Planning the pharmacy workforce: is there a shortage of pharmacists?

In the last of five articles on the Royal Pharmaceutical Society’s pharmacy workforce survey, David Guest, Ali Budjanovcanin and Patricia Oakley link the 2004 survey findings to estimates of future demand for pharmacists and conclude that some sectors of practice may face a long-term shortage.

Our final article in this series focuses on the future demand for pharmacists and link this to our findings from the 2004 pharmacy workforce survey. We can incorporate the information on demand for and supply of pharmacists into a planning model and then test the implications of possible variations in factors affecting both supply and demand. By identifying probable changes in the most likely factors, we can then begin to make projections about whether or not there will be sufficient pharmacists to meet the demands placed on them in the future.

Workforce planning in the NHS has traditionally made projections about future needs by looking at past supply trends. This may be adequate when there is a stable environment and little pressure to change. However, this approach gives potentially erroneous results when conditions are more volatile, for example, when there are changes in technology coupled with changes in consumers’ tastes, such as wanting extended opening hours.

We need to examine developments affecting demand alongside information about the pharmacist workforce, including changes in the numbers of pharmacists as well as whether pharmacists are likely to be satisfied and committed to their work and willing to work extra hours if the demand requires it.

A close examination of the demands for pharmacy services reported on in 2005 shows that, in 2002–03, pharmacists were employed in the following areas:

- **Community pharmacy**: About 66 per cent of pharmacists were employed in 12,206 pharmacies, of which about 46 per cent were independently owned and small chain businesses (fewer than five outlets) and 54 per cent were small, medium or large chain and supermarket businesses (five or more outlets).
- **NHS hospital and primary care pharmacy**: About 24 per cent of pharmacists were employed in this sector — about 18 per cent in NHS hospitals and 6 per cent in primary care organisations.
- **Pharmaceutical industry and its suppliers and support agencies**: About 5.5 per cent of pharmacists were employed in this sector.
- **Schools of pharmacy**: About 2.2 per cent of pharmacists were employed in schools of pharmacy.

We can get an idea of changes in demand by analysing relevant government policies, industry reviews and publicly quoted company accounts. To assess the significance of these and how they might combine, we also drew on information from an extensive panel of experts and sought to arrive at some consensus among them about the most likely developments.

The outcome of this process reveals that there are broadly three complementary themes that have driven, and are driving, an increase in the demand for pharmacy services and pharmacists’ time.

- **Healthcare expansion**: The “healthcare expansion” theme, consisting of the growing underlying demands for more services that are required to support an ageing population; government funding policies for the NHS and universities; and the development of gene technology, novel treatments and delivery systems to treat previously untreatable or low prognostic value conditions.

- **Organisation of pharmacy provision**: The “organisation of pharmacy provision” theme, consisting of the changing working and technological environment, for example, the range of services available and extended opening hours in the retail sector; and the expectations for safer and novel treatments that can be brought to the market more quickly than in the past.

- **Professional quality assurance**: The “professional quality assurance” theme, consisting of extending the legal and regulatory imperatives to improve patient safety and extending the role of pharmacists through the new contracts.

**Building the demand model**

To build the demand model, we determined the underlying important trends that drive these work areas and the potential call on pharmacists’ time to meet these demands, by identifying the most representative workload measures that can give the best explanation for each area of work. This simple “productivity” ratio allows us to look at projected workload trends and assess the implications for the future pharmacy workforce.

The key factors included in the model in 2004/05 are summarised below for each employment area:

- **Community pharmacy**: Community pharmacy business will expand mainly on the basis of the prescription dispensing business at a rate of 8.7 per cent per year for the next three to five years for the larger chains (≥5) and the multiples and at a rate of 1 per cent for the independents and small chains (1–4)

- **The structure of the business (the proportion of businesses represented by the independent and small chains, and by the bigger chains and multiples)** will shift in favour of the latter at a rate of approximately 2 per cent per year over the next 10 years.

- **The impact of introducing new technology** to increase the efficiency of the prescription dispensing business will mainly affect the bigger chains and multiples, where there is a concentration of high volume dispensing.

- **The shift in government policy concerning deregulation and market entry** and the development of an “e-pharmacy” business and the “warehouse dispensing” model will affect the high volume dispensing businesses.

- **The demand for community pharmacists may rise in the short-term (the next five years) to meet the increasing demands arising from the changes in the regulations, and the potential new business arising from the government’s policies to expand non-dispensing advisory services**

- **NHS hospital pharmacy**: The NHS hospital pharmacy service will expand to meet government policies to increase the NHS’s capacity; to develop the pharmacy service and to manage risk at a rate of 3.2 per cent per year for the next three years.

- **The structure of the service will shift to a more networked organisation, including the private sector in England, to achieve capacity growth and economies of scale where possible**

- **The impact of introducing a combination of new technology and skill mix changes, including dispensing robotics and the transfer of patient and medicines management information, will increase the service’s efficiency**. The overall impact will develop over at least 10 years because of the investment lead time and uncertainties arising from the changing funding mechanisms, particularly in England.

- **The shift in government policy, particularly in England, concerning capital investment procedures, deregulation and market entry concerning some of the prescription dispensing and manufacturing quality control services, and the development of a**
managed care service" to look after the elderly and chronically ill in their homes will affect productivity because some of these services are contracted out.

- Demand will rise to meet the new clinical governance and risk management requirements, including the extra demands arising from the European Directives for managing clinical trials, and the extra demands arising from the increased student numbers and their education and training requirements.

**NHS primary care pharmacy**

- The NHS primary care pharmacy service will expand at a marginal rate set by the overall growth rate of the number of GP partnerships (which is declining).
- The structure of the service will shift to a more networked organisation to achieve capacity growth on the basis of savings accrued from achieving economies of scale, and the exponential start-up growth trend seen in the past five years will not be carried forward in the future.
- The demand will rise to meet the education, training and risk management requirements in the light of the Shipman inquiry.
- Some of this growth will be reflected in an increased demand for pharmacy technicians rather than pharmacists and both demand-side trends will be offset by investments in new technology that will be introduced over the next 10 years.
- There may be a new demand in the future, related to the potential introduction of new private sector entrants (in England) to increase the NHS capacity to deliver long-term care programmes, but the pace of change may be slowed by the lack of management capacity in primary care organisations.

**Pharmaceutical industry and supplier organisations**

- The pharmaceutical industry will expand to meet the Government's policies to expand the NHS capacity but this will have no real impact on industrial pharmacists.
- The structure of the industry is likely to be fragmented with, on the one hand, bigger and more powerful global R&D companies, complemented, on the other hand, by a large number of small, niche organisations. However, the productivity of the industry is probably at near maximum to stay competitive in a challenging market place.
- The biggest change to this set of trends is likely to come from a combination of the development of new direct patient care specialist services, and from the new biotechnology and gene-based diagnostic and treatment services that will emerge in the next five to 10 years.
- The pace of development of innovative new products and services will be limited by shareholders' attitudes to risk in the long term and any financial gain in the short term.
- The demand for traditional industrial pharmacists will probably not rise to meet the expanding demands because of the comprehensive changes in skill mix and labour substitution policies that have taken place over the past 20 years. However, there may be some small demand for pharmacists who have worked in primary care organisations and hospitals to service the big companies' marketing and sales efforts.

**Schools of pharmacy**

- The existing schools of pharmacy will continue to expand up to their capacity constraint level and this growth will be augmented with the introduction of new schools.
- The organisation of the schools will shift in the future to a more networked set of organisations in which some teaching and research specialists are shared across institutions.
- The demand for academic pharmacists will rise somewhat in the future because of the need to redesign the core curriculum to reflect the increasing needs of pharmacists' preregistration requirements.
- The uncontrolled introduction of the new schools will create a potential surge in demand, in particular because of their greater emphasis on practice-based multidisciplinary teaching methods and their consequent requirements for many more practice-based clinical placements and clinical pharmacy teachers and supervisors.
- The pace of change is great but the impact of introducing new technology teaching aids will be limited.

**Modelling the impact on the workforce**

We modelled these changes and compared them with our supply model, which incorporates the new schools of pharmacy. The flows and the summarised model outputs are shown in Figure 1 and Table 1.

An analysis of the 2004 pharmacy workforce survey shows that pharmacists report that their average weekly contracted hours was 33 and this concurs with the census findings in 2002 and 2003. Our analysis of the attitudes of pharmacists reported in the earlier articles also shows that, on the whole, there is no evidence of any mass movement out of pharmacy but a clear theme that pharmacists would like to reduce their working hours.

Our model, therefore, shows the key areas where there are risks of long-term shortages in the big chain and multiple community pharmacies.
pharmacy businesses and in the schools of pharmacy. Both are worrying because the big chain and multiple community pharmacy businesses provide much of the routine prescription dispensing services and the schools provide the basic and postgraduate education and training to keep pharmacists up to date and patients safe.

So is there a shortage of pharmacists?
In answering this question, there are some interesting things to note.

Although pharmacists reported that their average contracted hours per week was 33, their reported actual working hours were an average 37 hours per week. Our modelling shows that when this “goodwill” contribution is factored into community pharmacy, the projection moves closer to achieving a balance.

Furthermore, under supply growth conditions, where fewer pharmacists leave the system and more return as a result of changing economic conditions and, at the same time, more enter from the expanded student intake, this shortage closes to a near balance.

In addition, it might be possible that excesses elsewhere in the system could transfer to shortage areas. For example, pharmacists working in independent and small chain community pharmacy businesses might transfer to bigger chains. Primary care pharmacists might transfer to hospitals or community pharmacy; and industrial pharmacists might transfer to community and, possibly, academic pharmacy. However, given the evidence from the 2004 pharmacy workforce survey, there are dangers in making these optimistic assumptions.

There are also a number of key questions to which we still need answers. For example:

- Will pharmacists be willing to move across the sectors, especially to the big chain and multiple community pharmacy businesses?
- Will pharmacists continue to contribute their “goodwill” in unpaid hours?
- What is the potential impact of the changing composition of the workforce, which is increasingly made up of younger, female and ethnic minority pharmacists?
- What is the potential impact of changing the community pharmacy contract and the prescription dispensing business model by using technology, for example, robotic-aided dispensing and the electronic transmission of prescriptions, on the productivity ratio, which is currently around an average of 20 items per pharmacist’s hour?
- What is the potential impact of the changing revalidation regulations on the one hand, and adverse economic conditions on the other, on pharmacists’ leaving and retirement rates?

Our analysis of the 2004 pharmacy workforce survey shows that 67 per cent of pharmacists have worked in other sectors than their current one and would be willing to do so again in the future. However, the number actually planning to move is considerably lower, with community pharmacists (in independent non-franchises and small chains) expressing the greatest willingness to move (41 per cent and 35 per cent). Therefore, the data does reveal some potential flexibility. However, as highlighted in the fourth article in this series, the developments in the profession that were likely to have a negative impact on pharmacists’ willingness to stay in pharmacy, were the growth of the multiples and decline of the independent pharmacies, along with a relaxation of the control-of-entry regulations for the large supermarkets and offering alternative distribution mechanisms for medicines.

The third article in this series concluded that pharmacists’ dissatisfaction, stress and work-life conflict can be attributed to experiences at work and, in particular, work overload and long hours rather than pharmacists’ age, gender or ethnicity. We know that part-time pharmacists and those on atypical employment contracts report experiences and attitudes that are at least as positive as those on traditional employment contracts and we know that many pharmacists wish to reduce their working hours.

These findings, notably the expressed desire and intention of many pharmacists to reduce their working hours, present a less than encouraging overall picture when we try to assess whether the projected shortages in the big chains and multiple community pharmacy businesses can be addressed by pharmacists moving sectors and maintaining, and even increasing, their average working hours.

The 2008 survey, “The careers and working lives of pharmacists”, which is taking place now, will provide a more up-to-date picture of pharmacists’ attitudes to flexible employment, work-life balance and career aspirations. Considered in conjunction with the results of the most recent census data, it will also shed some much-needed light on the potential long-term impact of the younger, female and ethnic minority pharmacists as they become the largest part of the active register.

Further research is required as a matter of urgency on the potential impact of the changing community pharmacy business model and, in particular, on the complex relationships between increasing dispensing workloads, increasing pressures to provide extended services, for example, under the new White Paper in England, and pharmacists’ feelings of stress and overload set within a more regulated and risk-averse context.

Strategic workforce planning is now central to the NHS reforms in England, Scotland and Wales. Following the 2008 survey and the census, the pharmacy workforce model will be updated and upgraded to provide some evidence-based workforce modelling capacity to the Royal Pharmaceutical Society and its national boards. The model’s design and its modelling capacity depend on good theoretical underpinning, robust research and constant data flows. Therefore, completing the workforce survey and the census are critically important to the profession and the governments for England, Scotland and Wales as they develop their policies for modernising pharmacy services for the 21st century.

References