'s)
Consultant Psychiatrist	36,338	72,675	109,013
Nurse Consultant Band 8B	20,675	41,350	62,025
Senior Charge Nurse	14,758	29,516	44,274
Administrator Band 5	10,062	20,124	30,186
Total	71,833	163,665	245,498

In addition, the Clinical Team will set the tone and therapeutic milieu for the service and staff. The team will require senior administrative support to undertake continuing project management and clinical secretarial tasks.

2.3.12 Benefits of Early Recruitment

The benefits of early recruitment include:

- Improved recruitment of the wider multidisciplinary clinical team;
- Market testing of the overall recruitment strategy;
- Improved induction and training of all staff working in the service;
- Ensuring key Standard Operating Procedures are prepared and adhered to;
- Working with the Capital Planning Team to ensure design meets the clinical specification and model of care;
- Working with the Senior Clinical Team within Woodland View to "test" on site facilities and systems;
- Linking with NHS England and independent sector to identify existing inpatients who would benefit from transfer to the NSAIS;
- Reviewing the clinical condition, associated risks and legal status of these patients to devise prospective care plans;

- National networking across key referrers (notably NHS Scotland specialist mental health services, CAMHS, whole system approach services, secure accommodation, young offenders institution and criminal justice) to identify potential new referrals to the NSAIS;
- Providing progress reports to commissioners and referrers as required.

In order to facilitate early recruitment, job descriptions are being developed with NHS Ayrshire & Arran's Human Resources, Health and Safety and staff side representatives.

2.3.13 Recruitment & Retention

As previously stated, early recruitment of key clinical staff is paramount to the successful commissioning and early operation of the facility.

Due to the unique nature of the service it would be appropriate to complete an early recruitment drive; with it being anticipated that the Senior Clinical Team be in place 9 months prior to the facility opening, with the majority of the staff team being in place 6 months before the facility opening. This is based on the successful commissioning of the adult low secure service within Woodland View.

In recognition of the report Child and Adolescent Mental Health Services in Scotland published by NES, 2018, the planning team are acutely aware of the impact and difficulty recruiting to this service will have on the overall CAMHS and Forensic workforce within Scotland. Therefore, the Planning Team are currently liaising with Human Resources from NHS Ayrshire and Arran, to create a recruitment timeline and advertising strategy which will include: a UK wide recruitment campaign through the national newspapers, professional journals, universities and colleges, conferences; and developing a landing site web page along with targeting specific individuals. We are supported by excellent recruitment and selection procedures, inductions, performance management, strong leadership and staff development processes.

2.3.14 Staff Education and Training Programme

NHS Ayrshire and Arran have completed a detailed multi-professional workforce plan to support the development of the proposed facility.

Because of the unique nature of the proposed service, NHS Ayrshire and Arran are working closely with the University of West of Scotland and NES to develop a training plan to up-skill the workforce for the facility. Within the training programme there will be a core education package for all staff recruited for the facility, with in-depth training for specific tasks. It is essential that that clinical staff within the facility are able to fulfil their roles and responsibilities to provide evidenced based safe and effective care.

Once operational, the proposed facility will be audited for the suitability of student placements for nursing and allied health professionals. There will also be opportunities for staff grade and higher trainee medical staff to have

placements within the facility.

Due to the highly specialist nature of the facility, the Team will collaborate with key institutions in undertaking original research.

2.4 Model of Care

NHS Ayrshire and Arran continue to review the model of care, taking cognisance of available research evidence and examples of good practice demonstrated within other adolescent secure inpatient services, which the Planning Team visited across the UK.

The aim of the model of care is to describe the quality of care and how it will be provided within the facility and this is explored in detail in the Clinical Output Specification (Appendix MC8). Staff will deliver a multi-disciplinary approach to the quality of care that will promote recovery, wellbeing and independence, through wrapping care around the key themes outlined within the NHS Scotland Quality Strategy, where young people and their families will be encouraged to be partners in their own care, with the ultimate aim of returning the young person to their community.

2.4.1 Communications

Communication as it sits within the model of care is multi layered and includes:

- Communication with the young person and their family/carer;
- Communication with referring clinicians and local Health & Social Care Partnerships; and
- Team communication

Communications with the Young Person and their Family/Carer

The young person will be fully involved in discussions regarding their care and provided with information about their diagnosis, treatment and the mental health legislation that they are detained under. At a suitable stage of their recovery, young people will be encouraged to prepare an Advanced Statement. Older teenagers will also be supported in making choices around nominating a Named Person.

The young person and their family will be encouraged to link with independent advocacy that will be part of a commissioned service delivered within the unit. As detained child patients, young people will have the right to access legal advice and appeal their detention in accordance with relevant legislation. They and their families will also be supported in accessing information about their legal status (such as materials from the Mental Welfare Commission and Mental Health Tribunal for Scotland), and communicating with relevant bodies regarding their care and treatment.

All of the young people admitted to the facility will start on an Enhanced Care Programme Approach (CPA). CPA provides a framework for multi-agency

assessment and holistic care and will promote integrated working across all agencies to ensure the best outcome for the young person.

The young person will be discharged from the facility whilst on CPA. The Clinical Team recognise the importance of the young person being able to maintain relationships and the ability to communicate with their family/carers (where appropriate). This can be achieved in a number of ways, however, smart phones and devices, which most young people will be comfortable using is currently under review by a Short Life Working Group The outcome of this review is due to be published in 2019 and will form the basis of the facility's operational procedures of internet access and the use of smart devices by the young people within the facility. Generally, the service will have a principal of minimum restriction on communication with friends and families to prevent isolation and support their recovery. However, communication between young people within and out with the facility can present risks to patients and other people. Where necessary and proportionate, young people may be made specified persons in terms of the Mental Health (Care and Treatment) (Scotland) Act 2003.

Under current legislation, this means that restrictions can be placed on the young person's communication including:

- Restricting or withholding correspondence.
- Restricting or preventing the use of telephones.

In addition, there are provisions within the 2003 Act for taking other proportionate measures to ensure safety and security in hospitals (e.g. searching patients and their belongings, taking and examining body samples, searching their visitors, restricting access and carrying out surveillance during visits).

The clinical team within the facility will work with the young person's social worker to agree and facilitate appropriate contact with the young person's family and/or carers. Where appropriate young people will be supported to remain in contact with their family/carers throughout their stay within the facility.

Communication with Local Authority/Referring Clinicians

Communication with the referring clinician and the young person's local authority care team will be supported through the existing and continually evolving technological infrastructure.

Telephony will be Voice Over Internet Protocol (VOIP), connected to the existing site infrastructure.

There is ongoing discussion with North Ayrshire Council focusing on the ability to access the Social Care and Education networks to promote a smooth flow of information. The facility will adopt the electronic systems in place within NHS Ayrshire and Arran such as:

- Trakcare for bed management and Patient Administration Function;
- JAC HEPMA for prescribing and administration of Medicines;
- Orion Portal;
- Care Partner, Clinical Records system; and
- All other corporate IT systems e.g. Datix, SSTS etc.

The Planning Team are linking with NHS Education Scotland, National Digital Services Department to explore the possibility of using the National Digital Platform, which is being developed to ensure clear, concise, consistent and timely communication between the facility and the young person's local care team and family. Once operational, the facility will continue to have links with the Digital Services, nationally and locally.

Communication with the Team

Clear written and verbal communication is vital within the multi-disciplinary team to ensure that the service runs smoothly. This will be facilitated in a number of ways including having time set aside for clinical and peer supervision, which will be programmed into the working day.

Whilst professional development is paramount to the success of the facility, it has to be balanced against the day to day running of the facility. This is where clear, concise communication within the team and externally is absolutely key.

Managing a difficult and challenging patient group requires clear multi-disciplinary care plans to be clearly communicated to all staff within the facility. The diagram below illustrates the key individuals involved in development and communication of the care plan.

The facility's multi-disciplinary team will ensure that there is structure to the young person's day and activities, ensuring that these are well planned and thought out, taking into account the young person's needs.

Individuals involved in the Developmental and Communication Care Plan

2.4.2 Safe

The care delivered within the facility will be underpinned by the United Nations Rights of the Child which highlights the young person's right to freedom and protection whilst balancing the fact that young people admitted to this facility will present a level of risk of harm to others which cannot be effectively managed in any other CAMHS in-patient care setting in Scotland. The facility will provide a robust level of security to ensure the safety of everyone being cared for, working in, or visiting the service.

The facility has been designed to meet the specifications required for a medium level of security as prescribed in the Definition of Security Levels in Psychiatric Inpatient Facilities in Scotland, Matrix of Security, Table 7 (Appendix SC1). However, there will be scope for flexibility around elements of procedural and relational security to ensure that each patient is managed in the least restrictive manner as they progress in their recovery. As a young person progresses through treatment toward discharge from the facility's care, the young person's ability to manage at a lower level of security can be "tested" through individualised care planning.

The multi-disciplinary team will have clear and consistent guidance on safe practices regarding the use of enhanced observations, physical restraint, as required medication and seclusion. These practices will retain a degree of flexibility in alignment with the individualised care plan. Routine documented reviews will be carried out regularly over the young person's admission to the facility. A developmentally appropriate recovery approach to care will be delivered, working with the young person to develop an understanding of their diagnosis and how to manage their illness, including helping and working with the young person to help improve their coping skills, ability to self-regulate and problem solving skills.

The driving force for this is to ensure that multi-disciplinary team create an environment where the young person feels safe and secure. Creating a Nurse led therapeutic milieu will alert the staff team to any changes in the atmosphere within the unit and will allow for proactive interventions to support the young person in managing their distress/frustration, with the goal of reducing physical interventions.

During commissioning of the facility, the clinical team will link with Healthcare Improvement Scotland (HIS), who co-ordinate and lead on the Scottish Patient Safety Programme (SPSP) Mental Health. SPSP promote cultivating learning and good practice to improve safety and developed four safety principles which include:

- Communication;
- leadership and culture;
- least restrictive practice; and physical health,

Leading up to the commissioning of the facility, the clinical team will develop the resources and tools required for data collection. The Project Team, Design

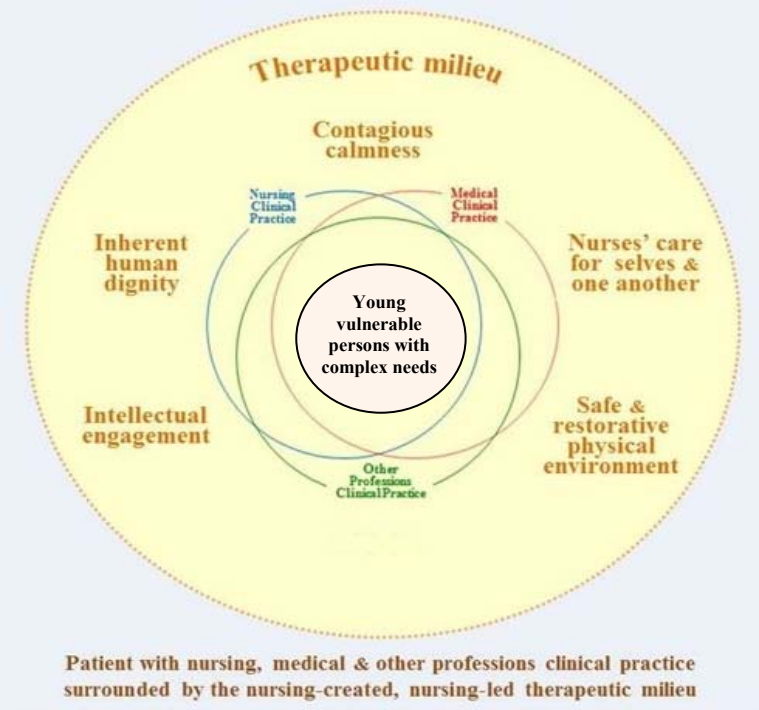
Team and Advisors have looked at best practice for the design of secure facilities and have provided a design that is appropriate for the management of young people. One of the more controversial elements of the design is the inclusion of a seclusion suite. Seclusion is defined as "locking someone in a room alone because of their behaviour" (MWCScot 2014). It involves "the restriction of a person's freedom of association, without his or her consent, by locking him or her in a room.

Seclusion can only be justified on the basis of a clearly identified and significant risk of serious harm to others that cannot be managed with greater safety by any other means." Seclusion should only be considered once de-escalation and other strategies have failed to calm the young person and should only be used as a last resort and for the shortest time possible. The Mental Welfare Commission has recently reviewed the use of Seclusion along with associated policies and will issue updated guidance on this intervention. The facility will develop an operational procedure regarding seclusion adhering to the best available evidence and current practice guidance. The Project Team and their advisors have looked at best practice in England and have treated seclusion as sympathetically as possible, whilst maintain the safety of both staff and the young person. The 1:200 Design layout is attached at Appendix SC2.

2.4.3 Therapeutic Milieu

The therapeutic milieu is a distinctive part of the culture that will be set for the proposed facility and will set the tone and to an extent the quality of care to be delivered. The Project Team and wider stakeholder groups have undertaken a number of visits to secure inpatient units in England and what has become apparent is the quality of the therapeutic milieu has the potential to have a positive impact on the outcome of a young person's treatment and care.

Therapeutic milieu provides the co-operative healing context within which all multidisciplinary care takes place, as illustrated in the diagram below:



Reference: https://www.carefulnursing.ie

Taking the best

practice and examples of therapeutic milieu, the service will provide trauma informed care with all elements of assessment and treatment being young person centred and recovery focused. The staff team will all be educated on the dynamics of the traumatic stress response and how this manifests in behaviour and how to respond to this in a way which develops a sense of safety for the young person and reduces incidents within the unit.

Art is an important part of the therapeutic environment and the project team are linking with the Glasgow School of Art to develop an art strategy which will be discussed further within the FBC.

2.4.4 Educational Curriculum

Since the initial agreement there has been no material change to the education pathway. The Project Team continue to work with North Ayrshire education department to ensure that the design accommodates the delivery of as full an age appropriate educational curriculum as possible, consistent with relevant legislation and GIRFEC principles.

2.4.5 Clinical Excellence

Since the Initial Agreement was submitted, Scottish Government has provided further guidance about data required to monitor quality improvement in CAMHS, with particular emphasis on indicators most relevant to young people under the age of 18 years requiring treatment in secure conditions. In its delivery plan, the C&YP Mental Health Taskforce has also provided initial recommendations for enhancing the collection and use of data by specialist CAMHS.

The service will adhere to national standards for health and social care (Scottish Government, 2017) and take cognisance of the recent co-produced proposed national standards for secure care in Scotland (Scottish Government 2019). The clinical team will participate in the Quality Network for Inpatient CAMHS (QNIC 2016) peer review cycle, and ensure standards are consistent with that system. There may be opportunities for benchmarking outcomes with NHS England Medium Secure Forensic Network for Young People. All treatment provided by the service will be in keeping with best available current evidence, notably guidance and quality standards published by the National Institute for Health and Care Excellence (NICE), and the Scottish Intercollegiate Guidelines Network (SIGN).

Over time, the model of care will evolve in keeping with evidenced best practice for young people across health, social care and education alongside shifting priorities and developments in relevant legislation and policies. . The clinical team will also be well-placed to contribute to the development of national guidance and policies in the future, such as the Secure Structured Care Guidance published by NHS Scotland School of Forensic Mental Health (2018).

The service will engage in continuous and sustainable quality improvement using methodology recommended by Health Improvement Scotland.

In particular, the facility will work with the Scottish Patient Safety Programme lead within NHS Ayrshire and Arran to develop the ability to gather, record and report data to Information Services Division. Through the creation of data recording and collection systems there will be an ability to collect data consistently will allow for meaningful analysis of longer term trends and outcomes.

The team will work with patients, families, referrers, professional bodies, organisations and academics to ensure that the data sets are relevant. The team will actively engage with NHS National Services Division informal performance management system and formal annual review cycle, giving reassurance that the service is clinically and cost effective.

The team are meeting with education and social work services to consider how to gather information which would be helpful to connect information with education and social work services, thus, facilitating a holistic approach to patient care, in keeping with GIRFEC principles. It would support linkage with each Child's Plan, Child Protection/ Vulnerable Young Person's documents, and data relating to education attainments.

2.4.6 Referral Criteria

The referral criteria has been discussed within National and local groups and to date no comments have been received therefore there has been no change of material importance made to the pathways of care as described within the Initial Agreement published in 2018.

The referral criteria remain as detailed below:

The young person is aged between 12 and 17 years inclusive at the point of referral

and

liable to be detained under relevant civil or criminal sections of the Mental Health (Care and Treatment) (Scotland) Act 2003

and

presents significant risk to others

and/or

is an untried or sentenced prisoner

and

there is clear evidence prior to referral that serious consideration of less secure provision has been made and/or tested and discounted as the

young person's needs/risk exceed the threshold for and the ability of those services to manage

2.4.7 Policy and Legislation affecting Children in Trouble

Since the Initial Agreement, we have been asked to consider whether referral criteria to the proposed national service would be affected by the increase in minimum age of criminal responsibility in Scotland from 8 years to 12 years (in accordance with the Age of Criminal Responsibility (Scotland) Bill (SP Bill 29).

The approach taken by NSAIS would be consistent with current Scottish policy which aims to reduce "criminalisation" of children and employs a welfare-based system to help children in trouble. There would be no change in referral criteria for the proposed national secure adolescent inpatient service as a result of increased age of criminal responsibility. Each patient would be assessed and treated according to presenting risks and needs. Care would be provided within the existing framework for children's services (of Getting It Right For Every Child, Whole System Approach and Early Effective Intervention), Treatment would also be given in keeping with welfare principles of mental health legislation (s2 MH(C&T) (Scotland) Act 2003).

Over the past 12 years, Scottish agencies have adopted a decriminalising approach to harmful behaviour displayed by children, with minimum intervention and maximum diversion from criminal justice services. This approach has been reinforced by the recent review of mental health services for young offenders (HMIPS, 2019). As children are increasingly diverted from prosecution, and less likely to be subject to compulsory measures of care and supervision, it is likely that most patients admitted to the service would be subject to compulsory medical treatment under civil measures rather than criminal procedures.

However, the service will provide prompt assessment and prioritise admission for the decreasing, but important, number of under 18's who are liable to prosecution and/or detained in custody. It is expected that these children will present particularly elevated risks and needs.

When recommending compulsory measures for young offenders, consideration will always be given to the likely course of their clinical condition, their developmental trajectory and the need for future flexibility in careplanning. For example, where appropriate, a period of assessment and treatment under an Interim Compulsion Orders would be considered. Given potential implications for transitions of young people to the adult forensic estate, the NSAIS clinical team would consult colleagues from relevant forensic services before recommending Restriction Orders.

2.4.8 Pathway of Care

The care pathway described within the Initial Agreement remains the same with the national secure inpatient service being integrated into NHS Scotland care pathways involving:

- child and adolescent community mental health services;
- three regional adolescent inpatient units;
- national child inpatient unit;
- general adult community mental health service;
- general adult inpatient services;
- adult community forensic services;
- adult forensic inpatient units.

The national secure adolescent unit will also form part of a spectrum of services which meet the needs of young people with high risk behaviours and/or who need care in secure environments:

- Whole System Approach/Criminal Justice services provided by local authority/third sector;
- Specialist residential care;
- Secure accommodation;
- Young Offenders Institutions.

The care pathway will support transitions into less restrictive environments as soon as possible, in keeping with current policy and best practice. Particular attention will be paid to the needs of young people whose vulnerability may increase on leaving from the secure adolescent service. The Transition Care Plan document (Scottish Government 2018) will be used to help older young people prepare to move on to adult community or inpatient mental health services. Recommendations of the recent HMIPS review (2019) will be taken into account when considering transitions for young people in an out of young offenders institutions and other custodial settings. As for any “cared-for” patient leaving hospital, discharge planning would involve the young person’s family/carer as much as possible from the earliest opportunity (s28 Carers (Scotland) Act 2016).

2.4.9 Referral Pathway

There is a short life working group who are developing standardised referral forms for CAMHS and Child and Adolescent Mental Health Inpatient Services and there is an expectation that this paperwork would also be used when making a referral to the proposed facility. The Project Team are linking with the national digital platform working group to explore the possibilities of linking all the referral and risk assessment templates to a national profile.

In keeping with recommendations of the Audit Committee (2018), attention will be paid to the impact on patients, families and the referring network in cases when a referral does not lead to assessment or admission of a particular young person.

It is anticipated that as a national service, the secure unit will be approached for advice about young people who are unlikely to meet referral criteria, but

nonetheless present high levels of risk and need. Immense challenges can be faced by families, carers and professional networks in supporting these young people to remain in community settings (Marshall & Irvine 2006; Henderson et al, 2016; Murphy, 2018). As appropriate, the secure service senior clinical team will provide guidance to referrers about possible approaches to risk assessment and management of these patients.

The service will also work with partners to support development of capacity in the wider system of children's services.

2.4.10 Staged Pathway of Care

Stage 1 – Preparation for Admission

Key features:

- Assessment for suitability for service;
- Familiarity with key members of staff;
- Comprehensive transfer, of prior and on-going therapeutic and educational input;
- Preparation for transfer to the service.

There is recognition that, particularly in the early phase of the service, the majority of young people will be transferred from existing services, which may mean that they are already receiving psychological and/or psychiatric interventions, and they will be familiar with an existing model of care. For those admitted directly to the service, there will be similar efforts to prepare young people, although it is acknowledged that these may be more curtailed than for young people who are already receiving in-patient care. Significant efforts will be made to ensure that any disruption in educational provision is minimised as far as possible when the young person transfers to the service.

Preparation for admission will follow the processes detailed within the integrated care plan (ICP), which will include assessments with the young person, their carers and/or family and involved professionals. During the process of assessment, the information gathered will be used inform care planning for the young person within the service.

Stage 2 – Stabilisation

Key features:

- A secure setting and helping the young person to feel safe;
- Building confidence and developing motivation;
- Identifying treatment and support needs;
- Identifying educational needs;

- Further developing behaviour support plans;
- Keeping the young person and others safe and well;
- Getting to know the young person and their family.

When young people are first admitted they may express high levels of fear, anger, distress and anxiety: they do not feel safe. This is likely to be particularly the case for young people who have been admitted directly to the service from the community. In order to support young people to feel safe, the service will provide high levels of staff, predictability, structure, and low levels of stimulus. Young people may have low self-esteem and engage in self-defeating behaviour, particularly if they feel that a transfer to alternative secure provision indicates that their stay within secure services will be lengthy.

When young people are first admitted, many arrive with high levels of risk to both themselves and others; their presentations may be extreme and difficult to understand. With this, having positive behavioural support (PBS) as an underpinning model within the unit will support understanding of behaviours, both for the young person and the wider staff group. In terms of direct working with the young person, the initial aim of care is to facilitate stability, to assess risks and needs within this setting and to develop a collaborative formulation to increase young people's awareness and understanding of their problems and to begin to understand how different forms of treatment and support may help them to develop and make progress. At this stage, a need for additional assessments relating to, for example, communication or neurodevelopmental disorders may also be highlighted. Throughout this stage, the service would seek to provide a safe and stable environment for the young person, whilst working to identify their needs and develop a support plan that can meet these.
From the point of admission and throughout their stay in hospital, close attention will be paid to young people's physical health needs. This will include thorough medical examination, physical investigations and treatments as indicated. Attention will be paid to patients' hygiene, dental and sexual health, and to ensuring they are up to date with recommended immunisations. As most patients will benefit from some form of psychiatric medication for their presenting symptoms, monitoring for potential side effects will be a key part of careplanning.

Stage 3 – Skills Development

Key features:

- Develop insight into problems;
- Increase education and activities;
- Psychoeducation / basic therapies;
- Increase collaborative care planning;
- Develop self-regulation skills;
- Positive risk taking / therapeutic leave.

At this stage, the young people are beginning to gain a level of reflective capacity and insight into their problems and begin to understand the need for

risk management. They begin to consider the possibility of a future outside of secure care. Risk patterns and their links to symptoms and context will become more obvious, particularly through the use of PBS within the service. Depending on their previous experiences of therapeutic input, some young people may move to and from this stage more quickly than others. Young people start to build dynamic relationships with staff and engage in conversations of greater depth.

They begin to negotiate with staff regarding their care needs and take on more responsibility. At this phase, the main aim of therapy is to provide psycho education, increase awareness of problems and develop skills (learning and transferring life skills, coping strategies, and raising independence with balancing occupational demands such as activities of daily living, leisure occupations and productive/vocational occupations), augmenting the need for psychotropic medications. This includes highly structured forensic and mental health interventions that may be delivered on an individual or group basis and will depend upon individual need. Amendments to the environment will be made in accordance with outcomes from functional analysis (as part of PBS), always with a focus on improving the quality of life for the young person and reducing difficulties.

Most young people who reach this phase of treatment, but do not move into the final phase are transferred to either an adult or adolescent low secure setting depending upon age and rate of change. Some young people may develop a pattern of returning to the stabilisation level of functioning in situations of stress or due to a lack of clarity around their trajectory (and hence a loss of felt safety). Some young people may oscillate between this middle phase and the transition phase on the basis of their level of risk and skills deployment/functioning. For those young people who do transfer to alternative in-patient settings, the assessments completed, and interventions undertaken will be used to support the receiving service to provide continuity of care.

Stage 4 – Transition

Key features:

- Integration / activities outside clinic;
- Make realistic plans for the future;
- Develop more independence;
- In-depth / formal therapies;
- Take more responsibility for their own care;
- Relapse prevention work;

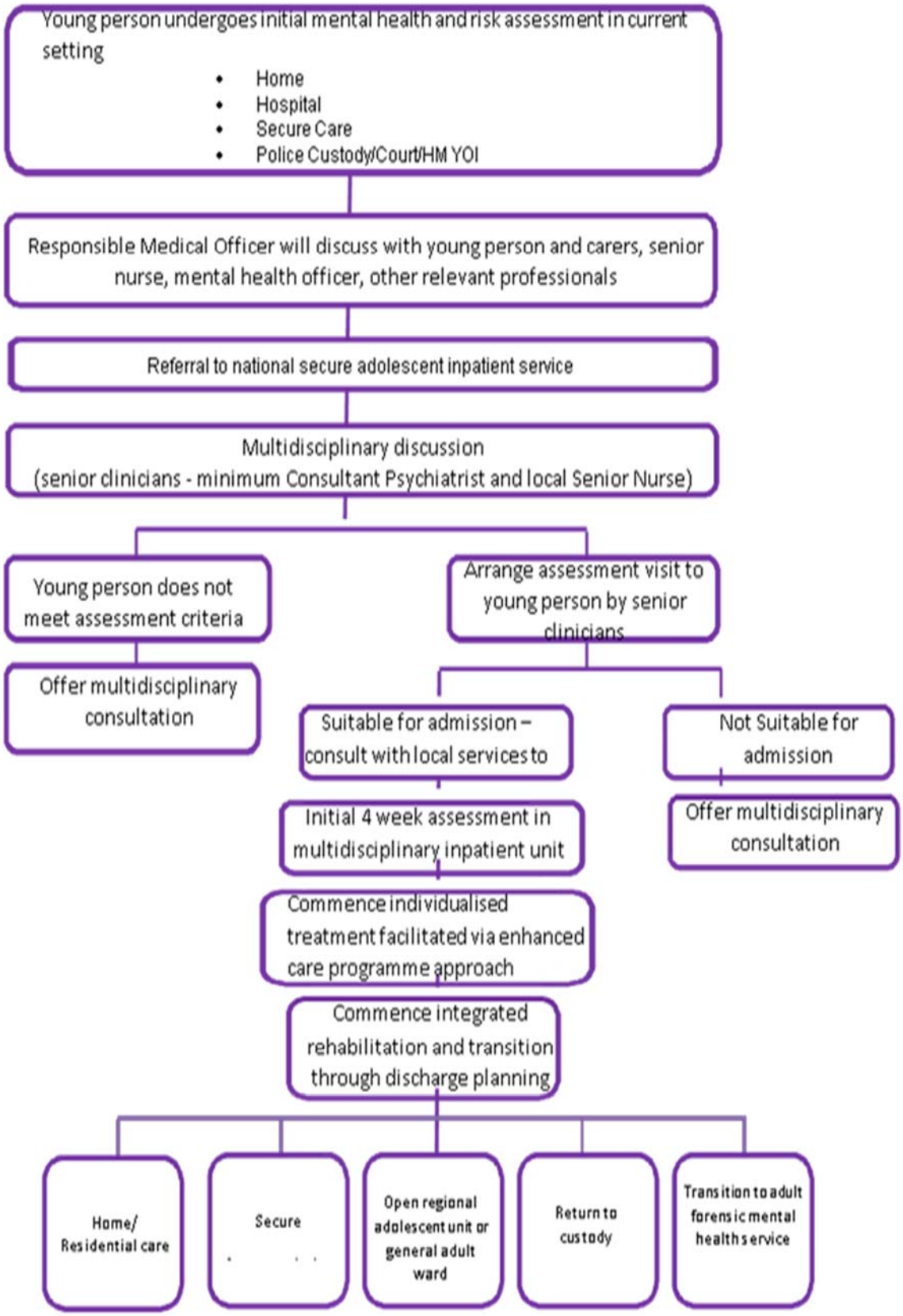
During this phase of care the young people begin to engage in meaningful activities outside the clinic, e.g. home leaves, participation in community-based activities, and vocational involvement. They may develop age appropriate levels of insight into historical and current problems and begin to develop a realistic plan for their immediate and distant future. They attain some age appropriate levels of skill deployment and engaging in most activities. There is increasing collaborative care and an equal relationship with staff, with the young people

taking a lead in making decisions around their care needs. Formal therapies, akin to those delivered in community settings, are possible. These could include Schema therapies and psychodynamic psychotherapy.

Dips and slips in mental health and risk relating clearly to sources of stress, such as disputes with other young people, may occur but they quickly recover.

Young people at this stage may be discharged into a community setting, or an alternative, low secure or open service depending upon age and individual factors.

The diagram overleaf describes the journey for the patient.


Young person undergoes initial mental health and risk assessment in current setting
Home
Hospital
Secure Care
Police Custody/Court/HM YOI
Responsible Medical Officer will discuss with young person and carers, senior nurse, mental health officer, other relevant professionals
Referral to national secure adolescent inpatient service
Multidisciplinary discussion
(senior clinicians - minimum Consultant Psychiatrist and local Senior Nurse)
Young person does not meet assessment criteria
Offer multidisciplinary consultation
Arrange assessment visit to young person by senior clinicians
Suitable for admission – consult with local services to
Not Suitable for admission
Offer multidisciplinary consultation
Initial 4 week assessment in multidisciplinary inpatient unit
Commence individualised treatment facilitated via enhanced care programme approach
Commence integrated rehabilitation and transition through discharge planning
Home/ Residential care
Secure
Open regional adolescent unit or general adult ward
Return to custody
Transition to adult forensic mental health service

2.4.11 Timeliness

It is important that young people are assessed as soon as possible after referral, and arrangements made for their prompt admission once that decision has been made.

The children and young person's mental health taskforce has recommended a reduction within the CAMHS heat target from 18 weeks to 12 weeks referral to treatment (Coia 2018). The staff team are developing pathways to ensure that evidence-based treatments are initiated within an 8 week period for all patients, which will significantly improve on the heat target that has been set.

2.4.12 Equity of Access

Equity of access will be ensured through the referral criteria being clear, concise and consistently applied in our assessment of young people.

The staff team will also establish regular communication with the wider network of potential referrers, via a system of practice development using video-links.

To avoid any risk of a local "halo" effect, a mechanism of secondary review of admissions from NHS Ayrshire & Arran will be used. Dispute resolution is yet to be discussed in detail, however, the Forensic Network or NSD could be asked to assist in resolving any anticipated or actual conflict around admission or discharge recommendations. Adjudication will be developed and tested during the Full Business Case.

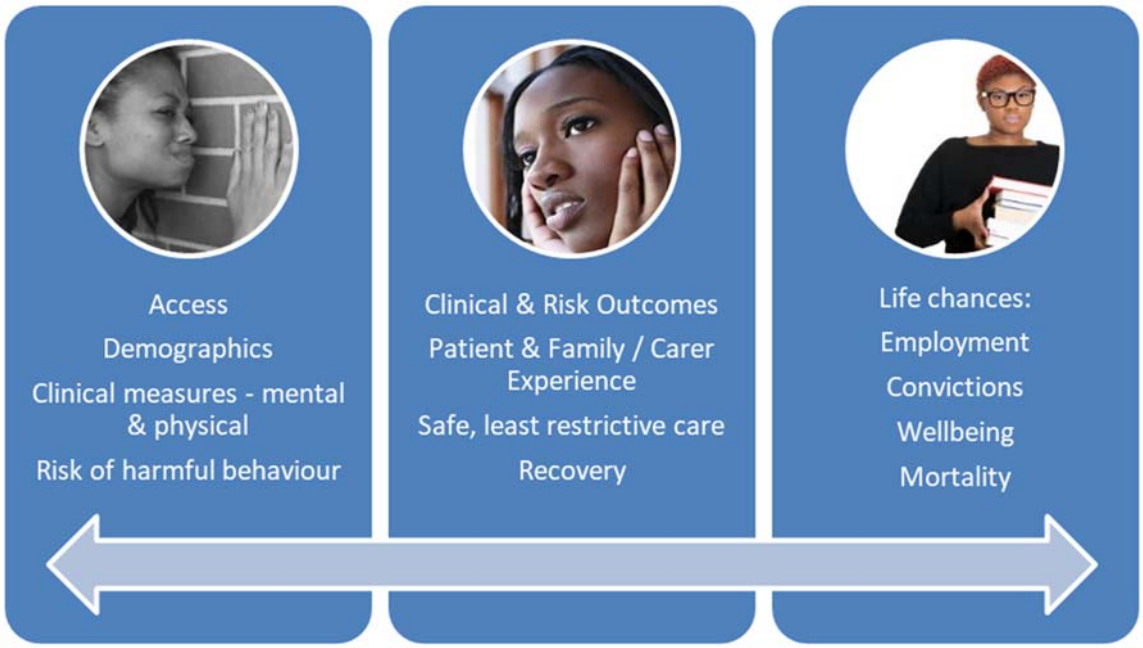
2.4.13 Quality Indicators

The team will employ the same Quality Indicator Profile as other secondary care mental health services to monitor and improve quality of the facility (Scottish Government Sept 2018). This will include measures across six key quality dimensions: person-centred, safe, effective, efficient, equitable and timely. These also map onto the nine Health and Wellbeing Outcome and relevant actions set out in the Mental Health Strategy. This Quality Indicator Profile will permit measurement of individual patient care and treatment, as well as service response.

Particular attention will be paid to measures which are best placed to demonstrate safe prescribing and administration of medicines, risk assessment and safety planning; incidents of self-injury, violence, physical restraint and use of seclusion, and communication at transitions.

Quality Indicators will also be consistent with recommendations of the Children and Young People's Taskforce (Coia 2018) and the Quality Network for Inpatient CAMHS peer review framework (QNIC 2016).

2.4.14 Quality Indicators across Patient Journey



2.5 Need for Change

A key part of this Strategic Case is to demonstrate the need for change. Young people who are at risk to others and severely unwell continue to be placed in secure accommodation in England. The Needs Assessment also highlights that there is a number of young people who are placed in either, inappropriate care settings, such as Adult metal health wards or within non health related secure accommodations.

The proposed solution of a purpose built medium secure facility located in Scotland will address the issue of geographical location and bring the young person closer to their support, whether that is family or carers. Confirming capacity of the proposed facility is linked to the needs assessment and confirms that 12 beds is the optimum solution.

The model of care has remained largely unchanged from what was described within the Initial Agreement; however the detail has been refined and developed taking into cognisance the NHS Quality Strategy, Royal College of Psychiatry QNIC standards and relevant mental health and child legislation.

A number of specific regulatory and policy drivers have had an impact on both the shape and size of the workforce, such as the HSE guidance, European Working Time Directive, and the impact of Modernising Medical Careers. These coupled with implementation of the quality strategy and ensuring the efficiency and effectiveness of the services we will deliver has directly influenced our decisions on workforce.

The overall vision is to ensure we have the right staff in the right place with the

right skills and competences to deliver high quality care and services to the young people of Scotland. In order to realise this vision the workforce needs to be aligned with both service and financial plans to ensure affordability and sustainability.

The review of the model of care, coupled with the development of existing and new roles, will be a benefit arising from the proposed facility. The specific benefit from service and role development should be improvement in service accessibility and providing care closer to home. Some of this has already been articulated, in the Strategic Case, detailing and refining the workforce profile for all staff groups – clinical, administrative and support roles - that will provide services from the proposed facility.

2.6 Strategic Case Conclusion

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The specific benefit from service and role development should be improvement in service accessibility and providing care closer to home.

Some of this has already been articulated, in the Strategic Case, detailing and refining the workforce profile for all staff groups – clinical, administrative and support roles - that will provide services from the proposed facility.

2.7 References

All references in relation to the Strategic Case are attached at Appendix SC9.

3 Economic Case

3.1 Economic Case Introduction

The Scottish Government's OBC guide identifies that the purpose of the "Economic Case" is to undertake a detailed analysis of the benefits and risks of a short list of options, including a do nothing and/or do minimum option for implementing the preferred service solution(s) identified within the Initial Agreement and to determine the most economically advantageous option, whilst meeting the national need.

The Economic Case should demonstrate the relative value for money of the chosen option in delivering the required outcomes and services.

3.2 Historical Overview of Options

The unique national nature of the proposed development has made the appraisal of the service option considerably more linear than normal, with a number of national and local stakeholders influencing key elements relating to option generation throughout the lifespan of the project to date. This has resulted in a preferred option that is the outcome of multiple separate appraisal processes, many of which have been carried out at a national level, rather than the more common numerical assessment of multiple options at the same time.

The path to the selection of the preferred option is explained by following distinct steps. These are:

- Identify a short-list of implementation options;
- Identify and quantify monetary costs and benefits of options;
- Estimate non-monetary costs and benefits;
- Calculate Net Present Value of options;
- Present appraisal results;
- Sensitivity Analysis.

3.2.1 Identify a Short List of Implementation Options

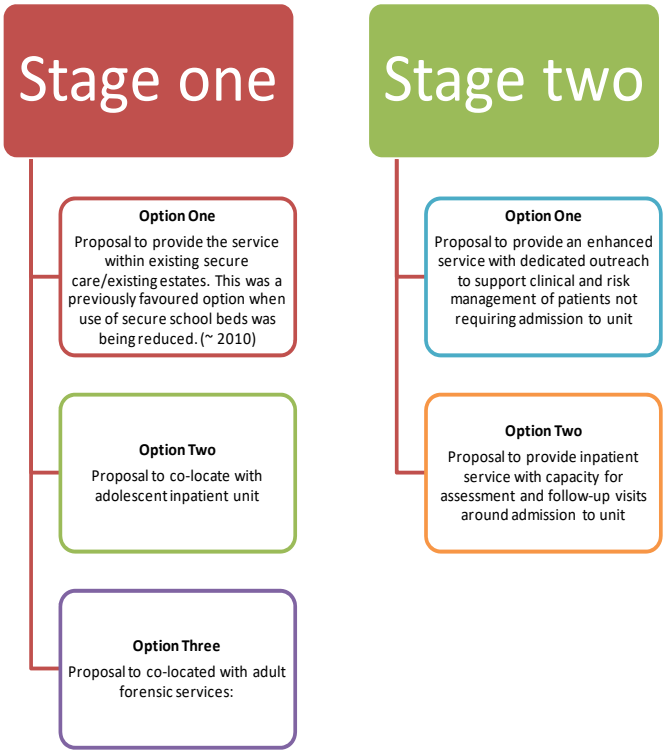
As the facility represents the physical presentation of a national service, the process of agreeing a short-list of implementation options has been more complex and involved than is normally the case. It has, in effect, been taken forward through 5 different phases:

- Agreeing the preferred model for provision. (National level)
- Agreeing a preferred national delivery location (host authority). (National level)
- Identifying a preferred geographical (site) location within the host board area. (National Level)
- Confirming the preferred configuration and size (capacity) of the proposed unit. (Host Board – with national stakeholder support)

- Agreeing the preferred location for the new unit on the preferred site. (Host Board)

In March 2016, the Scottish Government Health & Social Care Directorates National Planning Forum endorsed a report from the National working group on secure care for young people. The report recommended that a National Secure Adolescent Inpatient Service be established in Scotland.

A two-stage process was developed to specify the provision of a future adolescent inpatient service for Scotland. This process is described at a high level below.



At Stage 1, the national group considered 3 primary options for potential co-located provision of the proposed service:

Option 1 – Within existing secure care/school estate

Within existing secure care/school estate was a favoured option at a time when use of secure school beds was being reduced (~2010) and there was excess capacity in existing facilities.

Advantages envisaged included:

- the ability to create areas of secure specification with developmentally appropriate facilities (school, gym/pool, leisure, etc);
- ready access to trained education/care staff; and
- a potentially smoother transition between "hospital" and "care" units within a defined facility.

Disadvantages included:

- a lack of proximity to other hospital services, including urgent nursing/medical input to manage medical/psychiatric emergencies; and
- complex commissioning arrangements for secure schools.

Option 2 – Co-located with a current adolescent in-patient unit

The key advantage associated with the option to co-locate with a current adolescent in-patient unit was seen as ready access to developmentally appropriate non-secure facilities and appropriately trained adolescent specialist professionals allowing the young person access to step down care.

The main disadvantages related to: the current inpatient units do not have appropriate level of security which leads to an inability for the young people to attend the same educational or recreational facilities.

Option 3 – Co-located with current adult acute services

The option to co-locate a new unit with adult secure services was seen as benefitting from ready access to appropriate expertise relating to secure care and facilities.

The main disadvantages include: the potential lack of ready access to age appropriate education and other developmentally age appropriate facilities.

Review and Conclusion to Stages 1 and 2

Stage 1 favoured either option 2 or 3 as this ensured patient and staff safety by proximity to existing psychiatric hospital services. However, both these options did not provide a suitable care environment for a young person. Therefore, Stage 2 of the process explored a further 2 variations on baseline options. These were:

- An enhanced service with dedicated outreach to support clinical and risk management of patients not requiring admission to the unit;
- An in-patient service with capacity for assessment and follow-up visits built around admission.

The enhanced service with dedicated outreach to support clinical and risk management of patients not requiring admission to a unit was seen as having the advantage of delivering a comprehensive national service with integral care pathways – thereby ensuring equity of provision nationally. The disadvantage with this model was that the creation of a national “centre of excellence” may reduce local focus and regional capacity available in any event.

The in-patient service with capacity for assessment and follow-up visits related to admission was seen as having the advantage of enhanced clarity relating to the role of the unit within the overall model of care. The disadvantage with this model was that it would still have to rely upon increased local/regional capacity

to meet the needs of high risk patients in community and other hospital settings.

The National Specialist Services Committee considered an application for the service on 2 March 2016 and was highly supportive of the proposal. It was agreed that NSD should invite expressions of interest to host the service from NHS Boards in collaboration with Integrated Joint Boards.

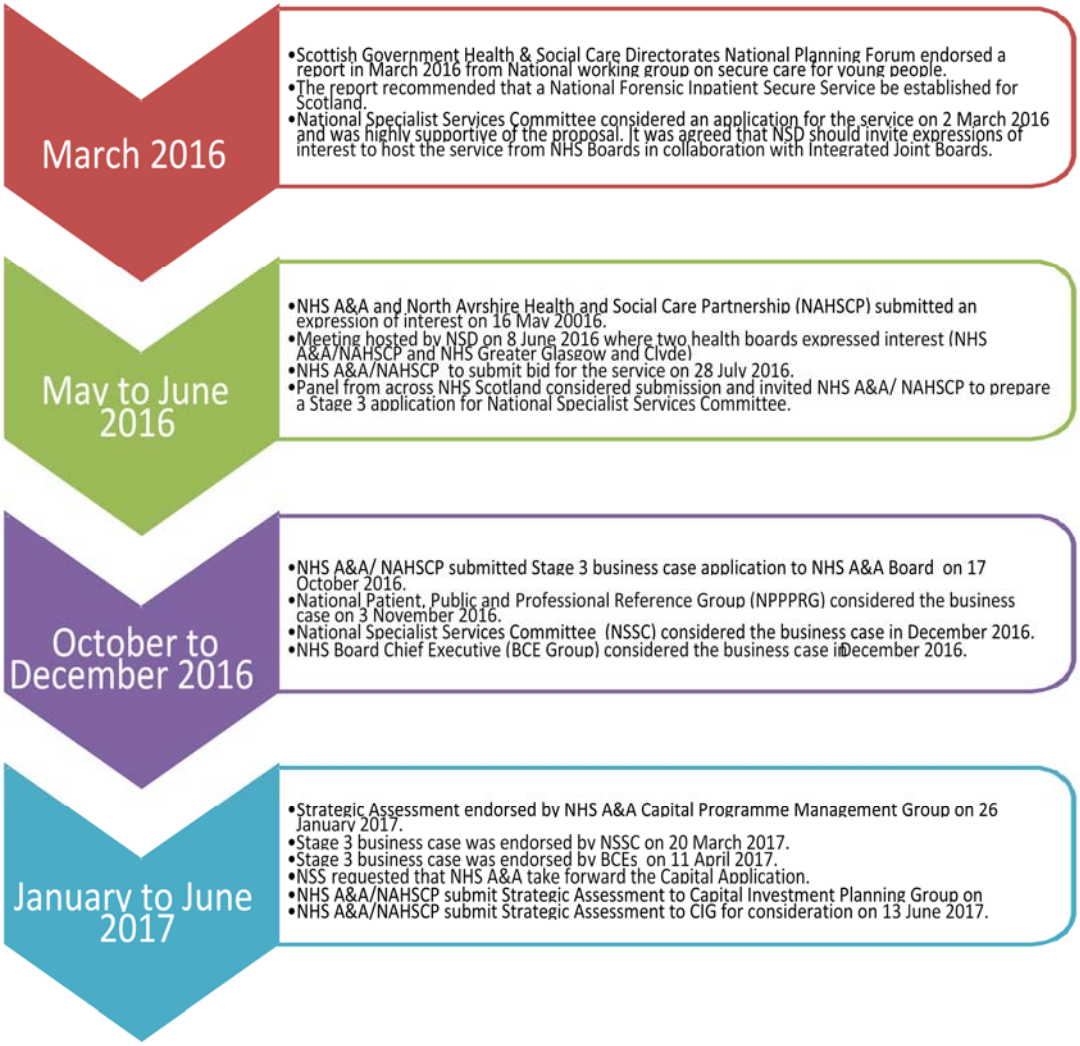
Thus, the preferred model for service provision and implementation option had largely been determined and agreed at a national level, prior to individual Board's being requested to submit expressions of interest to develop and host the required physical capacity. There was therefore no advantage in undertaking a specific option appraisal to support this decision at Board level.

3.2.2 Agreeing a National Delivery Solution (Host Authority)

In May 2016, NHS Ayrshire and Arran (NHS A&A) and North Ayrshire Health and Social Care Partnership (NAHSCP) – along with other interested parties in other parts of the country - submitted an expression of interest to develop and host the national unit and associated service model. NHS A&A and NAHSCP subsequently presented their submission to NSD in June 2016 and were, along with other national teams, evaluated.

Following an evaluation of these bids by a panel from across NHS Scotland, NHS A&A and NAHSCP were invited to prepare a Stage 3 submission for the National Specialist Services Committee.

In October 2016, Capital Planning and NAHSCP submitted NSS's Stage 3 Business Case to NHS A&A's Board for approval. The governance route for approval of Stage 3 business case is detailed in the chart below



In March/April 2017, the Stage 3 Business Case was endorsed by National Specialist Services Committee (NSSC), National Services Scotland (NSS), and the Board of Chief Executives (BCEs). At this time, NSS requested that NHS Ayrshire & Arran take forward the project through Scottish Governments Capital Investment process.

The decision on the national delivery location as it related to a chosen host authority was supported by a robust appraisal process undertaken at a national level with multi-professional and geographically appropriate stakeholder representation. The outcome of this process was that the unit should be hosted within NHS Ayrshire & Arran on the site of the recently completed Woodland View Hospital – a state of the art acute mental health facility with the required baseline infrastructure, clinical and wider links necessary to underpin the new facility and model of care.

3.2.3 Capacity Modelling

The detail of the Capacity modelling is set out in full in the Strategic case, however, for the purposes of the economic assessment the following

summarises the findings of the modelling:

- There was no single historic process for managing patients who will be cared for within the new unit in future.
- There was no single information repository to help us understand the specific care needs of this patient group that is complete and comparable.
- There was no single existing dataset relating to this patient group that would support a traditional capacity modelling methodology based on likely admission numbers over time and length of stay based on an alternative/enhanced model of care.
- There was no published data relating to patients who might benefit from the proposed unit in Scotland but who have not been referred to existing services because these are deemed unsuitable/inappropriate for whatever reason. (Unmet need).
- The emerging preferred physical layout of the unit (3 x equal bedroom "clusters") allowed the Project Team to factor in the impact of economies of scale associated with capacity change based on actual alternative versions of the project's schedule of accommodation. Most notably the impact of varying "bed cluster" size between 3 and 4 beds (9 and 12 beds in total).

A key impact of the capacity modelling (and design) work has therefore been to vary the number of beds being considered within the option appraisal with respect to potential future forecast needs. The short list of options to be considered for appraisal was therefore:

- Option 1: Do Nothing
- Option 2: A 9 bed unit (3 x 3 bed "clusters")
- Option 3: A 12 bed unit (3 x 4 bed "clusters")

3.2.4 Option Appraisal (Service)

Overview and Objectives

The following will provide detail on the non-monetary costs and benefits associated with developing a National Secure Adolescent Inpatient Service at Ayrshire Central Hospital. Specifically, there is a need to translate the potential non-financial benefits associated with the short-listed options into comparable scores in order to support a value for money appraisal and the legitimate presentation of a global "preferred option".

As noted previously these short-listed options are:

- Option 1: Do Nothing
- Option 2: A 9 bed unit (3 x 3 bed "clusters")
- Option 3: A 12 bed unit (3 x 4 bed "clusters")

It is noted that, whilst a detailed capacity modelling analysis demonstrated that a 12 bed unit is the clearly preferred option, it had not generated a comparable score to support NPV analysis between the options or determine how the "change options" identified scored relative to "do nothing". Consequently, a

further option appraisal exercise was conducted, with key stakeholders to complete this final stage in the non-monetary costs and benefits analysis process and provide the required scores for comparison and analysis.

The objectives of this process were:

- To determine the relative non-financial benefits associated with the short-listed options identified;
- To agree and evaluate those "benefits criteria" that is likely to define the best option from the short-list identified;
- To support a more detailed evaluation of this agreed range of short-listed options in order to identify which appears most capable of realising the benefits criteria identified;
- To allocate comparable scores to each of these options that could be used to support financial option appraisal;
- To determine which of the available options appears to be best overall through formal "option appraisal" and why this appears to be the case;
- To stimulate evidence-based discussion and objective debate; and
- To appropriately widen stakeholder involvement through sharing outputs from the process with the established National Stakeholder Group for discussion and review as appropriate.

3.2.5 The Process

The formal non-financial option appraisal process employed was discussed and agreed with participants at the outset. It involved working through a series of questions that attempted to apply a consistent and rational approach to the challenge of identifying the preferred option from the short-list already identified.

These were:

- What is the challenge that needs to be addressed?
- What are the benefits criteria (measures) to be applied that identify how well each identified option addresses this challenge?
- What is the relative weighting (importance) of each of these criteria?
- What is the actual weighting (importance) of each of these criteria?
- What are the options available to be scored?
- How well do each of these options realise the agreed benefits criteria?
- All things considered, what is the preferred option? (In the absence of further financial analysis/appraisal)

Group discussion confirmed that the challenge that needed to be addressed was to determine the relative non-financial benefits associated with the short-listed options identified.

3.2.6 Benefits Criteria

Early discussion on benefits criteria centred on elements identified within the Strategic Assessment and Initial Agreement to date, with the independent

facilitator presenting a provisional series of potential benefits derived from elements presented in these documents for discussion.

Group discussion sought to challenge these provisional criteria and test them against the issues that were specific and important for the new development. In summary, it eventually led to agreement on a range of benefits criteria that reflected the ability of any option identified to:

- Provide local (Scottish) access to services
- Deliver improved/enhanced pathways
- Be flexible and able to adapt to changing needs
- Reduce overall risk profile
- Realise sustainability and essential future capacity

A brief description of these benefits criteria, along with a series of "supporting characteristics" that were agreed as aids to the scoring process, is presented in Appendix EC1.

To support the process of applying a relative "weighting" (priority) to each of the criteria identified, a comparative matrix was used.

The populated matrix is shown in the Diagram (below), with the letters reflecting which criteria was deemed overall to be the most important in a trade-off between each of the criteria. The numbers represent a tally of the "score" of an individual criteria realised in the whole exercise. Thus, a higher "score" indicates a higher relative importance.

Relative Priority of the Agreed Benefits Criteria

A	Sustainability & future capacity									
B	B	Improved/enhanced pathways								
C	B	C	Local (Scottish) access to capacity & services/reduced travel							
A	B	C	D	Flexibility						
E	E	E	E	E	Reduced risk profile					
					F	6				
						G	7			
							H	8		
								I	9	
									J	10
1	3	2	0	4	0	0	0	0	0	TOTALS

Stakeholder Agreed Relative Priority of Benefits Criteria

In summary, relative priority agreed was:

- Reduced risk profile (4 points)
- Improved/enhanced pathways (3 points)
- Local (Scottish) access to capacity & services/reduced travel (2 points)

- Sustainability & future capacity (1 point)
- Flexibility (0 points)

To determine actual weightings to be applied, stakeholders were asked to allocate "100 points" appropriately between identified benefits criteria based upon their opinion of the relative importance of each. Whilst stakeholders were not bound to allocate weightings in line with the relative order identified in the previous session, they were encouraged to use this as an initial basis for developing weighted scores and to explain if/why they may have deviated from these. In the event, only minimal deviation from the overall agreed order was reported.

Weightings were fed back by criteria and the group in the first instance to ensure that no one stakeholder's scores were influenced by any others and to support an informed debate about any variances in these scores as they were presented. This discussion/debate was used to understand why different stakeholders had scored criteria in the way that they had and to offer them the opportunity to inform/influence the weighting criteria of others.

Following agreement being reached upon the relative weighted benefits criteria of each stakeholder group, a discussion/debate took place that sought to rationalise these separate "weightings" into a single agreed factor that would be applied to each identified option in the formal weighting/scoring process.

Individual stakeholder and overall "agreed" whole group scores are shown in the diagram below.

Group	1	2	3	4	5				
CRITERIA	Weight	Weight	Weight	Weight	Weight	Mode	Median	Mean (Average)	Agreed Weight
Sustainability & future capacity	10	15	15	20	20	15	15	16	16
Improved/enhanced pathways	20	25	25	20	20	20	20	22	22
Local (Scottish) access to capacity & services/reduced travel	20	20	20	10	15	20	20	17	17
Flexibility	10	10	10	20	10	10	10	12	12
Reduced risk profile	40	30	30	30	35	30	30	33	33
TOTALS	100	100	100	100	100				100

Stakeholder "Weighting" of Benefits Criteria

Following agreement being reached upon the relative weighted benefits criteria of each stakeholder group, a discussion/debate took place that sought to rationalise these separate "weightings" into a single agreed factor that would be applied to each identified option in the formal weighting/scoring process.

Overall the scoring group concluded that:

- The extent to which an option is able to reduce the global service risk profile is the most important criteria with an agreed weighting factor of 33 points.
- The extent to which an option is able to improve/enhance pathways is also important with an agreed weighting factor of 22 points.

- Delivering local (Scottish) access to services was weighted at 17 points; and sustainability at 16 points.

The overall lowest weighted criteria was flexibility, with an agreed weighting of 12 points.

3.2.7 Options

As the options had already been developed elsewhere in the business case process, there was no requirement for the group to identify or short-list options.

Options to be scored were simply confirmed as:

- Option 1: Do Nothing
- Option 2: A 9 bed unit (3 x 3 bed “clusters”)
- Option 3: A 12 bed unit (3 x 4 bed “clusters”)

3.2.8 Options Vs Benefits Criteria

Having agreed the benefits criteria, relative weighting and options to be assessed the group then undertook the formal process of applying a score from 1-10 to each criteria in the context of each option based on the criteria highlighted below where 10 is best and 1 worst.

10	Could hardly be better, perfection
9	Excellent, almost perfect
8	Very good
7	Good
6	Quite good
5	Adequate
4	Less good
3	Poor
2	Very poor
1	Could hardly be worse

Scoring Criteria Used

This was again supported through a process of personal reflection; discussion/debate within groups; and discussion/debate between groups with the intention of seeking consensus agreement around the relative merits of each option and scores to be applied.

Participants were provided with detailed information on the options as the basis for this wider discussion and debate that included:

- A summary of what the option involved presented by the facilitator.
- A copy of the numerical analysis/scenario planning outputs on each option.
- A copy of the schedule of accommodation relating to each option.

- The opportunity for all participants to discuss/debate/further inform the option and ask relevant questions.
- A brief period for personal reflection and scoring against criteria.
- A period for group discussion and to review scoring.

Extensive discussion and debate took place during the presentation and scoring of options, with different individuals encouraged to explain the rationale for their scores in order to influence the thinking of others. It was also made clear that individuals could change their scores at any time should they believe this to be appropriate.

Appendix EC2 (Service Option Appraisal) presents the summary of numerical outputs from this process as recorded at the event. It identifies that:

- Option 3 (12 bed unit) scored highest on the day with 871 points.
- Option 2 (9 bed unit) scored second highest on the day with 727 points.
- Option 1 (Do nothing) scored lowest on the day with 416 points

It is possible to conclude that Option 3 scored highest because it gained the same or more points against all criteria than the alternatives considered.

It is also appropriate to note that the outturns of the process were accepted and agreed unanimously by all participants as an accurate outcome; that they all understood why these outcomes had come about; that they were consistent with the informed debate that had taken place; and consistent with the numerical analysis and scenario planning done previously. Also, importantly, that they presented clarity around the numerical differences between the “do nothing” and other options which is critical to financial appraisal.

This analysis was subsequently shared with the national Clinical Reference Group who had the opportunity to review all of the numerical data generated and agreed with both the process employed and its outputs.

3.3 Risks Associated With Short-listed Options

In line with SCIM guidance, an appraisal of risks for each short-listed option was undertaken that effectively summarises data presented elsewhere in this document on the basis of whether or not they are low, medium or high risk. This was intended to inform the wider appraisal process in combination with service and financial review. A summary of this risk appraisal is presented in the table below.

Risk	Do Nothing	9 Bed Option	12 Bed Option
Patients continue to travel out-with Scotland for relevant services.	High	Med	Low
In-appropriate in-patient placements continue to occur e.g. Outwith the appropriate adolescent hospital setting.	High	Med-low	Low

There is an on-going delay in timeous assessment, leading to delayed commencement of treatment.	High	Low	Low
Lengths of stay are longer than necessary.	High	Low	Low
Adverse events pending admission continue to be a factor at the same level or greater.	High	Low	Low
Services at a local and national level continue to lack the clinical and management data required to support on-going service planning and modeling.	High	Low	Low
Patients are still required to cross legal, procedural, educational and governance boundaries.	High	Med-low	Low
Scotland still does not have access to a local, appropriately skilled workforce.	High	Low	Low
Failing to meet current and future service needs.	Med	Low	Low
OVERALL RISK	High	Med-low	Low
OVERALL RANK	3	2	1

In summary, the 12 bed unit option is seen as having the most favourable risk profile with the do nothing option presenting the most significant risks against the key criteria identified - as extrapolated from non-financial benefits criteria previously agreed.

3.4 NPV Findings

This section presents the economic appraisal of the shortlisted options and incorporates key elements of the Capital and Revenue implications of each option that have been assessed over the anticipated life of the project and discounted to derive a Net Present Cost (NPC) for each viable option.

The table overleaf sets out the estimated costs (Capital and Revenue) and the Net Present Value (NPV) for each of the options listed in the option appraisal above. These costs provide a sound basis for comparison of each of the options.

A detailed spreadsheet is included at Appendix EC3. This spreadsheet details the assumptions and costs that have been considered and includes optimism bias, preliminaries and inflation.

The Economic Appraisal has been undertaken using the Generic Economic Model (GEM) and includes capital and revenue costs for each of the options listed.

The Do Nothing Option – Costs

In assessing the do nothing option the Project Team had to make a number of assumptions related to constituent elements. These included that:

- There is no specific capital element.
- It must include the continued cost of sending patients to England.
- The starting point for this calculation was the revenue costs highlighted in the IA, which detailed a 3 year average spend by NSD of £2,105.337 from 2013-2016. Taking the mid point of 2014 and applying inflation of 2.5% per annum provided a baseline cost at 2019 of £2,383,172.
- Additional costs incurred through patients being accommodated in non-specific wards, for example adult secure wards, Adult IPCU or Paediatric wards. The cost of enhanced observations are real additional costs and will continue to occur. (The basis of estimates for these costs are detailed in an addendum to the needs assessment at Appendix EC4, with the rationale for actual cost estimates detailed in the GEM spreadsheet noted above) This equates to £2,772,000 PA.

This equates to an overall capital cost of the do-nothing option of £0 capital costs and £5,155,172 (Revenue) Per Annum (PA) at 2019 costs.

The 9 Bed Option - Costs

In assessing the cost of the 9 bed option, based on the capacity modelling undertaken, the Project Team:

- Assumed that the unit would be unable to accommodate all Scottish patients
- Assumed a residual requirement for up to 30% of patients to still require transfer to English units with a related impact on protracted stays within local adult facilities. (This was based on scenario modelling that identified that 9 beds could only cope with 70% of the credible scenarios modelled)
- Agreed the need to consequently retain 30% of the baseline revenue costs associated with the commissioning model in this option – in addition to 9 bed staffing costs – in order to address the predicted shortfall.
- Identified that the capital costs were therefore as identified for this option in the relevant capital cost plans, with total revenue costs including a salary and non-salary elements as identified in the 9 bed unit revenue cost plan plus 30% of existing revenue costs associated with the existing commissioned model to allow for periods of insufficiency.

This equates to an overall capital cost of £6,051,300 and £5,464,240 (Revenue) PA at 2019 costs.

The 12 Bed Option - Costs

In assessing the cost of the 12 bed option, based on the capacity modelling undertaken, the Project Team:

- Assumed that the unit would be able to accommodate all Scottish patients with no residual requirement for transfers to English units and no requirement for protracted stays within local adult facilities.
- Identified that capital costs were therefore as identified for this option in the relevant capital and revenue cost plans, with total revenue costs including a salary and non-salary elements.

This equates to an overall capital cost of £7,583,559 and £4,812,557 (Revenue) PA at 2019 costs. It also effectively means that the 12 bed unit option has a potentially lower revenue cost than the 9 bed unit option – based on those modelling assumptions documented.

3.4.1 Summary of Costs

The global summary of costs by option can therefore be summarised as in the table overleaf:

Costs £000 ex VAT	Do Nothing	Option 2 – 9 Beds	Option 3 – 12 Beds
Capital Cost (or Revenue for Option 1)	5,155.1	7,103.4	7,583.5
Whole Life Capital Costs	21,956,762	11,228.3	12,007.8
Whole Life Operating Costs	n/a	32,797.6	20,971.8

3.4.2 Non-Monetary Costs and Benefits

The results of the non-financial option appraisal summarised in section 3.2.8 were used to carry out an assessment of the non-monetary costs and benefits. The outcome of the option appraisal is included at Appendix EC2. The outcome of the OA is summarised in the tables below:

3.4.3 Benefits Weighted Scoring

The non-financial weighted benefits score by option, as detailed previously were:

- Option 3 (12 bed unit) scored highest in terms of non-financial benefits with 871 points.
- Option 2 (9 bed unit) scored second highest in terms of non-financial benefits with 727 points.
- Option 1 (Do nothing) scored in terms of non-financial benefits with 416 points

These are also presented by option, along with relevant weighting, in the summary table below.

1	Do nothing		
CRITERIA	Score Agreed	Weight	Total
Sustainability & future capacity	5	16	80
Improved/enhanced pathways	2	22	44
Local (Scottish) access to capacity & services/reduced travel	2	17	34
Flexibility	5	12	60
Reduced risk profile	6	33	198
TOTALS		100	416

2	9 Bed Unit (3 x 3 bed "clusters")		
CRITERIA	Score Agreed	Weight	Total
Sustainability & future capacity	7	16	112
Improved/enhanced pathways	8	22	176
Local (Scottish) access to capacity & services/reduced travel	8	17	136
Flexibility	6	12	72
Reduced risk profile	7	33	231
TOTALS		100	727

3	12 Bed Unit (3 x 4 bed "clusters")		
CRITERIA	Score Agreed	Weight	Total
Sustainability & future capacity	9	16	144
Improved/enhanced pathways	9	22	198
Local (Scottish) access to capacity & services/reduced travel	8	17	136
Flexibility	8	12	96
Reduced risk profile	9	33	297
TOTALS		100	871

3.4.4 Net Present Value

The Net Present Value calculations have been carried out using the Generic Economic Model (GEM) spreadsheet detailed in SCIM. The table below is a summary of the findings of the Value for Money assessment.

Option	NPV £'s	Weighted Benefit Score	Net Present Cost per Weighted Score	Ranking
Do Nothing	133,749,573	416	321.51	3
9 Bed	135,826,429	727	186.83	2
12 Bed	134,448,338	871	154.36	1

3.4.5 Sensitivity Analysis

A full sensitivity analysis confirmed that the (non-financial) preferred option did not change in any of the alternative scenarios modelled and that actual scores/option only varied minimally. This might have been expected based on the mixed clinical group scoring process adopted and process of seeking agreement on scores through whole group plenary discussion and debate before progressing.

3.4.6 Options Conclusion

The economic appraisal of the 3 options presented identifies that the 12 bed option is not only the preferred service solution but also, all things considered, the preferred economic option for this service moving forward.

3.5 Identifying a preferred geographical (site) location within the Host Board Area

As identified previously, the preferred location for the facility had been identified through an earlier national process, as Woodland View, Irvine (The ACH site). There were a number of issues that made this the clearly best location within the Board area. These included:

- It is the only acute mental health delivery location within Ayrshire & Arran, having been designed and configured to consolidate a wide range of historically disparate services;
- Ready access to acute hospital services in Kilmarnock (Crosshouse);
- Good access to the motorways network and short travel times to the main urban areas of central Scotland;
- Good access to a wide range of leisure and sports facilities in the local area
- The necessary infrastructure is already in place to support further development;
- A large number of relevant professionals are on site at all times who would be able to provide additional ad-hoc/emergency support to the new unit as required;
- A number of potential development sites for the new national unit are available.

There was therefore no further requirement for a specific option appraisal to support this decision – which had effectively been ratified at stage 3 of the national process.

3.5.1 Agreeing the preferred location for the new unit on the preferred site

Agreeing the optimal location to develop the new unit on the Ayrshire Central Hospital campus was identified as an essential component of the overall business case process. Consequently, this element of the appraisal process was facilitated independently to determine the optimal location for the proposed build in conjunction with a wide range of local and national stakeholders.

The objectives of the overall process were:

- To provide a background to the on-going project;
- To present an overview of the existing Ayrshire Central Hospital campus;
- To agree and evaluate those “benefits criteria” that were likely to define the most suitable site for the proposed development at Ayrshire Central Hospital;
- To agree the full range of possible future site options that may be capable of realising these “benefits criteria” (the “long list” of options);

- To identify which of these options appear feasible and are therefore worthy of more detailed consideration (the "short list" of options);
- To support the more detailed evaluation of this agreed range of short-listed options in order to identify which appears most capable of realising the benefits criteria identified;
- To determine which of the available options appears to be best overall through formal "option appraisal" and why this appears to be the case;
- To stimulate evidence-based discussion and objective debate; and
- To appropriately widen stakeholder involvement in the process.

3.5.2 Developing Site Options

In order to determine the facilities required to deliver the emerging service model and their subsequent site requirements, a number of documents were reviewed and discussed with members of the wider Project Team in support of the site option appraisal exercise. These included:

- A high level brief for the facilities required to support the developing service model;
- Data projections intended to calculate current and future capacity requirements for the service/facility;
- Alternative schedules of accommodation, intended to present defined area requirements within different options based on assessed need, form and functionality utilising the latest space planning guidance;
- An assessment of car parking, vehicular and other access requirements based on future activity profiles and local authority guidance;

An indicative building form (relationship diagram) that brought all of these considerations together and attempted to present them in the context of alternative sites and options – as provided by the Board's appointed Principal Supply Chain Partner (Keir Construction).

3.5.3 The Process

The formal non-financial option appraisal process employed was discussed and agreed with participants at the outset.

It involved them working through a series of questions that attempted to apply a consistent and rational approach to the challenge of identifying the best location (site) within the overall Ayrshire Central Hospital campus for the unit as it is currently understood. These were:

- What is the challenge that needs to be addressed?
- What are the benefits criteria (measures) to be applied that identify how well each identified (site) option addresses this challenge?
- What is the relative weighting (importance) of each of these criteria?
- What is the actual weighting (importance) of each of these criteria?
- What are the options (potential sites) available to be scored?

- How well do each of these options (potential sites) realise the agreed benefits criteria?
- All things considered, what is the preferred option (site)? (In the absence of further financial analysis/appraisal)

Group discussion confirmed that the challenge that needed to be addressed was the identification of a preferred site for the built element of NSAIS within the existing Ayrshire Central Hospital site (excluding any areas currently owned but already identified for disposal)

3.5.4 Benefits Criteria

Early discussion on benefits criteria centred on stakeholder experience of similar schemes and the criteria developed in support of them. It also included reference to the criteria used for the original selection of the Woodland View site as provided by NHS A&A.

Group discussion sought to challenge these provisional criteria and test them against the issues that were specific and important to the selection of an appropriate site for the new development. In summary, it eventually led to agreement on a range of benefits criteria that reflected the ability of each identified site to:

- Be accessed easily;
- Minimise disruption to existing services during construction;
- Support long-term flexibility & sustainability (for the new unit and existing services);
- Minimise planning issues, legal issues and lead time;
- Realise/support the NSAIS (Service-specific) clinical/service strategy;
- Realise the wider (Woodland View) clinical/service strategy; and
- Minimise the impact of any site/environmental constraints.

To support the process of applying a relative “weighting” (priority) to each of the criteria identified, a comparative matrix was used.

This comparison matrix forced participants to conclude which criteria were more important than others and in so doing identified the approximate priority order of the identified benefits criteria. As such it was also used as an aid to support the more complex process of applying an actual defined weighting to each criteria and to understand where different stakeholder groups may have differing opinions from the outset.

The populated matrix is shown in Diagram (Overleaf), with the letters reflecting which criteria was deemed overall to be the most important in a trade-off between two and the numbers a tally of the “score” an individual criteria realised in the whole exercise. Thus a higher “score” indicates a higher relative importance.

Whilst this process was seen as challenging by many participants – who struggled on occasions to make decisions about the relative merits of

competing benefits - it was subsequently identified as an important element of the overall option appraisal process as it helped to underline the challenge associated with appraising competing and emotive elements in an objective way.

Key challenges that emerged in this regard included:

- The relative importance of the clinical/strategic fit associated with the new unit compared to existing services – which was much closer than the scoring might indicate; and
- The relative impact of criteria that were seen as “long-term”, such as strategic fit and future flexibility as compared to those that were “transient” such as “disruption during construction”.

Relative Priority of the Agreed Benefits Criteria

A	Accessibility						
A	B	Disruption					
A	C	C	Future flexibility & sustainability				
A	D	C	D	Planning issues, legal issues and lead time			
E	E	E	E	E	Service-specific (NASMIS) clinical/strategic fit		
F	F	F	F	E	F	Site/environmental constraints	
G	G	C	G	E	G	G	Wider (Woodland View) clinical/strategic fit
3	0	3	1	6	4	4	TOTALS

Stakeholder Agreed Relative Priority Of Benefits Criteria

In summary, relative priority agreed was:

- NSAIS clinical/strategic fit (6 points)
- Wider (Woodland view) clinical/strategic fit (4 points)
- Site/environmental constraints (4 points)
- Future flexibility & sustainability (3 points)
- Accessibility (3 points)
- Planning issues, legal issues and lead time (1 point)
- Disruption (0 points)

Participants were informed that this relative prioritisation process was to assist in the process of developing agreed weightings only and that the order could be changed if individual groups felt strongly that it should be during the next phase of the process.

To determine actual weightings to be applied, stakeholder groups were asked to allocate “100 points” appropriately between identified benefits criteria based upon their opinion of the relative importance of each.

This process was applied to ensure that differences in the numbers of representatives from individual stakeholder groups did not have an impact on the overall weightings agreed whilst making management of the overall process a little easier.

Whilst groups were not bound to allocate weightings in line with the relative order identified in the previous session, they were encouraged to use this as an initial basis for developing weighted scores and to explain if/why they may have deviated from these. In the event, only minimal deviation from the overall agreed order was reported.

Weightings were fed back by criteria and group in the first instance to ensure that no one group’s scores were influenced by any others and to support an informed debate about any variances in these scores as they were presented. This discussion/debate was used to understand why different groups had scored criteria in the way that they had and to offer them the opportunity to inform/influence the weighting criteria of others.

Following agreement being reached upon the relative weighted benefits criteria of each stakeholder group, a discussion/debate took place that sought to rationalise these separate "weightings" into a single agreed factor that would be applied to each identified option in the formal weighting/scoring process.

Individual stakeholder and overall "agreed" whole group scores are shown in the diagram below.

Group	1	2				
CRITERIA	Weight	Weight	Mode	Median	Mean (Average)	Agreed Weight
Accessibility	10	15	#N/A	12.5	13	12
Disruption	5	5	5	5	5	5
Future flexibility & sustainability	15	15	15	15	15	15
Planning issues, legal issues and lead time	5	5	5	5	5	5
Service-specific (NASMIS) clinical/strategic fit	25	25	25	25	25	25
Site/environmental constraints	15	20	#N/A	17.5	18	18
Wider (Woodland View) clinical/strategic fit	25	15	#N/A	20	20	20
TOTALS	100	100				100

SCORER'S/GROUP'S NAME/IDENTITY
1 Clinical Group
2 Support Services/Technical Group

Stakeholder "Weighting" Of Benefits Criteria

As can be seen, identified weightings reflected a number of notable issues including:

- An overall broad agreement on the relative importance of most key criteria identified by the four scoring groups;
- "Clinical/strategic fit" scored consistently high from all groups, with the clinical group (Group 1) giving existing and new services the same weighting; and
- "Disruption" and "Planning/legal issues & lead time" scored consistently low for all groups – probably because they were seen as transient and manageable.

Following agreement being reached upon the relative weighted benefits criteria of each stakeholder group, a discussion/debate took place that sought to rationalise these separate "weightings" into a single agreed factor that would be applied to each identified option in the formal weighting/scoring process.

Despite slight differences being noted, the process did not find any trouble in reaching an agreement over the overall weighting to be applied through considering the mean, median and modal weightings identified by individual groups in the context of a wider discussion/debate. Participants were also re-assured that a sensitivity analysis would be undertaken that also demonstrated what their stakeholder group-specific preferred option(s) would be.

Overall the groups concluded that:

- The extent to which a site is able to realise/support NSAIS clinical/service strategy is the most important criteria with an agreed weighting factor of 25 points.
- The extent to which a site is able to realise/support the wider Woodland View clinical/service strategy is also important with an agreed weighting factor of 20 points.
- These leading criteria are followed by a second group that reflect the extent to which a site affects/is affected by environmental constraints; future flexibility; and accessibility, with 18, 15 and 12 points respectively.
- The overall lowest weighted criteria were those related to disruption and planning/legal issues, with agreed weightings of only 5 points each.
- The rationale for the overall weighting agreed was understood by them and explainable through the discussions/debate undertaken and scoring process adopted.

Whilst the overall weighting did not represent the opinions of any one single stakeholder group, it did represent the overall opinions of those individual groups identified who had agreed on the relative priority of most criteria

3.5.5 Long List of Options

The theoretical long-list of options was initially generated by NHS Ayrshire & Arran based on vacant land on the Woodland View site, although this was expanded upon by the facilitator who also sought to explore options that were not immediately apparent. These included areas of land that are currently in use for car parking or service delivery – where the current buildings are old/likely to need replaced at some time in the near future.

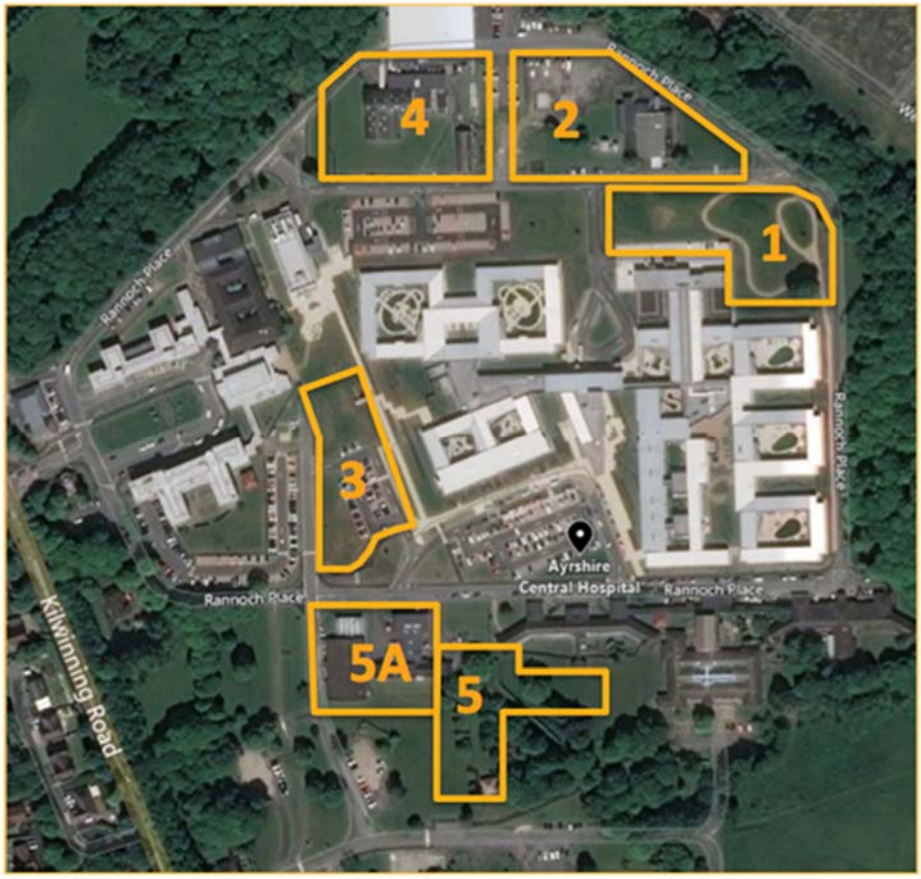
It was agreed that the exploration of any/all potential options was valid, even where these may require the re-provision of existing buildings/services. Specific site options eventually agreed included:

- Option (site) 1: An area of landscaped ground adjacent to existing acute mental health wards and IPCU.
- Option (site) 2: An area of ground adjacent to but across an access road from site 1 that is the current location for a now disused bed store and associated buildings.
- Option (site) 3: An area largely consisting of car parking located between the main elderly wards and Horseshoe Building.
- Option (site) 4: An area adjacent to site 2 that currently includes estates buildings and elements of the supplies function.
- Option (site) 5: A greenfield site, although with a number of mature trees, located behind the existing Douglas Grant Rehabilitation Unit.
- Option (site) 5a: An area adjacent to site 5 that currently features the existing training block and associated car parking.

3.5.6 Short List of Options

In so far as all of the identified options (sites) were deemed viable – albeit to varying degrees - and because the global options available were limited, it was decided that no short-listing was required and that all agreed options should be scored. Consequently the "long list" and "short-list" of options are one and the same. These are shown visually in diagram below.

Visual Representation of short-listed sites at Ayrshire Central Hospital



3.5.7 Options Vs Benefits Criteria

Having agreed the benefits criteria, relative weighting and options to be assessed the group then undertook the formal process of applying a score from 1-10 to each criteria in the context of each option based on the criteria highlighted below where 10 is best and 1 is worst.

10	Could hardly be better, perfection
9	Excellent, almost perfect
8	Very good
7	Good
6	Quite good
5	Adequate
4	Less good

3	Poor
2	Very poor
1	Could hardly be worse

Scoring Criteria Used

This was supported through a process of personal reflection; discussion/debate within groups; and discussion/debate between groups with the intention of seeking consensus agreement around the relative merits of each option and scores to be applied.

Participants were provided with detailed information on the options as the basis for this wider discussion and debate that included:

- A summary of what the option involved presented by the facilitator;
- An independent appraisal and summary SWOT analysis relating to site was presented to the group;
- The opportunity for all participants to discuss/debate/further inform the option and ask relevant questions;
- A brief period for personal reflection and scoring against criteria; and
- A period for group discussion and scoring.

The presentation used to support the scoring process is presented as a separate file in Appendix EC5 (Site Option Appraisal Session 2).

Extensive discussion and debate took place during the presentation and scoring of options, with different groups encouraged to explain the rationale for their scores in order to influence the thinking of others. It was also made clear that groups could change their scores at any time should they believe this to be appropriate.

Appendix EC6 (Site Option Appraisal Report) presents the summary numerical outputs from this process as recorded at the event.

It identifies that:

- Option (site) 2 scored highest on the day with 761 points.
- Option (site) 4 scored second highest on the day with 584 points.
- Option (site) 5a scored third highest on the day with 505 points
- Option (site) 1 scored fourth highest on the day with 387 points
- Option (site) 5 scored fifth highest on the day with 381 points
- Option (site) 3 scored lowest on the day with 343 points
-

It is possible to conclude that Option (site) 2 scored highest because it gained consistently more points against the majority of criteria from all scoring groups i.e. not simply because it scored particularly well against a limited number of criteria or the scores of any one group.

It is also appropriate to note that the outturns of the process were accepted and

agreed unanimously by all participants as an accurate outcome; that they all understood why these outcomes had come about; and that they were consistent with the informed debate that had taken place.

3.5.8 Sensitivity Analysis

In order to explore the potential impact of a range of variances on the numerical outputs from the option appraisal process, a sampling-based sensitivity analysis was conducted. This attempted to understand the main effects of varying key values on the relative prioritisation and scoring of options but was limited due to the very small number of groups participating.

The sensitivity analysis conducted fell into 4 categories of variable:

- Variable 1: Applying overall (group) scores to amended weightings based on the inclusion/exclusion of the weighting identified by individual stakeholder groups.
- Variable 2: Applying individual stakeholder group scores to agreed overall weightings.
- Variable 3: Excluding single individual stakeholder group scores from agreed overall scores and weightings (Using an amended mean score).
- Variable 4: Applying individual group weightings to the same group's individual scores.

Overall, the non-financial site option appraisal process identified that the clearly preferred site option was Option (Site) 2. This remained the preferred option in all of the scenarios considered and scored considerably higher than all other options (sites) considered.

This clearly preferred option is followed by Option (Site) 4 and Option (Site) 5a in all modelled scenarios, although there appear to be sufficient points between each of them and the preferred option to render them irrelevant in all but the most extreme future scenario.

For example, the clearly preferred option becomes unavailable or prohibitively expensive to develop based on a detailed financial option appraisal that builds on the baseline scoring presented here.

In summary, it was concluded that all of the stakeholder groups engaged in this process:

- Are likely to support Option (Site) 2 as an overall preferred option, unless something radical changes;
- Would see any alternative to Site 2 as a poor substitute; and
- Are likely to see options 1, 5 and 5a as unacceptable alternatives.

3.6 Economic Case Conclusion

In summary:

- The earlier national planning process identified a preferred service delivery model based around the provision of a dedicated adolescent in-patient secure service based in Scotland.
- The OBC has identified the alternative options for this unit, which relate entirely to relative size/capacity. (Do nothing, 9 beds or 12 beds)
- A non-financial option appraisal, in combination with detailed capacity modelling confirmed the preferred option as 12 beds.
- NPV analysis based on all available cost data has confirmed the 12 bed option as the economic as well as the non-financial preferred option.
- A further option appraisal has determined the preferred location for the development within the Ayrshire Central Hospital campus.

The preferred option is for a 12 bedded unit to be situated on the Ayrshire Central Hospital Campus (Woodland View), specifically in the location identified previously. Sensitivity testing has been carried out on all elements of the option appraisals conducted to confirm that the identified options do not change significantly under a range of different scenarios, allowing the Board to conclude that the defined location and configuration proposed are appropriate.

4 Commercial Case

4.1 Commercial Case Introduction

This OBC Commercial Case will outline and summarise the proposed commercial arrangements and confirm the PSCP and PSC appointments following the Initial Agreement. The Commercial Case will confirm the cost for advisors and the contractual agreement from Design to build of the proposed facility and will be achieved by considering the following:

- **The Procurement Strategy**: Justification will be provided for the selection of the Procurement route, Evidence will be offered to show compliance with EU Rules and Regulation, and the Procurement plan & timescales will be established;
- **Scope of Works & Services**: The scope and content of the included services, building works, and other works being contracted for;
- **Risk Allocation**: A table of Risk allocation will be offered to demonstrate how risks associated with the project will be apportioned between the Authority and PSCP;
- **Payment Structure**: The proposed payment structure, and other payment principles will be summarised for the complete life span of the contract. Any non-standard arrangements will also be discussed here;
- **Contractual Arrangement**: The form of proposed contract will be laid out here with key contractual and personnel issues also considered.

4.1.1 Proposed Procurement Route

Within the Initial agreement NHS Ayrshire & Arran outlined the rationale for selecting Frameworks Scotland 2 as the preferred procurement route.

Consideration was also given to hub Scotland – Tier 1 Contractor route.
Frameworks Scotland 2 is a procurement method which provides a range of construction-related services for both new build and refurbishment projects. The strategy consists of five Principle Supply Chain Partners (PSCP) who have been appointed to a framework for the delivery of capital projects at pre-agreed rates and whose services include the provision of Design Teams comprising of an Architect, M&E and Civil Structural Engineers and other specialist designers as required.

Health Facilities Scotland's (HFS) Professional Services Contracts (PSC) Framework provides a range of Consultant specialists who supply services required by NHS Boards, such as, Cost Advisor, Lead Advisor, Project Manager to assist in the procurement/construction process.
It was considered that the Lead Advisor is the best suited service for this commission.

Health Facilities Scotland advisors engaged with NHS A&A to develop a High-Level Information Pack (HLIP); which was issued to the five PSCPs and Lead Advisor PSCs. Following a mini competition, the most economical supplier is determined.

Although NHS Ayrshire & Arran were influenced by cost when selecting their preferred option; it was not the sole factor which was considered by Capital Planning and the wider Project Team. Other factors which were considered included but was not limited to:

- Acute healthcare experience;
- Healthcare planning experience; and
- Design & construction of similar natured projects.

It was the conclusion of the group that design experience and knowledge of Child & Adolescent Mental Health Services was essential. Likewise, it was important that the appointed Contractor Consultants have experience of designing and building / providing services of similar secure units.

NHS Ayrshire & Arran concluded that based on the above factors, and further expanded on it the Initial Agreement, that Frameworks Scotland 2 presented the most economical procurement route.

4.1.2 EU Rules & Regulations

Frameworks Scotland 2 does not require advertisement in the Official Journal of the European Union; however, the procurement process recommendations were adhered to.

4.1.3 Procurement Plan

With the assistance of HFS, NHS Ayrshire & Arran prepared and issued the tender documentation which included:

- A brief of requirements;
- Estimated Capital cost and programme;
- Constraints and project risks;
- Scope of duties;
- Project Team members;
- Approach to the project;
- Selection process and criteria;
- Feasibility Study;
- Design Statement; and
- Initial Agreement.

NHS Ayrshire & Arran initiated HFS's mini call of procedure by issuing the prepared HLIP to the five PSCPs and Lead Advisor PSCs.

PSCPs - Responses were received from two of the PSCPs (Balfour Beatty Construction Limited & Kier Construction Limited). Both responses were evaluated as per the following quality and cost evaluation.

Quality Evaluation

Criteria - Quality	Weighted Score
Proposed personnel and supply chain for the project, skills and expertise relevant to the project	20%
Proposed programme	20%
Approach to the project	30%
Interview	30%
Total	100%

Price Evaluation

Criteria – Price	Weighted Score
Priced Activity Schedules for Development Stages 2 and 4 priced PSCMs Stage 4 (construction)	30%
Construction cost score including project specific priced preliminaries percentages	70%
Total	100%

PSCPs - Following the methodology set out by HFS and Frameworks Scotland 2. Kier Construction Limited (hereinafter referred to as Kier) were considered the most economically advantageous tender and have been appointed to finalise design, work up target cost and to construct the facility.

PSC Lead Advisor – Following the tender process as set out in the LA HLIP – after all submissions/interviews AECOM were considered the most economically advantageous tender and were appointed as Lead Advisor. This service includes, NEC Project Management, Cost Management and Supervisor services.

4.1.4 Proposed Procurement Route Conclusion

Following the evaluation processes Kier Construction have been appointed as PSCP for the design and construction of the National Secure Adolescent Inpatient Service. AECOM have been appointed as Lead Advisor.

4.2 Scope of Works & Services

4.2.1 Scope of Services

Lead Advisor Service

AECOM have been appointed as the Lead Advisor to NHS Ayrshire & Arran. Their scope of Service is defined in the standard Frameworks Scotland 2 agreement. AECOM will be responsible for delivering the following key duties:

- Project Manager;
- Supervisor; and
- Cost Advisor.

The Project Manager will be responsible for administering the NEC 3 Contract, chairing project meetings, monitoring programme, producing Project Manager reports, and assessing Early Warnings and Compensation Events.

The role of the Supervisor is to provide BIM technical support during the OBC/FBC stage; including review of BIM layouts. The supervisor will also review the final Works Information Package at Stage 4. During construction, fortnightly site inspections will be carried out and reports prepared on a monthly basis. Support will also be offered during the defects liability period.

The Cost Advisor will be responsible for producing the Joint Cost Advisor Cost Plan, agreeing the Target Price with the PSCP, commercially assessing Compensation Events, producing frequent Cost Reports and carrying out Monthly Valuations.

Principal Supply Chain Partner

Kier have been appointed as the PSCP. Their primary role is to design and build the facility. They will also be responsible for appointing and managing the consultants who will make up the design team, these include:

- Architect;
- Civil and Structural Engineer;
- Mechanical and Electrical Engineer;
- Landscape Architect; and
- Acoustician.

Kier will manage the design through the various stages of the project. They will attend stakeholder meetings and undertake Market Testing to arrive at the Stage 4 Contract Value (target cost). Kier will be also be acting as Joint Cost Advisor with AECOM and will assist in the preparation of the Cost Plan.

4.2.2 Scope of Building Works

The PSCP has been commissioned to deliver is a National Secure Adolescent Inpatient Service (NSAIS). The scope of the PSCP is to Design, Build and Commission a new 12 bedded Secure Adolescent Inpatient Service; complete with support staff facilities, Educational facilities and a Sports facility, as outlined below.

- 12 en-suite bedrooms;
- Associated living, therapy, education and staff areas;
- Range of external areas for relaxation and recreation;
- Sports facilities
- All enclosed within a secure perimeter

The NSAIS facility will be provided under Frameworks Scotland 2 and as such the Capital Funding it is subject to the Scottish Capital Investment Manual Business Case process.

4.3 Design Development

This section of the Commercial Case will detail the development of the design including:

- Clinical Output Specification;
- The Technical brief;
- The Schedule of Accommodation;
- Architectural development;
- Mechanical & Electrical Options.

The design team was commissioned by NHS Ayrshire and Arran, via Frameworks Scotland 2 procurement programme, with Kier Construction as Principal Supply Chain Partner (PSCP). Two briefing documents were supplied in the form of a Clinical Output Specification and Technical Brief. These documents set out the clinical aspirations and the key design and construction requirements of the Authority in the provision of the proposed new building. The client's Design Statement has been used as a benchmark for design for the proposal. During the Stage Two design period, appropriate oversight of the process has been provided by Health Facilities Scotland and Architecture and Design Scotland (A&DS), under NHS Scotland's Design and Assessment Process (NDAP), which is attached at Appendix SC7.

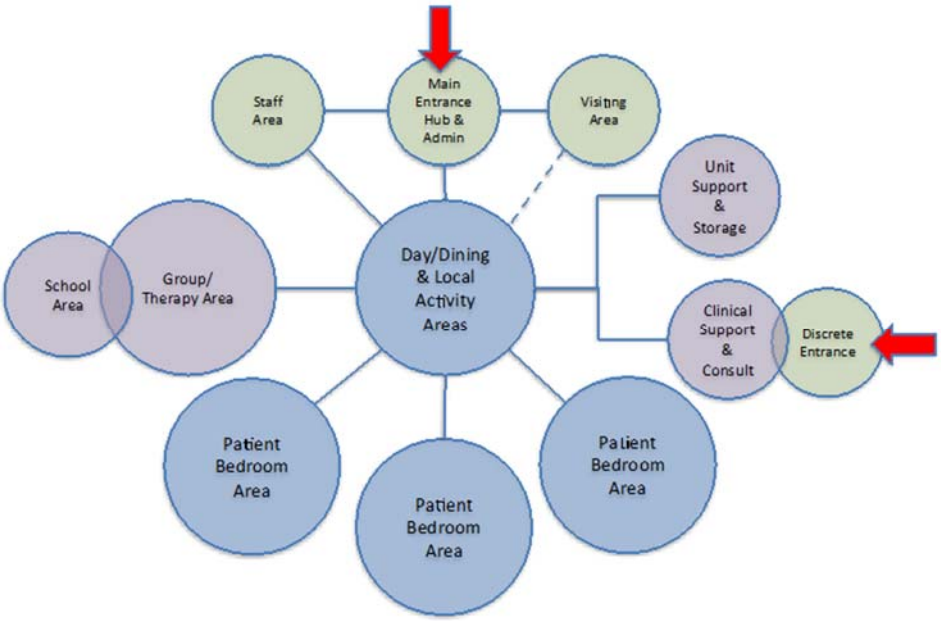
4.3.1 Clinical Output Specification

The purpose of the Clinical Output Specification (COS) is to inform the build element of a new National Secure Adolescent In-patient Service (NSAIS) that is to be developed at a defined location on the existing Ayrshire Central Hospital, Irvine and to ensure that all relevant aspects of therapeutic and enhanced care can be delivered within the facility.

Specifically it describes a 12 bed Inpatient facility. The main areas/zones within this development include:

- A small entrance hub and administrative area;
- A staff area;
- A visiting area;
- Day, dining and local activity areas;
- Patient bedroom areas (In 3 x blocks of 4 beds with Unit support & storage areas;
- Clinical support & consulting areas;
- Group/therapy areas;
- A school/further education/vocational training area.

These areas are described in more detail in the project Schedule of Accommodation, text within this section. The concept of how these areas/zones relate to each other is shown below:



4.3.2 Technical Brief

The Technical Brief sets out the key design and construction requirements of the Authority in the provision of the new National Adolescent Inpatient Service within Ayrshire Central Hospital, Kilwinning Road, Irvine. In short the Technical Brief sets out the Authority's Construction Requirements in the form of a brief and specification of standards to the Principal Supply Chain Partner (PSCP). There are a number of documents that inform the Technical Brief these are, but not limited to:

- Clinical Output Specification;
- NHS Scotland Sustainability Policy and the Scottish Government's Change Plan 2018;
- Energy Efficient Scotland;
- Climate Change Plan – The third Report on Proposals and Policies 2018 - 2032; and
- Scottish Energy Strategy: The future of energy Scotland

The Technical Brief is attached at Appendix CC1.

4.3.3 Schedule of Accommodation

The accommodation for this new facility is detailed in the Schedule of Accommodation (Appendix SC3), which is the baseline for the current 1:200 layout proposal. The starting point for the SofA was HBN 03-02 Facilities for child and adolescent mental health services, which is noted in the Initial Agreement and had an overall Gross internal floor Area (GIFA) of 1855 m².

The Project Team have held a number of meetings and workshops, which included key stakeholders and design team members to determine the operational, spatial and locational requirements of the facility. The final version of the SofA has a GIFA of 1533 m².

The table below provides commentary on the evolution of the Schedule of Accommodation.

	GIFA	Comments
Feasibility Study	1257	A Feasibility Study was commissioned by the Project Team to determine a procurement route.
Initial Agreement	1855 (1452)	The Strategic Case included a Schedule of Accommodation based on HBN 03.-02 Facilities for child and adolescent mental health services (1850) CIG colleagues asked, "Page 106: would it be possible to provide some more detail on how the capital cost range has been calculated? The response included a draft of a SoA detailing GIFA of 1452m², which was then used to provide an upper and lower capital cost estimate.
Outline Business Case	1533	The current GIFA is the basis of the design and cost estimates for the Outline Business case

4.3.4 Architectural

The design team's approach to the design of the facility is to provide a friendly and therapeutic environment for its young patient group, a welcoming impression for visitors while managing safety and security discretely. The initial observation of the site and its environment considered that whilst it is a standalone building in its own right, it would need to sit sympathetically within the collection of the other buildings within the Ayrshire Central Hospital site.

The proposed facility is surrounded by woodland to the northern side, the building form adapts to the shape of the site and directs views from within its main spaces to the surrounding landscape. One of the key design drivers was the transition between private and public spaces. The layout is designed to aid the separation of noisy/public and quiet/private spaces, both internally and externally, this is to allow different uses/activities to happen at the same time without interfering with each other.

In order to achieve a simple zoning of activity, the design is arranged as two standalone elements, with the main entrance acting as a threshold that highlights determined areas of transition.

The education suite is distinctly separate from the living areas, this is to allow

for a similar routine to that of home to be continued during a young person' stay within the facility. The central area helps the patient to adjust from one situation or experience to another. It also provides visual and physical integration of the landscape and emphasises the location of the main entrance within the front facade.

The 12 bedrooms are configured in a layout that allows for different ward configurations, to assist with fluctuations in admissions. The positioning of bedrooms around a single-sided corridor will maximise sightlines for staff observation and provide a pleasant outlook into green space. As a secure inpatient service, the aim of the design is to provide a safe and therapeutic environment, to contain, soothe and de-escalate deep distress so that the patients can receive the care required to enable them to recover.

Additional internal facilities include spaces to learn daily living skills, such as a kitchen and laundry. A large central occupational therapy / activity / games area gives direct access to the courtyards and offers a choice for individual or groups depending on the activity. The multi-functional dining and activity area has access to usable landscaped area. As well as a number of clinical support spaces, a seclusion suite is provided within the facility. This is a dedicated suite allowing a patient to be cared for in isolation for a short period, if they are deemed at risk of harming themselves or others.

While offering different internal places for activities to take place, a range of differently designed external spaces contribute to the patient's wellbeing by providing immediate fresh air from many internal areas, and a place to socialise and exercise. The bedrooms are built around a Therapy courtyard, which can help to create a quieter refuge from the hustle and bustle of other areas. The Recreational courtyard, on the other hand, acts as an acoustic buffer from the Central Decontamination Unit located in the North-West part of the site. This external area is directly linked to the Education rooms, offering immediate spill-out, and houses a 'Sports Barn'; a sheltered area for use in all weather conditions. Central to these other external spaces, there is a Horticultural courtyard, which links directly to the other side of the education rooms and the central internal area.

The current design has all habitable accommodation at ground floor level, with service access and a maintenance service walkway within the roof void. The walkway acts as the actual plant space and serves as the main distribution zone for mechanical and electrical services. It is located directly above the en-suites within the bedroom areas. Due to the sensitivity of the patient group, this allows Estates personnel access from the building's perimeter stair access up to the walkway to carry out maintenance, without disturbing either the young people or the day to day activities of the ward.

4.3.5 Mechanical & Electrical

The main drivers for the M&E strategy is the EU directive "Member states shall ensure that: after the 31 December 2018, new buildings owned and occupied by public authorities are nearly-zero energy buildings". And, demonstrate

compliance of the nearly zero energy through multiple, accurate Dynamic Simulation Models (DSM) as evidence.

NHS Ayrshire & Arran commissioned a report to consider the use of passive sustainability measures and Low/Zero Carbon Technologies (LZCTs) within the National Secure Adolescent Inpatient Service (NSAIS) building, a new build mental health inpatient facility located within the NHS Ayrshire & Arran Ayrshire Central Hospital Estate.

Passive sustainability measures and LZCT performance has been assessed relative to a set of parallel energy performance targets which have been derived from:

- Climate Change Plan, The Third Report on Proposals and Policies 2018 – 2032;
- Scottish Energy Strategy: The Future of Energy in Scotland;
- Energy Efficient Scotland Roadmap;
- Non-Domestic Technical Handbook 2015.

The following headline targets have been set:

- The building must demonstrate a 20% reduction in heat demand, relative to 2015 levels;
- The building must achieve a 59% reduction in regulated and unregulated building CO2 emissions relative to current 2015 levels;
- The building must incorporate a ‘Low Carbon’ technology which contributes at least 70% of the predicted annual heat demand;
- The building will be required to demonstrate compliance with Section 6 Energy 2015 of the Non-Domestic Technical Handbook.

A number of parallel energy performance targets have been set for the proposed NSAIS building. These are summarised below:

- Target 1 - The building must demonstrate a 20% reduction in heat demand, relative to ‘2015 Levels’.
- Target 2 - The building must achieve a 59% reduction in regulated and unregulated building CO2 emissions relative to ‘2015 levels’.
- Target 3 - The building must incorporate a ‘Low Carbon’ technology which contributes 70% of the predicted annual heat demand.

More information on the targets listed above is contained in LCZT Report in Appendix SC4.

The Table overleaf summarises a comparison of the options available to meet the nearly zero energy directive

		Base Case Gas boilers and PV Panels	Option 1 Gas CHP and Dual Fuel Boilers	Option 2 GSHP & Decentralised ASHP	Option 3 Decentralised ASHP
LZCT Plant Capital Cost[1]	£	135,000	50,151	111,191	68,867
25 Year life cycle cost (No RHI)	£	1,544,531	1,383,699	1,655,412	1,590,636
Building Heat Demand	kWh	417,657	286,945	286,945	286,945
'Low Carbon' Heat Source Contribution.	kWh	0	200,862	286,945	286,945
	%	0%	**70% - 0% Over system lifetime**	**100%**	**100%**
Building CO_2 Emissions (CURRENT DBEIS 2018 CO_2 Emissions)	Kg.CO_2	127,033	98,594	65,457	68,403
Percentage Reduction in CO_2 Emissions relative to 2015 base case.	%	NA	**22.4%**	**48.5%**	**46.2%**
Building CO_2 Emissions (FUTURE DBEIS 2032 CO_2 Emissions)	Kg.CO_2	NA	95,401	18,001	18,811
Percentage Reduction in CO_2 Emissions relative to 2015 base case.	%	NA	**24.9%**	**85.8%**	**85.2%**
Annual Heat Cost [2]	With RHI (£)	20,429	8,300	2,524	6,055
	No RHI (£)	20,429	**8,300**	**12,511**	**13,773**
System Payback	With RHI (Years)	NA	6.1	10	9
	No RHI (Years)	NA	NA	No Payback	No Payback

[1] Estimated from BSRIA guidance 2015
[2] Ground Source and Air Source Heat Pump systems are eligible for the Renewable heat Incentive. Payments are not guaranteed as the RHI scheme may expire in 2021

Option 3 – decentralised Air Source Heat Pump (ASHP) is the preferred option to provide heating to the proposed facility. This option would result in a 46.2% reduction in CO2 emissions relative to 2015 base levels.

This option would meet the requirement to provide at least 70% of the building heat demand from renewable sources. All space heat, ventilation heating and the building domestic hot water heating demand would be generated by electric heat pumps. As the carbon intensity of grid supplied electricity decreases over the lifetime of the system, this option will provide a very low carbon heating strategy.

Whilst this option would align with 2032 energy and CO2 emission targets, the

use of electric heat pumps would incur a higher capital cost relative to more traditional heating strategies.

Use of higher temperature heat pumps would mean that annual Seasonal Coefficient of Performance (SCoPs) are lower than would be achieved by using a lower grade heat emitter, such as underfloor heating. This means that more electricity is required to meet the building heat load.

ASHP are not without their problems, it is acknowledged that air source heat pump efficiency is driven by local ambient weather conditions. It is essential that manufacturers are consulted on potential performance relative to local weather data. If heat pumps are not suited to local conditions, lower SCoPs will be achieved and, as unit compressors will be working harder for longer, this can result in additional reactive maintenance costs.

Heat pumps could offer a relatively low annual heating cost and a short payback if current RHI rates were applied. However the future of the RHI is uncertain and the scheme may close in March 2021. If no subsidy were available, annual heating costs would increase and the system would not payback.

In summary the choice of primary heat source for the facility will be ASHP, however, any backup will be of a more traditional type e.g. gas fired boilers or CHP.

4.3.6 Civil & Structural

Key Design Parameters

The structural design for this project has been influenced by the Authority's Technical Brief and, outlined in workshops with the Design team.

4.3.7 Drainage

It is currently proposed that the foul and surface water drainage will connect into the existing site wide drainage system.

A Pre-Development Enquiry is to be submitted to Scottish Water to agree allowable discharge flow rates for the development prior to progressing to the next design stage and before the submission of the project for planning permission.

It is assumed at this stage that Scottish Water will advise that surface water discharge is in line with standard greenfield run off rate guidance and that attenuation of surface water will be required in some form. This has been allowed for within the cost plan.

4.3.8 Contamination and Ground Gas

The site investigation works have commenced on site and a report is included

at Appendix SC5.

Due to the presence of peats band within the site that ground gases are likely to be present and the appropriate measures should be taken. Site investigation report is included within Appendix SC5. The cost of the structural solution (piles and ground beams) has been allowed within elemental cost plan.

4.3.9 Stability

Stability within the residential, treatment and education areas is to be achieved via the utilisation of the timber stud walls as racking panels by sheathing them in plywood or OSB.

The racking panels will transfer the lateral loading applied to the structure to the ground floor slab which will in turn distribute it to the foundations.

The plantroom and sports barn will gain stability from in plane bracing within the roof level structure distributing lateral loads to vertically braced bays around the perimeter of the structures.

4.3.10 Substructure and Ground Floor

Site investigation results show the area for construction is made up of lens of peat, made ground and some sandy ground. At this stage the foundation design will comprise of piled ground beams supporting a suspended reinforced concrete flat slab which forms the ground floor.

4.3.11 Superstructure

The residential, treatment and education areas are to have their superstructure formed generally from timber frame construction with additional steelwork goal post frames and beams where required. This is to consist of timber stud walls and racking panels supporting timber roof joists and trusses.

The plantroom and sports barn are to be formed from steel framed construction.

4.3.12 AEDET Refesh

The OBC AEDET workshop was held on 21 February 2019 with the assistance of Susan Grant, Principal Architect for Health Facilities Scotland. The AEDET report is attached at Appendix SC6.

The OBC workshop captured the improvements made on the initial benchmark properties used. The AEDET workshop reviewed the current design, with the exception of Mechanical & Electrical, which had not been sufficiently developed at that stage due to the introduction of the “nearly zero energy” directive.

Relevant and important questions relating to this project were weighted and benchmarked against a target score.

4.3.13 National Design Assessment Process (NDAP)

In addition, the Project Team has worked with Architect + Design Scotland (A+DS) to develop a bespoke Design Statement for the National Secure Adolescent Inpatient Service (attached at Appendix SC7). Compliance with the Design Statement will be monitored and reviewed by NHS Ayrshire & Arran throughout the development of the project. SCIM's supplementary guidance: NHS Scotland Design Assessment Review Process (NDAP) also provides the benefit of an independent design review at key stages from A+DS and Health Facilities Scotland (HFS).

4.3.14 British Research Establishment Environmental Assessment method (BREEAM)

NHS Ayrshire & Arran in conjunction with Project Team, key stakeholders and our M&E advisors have held three focused BREEAM workshops to undertake preliminary scoring. The potential score sits at 68.29% - Very Good with a risk weighting applied to relevant credit areas.

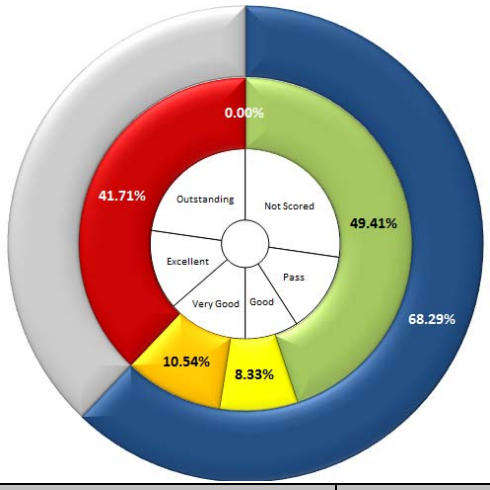
Our M&E designers are developing a 2018 bespoke BREEAM tracker document. This document provides a more intuitive mechanism to evaluate, monitor and predict the BREEAM scoring and is attached at Appendix SC8.

The tracker allows credit headings to be allocated to appropriate members of the design team and allows credits to be categorised in terms of risk, cost, value and difficulty.

Credits within the checklist have been broken down into four distinct risk categories:

- Anticipated Credits – Low risk, best value BREEAM Credits which form the basis of best practice design and which benefit the overall design with limited additional cost.
- Target A Potential Credits - Medium risk, technically challenging credits above best practice design which have implications on project cost, procurement strategy and site space requirements.
- Target B Potential Credits - These credits have high associated risk, due to uncertainty about aspects which are to be assessed or likely to be out of the control of the design team. These credits cannot be guaranteed.
- Unlikely credits - credits which are deemed unobtainable/unlikely due to the nature of the site, the nature of the building operation or due to the project scope.

The tracker wheel provides a visualization of potential credit scoring and prediction of overall BREEAM rating. It will also be used to show progress with collation of required evidence against to achieve scoring.



Credit Type		Potential BREEAM 2014 Score
Anticipated Credits		49.41
Potential Target A		8.33
Potential Target B		10.54
Unlikely credits		41.71
Maximum Potential Score		68.29
		Very Good

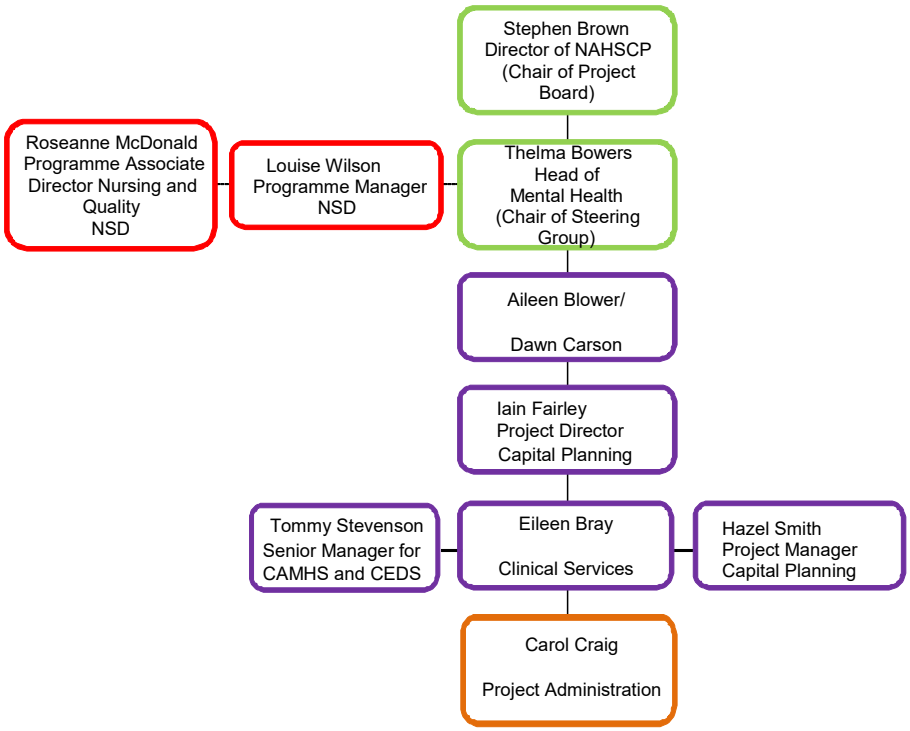
4.4 Associated buildings and Assets

4.4.1 Condition and performance of Existing Assets (Affected by this proposal)

NHS Scotland does not have a physical or built asset associated with the National Secure Adolescent Inpatient Service (NSAIS).

4.4.2 Identification of Resources

The diagram overleaf represents NHS A&A's Project Team who will be responsible for delivering the new facility. More detail regarding the Project Team is provided in the Management Case.



4.5 Risk Allocation

4.5.1 Key Principles

This project proposes to use the New Engineering and Construction Contract (NEC 3 – Option C). Some of the key features of this contract are:

- Parties are encouraged to work together as partners in an open and transparent approach and to ensure that this partnering ethos is maintained;
- There is a “Gain/ Pain share” mechanism to act as an incentive to the delivery team, by rewarding good performance and penalising poor performance;
- A clear and transparent system is “on the table” to enable negotiation to take place on prices;
- A level of “price certainty” is determined;
- All price thresholds are set using quantitative risk analysis;
- It is a variant of Maximum Price/ Target Cost (MPTC) approach.

As set out in the Frameworks Scotland 2 guidance notes, NHS Ayrshire & Arran and Kier are joint owners of the Project Risk Register. On this basis, risks are allocated to the party who is best placed manage the risk subject to Value for Money; responsibility for these risks is also clearly identified. The overriding objective is always to optimally allocate risk, in lieu of maximising its transfer.

4.5.2 Risk Allocation

Potential allocation of risk is as summarised in the table overleaf.

Risk Category	Potential allocation of risk		
	NHS Ayrshire & Arran	Kier	Shared
Design		✓	
Development and Construction		✓	
Transition and Implementation			✓
Performance			✓
Operating	✓		
Revenue	✓		
Termination	✓		
Technology and Obsolescence	✓		
Control	✓		
Financing	✓		
Legislative			✓

- As above, the risk for Development and Construction will be held by the PSCP, except in the event of Compensation Events or Delays which under the Contract entitle Kier to additional time and/ or monies.
- Transition and implementation risks are shared between Kier and NHS. Kier will predominantly carry this, subject to compliance with the authority's requirements.
- Performance risk will sit with Kier subject to agreement. For example, performance failures which arise because of NHS will offer relief to Kier.
- Under Frameworks Scotland 2, Kier will be responsible for designing & building the proposed facility; upon completion the facility is handed over to NHS Ayrshire & Arran. As such, Operational risk is carried solely by the NHS.
- It is the sole responsibility of NHS to provide and manage the revenue for the project.
- Termination risk is carried by NHS.
- The risk for Technology and Obsolescence is also carried by NHS.
- Change of control, termination for instance, sits fully with NHS.
- Any risk to Financing will also sit completely with the NHS.

- Legislative risks shall be carried by both parties. While it is the responsibility of Kier to produce a design, which is compliant with current Legislation, any changes in Law will give rise to a Compensation Event.

4.6 Payment Structure

4.6.1 Framework Scotland 2

Under NHS Scotland Frameworks Scotland 2, PSCs and PSCPs are appointed on the NEC form of contract A, C, or E.

NHS Ayrshire & Arran have appointed Kier on an Option C contract. Option C is a target price paid monthly up to the target cost (unless Compensation Events are added). Option C Contracts entitle the payments to be based on actual costs incurred by the PSCP. This will include a tendered Fee up to an agreed Target Cost Cap. Pain/Gain share mechanisms are set out in the Contract for any final costs above or below the Target Cost.

4.6.2 Charging Mechanisms

NHS Ayrshire & Arran are procuring this project through Frameworks Scotland 2; the design is led by Kier and their appointed design team.

The PSCP, Kier, will be incentivised with the use of the NEC 3 Option C Contract which encourages the PSCP to provide design efficiencies throughout the project. Furthermore, during the design and build phases, consideration will be giving to the projects Whole Life Cost as an additional means of achieving maximum Value for Money.

4.6.3 Open Book Philosophy

NEC 3 Option C relies on the payment of a “Defined Cost” (see 4.4.5.) and an open book accounting philosophy. In order to be effective, this requires the system for recording staff time and invoicing to be robust, reliable and transparent. This will allow AECOM’s Cost Advisor to clearly identify the costs and to establish which of these costs have truly been expended on the project and are therefore allowable under Option C.
All projects costs should reference specific items on a submitted Activity Schedule. Detail will also be provided against five main item headings, namely:

- Labour;
- Plant;
- Materials;
- Sub-contractors;
- Preliminaries.

Any orders, deliveries, payment invoices, plant hire, and sub-contracts are required to be cross-checked against Good Received Notes.

The most important cost consideration of the contract is the Target Price, which

should be set during the pre-construction phase – HFS Stage 3.

The price is set when the PSCP has concluded the costing of their design and the risk register is agreed and all signed off as agreeable /VFM by AECOM Lead Advisors.

4.6.4 Defined Costs

NEC 3 Option C outlines a Defined Cost in Clause 11.2(23) as:

"*The amount of payments due to Subcontractors for work which is subcontracted without taking account of amounts deducted for:*
Retention,
payment to the Employer as a result of the Subcontractor failing to meet a Key date,
the correction of Defects after Completion,
payments to Others and
the supply of equipment, supplied and services included in the charge for overhead cost within the Working Areas in this contract
and
the cost of components in the Schedule of Cost Components for other work
less Disallowable Cost."

Disallowable Cost is defined in NEC 3 Option C under Clause 11.2(25).

4.6.5 Contractors Share Percentage and Share Range

NEC 3 Option C sets out the pain share/ gain payment mechanism under Clause 53, which is to be read in conjunction with Contract Data part 1. The following Diagram outlines the share ranges on a Frameworks Scotland 2.

Kier, as the PSCP, shall be incentivised with the Target price with pain/ gain mechanisms to control the project costs.

Pain/ Gain Share Model

> 100%	Contractor takes 100% of the Pain
100%	Target Price
95 – 100%	Contractor & Employer share the gain 50:50
< 95%	Employer takes 100% of the Gain below the 95%

4.6.6 Priced Activity Schedule

NEC 3 Option C is defined within Clause 11.2(20). Furthermore, Clause 54.1 states that "information in the activity schedule is not works or site information". It is the responsibility of the PSCP to provide the activity schedule within Contract Data part 2.

With NEC 3, the activity schedule should relate to the accepted programme as

defined under Clause 31.4.

It is not the principle of NEC 3 to link the programme and activity schedule for assisting in the contractor's payments but is done so to assess compensation events and contractor's share.

4.6.7 Recording and Collation of Costs Information

It is also a requirement of NEC 3 Option C, under Clause 52.2, that Kier maintain records of all of the following, which the PSCP should "allow[s] the Project manager to inspect at any time within working hours the accounts and records which he is required to keep" as set out in Clause 52.3.

Documentation which Kier are required to keep, referred to above, includes:

- *"accounts of payments of Defined Costs,*
- *proof of payments being made,*
- *communications about and assessments of compensation events for Subcontractors,*
- *other records required by the works information."*

4.6.8 Compensation Events and the Application thereof

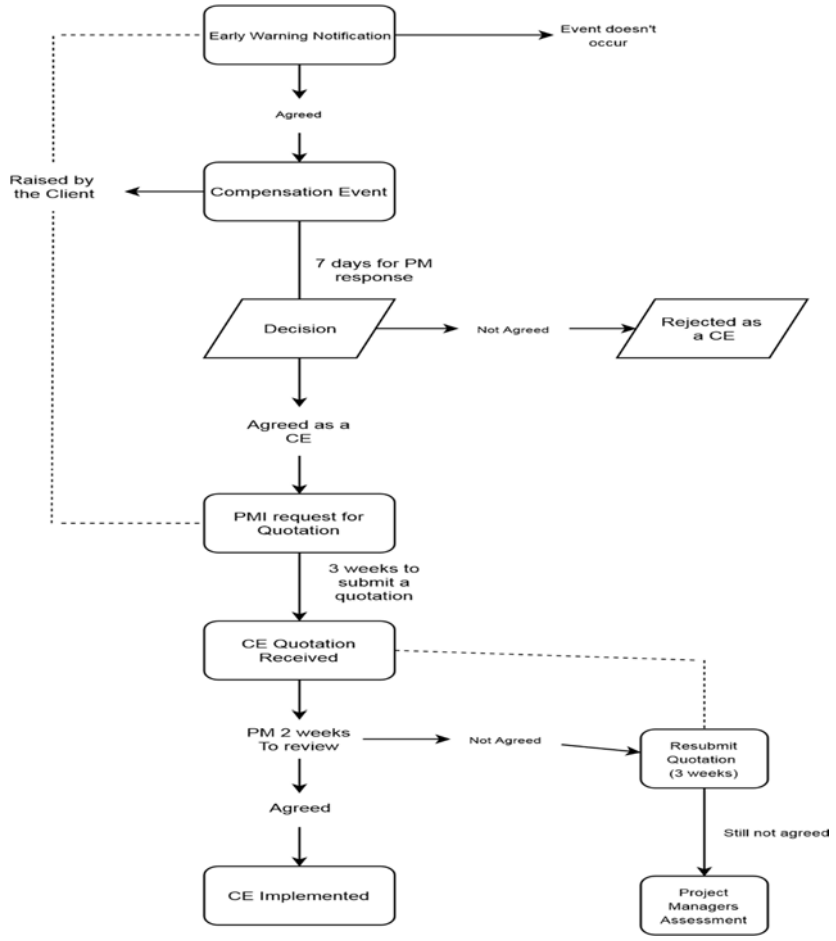
NEC 3 Option C sets out through Clause 60.1, the 19 events which Kier will be entitled to raise a Compensation Event (hereinafter referred to as CE) for in the event of which they occur. By listing the applicable events in one concise place, NEC 3 can reduce disagreements and allows the events to be allocated in line with a modern risk allocation principle.

NEC 3 allows for CEs to be raised by either the Project Manager or the PSCP. The project manager shall raise a CE for an instruction and/ or a changing decision. Whereas, Kier will notify a CE where they believe an event has occurred which the Project Manager has not issued a notification.

Clause 62 sets out the process for submitting quotations when the Project Manager has accepted a CE. Every quotation should cover cost and time, with a direct link shown to the accepted programme.

The Project manager will make their assessment in line with Clauses 63 or 64 – implementation of their decision is then made in accordance with Clause 65. Decisions and submission of quotations are restricted under various time constraints as a means of ensuring the process does not become drawn out for periods of time. This complete process can be summarised in the diagram shown overleaf.

Compensation Event Flowchart



4.7 PSC & PSCP Costs Stages 2 to 4

PSC and PSCP costs for stages 2-4 are as summarised in the table below.

PSC & PSCP Costs Stages 2-4

Anticipated Construction Cost per OBC Affordability Check £7,372,862.00

	Stage 2 (OBC)	Stage3 (FBC)	Stage 4 (Construction)	Compensation Events (CE)	Total	% of Construction Cost
PSC - AECOM	£ 27,731.33	£ 33,647.20	£ 62,583.87	£ 19,062.60	£ 143,025.00	1.94%
PSC - HGHCP	£ 5,923.50			£ 29,345.50	£ 35,269.00	0.48%
				Sub-total of PSC	£ 178,294.00	2.42%
PSCP	£ 144,406.00	£ 185,000.00	£ 90,000.00	£ 35,594.00	£ 455,000.00	6.17%
				Total	£ 633,294.00	8.59%

4.8 Key Contractual Arrangements

4.8.1 NEC Contract

As mentioned previously, Frameworks Scotland 2 with NEC 3 Option C is the vehicle for procuring this project. The framework encourages a collaborative working environment, and this ethos is further reinforced through the use of an NEC contract.

Having applied the tendering methodology for Frameworks Scotland 2, Kier have been appointed the PSCP; they will be responsible for the design, working up of the project target cost, and for the construction of the project. As Lead Advisor AECOM and their team of Project Managers and Cost Advisors will ensure input to and examination/agreement of the processes and ultimately a Value for Money assessment report.

4.8.2 Proposed Implementation / Business Case Timetables

Key Programme Dates

Task	Programme	Forecast date	Approved
Strategic Assessment	18 April 2017		Noted by Capital Investment Group (CIG) June 2017
Initial Agreement	28 June 2018	Complete	Approved to proceed with OBC June 2018
Outline Business Case	July 2019	On track to be submitted to CIG August 2019	
Full Business Case	February 2020	February 2020	
Anticipated Construction start date	Spring 2020	April 2020	
Anticipated handover	Winter 2021	March 2021	
Post Project Evaluation	Spring 2022	Spring 2022	

Kier have also, through their currently accepted construction programme, advised of their construction critical milestones. These milestones are shown overleaf.

Construction Critical Milestones

Milestone	Current programme forecast date
Planning Submission & Approval	18th October 2019 – 10th January 2020
Building Warrant Submission & Approval (Stage 1 substructure & drainage)	18th October 2019 – 10th January 2020
Building Warrant Submission & Approval (Stage 2 Superstructure/building)	8th November 2019 – 31st January 2020
Building Warrant Submission & Approval (Stage 3 M&E)	15th November 2019 – 7th February 2020
Demolition Works	12th November 2018 – 1st February 2019 (complete)
Start on Site	April 2020 – 19th March 2021
Project Completion	23rd April 2021
Post Project Evaluation	April 2022

It is anticipated that construction of the project should take approximately 45 weeks; including time for mobilisation, construction, completion, commissioning and handover.

Demolition of the existing building on site has already been carried out.

4.8.3 Communication Strategy

A communication plan, like that shown here is expected to be followed. This plan will be continually refined and developed throughout the remaining OBC and full FBC stages of the development.

Communication Aims

- Raise awareness of the new Mental Health Facility and the services which it will offer;
- Ensure that perspective patients, staff, and key stakeholders are in constant dialogue with Project Team;
- Highlight the benefits of the service as part of the Mental Health Strategy 2017- 2027.

Key Communication Messages

- This is an important new development which would be the first of its kind in Scotland;
- The facility will provide accommodation and treatment for up to 12 individuals, aged between 12 and 18 years old, within a secure environment;
- Within the facility, the young persons will receive assessment, treatment care and education. The new facility will have the necessary accommodation to facilitate their care

4.9 Commercial Case Conclusion

The Commercial Case outlines the process for appointing the PSCP and PSC in conjunction with the cost of the services provided up to and including completion of construction. In addition, both the PSC and PSCP have committed to aiding Post Project Evaluation of the project.

The cost of £398,377 relating to stages 1-4 for the PSCP services, equates to 6% of the capital cost of construction.

The cost of £173,600 relating to stages 1-4 for the PSC services equates to 2.5% of the capital cost of construction.

Overall the PSCP and PSC fee of 8.59% of the capital cost of construction is comparable with similar projects as noted in the table below:

Project	Works Cost	PSC	PSC %	PSCP	PSC %	Total
NSAIS	£7,372,862	£178,294	2.42%	£455,000	6.17%	8.59%
East Lothian Community Hospital (This was a HUB project and has a different financial model)	£65,016,830	£3,714,148	5.71%	£ -	0.00%	5.71%
Golden Jubilee Phase 1	£8,597,835	£287,533	3.34%	£722,713	8.41%	11.75%
Denburn	£5,593,000	£150,000	2.68%	£370,000	6.62%	9.30%

Works Cost: including Prelims, PSCP fee, Inflation, client contingencies (Optimism Bias)
PSC: Lead Advisor: Project manager, Cost manager, Supervisor, any other specialists
PSCP: PSCP Costs for Stage 1/2/3 + PSCP appointed designers Stages 1/2/3/4

5 Financial Case

5.1 Financial Case Introduction

The Financial Case presents the analysis of the preferred option based on the overall capital and revenue costs and sets out the following:

- Potential Capital funding requirement;
- Potential revenue impact;
- Summary of conventional capital costs and funding requirements;
- A statement of affordability; and
- Assessment of affordability gaps.

The preferred option is to design and construct a 12 bedded secure adolescent inpatient facility that is seen as a much-needed resource and asset to deliver part of the Mental Health Strategy 2017-2027. Nationally it is recognised that this project represents a challenge not only in the delivery of the strategy but also ensuring that this is achieved within the Capital and Revenue Resources available nationally.

NHS Ayrshire & Arran recognise that the proposed National Secure Adolescent Inpatient Service new build at Ayrshire Central Hospital, Irvine, is a significant undertaking and is a key requirement to support the delivery of the National Mental Health Strategy. There are several key issues which need to be considered to allow the successful delivery of this project and to ensure that the project remains affordable within the capital and revenue resources available nationally. These will include:

- Ability to deliver the clinical model;
- Ability to reduce length of stay;
- Bed numbers required within the new hospital;
- Single Room requirements;
- Link to national initiatives;
- Impact of “nearly zero energy” directive;
- Impact on potential regional centres and private sector suppliers; and
- Development of links between Health & Social Care Partnerships nationally.

The investment in a National facility will provide significant improvement in adolescent secure mental health inpatient services throughout Scotland in a new state-of-the-art/environmentally friendly facility with 100% single room provision with en-suites.

5.2 Preparing the Financial Model

5.2.1 Financial Model Summary

Key Information/ Assumption	Associated Costs	Comments
Impact on operating costs	£4,812,557 recurring revenue	Operating Costs include: Staff Pharmacy Domestic Rates Capital Charges Energy Portering Estates Training Transport Educational resources Other
Depreciation	£233,730 included above in Operating Costs	Depreciation is based on straight line, where the value of the investment is divided by the number of year associated with the relevant area. Furniture and Equipment is depreciated over 7 years, with the Building depreciated over 50 years.
Property Lifecycle Costs	£4,265,673	Based on AECOM Lifecycle Model, dated May 2019; cost excludes capital cost and is not NPV; NPV stated in separate Whole Life Cost Report in Economic Case
Inflation	Inflation is set at 3.51% = £228,403	Inflation is in line with current building indices and set at 3.51%
Taxation	Vat @ 20%. = £1,438,039.	VAT reclaim is assumed at 12%. This is a conservative estimate. Previous Framework Projects have ranged from 16% - 22% recovery
Proposed method of capital financing and any associated charges	Capital = £9,861,510 Revenue = £4,812,557	Capital will be wholly funded the Scottish Government. Revenue funding will be made by contributions from NHS Board's through NRAC.
Proposed funding sources and potential for income generation	Capital = £9,861,510 Revenue = £4,812,557	Scottish Government.

5.3 Capital and Revenue Impact

5.3.1 The Capital and Revenue Consequences

The capital costs for the preferred option is shown in the table below which has been abstracted from the Cost Plan which has been produced in collaboration with the Lead Advisor (AECOM) and the Principal Supply Chain Partner (Kier Construction).

Forecast Capital Costs for the Preferred Option

Capital Costs		NSAIS
Building capital cost – incl External works and Engineering	Value	£6,506,793
Inflation – Tender Price and Building Cost		£228,403
PSCP Costs – incl Agreed Compensation Events only		£455,000
Lead Advisor fees – incl Agreed Compensation Events only		£178,300
NHS Ayrshire & Arran Cost		£260,800
Optimism Bias		£637,666
Planning Fees and Building Warrant		£32,000
Furniture & Equipment Costs – VAT incl		£297,085
		£8,596,036
VAT (Currently applied to building cost, inflation and PSCP cost)	20%	£1,438,039
VAT Recovery	12%	£172,565
	Total	**£9,861,510**

This represents the estimated costs of construction in respect of a primarily single storey facility with accompanying external works, first floor plant rooms and service walkway; amounting to a total footprint of 1533 m². Design information upon which the estimated costs are based is detailed in the separate Joint Cost Advisor Affordability Check Rev 5 attached at Appendix FC1 (Elemental Cost Plan).

The estimated Building capital cost has increased from the Initial Agreement proposal for a variety of reasons and takes account of several previously unforeseen factors, including:

- Increase in total GIFA (1452) (IA) to 1533 (OBC));
- Inclusion of outdoor sports area (Sports Barn);
- Addition of Education Wing;
- Ground conditions have been found to be poorer than previously expected leading to a more onerous foundation solution;
- Introduction of courtyards and discrete entry;
- An increase in external envelope height and various items of design development has increased quantities such as doors/ windows and external wall areas;
- Requirement for the compliance with the “nearly zero” energy target which has increased the specification requirement for the heating system.

The Build Cost Elemental breakdown is shown overleaf.

The table above shows on an elemental basis the difference between the IA and the current estimated build cost (OBC), and what the 'filter' down effect is on each percentage-based item e.g. prelims, risk and direct fee. A number of assumptions on design and ground conditions had been made at IA stage and ultimately some of these did not fully materialise. This accounts for a proportion of the £2.2m cost difference and is analysed in greater detail below.

Furthermore, a number of previously unforeseen costs have arisen which include abnormal ground conditions and a more onerous requirements on minimising / eliminating carbon emissions.

Build Cost Elemental Considerations

Element	**Previous Estimate (IA)** (GIFA 1257 m2)	**Current Cost Estimate (OBC)** (GIFA 1533 m2)	**Difference (OBC – IA)**
Facilitating Works	-	-	-
Demolitions and Alterations	-	-	-
Substructure	£259,150	£495,112	£235,962
Frame	£251,400	£453,839	£202,439
Upper Floors	-	£8,210	£8,210
Roof	£207,021	£210,472	£3,451
Stairs	-	£16,000	£16,000
External Walls	£115,519	£387,924	£272,405
Windows and External Doors	£95,514	£194,600	£99,086
Internal Walls and Partitions	£197,832	£379,893	£182,061
Internal Doors/ Screens	£139,346	£252,810	£113,464
Wall Finishes / Decoration	£180,596	£46,438	(£134,158)
Floor Coverings	£91,241	£72,420	(£18,821)
Ceilings	£128,810	£84,852	(£43,958)
Fittings and Furnishings	£140,876	£171,805	£30,929
Mechanical	£529,546	£787,831	£258,285
Electrical	£429,121	£969,341	£540,220
Lifts	-	-	-
Builders Works	£47,933	£73,313	£25,380
External Services	£116,276	£141,788	£25,512
External Works - Generally	£429,034	£342,285	(£86,749)
External Works - Sports Barn	-	£247,242	£247,242
Sub-total	**£3,359,215**	**£5,336,175**	**£1,976,960**
Contractors Prelims	£409,488	£593,916	£184,428
PSCP Risk Allowance	£203,077	£296,505	£93,428
PSCP Fee	£292,828	£280,197	(£12,631)
Construction Cost	**£4,264,608**	**£6,506,793**	**£2,242,185**

The text that follows is an analysis of each element that has incurred a cost increase and an explanation for the change from IA to OBC cost.

- **Substructure**: The increase in GIFA is accountable for an increase in cost of approximately £55,000. The remaining £180,962 is attributed to the inclusion of piling across the whole building at £136,500 and the remaining £44,462 is a result of increased quantities of concrete for ground beams and pile caps.
- **Frame**: A cost increase of £202,439 has been caused by the increase in GIFA meaning a larger frame is required. The external wall heights have increased to 5.2m and now require structural support (I joists).
- **A service walkway** has been added which requires a non-standard frame supported by glulam beams, and an element of structural steel is required to supplement the design.
- **Upper floors:** The full £8,210 is accounted for by the inclusion of a service walkway and first floor plant room; neither of which had been included in the design at IA stage.
- **Roof:** The increase in GIFA has meant that the roof area has increased by 165m².
- **Stairs**: £16,000 additional cost for stairs is required to access the maintenance walkway in the roof void. This addition of stairs will maintain the secure perimeter and prevent intrusive maintenance.
- **External Walls**: There is an increase of £272,405 on the external walls. £128,950 of this is a result of the external wall heights increasing from 3.5 – 5.2m. There is also an increase in external wall area caused by the inclusion of the education wing and general building layout. External wall finishes within the IA were based on a brickwork design. The current design has developed and now includes a combination of feature corduroy brickwork, render, aluminium panels, curtain walling, and traditional brickwork – these additional finishes have added £135,901.
- **Windows and External Doors**: £99,086 has been added to the cost as a result of the increased GIFA, change in wall heights and design development. These factors have increased the number of windows by 160% and external doors by 225%.
- **Internal Walls and Partitions**: Internal wall heights and have increased from 3.2m across the full facility to varying heights. The increase in heights has added £130,015 of the overall £182,061– the remainder of which has been caused by the increased GIFA.
- **Internal Doors and Screens**: There is a 30% increase in the number of internal doors which is accountable for £32,220. The rate for all doors has also been adjusted now that a door has been specified and market testing has been carried out. There are also 7 additional internal screens which were not previously included in the design.
- **Fittings and Furnishings**: Fittings and Furnishings have increased the cost by £30,929 which is a result of the specialist equipment required for education i.e. £10,000 fume cupboard. Another reason for the increase in fittings and furnishings is the specification for fitted bedroom furniture.
- **Mechanical and Electrical**: When combined, plus Builders Work in Connection (percentage-based on both items), the cost uplift is £823,885. There are several reasons for this including the Service Walkway which has

altered the services design, the requirement for LZC heating which has added £200,000, and the increase in specification for high specification security systems such as "Staff Attack".

- **External Services:** The £25,512 uplift is a result of the development of the design and site information. The current proposal includes for a significant number of manholes and related pipework.
- **Sports Barn**: £247,242 is the cost of providing an outdoor games area. This area is seen as essential for this patient group, and was not included in the IA.

5.3.2 Original Capital Ceiling

The original Capital Ceiling, as set out and agreed at the Initial Agreement is shown in the table overleaf with the current forecast depicted alongside.

Cost comparison from Initial Agreement (IA)

Cost Summary	Initial Agreement	Current Cost Plan	Difference
Building Costs (incl VAT)	£4,264,608	£6,506,793	£2,242,185
Inflation	£85,292	£228,403	£143,111
Statutory Approval Fees	£20,000	£32,000	£12,000
Furniture & Equipment	£251,132	£297,085	£45,953
Optimism Bias	£417,932	£637,666	£219,734
Feasibility Report	£17,918	n/a	-£17,918
Design Fees	£336,150	£455,000	£118,850
Consultants/ Lead Advisor Fees	£135,889	£178,300	£7,136
NHS Resource Costs	£69,401	£260,800	£226,663
VAT	£1,024,380	£1,438,039	£413,659
VAT Recovered	-	£172,565	-£172,565
Total Project Costs	£6,622,702	**£9,861,510**	£3,238,808

As shown in the above table, there is an overall difference of £3,238,808. In addition to the summary above, further analysis on the uplift in cost is provided below:

- **Building Cost**: As shown in the previous elemental table and accompanying explanation.
- **Inflation:** Current cost plan includes for inflation in the Build Cost. It is worth noting that Inflation has increased because of the change in construction base dates and as a result of uncertainty in the market caused by forces such as BREXIT.
- **Statutory Fees**: These have increased as a result of the increase in building size and cost.
- **Furniture & Equipment**: Increased in line with building size.
- **Optimism Bias**: Calculated as per SCIM guidance and remains at 9.75%. The Board note that this has and continues to be re-assessed.
- **Feasibility Report**: Accounted for out of separate budget.

- **Design Fees**: Included within the Building Cost. These have increased on the IA to take Account of Kier's appointment and Compensation Events (CE) agreed to date.
- **Consultants/ Lead Advisor Fees**: These have increased to take account of AECOM's appointment and CEs agreed to date.
- **NHS in-house Resource Cost**: Revised to include staff costs to the end of the construction period.

5.3.3 Shortfall in Capital Requirements (Funding Gap)

As detailed in the table above, the difference between the Initial Agreement cost of £6,622M and the current cost estimate is £9,861M up £3,239M.

5.3.4 Cashflow

An exact cashflow will be confirmed at Full Business Case stage however, the total projected capital spend profile for the full development is shown in the table below.

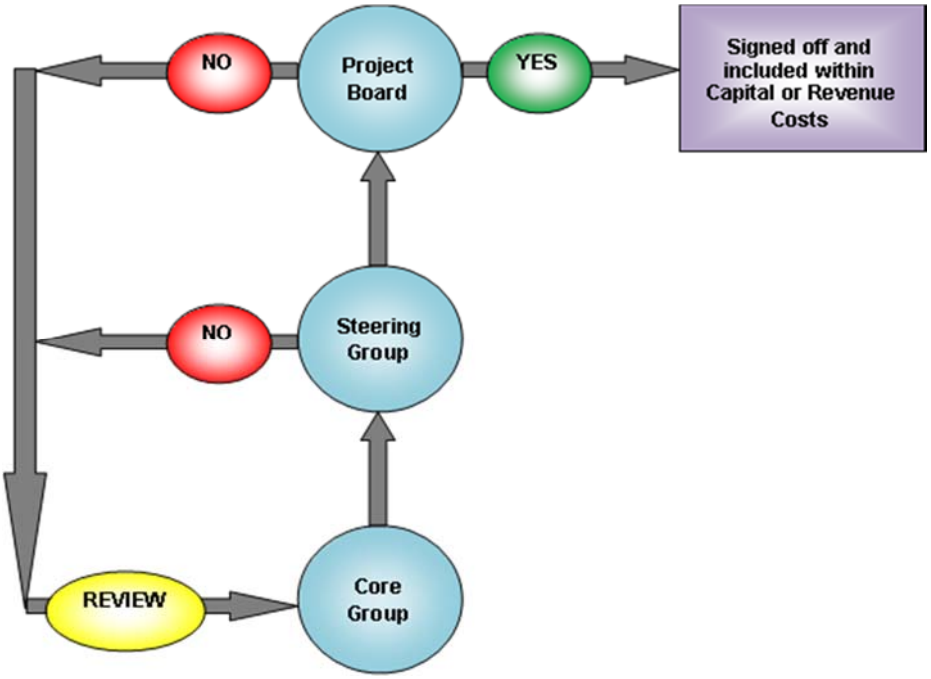
Preferred option	Description	2018/19	2019/20	2020/21	2021/22
		£000's	£000's	£000's	£000'S
	12 Bedded Medium Secure Adolescent Facility	450	475	8,007.8	446.8

5.3.5 Key Project Risks

This section details the key risks that could impact on the successful delivery of the project and sets out what actions the stakeholders in the project will take to ensure the risk is minimised and managed.

Whilst these risks have a mitigation strategy, the project delivery team recognises there are a number of factors out with their control that remain a significant risk, mainly regarding Capital & Revenue cost.

In the event of issues arising, the project team will follow an agreed escalation process that is shown in the organogram overleaf.



- **Scottish Government fail to fund the project through increased capital cost (SG04).**

- Delivery of the project is contingent on robust Business Cases that are accurate, determine value for money and demonstrate need. The next stage of the approvals process is the Outline Business Case (OBC). If approved the final stage will be Full Business Case
- OBC and FBC approval is noted as a red risk in the risk register, mainly due to the increase in Capital Cost

- **Equipment Budget (CR01)**

- There is a risk that the capital allowance made for the equipment may be inadequate. This is being managed by ensuring a complete Room Data Sheet and accurate 1:50 room layout process is undertaken to quantify the exact need and opportunities to establish extent of transferable furniture and equipment

- **Increased Capital or Revenue (CR03)**

- Capital and revenue funding continues to be monitored and is noted as a red risk on the risk register.
- Elemental construction cost estimates have been prepared which are beyond those noted in the Initial Agreement (£5.9-£6.5M). The cost uplift (£3.238M) is explained in detail above.

Value Engineering has brought forward savings in the region of £160K

The project team and their advisors continue to review design and specification in an effort to reduce costs.

Early recruitment is key to the operational success of the proposed unit and a case has been put forward to recruit key clinical staff, 6-9 months before the service is commissioned

- **Unexpected Ground Conditions (TR02)**

- A number of investigations are either planned or completed. A ground penetrating radar has been used to identify services or below ground obstructions. Site investigations have taken place to inform the building foundations. Ground conditions are worse than expected, with made ground and lens of peat throughout the site.

Currently Keir have advised a piling solution, which has increased cost (detailed in 5.3.1) Further site surveys are planned to determine an optimal substructure solution and challenge the current thinking.

NHS Ayrshire & Arran's risk strategy was detailed in the Initial Agreement and is again, summarised in the Management Case (6.5). The full risk Register is in Appendix FC4.

5.3.6 Summary of Cost Changes

As stated and shown in the tables above, there have been a variety of changes since the IA which have led to the project cost increasing. It should be noted that any changes to the build cost will be further affected at the bottom line by percentage-based items factors such as Prelims, Risk, PSCP Fee, Optimism Bias, Inflation, and VAT.

In summary the reasons for the cost uplift include:

- Increase in GIFA to include the education wing;
- Substructure resulting from ground condition surveys;
- External wall heights to achieve medium secure status;
- Service walkway to provide maintenance to patient bedrooms;
- Zero Carbon Energy Targets; and
- Inclusion of Sports Barn

5.3.7 Summary of Conventional Capital Costs Changes and Funding Requirements

Capital Costs:	Total £000s	Funding		
		Existing Resources £000s	Partner Contributions £000s	SG Additional Funding Requirement £000s
Building & Engineering works	6,507			2,242.2
Location adjustment	n/a			n/a
Quantified Construction Risk	Incl.			Incl.
Inflation – TPI and Building Cost	228.4			143.1
Design Fees – incl PSCP	455			108
Total Construction costs:	**7,190.4**			**2,493.3**
Site acquisition				
Other enabling works				
Additional itemised costs				
Total other construction related costs:				0.00
Furniture	297			45.9
IT	Incl. in equipment			Incl. in equipment
Medical Equipment	n/a			n/a
Total furniture and equipment	297			45.9
Additional Quantified Risk				
Total Estimated cost before VAT and fees	7,487.4			2,539.2
VAT	1,438			413.7
Recoverable VAT	(172.6)			(172.6)
Professional Fees	143			
Planning Fees and Building Warrant	32			12
Higher Ground Health Care	35			n/a
NHS in-house Staffing Cost	261			226.7
Total estimated cost including VAT and fees but before	9,223.8			3,019

optimism bias				
Allowance for optimism bias	637.6			219.8
Total estimated cost	**9,861.5**			**3238.8**

5.3.8 Profile of Capital Expenditure

A full profile of capital expenditure, including maintenance and replacement costs spanning 60-year life span of the facility is included within the Whole Life Cost assessment (attached at Appendix FC3 and FC4). In summary, the Net Present Value for the option, including initial Capital Costs but excluding VAT and various fees is £7,973,476.90.

5.3.9 Summary of Revenue, Capita; Costs and Funding Requirements

The revenue impact for the National Secure Adolescent In-patient Service (NSAIS) is £4.812M. The table below details the breakdown of the recurring revenue for NSAIS.

Revenue Expenditure Model 12 beds no outreach

Forensic CAMHS Inpatient Service
REVENUE EXPENDITURE MODEL
12 Beds - No Outreach

	Original Costed at top of scale		Revised Costed at 2nd top of scale		Modifications to Staffing Costed at 2nd top of scale			Updated for 3% pay award and 6% NIC increase			Updated for Top of 19/20 Pay Scale	
	Forensic CAMHS 12 beds		Forensic CAMHS 12 beds		Forensic CAMHS 12 beds			Forensic CAMHS 12 beds			Forensic CAMHS 12 beds	
	wte	cost £ 18/19	wte	cost £ 18/19	wte	cost £ 18/19		wte	cost £ 18/19		wte	cost £ 18/19
Inflation												
Medical												
Consultant	2.20	303,600	2.20	303,600	2.20	303,600		2.20	330,924		2.20	319,772
Paediatrician	0.10	13,800	0.10	13,800	0.10	13,800		0.10	15,042		0.10	14,535
Staff Grade	0.50	47,370	0.50	47,370	0.50	47,370		0.50	51,633		0.50	51,633
Higher Trainee (20% supplement)	2.00	77,930	2.00	77,930	2.00	77,930		2.00	84,944		2.00	48,230
Sub Total Medical Salaries	**4.80**	**442,700**	**4.80**	**442,700**	**4.80**	**442,700**		**4.80**	**482,543**		**4.80**	**434,170**
Nursing												
Band 8B Nurse Consultant	1.00	76,782	1.00	74,704	1.00	74,704		1.00	81,427		1.00	82,700
Band 7	1.00	54,785	1.00	52,966	1.00	52,966		1.00	57,733		1.00	59,032
Band 6 7 days a week 9-5	6.00	319,398	6.00	303,972	6.00	303,972		6.00	331,329		6.00	344,178
Band 5 50% days 50% evenings	33.40	1,562,235	33.40	1,500,311	33.40	1,500,311		33.40	1,635,339		33.40	1,683,794
Band 3 2/3 days 1/3 nights	12.00	401,600	12.00	393,076	12.00	393,076		12.00	428,453		24.50	884,368
Band 2 2/3 days 1/3 nights	12.50	395,683	12.50	382,479	12.50	382,479		12.50	416,902		0.00	0
Flexible Additional Hours	4.00	115,074	4.00	111,141	4.00	111,141	27,785	4.00	121,144		4.00	126,052
Sub Total Nursing Salaries	**69.90**	**2,925,557**	**69.90**	**2,818,650**	**69.90**	**2,818,650**		**69.90**	**3,072,328**		**69.90**	**3,180,125**
AHP												
Psychology - Band 8C	1.00	92,370	1.00	89,773	1.00	89,773		1.00	97,853		1.00	99,472
Psychology - Band 5	1.00	37,325	1.00	35,836	1.00	35,836		1.00	39,061		0.50	20,124
Occ. Therapy - Band 7	1.00	54,785	1.00	52,966	1.00	52,966		1.00	57,733		1.00	59,032
Occ. Therapy - Band 6	1.00	46,469	1.00	44,218	1.00	44,218		1.00	48,198		1.00	50,085
Occ. Therapy - Band 4	1.60	46,731	1.60	45,734	1.60	45,734		1.60	49,850		1.60	50,421
Speech & Language Therapist B 7	1.00	54,785	1.00	52,966	1.00	52,966		1.00	57,733		0.50	29,516
Dietetics - Band 6	0.40	18,588	0.40	17,687	0.40	17,687		0.40	19,279		0.40	20,034
Physiotherapist - Band 7	0.10	5,479	0.10	5,297	0.10	5,297		0.10	5,773		0.10	5,903
Social Worker/MHO	1.00	50,000	1.00	50,000	1.00	50,000		1.00	50,000		1.00	49,555
Sub Total AHP Salaries	**8.10**	**406,531**	**8.10**	**394,477**	**8.10**	**394,477**		**8.10**	**425,480**		**7.10**	**384,142**
Other												
Pharmacy 0.2 B8A + 0.5B5	0.70	31,421	0.70	30,295	0.70	30,295		0.70	33,022	Should this	0.70	33,868
Advocacy	1.00	30,000	1.00	30,000	1.00	30,000		1.00	32,700		0.50	30,000
Facilities **Domestic**			3.00		3.00			3.00	0		2.00	57,489
Portering			0.40		0.40			0.40	0		0.67	20,364
Estates			0.40		0.40			0.40	0		0.50	22,000
Facilities	3.80	112,088			3.80	106,612		3.80	116,207			
Sub Total Other Salaries	**5.50**	**173,509**	**5.50**	**60,295**	**9.30**	**166,907**		**9.30**	**181,929**		**4.37**	**163,721**
Admin												
Band 5											1.00	40,247
Band 4	1.50	43,811	1.50	42,876	1.50	42,876		1.50	46,735		1.00	31,513
Band 3	2.00	52,628	2.00	51,500	2.00	51,500		2.00	56,135		1.50	42,600
Band 2	1.00	23,895	1.00	23,088	1.00	23,088		1.00	25,166		1.00	25,798
Sub Total Admin Salaries	**4.50**	**120,334**	**4.50**	**117,464**	**4.50**	**117,464**		**4.50**	**128,036**		**4.50**	**140,158**
TOTAL SALARY COSTS	**92.80**	**4,068,631**	**92.80**	**3,833,586**	**96.60**	**3,940,199**		**96.60**	**4,290,316**		**90.67**	**4,302,316**
Non-Salary Costs												
Pharmacy		24,000		24,000		24,000			24,000			24,720
Catering		20,000		20,000		20,000			20,000			20,600
Domestic		3,000		3,000		3,000			3,000			3,090
Accommodation		219,489										n/a
Rates				50,000		50,000			50,000			51,250
Cap Charges				127,939		127,939			127,939			233,730
Energy				31,500		31,500			31,500			65,560
Portering				10,050		10,050			10,050			10,352
Estates		10,000		10,000		10,000			10,000			10,300
Training		40,000		40,000		40,000			40,000			41,200
Travel		10,000		10,000		10,000			10,000			10,300
Transport		15,000		15,000		15,000			15,000			15,450
Educational Resources		10,000		10,000		10,000			10,000			10,300
Other-Laundry/Waste/Telecoms		13,000		13,000		13,000			13,000			13,390
NON-SALARY COSTS		**364,489**		**364,489**		**364,489**			**364,489**			**510,242**
TOTAL COST		**4,433,120**		**4,198,075**		**4,304,688**			**4,654,805**			**4,812,557**
					Target	**4092011**		Target	**4092011**		Target	**4092011**
				235,045								
						212,677			562,794			720,546

The increase is explained in detail in the Strategic Case, and includes:

- Increase in banding for Healthcare Assistants from 2 to 3;
- Increase in banding for Consultant Psychologist from 8b to 8c;

- The Clinical Nurse Manager post has been changed to Nurse Consultant, which is 8a to 8b.

The need for security staff has been thoroughly reviewed through a number of workshops. It has been agreed that 3 WTE band 3 posts will be removed from the workforce. The difference between 2016/17 and 2019/20 is £720,546.

5.3.10 NRAC Share

Revenue costs associated with the proposed facility will be funded through the National Resource Allocation Committee. The NRAC figures set out in the table below are based on 2018/19 percentage share for each NHS Board. At the time of writing 2019/20 NRAC percentages were not available, however, the percentage figures and costs attributable to each Health Board will be updated in the Full Business Case, including updated reference period to reflect latest activity.

The contribution to the new service is projected at £4,812,557, which is the gross figure to run the service. This does not take account of monies paid by each Board towards the secure care of adolescents. The three year reference period detailed in the Initial Agreement covered 2013/14, 2014/15 and 2015/16 identified a current funding in place of £3,838,952. It has proved challenging to obtain any further data after the reference period noted above. It should be noted that whilst expenditure against secure care has been difficult to source, reference should be made to the costs of unmet need noted in Appendix EC4 Needs Assessment Addendum.

The increased cost to NHS Scotland is projected in the region of £974K.

National Secure Adolscent In-Patient Service

National Resource Allocation Committe (NRAC) - Contribution by Board Area

% attributable to each Board (2016)		Contribution to New Service (NRAC) - 2016 (IA) £	% attributable to each Board (2019		Contribution to New Service (NRAC) - 2019 (OBC) £	Change in Cost from 2016 (IA) to 2019 (OBC)
Ayrshire & Arran	7.43%	303,861	Ayrshire & Arran	7.41%	356,610	52,749
Borders	2.15%	88,115	Borders	2.10%	101,064	12,949
Dumfries & Galloway	3.10%	126,904	Dumfries & Galloway	2.98%	143,414	16,510
Fife	6.71%	274,474	Fife	6.81%	327,735	53,261
Forth Valley	5.39%	220,424	Forth Valley	5.42%	260,841	40,417
Grampian	9.63%	393,883	Grampian	9.87%	474,999	81,116
Greater Glasgow & Clyde	23.09%	944,239	Greater Glasgow & Clyde	22.34%	1,075,125	130,886
Highland	6.40%	261,847	Highland	6.44%	309,929	48,082
Lanarkshire	12.29%	502,710	Lanarkshire	12.35%	594,351	91,641
Lothian	14.43%	585,784	Lothian	14.80%	712,258	126,474
Orkney	0.48%	19,576	Orkney	0.48%	23,100	3,524
Shetland	0.47%	19,349	Shetland	0.49%	23,582	4,233
Tayside	7.77%	317,578	Tayside	7.85%	377,786	60,208
Western Isles	0.74%	30,250	Western Isles	0.66%	31,763	1,513
Total	100%	**4,088,994**	**Total**	100%	**4,812,557**	723,563

5.4 Assessing Affordability

5.4.1 A Statement of Affordability

The Financial Case has highlighted the overall capital and revenue cost of the preferred option and identifies a requirement for:

- A total forecast Capital cost of £9.861M to be funded by Scottish Government:
- Total recurring annual revenue costs of £4.812M to be through NRAC.

The project delivery team is acutely aware that there are a number of factors contributing to the cost increase, some that are out with their control and that whilst capital cost remains a significant risk, it should be possible to offset revenue requirements against recurring savings of circa. £5.151m.

5.4.2 Closing the Affordability Gap

Closing the gap between the initial estimate and the current capital cost is very challenging.

Kier & AECOM have led a value engineering exercise that has realised £161K of savings.

Elements of the design that are under review are:

- **Substructure** – Currently the cost plan is based on a fully piled solution – AECOM and the project delivery team is currently reviewing and challenging this part of the design.
- **Elevations** – The superstructure and fencing is 5.2mtrs high, Kier and AECOM are reviewing the front elevations of the building to quantify any savings.
- **Mechanical & Electrical** - Kier and their M&E designers will review the M&E design and specification to identify any potential savings.

5.5 Benchmarking Data

The table below shows available benchmarking data to support a comparison with Dudhope House, Dundee. Dudhope House is the only Scottish facility of a similar nature to the facility that is proposed. Dudhope is similar in that it provides:

- Young persons residential unit (12 beds);
- Therapy accommodation;
- Education suite;
- Office and staff accommodation.

Although the facilities have key similarities, Dudhope does not have the same level of security as the proposed facility. The capital cost of Dudhope inflated to 2019 building indices are similar, with only a slight difference in sq/m cost (£93

per sq/m).

Project	Completion	BCIS Tender Price Indices	Construction Value (REBASED to today's cost)	GIFA	£/m2	Deviation from Average
NSAIS (with Sports Barn)	n/a	332	£ 6,506,793.00	1533	£4,244.48	£ 195.97
Mental Health Accommodation, Leigh	2015	283	£ 23,555,815.15	5427	£4,340.49	£ 291.98
Highbury ATU, New Build Ward	2013	236	£ 4,740,256.21	1114	£4,255.17	£ 206.66
Brook Haven, 30 bedded unit	2013	236	£ 4,742,274.97	1260	£3,763.71	-£ 284.80
Older Persons Unit (OPU), 24 new bed	2014	259	£ 6,645,738.79	1530	£4,343.62	£ 295.11
Soss Moss Phase 2, 15 bed low dependency unit	2014	259	£ 5,654,719.84	1355	£4,173.22	£ 124.72
Provision of 30 bed low secure ward	2016	282	£ 8,323,314.39	2095	£3,972.94	-£ 75.57
Dudhope House (12 bedded Regional CAMHS unit)	2015	283	£ 6,918,336.34	2100	£3,294.45	-£ 754.06
					£4,048.51	Average

5.6 Stakeholder Engagement

This section summarises the range of stakeholders affected or consulted as a result of this proposal, and provides details of what engagement has taken place, outlines any concerns expressed, and confirms the level of support for the proposal.

Public Involvement

A Patient & Public Reference Group (PPRG) has been established with a specific remit for the new facility. The Group has met on four occasions since August 2018. There is a strong core group within this that all have a clear commitment to development of the new service. Group members have a variety of backgrounds, knowledge and experience. The reference group have clear terms of reference and have elected a chair and co-chair, who is a young person. Meetings are observed by a colleague from the Scottish Health Council. Members of the Project Team attend meetings to provide updates and answer questions. The PPRG chair and co-chair also contribute to all of the work streams.

The PPRG have offered invaluable insight about how the unit design can meet the needs of patients and their families. At the most recent meeting on 12th June 2019, the group visited an existing ward in Woodland View, to help their understanding of the bedroom design. The PPRG are leading on the task of Naming the proposed service.

The project team have also attended the Youth Forum meetings in Irvine to consult with young people about the facility and there have been a number of meetings with individuals who have lived experience of secure services. This includes patients who have direct experience of treatment in locked conditions. Findings from interviews with these young people and their parents/carers are summarised in the paper included in Appendix MC4.

As service development progresses, public engagement activities will be arranged, in keeping with governance and advice from Scottish Health Council.

National Stakeholder Group

A National Stakeholder group has been established, with the express remit that the group will provide expert advice on the development, planning, implementation and evaluation of the National Secure Adolescent Mental Health Inpatient Service for Scotland (NSAIS). Four meetings have been held, with active contribution from members during and between meetings. Success of this group has been facilitated by commitment from successive Chairs, who have led pre-planning meetings with the Project Team.

Since the Initial Agreement, other stakeholder engagement has continued as follows:

NHS / Professional Bodies

- Updates provided for discussion-s at Scottish Government CAMHS Lead Clinicians Group (2015–present (most recently 13 June 19) including communications regarding care pathways and transitions
- Discussion with Principal Medical Officer (Forensic Psychiatry) & Medical Director National Services Division Sept 18 about proposed level of security of NSAIS
- Presentation at the Forensic Network Inter-Regional Group Meeting (10 May 2019;
- Regular updates provided to the Child & Adolescent Psychiatry Faculty Executive, - Royal College of Psychiatrists in Scotland
- Regular updates provided to the Chair of the Royal College of Psychiatrists in Scotland, who facilitated the needs assessment survey and recent update.
- Updates provided to Royal College of Psychiatrists Adolescent Forensic Psychiatry Special Interest Group (next scheduled for 05 July 2019).

Other agencies

- Updates provided to Scottish Government Secure Care Group -most recently for meeting 25 June 2019)
- Presentation on proposed quality indicators to Secure Care Research Group national meeting, Stirling, 18 February 2019
- Meeting with Scottish Children's Reporter Administration, Mental Welfare Commission for Scotland & senior Social Work officer to discuss implications of Minimum Age of Criminal Responsibility (Scotland) Bill for referrals to NSAIS (Glasgow, October 2018)

The project team have continued to engage with clinical colleagues through a number of national workshops. The workshops test thinking on:

- the model of care.
- Referral criteria.
- Workforce and
- Design

The bullet point below summarise the purpose of the workshops.

- 2nd Clinical & Workforce Workstream workshop held on 17 September 2018in Stirling -.
- Workforce development meeting, held on 27 November 2018 in. Irvine. Colleagues from the Alnwood Clinic presented invaluable learning from their experience as an established provider of medium secure adolescent inpatient services. Senior colleagues from local learning establishments (University of West of Scotland, Forensic School and North Ayrshire Education Services)

In additional to the above stakeholders, Community Councils had also been identified as a good route to informing/engaging with local communities. We are liaising with North Ayrshire Council Connected Communities colleagues

regarding the development of this new facility.

The following partnership groups will be informed and engaged during the development of the facility:

Locality Planning Partnerships

The locality planning partnerships have a standing item on the Agenda for the Health and Social Care Partnership. It is envisaged that presentations and briefings will be provided to this group.

Community Councils

The Community Councils have a statutory duty to ascertain, coordinate and express (ACE) the views of the local community to the Council and its partner agencies.

There are 17 Community Councils across North Ayrshire but only 11 are currently active. The Chair of each Community Council has a right to sit on the Locality Planning Partnership (see above).

The involvement in Youth Services and Community Development teams will assist informing and engagement.

Informing and engaging events attendees will be expected to ensure that information is cascaded widely and appropriately in order to achieve community feedback.

The following table provides a summary of identified stakeholders, and their engagement and an indication of their support.

Stakeholder Group:	Engagement that has taken place	Confirmed support for the proposal
National Stakeholder Group	A National Stakeholder group continues to provide expert advice on the development, planning, implementation and evaluation of the National Secure Adolescent Mental Health Inpatient Service for Scotland (NSAIS). Four meetings have been held, with active contribution from members during and between meetings. Success of this group has been facilitated by commitment from successive Chairs, who have led pre-planning meetings with the	All in attendance support the proposed service.

Stakeholder Group:	Engagement that has taken place	Confirmed support for the proposal
	Project Team.	
Patients / service users	The Public Patient Reference group provides views and wishes obtained from a patient with lived experience of secure inpatient care and a carer of a patient. Both were supportive of the proposal. This is reflected in the NDAP report.	Patient / service user groups were consulted on the proposal to provide a National Service in Scotland and were both supportive of the proposal.
Mental Health Public Reference Group	Views and wishes have been sought from the NHS Ayrshire & Arran Mental Health Public Reference Group. All were supportive of the proposal. We have agreed to provide regular updates and obtain feedback.	The Public Reference Group was consulted in July 2019 on the proposal to provide a National Service in Scotland and were all supportive of the proposal.
Scottish Health Council	Four meetings have taken place with relevant representatives from the Scottish Health Council around patient and public engagement. The SHC have been instrumental in setting up and supporting patient and public participation in this proposed development.	Their guidance from these discussions will be followed.
Expert collaborators	Colleagues from Forensic Network are being consulted. discussions have been held with the following key collaborators, to develop a research strategy and teaching programme. The outcome is development of “A new to CAMHS” teaching programme	Broadly the Forensic Network support improved access to developmentally appropriate inpatient care for young people from Scotland. Professor Lyndsay Thomson, Forensic Psychiatry, University of Edinburgh & Jamie Pitcairn, Research & Development Manager, The State Hospital and Forensic Network, Chair of the National Stakeholder Group Professor Helen Minnis, Child & Adolescent Psychiatry, University of Glasgow

Stakeholder Group:	Engagement that has taken place	Confirmed support for the proposal
		Royal College of Psychiatrists Adolescent Forensic Psychiatry Special Interest Group Professor Paul Martin – Depute Principal, University West of Scotland
Staff / Resources	We are actively involving colleagues on a regular basis from Adult Mental Health and Forensic Services in NHS A&A. Their involvement in its development includes attendance at Project Group meetings, risk workshop, benefits workshop, steering group and Project Board. They currently provide services for NHS A&A patients in the community and Woodland View. The proposed service will share expertise and resources.	Staff representatives are involved on a regular basis and support this development.
North Ayrshire Council Education Department	We are actively involving colleagues on a regular basis from the local Education Department. Their involvement in its development includes attendance at Project Group meetings, risk workshop, benefits workshop. There will be an education sub group to plan provision for patients.	North Ayrshire Council Education Department support improved access to developmentally appropriate inpatient care for young people from Scotland.
North Ayrshire Council Children's/ Youth Justice Social Work Services	We are actively involving colleagues on a regular basis from the local Children's/ Youth Justice Social Work Services. Their involvement in its development includes attendance at Project Group meetings, risk workshop, benefits workshop.	North Ayrshire Children's/ Youth Justice Social Work Services support improved access to developmentally appropriate inpatient care for young people from Scotland.
Providers of Secure Accommodation	The proposal was presented to the Scottish Government Secure Care Screening Group;	

Stakeholder Group:	Engagement that has taken place	Confirmed support for the proposal
	further discussion has been held with Heads and key professionals from four Secure Accommodation facilities. Representatives from the sector participated in the Risk and Benefits workshop.	
Other key stakeholders and partners		
Violence Reduction Unit including Medics Against Violence, Police Scotland	The Violence Reduction Unit, Police Scotland contributed to the risk and benefits workshop. They will be engaged in participation.	Violence Reduction Unit including Medics Against Violence are keen to participate in the improved access to developmentally appropriate inpatient care for young people from Scotland.
Voluntary Groups and Third Sector	Step Down and SACRO contributed to the risk and benefits workshop. They and other providers of intensive community Youth Justice service will be engaged in participation.	Step Down and SACRO are keen to participate in the improved access to developmentally appropriate inpatient care for young people from Scotland.

5.7 Financial Case Conclusion

All things considered, it is possible to conclude that, the preferred option is to design and build a 12 bed medium secure adolescent facility, funded by capital from Scottish Government and delivered through Frameworks Scotland. Also:

- That robust capital and revenue costs for the proposed facility/service are available.
- Clarity exists around how and where these costs have changed since IA.
- Capital costs have been benchmarked against similar developments on an elemental and whole development basis.
- That a clear understanding exists related to existing funding gaps and the associated impact on Scottish Govt. and NRAC funding requirements.
- Key project risks (including these funding gaps) have been identified and mitigation plans developed where possible.
- Stakeholders have been kept aware of the changing financial implications, including expected impact on NRAC funding which is largely in line with inflation.

6 Management Case

6.1 Management Case Introduction

This section of the OBC sets out in detail the arrangements in place to manage and successfully deliver a National Secure Adolescent Inpatient Service for Scotland. This chapter will build upon the case set out in the Initial Agreement and will cover in detail:

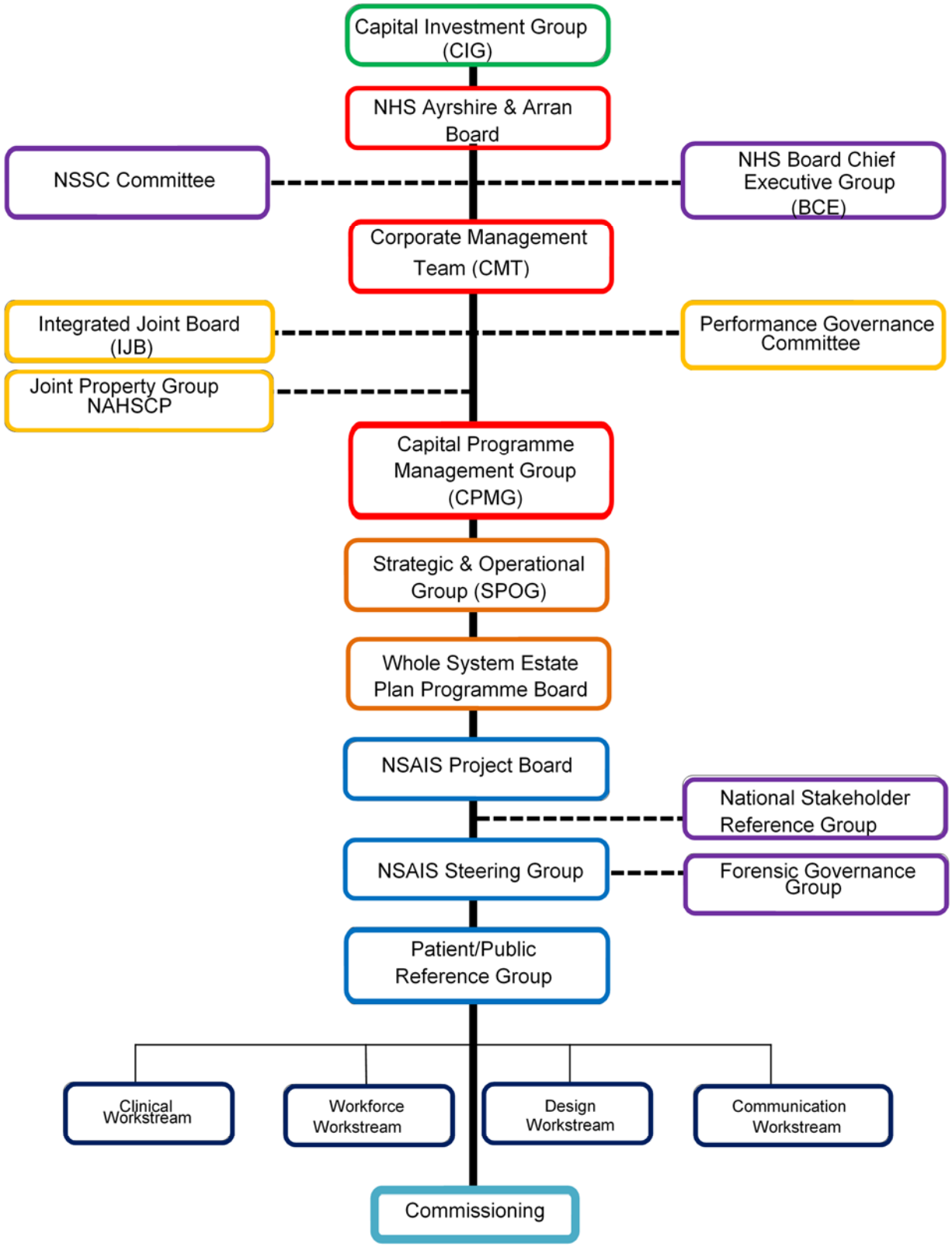
- Governance & Project Management Arrangements;
- Change Management;
- Benefits Realisation;
- Risk Management;
- Commissioning and
- Project Evaluation;

6.2 Governance and Project Management Arrangements

As detailed in the Initial Agreement, NHS Ayrshire & Arran has an established governance and reporting structure capable of delivering this National project. The structure ensures that there is a dedicated management focus and capacity for delivery of the project, visibility and accountability at the highest levels in the organisation and the involvement of a wide range of stakeholders in the project process.

6.2.1 Reporting and Governance Arrangements

The organogram overleaf outlines the project governance and reporting structure, which captures the majority of the Board's existing governance arrangements for capital projects


Capital Investment Group (CIG)
NHS Ayrshire & Arran Board
NSSC Committee
NHS Board Chief Executive Group (BCE)
Corporate Management Team (CMT)
Integrated Joint Board (IJB)
Performance Governance Committee
Joint Property Group NAHSCP
Capital Programme Management Group (CPMG)
Strategic & Operational Group (SPOG)
Whole System Estate Plan Programme Board
NSAIS Project Board
National Stakeholder Reference Group
NSAIS Steering Group
Forensic Governance Group
Patient/Public Reference Group
Clinical Workstream
Workforce Workstream
Design Workstream
Communication Workstream
Commissioning

The groups/committee's detailed below are the key governance groups:

NHS Ayrshire & Arran Board
NHS Ayrshire & Arran's Board has responsibility for approving capital investments. It fulfils the role of investment decision maker and exercises this at key points in the project, such as the approval of Initial Agreement, OBC and FBC in advance of submission to the Scottish Government.

Corporate Management Team
The Corporate Management Team has the responsibility at a strategic level for the successful delivery of the project. Their role is to provide strategic leadership and to manage the political dimensions associated with the project.

Performance Governance Committee
The Performance Governance Committee is a formal committee of the NHS Board chaired by the Board Chairman. It has a key scrutiny role on behalf of the NHS Board in relation to all aspects of the financial case for capital projects and related matters.

NHS Ayrshire & Arran's Capital Programme Management Group (CPMG)
CPMG is chaired by the Director of Corporate Support Services and is responsible for ensuring cohesive strategic alignment and prioritisation of capital programmes. The CPMG comprises a number of senior Executive Directors (Finance/ Planning and Performance/ Nurse Director) who provide robust and independent scrutiny of the project. The National Secure Adolescent Inpatient Service (NSAIS) is a standing item on the agenda of the CPMG and a regular report is provided to the Group.

NHS Board Chief Executives Group
The NHS Board Chief Executive Group allows strategic policy and operational discussions to take place between the Scottish Government Health Directorates and the Chief Executives of NHS Scotland Health Boards.

The National Stakeholder Reference Group
The National Stakeholder Reference Group comprises of a range of diverse stakeholders from across the regions and sectors. Due to its unique nature, it is important that the group have input into the development of this proposed national secure service. The National Stakeholder Reference Group considers care pathways, elements of design, function and other issues which arise during the project development.
Membership of the group comprises of stakeholders from NHS Boards, regional NHS services (such as adolescent inpatient units, Forensic CAMHS and intensive community treatment teams), the Forensic Network, Youth and Criminal Justice, Mental Health Welfare Commission and other bodies who commission and provide services for young people with risk of and mental health needs. Representatives from the stakeholder group also sit on the Project Board.

North Ayrshire Health and Social Care Partnership Integrated Joint

Property Group
Joint Property Group (NAHSCP) is a formal group of the North Ayrshire Health and Social Care Partnership. It is chaired by the Director of NAHSCP. This group is responsible for driving forward partnership premises and accommodation requirements in line with addressing partnership objectives. Prioritising partnership requirements to ensure best use of NHS and NAC property portfolio's.
Also responsible for early identification of new projects for possible inclusion in NHS and NAC Capital programmes. Group comprises partnership senior management from across range of services, together with Council and NHS Corporate Property Services and Partnership and Trade Union representatives.

Project Board
The Project Board is chaired by the SRO who is the Director of NAHSCP. The Project Board ensures that the Project realises the specified benefits and provides a key element of governance for the project ensuring that it is running to time, cost and quality. Core membership includes National Services Scotland's Associate Programme Director Nursing and Quality, the Project Director (who provides the report to the Project Board), the Assistant Director of Finance, Health Care Managers (in the role of business change managers). In attendance includes NHS Ayrshire & Arran's Project Manager, Clinical Services Co-ordinator and Project Administrator. The Project Board reviews and endorses key decisions as proposed by the Project Director and the Steering Group For example, the sign off of the Initial Agreement, OBC; the Project Risk Register; the response to gateway reviews; the design and the workforce plan etc

6.2.2 Steering Group

The NSAIS Steering Group is chaired by the Head of Mental Health Services NAHSCP. The Steering Group is responsible for the delivery of the project and is chaired by the Head of Mental Health Services. The steering Group has a number of key responsibilities, these are:

- Providing advice and input to the Business case;
- Review and feedback on stakeholder engagement;
- Financial governance;
- Providing advice on design and technical matters and how they relate to Child and Adolescent Mental Health
- Monitoring and reporting to the Project Board project risks and mitigation strategies;
- Monitoring and reporting to the Project Board on any deviation or amendments to the project benefits.

The Steering Group Chair is the conduit to all of the supporting project workstreams. The Project Director supports the Steering Group chair in driving the project forward, ensuring rapid decision making on issues of detail rather than strategy

6.2.3 Keys Roles and Responsibilities

The Project Team is responsible for controlling and managing all matters relating to the day to day development of the project. The Project Team is led by the Project Director, a senior member of the NHS Ayrshire & Arran's Capital Planning team. The Project Director will provide expert project management skills, to successfully deliver the proposed National Secure Adolescent Inpatient Service (NSAIS). The Project Director also has extensive knowledge of procurement, design, construction, commissioning and post project evaluation.

The Project Director will support the Senior Responsible Officer (SRO) specifically in the day-to-day project management of NSAIS and for ensuring that NSAIS meets its key milestones, project objectives and deliverables.

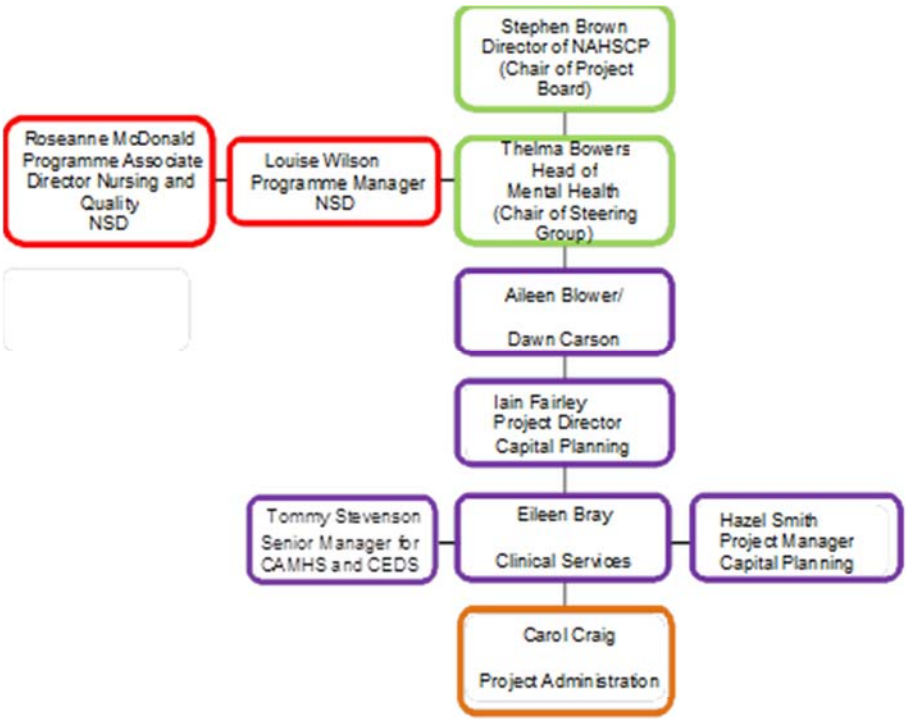
The Project Director will ensure, that on a day-to-day basis a framework is put in place for accountability and governance of the project, by actively implementing a defined Project Execution Plan (PEP) attached at Appendix MC1. PEP components include business case development, project organisation, plans, controls, risk management, project quality, configuration management and change control covering all of the activities of the multi-disciplinary Project Team. In addition the Project Director will also ensure that all relevant stakeholders are fully engaged in the project through the delivery of an agreed strategy for communication across the Board and nationally.

Critically during the project, the Project Director will be aided by a member of the Capital Planning team (Project Manager), The Clinical Co-ordinator, who is a senior member of the Child and Adolescent Mental Health (CAMHS) team and the Project Administrator. The Project Team will provide the necessary day to day project management of a multi-disciplinary Project Team who have responsibility for:

- Clinical modelling;
- User engagement and consultation;
- Design and technical development;
- Commercial Procurement;
- Programme management;
- Communications;
- Key Project Issues;
- Risk management.

The Project Team incorporates the necessary mix of skills and experience required to deliver the project, incorporating clinical advisors, leads in key operational areas, planners and communications leads. The Project Team meets fortnightly and whenever is deemed necessary by the Project Director.

The following diagram shows a summary of those identified within the Project Team. Further details of their roles and experience are described in Appendix FC2.


Stephen Brown
Director of NAHSCP
(Chair of Project Board)
Roseanne McDonald
Programme Associate Director Nursing and Quality
NSD
Louise Wilson
Programme Manager
NSD
Thelma Bowers
Head of Mental Health
(Chair of Steering Group)
Aileen Blower/
Dawn Carson
Iain Fairley
Project Director
Capital Planning
Tommy Stevenson
Senior Manager for CAMHS and CEDS
Eileen Bray
Clinical Services
Hazel Smith
Project Manager
Capital Planning
Carol Craig
Project Administration

A Baseline Skills Matrix is included at Appendix MC3 for the Project Director and Project Manager. The level of complexity for this project measured against Scottish Government and Scottish Future Trust baseline skill set for construction procurement is level 4.

6.2.4 Summary of Organisational Involvement

The following table provides a list of identified stakeholders, a summary of their engagement and an indication of their support.

Governance Group	Engagement that has taken place	Confirmed Support for the Proposal
National Services Specialist Committee	NSS is fully supportive of this proposal.	Correspondence received on 30 November 2017 from Fiona Murphy, Director, National Specialist and Screening Directorate (NSD), stated the following:- "The Cabinet Secretary has endorsed the National Specialist Services Committee (NSSC) recommendation to designate the Secure Care Adolescent Inpatient Unit as a National Specialist Service. NSD will now work with NHS Ayrshire and Arran to put in place arrangements to establish this National Service". This was reconfirmed on 27 February 2019
NHS A&A Board	NHS A&A Board is fully supportive of this proposal.	This Outline Business Case will be considered by the NHS A&A Board on 7 October 2019.
NHS A&A Corporate Management Team	NHS A&A Corporate Management Team is fully supportive of this proposal.	This Outline Business Case will be considered by NHS A&A Corporate Management Team on 16 July 2019.

NHS A&A Performance Governance Committee	NHS A&A Performance Governance Committee is fully supportive of this proposal.	This Outline Business Case will be considered by the NHS A&A Performance Governance Committee on 27 August 2019.
NHS A&A Capital Programme Management Group	NHS A&A Capital Programme Management Group is fully supportive of this proposal.	This Outline Business Case will be considered by the NHS A&A Capital Programme Management Group on 31 July 2019.
NSAIS Project Board	Project Board is fully supportive of this proposal, with Director Stephen Brown, taking the lead role in its development.	This Outline Business Case will be considered by the NSAIS Project Board on 1 July 2019.
NSAIS Steering Group	Steering Group is fully supportive of this proposal, with Thelma Bowers, Head of Mental Health Services taking the lead role in its development.	This Outline Business Case will be considered by the NSAIS Steering Group on 11 June 2019.
NSAIS National Stakeholder Group		
Service or Department	The Service Director(s) involved in this project is/are: John Wright (CPMG, CMT) Stephen Brown (Project Board, Joint Property Group, IJB, CMT) Thelma Bowers (Steering Group, Project Board, IJB, Joint Property Group) Aileen Blower (Steering Group, Project Board and National Stakeholder groups)	This Outline Business Case has followed the governance route detailed in the organogram at item 6.2.1.
Scottish Health Council	Scottish Health Council have been informed of the impact of any proposed service change on patient care.	Scottish Health Council have provided confirmation of the level of engagement expected. Further details on such engagement will be developed and shared.

6.2.5 Public Involvement

A Patient & Public Reference Group (PPRG) has been established with a specific remit for the new facility. The Group has met on four occasions since August 2018. There is a strong core group within this that all have a clear commitment to development of the new service. Group members have a variety of backgrounds, knowledge and experience. The reference group have clear terms of reference and have elected a chair and co-chair, who is a young person. Meetings are observed by a colleague from the Scottish Health Council. Members of the Project Team attend meetings to provide updates and answer questions. The PPRG chair and co-chair also contribute to all of the work streams.

The PPRG have offered invaluable insight about how the unit design can meet the needs of patients and their families. At the most recent meeting on 12th June 2019, the group visited an existing ward in Woodland View, to help their understanding of bedroom design. The PPRG are leading on the task of Naming the proposed service.

The project team have also attended the Youth Forum meetings in Irvine to consult with young people about the facility and there have been a number of meetings with individuals who have lived experience of secure services This includes patients who have direct experience of treatment in locked conditions. Findings from interviews with these young people and their parents/carers are summarised in the paper (Appendix MC4).

6.2.6 Stakeholders Identified

This section summarises the range of stakeholders affected and/or consulted with as a result of this proposal and details the engagement which has taken place; it also goes on to outline any concerns expressed and confirms the level of support for the proposal.

National Stakeholder Group

A National Stakeholder group has been established, with the express remit that the group will provide expert advice on the development, planning, implementation and evaluation of the National Secure Adolescent Inpatient Service for Scotland (NSAIS). The Terms of Reference, Chairs and membership for the group have been detailed within the IA. Four meetings have been held, with active contribution from members during and between meetings. The membership has grown and diversified; full membership is included at Appendix MC5.

Success of this group has been facilitated by commitment from successive Chairs, who have led pre-planning meetings with the Project Team.

Since the Initial Agreement, other stakeholder engagement has continued as follows:

NHS / professional bodies

- Updates provided for discussions at Scottish Government CAMHS Lead Clinicians Group (2015–present (most recently 13 June 19) including communications regarding care pathways and transitions
- Discussion with Principal Medical Officer (Forensic Psychiatry) & Medical Director National Services Division Sept 18 about proposed level of security of NSAIS
- Presentation at the Forensic Lead Nurse Conference (26th October 2018)
- Presentation at the Forensic Network Inter-Regional Group Meeting (10 May 2019;
- Regular updates provided to the Child & Adolescent Psychiatry Faculty Executive, - Royal College of Psychiatrists in Scotland
- Regular updates provided to the Chair of the Royal College of Psychiatrists in Scotland, who facilitated the needs assessment survey and recent update.
- Updates provided to Royal College of Psychiatrists Adolescent Forensic Psychiatry Special Interest Group (next scheduled for 05 July 2019).

Other agencies

- Updates provided to Scottish Government Secure Care Group -most recently for meeting 25 June 2019)
- Presentation on proposed quality indicators to Secure Care Research Group national meeting, Stirling, 18 February 2019
- Meeting with Scottish Children's Reporter Administration, Mental Welfare Commission for Scotland & senior Social Work officer to discuss implications of Minimum Age of Criminal Responsibility (Scotland) Bill for referrals to NSAIS (Glasgow, October 2018)
- Regular updates to Police, Fire and Rescue at Liaison meetings
- Clinical & Workforce Workstream workshop held on 17 September 2018 in Stirling -.
- There have been two workforce development meetings on the 22nd March 2018 and 27 November 2018.

Following the project team visits to secure services within England Colleagues from the Alnwood Clinic were invited to attend the meeting on the 27th November 2018 where they presented invaluable learning from their experience as an established provider of medium secure adolescent inpatient services.

Senior colleagues from local learning establishments (NES, University of West of Scotland, Forensic School, Glasgow Caledonian University and North Ayrshire Education Services) contributed to discussion about workforce development

Clinical & Workforce Workstream workshop held on 17 September 2018 in Stirling
There have been two workforce development meetings on the 22nd March 2018 and 27 November 2018.

As service development progresses, the public engagement activities will be arranged, in keeping with governance and advice from Scottish Health Council.

In additional to the above stakeholders, Community Councils had also been identified as a good route to informing/engaging with local communities. We are liaising with North Ayrshire Council Connected Communities colleagues regarding the development of this new facility.

The following partnership groups will be informed and engaged during the development of the facility:

Locality Planning Partnerships

The locality planning partnerships have a standing item on the Agenda for the Health and Social Care Partnership. It is envisaged that presentations and briefings will be provided to this group.

Community Councils

The Community Councils have a statutory duty to ascertain, coordinate and express (ACE) the views of the local community to the Council and its partner agencies.

There are 17 Community Councils across North Ayrshire but only 11 are currently active. The Chair of each Community Council has a right to sit on the Locality Planning Partnership (see above).

The involvement in Youth Services and Community Development teams will assist informing and engagement.

Informing and engaging events attendees will be expected to ensure that information is cascaded widely and appropriately in order to achieve community feedback.

6.2.7 Capability

Careful thought has been given to the composition of the Project Team. There is a mix of clinical and capital experience throughout the team.

The Senior Responsible Officer will be the Director of NAHSCP.

Within the Project Team are two joint clinical leads who between them, have extensive knowledge and experience of the functional and operational requirements of both a Child and Adolescent Mental Health services and Forensic/Secure Mental Health Services. The joint clinical leads are supported by three key team members who are responsible for the interface of all clinical operational services involved in the procurement, development and commissioning of the project.

The Project Director has extensive experience for the delivery of large, complex NHS capital projects. The Project Director is supported by a Capital Planning Team who have a wide range of capital planning experience. In addition, the Project Director will be supported by the Senior Finance Manager for Partnerships who will lead on the financial aspects of the project.

During the Outline Business Case, the Project Team will engage with a number of consultants, as part of the PSCP supply chain. For the OBC the key consultants will be Healthcare Planner, PSCP and PSCs.

6.2.8 External Advisors

The table below details the external advisors for the National Secure Adolescent Inpatient service.

Further details of their roles and experience are described in Appendix MC6

Professional Services Consultant (PSC) - AECOM
Robert Rankin, Associate Director, Cost Management Keith Homes, Project Manager Matthew Abbott, Associate, Cost Management Scott Mathieson, Graduate Quantity Surveyor, Cost Management Norman Sutherland, Technical Adviser (HGHCP Ltd)
Principal Supply Chain Partner (PSCP) – Keir Construction
Cameron Malcolm, Designer Chris McGhee, Commercial Manager
Architect – Medical Architecture
Lianne Knotts, Director / Architectural Lead Maria Sanchez Navarrete, Project Architect
Mechanical & Electrical Consultants – Hulley & Kirkwood
Pete Hinshelwood, Mechanical Associate
Civil & Structural Consultants – Curtins
Gordon McPherson, Structural Engineer

6.2.9 Project Plan

Task	Programme	Forecast date	Approved
Strategic Assessment	18 April 2017	Complete	Noted by Capital Investment Group (CIG) June 2017
Initial Agreement	28 June 2018	Complete	Approved to proceed with OBC June 2018
Outline Business Case	March 2019	On track to be submitted to CIG October 2019	
Full Business Case	February 2020	February 2020	
Anticipated Construction start date	Spring 2020	April 2020	
Anticipated handover	Winter 2021	March 2021	
Post Project Evaluation	Spring 2022	Spring 2022	

The accepted Programme Rev C18 is included at Appendix MC7

6.3 Design Development

As detailed in the Strategic Case the key driver for the design development of the proposed facility is, ensuring timely access to treatment and support for young people across Scotland. The focus of the design of the facility will be to meet the differing needs of this complex group of young people, who will be accommodated in wards which support activity, reflection and treatment.

Choice of environment, such as spending time as part of the ward community or choosing quieter areas with more privacy will be balanced through a range of activity areas from day spaces to treatment rooms, further enhanced by 100% single occupancy bedrooms with en-suite shower rooms and easy access to a range of outdoor space.

This requirement for current and future health care provision for young people is in stark contrast to the current policy of transferring young people to NHS England for treatment.

6.4 Commercial Management

Commercial Management is fully explained in the Commercial Case, the confirmed option for procurement of the proposed facility is Frameworks 2. AECOM, Professional Services Consultants (PSC) and Keir Construction, Principal Supply Chain Partner (PSCP) were appointed to advise, design and build the new facility.

These appointments have ensured the delivery of a Design and associated costs for this OBC. The Project Team will continue to ensure that this work will align with the outcomes noted in the National Design Assessment Process.

6.5 Change Management

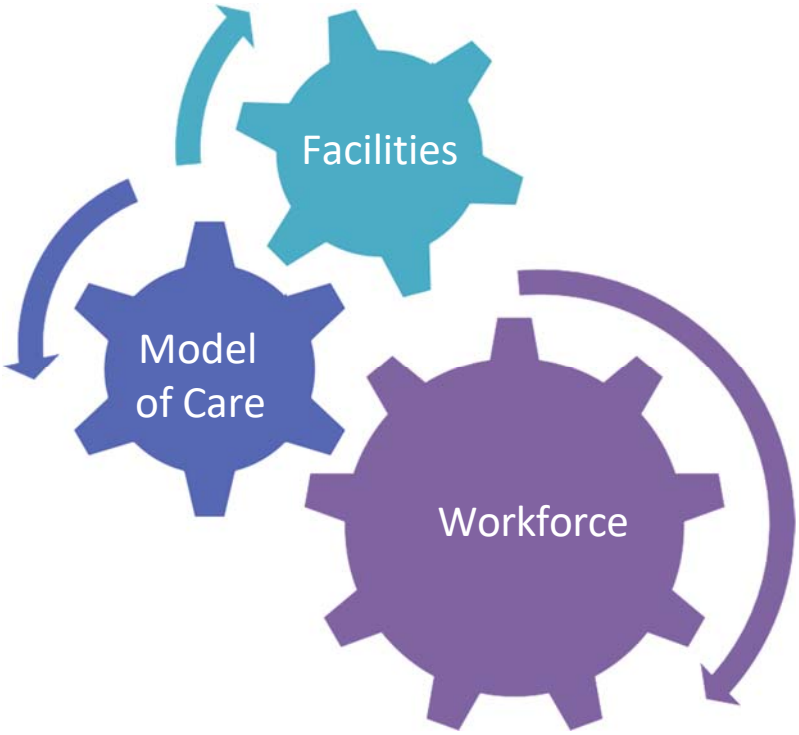
This section sets out NHS Ayrshire & Arran's approach to change management and how it helps to deliver the preferred option, discussing:

- Change management philosophy;
- NHS Change Management model;
- Stakeholder Engagement and Communication Plan

6.5.1 Change Management Philosophy

This Development represents a significant change point for NHS Scotland. The change to the physical infrastructure is simply an enabler to a more fundamental change in the way that mental health for young people will be delivered for NHS Scotland.

The diagram overleaf shows the three key elements encompassed in the scope of change.



There are three key elements of change management as depicted in the diagram. Some of the main impacts of the changes across four areas are as indicated below.

Area	Impact
Culture	The culture will change from one where medium secure care is not available within Scotland to one where the young person is seen as being at the centre of care. The need for improvements in quality placing service users at the heart of our values, provides the foundation of cultural changes. These changes will impact upon culture and therefore staff serving the facility and the young people of Scotland.
Systems	Systems will be more responsive and geared to supporting the new models of care. In particular more emphasis will be placed on good communication and effective handover between inpatient, community, primary care, social work and education to make the patient experience seamless.
Processes	The improved models of care that will be made possible by this

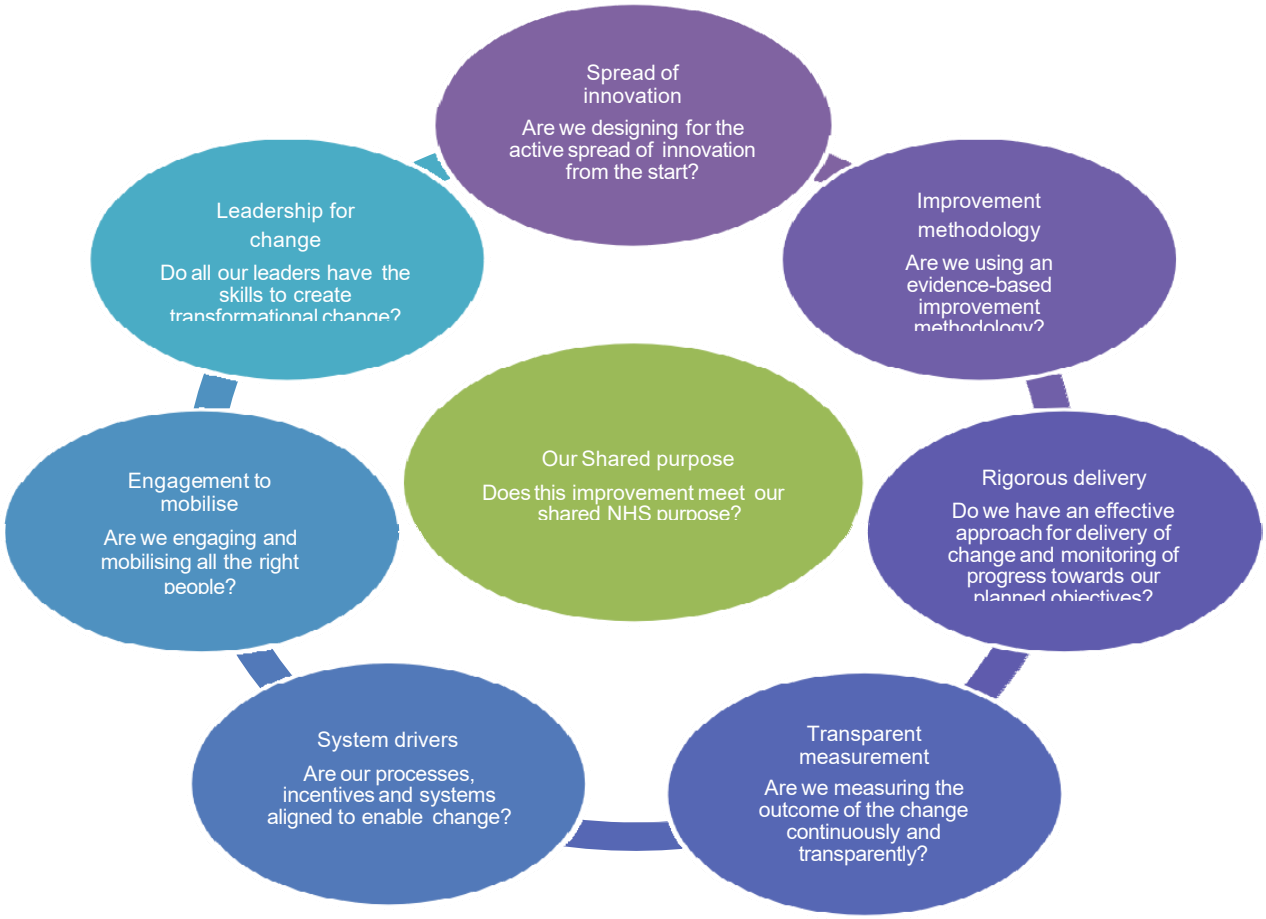
	development will provide enhanced multi-disciplinary, efficient services within modern facilities that will also deliver enhanced environmental quality, sustainability and more opportunities for teaching, training and many other benefits. The physical environment will also improve the way care is delivered.
People	There will be changes to roles and responsibilities, particularly for clinical staff. Some of this will arise from clinical process within the Development.

The Board's change management philosophy is to

- Recognise the significance of the change;
- Embrace the change, taking the opportunity to improve the quality of healthcare to maximise benefits realisation from the investment; and
- Implement the change in a structured and well managed way to empower staff to succeed.

6.5.2 NHS Change Management Model

The NHS Change Model has been created to support and adopt a shared approach to leading change and transformation. It brings together those elements that make change happen, informs how NHS Ayrshire & Arran transform their care and who needs to be involved. The illustration overleaf shows the model for change management within NHS Ayrshire & Arran:



NHS Ayrshire & Arran have reviewed the NHS Change Model and used each of the eight components to shape the way in which the process is managed. In particular evaluating the programme against each area:

- **Our shared purpose** - does this improvement meet our shared NHS purpose? The new National Secure Adolescent Inpatient Service development supports the NHS Ayrshire & Arran purpose of, “Working together to achieve the healthiest life possible for everyone in Ayrshire and Arran”. The proposed investment provides modern, fit for purpose facilities which allow an improved model of care to be fully implemented;
- **Leadership for change** - do all our leaders have the skills to create transformational change? Leadership is at the centre of the programme and the development of the improved model of care. This is provided from the Programme Managers and Change Managers;
- **Engagement to mobilise** - is NHS Ayrshire & Arran engaging and mobilising the right people? The programme has been the subject of wide engagement e.g. the development of the workforce planning group includes representatives from all services affected;
- **System drivers** - is our processes, incentives and systems aligned to enable the change? Supporting workstreams through the management structure will deliver the changes in the improved model of care;

- **Transparent measurement** - is NHS Ayrshire & Arran measuring the outcome of the change continuously and transparently? Project leads have identified measures for each of the model of care improvements
- **Rigorous delivery** - do NHS Ayrshire & Arran have an effective approach for the delivery of the change and monitoring of progress towards our planned objectives? Programme office established to use best practice project management techniques to deliver the change;
- **Improvement methodology** - is NHS Ayrshire & Arran using an evidence-based improvement methodology? Adoption of best practice and Kaisen techniques; and
- **Spread of innovation** - are NHS Ayrshire & Arran designing for the active spread of innovation from the start? Wide use of knowledge transfer/peer group review from other areas.

The change management philosophy and change management principles are being communicated to all staff as part of the launch of the change management process.

The Board has designed a change management approach that encompasses the philosophy and principles outlined above and has already made progress in delivering a core change management plan to implement the changes required to make the redevelopments a success.

The Board has:

- a sound change management philosophy, underpinned by specific change management principles; and
- developed a clear approach to change management to facilitate effective delivery of the development

6.5.3 Stakeholder Communication and Engagement Plan

NHS A&A recognises that the new facility will serve Scotland and as such there is a need for efficient, timely and relevant communication across a broad range of stakeholders throughout Scotland. To this end, a robust Communication Plan is being developed (included at Appendix MC10) and many of the key stakeholders are already being engaged. This process is ongoing as the project progresses.

6.6 Benefits Realisation Plan

6.6.1 Development of Benefit Criteria

There have been several Benefits Realisation Meetings, the output of which is captured in the Benefits Realisation Plan. A full version of the plan is attached at Appendix MC11.

6.6.2 Benefits Realised by new Models of Care

Benefits realisation will be measured throughout the first year of operation and

will be included within post project evaluation.

The identified benefits at this stage will help meet expectations for a Scottish service, will address the need for change and demonstrate the national importance of the proposal.

The new Mental Health Strategy for Scotland 2017-27 includes several actions of relevance to mental health care for children and young people who display offending behaviour. In particular, Action 20: "scope the required level of highly specialist mental health inpatient services for young people, and act on its findings.

These collective benefits will support progress in developing care pathways for young people who may be admitted to the proposed national secure service

6.6.3 Benefits Management

The Benefits Realisation plan has been established to monitor and manage the key benefits. It provides full details of:

- The main benefit
- Who benefits
- Benefits measure
- Who is responsible
- Investment objective
- Dependencies
- Support needed
- Date of realisation

The Clinical Lead has overall responsibility for the plan, supported by the Project Team

6.7 Risk Management Strategy

Effective risk management will provide a safer environment for young people and will help the organisation to capitalise on opportunities and fulfil its corporate objectives in the short and longer term.
Integrated risk management requires an ongoing assessment of potential risks and opportunities for an organisation at every level during design and construction. The results should inform all organisational level risks, facilitate priority setting and improve decision making.

Clear responsibility and accountability needs to be in place otherwise risks may remain unidentified; causing loss or harm that could be controlled or avoided. The organisation's Risk Management Strategy defines individual and organisational arrangements at local, system wide and Board levels.

6.7.1 Updated Risk Registers

A fully scored risk register is attached at Appendix MC12 which identifies the risks, associated with the project.
The risk register is a live document and is regularly reviewed by key stakeholders as well as at the Steering Group and Project Board. The key owners of risks will be the following:

- SRO (Senior Responsible Owner);
- Project Director;
- Project Manager;
- Finance;
- Clinical Managers;
- Support Services.

The risk register identifies risk under the following headings:

- Business Case;
- Change Management;
- Clinical;
- Communications;
- Construction;
- Design;
- Funding;
- Political;
- Resources.

6.7.2 Risk Control Measures

Integrated risk management requires an ongoing assessment of potential risks and opportunities for an organisation at every level. The results should inform all organisational level risks, facilitate priority setting and improve decision making.

Clear responsibility and accountability needs to be in place otherwise risks may remain unidentified; causing loss or harm that could be controlled or avoided. The organisation's Risk Management Strategy defines individual and organisation arrangements at local, system wide and Board levels.

6.7.3 Governance Arrangements

Risk management is an integral part of an organisation's Code of Corporate Governance. Corporate assurance is a process designed to provide evidence that an organisation is doing its "reasonable best" to meet objectives, protect patients, staff, the public and all stakeholders against risks of all kinds.

The Risk Register is a dynamic document that is reviewed and updated by the Project Team on a weekly basis. Any new risks are introduced through the Steering Group and ratified at the Project Board.

For the purposes of this project NHS Ayrshire & Arran's Board has overall responsibility for Risk Management and for ensuring that significant risks are identified and controlled.

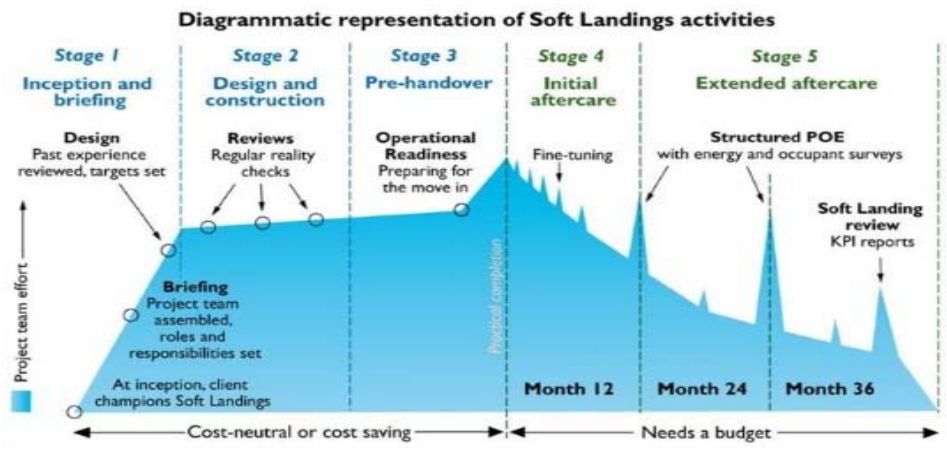
6.8 Commissioning

The Project Team will adopt the key principles of "soft landings" to ensure that the commissioning process is well planned and executed.

The British Standards Institute describes Soft landings as a graduated handover of a built asset from the design and construction team to the operation and maintenance team to allow structured familiarisation of systems and components and fine tuning of controls and other building management systems [from PAS 1192-2].

"A process for the graduated handover of a new or refurbished asset/facility, where a defined period of aftercare by the design and construction team is an owner's requirement that is planned and developed from the outset of the project [from BS 8536-1]"

Essentially soft landings strives for better outcomes for built assets through early engagement of the operational team. It is not just a handover protocol but a commitment from the design team, through construction and into operation providing emphasis on improving operational readiness and performance in use. The diagram from BSRIA overleaf, conceptualises the typical soft landings process and activities.



Soft landings will enable the Project Team to deliver:

- A progressive demonstration, where everyone collaborates, understands and is aligned to deliver a well-planned commissioning programme.
- A robust integrated mechanism to take stock at key gateways throughout the project
- A high-level visual report that allows the team to focus on the right things at the right time
- Certainty of delivery to all stakeholders involved in the Project.

A template of the detailed commissioning plan is included at Appendix MC12

6.8.1 Reporting Structure Aligned to main Project Structure

The reporting structure is aligned to the main project structure as detailed in organogram item 6.2.1

6.8.2 Person Dedicated to Leading this Process

The “soft Landings” process will be led by the Capital Project Manager supported by the Core Team, comprising:

- Project Director;
- Clinical Services Co-ordinator
- Project Administrator.

In addition to the team members listed above the project will be assigned an Assistant Project Manager from NHS Ayrshire & Arran’s Capital Planning team to assist with commissioning and equipping.

A “Soft Landings” Group will be established prior to construction starting with membership from the various stakeholders in the project including, clinical; non-clinical; eHealth; Telecoms; Estates; Procurement; Facilities Management; Infection Control.

The Group will be led by the Capital Project Manager Commissioning Team drawing on experience of previous new builds (including Woodland View) to develop an agreed commissioning and equipping programme in conjunction with users. The Group will also be responsible for the development of a migration programme for identifying and planning for the transfer of young people in medium secure care in England to the new facility; and co-ordination of all the service teams to achieve the commissioning programme.

6.9 Project Evaluation

NHS Ayrshire & Arran is aware that in order to assess the success of the project, a meaningful evaluation has to be undertaken and that this is essential to improving future project performance, achieving best value for money from public resources, improving decision-making and learning lessons for both the Board and others. In addition Post Project evaluations will measure how well the project has met its objectives and benefits.

NHS Ayrshire & Arran has carried out 8 Post Project evaluations over the past 3 years and has developed and refined the process for project evaluations to comply with the current SCIM requirements.

6.9.1 Methodology

The evaluation will use a number of quantitative and qualitative methods to gather information, this will include, structured questionnaires, semi- structured interviews, team workshops and retrospective audit of project records.

6.9.2 Scope of the Evaluation

The Post Project evaluation will be split into two distinct stages. The first part of the evaluation will deal with project performance and evaluate time, cost, quality and risk. Also, the Post Project Evaluation (PPE) will measure the benefits as outlined in the benefits realisation plan

6.9.3 PPE Programme

As stated above the PPE will be undertaken in two distinct stages. The first stage will evaluate the project performance evaluating programme, cost (revenue and capital), quality, which will include design performance and energy performance and review the project risks, identify any residual risks and any risks that were introduced during the project that had an impact on time, cost and quality.

The majority of the first stage, including lessons learned will be undertaken within the first three months following practical completion, which is forecast for the winter of 2020.

The second stage of the evaluation will measure the benefits as stated in the benefits realisation plan. To allow for the qualitative data to be gathered and assessed this activity is planned to take place 12 months after operational commencement, which is expected to be winter/spring of 2021.

To gather the information and present as a holistic PPE will take approximately 3 months. The PPE will follow Governance as set out in item 6.1.1 with an anticipated submission to Scottish Government late summer 2022. A detailed programme for completion and submission of the PPE will be detailed in the FBC

6.9.4 Evaluation Team

The core Project Team and representatives from the PSC and PSCP will have the responsibility for drafting, editing and finalising the Project Evaluation. The table below details the roles and responsibilities

Name	Role & Responsibility
Iain Fairley	Project Director – Final Approval
Hazel Smith	Project Manager – Design Questionnaires/Author
Elieen Bray	Clinical services Co-ordinator – Clinical Liaison/Author
Carol Craig	Administrator
Keith Holmes	PSC – Cost & Project Management inc. Risk, Cost & Programme.

John McDonald	PSCP – Construction Programme, Cost & Quality

6.9.5 Financial

Based on previous PPEs; time is the biggest commitment from NHS Ayrshire & Arran staff and our advisors. Most of the activities will be undertaken by the core team and will have no direct financial implications; however based on previous PPEs an allowance of £6,500 inc VAT has been allowed for.

Additionally a judgment will be made in relation to specific elements of the evaluation when it is difficult to determine which action had an impact on e.g. service performance indicators

6.10 Management Case Conclusion

Providing a purpose built 12 bedded National secure in-patient facility within Ayrshire Central Hospital, Irvine will greatly enhance the mental health outcomes for those young people who are the most vulnerable in our society.

As a central element of the Mental Health Strategy 2017-2027, this proposal offers a modern service, which is within the same country.

The Preferred Option, to build a 12 bedded medium secure facility, represents the best investment to provide the required services going forward. It is the best value option and would fulfil the drivers identified in this Outline Business Case.

The governance set out in the Management Case is robust and the dedication/expertise of the Project Team will ensure that this project can move at pace towards the development of the Full Business Case for this critical project

7 Outline Business Case Conclusion

This Outline Business Case (OBC) follows on from the previously ratified Initial Agreement (IA) and sets out a robust case for the provision of a new National Secure Adolescent Inpatient Service (NSAIS).

The investment proposed – in a 12 bed medium secure facility for young people in Scotland - reflects and responds to National Strategies, such as The National Clinical Strategy for Scotland and The Scottish Mental Health Strategy 2017 – 2027. It will transform the way in which health care for this group of young people will be delivered in a secure setting and will address a major gap within current mental health care delivery whilst significantly improving outcomes. The facility development will also provide enhanced services in an appropriate Scottish setting, enabling staff to work more efficiently and effectively as a component of the wider model of care by:

- Providing assessments of suitability for admission to adolescent medium secure care.

- Delivering specialist secure inpatient assessments of young people referred from other specialist mental health services.
- Co-ordinating a national referral system.
- Reducing the time taken from referral to treatment, and by providing that assessment and treatment in an appropriate health and care setting in Scotland.
- Establishing and maintaining links with key stakeholder organisations and referrers to ensure a robust referral pathway and appropriate admissions within specified timeframes.
- Providing consistent and equitable access to appropriate services for young people across Scotland.
- Planning for and delivering an appropriate range of clinical interventions that address young people's mental health needs within a medium security environment.
- Actively supporting on-going engagement between a young person and their referring team including health, education and partner agencies, thereby ensuring that they "stay connected" to local systems in order to make transitioning to and from the unit easier and quicker.
- Delivering responsive, individualised care coordinated through the use of Care Programme Approach (CPA) framework, including liaison with other services, agencies and facilities as appropriate.
- Promoting service user engagement and involvement.
- Promoting best practice in the field of Adolescent Secure Mental Health through teaching, research and service development.
- Delivering high quality care and treatment within the appropriate legislative and a robust governance framework.
- Ensuring that special care is taken of the welfare of under 18's - in accordance with the United Nations Rights of the Child, as enshrined in the principles of the

Mental Health (Care and Treatment) (Scotland) Act 2003 and Children and Young People (Scotland) Act 2014.

- Providing a safe, secure, therapeutic environment, which is the least restrictive necessary to ensure the welfare of patients, staff and visitors.

This OBC confirms the management, planning and governance structure established by key stakeholders to take the project forward on an affordable basis, monitored at every stage. In submitting the OBC, approval and support is sought to move to the Final Business Case (FBC) stage of this essential development.

NHS Ayrshire & Arran would like to acknowledge the effort, energy and enthusiasm of everyone who has been involved in the development of the previous IA and now this OBC from throughout Scotland and the rest of the UK.