

SECTION E: Design CDHs for implementation in 2021/22

In making prioritisation decisions for year 1 you may want to consider the constraints set out in Table 5.

Table 5: Constraints for roll-out

Constraint type	Current situation	Feasible in Year 1?
Workforce	Is there sufficient workforce which can be rapidly mobilised to deliver this service in year 1?	Y
Equipment	Is there sufficient equipment which can be rapidly mobilised to deliver this service in year 1?	Y
Estates	Can the required estate arrangements be in place for delivery of this service for year 1?	Y
Digital	Are the digital enablers required for delivery of this service in place for year 1?	Y

In the tables below please provide **as much detail as you can** on the following areas for any early adopters and/or Year 1 CDHs that are expected to be rolled out in 2021/22, including proposed development approaches and key risks in relation to:

- Location, including CCG/System
- Expected timelines for roll-out
- Commissioning model
- Workforce model
- Digital integration approach
- Tests and pathways provided
- Expected impact on six primary aims of CDHs, including increased diagnostic capacity and impact on waiting lists / backlog
- Costs, including capital and revenue

Complete the tables below:

- For Early Adopter sites, which may be operational from July, please complete Table A (Early Adopter information), Table B (revenue breakdown). The revenue breakdown is needed to release any funding. Table E can be used to provide details of impact on capacity.
- For Year 1 CDHs, sites which require capital and revenue and may be operational from October, please complete Table C (Year 1 CDH information), if only revenue funding is required please complete Table D (revenue breakdown) if you are able to, if revenue breakdown is not available at the moment, these details can be provided later. Year 1 CDH which require capital will need a business case to be submitted in order to release capital funding (in July). Table E can be used to provide details of impact on capacity.
- If an Early Adopter will later merge into a Year 1 CDH all the tables below should be completed. This will capture details to approve revenue funding for the Early Adopter and recognises further funding will be needed to develop the Year 1 CDH. Table E can be used to provide details of impact on capacity.

Note – please complete one table for each 2021/22 CDH. If you are planning to roll out more than one CDH in the Region, please copy and paste the set of tables.

Community Diagnostic Hub 1

Type of CDH (please tick below):

- Early Adopter – please complete Tables A and B. Table E **can** be used to provide details on impact.
- Year 1 CDH – please complete Table C and Table D if relevant (see bullets above). Table E **can** be used to provide details on impact.
- Early Adopter merging to Year 1 CDH – please complete Tables A, B, C and if relevant, D. Table E **can** be used to provide details on impact.

Table A: Early Adopter and Year 1 information (tables have been merged to avoid repetition)

Item	Regional Response
Site Name	North East and North Cumbria ICS – Central ICP Virtual CDH Proposal
Expected timelines	<p>Increased capacity can be stood up immediately and the CT scanner will be live by June 2021. The additional mobile MRI and CT capacity would be supported by the extension of the current private provider contract and there is a commitment agreed in principle with the provider to have the additional vans in place by the July deadline.</p> <p>The virtual hub would be live from October onwards.</p>
Location, including CCG/ system	<p>The larger diagnostic hubs would be developed from existing Trust hospital sites across the central and part of the South ICP as well as various locations at existing community sites, offering a wide selection of diagnostic testing and providing access close to patient's homes. Capacity would also be provided, via mobile provision, to those areas with increased demand and particular needs due to deprivation, health inequalities and access issues.</p> <p>This additional capacity would be provided in a number of ways.</p> <p>1) Bishop Auckland Hospital</p> <p>Expand the offer of MRI and CT through existing infrastructure. This elective 'cold' site is able to offer a dedicated diagnostic service and will not be impacted by emergency care needs.</p> <p>As described in the expressions of Interest for early adopter both the MRI and CT scanners, both of which have recently been replaced, are able to be rapidly expanded through an extension of the working day Monday to Friday and provide for a 7 day service (12 hours).</p>

2) Durham Treatment Centre

An existing Independent Sector Provider (ISP) through an existing contract (Alliance) is able to offer mobile scanning. South Tyneside and Sunderland Foundation Trust has, in principle, an agreement to expand this contract to offer mobile units for CT and MRI by early summer. The mobile capacity will be brought into the UK by Alliance as additional UK capacity if the existing fleet is on hire to support this contract.

The longer term intention would be to make this permanent capacity using relocatable units on the Durham Treatment Centre site as part of an offer to deliver integrated pathways as part of the existing Treatment Centre services.

The additional CT and MRI capacity would enable STS to commence direct access for GP's not currently offered the service, once the backlog and waiting times return to an appropriate level.

The expectation is that Durham Treatment Centre could offer a variety of tests and services in the following phases dependent on the needs analysis. This would require additional staffing. Operating 7 days a week operation is likely to ensure sufficient additional consulting/treatment room capacity.

3) University Hospital of North Durham (UHND) and Darlington Memorial Hospital (DMH)

County Durham and Darlington has invested heavily in Diagnostic replacement kit as well as expanding capacity where required. Some of the expansion has been designed to manage clinical risk both in the Trust and further to support the ICS.

An example of this is building in resilience for the Stroke Services by having a second CT scanner at UHND. This supports the health economy in terms of providing an always on service, even in times of breakdown of the single CT scanner CDDFT has historically had, as well as reducing the transfer burden for NEAS during CT downtime. This second scanner will be on line from June 2021.

This scanner is planned to run as a resilience scanner as well as increasing the Trust's capacity to manage elective growth we have seen in the system in normal hours gradually entering full service over a period of years. The second CT scanner, whilst on an acute site, will have available capacity to support additional diagnostic capacity. Whilst growth in demand is nationally recognised for imaging and planned for, with the support of Cumbria and North East Imaging Group (CNEIG), this capacity will be available in the short to medium term without it being an impact on acute activity, it simply would mean bringing on line additional resilience capacity earlier.

Furthermore, the MRI scanners are able to be rapidly expanded through an extension of the working day Monday to Friday and provide for a 7 day service (12 hours).

Funding will be required to increase staffing levels, however in the short term additional payments could be offered to open this capacity early using a phased approach.

4) Relocatable Scanner Building

County Durham and Darlington Foundation Trust owns a relocatable scanner facility. It is currently on the Darlington Memorial Hospital site supporting the refurbishment of the radiology department. It is a fully purposed CT suite. This will become available in July 2021. This has a control room, CT room small waiting area and changing rooms and is self-contained.

The relocatable CT scanner is, as stated, with cost, relocatable to any appropriately powered and drained site large enough to fit the building. It could be moved to an existing site such as a community Hospital or large GP practice i.e. the Richardson Community Hospital, Sedgefield Community Hospital or Shotley Bridge Community Hospital.

A Cannon Prime CT scanner would need to be purchased at c£445k of capital funding and an allocation of funding to move and recommission the building would be required c£250k.

Funding will be required to increase staffing levels on an ongoing basis.

5) South Tyneside Imaging Development

STSFT has CT capacity on the ST site which can be more fully operational if appropriately staffed. For the first phase an additional 3 days CT scanning would be available and for phase 2 an additional 2 days. This capacity would be ring fenced for elective work and would ensure the split of elective and non-elective work. Cost and activity are included in the finance appendix attached.

6) Cardiology

Echocardiogram (ECHO) service can be expanded through South Tyneside and Sunderland FT through expansion of the existing workforce 45 slots per week. Capital would be required for an additional Echo machine.

CDDFT has an average waiting time of 5 weeks for Echo (and most other cardiology diagnostics) 974 patients are waiting for an ECHO test. STS Echo's waiting list comprises of 3,219 patients with the longest waiter being 80 weeks

At CDDFT 24 hour recording of ECG can be performed within 6 weeks however the reporting of the test is c 12 weeks. This can be outsourced to a private reporting firm at cost and so reduce the overall waiting time.

The rate limiting factor is Cardiology workforce. An existing bid to HENE for Cardio respiratory physiologists has been submitted by CDDFT with no guarantee that this will be successful.

It is proposed that the Central ICP Teams work collaboratively to develop a joint workforce plan.

CDDFT would, with funding, for the two year period commit to training two band 7 ECHO technicians and two Band 7 Respiratory Physiologists. This in house training would be coupled with South Tyneside and Sunderland FT to build capacity in a shortage specialty workforce.

The increase in MRI capacity would enable the development of MRI cardiac service not currently offered in Sunderland

The high prevalence of cardiovascular disease needs rapid expansion of cardiac CT (NICE CG95, British Society of Cardiovascular Imaging) – a low risk, rapid turnaround, NICE recommended means of establishing the presence coronary artery disease. CDH need to reflect this growing need given the ever increasing demands on our CT services from all other specialties and pathways. Increasing cardiac CT capacity across the central ICP will be key to the overall diagnostic expansion requirements – this can be encompassed in the CDDFT offer in terms of additional CT capacity but will need the addition of specialist cardiac nurse (Band 7) to titrate B Blockers and monitor the ECG during the procedure.

Sleep diagnostics is a specialist service which has seen significant expansion due to our obesity epidemic nationally. Sleep is a nationally targeted diagnostic (DM01), due to the criticality or early detection and management on patients morbidity and livelihoods

NT- Pro BNP is a NICE approved biomarker for the detection of heart failure. This marker is detected in the blood with a high sensitivity but low specificity, but helps triage patients with suspect heart failure into an imaging pathway to determine the presence of cardiac dysfunction. For our growing elderly population and our need to better stratify patients with suspected heart failure, NT-Pro BNP is an essential preliminary tool in the heart failure diagnostic pathway, with financial support extension of this service will be achieved quickly.

7) Other Testing Facilities

The Central ICP will work with other stakeholders to ensure that additional testing/out-patient services would be made available and operated out of a number of community centres across the ICP, building on existing estate and services. This could be combined and work in partnership with local PCN networks offering phlebotomy, ECG pulmonary function testing etc. ensuring a wide variety of locations and offers across the ICP. These services would also work with the ICP imaging service to support cancer pathways and one stop shop clinics etc. and would mirror the deprivation and needs analysis.

8) Endoscopy

Short Term Capacity

In the short term CDDFT would increase capacity via insourcing using an independent sector company which are already working in the Trust and have established pathways in place. This independent sector activity would be over and above what has already been approved internally. This would provide additional capacity for routine and surveillance patients and the CDDFT capacity would be utilised for patients on the 2ww cancer pathway. CDDFT still has an active waiting list size of over 1100 patients and a further 823 patients awaiting surveillance so this would help reduce the backlog more quickly and to get closer to achieving the national waiting time targets for diagnostics.

This would equate to 8 additional lists per week of insourced activity at a cost of approx. £3k per list and 7 patients per list = £24k per week for 56 patients.

	<p>Long Term Capacity</p> <p>CDDFT currently has 6 endoscopy procedure rooms across the three sites and has the budget for 6 day working. There is the potential to increase endoscopy capacity up to 8 procedure rooms by increasing the unit at BAH from 2 to 4 rooms at an estimated capital cost of £1.714m. This will require additional revenue at a cost of £2.0m per annum.</p> <p>This additional capacity would enable additional activity of approximately 168 patients per week (based on average of 7 patients per list). This equates to approximately 8,736 additional patients per annum.</p>
Estates model	See commissioning model for full detail. The longer term plan would be to move further capacity onto community sites and a feasibility study is being undertaken to support developing the plans for year 2 and beyond.
Commissioning model	This would be via County Durham & Darlington FT and South Tyneside & Sunderland FT.
Workforce model	<p>The virtual hub has a requirement for workforce, the early adopter options outlined above carries risk as capacity expansion is dependant on additional hours / agency working. This risk is acceptable and manageable in the short term. Year one capacity is outlined in each section above and describes workforce expansion where required.</p> <p>The Central ICP is committed to joint working for the newly formed virtual hub functions and the expansion of workforce to support ICP capacity expansion. Where required, training, workforce sharing and job design to bring on line additional capacity is clear in the descriptions above.</p> <p>Workforce planning tools and support from Human Resources to look at workforce redesign in year one has been agreed.</p>
Digital and IT strategy	<p>The Central ICP is developing the concept of a Virtual Hub. Patients would be referred into a single point of contact and would then be offered an appointment based on the shortest wait or their nearest location across a number of community facilities within the Central ICP. The patient results/reports would then be sent back to the referring clinician.</p> <p>It is anticipated that the hub would have a single dashboard/waiting list for the particular diagnostic test showing available capacity. Ensuring those patients were allocated appointments based on priority from anywhere within the ICP. As the hub evolves this could include specific patient pathways or one stop services.</p> <p>In the first instance the provider trusts would utilise existing appointment services for activity stepped up within their patches, but would work together to ensure that capacity was fully utilised across the ICP.</p>

	<p>Work would be undertaken to establish the optimum way to utilise existing systems to bring capacity, appointment and results processes together. This could be provided by extending existing appointment services or part of a new virtual hub provision on a community site. The service would operate across the ICP providing a seamless single point of contact for patients and referrers.</p> <p>In the first instance additional administration staffing has been enclosed in the bid but this would require additional resources going forward.</p>
<p>Tests and pathways provided</p>	<p>Initially the hub is utilising existing hospital sites, therefore the full range of tests would be made available through the hub with additional capacity as outlined above.</p> <p>As the central hub develops it will be utilising existing community sites across the ICP. This will include sites other than the sites described to date such as existing primary/community care centres, hubs created during the pandemic to move services away from acute sites for example. It is anticipated that a wide range of tests and pathways can be incorporated into the hub offer including, plain film, ultrasound, phlebotomy, physiological testing etc. As well as one stop shop and other pathway clinics. The implementation group will work with wider stakeholders, including GPs and PCNs, to ensure that the service design targets the needs assessment work across the ICP</p>
<p>Expected impact on six primary aims of CDHs</p>	<p>The proposed model by the ICP will create a virtual hub which will enable patient's tests to be co-ordinated across the hub and all the available capacity which will be visible to all organisations within the hub. It will deliver increased activity as outlined in the table in the elective recovery plan section.</p>

Elective Recovery Plan

Additional activity per week:

	CT	MRI	Endoscopy	Echo	Other
Early Adopter (Jul - Sep):					
Bishop Auckland	126	46	0	0	0
Durham Treatment Centre	175	140	0	45	0
University Hospital of North Durham	231	46	0	0	0
Relocatable CT	231	0	0	0	0
Darlington Memorial Hospital	215	46	0	0	0
South Tyneside Imaging	60	40			0
Cardiology	0	0	0	30	18
Endoscopy	0	0	56	0	0
Total Early Adopter additional activity	1038	318	224	75	18
Year 1 CDH additional:					
Bishop Auckland	126	46	0	0	
Durham Treatment Centre	175	140		45	
University Hospital of North Durham	231	46	0	0	
Relocatable CT	231	0	0	0	
Darlington Memorial Hospital	215	46	0	0	
South Tyneside Imaging	100	40	0	0	
Cardiology*	0	0	0	30	18
Endoscopy**			224		
Year 1 CDH	532	232	0	45	0

	*Rises to 80 scans per week in part way through year 2 ** This activity would increase to this level from Jan 22
Indicative 2021/22 revenue cost	Early Adopter (Jul 21– Sep 21) - £2.795m Year 1 (Oct 21 – Mar 22) - £- 7.336m
Indicative 2021/22 capital cost	<i>CT Scanner - £445k</i> <i>Echo Machines - £107k</i> <i>Lung Function Machine - £54k</i> <i>Endo Expansion - £1,714k</i> <i>Sleep Monitors - £48k</i>

Table B: Early Adopter Revenue Breakdown

Early Adopters		
BREAKDOWN OF SCHEME REVENUE COSTS		
	2021/22 (Non-Recurrent – from ERF top slice) £'000	2022/23 Recurrent - Full year impact £'000
CDHs where below costs will be incurred		
Pay	774	0
Non-Pay:		0
Premises	0	0
Clinical Supplies	191	0
General Supplies	0	0
Other	1800	0
Depreciation	29	0
PDC Dividends		0
Total	2795	0
CDHs where additional activity is being commissioned		
Cost of addnl. - Imaging	1958	0
Cost of addnl. - Physiological Measurement	399	0
Cost of addnl. - Pathology	56	0

Cost of addnl. - Endoscopy	382	0
Total	2795	0

Narrative to support costs above:

1. Costs are based on high level assumptions and current knowledge.
2. Costs are indicative and subject to change upon further detailed workings.
3. Costs included at table B are relating to the period Jul-21 to Sep-21 (Early Adopter) with the recurrent / full year impact included at Table D.
4. Inflationary assumptions have been applied to future years revenue costs.
5. Capital costs would only be able to be incurred with no impact to CDEL limits

Table C: Year 1 CDH information – see table A

Item	Regional Response
Site Name	
Expected timelines	
Location, including CCG/system	
Estates model	
Commissioning model	
Workforce model	
Digital and IT strategy	
Tests and pathways provided	

Expected impact on six primary aims of CDHs	
Elective Recovery Plan	
Indicative 2021/22 revenue cost	<i>£xxm (provide detail for revenue costs as below)</i>
Indicative 2021/22 capital cost	<i>£xxm (if available)</i>

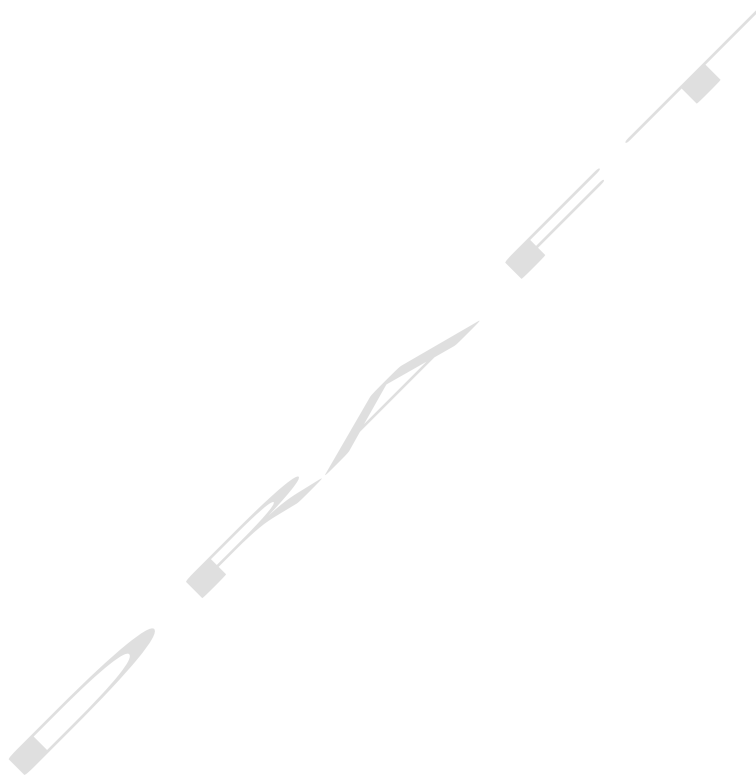


Table D: Year 1 CDH Revenue Breakdown

Year 1 CDHs with only revenue costs (no capital required)			
BREAKDOWN OF SCHEME REVENUE COSTS			
	2021/22	2021/22	2022/23
	(Non- Recurrent)	(Recurrent - Part year impact)	Recurrent - Full year impact
	£'000	£'000	£'000
CDHs where below costs will be incurred			
Pay	0	2341	5446
Non-Pay:			
Premises	0	£18	£73
Clinical Supplies	0	679	1844
General Supplies	0	3	39
Other	0	4174	6839
Depreciation	0	120	240
PDC Dividends	0		
Total	0	7336	14480
CDHs where additional activity is being commissioned			
Cost of addnl. - Imaging	0	5035	10243
Cost of addnl. - Physiological Measurement	0	816	1667
Cost of addnl. - Pathology	0	111	55
Cost of addnl. - Endoscopy	0	1373	2515
Total	0	7336	14480
Narrative to support costs above: <ol style="list-style-type: none"> 1. Costs are based on high level assumptions and current knowledge. 2. Costs are indicative and subject to change upon further detailed workings. 3. Inflationary assumptions have been applied to future years revenue costs. 4. Capital costs would only be able to be incurred with no impact to CDEL limits 5. Costs included at table B are relating to the period Jul-21 to Sep-21 (Early Adopter) with the recurrent / full year impact included at Table D. 			

Table E (optional): Early Adopter and Year 1 CDH impact on capacity and waiting lists/backlogs

The table below can be used to provide details of the proposed CDH additional activity and its impact on waiting list / backlog. Where no central data source exists for baseline use local data available or leave blank. Please duplicate the table if needed.

Modality	Diagnostic test	(System / Local) Baseline activity (2019/20)	Proposed additional CDH activity per month	Commentary to describe predicated impact on waiting list/ backlog e.g. Time to clear in months
Imaging	CT	94534	4422	System backlog issues
	MRI	41312	1173	System backlog issues
	Ultrasound (NOSB)	NA		
	Plain X-Ray	NA		
Physiological measurement	Echocardiography (ECHO)	27819	319	Due to training year 1 would be 120 per month rising to 320 per month extra by year 2. This will maintain waiting list to <6 weeks offering a 7 day service. Backlog reduce by 50% in year 1, cleared year 2.
	Electrocardiogram (ECG) including Holter monitoring	NA	No additional activity but reduced wait time	Use of IS to reduce analysis waiting times, currently up to 3 months, bringing this down to 1 month
	Oximetry	NA		
	Blood Pressure Monitoring	NA		
	Spirometry	NA		
	FeNo and Lung Function Tests	1885	50	Due to COVID and long COVID the demand has increased by 20 %, waiting times >10 weeks, need to increase capacity and bring this down to <6 weeks and cancer <2 weeks. Additional staff and equipment would see waiting times decrease within 6 months and to under 6 weeks. However need to track long COVID impact for next 2 years.

	Blood Gas Analysis	NA		
	Simple Field Tests (e.g. 6 min walk test)	200		Supports diagnostic total pathway wait reduction
	Simple sleep studies	1800	75	Currently being managed within 6 weeks
Pathology	Phlebotomy	NA		
	Point of Care Testing	NA		
	Simple Biopsies	28089	224	Activity wrapped up in system pathway costs
	NT-Pro BNP	15746	167	As above
	Urine testing	NA		
	D-Dimer Test	NA		
Endoscopy	Gastroscopy	14657	49	This will create the ability to work through the backlog generated through COVID at a faster pace, ie clear back log within 1 yr instead of 2 yrs and return to a waiting time of less than 6 weeks, within 6 months.
	Colonoscopy	10897	170	
	Flexi sigmoidoscopy	5142	24	
	<i>Other diagnostic test provided locally</i>			