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Andrew Walker
Aneurin Bevan University Health Board

Via e-mail

18 May 2016

Dear Andrew,

Understanding the benefits associated with the development of the Specialist Critical Care Centre as part of the Clinical Futures Strategy

We are delighted to present our proposal to support you in estimating the potential benefits of developing a Specialist Critical Care Centre (SCCC) as part of the Clinical Futures Strategy. This letter sets out our proposed methodology, team and experience. I hope you will find these aligned with your needs. Following your review of this proposal we would welcome further discussion to refine and agree this scope of work with you to ensure we provide you with insightful and valuable analysis that will support your Full Business Case (FBC) submission.

Our understanding of your requirements

Your case for change identified that the current configuration of district general hospital services at the Royal Gwent and Neville Hall sites will not support the achievement of good quality clinical outcomes and performance and will become an increasing risk for the Gwent area in the future. As such, Aneurin Bevan University Health Board has developed the Clinical Futures Programme for modernising the local healthcare system; as part of this, it is proposing the development of the SCCC which forms a critical component of the future model of care. The construction of the new build is the preferred solution to resolve service sustainability issues for hyper-acute and specialist services across this health care system and that is considered affordable and deliverable. This involves consolidating certain activity across two existing sites into one new facility.

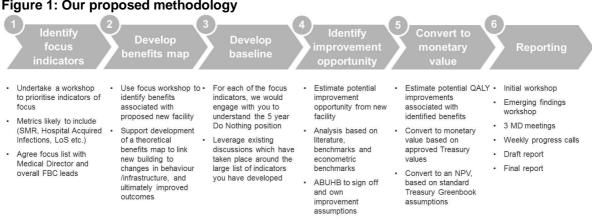
In light of this, we understand that you would like an external consultancy to estimate and quantify the potential benefits of the SCCC and associated consolidation of activity. The output of this engagement would be a report you would use to support your FBC submissions to the government, illustrating the potential benefits associated with the preferred clinical model, as estimated through the impact on a selected list of metrics.

We understand that no further primary data collection will be required to support this analysis. We will instead look to bring together the existing research, precedent and literature to develop a more comprehensive view of the benefits associated with the SCCC. We have undertaken similar engagements for numerous NHS providers, including Alder Hey Children's NHS Foundation Trust and Sandwell and Birmingham Hospitals NHS Trust.

Our proposed methodology

To support you with your initiative, we have developed a six-step methodology as illustrated in Figure 1 below.

Figure 1: Our proposed methodology



Each of these steps is presented in further detail below. In addition, we understand that you may also wish to undertake an updated health impact assessment as part of this engagement. We have not included the scope of this health impact assessment in our methodology or fees in this proposal, However, we outline the approach we would take to agree the scope, timelines and fees for this exercise.

Step 1: Identifying indicators of focus

The case for change identifies that the current configuration district general hospital services at the Royal Gwent and Neville Hall sites will not support the achievement of good quality clinical outcomes. As noted above, the proposed Specialist and Critical Care Centre will be a purpose built hospital, which is anticipated to generate a number of clinical, financial and operational benefits. The first step of our methodology involves working with you to identify the indicators of improved performance that will frame the rest of the analysis, i.e. the benefits of the new hospital will be estimated through these metrics. We will work with you to determine a list of 5 - 10 'focus indicators' for which the impact can be quantified.

We understand that you have developed a long list of metrics, grouped according to four areas including clinical outcomes, access, infrastructure related impacts and workforce impacts. In order to refine this long list into a short list, we will hold an interactive half day workshop. We would expect this workshop to be attended by:

- Medical Director:
- Performance Director;
- Corporate Services Director:
- Facilities Divisional Director:
- Workforce Director:
- Planning Director; and
- SCCC Programme Director.

We would agree the list of attendees at project inception.

We will develop criteria for shortlisting and agree these with you prior to the workshop. Typical criteria for assessing the metrics would include:

- **Materiality**: this will ensure that selected metrics are those which capture the most material, positive benefits generated by the new facility.
- **Ease of quantification**: it is important to select metrics which are observable and facilitate quantification. Some metrics are more qualitative in nature and may be less suitable, for example, metrics around patient complaint numbers, whilst being reflective of patient experience, may be more difficult to quantify in a systematic way.
- Precedent: linked to the point above, it will be important to consider those metrics where
 there is a body of evidence/precedent to support their quantification. This will ensure that
 assumptions are grounded in evidence (e.g. through the literature/past experience) and will
 be more robust to external challenge. For example, we know that there is a body of
 literature around the benefits associated with reduced mortality rates, increase life
 expectancy etc.
- Representative: it will be important to ensure a representative mix of metrics is chosen,
 i.e. they should be aligned to and cover each of the four investment objectives outlined in
 your FBC. This will lead to the development of a shortlist which contains both clinical and
 operational metrics.

The workshop would be used to score the metrics against criteria and to facilitate a discussion around results. Through the workshop we will aim to build consensus around the shortlisted 5-10 metrics to be included in the analysis.

As part of the prioritisation workshop, we would also engage with clinicians and programme directors to understand the perceived benefits associated with the new build and specifically how the new facility might impact each of the shortlisted metrics. Once the prioritisation exercise is complete, we would expect the Medical Director and Overall FBC leads to sign this off.

Step 2: Develop a benefits map

Having agreed the list of 5 - 10 focus metrics, the next step will be to develop a benefits map to understand the mechanism through which the new facility will lead to benefits as observed through

these metrics. The Clinical Futures Strategy sets out a range of objectives that are to be targeted through improved service delivery across the local health economy. In particular as a result of centralising specialist and hyper-acute services to provide patients with services that are of the required quality, availability and sustainability.

In many of our previous engagements we have supported stakeholders in these organisations to develop a 'benefits map'. This exercise is intended to focus stakeholders' thought process to identify the specific actions and systems changes that are associated with each desired outcome and to map exactly how these changes will results in changes to behaviour and outcomes in the system. Building of the indicators identified and short listed in stage 1 of our work, we will work with you to link each of these indicators to real change in the system and to determine how impact could be monitored and quantified by you on an on-going basis.

As an example, Figure 2 below shows an example of a benefits map that was produced to support the London Deanery's MDECS business case. It was the output of workshops and conversations with a range of stakeholders across the organisation and served to untangle various view-points into a focused 'chain of causality'. This allowed for the quantification of benefits, where appropriate.

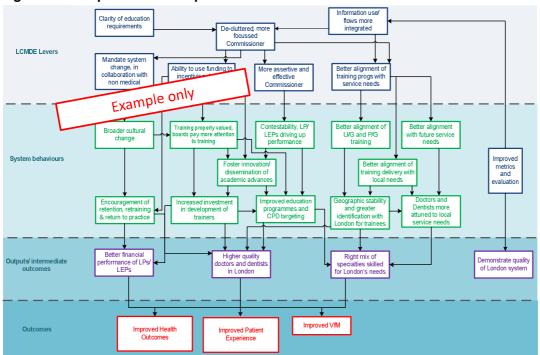


Figure 2: Example benefits map

We defined four key layers in the chain, and would work with you to tailor a similar structure for the benefits of the Clinical Futures Strategy. At the current time we imagine these could be:

- 1. **Health Board Levers:** Represent specific changes that the system enacts to support the strategy and is a clearly traceable originating point for each system benefit. For example, this could be building the Specialist and Critical Care Centre (SCCC).
- 2. **Provider Behaviours:** Through supporting the investment in the SCCC the Health Board will enable providers to change their ways of working. The concentration of activity in a single

SCCC could enable several provider behaviours, such as changes to recruitment and specialist staff scheduling, changes to operating hours and availability of staff, the ability of providers to attract and retain staff etc.

- 3. Outputs/Intermediate Outcomes: The changes in the behaviour of providers in the system will result in traceable changes to service delivery, including improvements to access and quality. For example, as a result of provider changes to staff scheduling patients requiring urgent and hyper acute care may have speedier access to the appropriate specialist, improving operational and clinical outcomes.
- 4. Outcomes: The final stage of the benefits map is the quantifiable and traceable outcomes of the strategy. These will be aligned to the 5-10 focus indicators which will be determined at project inception, as noted in the previous section. Continuing the example, speedier access to the most appropriate specialist could have a quantifiable impact of indicators such as: nonelective length of stay, mortality or re-admission rates.

Step 3: Develop a baseline position for focus indicators

It is important to establish a credible counterfactual scenario for the Economic Case of the FBC. Building on the agreed list of focus indicators and benefits map for each of these metrics developed in Steps 1 and 2, Step 3 involves developing a baseline position for the focus indicators. In developing this five year do-nothing position, it will be important to consider the impact of a number of factors on the selected indicators. These potentially include:

- Activity volumes. Healthcare services are facing significant demand pressure, driven
 primarily by demographic growth and more complex health needs. These trends could
 place increasing strain of the system and impact operational performance and thus the
 specific indicators. For example, readmission rates could increase if significant demand
 pressures were causing a reduction in treatment times;
- Patient case-mix. An ageing population and the increase of patients with multiple comorbidities are sources of increasingly complex treatment requirements. These could
 potentially result in different clinical outcomes from the ones we are seeing today assuming
 no change to clinical delivery models;
- Provider capacity. Due to growing cost pressures faced across the system, certain
 providers may struggle to increase overall capacity (e.g. number of beds available in a
 Trust). This could impact activity flows through points of care and potentially have an
 adverse impact on performance indicators;
- Staffing models. There is work underway at the national level exploring the potential to
 implement new workforce models and standardise staffing ratios. Depending on whether
 this results in higher/lower staff per activity this may improve/worsen performance across a
 number of areas;
- Service efficiency. Providers may already be looking to undertake a degree of efficiency improvement which will not be conditional on the realisation of the Clinical Futures Programme. For example, providers may be able to achieve a reduction in Length of Stay through the current operating model. Disentangling the proportion of these changes that

are incremental, i.e. as a result of the Clinical Futures Programme will be necessary for the Economics Case; and

Other providers of care. Due to the many interdependencies that characterise the
healthcare system, different providers of care may be closely linked in some of their
performance metrics. For example, length of stay for certain community beds is conditional
on availability of particular social care packages. Supporting the development of an
integrated care system is core to the Clinical Futures Strategy and as such, it will be
important to also consider the constraints and challenges faced by other parts of the
system when looking at performance metrics in the future.

From discussions with you, the process of establishing this baseline position has already started. As such, we envisage that you will be responsible for developing the five year baseline position, which you will provide to us for the purpose of estimating benefits. In order to support this on-going process, we will run a workshop to facilitate discussion around key drivers of change for each indicator, ensuring appropriate input from programme leads and the Medical Director. We will circulate findings from this session and seek your sign off on the agreed position.

Step 4: Identify potential improvement

Step 4 involves identifying and articulating the potential improvement associated with the establishment of the SCCC. Moving to a purpose built facility could result in improvement across various areas. These are expected to be driven through improved access to infrastructure and increased scale for certain specialties. In this step, we will work with you to develop assumptions around the potential improvement associated with the focus indicators. We note that you will retain responsibility for these assumptions.

The approach to identifying potential improvement is summarised in Figure 3 below and consists of:

- Literature review:
- Benchmarking; and
- Econometric analysis.

Figure 3: Approach to identifying potential improvement

Literature review

- Use our existing catalogue of literature to identify potential improvement areas as a result of the new-build.
- A further review of papers which are relevant to the proposed new-build characteristics will also be undertaken.
- This will result in the identification of qualitative improvement areas as well as identification of areas which can be quantified.

Benchmarking

- Develop high level benchmarking to understand any areas of potential improvement.
- This will include benchmarking of mortality rates, prevalence and length of stay.
- The benchmarking will help identify any potential improvement areas at a defined granularity (for example, specialty level)

Econometric analysis (time depending)

- Econometric analysis can be undertaken to statistical normalise for certain characteristics (such as demographics, deprivation and income).
- Undertaking this approach, where variables are controlled for, results in a more robust estimate of the potential areas of opportunity.

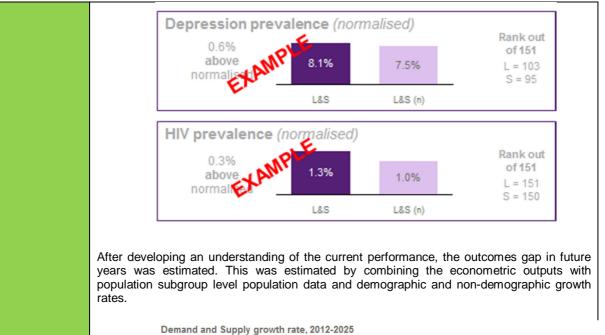


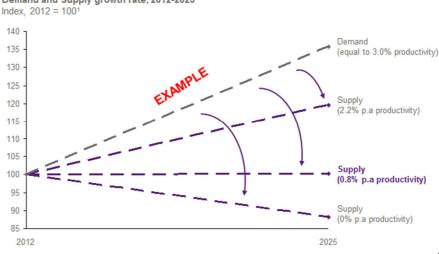




We undertook a similar exercise (using econometrics), for Guy's and St Thomas Charity (GSTC). Our approach and outcomes is presented in a case study below.

Client:	Guy's and St Thomas Charity (GSTC)				
Context:	The charitable trust, which provides financial support to improve health services and health wellbeing in Lambeth and Southwark, has key strategic priorities including; helping transform the healthcare system and improving the health of the local population. Deloitte was commissioned to present a 'case for change' based on the current and future outcomes gap in the health economy, while accounting for ill health in the two boroughs being associated with greater levels of deprivation and lifestyle factors compared to their peers.				
Our approach:	Analysis was focused on seven pathways which are expected to represent the areas of highest pressure in the coming years. These are; Cancer, CVD, Diabetes, Depression, Psychosis, HIV and Child obesity.				
	For the seven pathways, we employed a combination of techniques in order to develop an understanding of the health performance today and the change in these over time (incorporating impacts of things such as on-going financial pressures).				
	As assessment of current quality and outcomes was undertaken through benchmarking prevalence of each of the seven pathways. This included:				
	 Literature reviews. Developing an understanding of prevalence for the local health economy using literature, and using this to develop an understanding of how it varies across population sub-groups. 				
	 Benchmarking (simple and econometric). Simple way, as well as an econometric approach which normalised for a set of variables (including, demographics, deprivation and income). This highlighted, for each of the seven pathways, the expected prevalence rate. An example output is indicated in the diagram below. 				





Outcome:

GSTC was able to develop a report which presented a robust estimation of the current performance of certain health areas benchmarked to understand current performance as well as the expected outcomes gap in future.

It is important to note the following points when identifying potential opportunities:

- Insights from benchmarking are dependent upon data availability;
- Pre-existing peer groups are preferred for undertaking benchmarking; and
- The outputs of this exercise in terms of assumptions relating to focus indicators will be owned by you.

Step 5: Convert to QALY, monetary value and NPV

Having identified opportunities for improvement in step 4 for each indicator, the next step is to estimate potential benefits. A number of benefits could be realised, including:

- 1. Financial benefits; and
- 2. Non-monetary benefits.

Financial benefits

Financial benefits are benefits which can be quantified to estimate potential financial savings associated with the improved indicators. These benefits would be estimated through applying a number of methods depending on the indicator, for example:

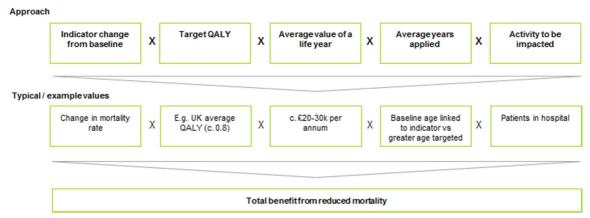
- Cash releasing savings through improved indicator values, such as those linked with local or national CQUINs or avoiding fines or penalties e.g. RTT breaches, those associated with QIPPs;
- Cost savings through improved efficiencies / productivity for example improving day case rates, outpatient first to follow-up ratio, reducing length of stay and reducing agency spend; and
- Improved margins through driving greater income from increasing certain activity types for example driving greater elective activity through improving RTT.

Non-monetary benefits

In addition to the financial benefits, there are also likely to be significant non-monetary benefits associated with the improvements to the selected indicators. For example, improved mortality rates, and improved health benefits to patients. These benefits are more qualitative in nature and while they do not comprise financial impacts, these benefits can be monetised through analysis using the Quality Adjusted Life Years (QALYs) methodology. This methodology provides a common framework for measuring benefits that would otherwise be challenging to quantify, and the approach is consistent with the Treasury Green Book around how benefits of this type can be quantified.

An example approach for how these benefits would be monetised for potential avoided fatalities is illustrated in Figure 4 below; there may also be further benefits from improved health outcomes.

Figure 4: Example approach to monetise benefits from reduced mortality



The assumptions underpinning these estimates would be drawn from a range of sources, for example literature on average target QALYs and average value of a life year, and the potential change in mortality linked to improvements to particular indicators.

Net Present Value for evaluation

The total estimated benefits of all of the indicators will then be synthesised in to a Net Present Value (NPV).

As set out in the Treasury Green book, the key measure to understand the relative economics of different options and quantify benefits is the NPV. This measure looks at all the flow of costs and benefits over the period resulting from an intervention or impact, such as an increase in the value of the indicators, accounting for the higher value placed on more near term impacts. NPVs allow the financial benefits (or costs) to be easily assessed against the base case (do nothing).

The core NPV assumptions would be agreed with you on project inception, however typically a conventional set of assumptions comprises of:

- A discount rate of 3.5% (in line with Treasury Green Book);
- 20 year time horizon;
- Assigning cost categories across fixed, semi-fixed and variable and modelling different cost responses to changes in activity;
- Adjusting for "optimism bias" i.e. scaling up costs by X% because these are often underestimated;
- A series of assumptions upon which to run sensitivities to generate different NPVs reflecting a range of costs and benefits, including assigning probabilities, to estimate an expected NPV / risk adjusted NPV; and
- Other assumptions e.g. cost inflation = income growth.

Reporting

We will present our findings to you in a word report which will be structured to allow you to share the methodology, key implications, and the analysis clearly and effectively with key stakeholders.

As part of the support we will provide you with, we will attend three meetings with the Medical Director and facilitate two workshops (one to identify focus indicators and another to discuss baseline assumptions for these indicators).

We envisage this project being undertaken over a six week time-frame; our proposed project plan is presented in Figure 5 below. We would be happy to discuss this with you upon project inception.



Figure 5: Proposed project timeline

Health Impact Assessment – scoping exercise

We understand that you are also considering undertaking an updated health impact assessment (building on the assessment you developed in September 2015). As a first step as part of this engagement, we would look to review your existing report and work with you to scope out the requirements of the updated assessment. This would likely involve a review of existing legislation (including Welsh specific legislation such as the 'Well Being and Future Generations Act) and the extent to which current work is likely to meet the necessary level of rigour to receive Government approval. This will involve consideration of:

 Level of stakeholder engagement used to inform health impact assessment (i.e. have all relevant groups been covered; this includes broader groups than those defined in the Equality Act 2010, for example the economically deprived, travelling communities etc.). Our current understanding is that the existing work relies on limited engagement.

- Analysis conducted to date, including travel time analysis (i.e. has the analysis considered
 whether there could be a disproportionate impact on access for particular patient groups,
 particularly those with protected characteristics). Typically we would undertake this
 analysis at the LSOA level to identify access impacts in a robust way, this would also have
 regard to the predominant transport method used by particular groups (i.e. public or
 private).
- Timing of previous work: we would look to understand the data used to inform the existing
 work and in particular whether more recent data is available to inform an updated impact
 assessment.
- Extent to which enhancements and mitigations have been proposed to offset any adverse
 impacts associated with the development of the SCCC. Typically, regulators would need to
 see robust and credible plans of potential mitigations for negative impacts identified; these
 can take many forms, including amendments to transport links, communication with
 affected patient groups and wider community engagement.

We have significant experience of considering health impacts in the context of service location and reconfiguration, notably in our high profile reports for the South London Trust Special Administrator and North West London health economy. We would use this experience in order to understand the state of readiness of existing work and the extent to which further input required to update the health impact assessment.

Undertaking the updated health impact assessment is not within the scope or fees specified for this engagement.

As part of this engagement, we have included three days of SME time to undertake an initial review of your existing health impact assessment (developed in September 2015) and work with you to further refine the scope/fees associated with an updated Health Impact Assessment Report. We will undertake this scoping exercise in week one of the engagement through a workshop.

Ways of working

We take a collaborative approach to working with our clients and we will look to ensure that you are consulted and kept well informed throughout the course of the engagement. This will ensure that you are comfortable with the final report and findings, and that our analysis provides real value in supporting your initiative.

Upon project kick-off we will meet with your team to:

- · Agree the scope of the work;
- Discuss and agree the methodology;
- · Identify key contacts;
- · Establish ways of working; and

· Identify existing available data sets.

During kick-off we will look to set up weekly update calls with your team. During these sessions we will look to:

- · Update on progress to agree timelines;
- Agree methodology and key assumptions underpinning the analysis;
- Raise any risks and issues regarding data availability and/or quality;
- · Discuss emerging findings and messaging; and
- · Agree sign-off processes.

To ensure that the work progresses smoothly and to the agreed project timelines, we will contact you to arrange calls/update emails as required.

It will be important to discuss any data limitations with you. In particular where assumptions or evidence are weak, our findings will reflect this and any conclusions will need to be appropriately caveated. We will raise any such issues with you during our regular weekly meetings to ensure that your expectations are kept in line with the analysis. We believe this project will only be successful if the work is conducted in partnership with you given your experience in the area to date and critical role in the work. As such, we propose to undertake the majority of the work in close collaboration with you.

Our team

Our proposed team to support you has significant experience of developing economic impact assessments and benefits cases across sectors, in particular health and social care sectors. To deliver on this critical project, we are proposing a core delivery team drawn from our health economic consulting practice. This team of c.20 postgraduate health economists has worked extensively for the centre (NHS England, Monitor and Department of Health), commissioners across the country, providers (acute, community and mental health), local authorities, and other organisations. Of particular relevance, members of this team have led high profile health impact assessments for reconfiguration programmes in south east London and North West London. They have also developed benefits cases for new hospital builds (including Sandwell, Clatterbridge Cancer Centre and currently Epsom & St Helier University Hospitals NHS Trust). They have also undertaken economic impact studies for Scope and the British Red Cross.

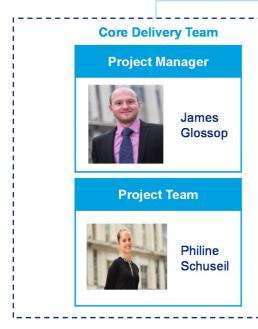
Our wider team has extensive experience of conducting economic impact assessments for clients in the UK public sector (including HMT, BIS, DfE, Ofcom, Ofgem, Ofwat and the CMA), international public sector (including more than 10 projects for the EU) and private sector clients (Including BT, Facebook, Google, eBay, London Stock Exchange, Water UK and the GSM Association),

Our team has extensive experience in undertaking exercises under tight timelines, employing a range of technical and modelling skills combined with strong stakeholder and project management

skills. Our proposed team structure is illustrated in Figure 6 below. We have also included pen portraits for our team members; we would also be happy to provide full CVs for our team upon request.

Figure 6: Our proposed team structure









Chris Williams is the partner leading our economics practice in the UK and is coordinator of Deloitte's global economics practice. Chris has been a partner with Deloitte for 8 years following 5 years as a partner with KPMG leading their international economics group. Chris leads all our health economics work in Economics Consulting and his clients have included national partners (including multiple projects for NHS England, Monitor, TSA, Health Protection Agency, and the TDA), SHAs (including London, South, South West, East of England, and East Midlands), more than 100 Trusts and Commissioners, County Councils on the integration with Social care (including Greater Manchester and Hampshire), Royal Colleges (including the RCGP and NMWC) and Charities (including British Red Cross, Scope, and National Autism).

Chris has advised widely on economic impact analysis within the health sector, including work for numerous business cases as well as sector policy for Monitor and NHSE. Outside of the health sector he extensive experience of conducting economic impact assessments for clients in the UK public sector (including HMT, BIS, DfE, Ofcom, Ofgem, Ofwat and the CMA), international public sector (including more than 10 projects for the EU) and private sector clients (Including BT, Facebook, Google, eBay, London Stock Exchange, Water UK and the GSM Association).

Chris will be the engagement partner and will have overall responsibility for the delivery of this engagement.



Kelly Eaves is a Partner in our Healthcare Transactions and Restructuring Team. Kelly's career started as a Health Economist at the Planning Department of South Tees Health Authority. She joined KPMG consulting in 1992 and thereafter Deloitte in 1999. She has 20 years of experience advising the NHS on business and investment decisions, including the development of benefits cases. Her particular focus includes: procurement advice, business cases and evaluation methodology development and negotiating contractual positions. She has advised on a number of new build hospitals, including on over £2.5bn worth of closed NHS PFI transactions, involving innovative funding solutions to many projects, business case submissions and value for money of funding analysis. Kelly was responsible for our advice on the recently closed Royal Liverpool and alder Hey PFI projects and is currently advising Sandwell & West Birmingham on the PF2 health pilot and Clatterbridge on its business case for a publicly funded capital scheme. Kelly has also recently advised a number of trust on ways of extending their service offering and in most cases via a joint venture

Kelly will be the second partner on the engagement and will provide quality assurance on all deliverables on this engagement.



Christian Norris leads Deloitte's health and social care public policy economics team. Christian has significant experience working on over 100 engagements for c.40 Trusts (hospitals, mental health and community trusts), c.20 commissioners, central government (Department of Health, NAO, NHS England), regulators (Monitor) and for private/third sector.

Of particular relevance he has developed health economy diagnostics and solutions for c.10 health and social care economies. This included recently as overall Project Director for one of the Challenged Health Economies, a large programme in Durham Darlington and Tees, for a £1.3bn health board in Wales, NW London, SE London, Hertfordshire, Manchester (integrated care), Birmingham and for NHS England.

Christian has significant experience in evaluating policy and measuring impacts to a green book standard. To this end he has worked for many government organisations and regulators (DfE, BIS, DH, Monitor, Ofgem, Ofcom), third sector clients (Red Cross, Scope, NAS, Mencap, Leonard Cheshire Disability, Whizz Kids) and private organisations (Skype, BT, Ericsson, c.20 Hospitals and other providers). Christian has presented these studies to No.10, Ministers, Treasury and various stakeholders.

Christian will act as the project Director bringing his experience of delivering policy analysis for a range or charities and health and social care clients.



James Glossop is a postgraduate economist within Deloitte's Economic Consulting practice based in London, and would be project manager for this engagement. James has undertaken engagements for a range of clients including NHS England Monitor, CCGs, providers, local authorities and private sector clients, focussing on detailed financial modelling. Of particular relevance to this project, James has undertaken financial analysis to feed in to a number of business cases (in line with Treasury Green Book) over the last couple of years. Modelling to support this has included: financial baselining; analysis of KPIs and quality indicators (e.g. impact of reducing SMRs); length of stay benchmarking and efficiency / productivity; benefits appraisal and NPV analysis; and QALY analysis. James holds a BSc (First class) in Economics (with Clayton Prize) from the University of Sheffield and an MSc in Economics from The London School of Economics (with Bill Harrison Scholarship).

James will be the day to day project manager and will act as your primary point of contact. He will be available to discuss any questions or concerns that you may have.



Philine Schuseil is a postgraduate economist within Deloitte's Economic Consulting practice based in London. She holds a BSc (First class) in Economics from Humboldt-University Berlin, a Diploma of Economics, and an MSc (First class) in Economics of Markets and Organisations from the Toulouse School of Economics. She has a range of health and social care experience, supporting both on the commissioner and provider sides. Philine recently supported NHS Southampton City Clinical Commissioning group in the development of a system-wide demand and capacity model allowing for more integrated planning. Philine also recently supported NHS Cumbria CCG to provide analytical support to assist them in a Local Health Economy reconfiguration as part of the Success Regime. Philine has delivered and previously supported NHS Kernow CCG with econometric cost benchmarking analysis to identify areas of potential cost savings to the system.

Philine will support both Christian and James in delivering our findings and will be responsible for undertaking the underpinning analysis.



Rohan Sawhney is a postgraduate economist with a focus on healthcare economics. He has significant experience of working with regulators, central government, hospital providers and commissioners. He led health and equalities impact assessments across system wide reconfigurations in south east London and North West London. He has developed a strong understanding of equalities legislation and requirements and has led analysis to support the development of a detailed report assessing the impacts of service changes. Rohan led significant stakeholder engagement with protected groups (including representative groups for BME population, economically deprived and elderly populations) and managed statistical and econometric modelling to understand whether certain reconfiguration options would have a disproportionate impact on protected groups. He has also led a number of engagements for Monitor, the Royal College of General Practitioners and providers and commissioners (including efficiency analysis, demand and capacity modelling and impact assessments). Rohan has strong analytical skills and considerable experience of engaging with a wide range of stakeholders (at all levels) within healthcare.

Rohan would lead the delivery of the Health Impact Assessment if you choose to pursue this work-stream.



Ann Zhang is a Consultant in Deloitte's Economic Consulting practice with an MSc. In Economics from LSE. She has recently supported Epsom & St Helier University Hospitals NHS Trust on its long term estates strategy strategic outline case, evaluating the impact of a number of options, quantifying the financial impact of each estates option on the Trust's position, and the potential benefits as a result of implementing each of these options. She also recently North West London Clinical Commissioning Groups (NWL CCGs) in evaluating the impact of the introduction of the Health and Social Care Act 2012 on the equality requirements of the Shaping a Healthier Future Healthcare Programme Paediatric transition. As part of this engagement, Ann led the review of legislation, undertaking desktop research to identify additional equality duties introduced by the Health and Social Care Act 2012 over and above the Equality Act 2010, in addition to identifying potential actions to address these additional duties. She has also supported recent engagements for the RCGP and a health economy in the North of England to assess potential benefits associated with shifting settings of care.

Ann would provide analytical support on the Health Impact Assessment work-stream.

Our experience

Deloitte's Economic Consulting team has extensive experience in estimating the social, environmental and economic impact of different organisations and policies across a range of industries, including healthcare.

In terms of healthcare economic impact assessment, we have supported numerous NHS Trusts in assessing the benefits associated with new clinical strategies and facilities. Additionally, we supported Monitor in developing their impact assessment framework. Key experience includes:

- Alder Hey Children's NHS Foundation Trust: estimated the economic impact of their proposed new services and their submission to HM Treasury.
- Guys and St Thomas' NHS Foundation Trust: developed report to assess the economic benefits associated with a new cancer strategy for South East London.
- Sandwell and Birmingham Hospitals NHS Trust: developed report to assess economic impact of a change in service configuration; including impact on patient outcomes such as mortality rates.
- Public Health England: developed a business case to evaluate health economic benefits of consolidation of existing facilities into a proposed new Science Hub.

Additionally, Deloitte was engaged by the British Red Cross ("BRC") to assess the impacts of their home for hospital care schemes. Deloitte estimated the impacts from their schemes based on considering the patient journey should the scheme not exist. The report was covered by a number of broadsheets at the end of 2012 and BRC also found the study useful in ensuring future schemes are effective in delivering benefits to commissioners. We have also conducted an economic impact study for the charities Scope, Mencap, Leonard Cheshire Disability, Sense, and the National Autistic Society, to consider the potential impact of providing social care services to disabled adults with moderate care needs.

We also have significant experience of undertaking health and equalities impact assessments (HEIA) for service reconfiguration and re-design. We undertook a detailed HEIA for the Trust Special Administrator in South East London, which involves developing a body of literature around differential health impacts across protected groups, detailed travel time analysis (at the LSOA level), considering the extent to which certain patient groups would be disproportionately impacted by service change, and in-depth stakeholder engagement with local health economy stakeholders and critically, representatives of protected groups, as set out in the Equality Act 2010. Whilst the reconfiguration options for South London were subject to judicial review, the health and equalities impact assessment undertaken by Deloitte was not subject to judicial review, based on the robustness of the report and given that it was grounded in evidence.

In addition to the health and social care sector, we have undertaken a number of economic and social impact studies for PayPal, Facebook, Advertising Association, the BBC and the GSM Association.

Examples of our reports can be found published online:

Trust Special Administrator, South East London - Health and Equalities Impact Assessment

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/213356/VOL-3-Appendix-L.pdfScope – Impact of social care

British Red Cross - Impact of care in the home

http://www.redcross.org.uk/~/media/BritishRedCross/Documents/What%20we%20do/UK%20services/Final%20report%20to%20BRC_with_marque_NO_APDIX%20(1).pdf

Internet.org - Value of connectivity, Economic and social benefits of expanding internet access

http://www2.deloitte.com/content/dam/Deloitte/ie/Documents/TechnologyMediaCommunications/20
14 uk tmt value of connectivity deloitte ireland.pdf

Advertising Association - Advertising pays: How advertising fuels the UK economy

http://www.adassoc.org.uk/wp-content/uploads/2014/09/Advertising_Pays_Report.pdf

A more detailed summary of our relevant experience is presented in Appendix 1.

Our fees

We have set out in Table 1 below our proposed fees, based on undertaking a six week engagement. Given our desire to support you on this critical piece of work, we have included a discount of 12% on total fees, in addition to providing Partner time free of charge. Our final fees would be £69,225, excluding VAT and out of pocket expenses.

Table 1: Our fees

Team Member	Grade	Role	Daily Rate	Days	Total
Chris Williams	Partner	Engagement Partner	£2,583	2	-
Kelly Eaves	Partner	Quality Partner	£2,583	2	-
Christian Norris	Director	Project Director	£2,205	5	£11,025
James Glossop	Manager	Project Manager	£1,470	30	£44,100
Philine Schuseil	Senior Associate	Project Team	£630	30	£18,090
Rohan Sawhney	Senior Manager	Impact assessment SME	£1,817	3	£5,450
Total fees exc. VAT/expenses					
Discount – 12%					
Total fees excluding VAT/expenses					
Total fees including VAT, excluding expenses					

We hope that you find this proposal compelling and we look forward to having the opportunity to discuss this with you. If you have any queries relating to our proposal please do not hesitate to contact myself, or Christian Norris in my absence (cnorris@deloitte.co.uk or +44 (0) 7825552948).

Yours sincerely,

Chris Williams

Deloitte LLP

Appendix 1: Our experience

Below we have set out some of our relevant experience, in particular related to estimating the health impacts associated with service re-design and reconfiguration, including the development of new hospital facilities. We would be happy to provide further information on any of these projects upon request.

Health and social care

Trust Special Administrator, South East London



Deloitte supported the Trust Special Administrator (TSA) on its recommendations for South London healthcare NHS trust and the wider south east London health economy; the first instance of a provider being placed into the Regime for Unsustainable Providers.

Deloitte developed a detailed report assessing the impacts of proposed service reconfiguration (specific services including emergency and urgent care, maternity services and community services) on the protected groups defined in the Equality Act 2010, along with the economically deprived.

This was a high profile statutory impact assessment which was presented to parliament and Boris Johnson. Whilst the reconfiguration options for South London were subject to judicial review, the health and equalities impact assessment undertaken by Deloitte was not subject to judicial review, based on the robustness of the report and given that it was grounded in evidence.

The report was supported by extensive stakeholder engagement with representatives from the protected groups, a literature review and statistical and econometric analysis. In particular, significant travel time analysis was undertaken at the lower layer super output area (LSOA) level to understand the impact on particular patients groups.

North West London Clinical Commissioning Groups (NWL CCGs)



Deloitte recently undertook an engagement for NWL CCGs around their equalities duty with respect to the proposed transition of inpatient paediatric services from Ealing Hospital, as part of the Shaping a Healthier Future (SaHF) programme. Deloitte developed a report to assess whether the additional equalities requirements outlined in the Health and Social Care Act 2012 have been met (i.e. over and above those set out in the Equalities Act 2010). This involved a review of existing equalities work, engagement with stakeholders across the patch and a review of the relevant legislation and guidance around equalities duties.

Shaping a Healthier Future Programme, North West London (2012)

Deloitte assessed the impacts of the "Shaping a healthier future" programme on several patient sub-groups, to support the equality duty of PCTs across NHS NWL. Deloitte were commissioned to conduct a regional consultation of some hard to reach equality groups (minorities, children, mothers, and disabled) as well as the economically deprived to understand patient/carer needs, issues with proposals, and recommendations/mitigations if going forward with reconfiguration.

The final equality impact assessment identified the key areas of concern for the programme board to focus on. This document along with the final recommendations for the programme was judicial reviewed and was cleared. The issues and mitigations identified supported the PCTs in developing an Action Plan to carry the transformation programme forward.

Deloitte also provided quantitative analysis on the likely impacts on these groups, which included demographic and trend analysis, travel impact analysis and impacts on accessibility scores.

Epsom & St Helier University Hospitals NHS Trust

Epsom and St Helier NHS
University Hospitals

Deloitte was asked to develop a SOC for investment in the ESTH estate, which included developing a clinical model, conducting detailed financial analysis and developing estates options across a multi-site trust. Our activities involved:

- establishing a baseline position under the current strategy, and a financial position of the trust over a 10-year horizon;
- agreeing a case for change in the ESTH estate;
- developing evaluation criteria with stakeholders;
- developing a clinical model, through engagement with clinicians and wider stakeholders:
- developing a list of options to deliver the clinical model, based on available estates opportunities;
- establishing a shortlist of feasible options through consideration of hurdle criteria;
- analysing the implications of each option (including efficiencies and consolidation benefits);
- · assessing shortlisted options against the agreed criteria;
- engaging with stakeholders, other specialist organisations, community service providers and regulatory bodies.

ESTH will have developed a SOC for investment in its estate, which will be reflected in local Sustainability and Transformation Plans and form the basis for further approvals.

Monitor, Impact Assessment Framework



Deloitte was engaged by Monitor to develop an impact assessment (IA) framework for their pricing decisions. This involved undertaking a detailed review of the existing best practice guidelines and precedents from other regulatory settings, in order to inform Monitor's framework. A suite of tools were described, both qualitative and quantitative, that could be applied by the pricing team to examine potential impacts on providers, commissioners and patients. In addition, the project also involved developing a set of templates and outlining provisional timelines for a range of possible pricing policy options.

British Red Cross



We developed models to consider the costs and benefits of their integrated care services.

The British Red Cross ('BRC') has provided healthcare and social care services in the UK for over 30 years, delivering support to over 45,500 service users in current projects. Services range from providing support to people to facilitate early hospital discharge to reducing domiciliary and residential care by delivering personal care, additional support and reablement. Deloitte was engaged by the British Red Cross to assess the impacts of their home for hospital care schemes.

Deloitte estimated the impacts from their schemes based on considering the patient journey should the scheme not exist. Based on this approach, it was identified that the schemes were achieving a number of positive benefits to PCTs and local authorities including reducing patients length of stay and preventing admission. It was estimated that health and social care Commissioners made savings of £8m from British Red Cross schemes, implying an overall return of 149%.

The value delivered to the client was:

- The report has been published by BRC and was covered by a number of broadsheets at the end of 2012.
- The client has also found the study useful in ensuring future schemes are effective in delivering benefits to commissioners.

Public Health England



Deloitte recently supported Public Health England (PHE) in the development of its business case in relation to the establishment of a Science Hub. PHE has a number of sites around the UK with overlapping responsibilities and workforce skills, and is seeking funding to consolidate these into a single site. Deloitte assisted PHE to evaluate the health economic benefits of co-location.

To accomplish this, we developed an economics model with the aim to understand the possible productivity improvements that could be achieved through co-location and a more effective knowledge sharing. In turn, we built and used an epidemiological model to simulate the number of infections and fatalities avoided from a more rapid response to an emergency situation. The volume of infections and fatalities were then monetised using a Quality Adjusted Life Year (QALY) approach.

Scope



We produced an economic impact study considering the benefit of providing social care services to disabled adults with moderate care needs.

Deloitte Economic Consulting produced an economic impact study considering the potential impact of providing social care services to disabled adults with moderate care needs. Increasingly, local authorities are no longer funding care for adults with care needs below a 'substantial' level as a result of tightening of the public purse. The charities Scope, Mencap, Leonard Cheshire Disability, Sense and the National Autistic Society commissioned Deloitte to produce a study to consider the financial impact of this policy trend to various government institutions including HM Treasury, Local Government and the NHS.

Our analysis was based on case study services from each of the charities and considered the impact that providing the service would have to local/central government, the NHS and the individual. We worked closely with each of the charities to understand the likely impact of providing each of the services, with a particular focus on supporting people to enter the workforce (and make tax contributions) and on preventing the need for higher cost care in the future. We employed TreeAge software to calculate the expected cost savings and ran Monte Carlo simulations to capture the level of uncertainty in our assumptions.

Based on the case studies, all services were estimated to provide a net positive economic impact.

Returns were estimated to range from 18% to 53% and are driven by a range of factors including:

 Income generated from supporting people into employment (this benefit accrues to private users and carers);

- Avoided cost of unemployment benefits paid to people moving into employment (this benefit accrues to DWP);
- Greater taxation receipts, from carers and people moving into employment (this benefit accrues to the Treasury); and
- Prevention of individuals circumstances deteriorating and relying on more costly public services (this benefit accrues to LA and NHS).

The value delivered to the client was:

 The report proved to be a key tool for Scope during high level negotiations with the Treasury, DCLG and DH in the lead up to the Spending Review.

The report has been published by Scope and was covered in major media including the Financial Times.

Sandwell and Birmingham

and West Birmingham Hospitals

Sandwell

Economic Case

Estimated the economic impacts of a large change in their current configuration. Impacts considered included:

- · Regeneration of the local area; and
- Improved patient outcomes, such as improved mortality rates;

The business case has been submitted to the Department of Health for approval. Deloitte supported discussions with the Department as to the approach and techniques employed.

Alder Hey Hospital Trust





Estimated the economic impact of their proposed new services. Impacts considered included:

- · Reduced patient anxiety;
- · Reduced length of stay;
- Reduced patients not attending appointments; and
- · Improved public health outcomes.

The business case has been submitted and presented to HM Treasury.

Guys and St Thomas' NHS Foundation Trust

Economic impact of new cancer strategy

Currently estimating the economic benefits associated with a new cancer



Guys and St Thomas' NHS Foundation Trust

Guy's and St Thomas'

NHS Foundation Trust NHS

strategy for South East London. This project is estimating the benefits in terms of improved survival rates and reduced length of stay and waiting times. The modelling is underpinned by an econometric analysis of survival rates.

The charitable trust, which provides financial support to improve health services and health wellbeing in Lambeth and Southwark, has key strategic priorities including; helping transform the healthcare system and improving the health of the local population. Deloitte was commissioned to present a 'case for change' based on the current and future outcomes gap in the health economy, while accounting for ill health in the two boroughs being associated with greater levels of deprivation and lifestyle factors compared to their peers.

Part of the work conducted for GSTC included Deloitte's Economic Consulting team undertaking statistical analysis to estimate the normalized disease prevalence, once controlling for demographic variables including, ethnicity, age, deprivation and income. Following this, a robust estimation of current and future prevalence across the pathways, segmented into eight population groups, was developed.

Broader sectors

Internet.org



Advertising Association



Deloitte UK published a report on the socio-economic impact of extending internet access to previously unconnected people globally. The study, made for Facebook's global partnership Internet.org, estimates the economic and social growth in developing economies, as well as the transition from a resource-based to a knowledge-based economy. It involved complex modelling based on the most recent academic literature. The findings suggest that if developing countries could bridge the gap in internet penetration to reach levels developed economies enjoy today, they would experience large increases in GDP growth and productivity and improvements in health conditions and education opportunities. The complete findings and a copy of the study can be found here

Deloitte conducted a study on the economic contribution of advertising to the UK, designed to raise awareness with policy makers of advertising's contribution to the economy. The objective of the work is to illustrate and quantify the different ways in which advertising enables the economy, including its role in making markets work better by supporting innovation, product differentiation and competition; its role in enabling the internet; its contribution to funding the media and resulting economic multiplier effects across supply chains; as well as its positive social contributions through raising awareness of issues such as healthy eating or responsible driving

Paypal



Deloitte conducted a study for PayPal to assess the impact of online payment on retail e-commerce and on wider economic growth. By employing econometric techniques, we estimated the direct impacts that online payments contribute to the economy through enabling online trade, by increasing sales and competition and driving down prices with a net benefit to consumers. Our model also included a detailed estimation of the effect of online payments in fostering cross border trade, supporting SMEs growth and creating opportunities for new and niche products. The report is available on the Deloitte website.



Deloitte carried out a study for Google that assesses the economic impact of the cloud on small and medium businesses across 5 European countries and the U.S. The report investigated the cloud's effect on a business's capacity to grow, ability to reach profitability, access to new markets, and capability of gaining a competitive advantage.

Deloitte researched the cloud through an online survey of 1,316 'IT decision makers' – typically Founder, CFO, CIOs, IT Director roles – in France, Italy, Netherlands, Spain, UK and US. Research was also done by conducting interviews with over 35 small and medium business 'IT decision makers' in the UK, US and the Netherlands across 13 industries.

Facebook



Measuring Facebook's economic impact in Europe

Facebook embodies a new generation of social media organisations who have significant global impact and create economic value through enabling ecosystems. The report examines Facebook's economic impact through narrow effects, caused by its day-to-day activities within Europe, and broad effects, accruing to third parties as a result of the Facebook ecosystem.

The report provides a central estimate of €15.3 billion economic impact enabled by the activities of Facebook in the EU27, which supports 232,000 jobs.

The report breaks down Facebook's economic impact across Europe including France, UK, Germany, Spain, Italy and Ireland.

Economic Impact of the BBC

Deloitte carried out a study for the BBC that analyses the economic contribution of the BBC's activities to the UK. The study assessed the BBC's interaction with the supply chain across its public service activities – television, radio, online – and commercial activities – including the activities of BBC Worldwide and BBC World. It explored the multiplier effects of the BBC's different types of expenditure – content, technology,

BBC



salaries, etc - and interaction with the supply chain. It also quantified other positive spillover effects of the BBC's activities through its commissions from the independent production sector, the formation of regional clusters, training activities, and the promotion of the UK abroad.

Appendix 2: Important Clarifications

1 Deloitte's Services and Responsibilities

1.1 Services to be provided

The scope of our services is set out in this proposal (the "Services") in addition to our responsibilities.

The analysis will be expected to be based on publically available information, information provided by Aneurin Bevan University Health Board, and potential stakeholder engagement feedback received on an ongoing basis. Key assumptions and uncertainties will be highlighted. It is important to emphasise that there may be limitations imposed by the limited availability of some data and they will be clearly identified together with our results and recommendations.

In carrying out our work, we will provide you with drafts of our report in order to discuss with you our approach to our work and to help refine our tentative conclusions. We will do this on the basis that you will not place any reliance on any such drafts, recognising that any outputs and conclusions contained in such drafts will be provisional only and, particularly in the case of early drafts, subject to material change.

1.2 Deloitte's Responsibilities

Deloitte is responsible for delivering the Services described above, subject to Aneurin Bevan University Health Board fulfilling its roles and responsibilities described under Section 3 and the accuracy of the assumptions listed under Section 3 where these impact upon the ability of Deloitte to perform its agreed Services.

We will employ internal quality control processes on the Deliverables. However, given the inherent nature of the Deliverables, it is generally not possible to test the Model to the extent that it can be assured that all errors have been detected. Without prejudice to our obligation to use reasonable skill and care in the provision of our Services, we cannot and do not provide any assurance that any Deliverable is free from error.

2 Principal's Responsibilities and Assumptions

2.1 Principal's Responsibilities

In connection with the provision of the Services, we refer you to clause 3 of the enclosed Terms of Business. These confirm your responsibility for the provision of information and decision-making in connection with the Services we are to provide. In addition, our delivery of the Services is dependent upon your completion of the following:

• To provide Deloitte with specific information, access to client-side systems, client-side resource & support prior to stated deadlines.

You acknowledge and agree that our performance of the Services is dependent on the timely and effective completion of your own activities and responsibilities in connection with this engagement, as well as timely decisions and approvals by you.

2.2 Project Assumptions

The Services, Charges (as set out in Section 4 below), fee estimate and timetable are based upon the following assumptions ("Assumptions"):

- All relevant information is provided to us in a timely fashion, whether this be from the Company or from parties that we undertake to interview and/or obtain data from;
- Third parties that we seek to interview make themselves available to us and are willing to
 provide us sufficient information to enable us to carry out the services we will provide,
 including financial and other information which may in some cases be considered
 confidential by them.
- Our report will only consider a do nothing scenario versus the preferred option.
- We will facilitate 2 workshops and attend 3 meetings with the Medical Director over the course of the project.
- Provision of accommodation, desk space and effective connectivity on site
- Timely responses by the Company to requests for information / documents by Deloitte

3 Deliverables

Deloitte will supply the following items (the "Deliverables") as part of the Services:

A report that illustrates the potential benefits associated with the new build hospital. This
report will be client branded.

We understand that you may wish to publish our final report in paper form or on your website. Our agreement to this is subject to the condition that the final report is published in its entirety under a disclaimer substantially in the form set out in Appendix 3: Example.

Appendix 3: Example transmittal letter for final report

[Client name] [Address]

[Date]

Dear Sirs

Project [name] - [insert description] ("the Project")

We have pleasure in enclosing [description of document] ("the Document") prepared under the terms of our engagement letter dated [date] ("the Contract") in connection with the Project.

Whilst we have assisted you in the preparation of the Document, it expresses your views and opinions and reflects information and assumptions supplied by you, which we have not verified. The Document comprises a Client Document under the Contract and accordingly is subject to your review and approval and remains your sole responsibility. Should you require any changes to it, please do not hesitate to contact us.

You have advised us that the Document is [strictly for your internal use] [only] [in connection with describe purpose] [but in addition may be made available to [review body/regulator/public authority], in accordance with the relevant HM Government approvals process]/[to be submitted to [regulator/public authority] [describe purpose e.g. as part of your bid submission on the Project]. In view of its references to Deloitte, should you wish to provide the Document to any other party (including other HM Government entities), you should seek our express written consent in advance. [In sending it on to [review body/regulator/public authority], you will be deemed to have reviewed it and taken sole responsibility for its contents.]

For your convenience, the Document may have been made available to you in electronic as well as hard copy format. Multiple copies and versions of this document may, therefore, exist in different media. Only the copy identified as [] should be regarded as definitive. Yours faithfully

Deloitte LLP