NHS Improvement

CANCER

DIAGNOSTICS

HEART

STROKE

Heart Improvement

# 18 Weeks - Focus on Cardiac Diagnostics

National Priority Project

Focus on Cardiac Diagnostics is a national priority project of the Heart Improvement Programme focusing on reducing the waiting times for all non-invasive diagnostics and achieving the maximum wait of two weeks.

The projects ran over the period June 2007 to March 2008.

Key learning from the project is available in the following formats:

**1. Project summary**
This document includes a description of the national project, supporting information gained throughout the period of the project and key learning from the project.

Project summaries include issues to address, actions taken and key results/outcomes from the 20 hospital/departmental sites participating in this work.

Contact details are included to provide additional information with regular updates available on the website at: **www.improvement.nhs.uk/heart**.

**2. Presentations at National Conference 8 May 2008**
Copies of presentations from the speakers at the conference are available on the website **www.improvement.nhs.uk/heart**

**3. Web based resources**
Project team members found this a very useful opportunity to share learning across the different project areas. These are now available to share on the improvement website at: **www.heart.nhs.uk/priority_projects**

These are categorised into three chapters:
1. Improving Capacity, Demand and Flow
2. Workforce and Changing Roles
3. Communication and Information

Content includes:
- Improvement stories
- Job descriptions
- Templates
- Questionnaires
- Survey examples

Additional information will be included as it becomes available and existing materials regularly updated.

Further information and updates email: **info@improvement.nhs.uk**

# Contents

# Introduction

This project was a natural follow on from the work with the Department of Health (DH) to develop "Transforming Cardiac Diagnostics". The DH project gathered a wealth of information on the current position, and produced a guide containing good practice, innovation, and advice on commissioning, workforce, technology and service improvement.

The Focus on Cardiac Diagnostics Project has taken the work done on that document through to practical implementation and delivery with a number of hospitals focussing on their cardiac physiology departments.

**Aim and scope:**
The aim was to:

- reduce the waiting times for all non-invasive diagnostics – in particular the waiting times for echocardiography – beyond the existing 18 week trajectory (six weeks by 31 March 08), aiming to achieve a wait of two weeks by 31 March 2008 in the participating sites
- reduce in-patient waits (particularly for echo) to same or next day service
- help all trusts meet the six week milestone by March 2008 (by sharing learning via the 30 cardiac networks)
- Improve awareness and engagement of doctors and senior managers in cardiac physiology and associated workforce issues.

The project worked with 20 hospital sites/departments in nine cardiac networks overall and in particular with 17 hospital sites/departments in six cardiac networks, for an intensive period. A range of quality improvement methodologies were used to bring about accelerated improvement. Individual projects were aligned with the particular hospital and network's own 18 week strategy. Five workshops were held which offered help in developing practical skills in service improvement and shared ideas and good practice. Participating sites were expected to work with their network and with the NHS Heart Improvement Programme team to spread the learning to other sites within the network.

In order to be accepted as a project site, a number of criteria had to be met:

- Identification of hospital site/diagnostics department with commitment from that organisation to work on the project until March 2008 and be a demonstration site
- Agreement of senior cardiac physiologist to work on the project and to participate in service improvement activity, data collection and analysis
- Commitment of dedicated network project manager resource of one day per week
- Commitment of a consultant cardiologist from the site to be the clinical 'champion'
- Commitment of attendance at a minimum of four action learning set workshops for senior cardiac physiologist and network project manager
- Identification of a spread strategy within the network
- Contribution to the development of products and other communication media which will evidence sustainable improvement
- Legitimately report the gains where improvement is measurable.

**Anticipated Outcomes:**

- Improved utilisation of capacity
- Reduction of waiting times
- Streamlined clinical and administrative processes
- Improved patient and staff satisfaction
- Production of a final report detailing the learning, outcomes and achievements.

**Recorded outcomes (based on official DH data available for nine sites only – August 07 – Jan 08)**

- All sites who worked actively on the project showed a marked reduction in waiting times. (see table below) – in project sites, the numbers waiting over three weeks reduced by 69% compared to 50% nationally
- Projects showed a substantial reduction in numbers waiting for echo (in project sites, the numbers waiting reduced by 25% compared to nationally 9% reduction)
- Case studies from the projects have been uploaded to the 18 weeks website
- A large number (148) of changes and improvements have been recorded and shared via the web based resource.

**Summaries**:
The following summaries give an overview of the work of some of the projects. . More detailed information, including improvement stories, reports, policies and procedures is available in a web based resource at: www.heart.nhs.uk/priority_projects/focus_on_cardiac_diagnostics/diagnostics.html

| | Total on waiting list | | | Numbers waiting over 3 weeks | | |
|---|---|---|---|---|---|---|
| | Aug 07 | Feb 08 | % Reduction | Aug 07 | Feb 08 | % Reduction |
| **Project Sites** | **2341** | **1664** | **29%** | **1344** | **248** | **82%** |
| Non Project Sites | 36571 | 32134 | 12% | 15777 | 6850 | 57% |
| National Figures | 38912 | 33798 | 13% | 17121 | 7098 | 59% |

# Key Learning

## Summary of key learning from Focus on Cardiac Diagnostics Projects

- Leadership is crucial to success – management, consultant or senior physiologists have shown leadership in successful projects
- Data – only when you have sound data about your demand, capacity, activity, staff, and clinics can you understand your service
- Engage all the team (including senior clinicians) to avoid anyone feeling threatened by change, ensuring that good ideas from staff are included. Good communication at all times really helps
- Go for a one-stop approach wherever possible
- Administrative processes are key to good flow
- Look at all aspects of capacity, for example, clinical templates and timings and machine use
- Review and address issues around workforce and skill mix
- Demand management (not just reduction) is needed to reduce variation
- Don't forget the inpatient work – it needs scheduling
- Don't forget the patients – their views are important and helpful in designing the service
- Use texts and phone reminders to reduce DNAs
- Use your PAS or departmental system effectively – get help to do this.

In working on these projects we have been struck by how the application of simple service improvement tools can bring about big improvements. The effectiveness of doing very focused work in a relatively small department has been surprising. There is still much to be done – to not only share these messages but to encourage the application of the learning more widely. Cardiac diagnostics departments are still often the 'backwater' of cardiology and cardiac physiologists profile needs to be raised. Let's ensure we continue to "focus on cardiac diagnostics" in our future work.

# Project Summaries

## Reduction in Cardiac Diagnostic Waiting Times
## Surrey and Sussex Healthcare NHS Trust
## East Surrey and North Sussex Cardiac Network

### Issues to address

- **Delays in the process of booking appointments.** Process mapping revealed multiple steps in the booking process. These steps were variable length of time and there were multiple queues. Some tests were booked up to 10 days after referral date and up to seven days of received date. Appointments were not always booked in date order
- **Wasted capacity was identified.** Demand and capacity studies revealed that not all slots for appointments were booked. For example, with echocardiograms, an average of 27 slots per week were identified as not utilised. Appointment templates did not always reflect working hours of staff
- **Clinic templates were carved out for in patient, outpatient, urgent etc.** This led to multiple queues
- **Highly skilled staff were performing duties** that other staff could undertake, for example, sonographers were not only performing and reporting on echocardiograms but also telephoning porters and wards, printing repeat test results, or receiving telephone calls regarding patient requests
- **Waiting lists not validated and managed by staff. No one person accountable** for validation of wait lists or ensuring demand matches capacity on a weekly basis. Staff did not generate their own waiting reports nor analyse findings. Patients with long waiting times were not flagged up to managers
- **DNA rates higher than the national average.** 2 – 25% per test. Average 11%.
- **Staff did not work as a team.** Staff did not rotate roles, within a specialised field, and they often worked in isolation of others.

### Baseline position

**Waiting times July 07**

| | |
|---|---|
| Echocardiograms | 6 – 8 weeks |
| Exercise Tests | 4 – 6 weeks |
| Cardiomemo | 4 weeks |
| 24hr ECG | 4 – 6 weeks |
| 24hr BP | 2 weeks |

**DNA rates**

| | |
|---|---|
| Average | 11% |

2- 25 % per test

Demand for each test was greater than capacity.

### Actions taken

- **Reduced the number of steps in booking process for all tests.** All tests are now booked on the day of receipt of referral. Appointments are primarily booked on one hospital site
- **Implemented new clinic templates.** Simplified new schedule by separating inpatient and outpatient schedule. Urgent slots removed. Adjusted ratio of inpatient to outpatient slots to meet demand. Adjusted templates to reflect working hours of all staff. Utilised an additional second echocardiogram room for booked outpatients, portable machine was used. More in-patients scanned in the department, rather than on the ward. Patients scanned on ward were identified as taking longer than those scanned in room
- **Implemented echocardiogram assistant role to improve patient flow through the two echocardiogram rooms.** This role was utilised to triage all referrals for level of urgency, telephone wards to check patient availability and prepare patients before and after test. This role was undertaken by cardiographers on a rotational basis and essentially increased time of sonographers to undertake more echocardiograms
- **Designated a person responsible for validation** and management of wait lists
- **Demand and capacity studies identified additional kit and manpower** required to reduce wait times
- **Telephone DNA survey undertaken** identified that the main reasons for non-attendance were due to either to:
  - **a) The patient not receiving an appointment letter** due to incorrect address on database or due to delays in postal system, as reported by patient or,
  - **b) The appointment not cancelled by the hospital**, when either consultant no longer required investigation or patient had already had test at another hospital or as an inpatient. These accounted for 69% of DNAs

**As a result the following changes were made:**

a) **Changes to the booking processes**
– All patients encouraged to book appointments at time of clinic appointment
– All other requests booked on day of referral received
– If letter is required to be sent out – all letters are sent out a minimum of 14 days prior to appointment date
– If appointment date within 14 days patients are telephoned
– All patients details are checked on data base via outpatient clinic
– All planned appointments put on waiting list and letter sent out 6–8 weeks prior to appointment

b) **Review of DNA policy and appointment letters reviewed** – All patients are telephoned if they DNA. One appointment then if the patient DNAs patient is referred back to referrer

- **Patient satisfaction survey identified that patients primarily wanted choice in appointment bookings rather than being sent appointment.** This led to the case being made for administrative support for a telephone booking line.

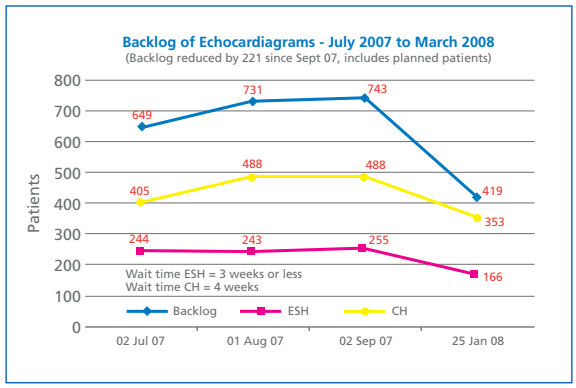
## Key results/outcomes

- Wait times for all tests reduced without additional manpower or kit

| | July 07 | Mar 08 |
|---|---|---|
| **Echocardiograms** | **6-8 weeks** | **3-4 weeks** |
| **Cardiomemos** | **4 weeks** | **2 weeks** |
| **Exercise Tests** | **4-8 weeks** | **4 weeks** |
| **24hr ECG** | **4-6 weeks** | **3-4 weeks** |
| **24hr BP** | **2 weeks** | **2 weeks** |

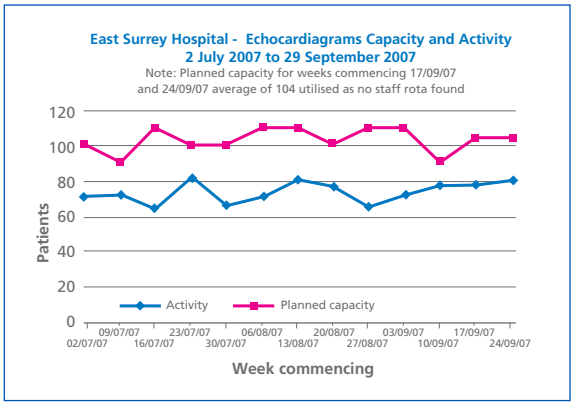
- **DNA rates for tests were reduced** from 0-25% per test to < 8.5%

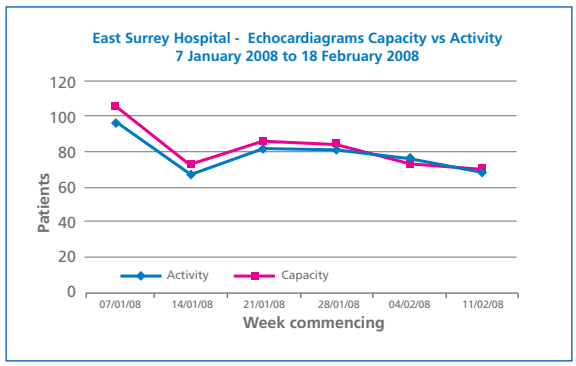
- **Reduced backlog of echocardiograms by 222 patients, with no additional manpower or kit, by implementation of cardiac assistant role and redesign of clinic templates**




- **Capacity now closely matches demand. Echocardiogram wasted capacity** reduced from 27 to 3 slots per week on average

- **Prior to implementation of changes – wasted capacity 27 slots per week.**




## Contact information

Sue Cottle, Service Improvement Manager
Email: Sue.cottle@sash.nhs.uk

# East Lancashire NHS Hospitals Cardiac Diagnostics Project: From Three Months to Three Weeks

## East Lancashire Hospitals NHS Trust (Royal Blackburn Hospital, Burnley General Hospital, Rossendale General Hospital)

## Lancashire and South Cumbria Cardiac Network

### Issues to address

East Lancashire Hospitals NHS Trust serves a population of approximately 500,000 people. In August 2007, the inpatient and outpatient cardiology services were spread across the two acute hospital sites (Royal Blackburn Hospital (RBH) and Burnley General Hospital (BGH). In addition, RBH and BGH offered a direct access service for Echos, ECGs and 24 hour tapes to primary care; whilst at Rossendale General Hospital (RGH) an ECG service was offered to both primary care and the mental health trust.

In November 2007, the trust underwent a major reconfiguration of clinical services. The planned result was for one of the acute sites to continue to deal with all emergency work, (RBH) whilst the other major site dealt with planned , elective work. The effect on cardiology services was that coronary care and inpatient cardiology would be based at one site only (RBH) whilst diagnostic services would continue to be offered at all three sites.

This change coincided with the opening of a new cardiac catheter laboratory (CCL) at RBH and the recruitment of three new interventional cardiology consultants. However, there was no further planned investment in cardiac physiologist (CP) recruitment.

Problems specific to the diagnostic department included a lack of appropriate administrative support at BGH; an absence of a unified, electronic system for real time mapping of activity; a surfeit of unfilled vacancies across all sites; the actual demand on the service had not been quantified, and hence the change in demand following the service reconfiguration could not be anticipated.

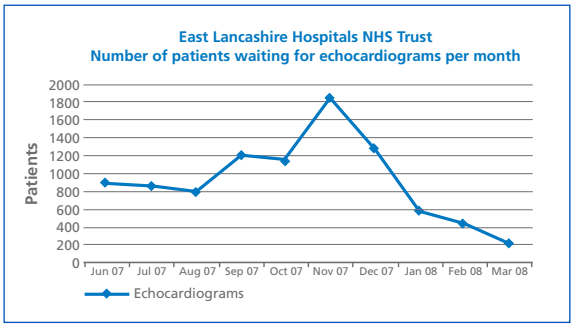
It was difficult to determine what the actual waiting time for a diagnostic procedure was as no consistent system existed to allow proper analysis. However, the waiting times for an echo at either RBH or BGH were known to be "in excess" of three months.

### Actions taken

- Demand mapping was performed, in order to quantify the various sources of investigation requests
- Process mapping of both departments
- The implementation of a PAS based electronic system across RBH and BGH which incorporated real time analysis of waiting times, allowed validated coding of activity undertaken, which in turn led to the generation of accurate invoices
- Implementation of a TOE service
- Implementation of a pacemaker insertion service
- Increased administrative support
- Workforce skill mix analysis and planning
- Recruitment to vacant post
- Redesign of administrative procedures
- Rationalisation of the service available from RGH
- Locum to clear backlog
- Extension of ATO roles

### Key results/outcomes

The departments had no robust electronic system, therefore had no idea of how many echo patient's were in the system at any one time. The graph below shows the number of patients waiting for an echo. ***Note: Electronic system was introduce in October/November.***




- Waiting time for an echo now stands at under four weeks at both sites
- Electronic system can map demand on a real time basis
- Extension of ATO role
- New TOE and pacing service
- National target of six weeks wait for diagnostics achieved 31 March 2008
- Team development programme

### Contact information

Jennifer Watts
Email: Jennifer.watts@lsccn.nhs.uk

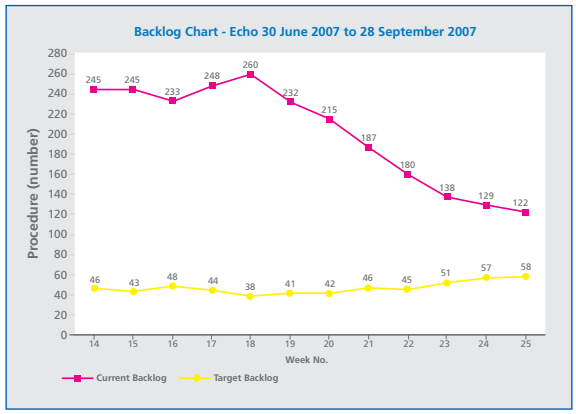
# Cardiac Diagnostics Improvements: Two Week Waits
## Royal Surrey County Hospital
## West Surrey Cardiac Network

### Issues to address
- Waiting times for cardiac tests varied from three or four weeks up to 13 weeks. Echocardiography had some of the longest waits and a backlog of 249 patients
- The booking process was coordinated through a central bookings service; this meant that cardiology had less influence/control over the process
- There was a large amount of rescheduling by patients and the hospital, and a higher DNA rate (up to 25%) than the target
- Capacity was insufficient to meet the demand for some tests while for others lack of equipment was the main concern
- Templates did not reflect all the work actually performed
- Some sessions for echo had four patients others six, this needed standardising.
- Skilled technical staff were regularly involved with administrative duties
- There was not enough equipment for ambulatory monitoring.

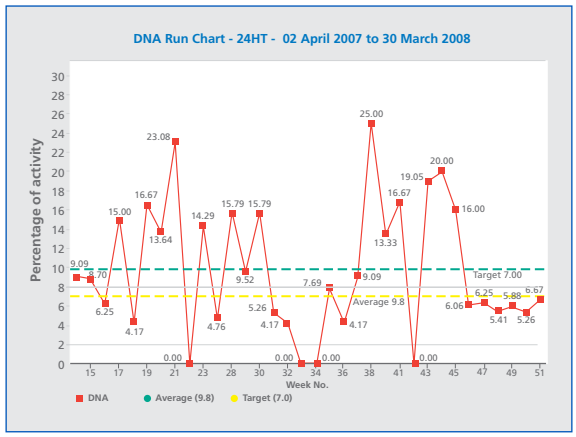
### Actions taken
- Process mapping to look at the whole pathways for all tests
- Redesigned the administration department to book all tests within cardiology instead of a central bookings office
- Examined demand and capacity for all clinics.
- Adjusted templates to ensure enough slots were available to meet the demands.
- Added extra clinics where required
- Examined workforce and recruited where possible
- Utilised a locum to clear echo backlog
- Changed bookings process so patients are phoned for an appointment. Introduced direct access to make bookings
- Devised plan to move towards one stop where possible
- Adjusted IT systems to capture all work, and made ambulatory monitoring templates flexible
- Bought new equipment for the department
- Revised technicians job descriptions to ensure that those inappropriately on a band five were moved to a six.

### Key results/outcomes
- Ordinary echo reduced to 0-2 weeks by November
- Other tests for ambulatory monitoring are all within three weeks (most within two weeks) with further adjustments to make to reach two weeks.
- Reduced DNA rate
- Less waste
- Greater control of bookings.

### Echo backlog at start of project




### DNA rate for 24hr Tape – now maintaining at 7%




### Contact information
Claire Johnson
Email: clairejohnson@nhs.net

## Focus on Cardiac Diagnostics: Maximum Two Week Waits Achieved
## University Hospitals of Morecambe Bay NHS Trust (Royal Lancaster Infirmary, Westmoreland General Hospital, Furness General Hospital) Lancashire and South Cumbria Cardiac Network

### Issues to address

University Hospitals of Morecambe Bay NHS Trust consists of three sites, which cover an area of 1000 square miles. Each Cardiac Investigation Unit (CIU) worked in isolation as cross-site working appeared an inefficient use of staff time and historically was rarely performed leading to staff and site isolation. Waiting times for Cardiac Investigations was over 18 weeks and this would inevitably impact on achieving the 18-week referral to treatment time for cardiac and non-cardiac pathways. A private sector company had been commissioned to reduce the echo waiting times from 20 weeks and this highlighted the need for service improvement and attainment and sustainability of short waiting times for cardiac diagnostics. The trust already had plans to introduce one-stop clinics to aid reduction in waiting times on the patient pathway.

Maximum waiting times for echocardiography in May 2007 was 47 weeks.

### Actions taken

- **Process maps performed at each site.**
- **Demand data collected over 4 weeks.**
- **All cardiac diagnostics waiting times measured.**

This resulted in:

- Redesign of administrative staff working patterns to ensure all clinical sessions were covered.
- Aim to reduce DNA rate and increase patient choice by implanting trust policy by arranging mutually agreed appointment times.
- Patients were encouraged to book appointments directly with the CIU department introducing and increasing patient choice and potentially reducing DNAs.
- To reduce length of stay for inpatients, diagnostic tests, that were suitable to be performed as outpatients, were requested and appointments given prior to discharge. This could not have been achieved without short waiting times and has led to an increase in patient choice as well as overall efficiency improvements.
- Dispatch of CIU results to take place twice daily 11.30am and 4 pm. This has led to improved patient flow and has potentially impacted on reduced length of stay for inpatients.
- Medcon link was implemented across all sites centralising reporting and accessing results and images. This improves reporting turnaround and impacts on overall efficiency.
- Daily waiting list management ensures all available slots are filled at mutually agreed short notice.
- Trialled flexible working days to extend use of Echo machine.
- Extra portable echo machine was acquired for FGH.
- Addition of recently BSE accredited cardiac physiologist.
- Successful bid for British Heart Foundation echocardiography student.
  Employed bank echo physiologist to cover short absence notice and sustain short waiting times.
- Commissioned independent sector to perform excess echo waiting list to reduce back log and allow service redesign and ensure capacity and demand were balanced.
- Extra stress testing slot on each session improved capacity and maximised resources.
- Support of services by a nurse led position and funding secured for a substantive post.
- Daily capacity management of Ambulatory monitoring, hook-up and analysis.
- Senior physiologists to dispatch normal open access results with guidelines and support from the consultant cardiologists. This reduces demand on the cardiologists and more fully utilises the highly skilled physiology workforce.
- Role redesign by training assistant technical officers in ambulatory hook-up reduces demand on the highly specialised physiology workforce.
- Opening Friday sessions for ambulatory monitoring hook up and arranging return of monitors to ward over the weekend increases capacity and reduces overall waiting times.
- Introduction of One Stop at Royal Lancaster Infirmary and Westmorland General Hospital. Aim to implement at FGH in May 2008.
- Workforce and skill mix review completed for cardiac physiologists.

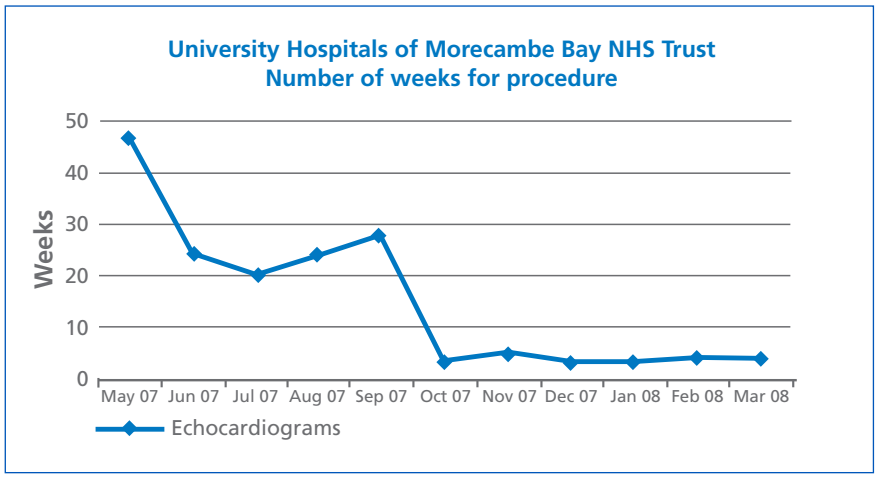
- Sustainability score and report produced.
- Communication plan and stakeholder involvement identified.
- Cross Bay, multiple site working for cardiac physiology staff ensured all diagnostic sessions were covered and improved efficiency of services across the trust.

## Key results/outcomes

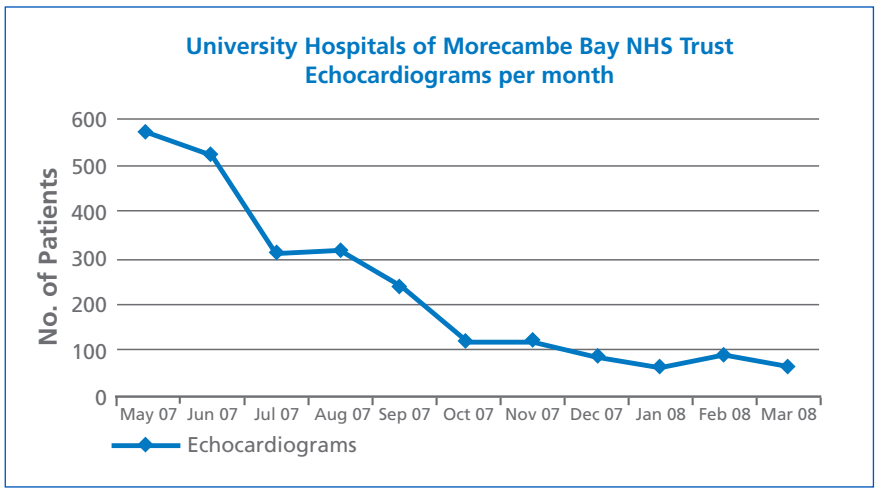
- **Sustained two week wait for all diagnostics**
- Cross site working
- One stop clinic implementation
- Reduced DNA rate
- Impacts on overall 18 week targets.

**Contact information**
Lauren Butler
Email: Lauren.butler@lsccn.nhs.uk

**Results: Waiting times**




**Results: Number of patients waiting**



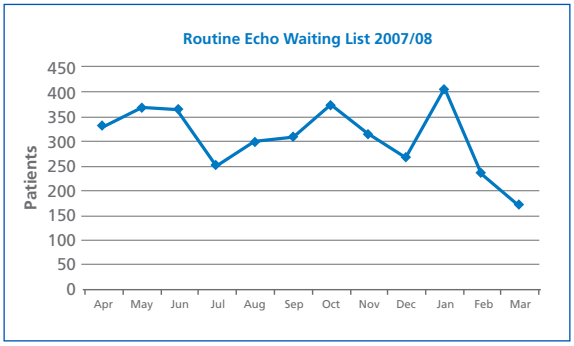
# 18 Weeks - Focus on Cardiac Diagnostics
## Ashford and St Peters NHS Trust
## West Surrey Cardiac Network

### Issues to address
- Echo waiting list and wait times: Echo waits >12 weeks with high inpatient demand and backlog for echo = > 350. High DNA rate for echo
- Rapid access chest pain clinic waits > 5 weeks – target not met
- Data collection
- Booking
- Inaccurate waiting list
- Inconsistent booking process

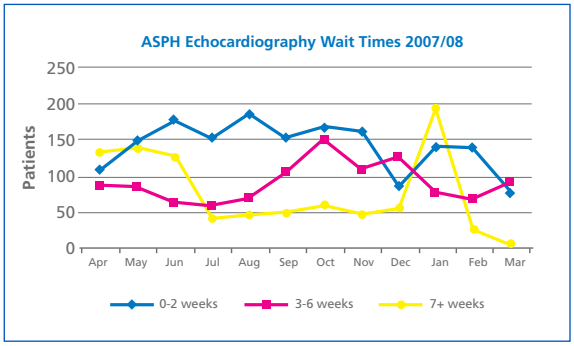
### Actions taken
- Project team established July 2007
- Project plan and time line developed
- Service improvement tools and techniques applied – process mapping, demand & capacity, data analysis and collaborative team work
- Base line data collection to establish current waiting list and times for diagnostics and chest pain clinic
- Validation of waiting lists
- Audits – DNA, workforce and patient satisfaction questionnaire
- Departmental workshop to review findings and engage all members of department in service redesign
- Training on booking system – prism to include upgrade
- New Inpatient echo guidelines – circulated to all wards and on intranet
- New clinic templates for echo and ETT
- New echo clinic on ward to increase capacity and utilise equipment to its full capacity
- Recruitment of second receptionist
- Securing of SHA funding for trainee posts
- Successful BHF bid for trainer across Surrey and Sussex
- New associate practitioner post
- Chest pain clinic – new booking system through central booking. New documentation to include referral form, outcome letter and patient information leaflet. Name change to chest pain clinic to avoid confusion with RAC and subsequent launch. All documents sent electronically to GPs
- Nurse led chest pain clinic pilot in progress – to increase capacity.

### Key results/outcomes
- Accurate data collection and improved waiting list management
- Improved booking and DNA management
- Staff trained in booking and have understanding of importance of 18 week targets
- Echo waits down to all within six weeks and majority within 2-3 weeks (included TTE, TOE and bubble studies)
- Echo waiting list down from 350+ to 170 which meets capacity
- Increased echo capacity from 89 slots per week to 150 which is > then recommended capacity
- Designated IP slots – improved IP management therefore IP waits < 48hrs
- Chest pain clinic – 100% patients seen < 2 weeks for last quarter Jan – March 2008
- Prism upgraded to version 7
- PAS/Prism link in progress
- New treadmill purchased to increase capacity
- SHA trainee funding secured for 2008/9
- Recruitment for BHF Trainer post in progress.

The diagram below demonstrates reduction in waiting list during project. This includes all routine patients with booked and pending an appointment.



The diagram below demonstrates the reduction in waits times with significant change from start of project. There was an increase in patients waiting >6 weeks in January due to reduced capacity. February saw the introduction of the extra clinic hence reduced waits > 6 weeks.




Special thanks to all the members of the team for their commitment and hard work which has made the project a success and in particular, Dr Ian Beeton, Consultant Cardiologist, Ashford & St Peters NHS Trust.

## Contact information

Alex Bennett (Service Improvement Manager)
Email: Abennett3@nhs.net

# Mid Yorkshire Acute Trust Cardiac Diagnostics Project: 70% of Tests Achieved Within 14 Days

## Mid Yorkshire Acute NHS Trust (Dewsbury District Hospital, Pinderfields General Hospital – Wakefield, Pontefract General Infirmary)
## West Yorkshire Cardiac Network

### Issues to address

The acute trust had three sites providing non invasive diagnostics. There was little coordination across the sites, who operated as separate departments. The three teams had not met previously as a single group. Waiting times were excessive with problems maintaining 13 week waits for echocardiography. Managers were using patient tracking and booking any potential 13 week breeches causing new referrals to wait longer.

The staff were very demoralised and felt both undervalued and penalised by the trust. A previous piece of work had resulted in the loss of three posts across the sites which made staff very wary of involvement in this project. Waiting times for tests were the worst in the region and the trust had all the long waiters for echocardiography regionally and were under pressure from the Yorkshire and Humber SHA. This was on top of issues with invasive diagnostics. The departments did not offer staff cover to other sites to help maintain capacity.

### Actions taken

- We organised a cross site meeting by closing the department on a Friday afternoon and inviting all staff to attend a meeting "off trust".
- Everyone attended and we arranged follow up meetings in December and February to maintain momentum.
- We undertook a staff survey to canvass opinions on current issues around better coordination of services cross trust and staff morale. This will be followed up by a second survey in early April 2009 to assess any change.
- 202 patients completed a patient survey of their views on current services at each of the three sites.
- Each site set up methods to collect demand data and use this to better plan capacity to reduce and sustain improved waits.

### Key results/outcomes

- The cross site meetings generated great enthusiasm which was harnessed to engage staff in tackling the problems of waiting times. Currently 70% of tests are undertaken within 14 days of referral and no patient is waiting longer than 4 -5 weeks unless through choice. This is a remarkable improvement in such a short time.
- The staff have established a mechanism for the sites to cross cover absence. This uses the demand and capacity work which allows weekly assessment of where capacity is at risk and the department heads liaise to ensure potential lost capacity is minimised.
- The patient survey was very appreciative of the staff and their level of service which was reported to the staff. Issues arose around access and other trust issues which were highlighted to management.
- The staff survey provided a good baseline of staff feeling. This will be compared to a repeat survey to assess any changes. It was important to undertake this survey as staff originally felt undervalued particularly by the trust and very seldom do we stop to ask their views. It is clear that this has helped with staff engagement which will be tested using the second survey.
- The feedback helped departmental management secure funding for a new physiology post (will be a trainee with band 6 post when qualified). This is a major success as the trust has had no trainees for several years.
- The success of this work has allowed discussion on wider issues and further work on improving referral and booking processes as well as scoping "one stop" clinics is already planned for early April 2008.

Thanks to all staff and managers for their efforts. It is they that have delivered success in this work.

### Contact information

Ged Oliver
Email: Gerard.oliver@bradford.nhs.uk

# Making a Difference to Physiological Measurement Diagnostic Services – Achieving 18 Weeks

## Heatherwood and Wexham Park NHS Trust (Wexham Park Hospital, Heatherwood Hospital, King Edward Hospital, St Marks Hospital) South Central Cardiac Network

### Issues to address

Heatherwood and Wexham Park NHS Foundation Trust is unique in that it is a multisited trust. The trust serves a population of approximately 500,000 in an area with a high prevalence of coronary heart disease. Over the last 4–5 years we have developed our services and repatriated the work that was traditionally done in a tertiary centre.

We had a large problem in long waits for all diagnostic tests.

### Actions taken

**1. Data & validation**

- Validating date – Implementation of a 'gatekeeper' to ensure referrals are correctly categorised
- Validation of backlog leads to slots, identification and improved referral criteria.

**2. Demand & capacity**

- Regular review of demand and capacity led to increased efficiency
- Admin staff informed of building waits leading to 'flexing' of clinical sessions to prevent backlog
- Cross site scheduling and daily capacity management
- Reviewed referral guidelines for both trust and direct access from GPs.

**3. One-Stop**

- One-stop model rolled out to five sites
- Introduction of Saturday one-stop clinic to cut down backlog.

**4. Booking**

- Improved booking for booking management
- Referral form reviewed with RTT and follow up status
- Electronic booking form redesigned
- Improved booking for echo improves flow
- Week by week review of booking system accommodates fluctuations in referral patterns
- Clinic templates redesigned
- Rolled out electronic triaging for outpatient referrals – request tests on same day of triaging electronically.

**5. New kit/kit use**

- Increased use of portable echo machine reduces wait and inpatient stay
- Additional 24 hr ECG, 24hr BP monitors and event recorders procured that have increased efficiency
- More efficient daily use of ECG/BP monitors (including Saturdays).

**6. Reduction in waiting times**

- Echo, ETT, 24 ECG and BP monitors, event recorders waits down to two weeks.

**7. New services**

- Electrophysiology clinic to start in May 2008
- Heart failure clinic (One Stop) to start in June 08
- Cardiac synchronisation through echo to start in August 2008.

**8. Workforce and changing roles**

- Saturday clinics for OPD work and other diagnostic tests
- Staggered working hours – change according to needs of service and to make efficient use of equipment.

**9. Workforce reviews and changing roles**

- Skill mix in cardiac physiologists encouraged through support in BSE accreditation
- Overseas recruitment
- Successful bids from SHA for student cardiac physiologists, currently two SHA funded and one trust funded.
- Review of establishment in March 08 due to rapid expansion if service.

**10. Admin and reception staff**

- Receptionists validate waiting lists
- Multiskilled receptionists – undertake senior admin role, trains other staff local and cross-site, booking, collects data, demand and capacity management and receptionist.

**11. Patient information and communication**

- Comments box available in unit
- Patient and Public Information forum to review access to cardiology
- Patient representative in LEAN project on heart failure.

**12. Staff communication/information**
- Active encouragement for staff to 'buy-in' to changes and improvements
- Team committed to achieve the 2 weeks target for diagnostics.

**13. Guidelines and documentation**
- New 'one' request form for all cardiology tests
- Guidelines posted on intranet
- Guidelines reviewed in Oct 2007 and incorporated at back of new form.

**14. Electronic communication/information**
- Encouragement of electronic referral within Trust rolled out
- Looking into reporting into MEDCON.

## Key results/outcomes

Waiting times for most of the tests are within two weeks.

**Electrocardiograms (ECGs)**
- All GP practices in East Berks have ECG machines and perform their own ECGs. The departments at Wexham, Heatherwood and St Marks have physiologists to provide an ECG service to patients in secondary care. Where there is no physiologist cover, nurses are trained to perform ECGs in clinics and on the wards.

**24 hr Ambulatory ECG and BP monitoring**
- Direct access to GPs whose patients require 24 hour monitoring. This is supported by robust referral criteria. Once the result has been generated, it is sent back to the GP.
- The same is offered to secondary care patients, this time with the result being sent back to the referring consultant within the trust.
- Extra 24 hr Ambulatory ECG monitors were purchased in Sept 2007 that have helped in clearing the backlog and has been able to maintain the wait within <2weeks.

**Event monitoring**
- Patients are referred from secondary care. They have a monitor fitted for seven days and then return the monitor for analysis. GPs supported with "Invest to Save" projects for monitoring in primary care (still in planning stage).
- Extra event monitors were purchased in September 2007 that have helped in clearing the backlog and has been able to maintain the wait within <2weeks.

**Transthoracic and Transoesophageal Echocardiography**
- The echocardiography department provides cardiac ultrasound imaging for patients from all specialities within the trust. In addition to transthoracic echocardiography, transoesophageal echo is also performed. At present we perform around 6,500 echoes per year over four sites. The majority of cardiology clinics over four sites are covered with "One Stop" echocardiography.
- Provision of a direct access echo service to GPs, again supported by robust criteria as discussed with the lead cardiologist. Results are sent back to GP with technical report and a conclusion for easier interpretation. Ongoing work between secondary and primary care to support education to GPs in interpreting results.

**Pacing Follow-Up**
- Around 2,000 pacing patients are receiving follow up. Many were repatriated from the tertiary centre (single/dual chamber and complex devices) and the others from new implants.
- To cope with the demand, we are currently holding pacing clinics on a daily basis with a complex device clinic on a Friday which is consultant/physiologist led.

**Exercise Tolerance Testing**
- Service provided to inpatients, outpatients and as "One Stop" to support the Rapid Access Clinics and Chest Pain Clinics.

## Contact information

Suzanne Burrows; Usha Balasubramaniam
Email: Suzanne.Burrows@hwph-tr.nhs.uk
Email: Usha.Balasubramaniam@hwph-tr.nhs.uk

## Reducing Cardiac Diagnostic Waiting Times to Meet the 18 Week Target
## Milton Keynes Hospital NHS Foundation Trust
## Central Southern Cardiac Network

### Issues to address
Waiting times for cardiac diagnostic tests needed to be significantly reduced in order to achieve the 18 week target, which was implemented in April 2008.

It was recognised that cardiology impact on other specialties and so reductions needed to be made and be sustainable.

### Actions taken
- Initial validation of waiting lists
- Development of action plan, with monthly milestones
- Use of additional lists
- Firebreak clinic every eight weeks
- Working patterns redesigned to ensure maximum utilisation of resources
- LEAN project started in June 2007
- Patient pathways streamlined
- Implementation of Cardiology Action Team to ensure there is continuous improvement.

### Key results/outcomes
- Waiting times have been reduced to approximately two to four weeks for tests
- New ways of working have been implemented
- Staff have ownership of targets and achievement of these.

### Contact information
Alison Gowdy
Email: Alison.gowdy@mkhospital.nhs.uk

## Reducing Echo Waits to Two Weeks
## Queen Elizabeth Hospital NHS Trust, Kings Lynn
## Anglia Cardiac Network

### Issues to address
Work started on reducing echo waits in July 2005 with monthly capacity and demand figures informing progress. By July 2006 the wait had fallen from 25 weeks to six weeks. But here it reached a plateau with a lack of ideas to improve the service further without spending money.

At July 2007 the wait for echo was six weeks. Monthly capacity and demand continued to be recorded.

### Actions taken
A generic support worker, band 3, was employed for a year.

**Duties include:**
- 50% administration: manning the reception desk, booking appointments face to face with patients and completing patient paperwork.
- 50% patient support: helping dress and undress, checking personal details, giving information and generally ensuring the equipment was ready for use.

The new position released the departmental clerk to:
- move from a postal appointments system to a telephone system as waiting times fell
- spend time checking clinic lists to be sure every slot is filled, even at very short notice.

### Key results/outcomes
Echo wait dropped to three weeks by November 2007.

Regrettably this was not sustained due to:

- a newly appointed additional consultant increasing the workload by 30% and
- the loss of two full-time echo technicians which we have been unable to replace.

We are now confident that we can deliver a two week wait:
- given the cardiac physiologists and assuming we will be able to retain the generic support worker.

### Contact information
Jane McQuade
Email: Jane.mcquade@qehkl.nhs.uk

## Technical Cardiology – Improving Access to Diagnostic Services
## Southampton University Hospitals NHS Trust
## Central Southern Cardiac Network

### Issues to address

As a department with generic/specialist working and a high productivity level per staff member, the introduction of diagnostic targets imposed increased pressure on a service which already had a very fragile balance between service demand and capacity.

Historically, interdependence on resources between specialist divisions (echo,cath lab, EP, implantable devices) meant that service pressure in one area impacted on other service areas. This being the case it was apparent that improvement in one area was also likely to have beneficial impact. With this in mind, a whole service review was undertaken and the issues demonstrating commonality addressed. These issues were surrounding:

- clinic organisation
- workforce
- administration
- information technology
- equipment utilisation

(*some of the processes listed were in place prior to the start of the project but were continued in support of the project).

The baseline position at the start of this project:

- Diagnostic waiting times not achieved e.g. echo waits:
  - inpatients up to five days
  - outpatients 17 weeks
  - open access echo 30 weeks
- Insufficient capacity for timely implantable device follow-up
- Significant delays in processing results
- Unnecessary duplication of administrative functions
- Sub-optimal use of equipment -availability of equipment affecting service provision – equipment downtime affecting diagnostic waiting times
- Lack of training time to develop staff in specialist areas, especially EP.

### Actions taken

**Clinic organisation**

- Weekly review of capacity versus available workforce to ensure optimisation of clinic time
- Introduction of manufacturer specific implantable device clinics to utilise support from industry (at no additional cost) and free up clinical physiologist time for training
- Triage of all requests to ensure appropriate clinic allocation/appropriateness of referral
- Agreement for ad hoc waiting time initiative clinics outside of normal working hours to smooth out any unplanned variations in the service provision.

**Workforce**

- Implementation of a rolling training programme with a supporting infrastructure in the form of a dedicated clinical tutor (plus clinical skills laboratory)
- Staff appointments from overseas organised using:
  - expertise from HR department
  - specialist agency
  - teleconferencing
  - competency framework
- Utilisation of an improved skill mix with the appointment of HCAs
- Improved inpatient capacity through employment of a dedicated porter.

**Administration**

- Centralisation of the administration support to provide improved backfill in times of sickness/holiday etc (therefore removing the time commitment required by the clinical physiologists to manage the administrative staff)
- Allocation of ownership of specific responsibility to a named administrator creating better continuity of tasks.

**Information technology**

- All requests made and results recorded via newly developed module (designed by clinical physiologists in conjunction with corporate information team) linked to hospital administration system
- Acquisition of database supporting remote data management
- Acquisition of a digital archiving system to facilitate echo review without having to tie up echo machine.

**Equipment**

- Introduction of extended working days to optimise equipment use
- Investment in two portable echo systems.

## Key results/outcomes

- Reduced echo waits
  - inpatients seen in 24-48 hours
  - outpatient waits two to three weeks
  - open access waits six weeks
- Increased capacity for patients with implantable devices on remote follow-up from eight slots per clinic to 24 per clinic therefore facilitating appropriate follow-up intervals
- Zero vacancies on clinical physiologist posts as of 19 April 2008 – staffing levels will facilitate improved training time
- All other diagnostic procedures performed under six weeks and diagnostic waiting times sustained
- Streamlined administration service - reduced DNA rates
- Improved access to patients results for referring clinicians reducing duplication of result processing and reducing queries for the administration staff.

## Contact information

Karen Taylor
Email: karen.taylor@suht.swest.nhs.uk

# Project Team

## Project Team

### National Team Members

**Julie Harries**
Director, NHS Improvement

**Linda Binder**
National Improvement Lead, NHS Improvement

**Sarah Armstrong-Klein**
National Priority Project Manager

**Dr Mark Dancy**
National Clinical Chair

**Dr Strat Liddiard**
National Clinical Lead

### Project Managers and Senior Chief Physiologists

**Lancashire and South Cumbria Cardiac Network:**
Project Managers:
**Lauren Butler**, **Jennifer Watts**, **Julie Seed**

Senior Chief Physiologists:
**Kay Smith** (Morecambe Bay)
**Gill Corteen** (East Lancashire)

**West Yorkshire Cardiac Network:**
Project Manager:
**Ged Oliver**

Senior Chief Physiologists:
**Jill Tinkler** (Dewsbury)
**Nichola Firth** (Pontefract)
**Linda Pilling** (Pinderfields)

**Anglia Cardiac Network:**
Project Manager:
**Susan Toogood**

Senior Chief Physiologist:
**Jane McQuade** (Kings Lynn)

**Bedfordshire and Hertfordshire Cardiac Network:**
Project Manager:
**Penny Thomas**

Senior Chief Physiologist:
**Huseyn Ahmet** (Bedford)

**South Central Cardiac Network:**
Project Managers:
**Usha Balasubramaniam, Peter Loomes**

Senior Chief Physiologist:
**Suzanne Burrows** (Heatherwood and Wexham Park)

Project Managers:
**Alison Gowdy, Peter Loomes**

Senior Chief Physiologist:
**Chris Barnas** (Milton Keynes)

Project Managers:
**Karen Taylor, Kim Waterman**

Senior Chief Physiologist:
**Diane Gardiner** (Southampton)

Project Managers:
**Sophie Jordan, Tracy Gwyther**

Senior Chief Physiologist:
**Lisa O'Dowda** (Portsmouth)

**Surrey Cardiac Network:**
Project Managers:
**Alex Bennett, Sue Cottle, Claire Johnson**

Senior Chief Physiologists:
**Rachel Danvers** (Surrey and Sussex)
**Gill Tyrrell, Audrey Kemp** (Royal Surrey)
**Suzanne Brooks, Satpaul Purwaha** (Ashford and St Peters)

**Leicestershire, Northamptonshire and Rutland Cardiac Network:**
Project Manager:
**Ben Knight**

Senior Chief Physiologist:
**Lorraine King** (Kettering)

**North Trent Cardiac Network:**
Project Managers:
**Sarah Halstead**, **Nicola Bolam** (Sheffield)

**Dorset and Somerset Cardiac Network:**
Project Manager:
**Frances Aviss**, (associated project)

NHS

# NHS Improvement

CANCER

DIAGNOSTICS

HEART

STROKE

## NHS Improvement

NHS Improvement is a newly formed national improvement programme working with clinical networks and NHS organisations to transform, deliver and sustain improvements across the entire pathway of care in cancer, cardiac, diagnostics and stroke services.

Formed in April 2008, NHS Improvement brings together the Cancer Services Collaborative 'Improvement Partnership', Diagnostics Service Improvement, NHS Heart Improvement Programme and Stroke Improvement into one improvement programme. With over eight years practical service improvement experience in cancer, diagnostics and heart, NHS Improvement aims to achieve sustainable effective pathways and systems, share improvement resources and learning, increase impact and ensure value for money to improve the efficiency and quality of NHS services.

**NHS Improvement**

3rd Floor | St John's House | East Street | Leicester | LE1 6NB

Telephone: 0116 222 5101 | Fax: 0116 222 5184

**www.improvement.nhs.uk/heart**



Publication Ref: IMP/heart0003