

# Nottingham and Nottinghamshire ICS

## Heart Health

## Clinical and Community Services Strategy

## February 2021

This information has been placed in the public domain in order to benefit patients across the country as we believe the experience and approach may be useful for others, however we request that acknowledgement to the work in Nottinghamshire is made and referenced in all materials. This helps us to understand the wider impact benefits of our programme. Please cite 'this work has been informed by the Nottingham and Nottinghamshire ICS' when referencing.

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The Integrated Care System (ICS) ambition across Nottinghamshire is to both increase the duration of people's lives and to improve the quality of those additional years, allowing people to live longer, happier, healthier and more independently into their old age. The aim of the Clinical and Community Services Strategy (CCSS) is to support the system to achieve this by shifting the focus of our health and care delivery from reactive, hospital based treatment models to a pro-active approach of prevention and early intervention, delivered in people's homes or in community locations where this is appropriate with a long term view of beyond 5 years.

Cardiovascular disease (CVD), which includes diseases of the heart and circulatory system, causes 25% of all deaths in the UK, with heart disease one of the top 5 causes of early death in England. Coronary artery disease, including Coronary Heart Disease (CHD) and Ischaemic Heart Disease (IHD), is the most common type of heart and circulatory disease, affecting 1.9 million people in England, with someone dying from CHD every 10 minutes.

The NHS Long Term Plan (LTP) makes strong reference to CVD, identifying it as the single biggest area where the NHS can save lives in the next 10 years. Out of Hospital Cardiac Arrest (OHCA) affects 30,000 people in England each year and 7,665 in our ICS, with a commitment to save 4,000 lives from OHCA by 2028 through improved access to resuscitation and defibrillation. Too many people have undetected high risk conditions, such as Atrial Fibrillation (AF), high BP and raised Cholesterol (ABC), with opportunities to make progress in people knowing their ABCs through enhanced Health Checks and the increased use of technology. Opportunities also exist through the identification of Familial Hypercholesterolaemia (FH) and signposting to genetic testing to support diagnosis and treatment. At present only 7% of people with FH are identified, with an ambition to increase to 25% in the next 5 years. Proactive case management and enhanced access to preventative treatments is also highlighted, with 67% of people with high BP not on optimal treatment. 80% of people with Heart Failure (HF) are diagnosed in hospital, despite 40% of people having symptoms that could have triggered earlier assessment. Access to improved diagnostics in primary care aims to support earlier detection before admission to hospital. Specialist advice and coordination of care is also addressed. This includes access to advice across inpatient settings, in the community and with a network multi-disciplinary team to support personalised care planning. Cardiac rehabilitation (CR) is an intervention that is evidenced to improve quality of life and reduce hospital readmissions, but with variation in access and uptake across England. The NHS LTP makes a commitment to improve access to CR to support a reduction in premature deaths and acute admissions over the next 10 years.

This heart health service review has been undertaken as part of the ICS CCSS work stream. It has been supported by clinical experts and stakeholders in the development of place based service models for the future, to support the long term needs of our existing citizens. The review also focuses on embedding prevention in our population over the next 5-10 years, by shifting our culture from one of illness to one of healthier lifestyles and self-care.

The strategy identifies major stages in the journey for people with heart health conditions and stresses a need to reorganise the way in which these services are delivered, from prevention to longer term management. A whole pathway approach in the provision of heart health services is crucial in order to maximise the clinical outcome for patients, their quality of life and experience of heart health services.

Key themes have been identified along with key transformational opportunities and potential impacts have been developed which include: prevention and education strategies to reduce risk; early detection and optimal treatment of risk factors; early and accurate diagnosis of heart conditions; standardised pathways and a Network MDT with enhanced use of technology to connect the system and the patient; access to specialist skills across settings; access and sharing of patient information in an emergency; 24 hour access to specialist treatment and equitable and timely access to rehabilitation.

A transformational 'Bridge to the Future' highlights current service offers across the ICS and identifies some potential long term next steps that can be taken to achieve the identified opportunities with proposed timelines and the expected outcome for our citizens of Nottinghamshire.

The recommended next steps are vital in keeping the momentum of change in the future offer of improved prevention and better health for our citizens; providing the right tools for our population to support their wellbeing; providing strong communication links for our staff is vital to enable them to provide the best care for our citizens; the most appropriate models of care in acute settings, neighbourhood and home need to be provided equitably across the ICS and be provided using best evidence, flexibly and in a patient centred way for them to fulfil their maximum potential throughout their lifetime.



### Background and Purpose

In Nottinghamshire we have made great progress in improving people's health and wellbeing. Today, we can treat diseases and conditions we once thought untreatable. However, our health and care system faces change and this will impact on our services, for example, the growing prevalence of long-term health conditions places new strains on our system. There is inequality evident in both the location of challenges and in access to services. In some areas, it is easier to access a GP than in others, or to find things to do to enable citizens to stay active and fit.

The ICS ambition across Nottinghamshire is to both increase the duration of people's lives and to improve those additional years, allowing people to live longer, happier, healthier and more independently into their old age.

The requirement for a CCSS came from the recognition that to achieve this ambition the system has to change as a whole, rather than just in its individual acute, primary care, community and social care elements. It is recognised that only by working together to describe changes in how care is provided across the system, rather than through individual organisations, will we deliver the scale of change required.

### The ICS Clinical and Community Services Strategy

The aim of the CCSS is to support the system to achieve this by shifting the focus of our health and care delivery from reactive, hospital based treatment models to a pro-active approach of prevention and early intervention. This should be delivered closer to people's homes or in community locations where this enables better prevention, more supported self-care and earlier intervention to support citizens. The Strategy recognises that achieving this change is a long term programme that will be delivered over the next 5 years and beyond. This is also to enable a necessary long term investment in the health and care buildings and infrastructure in the system.

An overall CCSS whole life model framework has been developed to focus on the need to support people through their lives from living healthy, supporting people with illness and urgent and emergency care through to end of life care. Citizens can experience different parts of the system at different stages in their lives. With the development of the overall Strategy framework the next phase of work is to review the 20 areas of service across the ICS that collectively form approximately 80% of the volume of clinical work in the ICS. This will ensure that overall the Strategy is described as a coherent whole and generates a programme of change for the whole ICS. This review of heart health is one such review and is part of the third phase of work.

### NHS Long Term Plan

The NHS LTP is clear that to meet the challenges that face the NHS it will increasingly need to be more joined up and coordinated in its care; More proactive in the services it provides; More differentiated in its support offer to its individuals.

The ICS has focused on describing 5 areas of focus for the delivery of the NHS LTP. These requirements are reflected in each of the service reviews that collectively will describe the CCSS

- 1. Prevention and the wider determinants of health** - More action on and improvements in the upstream prevention of avoidable illness and its exacerbations
- 2. Proactive care, self management and personalisation** - Improve support to people at risk of and living with single and multiple long term conditions and disabilities through greater proactive care, self-management and personalisation
- 3. Urgent and emergency care** - Redesign the urgent and emergency care system, including integrated primary care models, to ensure timely care in the most appropriate setting
- 4. Mental health** - Re-shape and transform services and other interventions so they better respond to the mental health and care needs of our population
- 5. Value, resilience and sustainability** - Deliver increased value, resilience and sustainability across the system (including estates)

<p><b>Approach</b></p>	<p>This strategy has been developed through an open and inclusive process which weaves together the expertise of clinicians and care experts with commissioners and citizens in determining the future shape of services across the system. There have been a variety of stakeholder and service user events to develop a clinical and community services model. An extensive system wide piece of work is taking place across a minimum of 20 services. The CCSS Programme Board have reviewed these services against a range of quantitative and qualitative criteria and agreed the third phase of seven service reviews. These include; Heart Health; Gastroenterology; Colorectal; Urological Health; Oncology; Depression and Anxiety and End of Life Care.</p> <p>This document discusses the approach, scope, the key issues and potential transformational opportunities within heart health services across the ICS. Health, social care, public health and the voluntary sectors have all been considered through reviewing the current service offer across the ICS. The service review was undertaken over approximately 24 weeks with representation from stakeholders across the ICS. An evidence review pack was developed which considered national and local best practice to inform the development of potential themes and new models of care where transformational change may take place across the ICS in the future.</p>
<p><b>Scope</b></p>	<p>For the purpose of the review the following focus was agreed:</p> <p><b>In scope:</b></p> <ul style="list-style-type: none"> <li>• Adults only</li> <li>• Familial hypercholesterolemia</li> <li>• Out of Hospital Cardiac Arrest</li> <li>• Arrhythmia</li> <li>• Coronary Heart Disease</li> <li>• Ischaemic Heart Disease</li> <li>• Myocardial Infarction</li> <li>• Heart Failure</li> <li>• Chest Pain</li> <li>• (interventions supporting conditions in scope, with the exclusion of specialised commissioning, will be included)</li> </ul> <p><b>Out of Scope:</b></p> <ul style="list-style-type: none"> <li>• Cardiac Surgery</li> </ul>
<p><b>Engagement</b></p>	<p>The Heart Health service review has been supported by a tailored Heart Health Steering Group involving stakeholders and clinical experts from across the ICS. They have provided expert advice, guidance, confirmed and challenged assumptions throughout the period of review and connected to other workstreams. This group has formed part of the governance process along with the CCSS Programme Board.</p> <p>Stakeholders involved in the Heart Health service review included Patients, Clinicians, Allied Health Professionals (AHPs), Nurses, Heads of Service, Social Care, Public Health, Commissioners and others to be proactively involved in re-evaluating current service offers across the ICS, in developing potential themes and agreeing transformational change for the future Clinical and Community Services Strategy.</p> <p>Patient engagement has enabled confirm and challenge of assumptions and play an active part in the co-design of any future service changes across the ICS.</p>

<b>Strategy Development</b>	This Strategy Document consists of five key elements. These have been developed through a process of design and iteration with the steering group, which includes key stakeholders across the system. The strategy has been developed with reference to the Evidence Review document and patient feedback.
<b>Priorities for Change</b>	The work of the Steering Group identified four key areas of focus that need to change in the ICS for heart health care. These were based on a review of the current issues facing the ICS and the views of the Steering Group.
<b>Proposed Future Care System</b>	<p>Following the evidence review at subsequent steering group meetings, attendees started to develop the future care system for Heart Health to address the Priorities for Change. The future care system is described against two dimensions</p> <ul style="list-style-type: none"> <li>• <b>Location</b> split between - Home (usual place of residence) – Acute Hospital with 24/7 medical presence – Neighbourhood representing all community/primary care and ambulatory care settings</li> <li>• <b>Urgency</b> split between - <b>Emergency/Crisis</b> requiring a service provided 24/7 to avoid crisis or risk to life – <b>Urgent</b> requiring a service 7/7 but not 24/7 to meet urgent care needs – <b>Scheduled</b> reflecting any arrangement where an appointment is agreed between a professional and a citizen</li> </ul> <p>The intention of the system model is to focus future care delivery closer to home and also with greater levels of scheduled care to best use the available resources and reduce demand on urgent and emergency care services. The new system to address the Priorities for Change is presented for each location and then summarised overall for the ICS.</p>
<b>Transformation Proposal</b>	<p>The Transformation proposal described the key initiatives or programmes that are required to deliver this new model. Namely,</p> <ul style="list-style-type: none"> <li>• <b>Priority</b> – What is the priority of the initiative in the view of the steering group and workshop attendees?</li> <li>• <b>Alignment</b> – At what level of the system should we aim to deliver each initiative? In most instances this is ICS level but there are some instances where the recommendation is for delivery to be at Integrated Care Provider (ICP) level where the greater value is perceived to be in an overall consistent approach. Alternatively, it is at Primary Care Network (PCN) level where differential delivery would benefit the needs of very local populations</li> <li>• <b>Enabling Requirements</b> – What is required to enable each Programme to deliver? This includes workforce, technology, estate or service configuration. There are also requirements of culture or finance and commissioning to allow the system to work together differently</li> <li>• <b>Benefits and Costs</b> – Where available, the key benefits of the initiative at system level are summarised</li> </ul>
<b>Bridge to the Future</b>	The 'Bridge to the Future' was generated at a further virtual steering group meeting. It summarises the current challenges for the heart health system in the ICS now (Priorities for Change), where we would like to be and how we plan to get there. Progress with the 'Bridge to the Future' and the partnering vision can be returned to with stakeholders as the work develops to ensure the work remains on track.



## Prevention & Self-Care

Treatment of  
Risk Factors

Out of Hospital  
Cardiac Arrest

Education

## Detection and Diagnosis

Referral and  
Triage

Early Diagnosis  
and  
Intervention

## Treatment and Condition Management

Acute  
Configuration

Community  
Care

Skills and  
Expertise in  
the Right Place

## Rehabilitation and Palliative/End of Life Care

Access

Model

# Prevention & Self-Care

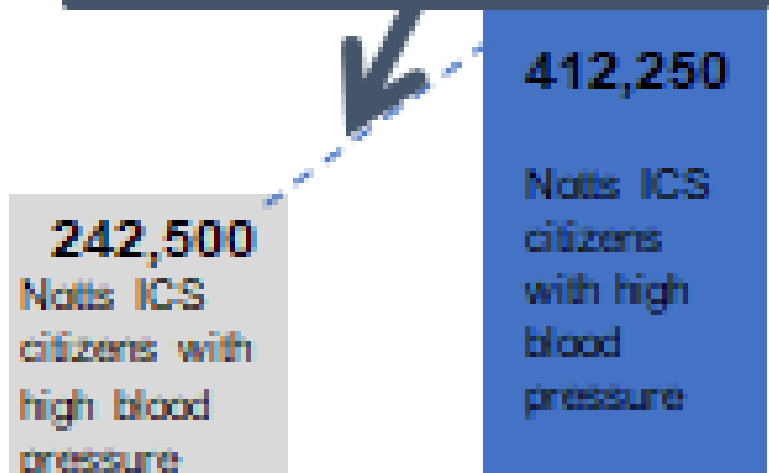
## HYPERTENSION



High blood pressure contributes to **50%** of heart attacks

British Heart Foundation

**Projected 70% increase**



**2018**

**2038**

Adult Population Notts ICS  
860,000

Notts ICS estimated population with hypertension  
242,500

Undiagnosed high BP  
101,000

Not optimally treated  
27,000

NHS HealthCheck

Optimal treatment of AF and hypertension over 3 years would prevent 160 heart attacks in our ICS.

NHS HealthCheck

**EMAS 2019:** Ambulance Service, OHCA Study Warwick University

7,665 out-of-hospital cardiac arrest

2,864 attempted resuscitations (37%)

**7.3%** were discharged alive (range in England 7.3-11.6%)



# Detection and Diagnosis

A blood test (**NT-proBNP**) in primary care could help deliver a **50%** reduction in likely unnecessary echocardiograms and referrals, saving the NHS around **£15,000 per month**

Roche Pumping Marvellous Report: Heart Failure: The hidden costs of late diagnosis



**80%** of heart failure is currently diagnosed in hospital, despite 40% of patients having symptoms that should have triggered an earlier assessment.

NHS Long Term Plan

Half of these are diagnosed in ED

Pumping Marvellous

**19%** of patients surveyed were not offered a blood test for heart failure at any point during their journey to a diagnosis

Pumping Marvellous

Only **7%** of patients surveyed were diagnosed with heart failure in primary care.

Pumping Marvellous

38.4% of patients have had their GP appointments cancelled as a result of service alterations and we also know that **COVID-19 risks causing a 10% rise in heart failure**

Pumping Marvellous

30,000 ECHOs are performed annually across the ICS. NUH & SFHFT

NUH ECHOs	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
IP ECHO	5,846	5,914	5,700	5,768	5,963	
OP ECHO	13,034	13,766	14,440	15,441	15,935	
<b>Total ECHOS</b>	<b>18,880</b>	<b>19,680</b>	<b>20,140</b>	<b>21,209</b>	<b>21,898</b>	<b>21,672</b>
ECHOs reduction due to COVID						650
Number of GPs within OP total	3,277	3,672	3,573	3,882	3,971	4,412

Note Trust figures includes patients that reside outside Nottingham and Nottinghamshire ICS

# Treatment and Condition Management

In our ICS population:  
CHD: 34,890  
Heart Failure: 11,520  
Left Ventric Failure: 8,195

Source: eHealthScope

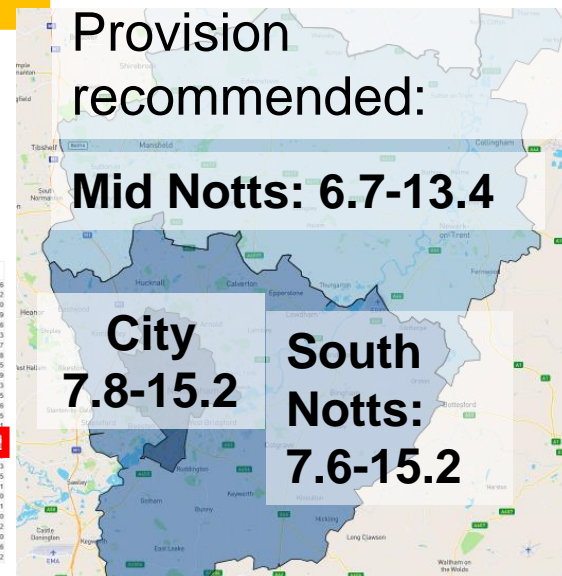
Many patients have more than one heart diagnosis. Included in these figures are 5,055 patients with HF & CHD and 3,860 with CHD&LVFD

Heart Failure Nurse Provision recommended:

**Mid Notts: 6.7-13.4**

**City 7.8-15.2**

**South Notts: 7.6-15.2**



Nottinghamshire has statistically higher heart failure admissions than the England average.



**63%** of NUH's cardiology patients are taken to ED by ambulance instead of the City Hospital Cardiac Unit

Community based intravenous (IV) diuretic service saves **£3,000 per patient**. 100% patients (93% carers) prefer home based care. British Heart Foundation

Source: National Institute for Cardiovascular outcomes research

OUTPATIENTS:

Sources:  
SFHFT & NUH

	SFHFT			NUH			Combined		
	New	FUP	N2FUP ratio	New	FUP	N2FUP ratio	New	FUP	N2FUP ratio
19/20	3876	4215	1.09	3416	3776	1.11	7292	7991	1.10
20/21*	1024	1730	1.69	1428	1200	0.84	2452	2930	1.19

\* April - Aug 2020 Note Trust figures includes patients that reside outside Nottingham and Nottinghamshire ICS

INPATIENTS:

Source: CCG	SFHFT			NUH			Other			Total (for all Notts ICS citizens)		
	DayCase	Elective	Emergency	DayCase	Elective	Emergency	DayCase	Elective	Emergency	DayCase	Elective	Emergency
2016/2017	707	289	229	1554	912	2026	124	80	246	2385	1281	2501
2017/2018	858	286	332	1944	457	1900	161	78	212	2963	821	2444
2018/2019	988	283	251	2175	306	1749	188	105	218	3351	694	2218
2019/2020	809	181	235	1989	256	2082	177	88	242	2975	525	2559

Hospital name	Heart failure admissions	ACEI on discharge	ACEI/ARB on discharge	Beta blocker on discharge	MRA on discharge	Discharged On (ACE And/or ARB) and Beta Blockers and MRA	Received discharge planning	Referral to HF nurse follow up	Referral to HF nurse follow up (HFREF only)	Referral to cardiology follow-up
Nottingham City Hospital	376	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	25.7%	41.7%	38.6%
Queen's Medical Centre	614	94.9%	97.7%	97.9%	93.8%	90.5%	99.6%	18.7%	32.8%	15.5%
King's Mill Hospital	423	69.1%	84.1%	87.8%	46.0%	37.1%	80.1%	56.4%	71.8%	62.7%

# Rehabilitation and Palliative / End Of Life Care

STEMI or NSTEMI

Year	2017/18	
Hospital	Out of all eligible (N)	Referred for cardiac rehabilitation %
King's Mill Hospital	268	78.36%
Nottingham City Hospital	917	97.38%

NICOR

Only 6% of patients with end of life heart failure are referred to palliative care

National Heart Failure Audit

Patients who have experienced **myocardial infarction (MI) and/or coronary revascularisation** completing a course of exercise-based **Cardiac Rehab** reduces cardiovascular mortality from **10.4% to 7.6%**

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4586722/>

Depression is **twice as likely** in people with heart disease & people with depression face a greater risk of heart disease.

Depression: **3x risk** of heart failure death

<https://www.health.harvard.edu/heart-health/depression-and-heart-disease-a-two-way-street>

The review identified 4 key areas of focus highlighting potential areas of change which include:

- Prevention and Self-Care (with emphasis on early detection and optimal treatment of risk factors, education to support citizens in making lifestyle change and increase skills and confidence in responding to a OHCA, education of health care professionals to support prevention and self-care);
- Detection and Diagnosis (standardised pathways and referral criteria with structured templates and advice and guidance to support timely and appropriate referral, early and accurate diagnosis of heart conditions with enhanced community provision and direct to test, one stop models to support early assessment and diagnosis);
- Treatment and Condition Management (developing standardised pathways and a Network MDT, consistent access to specialist skills across settings, 24/7 access to specialist advice and treatment, with consistent access to CCU for high acuity patients and co-location of emergency cardiology and ED, access and sharing of patient information in an emergency to support signposting to the correct setting, enhanced use of technology with visibility of information across settings);
- Rehabilitation and Palliative/End of Life Care (delivering a combined cardiac and pulmonary rehabilitation model, flexible offer to increase uptake, access to mental health services and peer support to support anxiety management).

### Prevention and Self-Care

Many different factors increase the likelihood of developing heart disease, including medical risk factors such as diabetes which increases risk 2 to 3 fold. CVD is largely preventable through lifestyle change. In more than 90% of cases, the risk of first heart attack is related to a number of modifiable risk factors. Public Health and NHS action on smoking, obesity, alcohol misuse and food reformulation identified as key opportunities to reduce risk. In the ICS, the average smoking rate is 158 per 1,000 registered persons, with highest rates in areas of deprivation. Similarly obesity levels are high with 206,440 citizens with a BMI of 30kg/m<sup>2</sup> and over. Alcohol misuse is also a particular issue in the ICS. Non-modifiable risk factors include age and ethnicity. CVD is also strongly associated with deprivation, with premature death rates from CVD up to 6 times higher among lower socioeconomic groups.

A 10% reduction in high risk factors through lifestyle intervention can save 9,120 lives per million over the next 10 years. These include AF, high BP and Cholesterol (ABCs). 50% of CVD is associated with BP, with 28% of adults in England having high BP and most not receiving effective treatment. In the ICS, 242,500 people have high BP, with 101,00 undiagnosed and 27,000 not on optimal treatment. There is also a 70% projected increase by 2038. Nationally, 47% of adults have a cholesterol level above national guidance (5mmol/l), with 6.5 million adults taking statins. In the ICS, 71,000 adults have a CVD risk >20%, with 49% treated with statins. FH is an inherited condition which affects 150,000 people in England, with the NHS LTP stating that only 7% of people identified and an ambition to increase this to 25%. Enhanced citizen knowledge of their ABCs can improve early detection and treatment of CVD to help people live longer, healthier lives. This includes improving the effectiveness of NHS Health Check, working with partner organisations to increase the number of people who know their ABCs, signposting to genetic testing and proactively seeking and monitoring citizens with high risk factors to support timely and effective treatment.

30,000 people in England have a OHCA each year, with 7,665 in the ICS, with a national survival rate of 1 in 10. Fast and effective treatment improves survival with access to immediate Cardio-Pulmonary Resuscitation (CPR) and access to a defibrillator. The NHS LTP makes a commitment to working with partners, including the British Heart Foundation (BHF), to improve citizen response to having a cardiac arrest and in building defibrillator networks.

Trusted and approved resources, such as “My Heart App”, are available to support prevention and self-care. Many other resources are available and accessible which span across many media links, complemented by a wide range of written resources. ICS agreement on consistent and trusted information on trusted sites, such as the NHS App, incorporating Patient Knows Best (PKB), can lead to improved signposting. Improved education and awareness of the general population helping to prevent heart conditions and improve self-care. Education of healthcare professionals (HCP) to deliver consistent and evidence based practice (EBP) will support successful outcomes through greater knowledge and skill in supporting people in addressing risk factors and treatment and self-care for people with heart conditions.





### Detection and Diagnosis

Standardised heart health referral criteria and guidance supports the prevention of unnecessary appointments which can contribute to increased demand for services and long waiting times. They prompt appropriate onward referral and ensure that referrers understand where to direct patients and what information should accompany them. Integration with the NHS e-Referral Service supports the process. Advice and guidance provides further opportunities to enhance shared learning and signposting referrals to the right person, in the right place first time. Access to standard referral pathways, informed by best practice, underpins this principle and supports the reduction in unwarranted variation and timely access to assessment, treatment and care. In the ICS, structured templates are available to support triage with access to advice and guidance. At present, there is access to some standard pathways, but these are not available across the breadth of heart health conditions.

Access to timely diagnostics supports the ambition to deliver early intervention. Heart failure (HF) affects 1 million people in the UK, 11,520 across the ICS. The road to diagnosis remains lengthy with 80% of HF diagnosed in hospital, (half of which are in ED) despite 40% of patients having symptoms that could have triggered earlier assessment. In the UK this accounts for 862,470 bed days (2018/19) at a cost of £400million. Echocardiogram is the most widely utilised diagnostic test for HF, with 412,323 undertaken nationally each year, resulting in 67,127 admissions for HF. Approximately 30,000 echocardiograms are undertaken in the ICS annually, with increasing requests from primary care. Using NT-proBNP as the first step in diagnosing suspected HF holds the potential to make diagnosis more accurate and efficient and could reduce the number of unnecessary echocardiogram by up to 50%, accelerating the triage of high risk patients to early intervention. Implementing NT-proBNP in line with NICE guidance supports the ambition to deliver diagnostics closer to home and increase diagnosis in primary care from the current 7%. In the ICS, guidance exists for the use of NT-proBNP, but this has not been implemented across the system. Opportunities exist to extend the community diagnostic offer, including ambulatory diagnostics, with enhanced use of technology and with visibility of results across setting to support the ambitions to ensure timely assessment and early intervention.

For patients requiring further diagnostics in the hospital setting, opportunities exist to extend direct to test offer. At present in the ICS, this is predominately accessible to general practitioner's (GPs). Extending this to other healthcare professionals can support timely signposting. Streamlining diagnostics supports the development of 'one stop' assessment and preparation to support early intervention. Opportunities exist to extend this model across the ICS, including in community settings. Angiography query proceed models also supports ambitions for early intervention, whilst supporting a reduction in the number of attendances before the point of the 'decision to treat'. In the ICS, angiography query proceed is not available in Mid-Notts after 1pm due to the requirement for post procedure access to an on call cardiology interventionist.

### Treatment and Condition Management

Acute heart health services provides the breadth of specialist intervention across elective and emergency care, with regional services such as Primary Percutaneous Coronary Intervention (PPCI) delivered at NUH. In an emergency situation 63% of heart patients are taken by ambulance to ED, often resulting in an inter-facility transfer to services delivered on City Campus. Opportunities exist to consider the configuration of emergency heart health services to co-locate with ED at QMC Campus. The high acuity of heart health patients also requires access to higher dependency care. In Mid-Notts the lack of Coronary Care Unit (CCU) beds results in inter-facility transfers to Nottingham. Access to specialist advice and optimal interventions supports improvements in outcome and reduction in length of stay. For heart health this includes access to heart failure specialist nurses reaching into key inpatient areas to offer advice and treatment and supports onward referral to HF nurses at discharge. The delivery of Cardiac Physiologist services over 7 days to support cardiac investigations and interventions, as well as the interrogation of cardiac devices to provide timely advice, providing an opportunity to deliver early intervention and prevent admission.

Publications, such as the National Confidential Enquiry into Patient Outcome and Death (NCEPOD), recommends access to multi-professional teams across settings to improve outcomes. Increasing demand for HF has resulted in recommendations by the British Society for Heart Failure Nurse Forum of 2-4 HF nurses per 100,000 citizens to provide expertise to reduce admissions, improve outcomes and reduce the risk of dying, with up to 25% of HF patients nationally dying within 1 year of diagnosis. Opportunities exist across the breadth of heart health conditions to add expertise and capacity to specialist advice closer to home. Expertise can also support increasing the ceiling of treatment in the home, such as IV diuretics, delivering benefits to outcomes and experience, but also preventing the 'revolving hospital door' and avoidable admissions for people with HF.



### Treatment and Condition Management

Standard referral pathways underpins the delivery of consistent and evidence-based practice for heart health across the ICS. An optimal heart health pathway requires access to appropriate skills and experience across settings to deliver high quality treatment and care. A National Heart Failure Specialist Nurse Audit found that only 84% of teams had access to an MDT, that teams did not have representation from across professional groups and that not all were following evidence-based guidance e.g. NICE. A Network MDT approach provides an opportunity to bring professional groups together to optimise service delivery and minimise fragmentation through a coordinated approach. Locally, skills and capacity to deliver this approach is not consistently accessible or supported by effective ways of communicating to support shared decision-making across multiple teams in different settings. The development of integrated technology solutions, with visible and accessible information across settings and with the patient provides an opportunity to develop a local clinical network.

### Rehabilitation and Palliative/End Life Care

Cardiac rehabilitation (CR) is evidenced to favourably impact on cardiovascular mortality, from 10.4% to 7.6% following Myocardial Infarction (MI), and hospital re-admissions. NICE guidance stipulates that all patients should be given advice about and offered a cardiac education programme with an exercise component. The National Audit of Cardiac Rehabilitation (NACR) has a registry embedded within practice. This has found that the proportion of patients recruited to and taking up CR programmes increased to 50%, following improvement projects in collaboration with BHF and the British Association for Cardiovascular Prevention and Rehabilitation (BACPR). Across the UK there are negative trends in uptake following MI, especially for females (18 to 38%) and people from BAME groups. Locally, 78 to 97% of patients are referred to CR, although there are areas of the ICS where CR programmes are not accessible. Opportunities exist to increase uptake through a flexible offer e.g. timing, location and through access to home-based CR programmes such as REACH-HE, a new mode of rehabilitation delivery by NHS Digital, as well as local digital offer. CR programmes should also include Phase 1 to 4 components as patient and carer feedback highlighted that Phase 4 is not always offered and is highly valued by patients in supporting their confidence and promotes self-management. Locally, during COVID-19 online programmes have been offered, providing future opportunities to increase access. This supports the NHS LTP ambition to achieve 85% uptake to CR in the next 10 years, with scaling up of CR to prevent 23,000 premature deaths and 50,000 acute admissions in England. Other models of CR delivery have explored combining cardiac and pulmonary rehabilitation. As stated in the NHS LTP, education and physical activity components of CR can improve quality of life by 90%. Breathlessness, as a common symptom is shared by cardiac and lung conditions, as well as psychological conditions and physical de-conditioning. A generic model has been shown to be effective, with a commitment to test and learn sites to increase evidence base. Locally, a trial of a combined model evidenced benefits to exercise capacity and quality of life. Some parts of the ICS are already developing combined models, as well as access online delivery and a flexible offer, with opportunities to extend reach and access across the ICS.

Anxiety and depression is common for many patients with heart conditions, with 21.5% of HF patients having depression. Guidance promotes appropriate signposting to emotional and social support, including timely signposting to psychological therapies. Locally, Improving Access to Psychological Therapies (IAPT) is incorporated into CR programmes. However, access to other psychological therapies is limited and inequitable. Peer support groups also provide important support to patients and their families. Patient focus groups undertaken as part of the strategy development highlighted the value of peer support, with recommendations to ensure timely signposting to appropriate groups locally e.g. Cardiac Support Group, Heart to Heart.

HF is described as the final common pathway for many cardiac conditions and remains a progressive and ultimately fatal long term condition. There is growing recognition of the requirement to provide supportive and palliative care, despite this nationally only 6% of people are referred to palliative care. MDT working with contributions from health and social care is required to support coordination of care and avoid fragmentation, with personalisation of care central. Transition of care between settings is a particular risk in ascertaining responsibility for holistic assessment and intervention in line with patients' wishes. Tools such as the National End of Life Strategy, Gold Standards Framework and Preferred Priorities for Care are applicable and should be available. Locally, RESPECT forms to support Advance Care Planning are inconsistently completed across settings, with opportunities to complete in a timely manner to support care planning.

## 6. Proposed future care system

Home

### Planned/Scheduled

### Urgent – 24 hours

### Emergency/Crisis – 4 hours

#### Prevention and Self-care – Prevention of risk factors, Out of Hospital Cardiac Arrest, Education

- Increased awareness of risk factors –working with employers to increase uptake to health checks
- Access to equipment to support self-monitoring e.g. weight, BP, pulse oximeter with Web-based, assisted technology to record and know own numbers e.g. NHS App/PKB/My Heart App/Flo
- Development of a Heart Health passport e.g. NHS App/PKB/RECAP.
- First aid and defibrillator training, targeted to population with highest risk
- Mental health support to support self-care e.g. Let's Talk/IAPT
- Offer psychological support or know how to self-refer
- Access to support groups to provide peer support e.g. Heart to Heart
- Education to build confidence as feel frightened
- Education of patients and their families to support prevention and self-care, including the use of technology e.g. My Heart App, targeting hard to reach communities
- Use of technology to support monitoring in care homes e.g. Restore 2
- Advance Care Planning – Completion of RESPECT forms between GP and patient/carer
- Consistent access to reablement with clear communication between health and social care
- Education of HCP and communication between health and social care – supports awareness of specific conditions and who to contact with concerns e.g. Sharepoint

#### Sustainable by:

- Improved support and understanding of risks allows early prevention
- Promotes awareness to support self-care and independence

#### Detection and Diagnosis – Referral and Triage, Early Diagnosis and Intervention

- Consistent access to Heart Failure Nurses (2-4 per 100,000)

#### Sustainable by:

- Earlier intervention to improve outcome

#### Treatment and Condition Management – Acute Configuration, Community Care, Skills and Expertise in the Right Place

- Consistent access to Heart Failure Nurses 2-4 HF per 100,000
- Care plan and access to advice and support before and after discharge
- Access to information across settings and with the patient, with the use of technology to support this e.g. video consultation
- Clear and consistent communication with the patient to support awareness of treatment plans e.g. avoidance of/explaining medical terminology
- Single point of contact for patients to support navigation through care settings
- Access to specialist advice into the home e.g. HF nurses
- Increased ceiling of treatment to support patients staying at home

#### Sustainable by:

- Improved condition management to support self-care, confidence and reduce overall healthcare use

#### Rehabilitation and Palliative/End of Life Care – Access, Model

- Increased knowledge and confidence in supporting person-centred discussion regarding end of life care
- Access to palliative care services to ensure support in place in line with wishes
- Timely discussions regarding advanced planning and completion of RESPECT forms
- Access to online rehabilitation e.g. My Heart App/REACH-HF
- Signposting to peer support groups - shared experience and builds confidence
- Access to face to face rehabilitation within the home for patients unable to attend session

#### Sustainable by:

- Promoting self-care and independence

#### Prevention and Self-care

- Education of patient and carers – when and how to act
- Sustainable by:
- Promotes self-care and improved condition management
- Reduces future demand on emergency care

#### Prevention and Self-care

- Education of staff to support signposting in an emergency
- Referral pathway aligned with NEWS 2 to support appropriate action and signposting
- Patient access to health information and open access to EMAS to support triage and reduction in ED attendances
- Advice on what to do in an emergency
- EMAS access to information systems to support triage with access to advice to prevent ED attendance

#### Sustainable by:

- Promotes self-care and improved condition management
- Reduces future demand on emergency care

#### Treatment and Condition Management

- Access to advice to avoid crisis
- Sustainable by:
- May prevent acute admission

Colour KEY to information source: Steering Group Evidence Document/ Guideline Patient Engagement

**NOTE:** In further developing and implementing the proposals set out above as part of our focus, each partner organisation within the ICS will continue to ensure that they comply with their statutory duties and system/organisational governance processes, particularly (but not limited to) those relating to patient and public involvement; equality and inequality analysis

## 6. Proposed future care system

Neighbourhood

### Planned/Scheduled

### Urgent – 24 hours

### Emergency/Crisis – 4 hours

#### Prevention and Self-care – Prevention of risk factors, Out of Hospital Cardiac Arrest, Education

- Earlier identification of risk factors and signposting to approved and consistent education (NHS App/PKB)
- MECC principles and brief interventions, targeting earlier prevention in children
- Proactive testing and monitoring of high risk factors and comorbidities ,with access to self-monitoring results to support decision-making
- Monitoring of risk factors and signposting to advice and support
- Identification of Familial Hypercholesterolaemia in GP practices
- Access to services to support lifestyle change e.g. weight management, referral to gyms
- Education of HCP to support identification of signs/symptoms and when to act
- Access and signposting to specialist advice and support to promote self-management
- Access to PC network pharmacist or community pharmacist to optimise medication use

#### Sustainable by:

- Improved support and understanding of risks allows early prevention
- Promotes awareness to support self-care and independence
- Improved satisfaction through flexible offer

#### Detection and Diagnosis – Referral and Triage, Early Diagnosis and Intervention

- Access to NT- Pro-BNP blood testing to support early diagnosis of Heart Failure
- Access to ambulatory diagnostics in the community with visibility of results across settings
- Standardised referral pathways and templates via E-referral, with option to self-refer
- Advice and Guidance accessible across the system
- One stop services to support early intervention

#### Sustainable by:

- Reduces unnecessary diagnostic test
- Reduces demand on healthcare and delivers care closer to home

#### Treatment and Condition Management – Acute Configuration, Community Care, Skills and Expertise in the Right Place

- Access to specialist nurses across breadth of heart conditions e.g. HF 2-4 per 100,000
- Extended role to increase ceiling of treatment e.g. IV therapy in the home/counselling
- Development of ACP roles for 'cardiology' to increase access to expertise
- Rapid access chest pain clinic (seen within 2 weeks) to support consistent and timely monitoring
- Clear pathways to support escalation and de-escalation of care across settings
- Cooperation between specialists to provide treatment at the right time
- Network MDT to support coordination of treatment and condition management
- Integrated IT systems to support visibility of information across settings and with the patient
- Proactive monitoring to reduce exacerbation of condition
- Seamless discharge planning and communication

#### Sustainable by:

- Timely access to specialist advice and coordination of care to support condition management

#### Rehabilitation and Palliative/End of Life Care – Access, Model

- Access and timely referral to rehabilitation across all phases (2 to 4)
- Promotion of all phases of rehabilitation to build confidence and self-care
- Flexible offer – criteria, timing and location to increase uptake
- Combined heart failure and pulmonary rehab– with consideration to education components and expertise accessible
- Access to palliative care MDT to coordinate needs in collaboration with Hospice care
- Access to psychological therapies to support mental health concerns e.g. depression

#### Sustainable by:

- Promoting self-care and independence

#### Prevention and Self-care

- Education of GP to recognise early signs

#### Sustainable by:

- Promotes self-care and improved condition management
- Reduces future demand on emergency care

#### Detection and Diagnosis

- Access to same day GP appointment e.g. early signs of heart failure

#### Sustainable by:

- Reduces future demand on emergency care

#### Treatment and Condition Management

- Out of hours rapid access cardiac nurse to provide advice e.g. following chest pain/angina attack
- Access to services to support management of exacerbations

#### Sustainable by:

- May prevent acute admission

#### Detection and Diagnosis

- Referral to C4C within 2 hours by nurse practitioner

#### Sustainable by:

- Promotes self-care and improved condition management
- Reduces future demand on emergency care

Colour KEY to information source: Steering Group Evidence Document/ Guideline Patient Engagement

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## 6. Proposed future care system

### Planned/Scheduled

### Urgent – 24 hours

### Acute

### Emergency/Crisis – 4 hours

#### Prevention and Self-care – Prevention of risk factors, Out of Hospital Cardiac Arrest, Education

- Proactive response to identified risk factors to maximise treatment
- Risk factors and treatment incorporated into discharge planning
- MECC and signposting to lifestyle advice and interventions
- Education of HCP to support optimal treatment to prevent progression of heart condition
- Signposting patients to approved and trusted, user friendly resources – available in range formats and including technology e.g. NHS App/PKB/My Heart App
- HCP available to answer patient and family questions and signpost to peer support groups

#### Sustainable by:

- Improved support and understanding of risks allows early prevention
- Promotes awareness to support self-care and independence

#### Detection and Diagnosis – Referral and Triage, Early Diagnosis and Intervention

- Standardised pathways and evidence based guidance to develop a traffic light system for heart conditions accessible in central repository visible across settings
- Clinician support to increase skills and confidence of GPs to support referral and triage
- Consistent access to triage and A&G with standardised templates across the system
- System wide physician of the week to support A&G
- Open access clinics
- Consistent use of F12 to support referral to diagnostics e.g. ECHO
- CTCA equality of access and capacity to meet demand
- CMR equality of access and capacity across the system
- Direct to ECHO based on BNP result
- Consistent access to One Stop/ Angiography Query Proceed Model across the system
- Integrated IT systems to support visibility of information across settings and with the patient

#### Sustainable by:

- Early diagnosis and intervention supports condition management and reducing future demand on healthcare
- Enhanced coordination of care

#### Treatment and Condition Management – Acute Configuration, Community Care, Skills and Expertise in the Right Place

- CCU across Nottingham and Nottinghamshire
- Consistent access to an inpatient HF team– reaching into key areas
- Access to pharmacy to support poly-pharmacy
- Access to data from devices to support condition management e.g. Pacemaker/ICD
- Network MDT to support communication, Physiologist support to MDT (Pacemaker/ICDs)
- Integrated IT systems to support visibility of information across settings and with the patient
- Electronic prescribing/discharge to support continuity of care/transfer of care

#### Sustainable by:

- Reduces overall healthcare demand
- Improves access to specialist advice and coordination of care to

#### Rehabilitation and Palliative/End of Life Care – Access, Model

- Referral to and seen by cardiac rehabilitation specialist nurse pre-discharge (Phase 1)
- Advice and support pre-discharge to answer patient and carer questions
- Consistent pathway and referral to Phase 2, 3 and 4 rehabilitation

#### Sustainable by:

- Promoting self-care and independence

#### Prevention and Self-care

- Education of patient and carers – when and how to act
- Sustainable by:
- Promotes self-care and improved condition management
- Reduces future demand on emergency care

#### Detection and Diagnosis

- Access to ECHO within 24 hours for Acute Heart Failure
- 7 day access to ECHO
- System-wide 'Hot week' service for urgent GP queries
- Direct speciality access
- Direct referral from professional in system

#### Sustainable by:

- Early intervention and improved condition management

#### Treatment and Condition Management

- Access to 7 day pacing across the system
- Access to urgent interventions e.g. Pacemaker/ICD
- Access to catheter labs 7 days a week
- System-wide on call
- 7 day access to specialist advice

#### Sustainable by:

- May prevent acute admissions

#### Prevention and Self-care

- Access to advice/signposting for people with chest pain/angina attack to avoid ED attendance e.g. on call cardiologist

#### Sustainable by:

- Promotes self-care and improved condition management
- Reduces future demand on emergency care

#### Detection and Diagnosis

- Access to PPCI within 90 minutes of admission – red phone direct with EMAS
- Access to specialist advice in ED
- Direct cardiology referral for bradycardia
- Pathway for chest pain (most common ED problem)
- Signposting to correct site e.g. diagnosed heart attack or heart rate below 50 bpm to City Campus
- Physiologist reaching into ED for arrhythmia to support ECG/cardioversion/discharge

#### Sustainable by:

- Early intervention and improved condition management

#### Treatment and Condition Management

- Co-location of ED and Emergency Cardiology
- Acute heart failure pathway for early intervention

#### Sustainable by:

- Early intervention and improved condition management
- Reduces inter-facility transfers

Colour KEY to information source: Steering Group Evidence Document/ Guideline Patient Engagement

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## Availability

4 hours  
or less

24/7

### Acute/ MH Hospital

- Access to PPCI within 90 minutes of admission
- Signposting from ED to appropriate clinic for ongoing care
- Visibility of information to support correct signposting
- Co-location of emergency cardiology on one site, including CCU and PPCI
- On call cardiologist and physiologist, with opportunities for joint working across the system

### Neighbourhood

### Home

Urgent  
Care/  
within 24  
hours

7 days

- Access to diagnostics within 24 hours e.g. ECHO
- Access to urgent interventions e.g. Pacemaker/ICD
- On call cardiologist and physiologist, with opportunities for joint working across the system
- 7 day access to Cardiac Assessment Team support

- Education of GP to recognise early signs with access to specialist advice via on call
- Access to same day GP appointment

- 999/111 response – with referral pathway and education to support appropriate triage aligned with NEWS 2
- Open access to EMAS to support triage and reduction in ED attendances
- EMAS access to information systems to support triage with access to advice to prevent ED attendance
- Referral to C4C within 2 hours by nurse practitioner
- Education of patient and carers - when and how to act
- 111 response

Scheduled

Appt  
based

- MECC, signposting to lifestyle interventions/support groups and proactive response to identified risk factors to optimise treatment
- Education and support to GP and health and social care professionals to develop skills and experience
- Standardised pathways and guidance for heart conditions visible across settings
- Consistent triage and advice and guidance
- Diagnostic capacity to meet demand e.g. CTCA/CMR with direct to test referral e.g. ECHO from GP and professionals with specialist skills
- Open access clinics for chest pain
- One stop/ angiography query proceed model available all day across the system
- Access to specialist advice, across professional groups, reaching into key inpatient areas e.g. admissions/HCOB
- Electronic prescribing and discharge planning to support seamless transfer of care
- Network MDT, with inclusion of Physiologist, to support decision-making, coordination of care and communication across settings
- Integrated IT systems to support visibility of information, including data from self-monitoring devices, to support timely decision making and person-centred care and avoid admission where possible
- Referral to and seen by cardiac rehabilitation specialist nurse pre-discharge (Phase 1) with consistent referral and pathway to Phase 2, 3 and 4

- Earlier identification of risk factors, with focus on health checks, proactive monitoring and early signposting to approved and consistent education (NHS App/PKB/My Heart App and referral to services to support interventions e.g. weight management services)
- Education of HCP to support identification of signs/symptoms and when to act
- Consistent access to NT-Pro BNP to support early diagnosis of Heart Failure
- Consistent access to ambulatory diagnostics in the community, e.g. ECG, 24 hour tape, with visibility of results across settings and development of one-stop models for heart health conditions
- Standardised referral pathways, guidance and templates e.g. E-referral
- Consistent triage and advice and guidance for all professionals
- Equitable access to specialist advice to national guidance e.g. 2-4 HF nurse per 100,000, with opportunities to develop extended roles e.g. ACP for cardiology and increase ceiling of treatments possible
- Network MDT to support coordination across settings, with clear pathways to support escalation/de-escalation of care
- Integrated IT systems to support visibility of information across settings and with the patient to support person-centred care, shared decision-making and seamless transfer of care
- Equitable and consistent access to rehabilitation (Phase 2, 3 and 4), with a flexible offer e.g. timing/location
- Combined Cardiac and Pulmonary rehabilitation
- Access to palliative care MDT to coordinate end of life care

- Increased awareness of risk factors, targeting high risk groups, with consistent health promotion and services to address lifestyle risk factors
- First aid and defibrillator training, targeting high risk groups and children to increase skills/confidence of the future generation
- Access to trusted and approved education to support patient and families, with use of technology e.g. NHS App/PKB/My Heart App
- Web-based assistive technology to record and know your own numbers e.g. NHS App/PKB/My Heart App, with access to devices to support self-monitoring and communication between HCP and with the patient
- Technology to support virtual consultations allowing connections with multiple professions across health and social care at home
- Equitable access to specialist advice and support, with a single point of contact to support patients navigating care
- Access to specialist staff expertise to deliver more interventions in the home
- Mental health support for patients and families e.g. Let's Talk/IAPT, with signposting to peer support groups e.g. Heart to Heart / Cardiac Support Group
- Consistent access to reablement with clear communication between health and social care
- Timely, person-centred discussion regarding advance planning and access to palliative care to support patients and their families
- Access to online rehabilitation e.g. PKB/My Heart App/REACH-HF, with access to face-to-face rehabilitation at home when required

**Whole system  
Education Programme  
for Heart Health cutting  
across the ICS for:**

- ICS Population – to support prevention
- HCPs – to support consistent practice
- Patients – to support self-management

**High  
Priority**

Far more needs to be done to raise awareness of the prevention opportunities linked to heart health, from addressing lifestyle risk factors through to helping people with heart health conditions manage their long-term condition.

Education for the ICS population on risk factors (obesity, physical activity, diet, smoking and alcohol) needs to be made readily available from trusted and approved sources both printed and online (e.g. NHS App). Self-management tools, such as My Heart App, should also be promoted as approved resources available for people to complement the existing Face to Face (F2F) offer. Engagement with public leaders, social prescribers and link workers should be encouraged to support BAME citizens and deprived communities to reduce health inequalities. Providing easy access to trusted resources for the ICS population (e.g. NHS App/ PKB) to promote education, advice and support is evident in preventing conditions from developing, but also in seeking accurate and up-to-date self-management.

Access to consistent and equitable services, such as weight management services, to address risk factors will support a reduction in cardiovascular risk of local citizens. A directory of resources and services for heart health will support consistent and equitable signposting to information and services to support prevention and self care. This should include lifestyle, physical and mental health (e.g. IAPT) as well as social care.

Education of the population provides an opportunity to increase skills and confidence in responding to a OHCA. This should include working in partnership with schools, colleges and employers to develop and deliver training. Access to a defibrillator is vital in this emergency situation and working in partnership with charities, such as the BHF, provides an opportunity to develop access to this equipment across Nottingham and Nottinghamshire. This could also include the use of technology to quickly identify the location of this equipment.

A system-wide approach to education of HCPs will ensure the delivery of consistent and evidence-based practice across all settings. Embedding training delivery across the ICS will support increased knowledge and confidence in heart health condition management and should include professionals across health and care. This can also increase opportunities to enhance roles, such as community pharmacists in improving medicine optimisation for heart health risk factors.

**Impact & Benefit**

- Enhanced prevention to reduce CVD risk
- Improved self-care and condition management
- Reduction in OP attendances and DNA rates as patients don't require multiple attendances at various locations

**Alignment** – To deliver a whole system education programme it is key that a universal approach is taken and alignment across the ICS to ensure consistent and equitable education of citizens, patient and healthcare professionals



### Early **detection** and optimal **treatment** of **risk factors**

- Maximising uptake of the NHS Health Check
- Proactive monitoring for people at high risk and signposting to services and optimising treatment
- Increasing use of self-monitoring devices with connections between HCP and the patient

### **Med Priority**

As prevention and self-care approaches and enhanced education of HCP are developed to support reduction in CVD risk factors, more needs to be done to detect high risk factors. This should focus on identifying people with AF, high BP and cholesterol (ABC), including opportunities to increase the detection of FH to support signposting to the FH service. EHealthScope provides important information to identify people with high risk factors and will support a targeted approach to support addressing health inequalities in the ICS. Maximising uptake of Health Checks through an advertising campaign using a range of formats provides an important opportunity to detect risk factors. Provision in a variety of settings, including GP, community pharmacy, workplace, leisure centres, further enhancing opportunities to attend. For communities with higher risk and a lower uptake to Health Checks a more targeted approach should be considered, utilising contact with voluntary groups, public leaders and link workers to reach into communities to enhance uptake.

Technology provides an important opportunity to support people knowing their numbers through the use of self-monitoring e.g. weight, blood pressure, pulse oximeter. This should include a clear pathway for action if irregular results are detected, to support connections between the person and the HCP allowing the commencement of treatment and/or signposting to lifestyle interventions. Flo, is an example of a text messaging system, that could be utilised to send text reminders to patients and for results and actions to be communicated.

As well as detection, further action needs to be taken to support optimal treatment of risk factors. This should include consideration to the range of interventions, including lifestyle change, with consistent and equitable access and signposting to services. Access to a PCN or community pharmacy is also important to support person-centred conversations to optimise medication use.

#### **Impact & Benefit**

- Earlier Identification and intervention
- Reduction in complications
- Improved experience for healthcare professionals and the patient
- Reduction in healthcare costs

**Alignment** - For improved detection and optimal treatment of risk factors alignment at an ICP level will support maximising uptake to NHS Health Checks and proactive monitoring of high risk patients



## Early and accurate diagnosis of heart conditions

- Developing consistent local access to BNP and ambulatory diagnostics
- Consistent direct to test offer
- Adequate capacity for acute diagnostic offer
- One stop models for heart conditions
- Angiography One stop query proceed model available all day across the system
- Consistent triage, advice and guidance

### High Priority

As the heart health transformation proposals evolve supporting improved prevention and detection, more needs to be done to support the early diagnosis of heart conditions. This should include specific consideration to the diagnostic offer in the community. NT-proBNP as a rule in/out diagnostic measure for HF provides an opportunity to support earlier diagnosis of HF. Use in primary care could help deliver up to a 50% reduction in likely unnecessary echocardiograms. System wide guidance is already available and consistent use of this measure can be implemented at pace.

Incorporation of guidance in referral pathways will support adoption of this measure. Extending E referral requests for echocardiogram within the Integrated Clinical Environment (ICE) to Nottingham will support consistency across the ICS in the effective management of echocardiogram requests aligned with NT-proBNP use. Community diagnostic offer can be further enhanced by increasing access to a range of ambulatory diagnostics e.g. ECG, 24hr tape, patient activated monitors, BP monitors. With consideration to demand, equipment and appropriate estate this could include scoping one day diagnostic models including ECHO in the community.

Early diagnosis can be further enhanced by a consistent direct to test offer, accessible to all specialist HCP working in community settings to request diagnostics in the acute setting. As the diagnostic requirement in the acute setting evolves due to emerging best practice evidence, adequate capacity should also be considered to support equitable access to diagnostics such as Coronary Computed Tomography (CTA) and Cardiac Magnetic Resonance Imaging (CMR).

Streamlining the diagnostic offer across acute and community settings supports the further development of 'one stop' models across the breadth of heart health conditions and should be delivered in the community setting where possible. 'Query proceed' supports intervention at the decision to treat. At present Angiography Query Proceed is not equitably available across Nottingham and Nottinghamshire. Agreement on system wide on call arrangements will support consistent delivery through the extension of the offer beyond 1pm in Mid-Notts.

To support the ambitions for early diagnosis and intervention consistent triage and advice and guidance should be available and utilised across the system.

### Impact & Benefit

- Earlier identification and intervention
- Reduction in unnecessary ECHO, reducing demand
- Improved patient experience by reducing attendances
- Reduced mortality and morbidity

**Alignment** – Improved early diagnosis of heart conditions should be aligned at an ICS level to ensure consistent and equitable access

**Standardise** and innovate the service model with consistent **pathways**, a Network MDT and **enhanced technology** to connect the system and the patient

### Med Priority

As well as supporting appropriate triage, advice and guidance, standardised pathways support the delivery of consistent and evidence based practice. Further development of pathways across the breadth of heart health conditions is required to achieve this ambition. Visibility and ease of access to HCP will support delivery and the development of skills and expertise across the system.

The development of a Network MDT for heart health will support communication, workforce development and coordination of care for patients based on the principles of shared decision-making. The evolving use of technology, such as virtual consultations and self-monitoring devices, and interoperability of systems will support connections across the system, both between HCP and with the patient.

### Impact & Benefit

- Reduction in referrals to secondary care
- Reduction in attendances across settings
- Enhanced patient experience

**Alignment** – Standardising the service model and delivery of a Network MDT should be aligned at an ICS level.

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### Access to specialist skills across the ICS which includes:

- Community nursing, ACP role with single point of contact and increased ceiling of treatments
- Rapid access clinics and reaching into inpatient areas
- Access to advice to support home monitoring
- Access to reablement and palliative care teams

**High  
Priority**

Access to specialist skills contributes to improved outcomes and experience, as well as reducing hospital admissions and length of stay (LoS). Enhanced community provision of specialist skills, such as HF specialist nurse, supports timely access to advice. Expertise in the community setting should be considered across the breadth of heart health conditions, with the possible development of Advanced Clinical Practitioners. To improve patient and carer experience a single point of contact should also be identified. Pathways for HF should also consider opportunities to increase the ceiling of treatment available in or close to the home aligned with hospital care.

Chest pain represents one of the most significant presentations in ED. Signposting to rapid access clinics supports the prevention of admission. In the acute setting, opportunities exist for specialist nurses to reach into inpatient areas to provide expert advice to optimise treatment and facilitate discharge. For HF this should include areas such as admission units and Health Care of Older People (HCOP) wards. This will also support education opportunities of ward teams to enhance skills and confidence in treating heart health conditions.

Technology supports connections between the patient and specialist skills, such as Flo to support monitoring of weight for people with heart failure. The cardiac physiologist role is pivotal in providing advice to prevent admission. The inclusion of the cardiac physiologist in the MDT will support shared-decision making in relation to cardiac devices. Interoperability of IT systems and with virtual connections with the patient can support coordination of care.

Access to palliative care and early conversations regarding advance care planning are inconsistent across the system. Consideration should be made to access to palliative care teams as well as education on the completion of RESPECT forms in a timely manner. Social care needs and access to reablement should also be considered.

#### Impact & Benefit

- Reduced admissions
- Enhanced patient experience
- Delivery of care closer to home
- Timely and person-centred end of life care

**Alignment** – to increase access to specialist skills that achieves equity of provision, alignment should be at an ICS level.

### Improved access & sharing of patient information for paramedics attending an emergency:

- Individual patient records
- With GP and on call cardiologist

**Med  
Priority**

Paramedics attend patients' homes in an emergency situation responding to the breadth of heart health conditions. Education of paramedics will support the development of skills and experience and appropriate signposting. The development of a referral pathway aligned with the National Early Warning Score (NEWS 2) will also support appropriate action.

To facilitate decision-making it is vital that paramedics have access to information systems to support triage and prevent ED attendance where possible. Patient open access to the East Midlands Ambulance Service (EMAS) will also support this ambition.

#### Impact & Benefit

- Reduction in ED attendances
- Improved signposting to the right setting

**Alignment** – An integrated approach to the development of information sharing should be aligned at an ICS level.





24/7 access to specialist treatment:

- Access to CCU at both acute trusts
- Co-location of emergency cardiology with ED at NUH
- On call cardiologist and physiologist with opportunities for joint working

### Med Priority

Whilst optimising education and information sharing to support paramedic staff signposting to the correct location, further consideration is required to the future optimal configuration of heart health emergency provision to meet the ambitions of right place, first time. Whilst there would be some efficiencies in co-locating elective and emergency cardiology on one site in Nottingham, the key priority is to co-locate ED and emergency cardiology on the QMC Campus to reduce the requirement for inter-facility transfer. The potential for a co-located elective and emergency model would need to be considered alongside the configuration of other services. The co-location of emergency cardiology and ED in Nottingham will require consideration of the required infrastructure and workforce, including evaluation of the necessary expertise to provide 24 hour coverage alongside likely demand.

To support an equitable approach consideration is also required to the access to CCU beds at SFH to ensure appropriate support for high acuity patients and prevent inter-facility transfers to Nottingham.

24/7 access to specialist treatment also requires consideration to the skills and expertise available and opportunities to further enhance joint working across the system. This includes the role of the cardiac physiologist over 7 days to support diagnostics and interventions, but also to provide advice and support remotely to patients with cardiac devices, reducing the possibility of admission.

#### Impact & Benefit

- Reduction in inter-facility transfer
- Reduced admissions
- Reduction in on call burden due to remote monitoring

**Alignment** – To develop 24/7 access to specialist treatment across the system, alignment should be at ICS level

**Equitable and timely  
access to  
rehabilitation:**

- Combined cardiac and pulmonary model
- Clear pathways to access Phase 1 to 4 rehabilitation
- Flexible offer group, online and into home
- Anxiety management, IAPT/ CBT as part of rehabilitation and proactive signposting to local support groups

### High Priority

CR delivered with an education and exercise component supports self-care, optimal condition management, improved quality of life and reduced admissions. Delivering equity of access and taking steps to increase uptake are important considerations to meet the ambitions of the NHS LTP. Evidence supports a combined cardiac and pulmonary model which can increase reach and inclusivity of all conditions in a future rehabilitation offer and overcome gaps that currently exist in the system. Any future model should consider access to relevant expertise at the point of delivery and include a referral pathway for all phases of rehabilitation (Phases 1 to 4) to build knowledge and confidence to support self-care. Increased uptake can also be achieved by a flexible offer, with consideration to timing and location. This should consider groups with lowest uptake e.g. women, BAME groups. Online rehabilitation programmes are available nationally and locally and should be made accessible across the system for people who would prefer this method of delivery.

Anxiety and depression are associated with heart health conditions. A future model of CR should continue to include IAPT within the educational component of the programme. The pathway should also include signposting to other psychological support for people with long term conditions (LTC)). Peer support groups provide a valuable source of support to patients and their carers. HCP should be aware of the peers support groups available across the ICS to support timely and proactive signposting to groups.

#### Impact & Benefit

- Improved access and uptake
- Enhanced self-care and patient experience
- Reduced admissions
- Inclusivity of all condition requirements in rehabilitation

**Alignment** – For cardiac rehabilitation to be accessible equitably across the system alignment should be at an ICS level.

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# Heart Health Transformation Proposal Summary

	Priority (High/ Med/ Low)	Alignment (ICS/ ICP/ PCN)	Workforce	Technology	Estate/ Configuration	Finance/ Commissioning	Culture	Benefits (*Less than £20,000 per QALY is cost effective)
<b>Whole System Education Programme</b> for Heart Health cutting across the ICS for: <ul style="list-style-type: none"> <li>ICS Population –to support prevention</li> <li>HCPs – to support consistent practice</li> <li>Patients – to support self-management</li> </ul>	High	ICS	<ul style="list-style-type: none"> <li>Social prescribers and link workers</li> <li>Investment in social care, OT and mental health across settings</li> <li>Education of HCP e.g.GP/community/acute teams</li> <li>Education of teams to support End of Life</li> </ul>	<ul style="list-style-type: none"> <li>Further App and other online development to support consistent and approved resources</li> <li>Standardised approach to app use across the system e.g. PKB</li> </ul>		<ul style="list-style-type: none"> <li>Equitable access to referral schemes</li> <li>Partnership buy in with funding not fragmented</li> </ul>	<ul style="list-style-type: none"> <li>Move to holistic care not task orientated</li> <li>Addressing health inequalities and reaching communities</li> <li>Co-production system wide</li> <li>Timely End of Life Care</li> </ul>	<ul style="list-style-type: none"> <li>Enhanced prevention to reduce CVD risk</li> <li>Improved self-care and condition management</li> <li>Reduction in OP attendances and DNA rates as patients don't require multiple attendances at various locations</li> </ul>
<b>Early detection and optimal treatment of risk factors</b> <ul style="list-style-type: none"> <li>Maximising uptake of the NHS Health Check</li> <li>Proactive monitoring for people at high risk and signposting to services and optimising treatment</li> <li>Increasing use of self-monitoring devices with connections between HCP and the patient</li> </ul>	Med	ICS	<ul style="list-style-type: none"> <li>Utilise voluntary contacts/collaboration with organisations to increase health checks</li> <li>PN/HCA/Community nurses to support detection and self-monitoring – capacity and training</li> <li>Access to services to address risk factors e.g. weight management</li> </ul>	<ul style="list-style-type: none"> <li>Use of Flo as a text messaging system to support communication between HCP and patient, with clear pathways for action based on results</li> <li>Use of EHealthScope to identify high risk factors</li> </ul>	<ul style="list-style-type: none"> <li>Consistent access to anticoagulation and consideration to increased community provision in the future</li> </ul>	<ul style="list-style-type: none"> <li>Funding of services to address lifestyle risk factors</li> <li>QOFF for annual reviews</li> <li>Funding for Flo to support self-monitoring</li> </ul>	<ul style="list-style-type: none"> <li>Incentives to support patient uptake to health checks</li> <li>Be aware of what has worked well to develop and bring skills together</li> <li>Everyone's business to address risk factors</li> </ul>	<ul style="list-style-type: none"> <li>Earlier Identification and intervention</li> <li>Reduction in complications</li> <li>Improved experience for healthcare professionals and the patient</li> <li>Reduction in healthcare costs</li> </ul>
<b>Early and accurate diagnosis of heart conditions</b> <ul style="list-style-type: none"> <li>Developing consistent local access to BNP and ambulatory diagnostics</li> <li>Consistent direct to test offer</li> <li>Adequate capacity for acute diagnostic offer</li> <li>One stop models for heart conditions</li> <li>One stop angiography query proceed model available all day across the system</li> </ul>	High	ICS	<ul style="list-style-type: none"> <li>Access to phlebotomy</li> <li>Education to make BNP routine</li> <li>Workforce and training to deliver one stop and angiography query proceed model</li> <li>Possible ACP role in balance with specialist roles and trained to Masters level</li> <li>Up skill of staff to complete/undertake local clinics.</li> <li>Additional capacity e.g. specialist nurses to deliver one stop model</li> </ul>	<ul style="list-style-type: none"> <li>Technology to support uptake of BNP within the Heart Failure pathway</li> <li>Adapt ECHO referral to include BNP within ICE</li> <li>Access to ambulatory diagnostics e.g. 24 hr tape, patient activated monitors, BP monitors, ECG, Life Cord</li> </ul>	<ul style="list-style-type: none"> <li>Utilisation of existing local hubs and PCN resource</li> </ul>	<ul style="list-style-type: none"> <li>Funding for diagnostics and one stop models across the system</li> </ul>	<ul style="list-style-type: none"> <li>Campaign to support BNP uptake</li> <li>Commitment to one stop models</li> <li>built into the pathways</li> <li>Partnership working across the system</li> </ul>	<ul style="list-style-type: none"> <li>Earlier identification and intervention</li> <li>Reduction in unnecessary ECHO, reducing demand</li> <li>Improved patient experience by reducing attendances</li> <li>Reduced mortality and morbidity</li> </ul>
<b>Standardise and innovate the service model with consistent pathways, a Network MDT and enhanced technology</b> to connect the system and the patient	Med	ICS	<ul style="list-style-type: none"> <li>System contact for patients self-monitoring to provide support and advice</li> <li>Education and shared learning across settings</li> <li>MDT links to support network approach</li> </ul>	<ul style="list-style-type: none"> <li>Technology to support remote monitoring and virtual consultation</li> <li>Shared information and access across health and care</li> </ul>		<ul style="list-style-type: none"> <li>Funding for patients to access technology for self-monitoring</li> </ul>	<ul style="list-style-type: none"> <li>Partnership working</li> <li>Development of community in-reach/outreach</li> <li>Enhanced communication</li> </ul>	<ul style="list-style-type: none"> <li>Reduction in referrals to secondary care</li> <li>Reduction in attendances across settings</li> <li>Enhanced patient experience</li> </ul>

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# Heart Health Transformation Proposal Summary

	Priority (High/ Med/ Low)	Alignment (ICS/ ICP/ PCN)	Workforce	Technology	Estate/ Configuration	Finance/ Commissioning	Culture	Benefits (*Less than £20,000 per QALY is cost effective)
<b>Access to specialist skills</b> across the ICS which includes: - Community nursing, ACP role with single point of contact and increased ceiling of treatments - Rapid access clinics and reaching into inpatient areas - Access to advice to support home monitoring - Access to reablement and palliative care teams	High	ICS	•Workforce ,skill mix and competencies required •Enhanced psychological/communication training •Possible ACP roles to Masters level in balance with specialist skills •Access to palliative care MDT earlier •Specialist skills to interpret home monitoring results •Utilise pharmacist skills	•Technology to support connections across settings/professionals to get specialist advice quickly •Access to virtual consultation platform •Connections with home monitoring devices	•Access to ambulatory setting for IV diuretics	•Additional funding to achieve 2-4 per 100,000 specialist workforce requirements per population. For HF •Funding for possible ACP role	•Pragmatic risk management to deliver interventions closer to home	• Reduced admissions • Enhanced patient experience • Delivery of care closer to home • Timely and person-centred end of life care
<b>Improved access &amp; sharing of patient information</b> for paramedics attending an <b>emergency</b> : - Individual patient records - With GP and on call cardiologist	Med	ICS	•Education of paramedic workforce	•EMAS connectivity to all systems with ease of access to all patient records e.g. ECHO			•Partnership working	• Reduction in ED attendances • Improved signposting to the right setting
<b>24/7 access to specialist treatment:</b> - Access to CCU at both acute trusts - Co-location of emergency cardiology with ED at NUH - On call cardiologist and physiologist with opportunities for joint working	Med	ICS	•Education of teams to signpost to the right setting •Physiologist workforce to support 24/7 delivery across the ICS	•Technology and connectivity to support visibility of information by HCP and with the patient	•CCU in Nottingham and Nottinghamshire •Co-location of emergency cardiology with ED at NUH		•System understanding of pathway to support appropriate signposting e.g. PPST to NUH as tertiary centre	• Reduction in inter-facility transfer • Reduction in on call burden due to remote monitoring
<b>Equitable and timely access to rehabilitation:</b> - Combined cardiac and pulmonary model - Clear pathways to access Phase 1 to 4 rehabilitation Flexible offer group, online and into home - Anxiety management, IAPT/ CBT as part of rehabilitation and proactive signposting to local support groups	High	ICS	•Workforce to deliver combined model with skills/ competence to meet national standards •Designated heart nurses/AHP to deliver programmes •Flexible to offer different levels of rehabilitation across acute and chronic conditions •Consistent access to Let's Talk Wellbeing /IAPT	•Online rehabilitation to support blended approach •Technology to support delivery and patient accessibility •Hybrid model of delivery inclusive of virtual models	•Venues and locations to deliver flexible offer	•Funding and commissioning for virtual and hybrid models •QOFF code for rehabilitation model as per current pulmonary rehabilitation model	•Behaviour change for staff to support combining of roles to deliver a combined model	• Improved access and uptake • Enhanced self-care and patient experience • Reduced admissions • Inclusivity of all condition requirements in rehabilitation

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<b>Workforce</b>	<p>Enhancing the future health and social care for heart health services, requires the following considerations for workforce:</p> <ul style="list-style-type: none"> <li>• Widespread training of healthcare professionals (HCPs) to empower them to signpost to appropriate resources and services and provide best practice advice to support self-care and condition management.</li> <li>• Workforce capacity and education to support proactive detection of high risk factors and self-monitoring, including Practice Nurses, Healthcare Assistants (HCAs) and community nurses</li> <li>• Consistent access to specialist skills across settings e.g. HF specialist nurses , possible ACP role and cardiac physiologists.</li> <li>• Cross pathway working (primary, secondary and community care) with specific development and expansion of the multi-professional team to meet best practice guidance and support shared decision-making and person-centred care.</li> </ul>
<b>Technology</b>	<p>The main areas in which technology can effect transformation for heart health care include:</p> <ul style="list-style-type: none"> <li>• Developing an integrated IT system for the heart health pathway to support visibility of information across settings</li> <li>• Trusted and approved resource development for signposting and self-care, with common understanding amongst HCPs - based on NHS App/PKB</li> <li>• Increased use of tele-medicine using virtual consultations and online education to deliver care closer to home</li> <li>• Use of self-monitoring and cardiac devices with connections between the patient and the HCP, such as Flo, to support optimal condition management</li> </ul>
<b>Estate</b>	<ul style="list-style-type: none"> <li>• Access to community hub space required to support enhanced diagnostic and community delivery e.g. one stop models</li> <li>• It is crucial to deliver some educational activity in alternative community locations to ensure better local access to some of the more remote areas of higher deprivation or cultural/ethnic diversity</li> <li>• Optimal configuration of emergency services , including co-location of emergency cardiology with ED in Nottingham, including associated infrastructure, and high acuity CCU beds in Nottinghamshire</li> </ul>
<b>Culture</b>	<ul style="list-style-type: none"> <li>• Acknowledgement that people live, work, learn and play within the system and partners should work together to implement a whole system approach to prevention</li> <li>• Collaboration and trust across organisational boundaries to deliver the future model in support of self-care and condition management</li> <li>• Promoting person-centred care and shared decision-making</li> </ul>

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# Bridge to the Future

## Heart Health Services Future Vision:

From...

To...

**Phase 1**  
1<sup>st</sup> year

**Phase 2**  
2-3 years

**Phase 3**  
5 years +

### Prevention & Self-Care

- Develop a directory of education resources considering areas of high risk
- Work with schools/colleges and employers to scope education and equipment linked to OHCA
- Education development for HCP, including social care
- Scope and agree Apps/platforms to support self-monitoring

- Roll out directory of resources
- Develop training and equipment requirements for OHCA
- HCP education to embed strategies and brief interventions
- Standardised access to services to address risk factors e.g. weight management
- Technology development to extend online education e.g. My Heart App

- Embedding as normal practice all education and prevention approaches
- Evaluate and adapt to evolving needs and technology

- Consistent and equitable prevention and self-care through wide-spread public awareness, education and signposting
- Equitable access to health checks, with consistent signposting and services to address risk factors, targeted to high risk groups
- Consistent evidence-based practice to support prevention, treatment and self-management
- Embedded self-monitoring to optimise prevention and self-care

### Detection & Diagnosis

- Develop local health check offer
- Roll out of BNP across the ICS
- Develop plans to access ambulatory diagnostics, aligned with acute offer
- Develop pathway to align diagnostics with expertise to deliver one stop
- System solution to on-call to deliver consistent angiography query proceed

- Consistent health check offer
- Development of local community hubs (and possible mobile unit ) to deliver consistent diagnostic and one stop model
- Consistent query proceed in place across the system

- Embed approaches to detection and diagnosis
- Diagnostic hubs configured more widely (within community hubs) to provide the local access requirements defined

- Consistent and embedded use of BNP as a diagnostic measure to rule in/out Heart Failure
- Consistent access to ambulatory diagnostics across the community to support early diagnosis
- Equitable access to direct to test available to all specialist healthcare professionals
- System-wide availability of one stop angiography query proceed model to support early diagnosis and intervention

### Treatment & Condition Management

- Define and develop unified pathway across settings for the system – guidelines developed and work towards these
- Scope specialist advice required across professions, with access to advice and guidance
- Define high acuity CCU requirement at SFH
- Define co-located model at NUH
- Technology requirement defined

- Pathway approved by APC and embedded, building MDT and partnership working
- System workforce agreed, with recruitment and education plan
- Plans and business cases for CCU and co-located model at NUH developed aligned with system ambitions
- Technology requirement implemented

- Continuous evaluation of pathway to ensure seamlessly working for patients across the ICS
- Configuration delivery of high acuity beds at SFH
- Long term vision of co-located model further developed
- Interoperable technology embedded to support pathway delivery

- Clear pathways across the system with a network MDT to support joint working
- Consistent and coordinated access to specialist advice
- CCU at SFH to support patients with higher acuity
- Co-located ED and emergency cardiology at NUH reducing inter-facility transfer
- Integrated technology, including easy access to patient records for EMAS, to support navigation

### Rehabilitation & Palliative/End of Life Care

- Develop combined model with access to trained staff at point of delivery
- Scope flexible delivery e.g. fitness environments, with development of online offer
- Consistent mental health offer in rehabilitation/scope additional requirements
- Define RESPECT process, scope training needs and palliative rehabilitation model

- Implement combined model, with consideration to workforce requirements
- Implement pathway to ensure appropriate mental health support, with consistent access to training and specialist advice
- Consistent signposting to support groups
- ReSPECT form completion embedded and in consistent use

- Embedded combined model of rehabilitation, with flexible offer and access to online offer to increase access and uptake
- Consistent completion of RESPECT to support end of life care for patients and their families

- Equitable and flexible rehabilitation offer, combined with pulmonary rehabilitation to increase reach and uptake
- Clear communication and coordination between health and care to support reablement
- Consistent access to mental health support in rehabilitation offer and beyond, signposting to peer support groups
- Timely person-centred advanced care planning to support end of life care

## Conclusions

The review of heart services as part of the development of a Clinical and Community Services Strategy for Nottingham and Nottinghamshire ICS has been undertaken using a co-design model where patients, carers, key stakeholders and voluntary sector groups have collaboratively worked together to shape a vision for the future care system. The four key themes for improvement identified are:

- Prevention and Self-Care (with emphasis on education of the population and patients and signposting to prevention and self-care strategies, education of the population to enhance skills and confidence in responding to a OHCA, education of HCP to deliver evidence based practice);
- Detection and Diagnosis (improving detection and optimal treatment of risk factors, enhanced community diagnostic offer, one stop and query proceed models to support early intervention);
- Treatment and Condition Management (standardised pathways and a network MDT, consistent access to specialist advice across settings, enhanced use of technology to support self-monitoring and connections across the system, signposting and configuration of emergency services with access to appropriate skills and experience);
- Rehabilitation and Palliative/End of Life Care (delivering a combined cardiac and pulmonary model, a flexible offer to increase uptake, timely access to psychological therapies, peer support groups and palliative care)

The review describes a future care system in optimal care settings and with care provided at different levels of urgency and envisages 4 high priority programmes to transform care:

- **High** – Whole system Education Programme cutting across the ICS
- **High** – Early and accurate diagnosis of heart conditions
- **High** – Access to specialist skills across the ICS
- **High** – Equitable and timely access to rehabilitation

To achieve these there are a range of enabling requirements for the ICS across workforce, estate, technology, culture and financial systems. Collectively these initiatives can transform and provide long term health improvement and sustainability in the area of heart health care in the Nottingham and Nottinghamshire ICS.

## Next Steps

This strategy sets the future direction of development of heart health care in the ICS and it is proposed it will shape future work of the ICS in a number of ways:

- The identified priorities and programmes should be used to inform commissioning ICS, ICP and PCN activity
- The enabling activities require development and inclusion in the relevant ICS workstreams to inform their work programmes
- The impact on estate and configuration changes require inclusion in a programme of pre-consultation business case development alongside the service changes recommended from other reviews.
- The aggregate impact of the collective suite of service reviews should be used to shape focus of future service provision in acute and community settings in the ICS

A&G	Advice and Guidance	IHD	Ischaemic Heart Disease
ABC	Atrial Fibrillation/Blood Pressure,/Cholesterol	IP	Inpatient
ACP	Advanced Clinical Practitioner	IT	Information Technology
AF	Atrial Fibrillation	IV	Intra-venous
App	Application	LoS	Length of Stay
BACPR	British Association of Cardiovascular Prevention and Rehabilitation	LTC	Long Term Conditions
BAME	Black, Asian and Minority Ethnic	LTP	Long Term Plan
BHF	British Heart Foundation	MDT	Multi-Disciplinary Team
BMI	Body Mass Index	MECC	Make Every Contact Count
BP	Blood Pressure	MH	Mental Healthcare
C4C	Call For Care	MI	Myocardial Infarction
CBT	Cognitive Behaviour Therapy	Mid Notts.	Mansfield & Ashfield, Newark & Sherwood
CCSS	Clinical and Community Services Strategy	NACR	National Audit of Cardiac Rehabilitation
CCG	Clinical Commissioning Group	NCEPOD	National Confidential Enquiry Patient Outcomes and Death
CCU	Coronary Care Unit	NEWS 2	National Early Warning Score
CHD	Coronary Heart Disease	NHFT	Nottinghamshire Healthcare Foundation Trust
CMR	Cardiac Magnetic Resonance	NHS	National Health Service
COVID-19	Coronavirus Disease 2019	NHSE/I	National Health Service England and Improvement
CPR	Cardio-Pulmonary Resuscitation	NICE	National Institute for Health and Care Excellence
CR	Cardiac Rehabilitation	NT-ProBNP	N-terminal pro b-type natriuretic peptide
CTA	Coronary Computed Tomography	NUH	Nottingham University Hospitals
CVD	Cardiovascular Disease	OHCA	Out of Hospital Cardiac Arrest
EBP	Evidence Based Practice	OOH	Out of Hours
ECHO	Echocardiogram	OP	Outpatient
ED	Emergency Department	PC	Primary Care
EMAS	East Midlands Ambulance Service	PCI	Percutaneous Coronary Intervention
EoL	End of Life	PCN	Primary Care Network
F2F	Face to Face	PH	Public Health
FH	Familial Hypercholesterolaemia	PID	Project Initiation Document
Flo	Florence Simple Teleheath Text messaging System	PKB	Patient Knows Best
FU	Follow up	PPCI	Primary Percutaneous Coronary Intervention
GP	General Practitioner	QoL	Quality of Life
H&SC	Health and Social Care	QIPP	Quality, Innovation, Productivity and Prevention
HCP	Healthcare Professional	QMC	Queens Medical Centre
HCOP	Health Care of Older People	RECAP	Rehabilitation Therapy in Older Acute Heart Failure Patients
HF	Heart Failure	ROI	Return on Investment
IAPT	Improving Access to Psychological Therapies	SC	Social Care
ICD	Implantable Cardioverter Defibrillator	SFH	Sherwood Forest Hospitals
ICE	Integrated Clinical Environment	UK	United Kingdom
ICP	Integrated Care Partnership		
ICS	Integrated Care System		

### Data Sources

British Society for Heart Failure Nurses Forum  
Local Data from CCGs, eHealthScope  
National Institute for Health and Care Excellence  
National Audit of Cardiac Rehabilitation  
National Heart Failure Audit  
National Institute for Cardiovascular Outcomes Research  
NHS England  
NHS Digital  
NHS Long Term Plan  
Nottingham & Nottinghamshire ICS Population Health Management  
Office of National Statistics  
Public Health England  
Pumping Marvellous