East Midlands Clinical Senate

National Rehabilitation Centre

Report of the Independent Clinical Senate Review Panel (29th July 2019)

August 2019

Confidential

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Glossary of abbreviations

ICS	Integrated Care System
NUH	Nottingham University Hospitals NHS Trust
SHRE	Stanford Hall Rehabilitation Centre
DMRC	Defence Medical Rehabilitation Centre
NRC	National Rehabilitation Centre
MDT	Multi-Disciplinary Team
MRI	Magnetic Resonance Imaging
DEXA	Dual Energy X-ray Absorptiometry
CAREN	Computer Assisted Rehabilitation Environment System
WTE	Whole Time Equivalent
BMJ	British Medical Journal
CT	Computed Tomography

Contents

1. Foreword by Professor Ashley Dennison, Clinical Review Panel Chair

Clinical Senates have been established as a source of independent and objective clinical advice and guidance to local health and care systems, to assist them to make the best decisions about healthcare for the populations they represent.

Clinical Senates are minimally staffed and built on the voluntary engagement and goodwill of local clinicians and other health and care professionals to ensure that the wider NHS can benefit from this expertise and experience.

We would like to thank Nottingham City CCG (on behalf of Nottinghamshire ICS) as the sponsoring organisation and members of the presenting clinical review team who gave their time on 29th July to describe to the clinical senate panel the ambitions of the National Rehabilitation Centre for NHS patients. We would also like to thank the Defence Medical Rehabilitation Centre for affording us the opportunity to be shown some of the facilities and the Stanford Hall site.

It is with thanks to our clinical review team for their participation and commitment and to those panel members who were able to join us from East of England and West Midlands Clinical Senates to ensure that the full potential of independent clinical advice could be maximised.

Professor Ashley Dennison
Clinical Senate Chair

2. Clinical Senate Review Panel summary and key recommendations

It was clear to the panel that the NRC represents a fantastic resource and a great opportunity for the expertise available to benefit the NHS in a genuinely collaborative venture. The research presented by the Academic Department of Military Rehabilitation was extremely impressive and the quality outputs from this were clearly evident to the panel. The experience and data available addressed a wide range of conditions and rehabilitation issues that affect NHS patients and in addition the Defence Medical Rehabilitation Centre (DMRC) were clear that they also feel that working with NHS colleagues would be beneficial. The clinical review team very much enjoyed visiting the facility which manifestly represents a state of the art approach to rehabilitation medicine. The main concern the panel had was the challenge that the collaboration represented and specifically the conflation of two very different systems particularly in respect of case mix, funding and personnel.

The key recommendations made by the panel concerned four key areas.

1. The selection criteria of patients will need to be clarified and an objective tool for assessment developed to ensure equity, which by necessity will be dictated by clinical policies and priorities.
2. It was recommended that a clear workforce plan should be developed examining in detail the staffing requirements, focussing particularly on acquiring a sufficient number of skilled nurses without undesirable effects on the local NHS workforce. Training issues will also need to be addressed but it was clear that the new facility will represent an extremely attractive proposition both in terms of acquiring an extensive, high level skill set and the working environment. Some of the potential problems would be obviated by the use of staff rotations although it was felt that it would still be difficult to identify sufficient numbers of appropriate individuals in all disciplines.
3. The panel were of the opinion that further consideration needed to be given to the discharge process and that presently there is an overly optimistic view of the community provision available at the end of the treatment period. The

panel felt that it is the availability of community facilities that should shape commissioning decisions rather than the NRC's aim to free up acute beds.

4. Finally, the panel felt that a detailed cost benefit analysis needs to be undertaken, as there was concern that the intention to release acute bed capacity was laudable but that it will be difficult to identify and ring fence those beds and at the same time ensure that the patients who are presently occupying the acute NHS beds are not disadvantaged. It was also felt a major issue of bed blocking in acute NHS Trusts had been significantly underestimated in the modelling.

3. Background and advice request

3.1 Description of current service model

The current pathway into rehabilitation arises in two ways. Firstly, following an episode of illness or injury, the patient requires multidisciplinary rehabilitation involving physical, cognitive and sometimes psychological rehabilitation. Secondly, there may be periods of time during the management of a long-term condition when rehabilitation is required. The existing patient journey into inpatient rehabilitation services, whether via a traumatic or non-traumatic route is described as highly variable and dependent on three factors:

1. Where the acute episode starts – either at NUH acute regional service of major trauma, neurosciences or complex orthopaedic services or the local hospital (Leicester, Lincoln, Derby).
2. The geography specifically in respect of the patient's domicile.
3. The management of each separate unit across the region as each of the NHS inpatient services are managed by a different Trust and commissioned differently.

NHS England Specialised Commissioning, commissions level 1 and 2a hyper acute and acute rehabilitation units. These units have the potential to take patients directly from critical care and therefore must be based on an acute site. In the East Midlands, these units are provided in Leicester and Lincoln only, and do not support the regional neurosciences or Major Trauma Centre at Nottingham. Post-acute neurorehabilitation services are provided by two acute Trusts (Nottingham and Derby) and are commissioned individually by Clinical Commissioning Groups. Patients are stable enough to be rehabilitated off an acute site at this stage but still require inpatient services.

3.2 Case for change

Outcomes for rehabilitation in England, benchmark poorly when compared to Europe and the United States, with recent return to work rates 6 months after injury in England at 34% and elsewhere at 50-60%. The contrast is even more stark when comparisons with Defence Services which have an 85% return to work rate are

made. The guidance and the data on benefits of early rehabilitation have been used to inform the proposed service model and benefit analysis in the sponsoring organisation's case for change.

The NRC proposition represents the case for change to facilitate access to advanced rehabilitation facilities when appropriate for patients who have suffered a range of physical and neurological insults and this early referral will improve outcomes.

3.3 Scope and limitations of review

The clinical review team were asked to examine the clinical case for change underpinning the proposals and an independent clinical opinion on the National Rehabilitation Centre clinical model, including the workforce plan, agreed referral criteria and clinical pathways for patients with rehabilitation needs.

4. Methodology and governance

4.1 Details of the approach taken

The sponsoring organisation (Nottingham City CCG) formally engaged the Clinical Senate on 24th May 2019 (Hazel Buchanan, Associate Director of Special Projects & EPRR) and a teleconference call took place between the Head of Clinical Senate, Hazel Buchanan, Miriam Duffy (Programme Director National Rehabilitation Centre) and David Levy (North West Regional Medical Director NHS England and NHS Improvement and Chair of the NRC Clinical Reference Group and formally Midlands and East Regional Medical Director). It was agreed that a full day's review would be required, and 29th July 2019 was identified for the clinical review panel.

Panel members and patient representatives were identified from the East Midlands Clinical Senate Council and Assembly membership as well as the East of England and West Midlands Clinical Senates to ensure appropriate representation of clinical roles.

A draft report was sent to the panel members and the sponsoring organisation to check for matters of accuracy.

The final report was submitted to the Senate Council (and ratified on 15th August 2019).
This report was then submitted to the sponsoring organisation, Nottingham City CCG, on 16th August 2019.

The East Midlands Clinical Senate will publish this report on its website once agreed with Nottingham City CCG.

4.2 Original documents used

The full list of documents provided by the sponsoring organisation for the clinical review panel can be found in Appendix B. The main submission included:

- Clinical Senate document (based on the West Midlands Clinical Senate's Stage 2 Assurance Evidence Pack Template)

- Eight appendices, which are listed in full in Appendix B

5. Key findings from the clinical review

The panel heard that a “state of the art” Ministry of Defence National Rehabilitation facility opened in 2018 on Stanford Hall Rehabilitation Estate (SHRE), which is known as DMRC. This presented an opportunity for a proposed NHS facility, known as the National Rehabilitation Centre (or NRC), to be located on the SHRE site near Loughborough, with the intended aim of transforming clinical rehabilitation in England. It will do so by delivering the specific sophisticated rehabilitation patients need at the appropriate time to improve health outcomes after the setback of serious injury or illness.

It was understood by the panel that the proposed centre being considered by the NHS will be something entirely new – a place where patients, innovation, and expertise combine to push boundaries beyond that currently achieved in this domain to date. It is viewed as a start-up and a flagship project in technology terms in the NHS Transformation programme now underway. The intention is that it will pave the way for similar clinical centres across the NHS in England (the NRC would operate as a hub and spoke model[1]). Under one roof, it will: treat patients, train and educate significant numbers of staff in this field, and integrate industry, research and innovation in rehabilitation to discover new and improved but importantly achievable solutions for patients. A national commitment from the Treasury of £70m capital funding has already been made available.

It was explained to the panel that the programme had been running since 2010 and that the DMRC had been built with sharing capacity in mind, which was part of the overall programme from the outset. The design is based on the maximum possible development size as defined in the outline planning permission, totalling approximately 13,089m^2 gross internal floor area. The distance from the defence centre is 400m and it was confirmed that there is space for expansion. The NRC believes it will likely open its doors and accept its first patients in 2023.

[1] The hub and spoke model for healthcare means having multiple practising sites where the “hub” is the anchor site of the specialty area and the “spokes” are connecting secondary sites serving that specialty.

The clinical model will transform the way rehabilitation is delivered in the East Midlands and patients will have the opportunity to transfer to the NRC if they meet the following criteria for admission:

- Rehabilitation need and potential
- Ability to cope with intensive rehabilitation programme
- Patients who could potentially benefit from occupational and vocational rehabilitation

The overall provision of in-patient rehabilitation beds is currently 85 for the East Midlands according to the written evidence submitted to the clinical review team. The panel were informed that this is 168 less than recommended by the British Society of Rehabilitation Medicine who recommend rehabilitation provision between 45 and 65 beds per million people (or 60 per million people excluding stroke services).

It was highlighted to the panel that potential savings for ongoing health and social care for one patient over a lifetime is in excess of £500,000.

The context and drivers for the National Rehabilitation Centre were described to the panel, which included recognition that rehabilitation has not been provided adequately across the major trauma networks and that the proposed NRC would address deficiencies which are currently recognised to exist across the region. Long waits within the East Midlands region for access to rehabilitation (up to a mean of 45 days) was highlighted as one of the drivers for the proposed NRC as well as a suggestion that the NRC would be front and centre of enabling more people back to work following injury and illness.

The panel understood that the principles underpinning the future clinical model which have been agreed will expect patients to be as independent as possible during their NRC stay and the design of the building reflects this. Patients will take meals in the dining room and where possible do their own laundry. The “rehabilitation day” is an individualised programme six days per week which is best practice taken from the defence services and the latest commissioning guidelines.

It was explained to the panel that patients who start their journey in the regional neurosciences and major trauma centres will have the opportunity to transfer straight to the NRC rather than wait to be repatriated to an acute medical bed in their local hospital and then wait again for a local rehabilitation bed. Those patients who currently do not have access to the appropriate level of rehabilitation such as orthopaedic patients will now have the opportunity to access NRC rehabilitation services. There will be a single point of referral for the NRC, with a trusted assessment model based on the rehabilitation prescription. The rehabilitation referrals will be reviewed by an MDT through videoconferencing with representation from each rehabilitation unit in the region. If they do not meet the NRC criteria, then patients will access their local acute rehabilitation facility. It is anticipated that the NRC would treat 800 patients per year. Patients from outside of the region would be assessed by the same MDT. It is anticipated that there would be an East Midlands protocol and a common pathway into the NRC, which had not yet been developed.

The NRC will provide an opportunity to share expertise with NHS rehabilitation units and some facilities with DMRC:

- Hydrotherapy (there is no routine access to a hydrotherapy pool at present for rehabilitation patients in the NHS)
- Gait laboratory analysis (not currently available to the NHS)
- Diagnostic suite (X-ray, MRI, Ultrasound, DEXA bone densitometry)
- Virtual reality rehabilitation environment Computer Aided Rehabilitation Environment (CAREN – there are presently only 6 in the world with the complexity varying and the unit at the DMRC contained within the “pod” representing state of the art)
- Prosthetics laboratory (although patients would subsequently have to be referred back to their local acute prosthetics centre for care)

It was accepted and confirmed that the term “sharing” did only extend to expertise and some facilities, it was recognised that military and NHS patients are different cohorts of patients with differing needs.

The potential to develop national and international research studies to advance knowledge and practice at pace with technological research opportunities, in partnership with universities, engineering and technology companies was described. The clinical review team heard a presentation from Mr Russell Coppack, Clinical Research Manager on the research themes of the Academic Department of Military Rehabilitation. Their research priorities included mental health, musculoskeletal injury, and trauma[2]. Their research will strengthen the current evidence-base and results are relevant to the NHS patients. The collaboration will open up new areas for research due to the increased numbers available to strengthen cohorts in randomised studies and data from comparisons of the military and NHS patients. The panel were informed that there would be considerable potential for collaboration, particularly around trauma.

The panel understood the potential opportunities to create a world leading centre of excellence that would be an extremely fertile environment for product development which would almost inevitably attract investment into rehabilitation, further establish rehabilitation medicine as an important speciality and innovate through collaboration building on the extensive research base at DMRC. This would present technological research opportunities for the study and development of:

- Multiprocessor prosthetic knees
- Bionic hands
- Osseointegration (the attachment of the osseointegrated prosthesis is much more stable and this allows for much improved walking and joint movement)
- Transcranial Magnetic Stimulation (is a form of non-invasive brain stimulation)
- Lycra and dynamic orthotics
- ReWalk for Spinal injuries (a commercial bionic walking assistance system that uses powered leg attachments to enable paraplegics to stand upright, walk and climb stairs)

The Stanford Hall Rehabilitation Estate is 350 acres and it is proposed that the NRC would have its own access via the A6006. A travel impact analysis had been provided for the clinical review team as part of the evidence submission and the

[2] Their research programme is consistent with their mission statement “To advance the scientific basis of Rehabilitation Medicine in order to maximise the number of UK Military Personnel fit for operations”

panel heard that Stanford Hall is well placed in the region, with Nottingham, Leicester and Derby roughly equidistant although it was acknowledged that Lincoln is further away. It was explained to the panel that Northampton is not presented in the rehabilitation provision in the East Midlands, as their major trauma network is different to the rest of the region with their patients being presently referred to Coventry. Public transport and bus routes had been considered as part of the analysis and the panel were also informed that Stanford Hall Rehabilitation Estate will have ample and free parking facilities at the NRC. The NRC plans to mitigate any negative impact on distances that some families and friends will have to travel to visit the patients by providing three family rooms to enable relatives to stay for short periods of time. Additionally, there are negotiations taking place with the highways agency to further improve public transport to the NRC site.

It was confirmed to the panel that one MDT team would have oversight of a patient and this team would be responsible for their assessment, care, therapy, and discharge into the community. A typical multidisciplinary team was presented to the panel:

- MDT assessment led by rehabilitation consultant
- Orthopaedic ward rounds and other specialty consultants as required
- Occupational health physician assessments
- Vocational therapist
- 1:1 sessions with physiotherapists, occupational therapists, psychologist, speech and language therapists, dietician
- Group sessions like upper limb exercise, general fitness class, balance class
- Rehabilitation exercise instructor
- Social worker
- Mental health nurse

Staff ratios in the NRC multidisciplinary team for neurorehabilitation was presented to the panel, which totalled 60.75 WTE per 20 beds (based on a level 2b local specialist rehabilitation service). It was proposed that multi-professional staff would rotate through trusts across the region. The panel made specific comments with regards to

the number of nurses proposed at 35-40 and 1.0-1.5 social worker/discharge co-ordinator, which is expanded upon in the next section.

6. Conclusions and advice

It was clear to the panel that the NRC represents a tremendous opportunity and asset for the region which has the potential to address a significant rehabilitation gap. The research presented was extremely impressive and the quality outputs from this clearly evident to the panel (high impact research which has been published in peer review journals such as BMJ) and the benefits this would bring to the NRC for collaboration (and linking in the future with the East Midlands Academic Health Science Network and the Midlands Engine with a focus on Med-Tech). The clinical review team very much enjoyed visiting the facility which is fantastic and felt that the main challenge was how the military facility would marry up with the NHS rehabilitation centre.

There was some confusion at the outset as to whether the centre would be regional or national. Through discussions with the presenting team, the panel understood that the NRC would be a regional rehabilitation centre and a national centre for research and development and rehabilitation training and education. The proposed hub and spoke model was viewed positively by the panel and this was felt to be encouraging, as this would have a longer-term trickle-down effect with the NRC established as a centre of excellence.

The panel recognised that the consultation with the clinical senate was at an early stage in terms of the NRC opening its doors to patients, although there were a number of issues that would need to be resolved and further detail provided in order to address the concerns raised by the clinical review team.

The selection criteria of patients would need to be made much clearer. The panel felt that the referral criteria for neuro-rehabilitation patients may mean that acute and hyper acute patients (for example, stroke patients) may not meet the description of independence in terms of taking meals in the dining room and doing their own laundry (where possible). The presenting team clarified that it was expected that patients would be transferred to the NRC when they are quite dependent although this seemed to be contrary to the written evidence submitted to the panel.

It was also not clear to the panel if the selection criteria would be equitable and an objective tool for assessment should be developed and underpinned by clinical policies (the panel felt that the emphasis was on trauma and polytrauma patients that would be referred from major trauma centres and not on neurological patients). It would also be important to demonstrate that the proposed NRC would not disadvantage lower levels of rehabilitation need. Emphasis had been placed on vocational therapy although the panel felt that recognising caring responsibilities as an outcome would be considered as equally valid. This was accepted by the presenting team although this was different to the proposed criteria for admission (patients who could potentially benefit from occupational and vocational rehabilitation).

A detailed plan for the MDT demonstrating the proposed approach, commitment of MDT members and how it will be operationalised, including input from outside of the region will also need to be developed.

Whilst the panel acknowledged that it will be three to four years before the NRC would be ready to accept patients, the workforce challenges were considered to be significant and potentially problematic and planning (and development) would need to start in the near future. It was recognised by the clinical review team that the NRC would likely attract staff due to it being innovative and different although there are significant nursing vacancies in particular across the region and this would be a major challenge for the NRC. It was suggested that there should be an increase in the number of student nursing placements and consideration should be given to creating new roles (i.e. Allied Health Professionals in other roles). Additionally, there are a number of advanced practice and scientific roles that work “behind the scenes” and their support is likely to be required in the NRC to support MRI, DEXA and CT.

It was acknowledged that the NRC would inevitably raise the profile of rehabilitation medicine as a specialty which would be likely to aid recruitment and retention. As a consequence there would be a greater need for a rehabilitation workforce which would likely need to consist of a different case mix (alternative roles) compared to the traditional roles within contemporary acute settings. The rotation of staff was

particularly welcomed by the panel, as this both upskills staff and it increases staff knowledge of the patient referral assessment process.

The suggestion that 1.0-1.5 WTE Social Worker/discharge co-ordinator would be sufficient for a 20 bedded neuro-rehabilitation facility was considered to be woefully inadequate (and the challenge of working with multiple local authorities around discharge arrangements), and that this would need to be addressed and reconsidered in the context of the discharge planning process. Moreover, the panel were of the opinion that the discharge process needed significant further consideration in terms of the community provision required to facilitate discharge and that it is this provision that should shape commissioning decisions rather than the NRC's aim to free up acute beds.

The travel impact analysis conducted appeared to be sound although the panel felt that three family rooms was unlikely to be sufficient.
Additionally, as the acute hospitals are some distance away from the NRC site, robust transport protocols and transfer arrangements would need to be developed in the event that a patient might require elective surgical input or if an unexpected emergency occurs.
As the distance from the defence centre is 400m away from the proposed NRC site, consideration will need to be given to the transporting of patients across the site (and in all weathers), some of whom could be temporarily (or not) paralysed.

Finally, the panel felt that detailed cost benefit analysis needed to be undertaken as it was understood that a main aim of NRC is to free up acute beds. The panel were concerned that the intention to release acute bed capacity would not be sufficiently demarcated and that the bed blocking issue prevalent in acute trusts had been underestimated. The proposal to release beds from Linden Lodge Neuro Rehabilitation Unit in Nottingham would release 24 specialist neurological rehabilitation beds, which would leave a shortfall based on the written evidence provided to the clinical review team (253 patient rehabilitation beds are required and there are 85 beds currently across the East Midlands).

7. Recommendations

7.1.1 Recommendation 1

It was recommended that an objective tool for assessment of patients (referral criteria) should be developed and underpinned by clinical policies to ensure there is equity both across clinical conditions and different patient groups.

7.1.2 Recommendation 2

It was recommended that a clear workforce plan should be developed detailing the staffing required and subsequent training, which should focus on a greater need for a rehabilitation workforce and alternative roles. This should include scientific staff and how specialties such as neuropsychiatry would be accessed.

7.1.3 Recommendation 3

It was recommended that a detailed discharge planning process is developed with a secure and clear exit pathway, which ensures there is a smooth interface with community provision and ongoing rehabilitation.

7.1.4 Recommendation 4

It was recommended that further detailed cost benefit analysis needed to be undertaken, which should include metrics such as Disability Adjusted Life Years (DALY); a measurement of the gap between current health status and an ideal health situation where the entire population lives to an advanced age, free of disease and disability.

Furthermore, when the admission criteria are developed, it is recommended that work is undertaken to audit currently occupied rehabilitation beds against those admission criteria. This would give a clearer prospective estimate of the potential capacity gap in the system, or indeed help quantify the acute bed savings.

Appendix A: Clinical Review Panel Terms of Reference

CLINICAL REVIEW TERMS OF REFERENCE

Title: National Rehabilitation Centre

Sponsoring Organisation: NHS Nottingham City CCG on behalf of Nottinghamshire ICS

Clinical Senate: East Midlands

NHS England regional or area team: Midlands

Terms of reference agreed by:

Name: E Orrock/A Dennison **on behalf of clinical senate and**

Name: H Buchanan **on behalf of sponsoring organisation**

Date: 28th May 2019

Clinical review team members

Chair: Professor Ashley Dennison, Consultant Hepatobiliary and Pancreatic Surgeon, University Hospitals of Leicester NHS Trust and Clinical Senate Chair

Panel members:

Name	Role	Organisation
Bernadette Armstrong	Extended Scope Physiotherapist	Northamptonshire Healthcare NHS Foundation Trust
Suzanne Avington	Physiotherapist - Team Leader Community Rehabilitation	Nottinghamshire Healthcare Trust
Mr Surajit Basu	Consultant Neurosurgeon and HOS Neurosurgery	Nottingham University Hospitals NHS Trust
Dr Ann Boyle	Associate Postgraduate Dean	Health Education England

Matt Day	Public Health Consultant	Public Health England
John Dick	Patient Representative	East Midlands Clinical Senate
Claire Greaves	Chief Scientist & Clinical Director for the Science & Technology Pathway Honorary Associate Professor	Nottingham University Hospitals NHS Trust University of Nottingham School of Medicine
Dr Jon Greiff	Consultant in Anaesthesia and Critical Care	University Hospitals of Leicester NHS Trust
Dr Rebecca Hall	GP	Charnwood Medical Group Clinical Senate Fellow
Dr Sheila Marriott	Regional Director	Royal College of Nursing East Midlands Region
Dr Martin McGrath (will input remotely as cannot attend in person)	GP and PCN Clinical Director	Lakeside Healthcare Group
Dr Ben Pearson	Executive Medical Director	Derbyshire Community Health Services
Remi Popoola	Senior Physiotherapist	Danetre Hospital, Daventry Clinical Senate Fellow
Gary Rogerson	Clinical Director AHP Suffolk Lead Extended Scope Physiotherapist Back and Neck Service	East of England Clinical Senate
Brian Rowlands	Emeritus Professor of Surgery	University of Nottingham
Keith Spurr	Patient Representative	East Midlands Clinical Senate
Edd Wallis	Cardiology Manager / Principal Physiologist	United Lincolnshire Hospitals NHS Trust

Jo Watson	Head of Clinical Productivity	NHS England and NHS Improvement – Midlands and East
Professor Adrian Williams	Professor of Clinical Neurology and Chair of West Midlands Clinical Senate	Queen Elizabeth Hospital Birmingham and West Midlands Clinical Senate

Aims and objectives of the clinical review

The clinical review team is being asked to test if there is a clear clinical case for change underpinning the proposals. The clinical review team will provide an independent clinical opinion on the National Rehabilitation Centre clinical model, which should include the workforce plan and agreed referral criteria and clinical pathways for patients with rehabilitation need. This review will take place prior to the NHS England regional assurance process for reconfiguration and prior to formal public consultation. The proposals will include an overview of all existing facilities in relation to rehabilitation pathways and demonstrate the case for change for the National Rehabilitation Centre.

Background

The proposed NHS facility, known as the National Rehabilitation Centre (or NRC), is to be located on the Stanford Hall Rehabilitation Estate near Loughborough. It will transform clinical rehabilitation by delivering the specific, sophisticated rehabilitation people need at the right time to give them back their lives after the setback of serious injury or illness – for example a road traffic accident, sporting injury, neurological problems following meningitis or multiple sclerosis.

This centre being considered by the NHS will be something entirely new– a place where patients, innovation, expertise and the physical space combine to push boundaries beyond that presently achieved in this domain. It should be viewed as a start-up and a flagship project in technology terms in the NHS Transformation programme now underway. The intention is that it will pave the way for similar clinical centres across the NHS in England. Under one roof it will: treat patients, train and

educate significant numbers of staff in this field and integrate industry, research and innovation in rehabilitation to discover new practical and achievable solutions for patients. It is clear that there will be international dimensions to the work of the NRC.

It will be 400 metres away from the newly created Defence Rehabilitation Centre (known as 'DMRC Stanford Hall') whose facilities it will share, including the CAREN simulator, the Gait laboratory, hydrotherapy pool prosthetic lab and the entire rehabilitation estate. Clinical staff from Defence Rehabilitation Centre and the NHS will share expertise to mutual advantage.

In the evidence gathering stage of developing the NRC concept, the socio and economic outcomes of improving the clinical rehab pathway were assessed. There were significant benefits in quality of life indicators, return to work figures and reductions in the costs of care.

The NRC will be a regional offer for the multidisciplinary provision of inpatient rehabilitation with:

- New improved ways of delivering an intense rehabilitation, based on best practice i.e. 6 day a week rehab offer
- Broadening the range of patients who can access rehabilitation, and moving towards the European model
- Considering others "where it is thought in-patient rehabilitation may be of benefit"
- Patients from outside the region having the choice to be admitted, if appropriate
- National offer for rehabilitation training
- National offer for rehabilitation research

Scope of the review

The clinical reference group has worked collaboratively with a wide range of clinicians and patients to develop the following model (in brief):

Patient pathway – with criteria of:

- Rehabilitation need and potential

- Ability to cope with intensive rehabilitation programme
- Those who could potentially benefit from occupational and vocational rehabilitation

Pathway proposal

There will be one referral point for the region for rehabilitation, along the lines of the rehabilitation prescription. Referral could be open to primary care colleagues as well as secondary care.

- Referral to one point to a regional MDT with a trusted assessment model
- Responsive MDT (video conferencing) run like a Cancer MDT to determine which patients go to which rehab unit in the region including NRC
- MDT would be made up of a clinician from each unit including Sheffield - and run twice weekly so that a delay is not introduced into the system
- Patients must be referred as soon as a rehabilitation need is identified

There will be a Regional rehab coordinator – B7 to organise the movement of patients

Operational support of rehabilitation pathway – this will be taken out of acute trust operational management

Process of the admission will be:

1. Assessment and goal setting meeting within 1 week – with the patient
2. Assessment will include with access to the gait lab, physiology lab and CAREN
3. Individual programme is written with 1:1 sessions, gym session with a rehabilitation instructor and access to shared facilities, rehab estate as required
4. The rehabilitation programme is reviewed weekly in MDT and new programme agreed with patient

Principles

The rehab day will be made up of a combination of the following. Sessions with:

- Rehabilitation instructor to carry out prescribed rehabilitation programme
- Group session including gym sessions and pool sessions

- 1:1 professional treatment sessions
- Rehabilitation estate
- Sharing arrangements and access to facilities – particularly gait and CAREN
- Shared MDT with Defence services
- Patients will be expected to be as independent as possible during the day

When reviewing the case for change and options appraisal the Clinical Review Panel should consider (but is not limited to) the following questions:

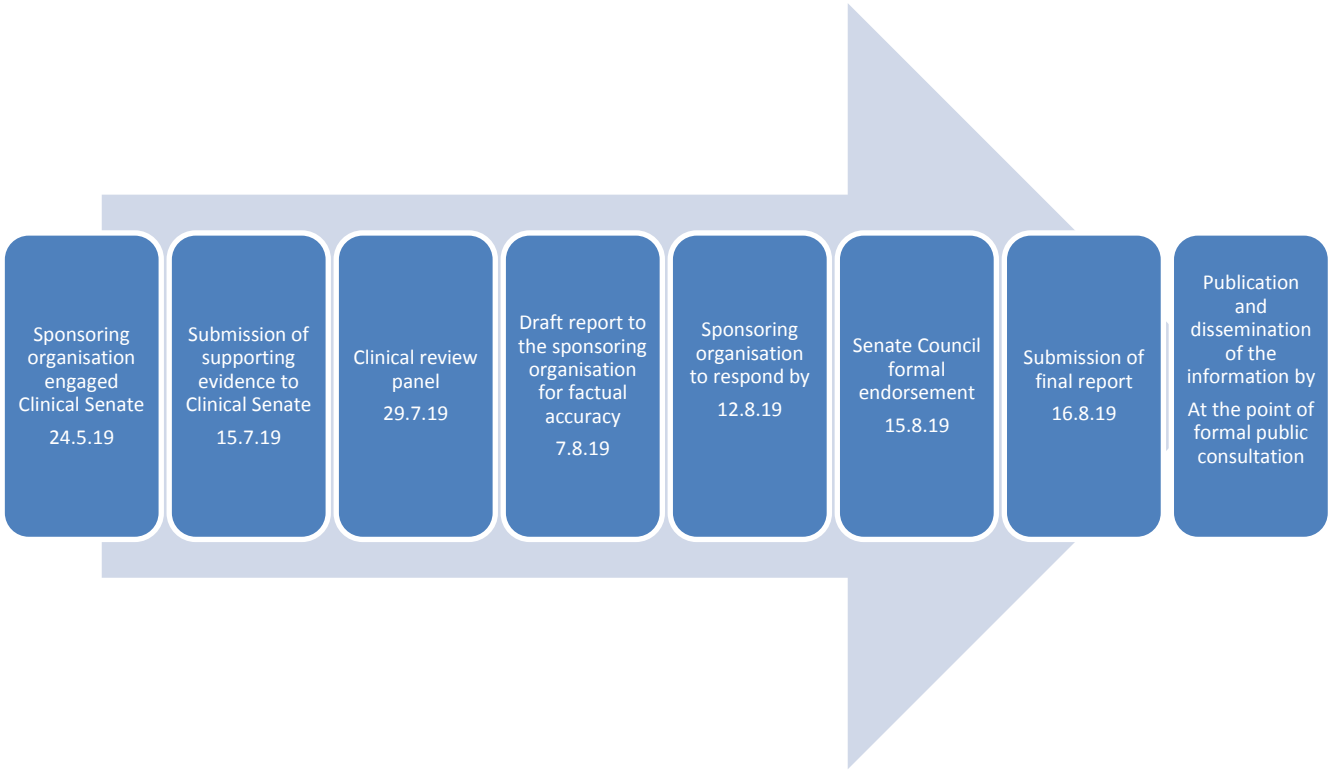
- Will these proposals deliver real benefits to patients (access/clinical outcomes/quality[3])? For example, do the proposals reflect:
    - The rights and pledges in the NHS Constitution?
    - The goals of the NHS Outcomes Framework?
    - Up to date clinical guidelines and national and international best practice e.g. Royal College reports?
- Is there evidence that the proposals will improve the quality, safety and sustainability of care? For example:
    - Do the proposals align with local joint strategic needs assessments, commissioning plans and joint health and wellbeing strategies?
    - Does the options appraisal consider a networked approach - cooperation and collaboration with other sites and/or organisations?
    - Is there a clinical risk analysis of the proposals, and is there a plan to mitigate identified risks?
- Do the proposals meet the current and future healthcare needs of their patients?
- Do the proposals demonstrate good alignment with the development of other health and care services?

[3] Quality (safety, clinical effectiveness and patient experience)

- Do the proposals support better integration of services?
- Do the proposals consider issues of patient access and transport? Is a potential increase in travel times for patients outweighed by the clinical benefits?
- Will the proposals help to reduce health inequalities?
- Do the proposals consider the workforce requirements and transformation required to deliver this new model?

The Clinical Review Panel should assess the strength of the evidence base of the case for change and proposed models. Where the evidence base is weak then clinical consensus, using a voting system if required, will be used to reach agreement. The Clinical Senate Review should indicate whether recommendations are based on high quality clinical evidence e.g. meta-analysis of randomised controlled clinical trials or clinical consensus e.g. Royal College guidance, expert opinion.

Timeline



Reporting arrangements

The clinical review team will report to the clinical senate council which will agree the report and be accountable for the advice contained in the final report.

Clinical Senate Council will report to the sponsoring organisation and this clinical advice will be considered as part of the NHS England assurance process for service change proposals (if appropriate).

Methodology

The sponsoring organisation has agreed to collate and provide the following supporting evidence:

- Case for change and a summary of the current position and proposed alternative service/care model
- Impact of withdrawing/reconfiguring services, including risk register and mitigations
- How proposals reflect clinical guidelines and best practice, the goals of the NHS Outcomes Framework and Constitution

- Alignment with local authority joint strategic needs assessments and a narrative around health inequalities and demographics
- Evidence of alignment with STP plans
- Evidence of how any proposals meet future healthcare needs, including activity modelling, pathways, and patient flows
- Demonstrate how patient access and transport will be addressed
- Consideration to a networked approach
- Education and training requirements
- Implications on and for the workforce in the form of a workplan

Report

A draft clinical senate report will be circulated within 7 working days of the final meeting - to team members for comments, to the sponsoring organisation for fact checking.

Comments/ corrections must be received within a further 3 working days.

The final report will be submitted to the sponsoring organisation by 16th August 2019.

Communication and media handling

The clinical senate will publish the final report on its website once it has been agreed with the sponsoring organisation. The sponsoring organisation is responsible for responding to media interest once in the public domain.

Disclosure under the Freedom of Information Act 2000

The East Midlands Clinical Senate is hosted by NHS England and operates under its policies, procedures and legislative framework as a public authority. All the written material held by the clinical senate, including any correspondence you send to us, may be considered for release following a request to us under the Freedom of Information Act 2000 unless the information is exempt.

Resources

The senate office will provide administrative support to the review team, including setting up the meetings, taking minutes and other duties as appropriate.

The clinical review team will request any additional resources, including the commissioning of any further work, from the sponsoring organisation.

Accountability and Governance

The clinical review team is part of the East Midlands Clinical Senate's accountability and governance structure.

The East Midlands Clinical Senate is a non-statutory advisory body and will submit the report to the sponsoring organisation.

The sponsoring organisation remains accountable for decision making but the review report may wish to draw attention to any risks that the sponsoring organisation may wish to fully consider and address before progressing with their proposals.

Functions, responsibilities and roles

The **sponsoring organisation** will

- provide the clinical review panel with all relevant background and current information, identifying relevant best practice and guidance. Background information may include, among other things, relevant data and activity, internal and external reviews and audits, impact assessments, relevant workforce information and projection, evidence of alignment with national, regional and local strategies and guidance (e.g. NHS Constitution and Outcomes Framework, Joint Strategic Needs Assessments, CCG two- and five-year plans and commissioning intentions)
- respond within the agreed timescale to the draft report on matters of factual inaccuracy
- undertake not to attempt to unduly influence any members of the clinical review team during the review
- submit the final report to NHS England for inclusion in its formal service change assurance process (if appropriate)
- arrange and bear the cost of suitable accommodation (as advised by the senate office) for the panel and any panel members

Clinical senate council and the sponsoring organisation will

- agree the terms of reference for the clinical review, including scope, timelines, methodology and reporting arrangements

Clinical senate council will

- appoint a clinical review team; this may be formed by members of the senate, external experts, or others with relevant expertise. It will appoint a chair or lead member
- endorse the terms of reference, timetable and methodology for the review
- endorse the review recommendations and final report
- provide suitable support to the clinical review team

Clinical review team will

- undertake its review in line with the methodology agreed in the terms of reference
- follow the report template and provide the sponsoring organisation with a draft report to check for factual inaccuracies
- submit the draft report to clinical senate council for comments and will consider any such comments and incorporate relevant amendments to the report. The team will subsequently submit final draft of the report to the Clinical Senate Council
- keep accurate notes of meetings

Clinical review team members will undertake to

- Commit fully to the review and attend all briefings, meetings, interviews, panels etc. that are part of the review (as defined in methodology)
- contribute fully to the process and review report
- ensure that the report accurately represents the consensus of opinion of the clinical review team
- comply with a confidentiality agreement and not discuss the scope of the review or the content of the draft or final report with anyone not immediately involved in it. Additionally, they will declare, to the chair or lead member of the

clinical review team and the clinical senate manager, any conflict of interest prior to the start of the review and /or which may materialise during the review

Appendix B: Summary of documents provided by the sponsoring organisation as evidence to the panel

The following documents were provided as evidence to the clinical review panel:

- Clinical Senate document (based on the West Midlands Clinical Senate's Stage 2 Assurance Evidence Pack Template)
- Appendix 1 – TARN (The Trauma Audit & Research Network) Analysis Report April 2019
- Appendix 2 – Towards a regional rehabilitation strategy; an analysis of major trauma rehabilitation services in the East Midlands Major Trauma Network
- Appendix 3 – Commissioning guidance for rehabilitation, March 2016 (NHS England)
- Appendix 4 – The National Clinical Audit of Specialist Rehabilitation following major Injury (NCASRI)
- Appendix 5 – Specialist neuro-rehabilitation services: providing for patients with complex rehabilitation needs
- Appendix 6 – East Midlands regional rehabilitation strategy 2019 (draft)
- Appendix 7 – NRC Travel Impact Analysis, July 2019
- Appendix 8 – Equality Impact Assessment, June 2019

Appendix C: Clinical review team members and their biographies, and any conflicts of interest

Name	Role	Organisation	Conflict of interest
Bernadette Armstrong	Extended Scope Physiotherapist	Northamptonshire Healthcare NHS Foundation Trust	None
Suzanne Avington	Physiotherapist - Team Leader Community Rehabilitation	Nottinghamshire Healthcare Trust	Employed by a local Trust that might see patients at a later date who have been through a period of intervention at the Centre – but it is not believed to be of direct or indirect benefit/interest to any commissioning decisions given that the community provision is not comparable to the specialist intervention of the Centre

Mr Surajit Basu	Consultant Neurosurgeon and HOS Neurosurgery	Nottingham University Hospitals NHS Trust	HOS Department of Neurosurgery NUH will be one of the users
Dr Ann Boyle	Associate Postgraduate Dean	Health Education England	None
Matt Day	Public Health Consultant	Public Health England	None
Professor Ashley Dennison	Consultant Hepatobiliary and Pancreatic Surgeon and Clinical Senate Chair	University Hospitals of Leicester NHS Trust	None
John Dick	Patient Representative	East Midlands Clinical Senate	None
Claire Greaves	Chief Scientist & Clinical Director for the Science & Technology Pathway Honorary Associate Professor	Nottingham University Hospitals NHS Trust University of Nottingham School of Medicine	Employed by Nottingham University Hospitals NHS Trust
Dr Jon Greiff	Consultant in Anaesthesia and Critical Care	University Hospitals of Leicester NHS Trust	Lead Dean for Sports and Exercise Medicine
Dr Rebecca Hall	GP	Charnwood Medical Group Clinical Senate Fellow	None
Dr Sheila Marriott	Regional Director	Royal College of	None

		Nursing East Midlands Region	
Dr Martin McGrath (will input remotely as cannot attend in person)	GP and PCN Clinical Director	Lakeside Healthcare Group	- GP Partner: Lakeside Healthcare Group - Clinical Director: Rockingham Forest Primary Care Network - Director: Viadoc Ltd (appraisals, consultancy, remote health services, urgent care, academic consultancy UCLan) - Director: Cas-App Ltd (remote urgent care services)
Dr Ben Pearson	Executive Medical Director	Derbyshire Community Health Services	I am the Executive Medical Director of Derbyshire

			Community Health Service NHS FT
Remi Popoola	Senior Physiotherapist	Danetre Hospital, Daventry Clinical Senate Fellow	None
Gary Rogerson	Clinical Director AHP Suffolk Lead Extended Scope Physiotherapist Back and Neck Service	East of England Clinical Senate	None
Brian Rowlands	Emeritus Professor of Surgery	University of Nottingham	My partner and my daughter both are consultants at UHL
Keith Spurr	Patient Representative	East Midlands Clinical Senate	None
Edd Wallis	Cardiology Manager / Principal Physiologist	United Lincolnshire Hospitals NHS Trust	None
Jo Watson	Head of Clinical Productivity	NHS England and NHS Improvement – Midlands and East	None
Professor Adrian Williams	Professor of Clinical Neurology and Chair of West Midlands Clinical Senate	Queen Elizabeth Hospital Birmingham and West Midlands Clinical Senate	None

Clinical Senate Support Team

Ms Emma Orrock – Head of East Midlands Clinical Senate, NHS England and NHS Improvement

Ms Aly Evans – Clinical Senate Support Manager, NHS England and NHS Improvement

Biographies

Bernadette Armstrong MSc MCSP SRP

Bernadette is an Extended Scope Physiotherapist practicing as a musculoskeletal specialist, working for Northamptonshire Healthcare NHS Foundation Trust (NHFT) in the Integrated Musculoskeletal service (IMSK). She has worked for the NHS for 27 years and also has her own private practice. She is a clinical lead for IMSK NHS physiotherapists in Northamptonshire, specialising in spinal and lower limb problems with a particular interest in the knee. She works across trusts in Primary and Secondary care and has been involved in GP and registrar teaching and mentoring. She played a key role as an Extended Scope Practitioner in the locally commissioned spinal service, which has now evolved into an AQP (Any Qualified Provider) service. As a Physiotherapy representative, she has been involved in the set-up of the Total Hip and Knee pathway across primary and secondary care and is currently auditing the physiotherapy outcomes. She is an active member of the NHFT's Leadership forum and the East Midlands Clinical Senate. She completed an MSc in Physiotherapy with Nottingham University in 2010 and her dissertation on Patellar Dislocation Primary Management was published in 2012 in the respected journal "The Knee". This was a collaborative project between Orthopaedics, A&E and Physiotherapy departments, and has led to international interest in her work. She served on the committee of ACPOMIT (Association of Physiotherapy Orthopaedic Medicine and Injection Therapy) as a CPD and PR officers and has also taught at Coventry University on the Injection Therapy master's module for Physiotherapists.

Suzanne Avington

Suzanne is a physiotherapist with over 20 years of clinical, professional and managerial experience. Since qualifying from Nottingham University, she has worked within the acute sector and the community where rehabilitation for older people, intermediate care, management of long-term conditions and falls have been the principal areas of interest and specialism that have governed her career.

More lately her career has benefited from an extended period of secondments: Deputising for the Associate Director for Allied Health Professionals within the Trust and as an Integration Development manager scoping out opportunities to align and

potentially integrate services addressing historical service boundaries and to reduce duplication and fragmentation.

Mr Surajit Basu

Surajit is Consultant Neurosurgeon and Lead, Functional Neurosurgery Service at Nottingham University Hospitals. Surajit has been a member of adult neurosurgery clinical reference group and continues as a member of the East Midlands Clinical Senate Assembly. Surajit is an elected member of the council of Society of British Neurosurgeons and has keen interest in methods of quality assurances, patient safety and patient reported outcomes. His research interests are in neuromodulation and neuropathic pain conditions. He also leads the neurosurgical research (clinical trials) in Nottingham University Hospitals.

Dr Ann Boyle MB BCh BAO National University of Ireland MRCPsych FRCPsych

Honorary Associate Professor Leicester Medical School

Ann is a Consultant old age psychiatrist employed at Leicestershire Partnership NHS Trust. Ann has been involved in medical education throughout her consultant career across the continuum of undergraduate and postgraduate training working as a clinical tutor, training programme director and Head of school of Psychiatry. Ann is currently working as an Associate Postgraduate Dean at Health Education East Midlands and as clinical block lead for Integrated Care Block at Leicester Medical School. Ann contributes nationally as the Specialist Advisor for the Foundation Programme at the RCPsych.

Matt Day

Consultant in Healthcare Public Health, Public Health England

In his current role Matt provides public health leadership to the NHS. Nationally he has recently served as National Incident Director for breast cancer screening and as PHEs liaison to the National Audit Office review into adult health screening. He has served as vice-chair of the national specialised commissioning network and led on NHS clinical policy in cancer and mental health initiating and chairing the first ever national prevention reviews for specialised mental health on smoking, CAMHS, obesity, and new psychoactive substances. In the East Midlands he is currently

chairing reviews on multiple site single service models of care and winter pressures for the Clinical Senate to inform clinical and population level best practice, and also serves as PHEs lead on the East Midlands Cancer Alliance Board. He has published extensively on cancer, mental health, epidemiology, and public health leadership and workforce. Matt is a member of the ACRA Technical Advisory Group which advises the NHS and Ministers on the NHS allocation formula. Matt currently holds Honorary Senior Lectureships in public health at the Universities of Sheffield and Leeds and contributes to public health training in the East Midlands as an Educational Supervisor.

Professor Ashley Robert Dennison MB, ChB, MD, FRCS
Consultant Hepatobiliary and Pancreatic Surgeon, University Hospitals of Leicester NHS Trust
Professor of Hepatobiliary and Pancreatic Surgery, University of Leicester
Clinical Senate Chair

Ashley graduated with MB, ChB from Sheffield University in 1977, obtained his FRCS in 1982 and his MD (Sheffield) in 1985. He was a Wellcome Research Fellow in Oxford from 1983-85, and from 1990-92 worked in Switzerland with Professor Blumgart, Paris with Professor Bismuth and Hannover with Professor Pichlmayer. Since 1994 he has been a consultant hepatobiliary and pancreatic surgeon at the University Hospitals of Leicester NHS Trust. He is the chief investigator and responsible for all research supervision and collaboration with external centres (national and international). He is also the lead clinician responsible for “sense checking” initiatives for service improvement and delivery. His main clinical and research interests relate to the metabolism and anti-cancer properties of intravenous lipid emulsions, the treatment of colorectal metastases and pancreatic adenocarcinoma and islet cell autotransplantation following total pancreatectomy for chronic pancreatitis. He has investigated ablative techniques for the treatment of colorectal metastases and the anti-inflammatory and anti-cancer effect of infusions of lipid emulsions containing omega-3 fatty acids. He has the largest European experience of pancreatectomy followed by islet cell auto-transplantation for chronic pancreatitis and is at present investigating the potential clinical applications of pancreatic ductal cells (intermediate cells). His interest in lipids has recently resulted

in trials in acute pancreatitis, sepsis in the intensive care setting, colorectal liver metastases and pancreatic cancer.

John Dick

John is a retired Local Government officer previously employed in Management Services, Emergency Planning, Education, and Highways departments.
For 40 years, John has been the Presiding Officer for Parish, District, County, National, European, and Police & Crime Commissioner elections.
John is the Chairman of Ashbourne and District 50+ Forum, organising open public meetings to which those in Authority are invited and whose policies have an impact on the health and wellbeing of our Rural community.
John is a Member of East Midlands Later Life Forum, AGE UK (London) Policy Review Panel, Ambassador and Patient Voice Panel member East Midlands Ambulance Service, and a Member of the Patient Participation Group Brailsford Medical Practice.
John attended Patient Leaders Training organised by EMAHSN in 2017 and is currently a member of the Derbyshire cohort on a further Patient Leaders training programme.
John is Elected public governor of Derbyshire Community Health Services representing Derbyshire Dales and High Peak, and elected Deputy Lead Governor.
John attends Quality sub group meetings, Patient Experience and Engagement, Lessons Learned, Clinical Leaflets group, and Clinical and non-clinical Audits as required. John is a patient representative on the Derbyshire Community Frailty Model steering group.
John is a representative for Derbyshire Unison retired members and attends meetings and annual conferences as required.
John sings Gilbert and Sullivan opera, and is also a member of the Bluecoat Singers, who raise monies for local charities.

Claire Greaves

Chief Scientist & Clinical Director for the Science & Technology Pathway

Honorary Associate Professor, University of Nottingham School of Medicine

Claire qualified as a Nuclear Medicine Physicist in 1987 and worked in Nuclear Medicine in several hospitals across the UK. Claire moved to the East Midlands in

2007 working at UHL before becoming Head of Medical Physics and Clinical Engineering in Nottingham in 2015, and more recently taking the post of the Chief Scientist providing senior professional leadership for scientists across NUH. Claire advises on Nuclear Medicine nationally as a member of the British Nuclear Medicine Society Council and Professional Standards Committee and is working with the Academy of Healthcare Science to develop standards for scientific services. Claire is passionate about providing high quality, state of the art, cost effective healthcare and believes that new technologies will support dramatic changes to healthcare offering great opportunities to patients and clinicians. Healthcare Scientist working with patients, healthcare providers, industry and academia will play a pivotal role in enabling the health service to realise its full potential and deliver services that are fit for the future.

Dr Jonathan MC Greiff MBBS B. Med Sci [Hons] DA FRCA FICM
Consultant in Anaesthesia & Critical Care, University Hospitals of Leicester NHS Trust

Jon is a consultant in Critical Care and Anaesthesia and the Guardian of Safety for the University Hospitals of Leicester. He currently chairs their Local Negotiating Committee. He is also an Associate Postgraduate Dean for Health Education England, and currently is acting lead Dean for Plastic Surgery and also for Sports and Exercise Medicine. He was key in the development of the Joint Council of Cosmetic Practitioners [JCCP] which followed on from previous HEE work. This body has set training requirements together with quality standards throughout the cosmetic industry [2018]. He currently represents HEE on the JCCP's advisory group and their stakeholder council.

His main interests are in quality and safety both for patients and trainees.

Dr Rebecca Hall BSc (Hons), MBChB, MRCP(UK), MRCGP, DRCOG

Rebecca is a General Practitioner in Loughborough, Clinical Fellow with Health Education East Midlands and Clinical Fellow with the East Midlands Clinical Senate. Rebecca graduated from University of Warwick in 2002 with a Bachelor of Science in Chemistry and Medicinal Chemistry. She then commenced her medical degree with the University of Leicester, graduating in 2007.

Rebecca undertook core medical training in Nottingham prior to deciding that due to having broad interests in all aspects of medicine, a career in General Practice was where her future lay.
Rebecca completed her General Practice training in 2014. She was successfully appointed as a partner at Charnwood Medical Group in 2016 where she continues to practice. One of the key benefits to a career in General Practice was the flexibility it offers to allow pursuit of a variety of roles.

Since 2014 Rebecca has been able to balance her clinical interests with a desire to have closer links between primary and secondary care for patients and has undertaken a number of clinical fellowships to develop these interests.
Currently Rebecca is working with Leicestershire Partnership Trust to enhance and develop GP trainee knowledge and experience of the holistic care of patients with mental health needs.

Dr Sheila Marriott Dman MSc MA RSCN RGN
Regional Director, RCN East Midlands
Having qualified in Children and Adult Nursing in Sheffield, Sheila pursued a clinical career for twelve years, moving into management before becoming the Director of Nursing at Birmingham Children's Hospital. She then held director positions at Regional Office and Strategic Health Authority levels before leaving to run her own healthcare consultancy business. During this time, she worked with clinical and managerial staff on organisational change, and studied for a Doctorate of Management at Hertfordshire University. She is now the Regional Director for the Royal College of Nursing (RCN) in the East Midlands, which represents nursing and nurses, and shapes healthcare policies. Sheila is a board member of the Healthcare Quality Improvement Partnership (HQIP) established to promote quality in health and social care to increase the impact of clinical audit and is also the chair of a social organising group called Nottingham Citizens, which brings together 35 Nottingham based organisations to work on agreed local concerns, holding local councillors and MPs to account.

Dr Martin McGrath

Martin is an experienced clinician and medical leader with particular interests in strategic and operational planning, medical education and the delivery of urgent medical care. He joined the Royal Air Force in 1998 where he completed a medium commission, initially developing expertise in pre-hospital care, aviation medicine and medical planning. Amongst other roles he assisted in the development and implementation of capability re-design as part of a RAF Medical Branch re-structure and was responsible for the control of UK Defence strategic aeromedical evacuations. He attended the UK Military Advanced Command and Staff Course which prepares selected officers for high-grade appointments and commanded one of the military's foremost operational medical units.

Martin left the RAF to join Lakeside Healthcare Group where he consolidated his role as an active clinician, delivering both primary and urgent care, and as a medical leader, assisting the design and delivery of class-leading urgent care models and becoming Clinical Director of a Primary Care Network. He is a GP Trainer, GP Appraiser and Examiner for the Royal College of Surgeons of Edinburgh Diploma in Urgent Medical Care. He was a 'Healthcare Leader of the Year' finalist in the General Practice Awards 2017 and has recently been appointed a Fellow of the Faculty of Medical Leadership and Management.

Dr Ben Pearson BSc, MBBS, FRCP, MMedSci (Clin. Ed.)
Executive Medical Director, Derbyshire Community Health Services

After gaining a zoology degree from Durham University, Ben trained in medicine at Kings College London, qualifying in 1993. He worked in London, Lincoln and Nottingham and took up a consultant post in geriatric and general (internal) medicine at Derby in 2004. Leading the development of acute medical services, Ben introduced senior clinical decision making and ambulatory care for acute medicine. Ben is the secondary care doctor on the Mansfield & Ashfield and Newark & Sherwood CCG Governing Body. In 2010, he was awarded a Master's degree in clinical medical education. Ben writes for the RCP Geriatric Medicine specialist exit examination and is a member of the Society for Acute Medicine and British Geriatrics Society.

Gary Rogerson

Gary is the Clinical Director of AHP Suffolk, a social enterprise providing MSK Physiotherapy in Suffolk. He is also the Lead Extended Scope Physiotherapist in the Spinal Service and has been working in this role for the last 16 years.

He has worked in the NHS for 28 years and completed his MSc in Manipulative Therapy at Curtin University, Perth Western Australia in 1999.

He is a member of the Musculoskeletal Association of Physiotherapists and the National Back Pain Clinical Network.

He has been involved in teaching both locally and nationally on spinal pathology and differential diagnosis. He has a keen interest in the development of patient pathways from primary to secondary care and in the development of pain services in primary care, particularly for spinal patients.

Remi Popoola

Remi is a chartered physiotherapist with a special interest in neurological physiotherapy. He is currently a Senior Physiotherapist at Danetre Hospital, Daventry. He graduated with BMR (Physiotherapy) from Obafemi Awolowo University, Nigeria in 2004. Thereafter, he moved to the UK and obtained an MSc (Evidence based Healthcare and Health Technology Assessment) from University of Birmingham in 2009.

Currently, he is undertaking a PhD (part-time) at University of Keele where he is exploring the impact of somatosensory facilitation in improving upper limb functions in chronic stroke.

Remi has co-authored a couple of research publications on systematic reviews and health economic evaluation of effectiveness of male circumcision in preventing HIV in sub-Saharan Africa.

Brian J Rowlands MD, FRCS, FACS

Emeritus Professor of Surgery, University of Nottingham

Brian qualified in Medicine from the University of London (Guys Hospital) in 1968. He trained in surgery in Sheffield and spent a year of post-graduate advanced training in the USA in 1977-78 as a Fellow in Gastro-Intestinal Surgery and Nutrition. His career

in Clinical Academic Surgery over 30 years took him to Houston, Texas (1978-86), Belfast, Northern Ireland (1986-97) and Nottingham (1997-2009). His major interests were Hepato-Pancreatico-Biliary surgery, care of the critically ill patient, metabolism and sepsis. Since retiring from clinical practice, he has been Director of Professional Affairs in the East Midlands (2009-14) and Vice-Chair of DPA Forum (2010-12) for Royal College of Surgeons of England, championing a new programme of personal and professional development entitled "Supporting Surgeons in the Workplace". A strong advocate of high-quality clinical practice and safety in the surgical unit, he enjoys the challenge of advising about re-shaping services and strategic planning through the work of the Clinical Senate Council in the East Midlands.

Keith Spurr

Patient representative

Keith is a retired experienced HR Advisor/Business Partner providing generalist HR support to organisations of varying sizes, within all types of industry for 40 years. He was an accredited Trade Union Representative when he represented ex-employees at Tribunals liaising with solicitors, courts, CMDs, PHRs and Full Hearings. Therefore, he has experience as both a manager and as a Trade Union representative and can appreciate both sides of the “table” whilst at the same time represents individuals and groups as required. He has worked with organisations as part of their change programme. He is diabetic Type 1 and had a TIA 25 years ago. He is the Diabetes UK Champion for the South Lincolnshire Area and a diabetic “voice”.

Mr Edd Wallis

Edd is currently working as chief physiologist at United Lincolnshire Hospitals NHS Trust and honorary chief physiologist at Kettering General Hospital NHS Trust. Edd has a special interest in complex implantable cardiac devices holding international professional accreditation from the European Society of Cardiology. Edd has also recently been awarded chartered scientist status by the United Kingdom Science Council and holds full membership with the Society of Cardiological Science and Technology and the Society of Critical Care Technology. A graduate of the NHS Leadership Academy, Edd holds a postgraduate certificate in healthcare leadership

following a successful project in clinical service redesign and organisational development.

Jo Watson

Jo is a children's nurse with over 20 years' experience working with children and young people.

Jo has experience of working in a number of different areas across both acute and community sectors. Jo spent a significant period working at Birmingham Children's Hospital as Deputy Head of Nursing where she developed a number of new services including a Hospital at Home team and a regional long-term ventilation team. Jo is now Lead Nurse for Paediatrics at the University Hospitals of Derby and Burton and is now overseeing the recent merger of both trusts within all children's areas.

Jo completed her first Masters at the University of Manchester in Advancing Nursing Practice in 2012. Since then she has completed a Post Graduate Certificate in Strategic Workforce Planning and is currently completing a further Masters in NHS Leadership at the University of Birmingham on the Elizabeth Garrett Anderson Programme, with the NHS Leadership Academy.

Professor Adrian Williams

Professor Adrian Williams, MB ChB, MD, FRCP graduated from the University of Birmingham, before embarking as a Pharmacology & Immunology Research Fellow at National Institutes of Health (NIH), Bethesda, USA.
Upon his return to the UK he was a Registrar in Cambridge and London, moving back to Birmingham in 1981 to commence his post as a Consultant Neurologist at the Queen Elizabeth Hospital, Birmingham – a position which he still holds today within University Hospitals Birmingham NHS Foundation Trust.

In 1989, Adrian became Professor of Clinical Neurology (Foundation chair) from the University of Birmingham. In 2010 he held an Honorary Professor role at Aston University and has acted as Chair for the Neurosciences Board QEHB, Neurosciences (Neurology/Neurosurgery/Neuro-Interventional Radiology) CRG, National Neuro Advisory Group (National Clinical Lead Neurosciences), and

Neurosciences NHSE review and member of Stroke review. Adrian also held the position of NHSE Clinical Director Neurosciences (WMids) and is a Senior Clinical Advisor for GIRFT (Getting It Right First Time).

Adrian has held the role of West Midlands Clinical Senate Chair since 2016 and has gained an MSc in Human Evolution (Oxford- 2012).