

PHYSICIAN WORKFORCE PLANNING: WHAT HAVE WE LEARNED? **LESSONS FOR PLANNING MEDICAL SCHOOL CAPACITY AND IMG** **POLICIES**

A. *Review recent developments within the country regarding physician workforce planning*

- 1. *Has there been a recent reassessment of the adequacy of the supply and levels of production?***
- 2. *What led to the reassessment?***
- 3. *What organisational/political process was used for the reassessment?***

In 2002 the total number of doctors in the NHS in England was around 105,000 for a population of about 52 million. Over the last 5 years there has been increasing acceptance that we are not producing sufficient doctors either to sustain the current workforce or to meet the growing demand.

The reassessment of the medical workforce position in England* has resulted from a growing realisation in the 1990s that existing undergraduate numbers were insufficient to maintain current trends in medical workforce growth, strongly overlaid with government determination to invest in significant staffing increases in the NHS.

The production of doctors for the NHS was traditionally held at levels well below “need”. Factors affecting need and demand are illustrated in the diagram on page 3. This may be attributed to a number of factors, some of which are based on evidence, some on “perceived wisdom” and some on anecdote:

- A weary acceptance throughout most of the service that with a much lower spending per head of GNP on health services than many other countries, we could not expect to have the same ratios of doctors to patients.
- An assumption that even current growth rates would be unlikely to be sustained.
- A concern that even if more doctors were trained there would still not be the resources to employ them so that expensive investment would be wasted. Senior members of the profession remember intense competition for small numbers of available consultant posts.

* This paper applies strictly to England. Some of the data and earlier sources are UK based.

- Some people believe that some of the surgical specialties have colluded in keeping both consultant posts, and numbers eligible for them, low in order to sustain levels of private practice income.

So although there have been some technical and methodological issues in workforce planning, detailed below, which have widened the gap between need and supply, the reassessment has been largely a **political**, rather than a technical process, a political commitment to secure “..the staff that the NHS needs... and that patients deserve” (speech by Secretary of State for Health).

There was a growing realisation through the 1990s that:

- Medical student numbers had been held down too long.
- There was over-reliance on an increasing proportion of non-UK trained doctors in the workforce (21 to 24% over the period 1991-96).
- The gap between doctor-patient ratios in England and the rest of the developed world was widening.
- Serious shortages of applicants for consultant posts were developing in some specialties.

The third report of the Medical Workforce Standing Advisory Committee in 1997¹ reviewed the evidence on supply and demand, including commissioned research on female participation in the workforce, flexible working and retirement patterns.

It concluded that we should:

- Plan on an annual increase of 1.7% in doctors.
- Aim for greater self-sufficiency in doctors (ie more than 76% UK trained).
- Increase medical student numbers by 1,000 (in addition to the existing 4,000 in 2003/04).

This increase was subsequently doubled, so that medical student numbers will reach 6,000 per year by 2010/11. There was very little review of the evidence in order to reach this decision, although there was some analysis

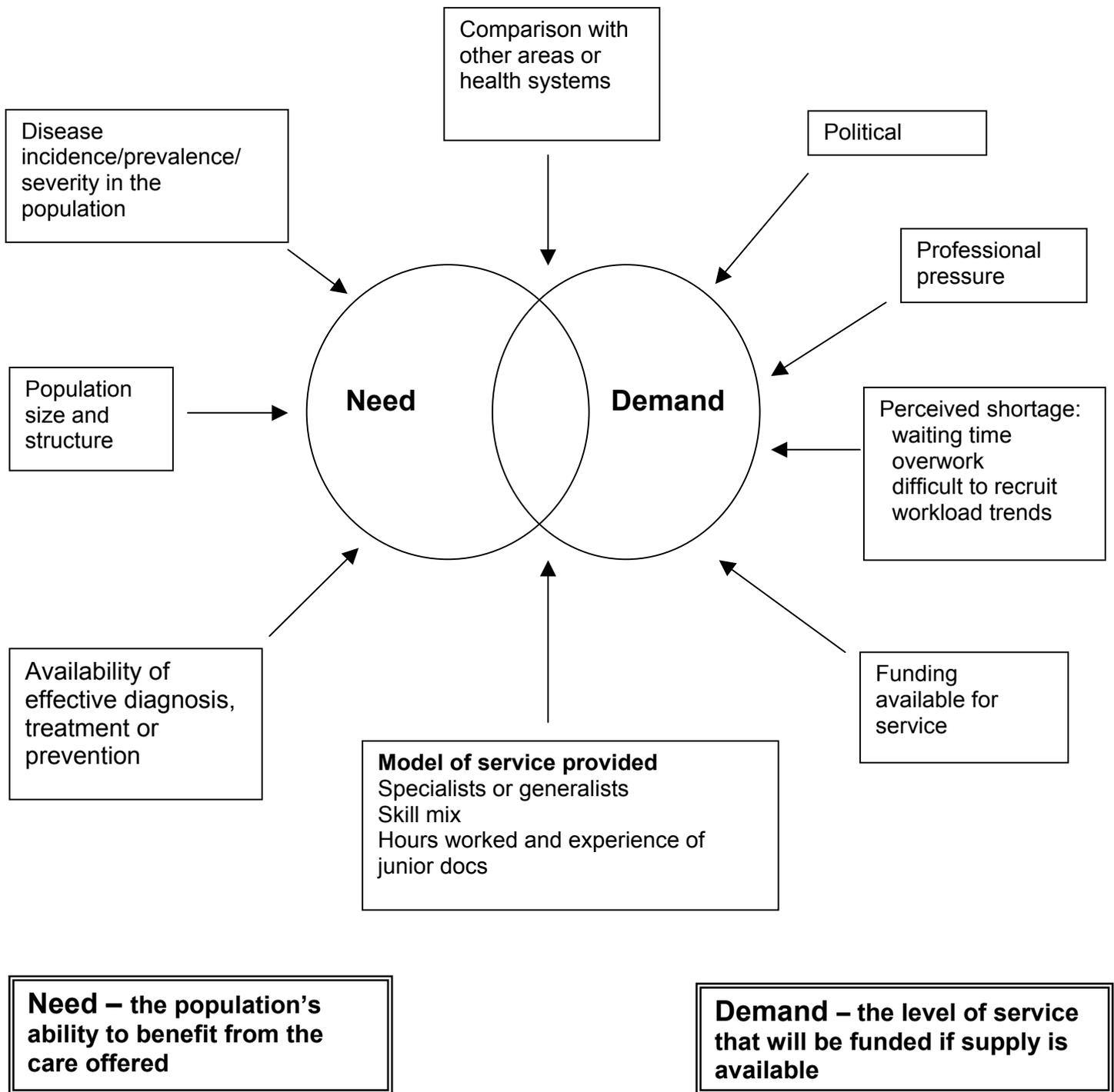
of its likely impact. It was primarily a political decision based on a concern that even with the initial planned increase we would continue to be heavily dependent on overseas doctors and a recognition of the need for a step-change in the medical workforce to deliver real improvements for patients.

The government was committed to the transformation of the NHS with “more staff ...working differently”. It embodied its plans in two key documents:

“A Health Service of All the talents: developing the NHS workforce”²

The NHS plan³

FACTORS INFLUENCING NEED AND DEMAND FOR DOCTORS WITHIN THE NHS



Many of these factors are interdependent – the diagram does not attempt to describe the relationships between them

- B. *In general, what methodologies and tools were used to forecast future supply, demand and/or need? Who conducted the technical assessments? Were there any new advances in methodology or tools for forecasting future supply and demand and/or need? Was a process established to reassess the adequacy of the forecasts on a periodic basis? (Will there be an effort to systematically track supply and demand?)***

Supply Models

There is a large number of different supply models designed to capture particular features of the medical workforce, but they fall into two general categories.

Overall workforce models look at numbers flowing through all the grades, from exit from medical school through to Consultants and General Practitioners. These models consider the various medical grades as a series of 'boxes' through which individuals flow. The outputs from the models show how many individuals are in each 'box' at yearly intervals.

Flows between the boxes are controlled using a variety of different assumptions. In some cases, the mechanism is assumed to be a 'push' - for example all Pre-Registration House Officers (PRHOs) move on to Senior House Officer (SHO) posts after one year, pushing through the system. In other cases, the main mechanism is a 'pull', for example flows into general practice from the SHO pool are assumed to be driven by the number of GP registrar places pulling people into that sector. In some cases the models feature a complex mixture of pull and push factors, particularly in the entry to the Specialist Registrar (SpR) grade. The push factors here would be the build up of SHOs with different levels of experience, whilst the pull factors depend on the number of national training numbers (NTNs) available, increases in training places, promotions to consultant etc.

The latest versions of the overall model include facilities to model different ways of controlling SpR numbers and different approaches to SpR and SHO training, and incorporate more detailed figures on specialty (group) level data. These models have been used recently to examine the impact of "Modernising Medical Careers" (changes to specialist training and SHO modernisation)⁴.

The other broad type of model is "consultant only". The aim of these is to show projections of the likely future number of consultants (or "fully trained specialists"). They take into account all the different sources of consultant recruitment, including detailed work on retirement patterns, international recruitment, conversion from other grades, rejoiners and so on. The models generally also include detailed modelling on flows through the

Specialist Registrar grade, including assumptions about controls on NTN. consultant only models are much more detailed than overall models in projecting consultant counts, but they do not extend to very detailed modelling on non-consultant grades, or SHOs or GPs.

The “SWAG” model (although the Specialist Workforce Advisory Group has been replaced by the Workforce Numbers Advisory Group) is a special case of a “consultant only” model. It features detailed modelling for each individual consultant specialty. The model is based on data from the Department’s workforce censuses⁵, but in this case it is used to feed into an annual review process involving the Medical Royal Colleges. In some cases, the census data are replaced by Royal College data by agreement.

The “SWAG” model uses data by specialty as set out below:

- Current number of consultants
- Current and predicted future ratio headcount to wte
- Expected specialist qualification dates of registrars in training
- Anticipated delays in those dates
- Distribution of training time of future recruits
- Direct international recruitment at consultant level
- % overseas doctors staying
- Wastage rates
- Retirement rates
- Numbers of rejoiners or conversions from Non-consultant grades
- Additional training opportunities planned

It allows a number of factors to be included, but many have to be estimated.

For GPs, the modelling is less well developed, but is now being expanded using models similar to the “consultant only” models. GP models take into account GP registrar training places, and assumptions about the rate at which trainees can be converted into GPs. In some cases, the model allows conversion rates to be varied depending on key characteristics of the trainees, particularly their country of qualification and gender.

Alongside data on trainees, the GP model also allows flows into the workforce from overseas recruitment, rejoining, and conversion from the GP retainer grade or locums. It includes assumptions about wastage and retirement. The retirement assumptions are becoming more refined in recent models to reflect the considerable variation in age profile across the country.

Demand/Need Models

A variety of methods are used to predict future demand/need. One very crude measure of increased demand was the trends in annual consultant expansion. In the absence of any better information, the default assumption tended to be that the annual percentage rate of expansion would tend to stay constant or fall slightly. This was 1.8% over the period 1976 – 1996.

The Economic and Operational Research Division of the Department of Health run a “**demand model**”. This is activity based and predicts demand based on a number of “demand drivers”:

- Waiting times
- Demography
- Public expectations
- Skill mix
- NSFs and other service strategies
- vacancies

Its strengths lie in being:

- relatively objective
- consistent across specialties
- able to review trends

Its limitations include:

- By starting from the present workforce, it makes an underlying assumption that the current workforce is sufficient to do the current work to the required standard.
- It does not reflect the requirement of the EWTD.
- Some of the numbers attached to the drivers can seem quite “opaque”.
- It is more strongly driven by in-patient elective procedures than by out-patient procedures or emergency work, so may underestimate demand for out-patient specialties.

Many of the Royal Colleges and specialty associations have undertaken relatively sophisticated planning⁶. On the whole this has tended to be needs and population based⁷ but there are also examples of building up from a multi-disciplinary service model^{8/9}.

Various attempts have been made to encourage “the service” to undertake long-term workforce planning. These have included annual surveys undertaken through regional offices, and setting up local medical workforce advisory groups. The lack of long-term service planning or revenue certainty made it difficult for organisations to plan their workforce far ahead. Now workforce development confederations have been established but planning horizons are still relatively short-term.

The introduction of national service frameworks, initially for coronary heart disease and mental health, has provided a focus for workforce planning based on service planning against defined standards.

When looking at the balance between specialties, all these sources are triangulated to form a view.

There has not been a regular process of reviewing previous predictions. In general, overall numbers of doctors have been reviewed at unspecified intervals. In between, it has been assumed that the number of doctors being trained overall was correct. When MWSAC reviewed previous predictions in 1997, it concluded that previous reports had consistently underestimated the rate of physician growth in the workforce¹. Most had predicted a rate of growth of 1% to 1.5% when it had been around 1.8% for 20 years. GP growth was assumed to be 1%.

The balance of training between specialties and general practice overall has been reviewed each year within the context of an overall limited “pot”. The introduction of a standard specialty proforma for the medical specialties (“SWAG”) model, was partly driven by frustration at the lack of a clear audit trail as to what assumptions had previously been made and how earlier decisions had been reached in regard to the balance between specialties.

Early discussions are taking place around a central focus for NHS workforce planning information, which could be an opportunity to build in processes for reviewing previous predictions.

C. *What were the key findings of the re-assessment? How do the findings compare with prior assessments? If the results were different, why were they? What factors were viewed as having a major potential impact on future supply and demand and/or need?*

Against the backdrop of an underestimate of the underlying growth in the system, the main issue in the reassessment was that **demand** for doctors would be greater because the government planned to make significant investments in the NHS.

Thus, previous assumptions about the number of posts that would be available for trained specialists and general practitioners in the NHS, based on historical rates of growth in spending on NHS were incorrect in the face of this, arguably unforeseeable, stepped change.

The NHS plan³ states:

The NHS has delivered major improvements in health but it falls short of the standards patients expect and staff want to provide. Public consultation for the Plan showed that the public wanted to see:

- more and better paid staff using new ways of working
- reduced waiting times and high quality care centred on patients
- improvements in local hospitals and surgeries

In part the NHS is failing to deliver because over the years it has been underfunded. In particular there have been too few doctors and nurses and other key staff to carry out all the treatments required. But there have been other underlying problems as well. The NHS is a 1940s system operating in a 21st century world. It has:

- a lack of national standards
- old-fashioned demarcations between staff and barriers between services
- a lack of clear incentives and levers to improve performance
- over-centralisation and disempowered patients

These systematic problems, which date from 1948 when the NHS was formed, are tackled by this Plan. It has examined other forms of funding healthcare - and found them wanting. The systems used by other countries do not provide a route to better healthcare. The principles of the NHS are sound but its practices need to change.

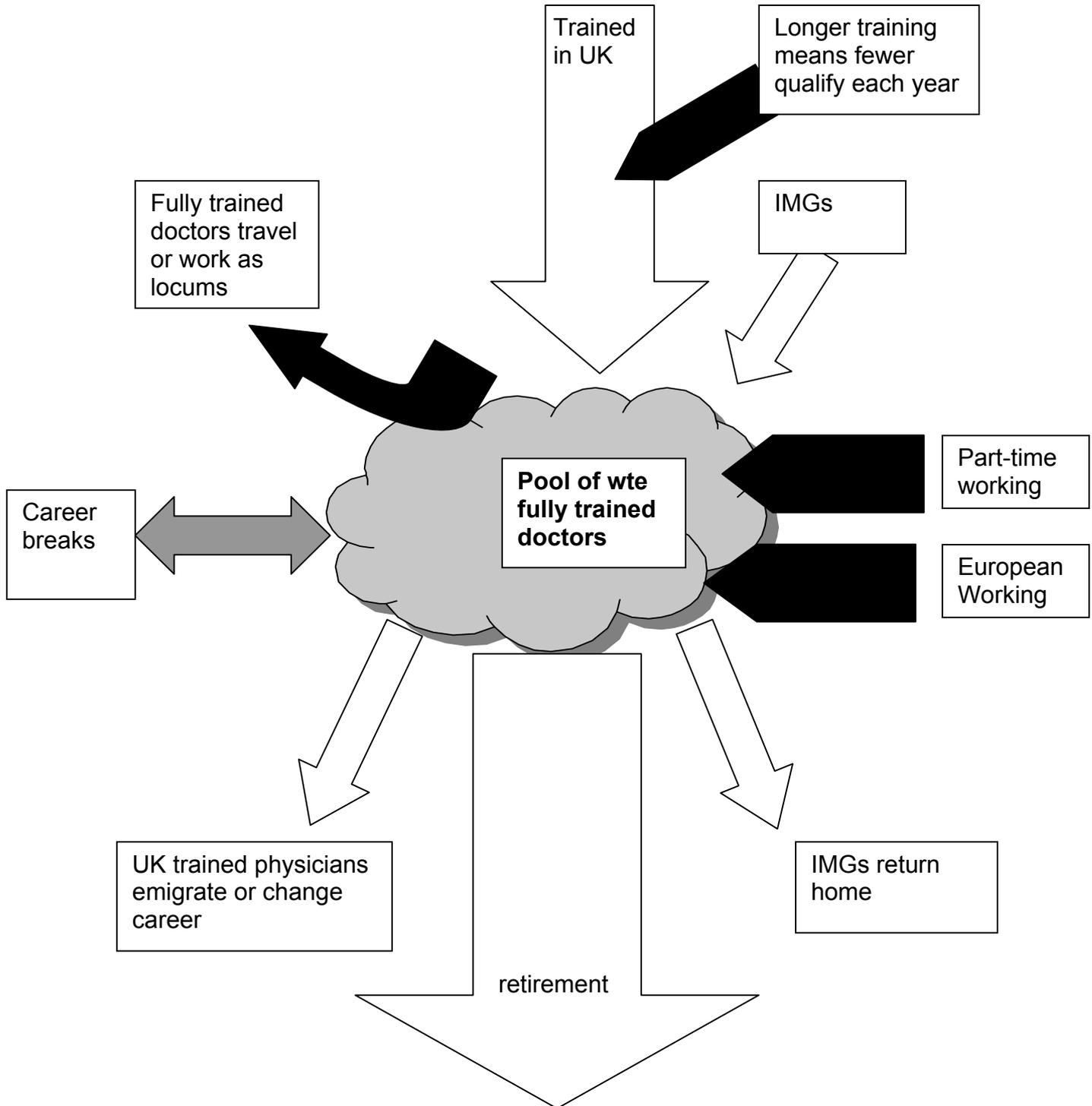
In 2002 the government committed itself to:

...through general taxation ... fund a catch-up period to get us to health spending of 9.4% of GDP by 2008 – easily on a par with European levels of health spending

Although this was a political reassessment of the demand for physicians that would be created by demanding higher standards and injecting large sums of money into the NHS, there are also a number of factors that affect the supply and demand for future doctors which operate in England and which need to be taken into account:

These are shown in the model below:

INFLUENCES ON SUPPLY OF DOCTORS



Supply

Part-time working

An increasing proportion of the workforce expects to work part-time for at least part of their working lives. This can be attributed to a number of factors:

- Increased proportion of women in the medical workforce¹⁰. In 2001, 36% of all doctors were female; 23% of consultants in the NHS were women, but 38% of registrars. In general practice the contrast is even more stark: 36% of GP principals but 61% of GP registrars; and now about 60% of medical school graduates are female. It is still more common for female doctors to work part-time than male.
- Special arrangements to make part-time training possible mean that some doctors become used to working part-time and wish to continue once fully trained.
- Changing expectations among doctors, along with the rest of society, about career patterns and “one full-time job for life”.
- Gradually increasing acceptance of part-timers, particularly in certain specialties and general practice.

The 1995 labour force survey showed that male doctors could expect to contribute 31.5 years to the workforce and female doctors 22.

In a Royal College of Physicians survey of Medical Registrars¹¹ 69% of females and 22% of males expressed a wish to work part-time at some point in their careers. (This may overstate the number who still wish to, once faced with the reality of student debt and housing costs).

EWTD

The European Working Time Directive already applies, in theory, to consultants in the NHS, but, pending attempts to negotiate on the consultants' contract, little attention is being paid nationally to monitoring this. However, Junior Doctors' hours are being tightly monitored and the requirement to achieve 58 hour working weeks by 2004 and 48 hours by 2009 is being taken very seriously.

This will have a dual impact. Some of the work previously undertaken by experienced juniors will be done by consultants **and** some consultants will be working fewer hours than currently. In the longer term it is anticipated that consultants, who have been used to working a maximum

48 hour week during their training, will not expect to work long hours, and therefore the number of hours worked per whole time equivalent specialist will be less. The extent to which this will be offset by changes to modernise the NHS, increase productivity and redesign roles, is as yet untested.

Retirement Age

Most modelling assumes a fairly static retirement age of around 60, despite surveys conducted by professional bodies indicating that many doctors are hoping to retire earlier. The data suggests that retirement ages have been fairly constant over the period 1992 - 2000. Each year 20% of the 60 to 64 year-olds in posts leave, and 30% of the 65 to 69 year-olds. There is some evidence from general practice that 70% of doctors retire when they indicated they would in surveys¹².

D. *What new programmes or policies, if any, have been proposed and which ones have been put into place as a result of the reassessment?*

The new programmes and policies that have been proposed underpin both expansion and transformation of the workforce. They include:

- Medical school expansion
- NHS Plan – consultant, GP and training expansion
- Further expansion of training numbers
- International recruitment
- Modernising Medical Careers
- Recruitment and retention initiatives
- Job redesign

Medical School Expansion

This predated the NHS plan. The third report of the Medical Workforce Standing Advisory Committee in 1997 recommended an increase of 1000 in medical school intake¹. The NHS Plan³ added a further 1000 to these numbers. This is to be achieved by 2009, partly through increased capacity in existing medical schools and partly through the establishment of 4 new medical schools in under-doctored areas. There is an emphasis on widening access, introducing shorter courses for graduates in an arts or science discipline (traditionally, English medical students have begun their courses at 18, like other undergraduates).

NHS Plan

The NHS plan³ states:

The March 2000 Budget settlement means that the NHS will grow by one half in cash terms and by one third in real terms in just five years. More money will fund extra investment in NHS facilities...

- 7,000 extra beds in hospitals and intermediate care
- over 100 new hospitals by 2010 and 500 new one-stop primary care centres
- over 3,000 GP premises modernised and 250 new scanners
- clean wards - overseen by 'modern matrons' - and better hospital food
- modern IT systems in every hospital and GP surgery

...and investment in staff:

- 7,500 more consultants and 2,000 more GPs
- 20,000 extra nurses and 6,500 extra therapists
- 1,000 more medical school places
- Childcare support for NHS staff with 100 on-site nurseries.

But investment has to be accompanied by reform. The NHS has to be redesigned around the needs of the patient.

In a follow-up to this in 2002, called "Delivering the NHS Plan" further commitments were made to:

- 15,000 more GPs and consultants
- 30,000 more therapists and scientists
- 35,000 more nurses, midwives and health visitors
- 10,000 more general and acute beds

There is real commitment to the increased numbers and there is heavy performance management of targets at local level. At present, consultant and GP expansion is behind target.

Further Expansion of Training Numbers

There has been an expansion of registrar training opportunities even greater than promised in the NHS plan, encouraging hospitals to use local resources to develop training posts, rather than relying entirely on "training" funding. 100 GP registrar and potentially up to 2000 specialist registrar posts will be created over and above the numbers in the plan.

International Recruitment

There has been a government sponsored programme of international recruitment of both hospital specialists and general practitioners. To date (May 2003) 150 consultants and 100 GPs have been recruited in this way.

In 2002 the government issued advice to NHS organisations recruiting internationally, on the infrastructure necessary to support this, particularly induction and mentoring¹³. Guidance also covered the ethical consideration for recruitment from other countries who need our doctors.

In addition, support is available to employers and doctors through the central international recruitment campaign, through IMP Worldwide and a relocation company.

Modernising Medical Careers

This programme will have the effect of making overall post-registration training shorter and more structured. As well as educational benefits it is intended to produce consultants more quickly. A new post-graduate education and training board (PMETB) is being set up to oversee post-graduate medical education and training.

Recruitment and Retention Initiatives

There are a number of initiatives throughout the NHS such as “Improving Working Lives” aimed at improving retention. There is a flexible careers scheme - in addition to the flexible training scheme already in existence for doctors in training.

The flexible careers scheme was designed to meet the needs of doctors at all stages of their careers who want to work less than 50% of full-time (in the UK, working less than 50% of full-time cannot be counted towards training and therefore is not eligible for “flexible training”).

Employers of career grade doctors on the FCS receive 50% / 25% / 10% of the funding over three years and 100% of funding during refresher training.

Because of the urgent need to recruit additional consultants, the scheme has now been extended to include those who trained full-time but wish to take up a consultant post part-time.

A programme encouraging doctors to take partial retirement and then continue to use their skills for the benefit of the NHS has also been launched.

Flexible Retirement

Flexible retirement options may be offered to any doctor over 55 and should be offered to anyone over 60. NHS pensions are based on final salary (wte where part-time hours are worked).

Options available are:

- Winding down (reduced hours)
- Stepping down (less demanding job, freeze previous pension and start new one)
- Retire and come back (if over 60 and work no more than 16 hours per week in last month of retirement). Draw pension but salary after coming back not pensionable.
- Working when needed

Job and Service Redesign

“Modernisation” is the order of the day and there are many programmes to change the way services are designed and the roles undertaken eg emergency admission units, diagnostic and treatment centres.

These are underpinned by new pay scales for most staff (“Agenda for Change”)¹⁴ and negotiation of new contracts for Juniors (2000), Consultants and GPs (last two still under negotiation).

E. *What role is envisioned for IMGs in meeting the nation’s physician workforce needs? Is this role different than in the past? What criteria/factors are being considered when deciding to increase medical school capacity versus increasing the inflow of IMGs?*

England has always relied on overseas doctors to run NHS services. In the 1990s 24% of NHS doctors trained outside the UK. In the past, the “deal” was that overseas doctors (particularly from the Indian sub-continent) could be offered training and experience in junior training grades before going back to their own countries. They could then use those skills for the benefit of the citizens of former commonwealth countries.

In practice, many stayed much longer, often doing a series of junior hospital jobs, locums or ending up in non-consultant career grades. In 2002, around one in four hospital consultants in non-dental specialties had qualified outside the UK, but over 70% of staff grade/associate specialist grades were filled by doctors who qualified overseas.

For the first time, there has been a government driven initiative to recruit fully trained specialists from other countries. Immigration rules have been relaxed to enable general practitioners to be recruited directly from overseas.

A programme of international recruitment has been established within the Department of Health. The aim has been both to recruit doctors and to support their successful integration into the NHS. To date, about 250 doctors have been recruited, 150 consultants and 100 in general practice. This figure only includes doctors recruited through the “official” national programmes. As the word has spread that England is short of doctors, there is anecdotal evidence that doctors from eg Germany are responding directly to adverts in the British Medical Journal.

Alongside this, doctors are needed at all grades. Our Pre-Registration House Officer post numbers allow for up to an additional 12% of doctors to come from overseas (reference WNAB paper 12(03)).

F. *What are the cost implications of increasing medical school capacity compared to increasing the inflow of IMGs? Was the cost and/or the time needed for medical education a factor that was considered in the policy discussion?*

There was no cost-time analysis comparing medical school expansion and increasing inflow of IMGs. It seemed “obvious” that it was necessary to do both, partly because the growth needed was so great that neither method could be relied on to meet it in its entirety. It was also clear that the main thing that could be done quickly was to recruit from overseas as the expansion of the medical schools would take 12 to 20 years to affect the number of specialists available.

G. *Were there any recommendations or new policies designed to increase productivity, increase the use of non-physician clinicians or reduce demand for physician services to help meet future need?*

There are a number of initiatives explicitly aimed at achieving “fundamental changes in job design and work organisation”. These include new contracts for consultants and general practitioners (not yet implemented and both have met substantial opposition) and a new pay scheme for other staff (“Agenda for Change”)¹⁴.

There have been a number of initiatives to improve productivity in individual specialties. Access targets for waiting times have driven increases in workload for some surgeons - often at enhanced “overtime” or private sector rates.

There have been specific initiatives such as “action on” ENT and ophthalmology which attempted to increase productivity in routine elective surgery.

However, in some specialties, we already have a richer skill-mix than many other countries, partly due to the historically lower numbers of doctors. So, for example, in radiology, radiographers are trained to a higher level than in many other countries. This has led to problems importing radiographers from abroad as in general, only those from Australia (Mrs Ann Cattell, Chief Executive, College of Radiographers) are considered trained to the level required for automatic registration in UK.

For many years, junior doctors were a very cheap source of labour for the NHS. Although basic pay was higher than nursing and other staff, additional duty hours were paid at 1/3 of basic pay, making the 40 to 60 hours of on-call work on top of the basic week a bargain for the NHS (ref, Author's pay slip 1982!).

The introduction of the "New Deal" in 1991 sounded the final death knell for cheap junior doctors working long hours, by significantly increasing rates of pay for doctors working on non-compliant rotas. Registrars on the most onerous rotas now earn more than some of the consultants they are working for. This has led to a wave of interest within the service in new roles, Physicians Assistants etc. This has been encouraged through national policy on modernisation, supported by the modernisation agency.

There has also been significant capital investment in diagnostic and treatment centres, designed partly to increase productivity.

The very fact that capacity is being increased in the NHS should increase productivity, as many hospitals have been operating at such high bed occupancy rates they have been unable to make efficient use of other resources (eg Surgeons).

CONCLUSION

The NHS in England is undergoing a period of rapid expansion of numbers of doctors at the same time as a radical change in training programmes. There will need to be a rebalancing of numbers between specialist and training grades. It seems likely that IMGs will be needed at all levels for the foreseeable future.

Dr Judy Curson FFPH
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Views expressed are those of the author, not necessarily shared by her employers or funding organisations

References

1. Medical Workforce Standing Advisory Committee (MWSAC) (1997) *Long-Term demand for Doctors in the United Kingdom and the measures needed to meet that demand*
2. Department of Health (2002) *A Health Service of all the talents: Developing the NHS workforce; Consultation Document on the Review of Workforce Planning*
3. The NHS Plan (2000): A plan for investment , A plan for reform
4. Department of Health (2003) *Modernising Medical Careers – The response of the four UK Health Ministers to the consultation on Unfinished Business: Proposals for reform of the Senior House Officer grade*
5. Department of Health (2001) *Medical and Dental Workforce Census*
6. The Royal College of Obstetricians and Gynaecologists. *Medical Workforce in Obstetrics and Gynaecology Fourteenth Annual Report; April 2003*
7. The Royal College of Physicians. *Consultant Physicians Working for Patients The duties, responsibilities and practice of physicians; 2nd Edition*
8. The Society of British Neurological Surgeons. *British Neurosurgical Workforce Plan 2000 – 2015.*
9. The British Renal Society. *The Renal Team, a multi professional Renal Workforce plan for Adults and Children with Renal Disease*
10. Department of Health (2001) *General and Personal Medical Services Statistics*
11. Royal College of Physicians. *Survey of Medical Registrars; BMJ 2001;322: 1578 – 1579 (30 June)*
12. Predicting Early Retirement in General Practice: Luce, Firth-Cozens, van Zwanenberg & Tinwell. *University of Northumbria, Newcastle (2001)*
13. Department of Health (2002) *International Recruitment of Consultants and General Practitioners for the NHS in England*
14. Department of Health (1999) *Agenda for Change – Modernising the NHS Pay System: Joint Framework of Principles and Agreed Statement on the Way Forward*