

Diabetes and hypertension in Britain's ethnic minorities: implications for the future of renal services

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Abstract

Diabetes and hypertension are much more prevalent among Britain's 2.5 million Asian and African-Caribbean population than among the white population and are major contributors to end stage renal failure. Asians and African-Caribbeans have threefold to fourfold higher acceptance rates on to renal replacement therapy than white people, and in some districts they comprise up to half of all patients receiving such treatment. Their greater need for renal replacement treatment is accompanied by difficulties of tissue matching in cross racial transplants and a shortage of donor organs. The aging of ethnic minority populations will increase local need for renal services significantly. Measures to control diabetes, hypertension, and secondary complications in Asian and African-Caribbean communities will contribute both to safeguarding health and to economies in spending on renal services. Education about diabetes and hypertension, modification of behavioural risk factors, early diagnosis, effective glycaemic and blood pressure control, and early referral for signs of renal impairment are essential preventive measures. Primary and community health care professionals have a critical role to play here.

Introduction

Diabetes and hypertension are major causes of disability and handicap, leading to premature death. Although end stage renal failure is a less common complication of diabetes and hypertension than coronary heart disease or stroke, treatment is both life-long and expensive. The incidence of end stage renal failure therefore has significant consequences both for the health of local populations and for NHS resources. The national renal review estimated an increase over the next decade of 80% in the 20 000 or so patients receiving renal replacement treatment and a doubling of the current cost—about £300m a year—of providing renal services.^{1 2}

Diabetes, hypertension, and renal failure are much more prevalent among Britain's 2.5 million Asians and African-Caribbeans than in the white population.^{3 4} The aging of these as yet young populations will have major implications for the future need for renal replacement treatment and highlights the urgent need for preventive measures.

Diabetes

About 4% of the UK population aged over 19 has diabetes, and 4-5% of total health care expenditure is spent on the care of people with diabetes.^{5 6} Diabetic nephropathy is a major underlying cause of end stage renal failure. Asians and African-Caribbeans have a high prevalence of non-insulin dependent diabetes mellitus, and among those who develop end stage renal failure it is predominantly non-insulin dependent diabetes that is implicated.

The prevalence of non-insulin dependent diabetes in Asians in the middle years of life is up to five times greater than in whites, and up to 20% of Asians aged 40-69 have this type of diabetes compared with about 5% of whites.⁷ The age at presentation is also significantly earlier, and the condition remains undiagnosed in up to 40% of Asian diabetics.^{8 9} Since duration of diabetes is one of the strongest risk factors for complications, this places Asians at greater risk.

Diabetic nephropathy and end stage renal failure are significantly more common in Asian diabetics than in white diabetics, with a relative risk of up to 14 reported from Leicestershire.¹⁰ Recent (1988-92) data for England and Wales show that mortality from diabetes among people born in the Indian subcontinent is about 3.5 times the national rate.¹¹

People of African descent in Britain, the USA, and their countries of origin also have a high prevalence of diabetes, diabetic nephropathy, and end stage renal failure.¹²⁻¹⁴ Mortality from diabetes among African-Caribbean born men in England and Wales is about 3.5 times the national rate for men, with Caribbean women showing a sixfold excess.¹¹

The World Health Organisation study group on diabetes notes that resources should be directed to improving the quality of preventive care in primary settings and to public health interventions for controlling non-insulin dependent diabetes.¹⁵ Low physical activity and obesity are significant risk factors in the development of insulin resistance and non-insulin dependent diabetes.^{16 17} The propensity of Asian people to central obesity⁷ and a sedentary lifestyle¹⁸ place them in the high risk category. Obesity is common also among African-Caribbeans.¹⁴ Because increased physical activity and control of obesity are the few known means of controlling insulin resistance, health education measures to promote physical activity and control obesity are likely to be the most important

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Fig 1 The inappropriateness of much health information for ethnic minorities means that many patients know little about their disease or its management

interventions for controlling the prevalence of diabetes among Asian and African-Caribbean people.

The Diabetes Control and Complications Trial in the USA demonstrated the effectiveness of strict blood glucose control in reducing renal (and other) complications of diabetes.¹⁹ Although the study related to insulin dependent diabetes, the consistency of treatment outcomes suggests that effects would be similar in all patients with diabetes. Information on blood glucose control and complications in non-insulin dependent diabetes will come from the UK Prospective Diabetes Study.²⁰

The evidence to date, however, suggests that the quality of health care for Asian and African-Caribbean diabetics is inadequate and compliance poor.^{14 21-24} Often this is because patients lack knowledge about the disease, complications, and the importance of self management, as a result of poor communication, provision of inadequate or culturally inappropriate information, and non-availability of educational material in minority languages (fig 1).

One study noted that Asian diabetic patients knew less about the disease and its complications than their white counterparts. One third did not know why it was important to keep their blood sugar concentration low, 72% did not know that poor control resulted in complications, and 58% could not name a single complication.²³ A study at the Manchester diabetes centre similarly showed deficiencies in the care of African-Caribbean patients compared with their white counterparts.²⁴

Hypertension

Hypertension is a common condition, affecting 10-20% of the UK adult population. Because it is often asymptomatic, it often remains undiagnosed and untreated for long periods. It is a major cause of end stage renal failure. Compared with 10-20% of whites, 25-35% of African-Caribbeans are hypertensive.²⁵ Recent (1988-92) mortality data for England and Wales show that mortality from hypertension among African-Caribbean born people is 3.5 times greater than the national rate, the excess in Caribbean born women being more than sixfold.¹¹ The prevalence of hypertension is high in people of African descent throughout the world, and it

results in greater end organ damage. Hypertension is the most common chronic disease in the Caribbean and among the 10 leading causes of death, and hypertensive renal failure is common.²⁶ US data suggest that people of African descent may have an inherent susceptibility to hypertensive injury to the kidney.²⁷ To a lesser extent, British Asians also have raised mortality from hypertension, with rates about 1.5 times the national rates.¹¹

Although the cause of hypertension remains unclear and primary prevention may not always be possible, several modifiable risk factors have been identified: smoking, obesity, high alcohol intake, high salt intake, a sedentary lifestyle, and stress. African-Caribbeans experience many of these risk factors, with a higher body mass index, greater prevalence of diabetes, and evidence from the USA suggesting greater sensitivity to salt than whites.^{25 28}

The prevalence of hypertension is typically associated also with low socioeconomic status and the poor access to and quality of care that often go with it: black people are among the most deprived of Britain's ethnic minorities. Research suggests that poor communication between African-Caribbean patients and their general practitioners often results in poor compliance with antihypertensive therapy and poorly controlled blood pressures.²⁹

Renal disease

Diabetes and hypertension are major underlying causes of end stage renal failure, which is fatal without expensive, lifelong treatment. Compared with other services which purchasers are responsible for commissioning, renal services are of relatively low volume but high cost. The national renal review estimated the annual average cost per patient on dialysis at £23 000 and of a transplant at £12 000 with recurring annual costs of about £5400 for drugs and other treatment.^{1 2}

The prevalence of end stage renal failure can be inferred from the numbers of patients receiving renal replacement treatment. The review of specialist services in London^{30 31} and the national renal review^{1 2 12} showed a threefold to fourfold higher rate of uptake of renal replacement treatment among Asians and African-Caribbeans than among whites, the relative risks rising steeply with age (fig 2). Analyses adjusting for area of residence show that this excess is not explained by higher referral rates resulting from inner city residence and proximity to renal units; instead it indicates greater need.¹² Whether or not the higher rates of renal replacement treatment match overall need in these populations remains uncertain, since there are no ethnic data on those not referred, those referred but not treated, and those who die from renal failure before renal replacement treatment.

Diabetes is the major underlying cause of renal failure in ethnic minority patients receiving renal replacement treatment, the relative risk of end stage renal failure secondary to diabetes being 5.8 times greater in Asians and 6.5 times greater in African-Caribbeans than in whites.¹² For hypertensive end stage renal failure the risk is fourfold in African-Caribbeans and 2.4 fold in Asians. Thus not only are African-Caribbeans and Asians more prone to diabetes and hypertension than whites, they are more likely to develop end stage renal failure as a

JOANNE O'BRIEN/FORIMAT

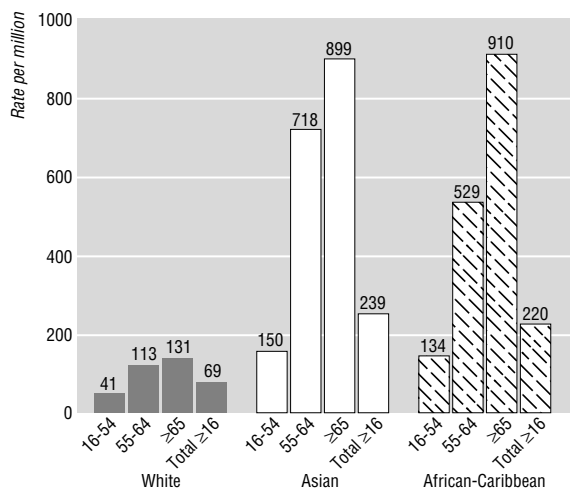


Fig 2 Acceptance rates (per million population) for renal replacement treatment England 1991-2 broken down by broad ethnic group

consequence. The higher prevalence of end stage renal failure is reflected also in a threefold to fourfold excess mortality from renal disease among Asians and African-Caribbeans,¹¹ as shown by the 1991 census based analysis of mortality data (fig 3).

Population projections

The ethnic composition of local populations has an appreciable impact on local need for renal replacement services. In some districts with large ethnic minority populations the total number of patients receiving renal replacement treatment at any one time is over 700 per million population, compared with an average of 354 for the UK and 420 for the Thames regions.³¹ With the aging of ethnic minority populations, the impact of ethnicity on the need for renal replacement services will become even greater over the next decade. Population projections for ethnic minori-

ties in London³² illustrate this effect: the number of elderly people in ethnic minorities is expected to triple between 1991 and 2011, with non-whites as a proportion of all Londoners aged 65 and over increasing from 5% to 17%.

Crude estimates based on ethnic and age specific rates of acceptance for renal replacement treatment in 1991-2 and the population projections for London suggest that between 1991 and 2001 the numbers of new Asian and African-Caribbean people accepted on to renal replacement programmes in London could rise by about 45%, increasing the proportion of these groups from 39% to 50% of all new receivers of renal replacement treatment, with corresponding increases in their proportion of overall patients. Health authorities with high proportions of Asian and African-Caribbean populations are therefore likely to need considerable additional investment in renal services to meet future needs, even if the current level of provision remains unchanged. If resource considerations constrain service provision ethnic minorities will be particularly disadvantaged.



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Fig 4 In the US 30% of patients undergoing renal replacement treatment are African-American

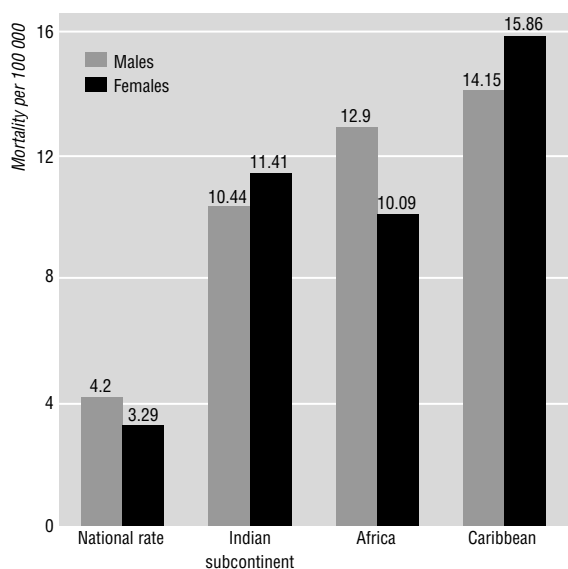


Fig 3 Mortality from renal disease (ICD codes 016, 250.3, 403-4, 580-91, 753, 788.9) by country of birth (ages 20-69) England and Wales 1988-92. Mortality is directly age standardised on European standard population

Shortage of donor organs

Another issue is the shortage of donor organs and growing waiting lists resulting from falling road casualties. Transplants among ethnic minorities encounter additional constraints because of difficulties of tissue matching in cross-racial transplants and a reluctance to donate arising from religious concerns, poor awareness about the need for organ donation, and fears about the medical consequences.

Experience in the USA

The current American experience—of rising rates of diabetic renal disease, hypertensive renal damage, and renal failure in African-Americans—has considerable relevance for Britain. In 1990, 30% of patients receiving renal replacement treatment were African-American, even though they comprised only 12% of the total population (fig 4).¹³ Diabetes or hypertension are the underlying causes in over 70% of African-American cases of end stage renal failure. End stage renal failure is perceived as a major public health problem in the US, with the incidence of treated end stage renal failure ris-

ing 2.5 fold between 1977 and 1990, and the 200 000 patients receiving such treatment in 1990 costing about \$7.3bn (£4.7bn) a year.³³ The continued growth in the population needing dialysis will increase the cost to Medicare, which funds 80% of the expense, by \$1bn every five years.

The way forward

Prevention

Strategies for controlling diabetes and hypertension are likely to be most effective for reducing the risk of end stage renal failure among Asians and African-Caribbeans. (Such interventions will also reduce the incidence of other serious complications such as cardiovascular disease.) Educational interventions should target not only high risk middle aged people, but also adolescents and young adults, so that awareness of the disease and its effects are appreciated at an early age. Interventions to promote physical activity and control obesity among Asian and African-Caribbean communities should be consistent with lifestyles, diet, and cultural considerations. Antismoking measures are needed to reduce the risk of diabetic kidney damage. The future renal health of these communities is contingent also on these populations being aware of the disease within their communities and willing to accept the need for organ donation.

Purchasing

In areas with large Asian and African-Caribbean populations contracts should specify standards of care (primary and secondary) for ethnic minority patients with diabetes and systems for monitoring the quality of care and health outcomes. A participatory approach involving diabetic patients and carers from ethnic minorities in planning local strategies for diabetes care will make services more acceptable and effective. Self help and community based education forums where experiences and information can be shared create greater awareness about ways in which patients can manage their diabetes more effectively in culturally acceptable ways.

In areas with sizeable ethnic minority populations health authorities should consider establishing registers of diabetic patients so that their care, follow up, and outcome, and the prevalence of diabetes in local communities, can be closely monitored. The feasibility and cost effectiveness of screening for diabetes and hypertension should also be examined. The problem of undiagnosed diabetes and hypertension can in part be addressed within primary health care through opportunistic screening.

Providing health care services

The role of primary care in early diagnosis and effective management of diabetes and hypertension among ethnic minorities is critical for slowing the progression of renal impairment. Since the routine care needs of most patients with diabetes or hypertension are met within primary care, primary healthcare teams are well placed to offer opportunistic screening, early diagnosis, structured care, monitoring and control of blood glucose and blood pressure levels, and surveillance for complications. Because of the high

prevalence and early onset of diabetes and hypertension among Asians and African-Caribbeans, primary health care and community professionals need to be vigilant in detecting the presence of these conditions and screening for complications.

Compliance with recommended dietary, lifestyle, and medical advice depends on good rapport with patients and involving them in their own disease management. Since the quality of self care is all important in both diabetes and hypertension, and day to day management of the condition is largely in the hands of the patients themselves, health professionals need to be familiar with the culture, customs, and sensitivities of their ethnic minority patients. They thus need to ensure that advice and treatment are integrated into traditional diets and lifestyles and that patients are aware of the risks and nature of complications associated with poor glycaemic and blood pressure control. Standards of care in general practice have a strong influence on outcomes in people with diabetes or hypertension. But the quality of care for ethnic minority patients is variable, and poor doctor-patient communication often results in poor metabolic and blood pressure control.

As early referral for treatment of end stage renal failure affects outcome, primary healthcare teams play an important role in identifying the groups at risk of renal failure and ensuring early referral. The number of patients with some degree of renal failure is low—up to 30 in a general practice of 10 000—so general practitioners sometimes fail to identify and refer patients. The review of London's renal services noted that up to half of patients presenting to renal units do so at the end stage of renal failure, when it is too late to arrest progression of the disease.³⁰

Conclusion

The greater prevalence of diabetes, hypertension, and associated complications in British Asian and African-Caribbean communities needs to be addressed now in order to forestall a significant increase in the human and economic costs associated with these conditions. In particular, the future need for renal replacement treatment is likely to grow considerably unless effective measures are introduced among ethnic minority populations along the entire continuum of prevention—primary, secondary, and tertiary. Education, early diagnosis, and effective management of these conditions are important both for safeguarding the health of susceptible populations and for long term cost savings for the NHS.

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Association of use of a log book and experience as a preregistration house officer: interview survey

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Abstract

Objective: To determine whether use of a log book improved the experiences of preregistration house officers.

Design: Confidential questionnaire and interview survey of preregistration house officers carried out as part of University of London inspection process.

Measures: Preregistration house officers were asked to rate educational and pastoral elements of their posts and about the use made of previously distributed log books.

Subjects and setting: Preregistration house officers in North Thames.

Results: The incumbents of 535 of 560 (95%) preregistration house officer posts in the region were surveyed between June 1994 and July 1995, 490 by questionnaire and interview, 45 by questionnaire alone. House officers who had discussed the log book with their consultant expressed more satisfaction with their induction, consultant supervision and feedback, and formal and informal education and were more likely to recommend their job to a friend.

Conclusion: Preregistration house officers who had discussed the log book with their consultant expressed more satisfaction with the educational elements of their jobs. The structured discussion with their consultant about the job and their performance seemed to make the difference.

Introduction

Preregistration house officers have expressed dissatisfaction with the level of supervision, teaching, and

feedback they receive from their consultant supervisors, and widespread anxieties exist about the educational value of this year.¹⁻³ A survey of Yorkshire consultants revealed that few assessed the effectiveness of their teaching, and feedback offered to house officers was rudimentary.⁴ Dowling and Barrett found an absence of educational planning, supervision, and coordination.⁵ They found consultants unaware of the General Medical Council's recommendations about the responsibilities of educational supervisors⁶ and reluctant to appraise their house officers. Much has been written about the problems but much less about those factors that improve the experience.⁷ One attempt to improve the experience has been the introduction of log books in the Thames regions. We set out to determine whether use of the log books was associated with preregistration house officers' satisfaction with their posts.

Methods

The log books

In an attempt to provide an educational framework for the preregistration house officer year, a log book was developed by the postgraduate dean of South East Thames, together with the Open University and the Joint Centre for Education in Medicine.⁸ The aim was to encourage an effective dialogue between consultant and house officer for setting objectives and assessing progress. The log book was small enough to fit in a white coat pocket and contained checklists for self assessment of practical procedures performed, emergencies managed, and educational topics covered. It also contained advice for the consultant about how to

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Table 1 Comparison of log book discussers (n=177) with other house officers (n=358). Values are scores* unless stated otherwise

	No of respondents	Mean (SD)	95% Confidence intervals	P value
Induction				
Log book discussers	168	3.59 (0.94)	3.45 to 3.73	<0.001
Others	346	3.13 (1.064)	3.02 to 3.24	
Consultant supervision				
Log book discussers	177	3.86 (0.89)	3.73 to 4.00	0.002
Others	355	3.59 (1.06)	3.48 to 3.70	
Informal education				
Log book discussers	172	3.53 (0.88)	3.40 to 3.66	0.001
Others	352	3.26 (0.96)	3.16 to 3.36	
Formal education (hourst)				
Log book discussers	175	2.51 (1.09)	2.35 to 2.67	<0.001
Others	352	2.08 (1.08)	1.98 to 2.19	
Recommend job				
Log book discussers	175	3.85 (0.77)	3.74 to 3.96	<0.001
Others	354	3.59 (0.93)	3.49 to 3.69	

*Mean score out of 5 where 1=very poor and 5=excellent.

†Mean hours/week usually attended.

set objectives at the beginning of the post and offer structured feedback at intervals thereafter.⁹

After a trial in South East Thames the log book was introduced in all the Thames regions in 1991. Copies for all preregistration house officers and their educational supervisors were sent to postgraduate centres. Clinical tutors were asked to explain and promote its use among consultant supervisors. Reactions from both consultants and house officers were mixed, and compliance was patchy. The length and content of the checklists were criticised, as was the whole concept of performance appraisal.

None the less, the postgraduate deans continued to supply the log book and promote its use. Guidelines for inspection visits included the sentence "While the use of the log book is in no way compulsory, the postgraduate dean wishes to see regular, recorded, formal assessment of house officers by the consultant supervisor as an integral part of the training relationship."

Evaluation

On behalf of the University of London the Thames postgraduate deans regularly inspect all hospitals with preregistration house officers. House officers are interviewed, alone or in pairs, by a team consisting of the postgraduate dean or associate, a consultant from another hospital, and an assistant. Visits are arranged to avoid the six weeks after house officers start their new jobs and the popular holiday periods. The inspection visits are taken seriously, and the turnout is good. For the purpose of this study, a questionnaire was developed from questions routinely asked at these inspections and from a similar questionnaire in use for senior house officers in North Thames.¹⁰ It covered workload, induction, supervision (consultant and middle grade), formal and informal education, feedback, catering, and accommodation. Finally, house officers were asked how they would recommend the post to a friend who was thinking of applying. For most questions a five point scale of responses was offered where 1=very poor and 5=excellent. Four yes/no questions about the log book were included asking the doctors whether they had been given a log book, whether they had used it, whether they had discussed it with their consultant, and whether they had found it

useful. The questionnaires were completed shortly before the interview. Additional questionnaires were distributed to house officers unavailable on the day, for return directly to the dean's office.

The data from the questionnaires were entered on to a Microsoft Excel 5 spreadsheet and calculations were performed using the statistics package of this program.

Results and discussion

Altogether 535 of 560 (95%) preregistration house officers in North Thames were surveyed, 490 (92%) by questionnaire and interview and 45 (8%) by questionnaire alone. All hospitals received and distributed the log books, but 67 (12%) house officers from 18 hospitals said they had not received one; 186 (35%) had received one, but neither used it nor discussed it with a consultant; 105 (20%) had used the log book but had not discussed it with a consultant; and 177 (33%) had discussed it with a consultant.

House officers who did not receive a log book gave a lower rating to their induction, but otherwise house officers who received a log book but did not use or discuss it did not differ in their responses from those who never received one. Those who said they used the log book but had not discussed it with their consultant were more likely to consider the log book useful, but otherwise did not differ from those not using or not receiving it.

Log book discussers—The house officers who reported discussing the log book with their consultant (log book discussers) did not differ from the others in their rating of the workload or the quality of middle grade supervision, food, or accommodation. They did, however, give significantly higher ratings to their induction, consultant supervision and feedback, and formal and informal education, and were more likely to recommend their post (table 1). It made no difference whether they had used the log book (11% had not), or whether they considered the log book useful (34% did not). From the interviews we learnt that the log book was often filled in the night before the discussion took place.

Feedback—Offering feedback was not restricted to those consultants who used the log book: 144 (40%) house officers who had not discussed the log book none the less reported having sat down with their consultant to talk about their progress (table 2). These house officers rated their consultant supervision and informal education just as highly as the log book discussers, but the latter gave a higher rating to their induction, attended more formal education, and were more likely to recommend the post (table 3). From the interviews it appeared that consultants who discussed the log book with their house officers spent more time at the beginning of the job making it clear what was expected of them, including attendance at educational activities.

Conscientious consultants—Discussing the log book may simply have been a mark of a conscientious consultant who ensured a good educational environment. However, many consultants whose supervision was praised by their house officers had not discussed the log book. We analysed the responses of all those house officers who described their consultant supervision as good or excellent and within this group compared log book discussers with the rest. Induction and formal education were rated higher by log book discussers, and they were more likely to recommend the post (table 4).

Conscientious house officers—House officers who were ready to discuss their log books might have been more naturally compliant than their colleagues. However, they did not differ in their rating of the workload, the catering, or the accommodation. More importantly, they did not differ in their rating of middle grade supervision, which was the single factor that correlated most strongly with recommending the post. Also it was clear from the interviews that it was more likely to be the consultant who decided whether the log book was discussed. Several house officers made remarks like this: "I discussed the log book in my last job, and I thought it was useful, but when I mentioned it to my present consultant he asked if I didn't think it was a load of rubbish, so I let it go."

Objective setting and performance appraisal—The log books have not been greeted with universal favour. Most consultant supervisors did not use them despite continued pressure by postgraduate deans. Objective setting and performance appraisal, almost universally recognised as good employment practice outside the medical profession, are still very foreign to our culture.

Table 2 Responses to the question "Have you sat down with your consultant to discuss your progress?" Results are percentages (and numbers) making each response, with 95% confidence intervals of percentages

Response	Log book discussers (n=177)	Others (n=358)
Yes, and it was useful	76 (134), 72.5 to 78.9	35 (126), 32.7 to 37.7
Yes, but it wasn't useful	11 (20), 9.0 to 13.6	5 (18), 3.9 to 6.1
No, but it will happen	4 (7), 2.6 to 5.4	10 (37), 8.7 to 11.9
No, but it wasn't necessary	1.1 (2), 0.4 to 1.8	7.5 (27), 6.2 to 8.8
No, but I would have liked to	1.7 (3), 0.8 to 2.6	16 (58), 14.3 to 18.1
Not in post long enough	6 (11), 4.4 to 8.0	26 (92), 23.4 to 28

Table 3 Comparison of log book discussers (n=177) with others who had received feedback on progress (n=144). Values are scores* unless stated otherwise

	No of respondents	Mean (SD)	95% Confidence intervals	P value
Induction				
Log book discussers	168	3.59 (0.94)	3.45 to 3.73	0.0004
Others	139	3.18 (1.10)	2.99 to 3.36	
Consultant supervision				
Log book discussers	177	3.86 (0.89)	3.73 to 4.00	0.38
Others	143	3.77 (1.01)	3.61 to 3.93	
Informal education				
Log book discussers	172	3.53 (0.88)	3.40 to 3.66	0.20
Others	142	3.40 (0.93)	3.25 to 3.55	
Formal education†				
Log book discussers	175	2.51 (1.09)	2.35 to 2.67	<0.0001
Others	142	1.96 (1.10)	1.78 to 2.15	
Recommend job				
Log book discussers	175	3.85 (0.77)	3.74 to 3.96	0.01
Others	141	3.59 (0.94)	3.44 to 3.74	

*Mean score out of 5 where 1=very poor and 5=excellent.

†Mean hours/week usually attended.

Table 4 Those who rated consultant supervision good to excellent: comparison of log book discussers (n=124) with others (n=196). Values are scores* unless stated otherwise

	No of respondents	Mean (SD)	95% Confidence intervals	P value
Induction				
Log book discussers	117	3.74 (0.94)	3.57 to 3.91	<0.0001
Others	189	3.24 (1.02)	3.10 to 3.39	
Informal education				
Log book discussers	121	3.76 (0.74)	3.62 to 3.89	0.14
Others	194	3.62 (0.88)	3.49 to 3.74	
Formal education†				
Log book discussers	122	2.56 (1.10)	2.37 to 2.77	0.003
Others	196	2.18 (1.08)	2.03 to 2.33	
Recommend job				
Log book discussers	123	4.11 (0.63)	4.00 to 3.22	0.01
Others	195	3.91 (0.77)	3.80 to 4.02	

*Mean score out of 5 where 1=very poor and 5=excellent.

†Mean hours/week usually attended.

This survey suggests that time spent by consultants in planned, well structured discussions with their house officers about their problems and their performance may be an important factor in enhancing the educational value of the preregistration house officer year. The log book appeared to be a useful tool for adding structure and focus to such discussions.

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Commentary: Educational initiatives deserve randomised controlled trials

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Clearly as much as possible needs to be done to improve the training of preregistration house officers, both from the more personal aspects of improving skills, knowledge, and satisfaction and also from the educational and management perspectives to ensure that the “education” process is effective. Clearly also any interventions suggested for educational or other reasons must be shown to be cost effective. Providing a log book for every preregistration house officer involves the cost of providing the log book itself and the time involved in completing it. If the log book turns out to be valuable enough to justify its cost then clearly its use should be encouraged. Conversely, if its value is not demonstrated the whole idea may need to be dropped and a new approach attempted.

Can we be sure that the present study draws firm enough conclusions? Is there enough evidence to persuade deans of other medical schools within the UK and abroad to adopt such a system?

An analogy

Suppose we draw the analogy between this study and a therapeutic trial: if we were concerned with the efficacy of a new treatment compared with the existing standard treatment then we would not give all the patients the new therapy. We would randomise between them, with the aim of removing any bias from the estimate of the difference between treatments. Contrast this with the comparison of logbook discussers and others.

There are practical difficulties of randomising in the context of this study. For example, the problem of contamination could arise if two house officers worked closely together and one was randomised to use the log book and the other not. They would clearly discuss it together and such discussion could dilute any effect of the log book. Such problems can be overcome with a careful design—perhaps randomisation done on a hospital by hospital basis.

Aside from the difficulties of drawing unbiased conclusions from non-randomised studies, the comparison of log book discussers and others (in the authors’ table 1) shows some highly statistically significant differences in mean scores, with all P values ≤ 0.002 . However, is the difference, which ranges to a maximum increase of 0.46, large enough to warrant the use of the log book? Is the difference “educationally significant” in the same way that a difference in outcome in disease management needs to be clinically significant before a new treatment will be regarded as better than standard therapy.

The current standards for the design of therapeutic trials are very high indeed,¹ and it is important, whatever the study area, that the best design is used for the question posed. Careful consideration should always be given to the possibility of using a randomised controlled trial.

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Funding the NHS A little local difficulty?

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This is the third in a series of articles discussing how the NHS is funded

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Abstract

The media have been full of reports of crisis in the NHS. Although national analyses suggest that the NHS should be able to cope within the increases in spending it has been given, local pressures can leave parts of the service struggling. Firstly, the change to allocation of funds on the basis of population needs has meant that some authorities and trusts have had effective cuts in their budgets, requiring them to trim services. Secondly, the government's insistence on an annual 3% increase in efficiency may have resulted in authorities taking short term measures that actually decrease efficiency in the long term. Thirdly, health authorities have had to bear the costs of national targets such as reducing waiting lists and junior doctors' hours as well as local problems such as

higher numbers of mentally disordered offenders. However, all these factors can be controlled by national or local management and so their impact is not inevitable.

Introduction

The ability of the NHS to provide an acceptable service depends mainly on the level of funding, the efficiency with which the resources are used, and the nature and extent of pressures on NHS spending. Last week we discussed these three factors from a national perspective and concluded that on balance there was no reason to suggest that the NHS could not cope in future.¹ The financial pressures are at least partly amenable to control.

Table 1 Annual percentage growth in real* and volume† expenditure in the NHS, hospital and community health services, and family health services in England, 1973-4 to 1996-7 (excluding money obtained from sources other than central government and capital expenditure)

Year	NHS		Hospital and community health		Family health services	
	Real growth	Volume growth	Real growth	Volume growth	Real growth	Volume growth
1973-74	1.8	-0.7	6.4	3.7	2.4	2.3
1974-75	14.2	2.8	18.8	4.4	0.9	-2.6
1975-76	5.2	2.5	4.5	1.8	8.1	5.6
1976-77	0.8	1.2	0.5	0.2	2.4	4.6
1977-78	-1.4	2.9	-1.5	3.0	-0.5	4.0
1978-79	1.5	2.2	1.1	2.5	9.7	7.8
1979-80	2.1	-0.7	2.3	-1.0	-0.2	-1.5
1980-81	9.8	2.6	11.5	3.0	4.9	1.4
1981-82	1.5	2.6	0.6	1.9	4.5	3.5
1982-83	2.0	4.1	0.6	1.1	7.5	6.3
1983-84	1.2	0.8	0.5	0.0	2.4	2.0
1984-85	2.0	1.0	0.7	-0.1	4.8	2.6
1985-86	0.2	0.5	0.0	0.6	0.4	0.9
1986-87	4.3	1.1	4.5	0.6	4.0	1.8
1987-88	5.0	2.4	4.9	1.9	5.3	3.7
1988-89	4.1	1.0	4.1	0.4	5.8	3.1
1989-90	-0.4	0.4	0.1	0.7	-2.6	-0.3
1990-91	3.8	3.5	3.8	3.2	2.7	0.9
1991-92	7.3	4.3	7.1	3.4	7.2	3.0
1992-93	5.7	4.1	5.7	2.9	6.2	5.7
1993-94	1.4	1.6	1.0	0.5	2.8	4.8
1994-95	3.0	2.0‡	2.9	1.8‡	4.9	3.9‡
1995-96	2.9	2.8‡	2.9	2.7‡	2.2	2.0‡
1996-97	0.9	0.7‡	0.1	-0.1‡	3.7	3.6‡

Source: Department of Health. *Real expenditure on the NHS is cash expenditure adjusted to allow for economy-wide inflation of prices. The figure for 1996-7 is that estimated by the Department of Health in March 1996. †Volume expenditure is real expenditure adjusted to allow inflation of prices specific to healthcare goods and services. ‡Since healthcare specific inflation is usually estimated retrospectively, figures showing volume growth are not available yet for 1994-5 onwards. For the years we have used an annual healthcare inflation of 3% to estimate volume growth for 1994-5, 1995-6, and 1996-7.

But this picture of coping nationally seems to be at odds with reports of crises in individual health authorities and trusts,² which contribute to a general sense of unease about the ability of the NHS to cope. So what are the reasons for these crises—to what extent are they due to the level of funding or to other factors? Are crises inevitable or can they be ameliorated by political and managerial choices? In this article we consider these questions by examining the influence of funding levels, the drive to efficiency, and the pressures on the NHS locally.

Funding

The steady upward trend in real and volume expenditure in the NHS over the past 20 years masks significant year on year fluctuations in funding (table 1). In the 24 years shown in table 1 there were five years in which the growth in real expenditure for the NHS as a whole was under 1% and two years with negative growth. Volume expenditure (expenditure adjusted to allow for inflation of prices specific to healthcare goods and services) gives a more accurate picture of what resources can buy in the NHS: in the 20 years from 1973-4 to 1993-4 the NHS as a whole and the hospital and community health sector had two years of negative growth and the family health sector three years. In these years the NHS had either to reduce staff and services or to increase efficiency (do more for less), or both. As predicted,³ 1996-7 has been a difficult year particularly for the hospital sector. We estimate the volume growth for this year to be -0.1% (that is, a reduction in goods and services which can be

bought). This compares with an estimated average volume growth in resources of 2.3% in the previous five years.

The funding received each year by individual health authorities for hospital and community health services is influenced not only by national fluctuations but by the way the national total is distributed between them. The formulas used to do this are designed to distribute resources equitably throughout the country. This has meant a move away from funding based on historical levels of activity and towards a target budget which reflects more the size and needs of the population served. But the target itself has changed in



Fig 1 The search for efficiency savings sometimes ends in closed wards

Table 2 Percentage growth in real expenditure* (excluding money obtained from sources other than central government and capital expenditure) for hospital and community health services in selected health authorities 1996-7

Health authority	Current distance from target budget 1996-7 (%)
Under target:	
South Essex	-7.88
Berkshire	-3.67
Wigan and Bolton	-3.63
Barnsley	-2.69
East Norfolk	-1.04
Sunderland	-0.51
Lambeth, Southwark and Lewisham	-0.35
Overtarget:	
Camden and Islington	13.08
Manchester	7.87
Newcastle and North Tyneside	3.75
Salford and Trafford	2.45
Enfield and Haringey	1.11
Leeds	0.47
Coventry	0.01

Source: House of Commons Health Committee, Second Report. Allocation of resources to health authorities. Volume 1.24 June 1996. London: HMSO.
*Real expenditure on the NHS is cash expenditure adjusted to allow for economy-wide inflation of prices.

recent years as the way that population need is measured has changed. Health authorities that are over target may be allocated a very small increase or even a decrease in volume expenditure, regardless of overall growth in the NHS. The converse is true for health authorities which are under target. Table 2 gives some examples of health authorities which are over and under target.

Health authorities that are over target and therefore receiving minimal increases in funding, such as many in London, will have had to cut back services or try to improve efficiency, or both.⁴ It could be argued that such action should not lead to financial stress since the authorities have received more funding than their population size and needs appear to warrant (according to the national allocation formula). But it is difficult to cut back existing services—hence changes in the level of funding may be as important as the absolute level in creating perceptions of pressure or crisis. The lower the national absolute rate of increase, the more likely it is that redistribution will mean that some authorities will have to make savings by cutting back rather than improving efficiency.

Efficiency

The 1991 NHS reforms devolved purchasing responsibility away from the centre and regions to health authorities and general practices. This was accompanied by a requirement for health authorities to meet certain targets such as reducing waiting times and increasing levels of activity. But as shown in table 1, in some years the increase in resources awarded to the NHS may not have been enough to cover the rise in healthcare sector prices, especially if wage settlements (a major driver of healthcare specific inflation) were relatively generous. To meet current or any additional demands the NHS would need to become more efficient.

The official measure of efficiency is the purchaser efficiency index, which essentially relates allocated fund-

ing to hospital activity (finished consultant episodes).⁵ In recent years authorities have been required (through their providers) to achieve 3% more activity for a given increase in real resources. This means that health authorities have to buy higher levels of hospital activity from NHS trusts for the same money.

The reasons why the required efficiency improvements are not achieved are complex. Some may relate to a lack of effective local management—for example, not having accurate information with which to control activity and set accurate prices or continuing to offer inappropriate care (suggested by wide variations in clinical practice⁶). But other factors may be largely beyond the control of local managers and more in the hands of government. For example, trusts may not be able to reduce costs because the increasing volume and sophistication of contracting requires higher investment in information technology and management; local pay negotiations may make it more difficult to control wage increases; or a lack of local social care leads to bed blocking.

The internal market encourages purchasers to exercise choice. If other purchasers (such as general practice fundholders) withdraw contracts from a trust, the overhead costs to be covered by the remaining purchaser—the health authority—increase. Attempts by health authorities and trusts to reduce overheads by closing hospitals may be blocked by local demands to keep them open. Finally, trusts also have to meet other costs to cover national initiatives (see demands below).

Reduced efficiency?

The purchaser efficiency index requires health authorities to purchase more hospital activity for the same or less money. But this may encourage trusts to record more finished consultant episodes for the same number of patients⁷ or to favour treatments which lead to a faster turnaround of patients (such as daycase surgery) rather than those leading to more benefit for the cost.⁸ The 3% annual efficiency target may also encourage health authorities and trusts to look for easy short term methods to improve efficiency without regard to the long term effects.⁹ Finally, the index provides an incentive to increase activity in hospital and a disincentive for health authorities to shift resources into other settings such as primary care, which again may offer more benefit to patients for the same costs.⁵ All of these effects will act to reduce efficiency and therefore increase financial pressures locally.

Demands

The four main pressures on national expenditure discussed last week—changes in demography, morbidity, availability and use of new technologies, and expectations¹—may also vary from area to area. Other demands too can have an important local effect. For example, health authorities and trusts have to meet the costs of a large number of central initiatives such as reducing junior doctors hours; implementing training requirements recommended by the Calman review¹⁰; implementing the patient's charter, particularly the requirement to treat all on waiting lists in less than one year; consulting the public in purchasing decisions; expanding the number of paediatric intensive care

beds; expanding the fundholding scheme; and encouraging a shift from secondary to primary care. Hospitals that need new buildings (often in order to reduce overhead costs) or major items of equipment must now seek competitive tenders through the private finance initiative. The high cost (£1 million for one trust) of putting together tenders, and the payback to lenders, must be met within existing revenues.¹¹

Finally, local demands for NHS care may be high for external reasons—for example, a low availability of social care leading to higher number of admissions for a large number of mentally disordered offenders requiring costly care in secure units. Policies which reduce the availability of alternative sources of care available to NHS patients (such as closure of a local military hospital providing free care to NHS patients) will also add to demands made on the local health authority budget.

Discussion

The reasons why specific health authorities and trusts experience acute financial stress are complex and interlinked. They relate not only to the underlying level of funding but also to the ability to improve efficiency and absorb the costs of national directives or other local demands. Each of these, and therefore the extent of financial stress, are the result of a complicated series of political and managerial choices at national or local level.

The level of growth of overall funding in the NHS is obviously the responsibility of central government. An incremental approach is currently taken to funding the NHS, but political choices resulting in awards which imply less than 1% growth in real or volume expenditure each year are likely to induce financial stress. The award for 1996-7 (0.9% in overall real growth; table 1) makes this year predictably difficult.

The distribution of funding to health authorities through the national allocation formula is also the government's responsibility. The government receives advice about the formula from researchers such as those at the University of York¹² but ultimately chooses the elements to be included. It is technically difficult to reflect the needs of the population accurately within the formula, and there are worries that the formula is not yet right.¹³ But decisions on resource allocation cannot be deferred indefinitely even if information is imperfect: the benefits of delay would have to be balanced against the drawbacks of some health authorities being under their target level of resources for longer.

The government's policy of requiring all health authorities to achieve national targets regardless of their ability to achieve them is bound to cause acute financial stress in some areas. Furthermore, the likelihood of specific health authorities and trusts running into trouble as a result can be largely predicted by the Department of Health. This is because both the increments in funding to specific health authorities and those which are unlikely to achieve the 3% efficiency target are known in advance of each financial year. Despite this the government does not take the information into account when allocating resources through the national allocation formula. Instead, financially stressed health authorities and trusts have to put their case for extra one-off funds.

Last year the Department of Health made an extra £25 million one-off payment to nine health authorities,¹⁴ of which eight had received less than average growth in funding in 1996-7 and four were expected to achieve efficiency gains of less than 1%.¹⁵ The reasons given for the extra funding were vague and reported as being for structural and market management changes and reconfiguration of services.¹⁴ Since most health authorities are experiencing these, more demands for one-off extra funds might be expected in subsequent years particularly if volume growth remains low. And since these demands are more likely to be heeded if the crisis reaches public attention, more media coverage can be expected. This leads to a predictable cycle of doom and gloom stories for the NHS each year.

The inevitability of variations in local circumstances and in the ability of health authorities and trusts to achieve any centrally set target make the management task facing the Department of Health demanding. The task is made more difficult by the numerous central initiatives it continues to implement, all of which impose costs directly on health authorities and trusts or indirectly through their claims on management time. The continued use of national targets which do not allow for variations in the abilities of local management or the situations they have to deal with will lead to more local financial crises, particularly when national increases are low or there is significant redistribution of resources.

Conclusion

The financial stress experienced by some health authorities and trusts is related not only to low underlying increases in NHS funding but also to the requirement to increase activity and to absorb the costs of national directives or other local demands. All of these factors, however, can be controlled by the government, the NHS Executive, or locally. In the final article in this series next week, we explore what could be done to reduce financial pressures and ask whether the NHS is sustainable.

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