The National Service Framework for coronary heart disease: the emperor’s new clothes

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The NHS is second rate. There are plenty of first-rate people working for it, and most NHS employees do their best to provide a first-rate service, but any doctor who has discussed his clinical practice with colleagues from North America, Germany, or France will remember that faintly contemptuous smile. We know that in the UK secondary prevention measures are not universally applied after myocardial infarction; that many patients with heart failure do not receive optimal therapy; that patients with unstable angina are inadequately investigated and treated; and that patients wait for too long for a coronary artery bypass graft (CABG) or percutaneous transluminal coronary angioplasty (PTCA). How are things to be improved?

The long-awaited National Service Framework (NSF) for coronary heart disease has now been published. The NSF ‘is a blueprint for action to reduce the incidence of coronary heart disease and modernise the NHs by driving up standards and cutting variations in services. The NSF will be key to achieving the Government target of cutting coronary heart disease and stroke by 40% by 2010’.

Jargon

Whatever else, the NSF for coronary heart disease deserves grade II listing status for preservation as an example of the supreme art of management jargon at the end of the 20th century. It gushes of ‘a new vision’, a ‘government-wide agenda’, and anticipates ‘an effective service for all who could benefit’. It aims to ‘specify interventions known to be effective’, which will be ‘developed by focus groups’. However, changes will need ownership of the guiding values ... a shared understanding within and across agencies and stakeholders, and ‘involvement of patients and users who can provide a unique perspective’. Interestingly, there must also be ‘involvement of staff’. It seems that we need ‘effectively targeted resources which lever change’. There has to be a ‘sharp focus on delivering improvements by ‘key stakeholders’ and ‘local players’. We need ‘concerted action to recognise that changes need to be systematic, and must be measured with milestones. We must build a programme which is ambitious’. In short, the report is a joy for managers to read but a yawn for clinicians. The clothes the NSF is dressed in seem magnificent, but the style is actually counterproductive.

We are frequently treated to statements of the blindingly obvious. For example, we are told that echocardiography can be made available for people with suspected heart failure through specialist heart failure clinics, cardiology outpatients, or open access facilities. How else? Which of these is preferable, easiest to set up, or most cost effective is not discussed. There is a vast amount of repetition, particularly between the main document and the separate appendices, and it is difficult and time consuming to find such meat as there is.

Targets

There is only one fact in the whole document of interest to clinicians concerned with the management of patients with coronary disease. That is a target of 750 CABG and 750 PTCA procedures per million of the population. This is lower than the going rate in North America, Germany, or France but represents a considerable improvement over the present UK performance and is certainly a target we could live with for the moment. The implications of setting this target are not discussed.

Otherwise, the targets are worthy but sometimes vague. The prevalence of smoking should be reduced. General practitioners (GPs) should establish registers of all patients with, or at high risk of, coronary disease. The ambulance response time for patients with suspected heart attack should be less than eight minutes. Aspirin and thrombolysis should be given to appropriate patients within 60 minutes of their call for help. Other targets include the need to ‘arrange for appropriate investigations’, and the necessity for patients to ‘receive timely and appropriate treatment to relieve symptoms and reduce the risk of subsequent events’. All this is to be achieved by ‘putting in place agreed protocols/systems of care’. There is a suggestion at one point that all these things apply only to patients aged under 75 years, but perhaps this is just an example of the several inconsistencies in the text.

Some of the immediate targets are quite specific. Specialised smoking cessation clinics must be set up. Funding will be provided for 50 ‘rapid access chest pain clinics’. Seventy five percent of eligible patients should receive thrombolysis within 30 minutes of hospital arrival. Eighty to ninety percent of patients discharged from hospital following a heart attack should be prescribed aspirin, a beta-blocker and a statin.

There are some waiting time aims that will be useful to those centres that cannot fulfil them. The interval between referral by GP to specialist (presumably via a chest pain clinic) for assessment of patients with new onset of chest pain thought to be angina, must not exceed two weeks. The wait to see a consultant must initially be no more than 13 weeks, reducing in a few years to four weeks. The maximum wait thereafter for angiography is initially to be six
months, reducing to three months. The wait between angiography and angioplasty is initially allowed to be 12 months, reducing eventually to three months. The wait for surgery must be no more than 12 months, and eventually six months.

These targets mean that a patient with angina could legitimately wait a total of 21 months for a PTCA. Precisely when the second stage aim of seven months is to be achieved depends on 'resources and capacity becoming available.' Precisely what resources would be needed for either the initial or the second stage aim are not estimated.

**Clinical standards**

The external reference group responsible for the NSF had 41 members. Of these, three were cardiologists, and eight might loosely be called clinicians with other interests. This may explain why the standard of the medical aspects of the NSF approximates to the level one might expect in a final MB viva of a student of poor to moderate ability.

There is a brief section on the simple epidemiology of coronary disease: it is more common among manual workers, in the north of the UK, among Asians and among the poor. Patients diagnosed as having coronary disease should be advised of the need to stop smoking, lose weight and take more exercise. Their blood pressure should be controlled to below 140/85, and blood pressure control should be meticulous in diabetics. Patients with coronary disease should be given aspirin, and here a dose is advised ~75mg daily. These patients should be given a statin if their total plasma cholesterol level is greater than 5.0mmol/l, and an angiotensin converting enzyme (ACE) inhibitor if there is evidence of left ventricular dysfunction. Beta-blockers should be given following myocardial infarction. Warfarin or aspirin should be prescribed for patients aged over 60 with atrial fibrillation. Patients without manifest coronary disease, and who are calculated to have a 30% risk over 10 years, should be given a statin if their cholesterol is greater than 5.0mmol/l.

We are advised that cardiopulmonary resuscitation should be applied if cardiac arrest occurs, and apparently defibrillators would be useful in places where large crowds assemble. Pain relief is a good thing for patients with myocardial infarction and we are kindly told the dose of diamorphine. It seems that immediate transfer to hospital is sensible, with urgent thrombolysis, though we are not advised which agent to use. Beta-blocker treatment is good in myocardial infarction, though which drug should be used and when treatment should be started is not discussed.

Unstable angina, the condition that causes most emergency hospital admissions, is covered in half a page with seven bullet points. Bed rest and pain relief are good, as are aspirin and heparin (either unfractionated or low molecular weight heparin can be used but there is no advice as to which). Beta-blockers, nitrates and calcium antagonists can be used and we are advised to reassess the patient after 12–24 hours. No mention is made of modern treatment and there is no specific advice about the high risk associated with the condition and its need for investigation and treatment.

For patients with stable angina, haemoglobin, plasma cholesterol level and exercise tests are the appropriate investigations, and exercise testing should be available on an open access basis. Glyceryl trinitrate, beta-blockers, long-acting nitrates and calcium antagonists are the correct treatment, and angiography should be reserved for patients with persistent symptoms despite optimal medication, or for those with a strongly positive exercise test.

There needs to be a 'systematic approach' to determine who needs revascularisation, but we are told that CABG is appropriate for patients with left main or three vessel disease, and for those with two vessel disease when that includes the proximal left anterior descending artery. Otherwise, PTCA is appropriate for single and two vessel disease.

Patients with suspected heart failure 'must be offered appropriate investigations ... the cause of heart failure must be identified [and] treatment most likely to both relieve [sic] symptoms and prolong life.' The electrocardiogram and echocardiogram are the best investigations. As for treatment, the document plumbs new depths with advice 'that diuretics can provide rapid symptom relief,' but other remedies advised (in general terms) are ACE inhibitors, spironolactone, beta-blockers, hydralazine/nitrate combinations, and digoxin. Readers will no doubt be surprised by the suggestion that specialised nurses might help with long-term patient management.

In these few paragraphs I have covered, admittedly without bullet points, the total clinical content of this 128-page document. It makes no attempt to provide guidelines, though in the appendices some existing guidelines are referenced. The clinical content is at such a low level that it is hard to see why it has been included at all. Many would consider the advice conservative.

**Evidence-based medicine**

'The NSF is a practical, evidence-based, and flexible approach to tackling coronary heart disease.' The document makes the usual genuflection to evidence-based medicine (EBM), meta-analysis and the Cochrane Collaboration, but in the absence of detailed references it is not always easy to see what evidence is being used. There is, for example, no evidence for the use of the chest pain clinics that form one of the immediate priorities. True, some centres have found these to speed the diagnosis and management of patients with angina, but others have found that they attract mainly patients with non-specific chest pain and have abandoned them as ineffective. The evidence base for rehabilitation is debatable, and certainly there is no evidence for the value of routine hospital follow-up of all myocardial infarction and CABG patients at one year – a practice most cardiologists have given up because it seldom leads to action.

The general tone of the NSF is the application of old
knowledge – aspirin, beta-blockers, and so on. There is a
total lack of reference to new thinking, even though the
evidence base for some of the new treatments is better than
that for some of the old ones. The place and cost of new
anti-platelet agents, of immediate PTCA for myocardial
infarction, or early angiography for unstable angina are not
even mentioned. The feeling the document gives is that all
that is needed is the routine but widespread application of a
few old-fashioned remedies. This, it seems, can be done
without much in the way of individual doctor/patient
contact.

In giving this impression, the NSF falls into the standard
EBM trap of believing that real-world patients behave like
those in clinical trials. The true fatality of patients with
myocardial infarction in hospital is at least twice that seen
in thrombolytic trials. There are seven or eight regimens
with a good evidence base for their use in heart failure in
middle-aged men, yet the standard patient with heart
failure is an old lady with multiple diseases, already on
multiple treatments. Most geriatricians know the options for
heart failure treatment but consider they are doing well if
they can get their patients on two or three of them because
their treatments are so complicated. While the NSF’s atti-
dute to ‘treatment by numbers’ is what one might expect of
a document by and for managers, it is unlikely to find
favour with clinicians.

It would have been more helpful if such a potentially
important document had pointed to the limitations of EBM.
Clinicians would have welcomed guidance as to when and
whether the members of a drug class can be considered to
have a ‘class effect’, and how much attention should be paid
to the different costs of drugs within a class. Some would
believe that all ACE inhibitors and all statins are essentially
the same, and that it is sensible to use only the cheapest;
others would point to the many arguments against such a
view. Few would accept that all beta-blockers or all anti-
platelet agents are the same, but to what extent is it
justified to take clinical practice outside the strict limits of
the evidence base? The NSF does not attempt to help us.

Managers never understand that treatment can depend
on something as subtle and unquantifiable as the glint in
the patient’s eye. Patients certainly want such things to be
taken into account but the NSF can only succeed in
de-personalising medical treatment.

Audit

Audit conquers all and whatever else it may or may not be,
the NSF is a blueprint for audit. There are references
throughout to the need for ‘audit data not more than 12
months old’ relating to everything that is discussed. Setting
up audit systems is evidently the main aim of the NSF.

The principles underlying clinical audit are undoubtedly
correct and, used appropriately, audit can be a major way of
improving patient services. However, audit has not been
accepted enthusiastically for a multitude of reasons. First,
perhaps, is the obvious fact that unless funds are available
to use the results, audit can be fairly pointless. Second, to
execute audit properly involves a huge amount of time and
resources, and a demand for audit always represents just
one more chore for the clinician. Third, it is not always clear
precisely what is being audited and why the audit is being
done. Fourth, and most important, NHS information
technology is simply not up to the job.

Hospital diagnostic coding systems are not good. Coded
and clinical diagnoses frequently do not match. This is
especially true with heart attacks, where several different
definitions of infarction/non Q-wave infarction/unstable
angina/angina/chest pain of unknown cause may be used.
Few hospitals code the diagnoses of outpatients at all.
General practice diagnostic registers are incomplete and of
doubtful accuracy, and the use of prescription data as a
diagnostic surrogate makes for second-class audit. There is
little experience of linking hospital and GP diagnostic
registers.

Community registers have been satisfactorily established
for thyroid disease, diabetes, and some forms of cancer, but
coronary disease is more complex because it is so much
more common. Coronary registers can be set up, but only
with difficulty. The Department of Health has not been
prepared to fund register projects, suggesting that there is
not much determination to find out how best to establish a
national database.

The NSF suggests that all data be held electronically so
that they can be accessed easily, and one could certainly
make a case for all available coronary disease development
funds in the next three years to be put into IT systems.
Unfortunately, experience with complex NHS computers
does not suggest that the money would be well spent.

The real danger of the audit system advocated here is
that it will become an end in itself. Clinicians will not see it
as worthwhile, but will be forced to provide data, and the
data will be ‘adjusted’ in such a way as to minimise conflict
with the triennial inspection visits that trusts are promised.
The process itself is likely to increase frustration and
decrease morale, and in the end could be counter-
productive.

The fact is that clinicians do not need audit to tell them
how to treat coronary patients. They know that the reason
for poor treatment is not a lack of audit, but a lack of
specialist nurses, technicians, infrastructure (such as tread-
mills and echocardiograms), and above all consultants,
which means that no-one has any spare time to invest in
projects without a beneficial outcome. The sensible course
at this stage would be to provide extra resources, let cli-
nicians set up the systems they know they need, and then
proceed to audit to see what else needs to be done. Starting
with audit will simply demonstrate the obvious, and
alienate clinicians whose jobs are already difficult enough.

Money

In the 128-page NSF document there is one page (p84)
devoted to finance. It contains only two figures, both
referring to non-recurrent funds. There is to be £50 million allocated to increasing the number of revascularisation procedures by 3,000 over the next two years, and £10 million to buy defibrillators and echocardiography equipment. Other unspecified amounts of money will be taken from 'the increase of £18 billion in NHS funding ... announced in July 1998'.

Herein lies the real problem with the NSF. The service for coronary patients will be improved by money, not by audit. A huge opportunity has been missed by failing to make at least a rough calculation of the funding required.

To borrow some management jargon, the necessary funds need to be calculated using both a ‘top-down’ and a ‘bottom-up’ approach. If we accept the target of 750 CABG and PTCA procedures per million of the population, we can calculate the numbers of cardiothoracic surgeons and interventional cardiologists required. At the same time, the necessary number of trainees can be established. Each surgeon and interventionist needs theatre and catheter laboratory time, and a retinue of perfusionists, specialist nurses, radiographers, and ITU, CCU and cardiology beds. Two patients will probably have an angiogram for each one who receives an intervention and so the number of non-interventional cardiologists can be worked out. These will need to be supported by physiological measurement technicians and the necessary facilities for exercise testing and echocardiography. From these figures the proportion of patients with unstable or stable angina who can be investigated can be calculated, and quantified plans can be put in place to ensure that more patients do not enter the investigation stream than can ultimately be offered intervention.

Alternatively, since we know the prevalence of symptomatic coronary disease (myocardial infarction, unstable angina, stable angina) and heart failure in the community, we could calculate the number of patients needing exercise testing or echocardiography, and the number of technicians and specialist nurses and doctors needed to provide these tests. We could make assumptions about the population need for angiography and so calculate the number of cardiologists and, from the proportion who might be expected to justify intervention, we could work out the requirements for surgeons and interventionists.

With either approach, the cost of a reasonable service could be calculated and, if that turned out to be more than could be guaranteed, at least the rationing points would be clear. No committee should ever meet unless it has a budget, and the failure of the NSF is foretold by the failure of the committee even to consider the financial consequences of trying to improve the coronary disease service.

An alternative NSF

When a committee is set up to produce a report, the report is effectively written the day the committee membership is announced. Given the small number of clinicians who contributed, it is hardly surprising that the NSF has turned out to be a handbook for managers, not clinicians. Few clinicians will read it and of those who do try, few will wade through the pages of impenetrable jargon to the end. It tells clinicians nothing they do not know, and offers little encouragement for them to believe that cardiological service will improve in the foreseeable future.

Criticism of the NSF will doubtless be construed in some quarters as an attack on motherhood and apple pie, or – the supreme accolade? – an outburst from the forces of conservatism. But our second-rate NHS will not be helped by this second-rate pamphlet. There is evidently a need for clinicians to draw up an alternative NSF that calculates the necessary funding, suggests priorities, and sets a realistic and detailed timetable.

The present emperor has no clothes.

Reference

1 Department of Health. National service framework for coronary heart disease. Modern standards and service models. London: DoH, 2000.

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In response

From Professor Sir George Alberti, Co-Chairman of the National Service Framework for Coronary Heart Disease and President of the Royal College of Physicians

Professor Hampton has several justifiable complaints in his criticism of the National Service Framework for coronary heart disease (CHD) with which I agree – the overuse of NHS ‘bureauspeak’ and the lack of accurate costings. The latter, of course, have been calculated – but what political party is going to publicise such facts which then become a political football.

More importantly, however, Professor Hampton has missed the point of the NSF. This is a blueprint for all members of the health professions; it is not intended purely for cardiologists. It stretches from primary prevention through to rehabilitation. It sets realistic targets across the board and provides a long-term programme. To Professor Hampton it is all obvious and already widely known. The problem is that practice in the NHS has not matched knowledge. It seems sensible to ensure that relatively straightforward measures are implemented NHS wide – which they have not been – before worrying about new treatments. The NSF in the first instance should serve to counter both the ignorance and the incompetence that exist. It will also help, through the audit systems, to ensure that appropriate resources will be directed to CHD. I anticipate that there will be improved consultant staffing in cardiology.