

CORONARY HEART DISEASE

1. National Primary Care Collaborative Aim

A reduction in the mortality of patients with proven ischaemic heart disease by 30% in 3 years and 50% in 5 years in participating sites.

2. Background

Coronary heart disease (CHD) is the leading cause of premature death and morbidity in this country. However, there is a strong body of evidence supporting practical and often simple interventions – secondary and primary – which can significantly add years to life and life to years. A study in The Lancet showed the high impact on mortality for patients with established heart disease of the implementation of known drug therapy¹. In March 2000, the Secretary of State for Health launched the National Service Framework (NSF) for Coronary Heart Disease. This document brings together current evidence for clinical practice and service delivery in a practical framework to enable health care providers to offer patients optimum care.

The practical application of the evidence lends itself to a systematic approach, which means that the collaborative model is particularly useful in accelerating implementation and helping practices to achieve the potential improvements in outcomes for their patients. Sharing experience and best practice; monthly measurement and feedback; and rapid change using the improvement model are central to the collaborative practices' work.

Practices involved in the first four Waves of the National Primary Care Collaborative (NPCC) have achieved significant improvement in the care of patients with proven CHD using this approach. While every practice and PCT in the country has been involved in CHD work through the implementation of the National Service Framework, an analysis of the Office of National Statistics (ONS) data has demonstrated that PCTs on Waves 1 & 2 of the Collaborative have, on average, delivered a four-fold greater reduction in CHD mortality compared with the rest of England. Some PCTs, who have systematically monitored practice CHD mortality rates, can point to a reduction of 30% in CHD deaths in only one year.

The improvement in Waves 1 and 2 of the first phase of the National Primary Care Collaborative translates to just over 800 extra lives saved compared to the rest of England. Replicating this improvement across the whole of England would result in over 6,000 fewer deaths from CHD in a year. As result of this knowledge, NPDT has made the rollout of the learning on improving secondary prevention CHD a priority for Phase II of the National Primary Care Collaborative.

We recognise that every PCT and practice will have developed a strategy for local implementation of the NSF and will have undertaken significant work to date. NPDT has distilled both expert and practical learning on improving practice-based secondary prevention of CHD into a set of five change principles and associated change ideas. This handbook is intended to be a practical guide to help practices apply the change principles and ideas quickly and effectively to achieve the best possible impact on morbidity and mortality for their patients.

2. Scope of NPCC work on Coronary Heart Disease

The NPCC work on CHD focuses on the improvements that can be made within general practice for those patients that have established CHD. The work in this area will ensure that these patients receive optimum care through the application of a systematic, sustainable approach. Equally importantly, the approach helps practice teams learn a crucial set of skills in improvement and in systems thinking that they can apply in other areas of work, particularly chronic disease management. Many practices in Phase I of the Primary Care Collaborative have spread their learning on CHD to the wider scope of the CHD NSF and areas such as diabetes, asthma and care for older people.

The Coronary Heart Disease Collaborative is working across the whole integrated pathway of coronary care and focuses its secondary prevention work mainly on the interventions required at the interface between primary and secondary care. Details of their work can be found at www.modernnhs.nhs.uk/chd

3. Learning for PCTs on CHD

The implementation of a wide-ranging strategy such as the NSF requires a co-ordinated approach at PCT level. Those PCTs on the Collaborative where the practices have achieved significant, sustained improvement in the Collaborative measures and the resulting mortality reduction have taken an approach that includes:

- ♥ Co-ordination of work, linking initiatives, across the PCT and practices. This might include clinical governance, Primary Care Collaborative, primary care development, training, data quality, protected learning time and other modernisation work
- ♥ Spreading beyond the core practices to the whole PCT at an early stage
- ♥ Development of protocols, guidelines and templates
- ♥ Support for rigorous, practice-level measurement and use of improvement methods
- ♥ Sharing results and learning between practices
- ♥ Ensuring practices have skills and equipment to support their improvement work (e.g. training for practice nurses, health care assistants, and provision of BP measuring machines). Examples of training programmes can be found at www.npdt.org
- ♥ Linking CHD work to improving access. Practices that work towards advanced access find that it helps them to develop new, appropriate ways to handle demand and to free up capacity to support areas of work such as chronic disease management.

¹ Tunstall-Pedoe H et al. Estimation of contribution of changes in coronary care to improving survival, event rates, and coronary heart disease mortality across the WHO MONICA Project populations. Lancet. 2000; 355:688-700

4. National Primary Care Collaborative change principles for secondary prevention of CHD

Change principles

- ➔ Know all your patients who have Coronary Heart Disease
- ➔ Be systematic and proactive in managing care
- ➔ Ensure timely and high quality support from secondary care
- ➔ Involve patients in delivering and developing care
- ➔ Develop effective links with other key local partners

This section of the handbook describes the basic change principles and associated change ideas for secondary prevention of CHD that the experience of others has shown to deliver maximum effect. The principles may not look extraordinary but consistent and systematic work in each is most likely to deliver the greatest impact in terms of improving care and saving lives.

Specific change ideas are identified under each principle and practical examples, tips, guidance and tools have been provided where possible related to each area for change, denoted by the symbol ♥.

These examples are intended to stimulate thinking and debate about how the work is developed locally.

- ♥ The NSF for CHD contains a useful glossary of terms that you may wish to use alongside this handbook (www.doh.gov.uk/nsf/coronary.htm).

4.1 Know all your patients who have Coronary Heart Disease

Change ideas

- Agree a clear definition of CHD
- Develop a CHD register
- Develop systems to maintain a valid register

Agree a clear definition of CHD

The Collaborative work on CHD focuses specifically on patients with an **established history** of coronary heart disease e.g. past history of heart attack, angina or revascularisation. Whilst recognising the arguments for their inclusion, and after consultation with experts, the Collaborative has decided not to include PVD, TIA, ischaemic stroke, atrial fibrillation or heart failure for our purposes.

If the practice's CHD register includes patients who **only** have the conditions listed above (i.e. they do not also have proven coronary heart disease), a decision will need to be made as to whether to exclude them from the measures used in the Collaborative work. It is not a problem if the practice uses a broader CHD definition, as the most important factor is for consistency within the practice so that improvement can be monitored.

Collaborative practices may find it useful to consider establishing a clear definition for Coronary Heart Disease that is agreed initially amongst the primary care teams on the Collaborative and then across the whole Primary Care Trust. This will facilitate the spread of Collaborative work throughout the PCT.

Develop a CHD register

An accurate, complete and current register is the crucial starting point for improving CHD care. We suggest that initial work is focused on **ensuring that the register contains the right patients and that the information recorded about those patients is correct.**

Most practices will already have an active register of CHD patients as a result of their work on the NSF however at this stage you may find it useful to clarify which groups of patients have been included on the CHD register. Many practices will have taken a staged approach to building their register, moving from patients with CHD to those with atrial fibrillation, heart failure, cerebrovascular disease and so on. Practices may wish to use this ‘**stocktake**’ to discuss how they plan to further develop their register and possibly expand their work.

It may also be helpful to revisit **guidance on setting up a register**, as part of the process of ensuring it is complete and up to date and to access support for developing your register.

- ♥ *Examples of guidance on developing and maintaining a register can be found at www.npdt.org*
- ♥ *Local guidance and support is likely to be available at the PCT in the form of Information or Data Quality Facilitators, including PRIMIS facilitators, to provide practical support and guidance on construction and maintenance of computerised registers. PCTs may also have developed guidance on developing registers.*
- ♥ *The Health Informatics Programme for CHD or HIP for CHD (www.hipforchd.org.uk) provides a flexible framework of action for primary health care, which supports the clinician in consultation. It provides practical tools and methods to help practices and PCTs measure the effectiveness of their care delivery and meet NSF milestones and standards. The web site includes comprehensive guidance on registers.*
- ♥ *PRIMIS is an NHS Information Authority-funded training and support service to help GPs and their staff to make best use of their clinical computer systems and boost data quality in primary care. PRIMIS provides training and assistance to information facilitators employed by Primary Care Trusts, feedback and interpretation of the results of data quality and comparative analyses and support in developing action plans to improve data quality. See www.primis.nhs.uk*

Using a **protocol for coding** patient information can help to ensure consistency both within a practice and across the PCT, particularly if different clinical systems are used. Using a coding protocol, ideally alongside a CHD template, will support the process of and improve data quality and consistency.

- ♥ *An example of a protocol for coding can be found at www.npdt.org*
- ♥ *The CHD NSF includes a list of suggested read codes (www.doh.gov.uk/nsf/coronary.htm)*

The **improvement model** (three fundamental questions and PDSA cycles) is a valuable tool for checking the completeness and accuracy of the register.

- ♥ *Table 1 gives examples of real PDSA cycles that have been used to test and improve the quality of the register.*
- ♥ *PCTs offer support in helping practices interrogate their database and draw out comparative information assists in the process of improving the quality of the information held on it. The Department of Health has made MIQUEST software available to support this work.
(<http://www.nhsia.nhs.uk/nhais/pages/products/vaprod/miquest/>)*
- ♥ *The HIP for CHD provides guidance on validating registers.*
- ♥ *An example of MIQUEST queries can be found at www.npdt.org*

Develop systems to maintain a valid register

Once the register has been developed and validated, it is essential that systems are developed to maintain its validity. This should include a system to ensure that new information on existing patients is gathered and recorded, and another to ensure that new CHD patients are identified and included on the register.

Think about the following when you are developing your systems for maintaining the register:

- ♥ ***Who will be responsible for the maintenance of the register?***
Identify a named member of the team to be responsible for this work. Think about whether they might need training to develop their clinical knowledge to carry out the task effectively.
- ♥ ***How will you identify new cases or changes in diagnosis?***
Where does the information come from e.g. hospital letter, test results? How will you ensure that the information reaches the person responsible for the register's maintenance and is recorded and coded appropriately?
- ♥ ***How will the clinicians in your practices notify the register manager of changes to patient information?***
If the team is using computer templates, this will not be necessary. If not, you need to design a system to make sure the information is captured and recorded.
- ♥ ***Do you need a system to routinely check the quality of the information on the register?***
You might wish to build in regular checks on samples of data to make sure that your system for maintaining the register is working. These checks can be done using PDSA cycles and can be useful to highlight any gaps in your system.
- ♥ ***What do you need to write down about how the system runs?***
Recording how your system for maintaining the register works can be useful to ensure consistency and helps when the person responsible is away.

4.2 Be systematic and proactive in managing care

Change ideas

- **Measure progress rigorously and frequently**
- **Establish clear organisational arrangements**
- **Establish systems for delivering care to patients with CHD**
- **Use guidelines, protocols and computer templates to support care delivery**

Managing the workload and providing consistent evidence-based care for CHD patients requires a planned and systematic approach. Working through the change ideas in this section will help in ensuring that patients receive the greatest opportunity to receive optimum care.

Measure progress rigorously and frequently

NPDT considers **monthly measurement** for improvement to have been critical in helping Collaborative practices achieve the impact on mortality that has been shown to date.

Measurement should be at the centre of your improvement work. Tracking your progress in each of the four Collaborative measures each month will demonstrate the impact of your work and show the effectiveness of the systems you have developed to support ongoing care delivery.

The following section of this handbook on “CHD measurement: How to do it” contains detailed information on how to calculate the four CHD measures for the Collaborative.

- ♥ Practices are strongly recommended to establish a system to record CHD deaths in their registered population so that they can **measure mortality** over time. A suggested approach on how this can be done can be found in appendix .

Establish clear organisational arrangements

Organisational arrangements for secondary prevention of CHD should be agreed and communicated to all members of the primary health care team. Teams have found that the following organisational elements have proven to be of benefit:

- ♥ Establish a small, multidisciplinary team to lead the work. A **‘micro-team’** for CHD might include a GP, nurse and member of the administrative team who can together ensure that all aspects of the system are developed and managed, and that improvements are shared across the whole practice team.
- ♥ Identify a lead clinician with overall responsibility for co-ordinating care across the team
- ♥ Create protected time for the ‘micro-team’ to take forward improvement work on a regular basis
- ♥ Use the improvement model to make rapid change
- ♥ Develop nurse-led care for CHD patients
- ♥ Provide training and training materials for staff

Establish systems for delivering care to patients with CHD

The CHD ‘micro-team’ needs to consider what approach will be used to ensure that patients receive appropriate, timely care. This will include developing systems for call/recall and managing the workload.

- ♥ Practices may find it useful to use the principles of **advanced access** to plan how can best manage demand for CHD care.
- ♥ Many practices find that a **nurse-led approach** is very effective, with other members of the primary health care team becoming involved where appropriate. The role of the GP is

crucial in providing professional support to nurses, support to clinics for complex cases and in medication review.

- ♥ Work systematically to test whether patients are being prescribed the appropriate medication. The baseline CHD measures are the starting point for this work. Practices have found it useful to develop PDSA cycles to determine whether patients are being treated appropriately. Looking systematically at each group of patients will help you to understand your results and improve the quality of data and treatment. Examples of PDSA cycles are shown in Table 1.

The ongoing management of your patients with CHD is dependent on having a clearly defined system for **call/recall** that ensures that patients are invited at least annually, tracks attendance and follows-up patients who do not attend. Use **PDSA cycles** to test out developments and changes to your system. Ideas for developing your system include:

- ♥ Identify a named member of the multidisciplinary team to manage the call/recall process
- ♥ Decide how you will call/recall patients. You may wish to use your clinical computer system (linking via your computerised CHD template), using the date of last attendance or date of birth. Some practices call by date of birth and use a birthday card to remind people that their review is due.
- ♥ Consider how you will manage the care of patients who do not attend. Some practices have found that telephone review is useful for non-attenders. Prompts in patient notes or on the computer system can help clinicians remind patients that their review is overdue, or be used to initiate opportunistic reviews.
- ♥ Think about how to manage the CHD workload. Some practices find it useful to work out how many patients they need to see each year and have a system to call the right proportion each month or week.
- ♥ Develop the system with patients. They should be able to provide valuable information on the style and content of letters and patient literature, the organisation and timing of clinics/appointments to maximise attendance, how to best deliver care to patients with more than one chronic condition, understanding issues around compliance with medication, developing patient self-care
- ♥ Think about patients with particular needs e.g. hard to reach patient groups, patients whose first language is not English.

Use guidelines, protocols and computer templates to support care delivery

Whatever method is chosen for delivering CHD care in the practice, basing your service around agreed protocols means that the entire team can be clear about roles, responsibilities and how patients are managed. Protocols can be developed at practice level, agreed across Collaborative practices or the entire PCT.

- ♥ Examples of protocols can be found at www.npdt.org
- ♥ Applying the principles of advanced access can help to make the best use of skills and capacity to meet demand for this area of care

Use of computer templates allows a systematic, consistent approach to delivering care to patients and improved accuracy and completeness of patient data. Support in developing templates may be available from your PCT and system supplier.

Some practices have found it useful to develop a second, shorter CHD template for GPs to use opportunistically.

Useful tips in maximising the use of the template are:

- ♥ Keep it simple and user friendly
- ♥ Provide one-to-one training and support to the clinician using the system
- ♥ Routinely review the template and amend where appropriate
- ♥ Regularly use the data from the template to inform the team of its performance

4.3 Ensure timely and high quality support from secondary care

While many of the ideas set out in the NSF are applicable in primary care, there will be a need to co-ordinate other elements at the PCT, particularly around prescribing and access to secondary care.

Change ideas

Ensure PCT co-ordination at the primary/secondary care interface
Analyse the patient journey and redesign where necessary

PCT co-ordination at the primary/secondary care interface

Most PCTs have established multidisciplinary **implementation groups** with representatives from primary and secondary care to manage implementation of the NSF and ensure high quality services are in place in both primary and secondary care. The learning from Collaborative practices can be fed into the group to assist spread.

Having such a group will help to ensure that the roles and responsibilities of people involved in services for patients with coronary heart disease are co-ordinated. The group's key functions are likely to cover measurement of progress against the NSF, the production of referral criteria and access to a rapid assessment service, formularies, discharge arrangements, developing a strategy for training and ensuring that appropriate equipment is available. It is suggested that the group may also use the opportunity to review and redesign the patient journey.

The enactment of best practice increases statin use. The involvement of the pharmaceutical advisor is essential to ensure appropriate links into financial framework and to assist in seeking opportunities to reduce costs in other areas. Some PCTs, for example, have been able to negotiate with the acute trust to use more cost-effective beta-blockers. Data from core practices will help in estimating the financial impact of this work.

The Local Implementation Group may find it useful to map other **local organisations** that have an influence or potential influence on CHD in their area and think about how to involve them in developing CHD services. Local Authorities, for example, with their responsibilities around social care, education, environmental services and links with recreation, potentially have a very important role in providing complementary services to support NHS care for patients with proven CHD. In addition, many local communities have a vibrant and active voluntary sector with the potential and community networks to make an effective contribution. This is particularly relevant when looking at the needs of local minority ethnic groups. The implementation group may wish to:

Practical ideas, which have been rolled out successfully in many places, include:

- ◆ Prescription for exercise schemes using local recreational facilities, including targeted schemes for specific communities (e.g. exercise classes for Asian women)
- ◆ Targeted dietary advice and classes through existing local community groups i.e. using volunteers to run the groups.

Analyse the patient journey and redesign where necessary

Mapping the processes or sequence of events between primary and secondary care from a patient's perspective is an effective approach in starting to understand whether current service provision is timely and high quality.

Once this has been agreed between the group, the following questions are useful in developing ideas to improve the patient journey:

- ♥ What are the problems – barriers and bottleneck – in the patient's journey, especially in handovers between primary and secondary care?
- ♥ Can steps be reduced or simplified? e.g. rapid access chest clinics, mobile echo services
- ♥ Can constraints (e.g. waiting times for investigations) be addressed?
- ♥ How can the evidence base be better integrated into the provision of care? e.g. standardising computer coding between primary and secondary care
- ♥ Are the right people with the right skills in the right place to provide the right care at the right time? Are there opportunities to relocate service in primary care? e.g. in-house echocardiography, echo and 24 hour ECG by GP with referral from other practices
- ♥ What the training and development implications for staff and how can these best be addressed?
- ♥ What should be measured to demonstrate the effectiveness of the service and improvements made?

Examples of redesign at the primary/secondary care interface can be found on the CHD Collaborative web site at www.modernnhs.nhs.uk/chd

The CHD Collaborative have used a tool called 'discovery interviews' to improve understanding of the needs of patients and carers. Further information can be found at www.modern.nhs.uk/chd

4.4 Involve patients in delivering and developing care

Change areas

Deliberate strategy for self-management

Integrating the patient's perspective constantly in the design of services

Ensure written communication is appropriate and understood

Pay special attention to the needs of people from hard to reach groups

Deliberate strategy for self-management

Patients live with their chronic disease 24 hours a day 365 days a year and are experts on their condition. Many patients are happy to, and effective at, managing aspects of their own care. This may include developing their understanding of their disease through practice-

based education, improving blood pressure control by home monitoring, and actively participating in improving their diet and lifestyle.

In 2001 the Department of Health launched the 'Expert Patients Initiative' to bring about a shift in the way that chronic diseases are managed, encouraging and enabling patients to take an active role in their care. Further information on this programme can be found at http://www.doh.gov.uk/healthinequalities/ep_report.pdf

One example of such an initiative is the 'Heart Manual' developed by the British Heart Foundation Rehabilitation Research Unit. This self-management system for patients undergoing cardiac rehabilitation involves three elements: a professionally facilitated introductory session, a phased programme of home based exercise, stress management and written information and two audio tapes for relaxation training and improving patient/carer understanding of the disease. Further information can be found at <http://www.cardiacrehabilitation.org.uk>

Integrating the patient's perspective in the design of services

Patients and carers offer a unique insight into services, and their participation in redesign is crucial to truly enhance care. Teams should consider how they might meaningfully involve patients in decision-making about care delivery. Successful teams have ensured that the views of patients are incorporated into a range of initiatives around CHD such as the development of guidelines and protocols, patient information and in redesign initiatives.

- ♥ The Modernisation Agency provides a useful guide, 'Involving patients and carers' in their Improvement Leaders' Guide series. See www.modern.nhs.uk/improvementguides

Ensure written communication is appropriate and understood

Most primary health care teams have written material (letters and advice leaflets) to support patient care. It may be useful for individual teams or the PCT to review material, involving patients to ensure it is appropriate and clear.

It might be worth noting that the Plain English Campaign recommend that written material should be pitched at a reading age of seven to be understood by 90% of the population. See www.plainenglish.co.uk

Pay special attention to the needs of people from hard to reach groups

It is obvious, but pay special attention people who have particular needs including patients from minority ethnic groups and patients with disabilities. Local community representatives and voluntary organisations can be a valuable source in helping to identify appropriate mechanisms of communication and in addressing issues around access.

- ♥ The Department of Health has produced guidance for primary care on addressing the needs of hard to reach groups. See http://www.doh.gov.uk/pricare/pdfs/nsf_inequalities.pdf

CHD measurement: how to do it

Help and support

We have designed the measures for the collaborative to be easy to understand and to collect. Access Facilitators and your NPDT Centre Teams are able to offer assistance and advice for any queries to do with measurement.

Definition of Coronary Heart Disease

The Collaborative work on CHD focuses specifically on patients with an **established history** of coronary heart disease e.g. past history of heart attack, angina or revascularisation. Whilst recognising the arguments for their inclusion, after consultation with experts the collaborative has decided not to include PVD, TIA, ischaemic stroke, atrial fibrillation or heart failure for our purposes.

If the practice's CHD register includes patients who **only** have these conditions (i.e. they do not also have proven coronary heart disease), they will need to make a decision themselves whether to exclude them from the measures used in the collaborative work. It is not a problem if the practice uses a broader CHD definition, as the most important factor is for consistency within the practice so that improvement can be monitored.

Collaborative practices may find it useful to consider establishing a clear definition for Coronary Heart Disease that is agreed initially amongst the primary care teams on the collaborative and then across the whole Primary Care Trust. This will facilitate the spread of collaborative work throughout the PCT.

General guidance on measurement

The aim of the work that the practice carries out with patients with established CHD is to maximise the number of patients taking the appropriate medication whilst taking account of **individual patients' needs**.

The **purpose** of the measures is to help you track progress in achieving the above aim. It is important that the team understand the definition of each measure to ensure consistency.

In the process of managing patients with CHD, you will find that some of your patients will not be able to take medication because of contraindications or because they experience side effects. We therefore suggest that these patients should be **excluded** in your calculations so that your measures accurately reflect how you manage your patients. We also suggest that you exclude patients who are taking alternative medication and those patients who choose not to take particular medication.

Therefore, for the purposes of the collaborative, the percentage of CHD patients on aspirin, statins and beta blockers means the percentage of CHD patients does not include those patients who

- ***have contraindications to those drugs (by age or pharmacology)***
- ***have side-effects preventing them taking the drug***
- ***are taking alternative medication***
- ***have chosen not to take the medication***

The practice will therefore need to identify patients in the above groups to make the measure accurately.

For example:

Practice has 100 patients with a diagnosis of CHD

50 of those patients are recorded as being on aspirin

18 patients have a contraindication recorded in their notes

2 patients are prescribed with Warfarin

The number of patients this measure applies to is therefore $100 - 18 - 2 = 80$

*The aspirin measure for this practice is $50/80 * 100 = 63\%$*

CHD Measures

Monthly Measures:

- Aspirin: % patients with CHD on aspirin (unless a contraindication or side-effects are recorded)
- Statins: % patients with CHD who are on a statin (unless a contraindication or side-effects are recorded)
- Beta-blockers: % patients had an MI in past 12 months on beta-blockers (unless a contraindication or side-effects are recorded)
- BP: % patients with a BP < 150/90

Annual Measure:

- Number of patients died from CHD in 12 months

Percentage of CHD patients on aspirin

How do I measure the % of CHD patients on aspirin?

Using the CHD register, count the number of patients identified as receiving aspirin and calculate as a percentage of the total number of patients on the CHD register. Exclude those patients taking alternative anti-platelet therapy or anti-coagulants, those not taking aspirin because they are experiencing side-effects, and those patients who have elected not to take medication.

We suggest that practices record patients buying their own aspirin using a template or code on the computer system. This will automatically enable the practice to include those who buy aspirin directly over-the-counter when counting patients on aspirin. Counting the number of patients receiving repeat prescriptions is a starting point, but is likely to underestimate the true number taking aspirin.

Note

- ♦ Some general practice computer systems allow the user to search for prescriptions by a code representing the section of the British National Formulary (BNF) in which they are listed. Aspirin is referred to in different ways in the BNF (as an antiplatelet agent, as an anti-inflammatory and as an analgesic) so it important to use the correct code or codes when searching for aspirin prescriptions or you may underestimate the number of patients on aspirin.
- ♦ Suggested Read codes for the coding of aspirin are OTC aspirin therapy 8B3T, aspirin prophylaxis – IHD – including prescribed system 8B63-1.

Percentage of CHD patients on statins

How do I measure the % of CHD patients on statins?

Count the number of patients on the CHD register that are currently receiving a repeat prescription for statins and calculate as a percentage of the total number of patients on the CHD register.

Note

- ◆ When searching for statins on a computer system, ensure that drugs included in the search are only statins (HMG co-A reductase inhibitors) as some systems have a category for “lipid lowering drugs” which includes drugs other than statins (e.g. bezafibrate).
- ◆ There is emerging evidence for the benefit of statins for all patients regardless of starting cholesterol level. Having consulted with the Heart Team, we currently suggest that those patients who do not have a cholesterol level sufficiently raised to merit the prescription of a statin –i.e. < 5mmol/l and hence would not be appropriate for the drug can be **excluded** from the calculation. However, in the light of the emerging evidence, you may wish to discuss individual patient management with clinical colleagues.

Percentage of post-MI patients on beta blockers

How do I measure the % of patients with a history of MI on beta blockers?

Use the CHD register to select only patients who have had a myocardial infarction (MI) **in the last year**. Search this group of patients and count the number that are currently receiving a repeat prescription for beta blockers. Calculate this as a percentage of the total number of patients who have had an MI.

Note

- ◆ Read codes identifying myocardial infarction are: G41 (Read 4 byte set) or G31 (Read 5 byte set).
- ◆ It is important to track the incidence of new cases - i.e. patients who have heart attacks after the start of the collaborative work. This will be part of updating the CHD register.
- ◆ We have restricted the measure for beta blockers to patients having had an MI within the last year. The view of national leaders on heart disease is that the benefit of beta-blockers more than 12 months beyond myocardial infarction is unproven (...although *lack* of benefit is also unproven). There are quite a number of places where beta-blockers are continued (provided there are no contra indications), although the NSF reflects the standard of 12 months post-MI.

Percentage of CHD patients with blood pressure below 150/90

How do I measure the % of CHD patients with blood pressure below 150/90?

Using the CHD register, count the number of patients whose blood pressure reading was **below** 150/90 and calculate as a percentage of the total number of patients on the CHD register. Use the **most recent** blood pressure reading within 12 months of the date when you are measuring.

Note

- ◆ As stated in the National Service Framework, a blood pressure reading below 150/90 means both a systolic blood pressure below 150 **and** a diastolic blood pressure below 90.

Number of patients died from coronary heart disease each year

How do I measure the number of patients that have died from CHD?

Currently, deaths from CHD are collated by the Office of National Statistics (ONS) according to postcode. This information is usually inaccurate because it can take time for the information to reach ONS and does not provide the PCT with information on its **registered** population.

An annual audit of the number of deaths from CHD at practice level will provide more timely information on the PCT's **registered** population, reflecting the impact of practices' improvement work.

It is recommended that practices count CHD deaths where ischaemic or coronary heart disease appears in any section of part I of the death certificate. Other sources of information such as hospital letters should be included in this audit.

Example PDSA Cycles

Section 1: Improving the CHD register

Objective: To improve data quality on CHD register			
Plan	Do	Study	Act
Identify patients who do not have recognised diagnosis codes but have recognised associated codes for CHD	Used PRIMIS pilot as a means for investigating register	48 patients do not have a recognised diagnosis code for CHD but have an associated code for CHD	<ol style="list-style-type: none"> 1. List all patients identified – check notes and computer record to see if diagnosis code needs to be added or if associated code is incorrect 2. 8 patients identified as needing IHD diagnosis

Objective: To improve the number of CHD patients being prescribed aspirin			
Plan	Do	Study	Act
Ascertain how many patients are being prescribed aspirin or are buying over the counter. Run search on computer and check CHD registers	Search run and records examined	There were 100 patients with no record of aspirin of which 19 had contraindications.	Send our questionnaire to those patients with no record of aspirin.
Questionnaire on aspirin compliance to be sent to 81 patients	Questionnaire sent out and results gathered	Of 81 questionnaires, we had 59 replies. 3 had contraindications and 36 did not take aspirin at all	After discussion it was agreed that we would invite these patients into surgery for a check up

Objective: To improve the take-up of aspirin in IHD and CABG patients			
Plan	Do	Study	Act
Identify patients with IHD and CABG not recorded as on aspirin	Search for patients with diagnosis not recorded as on aspirin with no contraindication shown	22 patients identified 7 patients diagnosis uncertain 7 patients need follow-up (not on aspirin) 1 not re-prescribed aspirin for >6/12, follow-up needed	Computer updated Pull notes and check diagnosis where uncertain Follow-up those patients that should be on aspirin We have already improved our figures!

Objective: To improve the prescribing of aspirin for patients with CHD			
Plan	Do	Study	Act
To improve the prescribing of aspirin for patients with CHD. We had identified that 90% of all our CHD patients were on aspirin. This appeared very good but on checking the way our figures were calculated it was incorrect	Ran a search on all patients on aspirin on CHD register	176 on aspirin out of 328	We knew many get aspirin OTC and had been documenting this by adding to the repeat prescribing screen but not dispensing it. Search records of all patients who are not on aspirin
To confirm which patients who are not being prescribed aspirin are buying it OTC	Search remaining 152 records to see if we knew that they were taking OTC medication	<p>Revealed the initial search carried out was inaccurate. Many patients were being prescribed aspirin but this had not been recorded electronically.</p> <p>From the manual search we found that 77 were on prescribed aspirin and 13 with an entry signifying OTC aspirin. Therefore 86 patients with no record of aspirin use</p>	<p>To clarify why information on the prescribing of aspirin is not accurate</p> <p>Search for an aspirin allergy to understand why these patients were not on aspirin</p>
Search patients' records who are not buying aspirin OTC or prescribed aspirin	Search undertaken	16 patients were not on aspirin due to allergy or contraindication. It also revealed 13 patients with allergy who appeared to be on aspirin	Recall patients with an allergy who appear to be on aspirin. Contact those who are not on aspirin with a view to putting them on it.
<p>C to ring all 13 patients with allergy who appear to be on aspirin. If not taking aspirin ask the patient to see a GP, if they are to update the records. Ring those not on aspirin to see:</p> <ul style="list-style-type: none"> • if OTC – update records • if not, ask to see a GP • if allergy, update records 	All 13 patients contacted	<p>Of 13 patients:</p> <ul style="list-style-type: none"> 6 on Warfarin 1 on clopidogel 2 on dipyridamole 4 on no form of anti-platelet preparation 	<p>What are patients allergic to aspirin on? What should they be on?</p> <p>Will review records of all patients with allergy and discuss results with partners to develop a consistent approach</p>

Objective: To improve beta blocker prescribing			
Plan	Do	Study	Act
<p>Identify and review all notes of patients who have had an MI in the last year</p> <p>Look for contraindications to beta blockers</p> <p>Any patient who should be on beta blockers to be called in for consultation to assess whether appropriate</p>	<p>Reports run to identify patients</p>	<p>5/11 patients with MI in the last year were not on beta blockers.</p> <p>Of the 5, 3 have asthma or COAD, 2 had heart failure post MI and so were not put on beta blockers for that reason</p>	<p>No patients were missing beta blockers</p> <p>Repeat this cycle on a two monthly basis</p>

Objective: To improve statin prescribing			
<p>Audit all CHD patients not on statins. Look at last cholesterol result, and confirm/refute diagnosis</p>	<p>46 records identified and audited</p>	<p>Of 46 patients:</p> <p>10 had erroneous diagnosis and were removed</p> <p>9 had an elevated cholesterol</p> <p>22 had a cholesterol > 1 year old and had contraindication to statin</p> <p>1 below treatment</p> <p>4 under follow-up for cholesterol already</p>	<p>Call all patients who should be on statins – write to all patients on the list asking them to make a routine appointment with Dr to discuss statin treatment</p> <p>Call all patients with no recent cholesterol result for fasting lipids followed by appointment for annual review</p>

Objective: To improve uptake of beta blockers for patients who have had an MI in the last 12 months			
Plan	Do	Study	Act
<p>Look at all patients that have had an MI in the last 12 months and establish why certain patients are not on beta blockers</p>	<p>Search computer for all patients that have had an MI in the last 12 months</p>	<p>11 patients have had an MI in the last 12 months</p> <p>3 patients not on beta blockers</p>	<p>1 patient beta blocker treatment not appropriate</p> <p>1 patient cardiologist not suggested a beta blocker</p> <p>1 patient is on alternative drug</p>

Objective: Assess efficacy of statin therapy			
Plan	Do	Study	Act
Analyse records of patients on repeat prescriptions for statins	Analysed records, noting what % had cholesterol measured in last year and what % < 5mmol/l	89.9% had cholesterol measured in last year 59.7% of those measured in last year had cholesterol < 5mmol/l	Discuss results with partners to determine next steps

Section2: Improving care for CHD patients

Objective: To establish 100% uptake on aspirin in CHD patients where not contraindicated, and ensure accurate records maintained			
Plan	Do	Study	Act
Search for CHD patients coded for CHD not taking aspirin. Exclude those allergic to aspirin or taking Warfarin	Search carried out Patients not shown to be taking aspirin contacted to establish whether aspirin is being purchased OTC	45 coded IHD not on aspirin 5 did not have IHD 3 too frail and unsuitable to have more medication 4 started on aspirin 11 need past medical history checked 2 on clopidogrel so ok 5 coded as OTC 15 patients to be seen	15 patients to be invited for a medication review with GP
Invite 15 patients for review	Patients invited to appointment with GP	2 patients have uncertain diagnosis 6 prescribed aspirin 3 unsuitable for medication 4 refused 2 contraindicated	Look at 2 patients with uncertain diagnosis
Review notes of patients with uncertain diagnosis	Plan of action determined for patients at review	1 patient to have exercise test 1 patient to be called for review by doctor	

Objective: To assess the quality of care of IHD patients who have cholesterol above 5.0			
Plan	Do	Study	Act
List the patients with IHD who have cholesterol about 5.0	From the computer produce list A	Full lipid profile needs to be reviewed	Separate those with low LDL, low ratio. Make list B
Results showed the problem was due to too low a dose of statin. Review.	Make a list of patients on the lowest dose of statin	Review for contraindications	Contact patients to increase dose and check lipids in 3 months. Recall
Review patients not on a statin	Make a list of patients not on a statin	Review records for contraindications	Contact and recall patients to advise starting statin – as needed

Objective: To identify established CHD patients not captured on the computer register			
Plan	Do	Study	Act
<p>To search for all patients prescribed with nitrates</p> <p>Cross reference list of nitrates with the names on the CHD register</p>	<p>Printouts were obtained from the computer by searching on drug names</p> <p>PM/PN carried out a simple exercise on the nitrates printouts by crossing off those names found on the CHD register</p>	<p>The search for nitrates using the reporting option from the clinical system was simple and easy</p> <p>By producing separate list for each nitrate drug, there was some duplication of names. However, it reduces the errors associated with the search and report function</p> <p>The process of cross-referencing took longer than allowed (an additional 20 minutes)</p> <p>A total of 38 names were identified as not found in the CHD register</p>	<p>A list of these 38 names was compiled and the plan is to check the medical notes to verify the diagnosis before adding onto the CHD register</p>

<p>To confirm the diagnosis of CHD on those patients identified from the nitrates exercise by checking through the medical notes</p> <p>It was anticipated that 3 days would be sufficient to check the 38 sets of notes between 2 members of staff</p>	<p>The PNs shifted through the manual records for a definite diagnosis or either angina, MI or revascularisation</p> <p>No other information to be collected in this exercise</p>	<p>The time it took to locate the confirmation of the diagnosis depended on the size of the patient notes and the number of tests/investigations done. The time varied between 1 min and 15 minutes (a number of patients have huge medical notes).</p> <p>22 patients were confirmed as CHD. These patients were not on the computer register printout for 2 reasons: the diagnosis was not entered in the computer and some had a different Read code</p> <p>The other patients with AF, ischaemic stroke, PVD and heart failure were excluded.</p> <p>4 patients have a doubtful diagnosis based on the investigation results. It was agreed that these cases needed to be discussed with the doctors before being included in the CHD register</p>	<p>The CHD register is updated</p> <p>PN and doctors were reminded of their responsibility to enter diagnosis using the relevant Read codes</p> <p>These 22 notes will be reviewed in detail for information on the management of their condition</p> <p>2 patients are undergoing further investigations</p> <p>The remaining 14 patients will also be followed up by the doctor and nurse on a regular basis</p>
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Section 3: Developing systems for managing care

Objective: To develop follow-up for CHD patients			
Look at follow-up arrangements for CHD and discuss at weekly clinical meeting	Round table discussion	'SOPHIE needed to be used at annual review Insufficient expertise at present to set up CHD clinic	Review opportunistically at present. Annual reminder to be set up in notes
To write a computer template ('SOPHIE') for CHD annual review Dr W to asked to write template and test on fictitious patients	Template tested	A few minor problems were found.	Problems amended Template to be introduced to all clinicians to use with every review

Objective: To verify the results of total cholesterol entered into the computer			
Plan	Do	Study	Act
To use the list of identified patients from the first PDSA cycle to check the manual pathology reports against the computer entry	10 sets of notes were checked in 2 days The incorrect data were amended in the computer The errors were discussed with the Practice Nurse and Receptionists who have the responsibility for inputting these results	Only one gross error was identified – the level of RBS was entered as T.C., a typing error of the Read code Dates of blood tests on computer did not match the manual report: receptionist forgot to change date in computer Useful exercise to audit quality of data entry Highlights to all staff the importance of accurate data input Having a pathology link might resolve this issue	It was agreed that staff would input the information in the same sequence as presented on the manual report Receptionist to check each entry quickly before moving to next pt. To repeat this cycle in 6 months as a means of verifying data accuracy The verified list to be used by PN to contact patients for review

Objective: To assess the effectiveness of identifying the manual records of CHD patients			
Plan	Do	Study	Act
<p>Computer CHD register is useful to identify who these patients are but not a practical means to plan and monitor the whole care package</p> <p>As the practice uses manual records during face-to-face consultations, it would be helpful to identify the MRE of these CHD patients</p> <p>A white label with 'CHD' printed on it was thought to be a good method to test out</p>	<p>Small (13x8 mm) white sticky labels were marked with the word 'CHD' in black ink</p> <p>These labels were stuck on the top right hand corner of the MRE of those patients identified with raised total cholesterol from an earlier PDSA cycle</p>	<p>The idea of the small white label was simple, easily achieved and did not involve additional cost to the practice</p> <p>However the label is not noticeable by the doctors or the nurse at the time of the consultation due to the insignificant size of the label</p> <p>The idea of flagging the notes of CHD is still thought to be important but a more eye-catching method is essential</p>	<p>The tracer cards used to identify other groups of patients are well recognised by all staff. Therefore it was agreed to use the same method to flag the CHD MREs.</p> <p>The choice of colours of the tracer cards is between pink and violet</p> <p>PM has obtained a cost and request samples of the 2 colours to help the practice decide which is more attractive</p>
<p>To tag the MRE of CHD patients, it was decided to use coloured plastic tracer cards</p> <p>Colour of choice was violet and a supply was purchased</p> <p>By means of the Excel spreadsheet created from another PDSA cycle, the Receptionists will insert a card into the MRE</p>	<p>The 2 Receptionists had no difficulty in carrying out this exercise using the spreadsheet with the known CHD patients listed in alphabetical order</p> <p>Every team member was reminded of the significance of the violet tracer card in the MRE</p>	<p>The Receptionists found the activity of inserting the cards enabled them to identify the patients with a medical condition and improve their understanding of the reviews required for these patients</p> <p>The PN was able to identify very quickly that she is seeing a CHD patient even through the patient has attended for another reason and use the opportunity to address the CHD care package</p> <p>The doctors also found the violet cards effective during the consultation sessions – a rapid and very visual reminder</p>	

Objective: To increase the % of patients on the CHD register who are on aspirin therapy, either FP10 or OTC			
Plan	Do	Study	Act
<p>Each GP to be asked to trawl through 2 computer listings each, detailing their patients who have no record of aspirin therapy. Separate lists to be printed for patients under 65 years of age as it is felt that the patients under 65 years of age are more likely to be buying aspirin over the counter</p> <p>GPs are asked to refer to lists during patient consultations and if appropriate, mark on the freehand screen entitled IHD, under Other drugs – OTC Aspirin</p>	<p>Searches undertaken, lists printed and circulated with an explanatory memo by the Practice Manager</p>	<p>When carrying out a random check of the lists to check if the patients had been selected, it was discovered that some patients had Aspirin on the Therapy Master record, but it had not been prescribed for some time. Therefore all lists were checked and manually marked accordingly, for the GPs information</p> <p>Dr H completed a check of his lists and the outcome was as follows: Patients under 65 years of age: 16 - not applicable to prescribe aspirin 12 – require review</p> <p>Patients over 65 years of age: 14 – not applicable to prescribe aspirin 1 – deceased 2 inappropriate for CHD register 2 – aspirin on therapy master but not recently prescribed 6 – updated by GP 15 – require review</p>	<ol style="list-style-type: none"> 1. Practice Manager to design an effective 'tag' for the manual records of those patients who require review 2. Receptionists/clerks to insert 'tags' on records as appropriate 3. Practice Manager to investigate why two patients have been 'caught' when is it inappropriate. Advise other GPs that they could come up against same problem when checking their lists. 4. Remind other GPs to undertake this task
<p>GPs to be reminded to pursue the list of patients currently on the CHD register who are not prescribed aspirin</p> <p>Develop a 'tag' to be attached to Dr H's patients' manual records who require a review. GP to mark the outcome of the review on the 'tag' and return it to the Practice Manager in order that the</p>	<p>Memo from Practice Manager sent to all GPs reminding them to look at computer lists detailing patients who have no record of aspirin therapy.</p> <p>Practice Manager developed and produced a personalised 'tag' for each patient who required review (27 in total). A work experience student attached these to the</p>	<p>To date 7 'tags' have been returned to the Practice Manager of which: 1 – should be prescribed FP10 1 – not IHD 3 – buying OTC aspirin 4 – not required, taking Warfarin</p>	<p>Verify the CHD register</p>

appropriate action be taken	patients' medical records during week commencing 25 June. Once the patient had been seen by the GP the appropriate information was entered on the patient's computer record by the GP and 'tag' returned to the Practice Manager with the outcome of the review marked for audit purposes		
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Section 4: Other PDSAs

Objective: To improve our care of CHD patients			
Plan	Do	Study	Act
To compile a profile of our known CHD patients which might influence how we manage them	<p>The following areas were examined: Sex distribution Total no. who had MI Total no. of diabetics Total no of diabetics who had MI</p> <p>The information was extracted from the CHD register</p> <p>Female: 27% Male: 73% MI: 43% Diabetics: 34% Diabetics with MI: 40%</p>	<p>There is a higher percentage of male CHD patients predominantly of Asian origin. There may be some cultural barriers with a female health professional providing the services. Compliance with medications, diet, physical activity, smoking cessation and alcohol intake may be harder to achieve</p> <p>Diabetics with established CHD have an increased risk of further events and will require multifactorial interventions aiming at secondary prevention</p>	<p>Practices Nurses working with this group of patients should be aware and aim to understand their culture/habits</p> <p>To establish good communication/dialogue with the patients and their partners/carers</p> <p>To target the diabetics and examine the risk factors of smoking, raised lipids, poor BP and glycaemic control</p> <p>To look at the employment status and age distribution in the next PDSA</p>

Objective: To reduce duplication in care of patients with CHD and diabetes			
Plan	Do	Study	Act
Currently patients attend separate health checks for CHD and diabetes. These patients have increased risk factors. The practice is to identify those patients with both conditions and introduce one check covering both	39 patients were identified as being on both registers	<p>Audit of computer appointments and records found that 10 patients have annual diabetic checks due and Alison has instructed that the CHD reviews will be carried out at the same time (in free text about booking). This will save 10x15 minute nurse appointments (2 hours 30 minutes)</p> <p>10 patients have had both annual diabetic check and CHD check carried out simultaneously in diabetic clinic</p> <p>15 patients have had annual diabetic check but not annual CHD check – some of these were done before the new system was introduced</p> <p>4 patients have not had their annual check and do not have an appointment booked. Alison will check with the PN to see why.</p>	Rebecca will check with PN about the 15 patients who have not had their annual CHD check – these will be sent an appointment using their month of birth as an identifier but will be incorporated with the diabetic clinic next year.

Objective: To decrease polypharmacy in the elderly and ensure cost effective prescribing			
Plan	Do	Study	Act
<p>Audit patients aged over 75 who are currently prescribed repeat medication. Prioritise patients according to the number of repeats and trawl through patient computer records looking for patients who are not taking their prescribed medication, have interactive medication or have high incidence of side effects. These patients to be invited into the surgery for review by the GP. Results to be analysed and put into disease category in order that future audits can target those categories most likely to be reduced</p>	<p>Computer lists compiled by the Practice Manager for each GPs patients aged over 75 years who are currently prescribed four or more items in repeat</p> <p>Lists trawled by GPs, indicating those patients who can be contacted by telephone to discuss their repeat medication</p>	<p>Lists trawled by GPs, indicating those patients who can be contacted by telephone to discuss their repeat medication</p>	<p>Sessional pharmacist to start contacting patients by telephone with a view to discussing their current medication and prioritising patients who should be reviewed by the GP</p>

