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*The role of the multidisciplinary team and  
triage in the community one stop diagnostic  
clinics  
BCUHB*

*By Liana Shirley  
Advanced Clinical Physiologist MSc ACP, PwSI in Cardiology*

# Declarations of Interest



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# What are we?



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- The community diagnostic services is a multidisciplinary team. The team consists of advanced practitioners, pan BCU, carrying out one stop consultations, with echocardiography assessments in various cardiovascular diseases (HF, CP, Valve disease)
- The clinics are run by the advanced practitioners with remote support, where needed, from either GPwSI in cardiology or cardiologists.
- The practitioners that run the clinics are qualified (or working towards) MSc in Advanced Clinical Practice, Accreditation with the British Society of Echocardiography (or working towards), PgDip (PwSI) for practitioners with a specialist interest in cardiology (or working towards)

# Where are we?



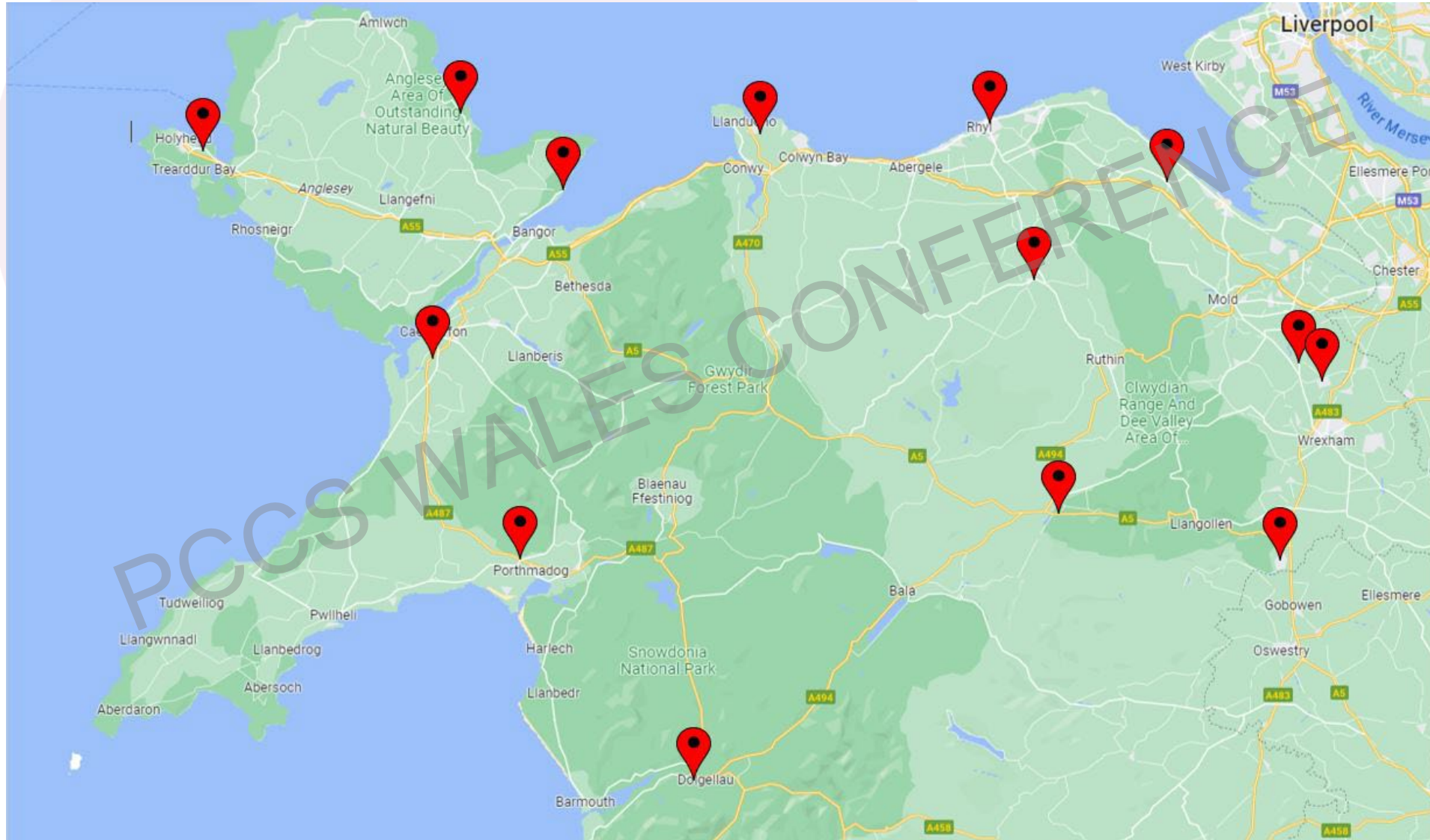
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# Clinics consist of.....

- Comprehensive clinical history
- Clinical examination
- ECG, echocardiogram, ambulatory monitor; if appropriate
- Diagnosis on the same day, which can include life-limiting conditions, breaking bad news, genetic implications etc.
- Prescription if appropriate and possible
- Management plan sent to GP / other HCP / patient (typically within the week)
- Waiting times for the clinics are 2–6 weeks depending upon clinical urgency (squeezed people in next day!)
  - **One stop shop!**



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# Extended roles



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- The service enables professions to develop new skills, improving cardiac care.
- Advanced physiologists are trained in clinical assessment to postgraduate level with MSc ACP / PwSI in cardiology.
- Heart failure nurse specialist trained in echocardiography and accredited with BSE (British Society of Echocardiography)
- GPwSIs trained and training in Echocardiography.

# Triage



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- Heart failure diagnostic clinics.
  - Signs and symptoms of heart failure
  - NT-proBNP >400
  - Waiting times between 2–6 weeks depending upon clinical indications
- Chest pain clinics
  - These patients are seen within 4 weeks and are redirected into the community to their closest community hospital
- One stop valve surveillance clinics
  - These patients are taken off the secondary care W/L and seen in the community in a one stop setting with clear NICE / BSE parameters for referral back to the cardiologists.

# Data from 2022



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- Developing service as staff still in training.
- 814 patients seen, replacing 2442 hospital-based appointments.
- **HF clinics**
  - 55% diagnosed with HF
  - 73% medication changes
  - 66 Avoided admissions

**Substantial cost saving in bed days alone!**

- **Chest pain clinics**
  - 50% of all patients seen needed an echocardiogram, which was done on the day
  - Medication altered in 54% of the pts seen
- **Valve surveillance clinics**
  - These clinics have only just started but we have already identified a pt at risk of admission due to critical stenosis.



# Case study – refused referral



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- 80 year old lady
- New systolic murmur
- NTpro-BNP 481
- SOB
- Hx of chronic anaemia; no other cardiovascular Hx
- No medication

# Further details



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- *'Presented to GP with SOB, noted to have murmur. BNP 481. Also chronic iron deficiency anaemia. Normal colonoscopy and gastroscopy end of last year. Hasn't been taking Iron, Hb has dropped to 86. Starting oral iron again. Echo to evaluate murmur and heart failure'*
- The request was refused on the basis that anaemia can cause elevated BNP, SOB and systolic murmur. It was suggested that if the pt was still symptomatic and a systolic murmur was still present after her anaemia was treated / with Hb increased then re-refer.
- **Safety net** – repeat FBC in 4–6 weeks – please perform 12 lead ECG to help assess for any significant cardiac pathology. We are happy to interpret ECG if needed. Triage would be assisted by a full description of the murmur heard.

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- The multidisciplinary team approach and the extended roles work well in this service and have been shown to improve cardiac care.
- In addition, North Wales and its vast geography lends itself well to this community model; in our rural area it has shown to reduce DNA numbers.
- Can this be replicated in a city area? / secondary care..... Various factors such as cost effectiveness, ability / willingness of the practitioners to take on these extra roles

# We also have a van!!!!



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# *The role of the multidisciplinary team and triage in referrals to diagnostic pathways*

*By Nerys James*

*Cardiac and Respiratory Healthcare Sciences Manager*

*Hywel Dda University Health Board*

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# Access to Diagnostics



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1. Referral for cardiology, heart failure services, arrhythmia services
2. Primary care complete Welsh Clinical Portal (WCP) referral to cardiologist
  - >> printed and posted / redirected electronically to cardiac diagnostics
  - >> results to cardiologist
  - >> letter and results to Primary Care
3. Primary care complete request form
  - >> post to the cardiac diagnostics department
  - >> results posted to primary care referrer

# Access to Diagnostics



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# The Evidence for Triage



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## The aim

To enable us to provide echo where it is most likely to make a difference to the outcome for that patient

## The outcome

1. Reduce overall demand and the demand-capacity mismatch
2. Reduce patient anxieties related to 'being on a waiting list'
3. Educate referrers on when echo will be of benefit
4. Support referrers in their decision not to refer for a diagnostic test

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# The Triage Guidance



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This poster describes  
where echo has low  
clinical yield

Conditions are grouped  
by symptoms

Available at:  
<https://bsecho.org/>.  
(Accessed April 2023)



## Introduction

Transthoracic echocardiography is an essential test in the evaluation of patients with suspected structural and functional cardiac conditions. When used appropriately it facilitates rapid diagnosis and timely intervention for patients. The BSE have previously issued detailed guidance, aimed at hospital and specialist referrers, regarding the indications for, and optimal timing of, outpatient, inpatient, and critical care transthoracic echocardiography. These indications can be accessed in full here [bsecho.org/PC-Triage](https://bsecho.org/PC-Triage).

However, we also recognise that very often the most useful information in primary care is to know

## Conditions in which an echocardiogram has low clinical yield from primary care

Situations relevant to primary care where an echocardiogram is likely to be of low clinical yield

Authors: Andrew Potter, Tom Ingram, Claire Colebourn, Daniel Augustine, Sadie Bennett, Keith Pearce, Sarah Ritzmann, Martin Stout

the clinical conditions in which transthoracic echocardiography is not routinely indicated at the time of initial clinical contact. These conditions are grouped by symptom or clinical finding below for rapid reference by General Practitioners for use in primary care settings. This guidance is not intended to override clinical judgment in individual cases and has chiefly been created to support situations where clinical judgement favours avoiding further investigation. This document can also aid the general practitioner in challenging unnecessary echo requests from secondary care.

### CONDITIONS IN WHICH AN ECHOCARDIOGRAM IS UNLIKELY TO AFFECT PATIENT MANAGEMENT

#### HEART MURMUR

- Assessment of an innocent (i.e. physiological/flow) murmur. An innocent murmur has previously been defined as: a systolic murmur of short duration; grade 1 or 2 intensity at the left sternal border; a systolic ejection pattern; a normal S2; no other abnormal sounds or murmurs; no evidence of ventricular hypertrophy or dilation; no thrills; and the absence of an increase in intensity with the Valsalva manoeuvre. Such murmurs are especially common in high-output states such as pregnancy.
- Unchanged murmur in an asymptomatic individual with a previous normal echo

#### SUSPECTED HEART FAILURE

- Assessment of patients with peripheral oedema and no other symptoms to suggest cardiac disease with a normal ECG and BNP or NT-pro-BNP levels.

#### HYPERTENSION AND SUSPECTED LEFT VENTRICULAR HYPERTROPHY

- Routine assessment of essential hypertension with normal ECG and examination over the age of 40

#### SUSPECTED CARDIAC MASS/POSSIBLE CARDIAC CAUSE OF SYSTEMIC-CIRCULATION EMBOLISM

- Patients in whom echo will not affect the decision to commence anticoagulation: for example, patients in atrial fibrillation with cerebrovascular event and no suspicion of structural heart disease

#### PULMONARY DISEASE

- Lung disease with no clinical suspicion of cardiac involvement or pulmonary hypertension

#### PALPITATIONS AND PRE-SYNCOPE/SYNCOPE

- Palpitations without ECG proof of arrhythmia or clinical suspicion of structural heart disease on examination
- Classic neuro-cardiogenic (vaso-vagal) syncope

#### SUSPECTED PERICARDIAL DISEASE

- Repeat assessment of a small pericardial effusion without clinical change

#### PRE-OPERATIVE ECHOCARDIOGRAPHY FOR ELECTIVE AND SEMI URGENT NON-CARDIAC SURGERY

- Routine pre-operative echocardiography
- Where a patient is under active echo follow-up (i.e. valve disease); repeat echo assessment prior to next planned echo appointment with no intervening change in clinical status

#### ESTABLISHED CARDIOMYOPATHY

- Routine repeat assessment in clinically stable patients in whom no change in management is contemplated

#### INHERITED CARDIAC DISEASES

- Where there is a family history of a cardiomyopathy a screening echo should only be undertaken in first-degree relatives (i.e. children, siblings and parents of the proband case) unless specialist guidance suggests otherwise.
- Echo outside of the guidance for frequency of repeat echos with a family history of cardiomyopathy

#### GENERAL CONSIDERATIONS

- Repeat echocardiogram in the absence of a change of patient symptoms or signs
- In patients with terminal or significantly life-limiting diseases in which an echo would not alter management
- In patients with significant frailty in which an echo would not alter management

# Case Study 1:

**87 year old lady referred for echo in a department that did not triage referrals until recently**



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**87 year old lady referred for echo in a department that did not triage referrals until recently**

**2015, 80yrs, OP echo request: ? aortic stenosis**

The echo reported:

No evidence of aortic stenosis

Good LV function EF 55-60%

Non obstructive mild basal septal bulge, unable to measure wall thickness

Normal atria and right ventricle.

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**87 year old lady referred for echo in a department that did not triage referrals until recently**

**2017**, 82yrs, IP echo request: collapse.

The echo reported:

Mild LVH. Non-obstructive septal bulge.

Good LV function 55-60%.

Mildly dilated left atrium, normal right side.

Sclerotic aortic valve, opened well. Mild mitral and tricuspid regurgitation. Normal pulmonary valve,

Normal aortic root IVC, IAS.

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**87 year old lady referred for echo in a department that did not triage referrals until recently**

**2019, 84yrs, urgent OP echo request: ejection systolic murmur.**

The echo reported:

Mild LVH. Good LV function EF >60%.

Normal atria, right ventricle.

Normal aortic valve. Mild mitral regurgitation. Normal pulmonary and tricuspid valve.

Normal aortic root IVC, IAS. She waited 7 weeks.

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**87 year old lady referred for echo in a department that did not triage referrals until recently**

**2023**, 87yrs, follow up OP echo request: murmur, ? aortic stenosis.

The echo reported:

Mild septal hypertrophy. Good LV function EF >60%.

Normal atria and right ventricle.

Normal aortic valve. Normal mitral, pulmonary and tricuspid valve.

Normal aortic root IVC, IAS. She waited 34 weeks.



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**Echo 1:** Triaged against our OP guidance criteria: ? aortic stenosis

## HEART MURMUR

### Not Indicated

- Assessment of an innocent (i.e., physiological/flow) murmur diagnosed by a competent clinician
- Unchanged murmur in an asymptomatic individual with a previous normal echo

### Indicated

- Murmur in the presence of cardiac or respiratory symptoms
- Murmur in asymptomatic individuals in whom clinical features or other investigation suggest structural heart disease

### Urgent

- Murmur in the presence of class 2 or 4 heart failure symptoms or syncope

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## Echo 2: Triaged against our IP guidance criteria: Collapse

### Syncope

#### Not Indicated

- No murmur detected or documented malignant arrhythmias
- Vaso-vagal or situational syncope

#### Urgent (within 24 hours)

- Murmur detected clinically
- Arrhythmia-associated syncope
- Significantly abnormal ECG e.g. LBBB, RBBB or LVH

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## Echo 3: Triaged against our OP guidance criteria: Ejection Systolic Murmur

### HEART MURMUR

#### Not Indicated

- Assessment of an innocent (i.e., physiological/flow) murmur diagnosed by a competent clinician
- Unchanged murmur in an asymptomatic individual with a previous normal echo

#### Indicated

- Murmur in the presence of cardiac or respiratory symptoms
- Murmur in asymptomatic individuals in whom clinical features or other investigation suggest structural heart disease

#### Urgent

- Murmur in the presence of class 2 or 4 heart failure symptoms or syncope

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## Echo 4: Triaged against our Heart Valve Disease Guidance Criteria: Follow Up

### Mitral Regurgitation

#### Severe

- Echo every 6–12 months
- Cardiology review at 6 months

#### Moderate

- Echo every 1–2 years
- Cardiology review

#### Mild

- Echo every 3–5 years if mild prolapse
- No follow up usually required if normal mitral valve appearance

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## A 70 year old man admitted to hospital with new onset atrial fibrillation

An IP echo was requested: New onset AF, ? Suitability for OP cardioversion.

Triaged against our IP guidance criteria: Arrhythmias

### Arrhythmias

#### Not Indicated as an IP

- Fast AF without hypotension or suspicious of structural heart disease
- Symptomatic ectopics (defer to outpatients following Holter monitoring)

#### Urgent (within 24 hours)

- Arrhythmia associated with hypotension
- VT or VF

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Echo findings revealed:

Biventricular dilatation and severely impaired function. EF: 28%

Bi-atrial dilatation

Mitral valve prolapse with severe regurgitation.

Lessons Learned

Clear communication between the referrer and the echo team regarding

1. The reason for echo
2. The timing of echo
3. The outcome of triage



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# Thank You

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