Report From the Community Echocardiography Group

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**Background**

Echocardiography plays a key role in the investigation of patients with cardiac disease including:

- Heart failure: ‘Patients with heart failure should have the diagnosis confirmed with echo’ (Wales Quality Requirements For the Care of Patients with Chronic heart failure).
- Atrial fibrillation (AF): based on Draft NICE guidelines (Jan 06) on management of AF the majority of patients with require echocardiography.
- Assessment of valve disease.
- Following myocardial infarction.

Most of this document will focus on the identification and management of heart failure as this is the commonest indication for echocardiography in primary care. The diagnosis of this condition leads to a management plan which is known to prevent hospital admission, improve quality of life and prognosis.

Traditionally, echocardiography has been performed in cardiology or radiology departments in district general hospitals or in tertiary centres. Some hospitals provide ‘open access’ echo or heart failure clinics others may only accept requests via the cardiology consultant.

As a result of documents such as ‘Designed for Life’ and the ‘Wanless’ Report and the realisation that many of the conditions encountered are common and chronic, there has been a thrust towards management of patients in primary care. The logical progression from this is that patients should also be investigated locally.

Four documents taken in conjunction give guidance and support this concept:

3. Wales Guidance for the Development of GPs with a Special Interest in Cardiology, accepted by Cardiac Reference Group Oct 05.
4. Recommendations for the delivery of Community/Primary Care Echocardiography in Wales (in draft) –Wales Cardiac Networks Coordinating Group.

**Aims and Objectives**

Produce Guidelines and recommendations for healthcare organisations and commissioners across North Wales with regards to the development of community echocardiography(+- heart failure services).

**Key Tasks**

1. Undertake baseline assessment of current echocardiography provision across North Wales to include waiting times, availability of trained echocardiographers and equipment
2. Identify different models of echo and heart failure provision across the region
3. Review service models available for echocardiography
4. Benchmark with other service providers
5. Produce recommendations and guidance for North Wales service providers and commissioners with regard to the development of community echo services

1. **Baseline Assessment**

We e-mailed a spreadsheet to the Chief Technicians at the 3 Acute Trusts in North Wales requesting details outlined above:

<table>
<thead>
<tr>
<th>Trust</th>
<th>NWWT</th>
<th>C&amp;D Trust</th>
<th>NEWT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transthoracic Echo</td>
<td>2000</td>
<td>2760</td>
<td>4030</td>
</tr>
<tr>
<td>Transoesophageal Echo</td>
<td>120</td>
<td>50</td>
<td>150</td>
</tr>
<tr>
<td>Wait (wks)</td>
<td>20</td>
<td>22</td>
<td>12</td>
</tr>
</tbody>
</table>

These figures may not include ‘emergency’ echoes done on coronary care etc but this is unlikely to influence the overall picture.

It can be assumed that the catchment area for all three trusts is similar however as can be seen from the above table NEWT is doing twice as many studies as NWWT. The wait across the region is between 12 and 20 weeks. Standard 4 of the NSF suggested that patients with suspected heart failure should have an echo within 4 weeks. The Saff target is 24 weeks which is clearly clinically unacceptable.

<table>
<thead>
<tr>
<th>Trust</th>
<th>NWWT</th>
<th>C&amp;D Trust</th>
<th>NEWT</th>
</tr>
</thead>
<tbody>
<tr>
<td>No of Technicians WTE</td>
<td>4.8</td>
<td>8.26</td>
<td>8.2</td>
</tr>
<tr>
<td>MTO 5</td>
<td>1</td>
<td>1.19</td>
<td>2</td>
</tr>
<tr>
<td>MTO 4</td>
<td>1.8</td>
<td>3.07</td>
<td>0.8</td>
</tr>
<tr>
<td>MTO 3</td>
<td>2</td>
<td>3</td>
<td>3.4</td>
</tr>
<tr>
<td>MTO 2</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>ATO</td>
<td>3</td>
<td>4.5</td>
<td>5</td>
</tr>
<tr>
<td>Accredited Echo Tech</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>In Training</td>
<td>2</td>
<td>1</td>
<td>1.8</td>
</tr>
</tbody>
</table>

This table shows significantly less trained technicians in NWWT compared to C&D Trust and NEWT. However there are more British Society of Echocardiography Accredited technicians in the trusts who do less procedures.

**Equipment:** All the Trusts have excellent state-of-the-art equipment and this is by no means a limiting factor for the number of procedures performed.
2. Heart Failure Provision

<table>
<thead>
<tr>
<th>Trust</th>
<th>NWWT</th>
<th>C&amp;D Trust</th>
<th>NEWT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any GP ref</td>
<td>n</td>
<td>N</td>
<td>n</td>
</tr>
<tr>
<td>Open Access HF Clinic</td>
<td>n</td>
<td>N</td>
<td>y</td>
</tr>
<tr>
<td>Heart Failure Nurses</td>
<td>n</td>
<td>1 (funding for 2)</td>
<td>3</td>
</tr>
<tr>
<td>Heart failure Pharmacist</td>
<td>n</td>
<td>N</td>
<td>y</td>
</tr>
</tbody>
</table>

NWWT no heart failure service, but have recently applied for funding for a BHF Heart failure Nurse Specialist.

C&D Trust currently have 1 nurse specialist in post. Only patients referred by the consultant cardiologists are seen. They are about to appoint a second nurse.

NEWT have 3 specialist nurses, 1 dedicated pharmacist and full time administrative support There are twice weekly ‘open access’ echocardiography clinics. Patients with significant LV impairment are seen by a doctor otherwise a report is issued by the technician for the general practitioner. All patients with Class 3 and 4 heart failure can be referred to the team who have regular out-patient clinics in the acute and peripheral hospitals. **Currently there is spare capacity in the echo clinics.**

3. Service models available for the delivery of an echocardiography service for patients with suspected heart failure referred directly from primary care (as described in ref 4 above):

- Open access echocardiography service based in hospital.
- Open access echocardiography service based in a Community hospital, clinic or GP surgery.
- Mobile echocardiography service operating peripatetically.
- Echocardiography service as part of a Rapid Access heart failure clinic.

**Open Access Hospital based**

- The model receives referrals direct from General Practitioners, as part of a locally developed Heart Failure service.
- The existing Echocardiography department provides the echocardiography provision.
- Increased capacity of the hospital echo dept is required i.e. an additional allocated provision of echocardiographers, cardiologists and ultrasound equipment.
- Existing infrastructure is utilised.
- The service will be delivered by a BSE accredited echo-cardiographer and a cardiologist.
Recommendations on the essential characteristics of such a service are:

- The department must be BSE accredited.
- A structured, protocol based referral process built on effective communications between Primary and Secondary Care, as defined by existing recommendations.
- Clinical input is provided by a cardiologist, over and above the technical echocardiography report.
- Clinical backup if problems are identified by echocardiography.
- Integration with main Echo department in terms of quality assurance and staff training and CPD.

Open Access Community Based

This type of service can be located in a community hospital, clinic or GP surgery. The service needs to be established in addition to existing hospital based provision and agreement reached with the commissioners on how this is funded.

Recommendations on the essential characteristics of such a service are:

- This service must be an integral part of the overall approach to the delivery of heart failure services in a health community. There is no place for isolated stand alone open access echocardiography.
- The service should be delivered by an operator who is BSE accredited.

The operator could be a GP with Special Interest (GPwSI) or a Practitioner with a Special Interest (PwSI). Guidance on the development of GPwSI in Cardiology has been developed to complement the Welsh Health Circular on GPwSI. This guidance has been endorsed by the Cardiac Networks Co-ordinating Group.

Some GPs are already experienced expert echo-cardiographers who have not received BSE accreditation. Provision of services by such practitioners should be considered on an individual basis.

- A structured, protocol based referral process built on effective communications between Primary and Secondary Care.
- Structured reporting arrangements which ensure information is available to both primary and secondary care providers.
- The service should not be used for established patients requiring secondary care follow up.
- Links to the hospital based service (preferably electronic) for second opinions and clinical backup.
- Links to the hospital based service to ensure quality assurance.
- Links to the hospital based service to allow for training and CPD for staff.

Mobile Service

Mobile echocardiography services is the description generally used for services provided by a third party (other than existing primary or secondary care providers), usually a private company. The term mobile refers to the mobility of the staff and equipment who can service demand across a large geographical area. Whilst the
service may be provided literally from a mobile facility, it may equally be provided in a Community Hospital, clinic or GP surgery. Recommendations on the essential characteristics of such a service match those for a community based service.

**Rapid Access Heart Failure Clinic**

This is a term used for where specialist secondary care based staff offer diagnosis and initial treatment whilst liaising with Primary Care staff for ongoing care and with Tertiary staff for specific specialist advice. The following recommendations for this service model arise from the Heart Failure Quality Requirements for Wales (5) and are that:

- An echocardiogram forms an essential part of the assessment of a patient with suspected heart failure. This is in addition to a clinical assessment, and ECG, BNP and Chest x-ray.
- Diagnostic heart failure clinics at which a consultant cardiologist/physician with a special interest in heart failure and heart failure specialist nurse are both present should be held at least weekly with echocardiography available during the clinic times.
- It is acceptable for a standard study conducted as part of a) an open access hospital based service b) a community based service c) a mobile echo service to supply the echocardiographic information as part of the Heart Failure clinic assessment provided the study has been conducted under BSE accredited conditions.
- The local heart failure team should have access to echocardiography according to agreed referral guidelines, with reports available within four weeks.
- All echocardiographs should be performed and reported by an appropriately trained and experienced member of staff.
- Each member of staff performing echocardiography should normally carry out at least 100 tests per year.

4. **Benchmark with other Service Providers**

In the inaugural meeting of this task Group Dr Huw Williams a GPwSI presented his experience of providing a service in West Wiltshire. He showed that the echo service in conjunction with a heart failure nurse specialist significantly reduced the admission/re-admission rate of patients with heart failure. He emphasised the importance of being supported by the acute trust and by a heart failure service. He also showed that a large proportion of the patients had no systolic dysfunction thus reducing the referrals to the acute trust.

5. **Recommendations**

Some of the models described in 3 above already exist in North Wales eg NE Wales NHS Trust run an open access Heart Failure clinic as described previously. This clinic is if anything, under-utilised therefore it seems pointless setting up a separate echo service in the community close to the hospital. However other parts of North Wales may be ideally suited for a community service eg rural areas or when the service provided by the
acute trust cannot cope with the volume of patients. There has already been some preliminary work in establishing a service in Gwynedd and we feel that this should be encouraged and supported.

The following factors are essential to provide an echo service:

- Staff
- Training
- Guidelines for Referral (heart failure alone or patients with murmurs/atrial fibrillation)
- Clinical Back-up provided by the acute Trust
- Heart Failure Team support
- Quality Assurance/Audit
- Continuing Education

One of the pre-requisites of a community based service is to find a General Practitioner, a Consultant Cardiologist, a heart failure Nurse Specialist and possibly a cardiac technician who are keen to provide a service.

The GP will need to be trained (and funded) in the management of heart failure and echocardiography unless the latter can be provided by a Medical Technical Officer. It takes a minimum of two years to train a practitioner to British society of Echocardiography standards. This would involve at least 1 day per week with inevitable consequences on cover/locum arrangements. BSE accreditation in community echocardiography began in Oct 2004 the process involves a written examination and a logbook of 200 cases. Details are available on the BSE website: http://www.bsecho.org/content/category/13/31/57/. It should be emphasised that a heart failure specialist nurse or other practitioner with a special interest (PwSI) could also be trained in a similar way.

Currently there is a dearth of cardiologists in North Wales and Trusts have been tasked with reducing their workload. Supervising training, reviewing clinical cases etc will involve additional work which will require additional consultant sessions of work. There is also a lack of technicians in the UK and even if funding is available, it may be impossible to appoint.

Throughout this report we have focused on heart failure. Local guidelines may also allow referral of patients with atrial fibrillation or murmurs. Acutely ill patients or young patients with possible congenital heart disease should not be studied in a community setting. Heart failure support facilitates timely and appropriate therapy as such, a GPWSI performing echocardiography would ideally have access to a heart failure nurse specialist. These nurses could be trained in the acute trusts before working in a community setting. There is no heart failure team in Ysbyty Gwynedd at the moment and this may be a major stumbling block unless a community service can be established in the near future.

Audit of a new service is essential. Some have raised concerns that this kind of service would identify more patients with heart failure resulting in more referrals to hard pressed
cardiology clinics in secondary care. Others have suggested that such a service would ‘filter’ referrals to secondary care and reduce readmission rates with heart failure thus providing a very cost effective service. Detailed audit is essential to assess this quantitatively.

6. Conclusions

- There are significant inequalities in access to echocardiography (echo) and heart failure services across North Wales
- Although the current waiting times for Echo are within SaFF targets we feel that 20 weeks is an unacceptable delay
- The Trust with the fewest BSE accredited technicians does most studies: are they doing too many? Are they more efficient? This requires further evaluation
- A ‘community based echo service’ is predominantly for the management of possible heart failure and it may be best re-named? Community Diagnosis and Treatment of Heart Failure
- A community based service will need to have a BSE accredited echocardiographer. This will require a large initial time investment by a General Practitioner and significant funding. However, this could be a very rewarding experience. He /she would need the support of a heart failure nurse specialist and the cardiologist at the acute trust.
- There are problems dealing with the volume of patients in the acute trusts and some patients have to travel a significant distance therefore there are significant attractions to providing a local service
- Any new service needs to fulfil the above criteria and needs to be audited in order to assess the cost and effectiveness of the service.