South West Strategic Clinical Network

SW CV SCN – Complex Cardiology and Stroke Service Mapping Project Initiation Document

Purpose

This Service Mapping Project arises as a consequence of the following national drivers:

1. **The Urgent and Emergency Care Review (UECR) –** Specialist Emergency Centres to include at least two of the following:
   - Major trauma management including neurosciences, plastic surgery, burns;
   - Primary percutaneous angiography for myocardial infarction;
   - Stroke;
   - Emergency vascular surgery;
   - Specialist paediatric facilities;
   - Critical care;
   - Interventional Radiology.

   The UECR anticipates a rationalisation of many of these services to between 40 and 70 Specialist Emergency Centres across England. The principal objectives of the UECR are endorsed in the NHS England Five Year Forward View (October 2014).

2. **'Putting Patients First' - NHS England Business plan 2014/15-2016/17.**
   - Develop a specific case for acute stroke service reconfiguration in two geographical locations by April 2015;
   - Ensure the availability of resilient and sustainable seven day services where this makes a clinical difference to outcomes.

3. **Specialised Commissioning national service specifications.**

The SW CV SCN have been tasked by NHS England to coordinate the development of service maps and profiles for complex cardiac and stroke services across the SW SCN footprint, to provide robust evidence to support discussions regarding service configurations.

The SW CV SCN covers Devon, Cornwall & Isles of Scilly, Bath, Gloucestershire, Swindon & Wiltshire, Bristol, North Somerset, Somerset, South Gloucestershire and all Clinical Commissioning Groups/Unitary Authorities within these boundaries.

The patients included in the model are those who live within the SW SCN area **OR** those patients whose closest* acute/general hospital is within the Strategic Clinical Network area.

**Closest = lowest straight line distance, estimated using Microsoft MapPoint with MP Mile Charter Add-In. Where possible the identification of closest hospital will be restricted to those known to offer particular service (e.g. those hospitals accepting patients for stroke or primary PCI).*

Scope

Stroke and complex cardiology services will be modelled to incorporate the South West population, taking full account of boundary issues. It will encompass the provision of emergency/primary coronary angioplasty (PPCI), together with elective provision for complex devices and electrophysiological services. It will also examine hyperacute stroke services, taking account of essential co-dependencies such as vascular surgery and interventional radiology.

The modelling will start from a blank canvas and include the following options:

1. Status quo;
2. Configurations meeting best/expert practice:

i) Meeting national guidance

Cardiac	
Primary Percutaneous Coronary Intervention (PPCI)	• Minimum 100 PPCI per annum • Call to balloon (CTB) 150 mins • Door to balloon (DTB) 90 mins -75% or greater • Operating hours-24/7 • 300 or more patients per annum, with an absolute minimum of 100 PPCI patients per annum • 2 or more cardiac catheter laboratories
Percutaneous Coronary Intervention (PCI)	• 400 cases per annum • 1 cardiac catheter laboratory (BCIS)
Electrophysiology	• AF ablation – 100 per million • SVT ablation – 100-150 per million • Ventricular tachycardia ablation – 20 per million
Complex Cardiac Devices	• ICD - 100 per million • CRT - 130 per million
Cardiac Magnetic Resonance Imaging (CMR)	• Minimum 300 scans and >500 scans for training centres
Stroke	• 600-1500 stroke admissions per year • Maximum 45 minute travel time • 6 consultants with stroke expertise on rota • 7-day consultant ward rounds • Nursing input: 2.9 WTE nurses per bed for HASU (ratio 80:20 qualified to unqualified) and 1.35 (ratio 65:35) for ASU • Therapy input: 0.73 WTE Physio, 0.68 OT, 0.68 SALT per 10 beds (HASU)

ii) Meeting international guidance;

Cardiac	
Primary Percutaneous Coronary Intervention (PPCI)	• European Society of Cardiology (ESC) guidance 600,000 to 1 million catchment population • ESC guidance Call to balloon (CTB) 120 mins

3. Co-location of complex cardiac and stroke services;

4. A two-centre option - Bristol and Plymouth (both organisations meet all the Major Emergency Centre criteria);
5. A range of intermediate geographical configurations up to and including the status quo.

The modelling exercise will be evidence based and be undertaken in collaboration with academic partners in the SW Peninsula CLAHRC with expertise in healthcare-related service modelling (see http://clahrc-peninsula.nihr.ac.uk/).

Outcomes

- The Service Mapping Project will produce a range of options intended to provide the greatest health benefit from interventions for acute stroke and heart disease, and improved access to complex cardiac services, to the maximum number of people in the South West. These options will take account of anticipated changes in demography and disease incidence over the next 10-20 years.
- The Service Mapping Project will provide an options appraisal to present to Clinical Commissioning groups and Specialised Commissioning to guide decision-making in response to the UECR.

Data requirements

The model will be populated using data from the time period 2010-2014. Data to be obtained from HES:

- Number of patients with primary diagnosis of stroke (ICD10 codes I-61, I-63 and I-64) along with home location (by Lower Layer Super Output area and hospital trust of treatment).
- Number of patients with primary diagnosis of myocardial infarction (ICD10 codes I-21) along with home location (by Lower Layer Super Output area and hospital trust of treatment).
- Number of patients with PCI (elective separated by emergency and STEMI separated from NSTEMI); Procedure codes K49, K50, K75) along with home location (by Lower Layer Super Output area and hospital trust of treatment).

Data from the National Cardiovascular Health Intelligence Network (NCVIN):

- Number of patients passing through cardiac catheter labs with breakdown of procedures: PCI, PPCI, Implantable Cardioverter Defibrillator (ICD), Cardiac Resynchronisation Therapy (CRT), Electrophysiology and ablation, transcatheter aortic valve implantation (TAVI), angiography, pacemaker implantation. Broken down by type of admission (emergency/elective) and organisation.
- Catheter lab time required per procedure.

Data from relevant national audits (MINAP and SSNAP):

- 90th percentile door-to-balloon times for PPCI by hospital;
- Thrombolysis treatment times for hyperacute stroke.

Pre-hospital data from South Western Ambulance Service:

- 12 month ambulance data for patients attended with suspected stroke or myocardial infarction (identified by either phone triage or paramedic where paramedic classification is available):
  - Date and call origin time
  - Postcode (full)
  - Time Arrived At Scene

- Time Left Scene
- Hospital Attended
- Arrival at hospital time
- Reason for stopped call
- Handover duration.

Constraints and Risks

Constraints

1. The project can make no assumptions regarding reconfigurations of adjacent services in boundary areas, which may affect services within the South West.
2. The project will, where necessary, assume the existing plan for the reconfiguration of acute vascular services into larger geographical networks will proceed as presently outlined.
3. There is an underlying assumption that any reconfiguration will be achieved within the existing specialised/locally commissioned financial envelope.
4. Although cardiovascular mortality will be modelled, sample size considerations will significantly reduce the confidence with which any conclusions relating to mortality can be drawn.

Risks

1. Failure to agree on the parameters of benefit for the population (or, prioritising organisational benefits and burdens above those for the population).
   Mitigation: Present opportunities to stakeholders through the SW CV SCN Commissioning Advisory Groups (CAGs) and other means to articulate the overarching priorities of the project.
2. Technical failure to produce a model capable of producing the desired outputs. This includes limitations of the data, which comes in part from NHS administrative datasets.
   Mitigations: [i] Selection of an academic group with established expertise in complex healthcare modelling of this kind; [ii] use of sensitivity testing to assess the robustness of the modelling outputs; [iii] a programme of regular project supervision and review between the SW CV SCN and the modelling team in PenCLAHRC.
3. Failure to deliver the project to the appointed timescale.
   Mitigation: Regular project supervision and review involving senior decision-makers from the SW CV SCN and PenCLAHRC.

Governance

1. The Service Mapping Project is initiated and owned by the SW CV SCN, and will be overseen by a Project Management Group (PMG) consisting of:
   - The SW CV SCN Network Manager (chair) and Clinical Directors/Clinical Leads;
   - The Director of PenCHORD (Peninsula Collaboration for Health, Operational Research & Development) and lead modeller(s);
   - Public Health England representative;
   - South West Ambulance Service representative;
   - The Clinical Pathways and QIPP Lead for the SW SCN;
   - The Information and Quality Improvement Analyst for the SW SCN;
   - Other members will be co-opted according to necessity.
2. The PMG will meet approximately monthly over the lifetime of the project.
3. The PMG will be accountable to the SW CV SCN Steering Group, and will report to the

Cardiac and Stroke CAGs (and other interested parties as appropriate).

4. Administrative support for the PMG will be provided by the SW CV SCN.

Timescale	
Preliminary model presented to Stroke CAGs	complete
Progress of PPCI modelling to be reported at Cardiac CAG Venue: SW House, Taunton.	complete
Progress of complex cardiology modelling to be reported at Cardiac working group. Venue: SW House, Taunton.	complete
Final modelling to be complete	complete
Final outcomes of complex cardiology and stroke modelling to be presented to commissioners **Commissioner meeting 03.11.15 11-13.00hrs.** Venue: SW House, Taunton.	complete
Final outcomes of complex cardiology and stroke modelling to be presented to providers and commissioners **Joint provider and commissioner meeting 03.11.15 14-16.00hrs.** Venue: SW House, Taunton.	complete
CV SCN options appraisal completed	18.01.16

Document History

Document Owner The SW CV SCN

Document Status The status for this document is FINAL

Revision History

Version number	Revision date	Previous revision date	Summary of changes
V1	21.10.14 (MR)	-	First draft
V2	23.10.14 (MAJ)	21.10.14	Document presented to PMG
V3	30.10.14 (MAJ)	23.10.14	Amended draft circulated to PMG
V4	05.11.14 (MR)	30.10.14	Updated following PMG amendments
V5	26.11.14 (MR)	05.11.14	Updated following cardiac and Stroke CAG amendments
V6	04.02.15	05.11.14	Update following data issues
V7	16.03.15	04.02.15	Update following NICOR data issues
V8	28.04.15	16.03.15	Update following NICOR data issues
V9	28.04.15	20.07.15	Update with amended timetable
V10	20.07.15	20.08.15	Update with amended timetable and additional information regarding financial constraints
V11	20.08.15	02.09.15	Update with amended timetable
V12	17.11.15	02.09.15	Update with amended timetable