EXECUTIVE SUMMARY

A Study of the Demand and Supply of Pharmacists, 2000 - 2010

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Mr John Bronger	Pharmacy Guild of Australia
Ms Donna Harvey	Pharmacy Guild of Australia
Mr Lance Emerson	Pharmacy Guild of Australia
Mr John Dowling	Pharmacy Guild of Australia
Ms Yvonne Allinson	Society of Hospital Pharmacists of Australia
Ms Sue Kirsa	Society of Hospital Pharmacists of Australia
Professor Colin Chapman	Victorian College of Pharmacy
Mr Chas Collison	Association of Professional Engineers, Scientists and Managers, Australia
Ms Kirrily Edmondston	Commonwealth Department of Health and Ageing
Dr John Primrose	Commonwealth Department of Health and Ageing
Mr Allan Neate	Commonwealth Department of Health and Ageing
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Mr Warwick Conn	Australian Institute of Health and Welfare
Ms Leone Coper	Australian Association of Consultant Pharmacy
Ms Jessica Graves	Australian Association of Consultant Pharmacy
Ms Michelle BouSamra	Pharmacy Guild of Australia

The members of the National Pharmacy Workforce Reference Group contributed to the report but the assumptions and findings contained herein may not reflect the opinions of individual members or their organisations.

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Executive Summary

Overview

This study aims to project the supply and demand for pharmacists between 2000 and 2010. It updates the supply and demand model previously developed by HCI (1999) for the National Pharmacy Workforce Reference Group (NPWRG), by reviewing and modifying its assumptions where appropriate, in the light of new developments since 1999. On the supply side, these include the latest information on student intake and projected graduations. On the demand side, they include a consideration of the impact of the Third Community Pharmacy Agreement, the increasing focus on safety and quality of medicines use across the continuum of care and a host of clinical governance and Commonwealth and State/Territory government policies which impact on the demand for pharmacists.

Key findings

1. Literature

The literature review, discussed in Chapter 2, indicates that there are national and international shortages of both community and hospital pharmacists, and include the United States, Canada, New Zealand and South Africa. The literature suggests that a complex range of factors will affect the Australian pharmacist labour market and include:

- structural issues—changes in the way that health services are organised and delivered, and the evolution of new management models;
- technical changes—associated with the increasing complexity of medication;
- workforce demographic change—associated with feminisation and ageing proprietors in community pharmacies;
- working arrangements—the way in which pharmacists work with assistants and technicians and collaborate with the medical profession;
- demographic change in the general population—and its impact on the demand for the services of pharmacists;
- educational—marked by increases in pharmacy student enrolments;
- political and cultural—associated with the Third Community Pharmacy Agreement, the application of new professional standards, government and consumer expectations concerning safety and the quality use of medicines, and the implementation of new Government policies;
- rural concerns—associated with ensuring adequate service access in rural and remote localities;
- information technology—characterised by the integration of professional care with electronic data interchange.

2. Supply

In measuring supply, Chapter 3 focuses on the variables that affect the active workforce from year to year, such as new graduates, immigration, emigration, retirement, participation and occupational separation. Both primary and secondary data sources are used. The main source of primary data is the response from a survey of a stratified sample of pharmacists.

The supply data confirm that:

- the community pharmacy workforce is ageing;
- the proportion of females in the pharmacy workforce has steadily grown and now approximates the number of males;
- there is likely to be a significant restructuring of the workforce in the next 10 years, as older male pharmacists retire and are replaced by younger female pharmacists;
- average hours worked by pharmacists remain fairly stable;
- total enrolments in pharmacy schools have grown by nearly 4% per annum for the past 15 years.

The model projects that overall FTE pharmacist workforce supply will grow from 11,188 in 2000 to between 13,594 and 14,147 in 2010, representing an average annual growth rate ranging between 1.98% and 2.38% depending, respectively, whether one adopts high or low values for net workforce loss.

3. Demand

Chapter 4 considers projected demand for community and hospital pharmacists separately. It uses the demand model developed by HCI in 1999 to examine the impact on demand for *community pharmacists* of:

- growth in dispensing demand, largely as a result of population and demographic change; and
- growth in cognitive services by way of activities associated with implementation of the Quality Care Pharmacy Program (QCPP) and additional interventions attributable to QCPP—as well as residential and domiciliary medication management review services (DMMRs). DMMRs are also known as Home Medicines Reviews (HMR).

In the case of *hospital pharmacists*, demand has been modelled using specific assumptions about the allocation and use of hospital beds and hospital pharmacist staffing ratios required to service their respective needs. The consultant argues that demand for hospital pharmacists is likely to remain a structural feature of the hospital system rather than a growth phenomenon.

Modelling for differential hospital demand was also undertaken separately by the Society of Hospital Pharmacists of Australia (SHPA) under subcontract to HCI. In contrast, the SHPA report concludes that:

- An additional 259 hospital pharmacists will be required to counter the *current unmet demand* represented by estimated vacant positions in hospitals across Australia; and
- An additional 1207 hospital pharmacists FTE will be required to meet *future demand* between 2001-2010 (estimated range of 1200 to 2200).

In forming this conclusion, SHPA is in agreement with the US Department of Health and Human Services which considers that for the whole pharmacy workforce, "the critical issue is the delivery of all needed pharmaceutical care services (some are termed cognitive services in this report) to consumers, not simply the dispensing of prescriptions". Concerning the hospital pharmacy workforce, they counsel that "any effort to base the increased demand for such pharmacists upon increased numbers of prescriptions, medication orders or the like, ignores the reality that today's hospital, long term care, and home care pharmacists devote less than half of their time to dispensing medications and the rest to other clinical and

management activities". This is consistent with the most recent Australian data (O'Leary et al, 2002).

Amalgamated data on year-to-year demand for the two mainstream roles of community and hospital pharmacists are modelled using various combinations of demand settings to represent different illustrative scenarios for overall demand. Depending upon the scenarios selected, by 2010 total demand for FTE pharmacists could range between some 12,700 and 20,000.

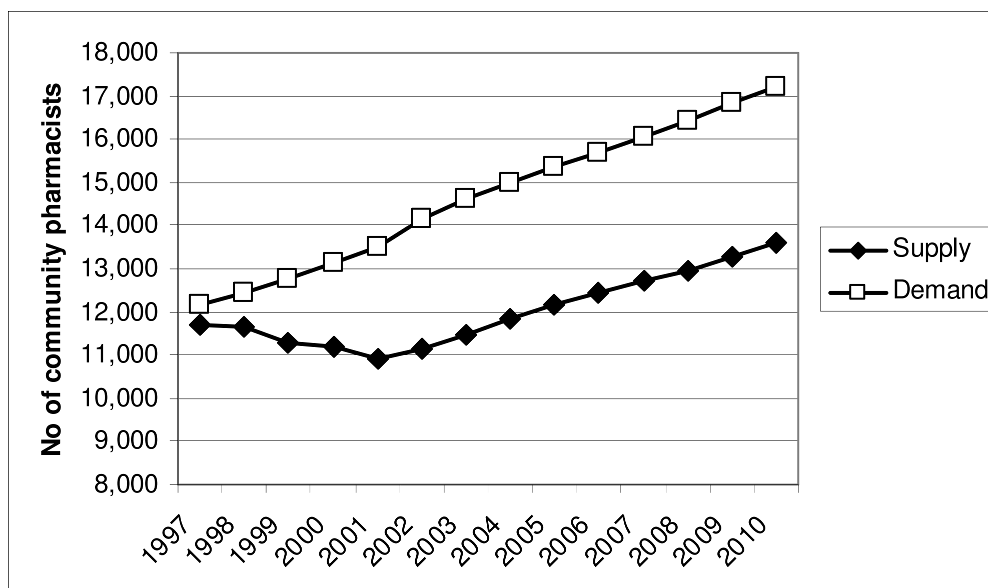
4. Labour market balance and adjustment

In terms of overall balance, we provide a possible simulation of the evolution of the total labour market between 2000 and 2010. This is based on:

- an optimistic assessment of workforce loss (the lower bound sensitivity of 3%)—in turn yielding "high" overall supply, embodying a rise from some 11,200 FTE pharmacists in 2000 to about 14,150 in 2010;
- "high" community demand for dispensing services and a positive view as to the uptake of cognitive activities in community pharmacy—in turn resulting in "high" community demand; and
- a conservative view about the demand for hospital pharmacists—in turn suggesting that the key driver will be an underlying dispensing demand based substantively upon hospital admissions activity. This scenario does not allow for the implementation of existing government policies on access, equity, medication safety, quality use of medicines, or continuum of care. As noted, this contrasts with the view of SHPA as to the expectations of both consumers and governments.

The scenario for demand is projected to cause overall demand for FTE pharmacists to increase between 2000 and 2010 from some 13,100 to 17,200—in turn contributing to the overall shortfall of FTE pharmacists increasing from about 2000 to around 3,000. The overall shortfall is likely to be primarily attributable to the current shortage and the endemic problem of wastage in conjunction with the behaviour of the demand for community pharmacists. The market for hospital pharmacists is currently under-supplied and likely to remain so, unless changes are made to mitigate the existing recruitment and retention factors of the sector.

From page 80 full report (Table 5.6: Total FTE pharmacists, 'high' supply and 'high' community / 'low' hospital demand to 2010).



While alternative scenarios for supply and demand of FTE hospital pharmacists are presented in Chapter 5, they do not alter the conclusion (based on the structural characteristics of the model in this study) that an overall excess demand for pharmacists is likely to continue during the next 10 years. The only issue in contention is the degree of excess demand over supply. If allowance is made for the possibility of greater than minimum levels of 'wastage', the shortfall could be greater by 2010 by up to at least 500 FTE pharmacists. Moreover, if as argued by SHPA, the demand for hospital pharmacists were to materialise at even a medium level to meet service delivery targets, there could be a further 2,500 FTE contribution to the overall shortfall.

In the context of an ongoing shortage and the ability for community pharmacy to offer higher remuneration, this is likely to result in ongoing reduced supply flowing to the hospital sector.

Summary of Recommendations

The recommendations attempt to focus on a 'managed' response to the most likely labour market outcome, and are aimed at either:

- minimising the gap between sustained overall demand for, and supply of pharmacist labour; or
- minimising disruptive internal market dislocations, especially those prone to occur in less flexible market segments (such as hospital pharmacy practice).

The NPWRG identified five main targets for intervention in relation to supply, *viz*:

1. the number of qualified pharmacists entering Australia from overseas (immigration);
2. the training rate;
3. wastage from the workforce;
4. labour substitution; and
5. pharmacy rationalisation.

The first three, at least, need to be considered as a suite of actions, the effects of which will be felt chronologically (in the order listed above).

1. Immigration

There is limited scope for increasing pharmacist immigration rates and the most rational approach would be to target overseas labour markets with a current or emerging oversupply of pharmacist labour, and where the standards of training were acceptable. Recruitment from overseas should be a short-term, stopgap solution—possibly helping to moderate the impact of the underlying labour market situation through 2003 to 2004. A difficulty here is that, as remarked in Chapter 2, many countries comparable with Australia also face likely pharmacist shortages.

2. Graduate supply

In the medium term—2006 to 2008—a second tier intervention could come into play. Increased student intake into Schools of Pharmacy in 2003 and 2004 would provide the supply benefits sought in the medium term. In an appropriately managed response, the source of training supply would need to be capable of being turned both on and off. This implies that significant increases in student intake should occur only at educational institutions where increased infrastructure investment was not required. Wherever

infrastructure investment is required to facilitate an increase in student numbers, there could be difficulty in flexibly responding to unforeseen demand reductions.

A related strategy suggested by the NPWRG concerns the fast tracking of students. Although those who have related degrees can usually skip part or all of first year, the introduction of professional skills into the first year curriculum means that some science graduates need to attend a summer school to attain a first year credit.

Accurate location and tracking of pharmacy graduates and monitoring their career paths are important for developing and evaluating strategies for the retention of pharmacists. Thus, linked to the third intervention discussed below, the NPWRG recommended the development and implementation of a longitudinal tracking system of graduates to determine their subsequent career moves and to more accurately calculate the wastage rate.

3. Wastage rates

Third, in the longer term, a reduction in wastage from the projected 3% - 7% range down to 2% per annum (or lower) is desirable. In the short term, the disproportionate number of pharmacists over sixty years of age remaining in the workforce will continue to feed net workforce loss. The challenge will be to retain younger, female pharmacists, both in the active workforce, and in a more fully participating capacity. In other similar workforces, female participation rates appear to be enhanced by having an ownership stake in the practice in which they work (HCA, 1998).

The NPWRG noted that there is a huge pool of about 5,000 registered pharmacists not working in pharmacy. The NPWRG has suggested that an increase in re-entry rates would require:

- Research into the characteristics of “lapsed” pharmacists (age, gender, location, etc), their reasons for leaving (such as long working hours, switching to medical degree, etc), and the types of re-entry courses that would suit their needs;
- A national effort to provide innovative and flexible models for re-entry, including part-time training, on the job training, existence of infrastructure, etc.

4. Training and labour substitution

Increased emphasis on training and labour substitution may constitute an important parallel avenue to augmenting the supply of pharmacy services, through greater efficiencies in the use of a given stock of pharmacy labour. This may be possible through:

- Better, more appropriate use of pharmacy assistants/technicians in both community and hospital settings. Competency standards are in place for community pharmacy at the basic training level which match legal requirements, and there is a move in some states to require technicians to have completed courses at a recognised level. However, for the role of technicians to significantly expand, there needs to be enforceable standards of practice under the jurisdiction of regulatory authorities which can then be linked to technician standards. The Guild has commissioned a project ‘Workforce and Career Path Options for Pharmacy Assistants” through the Third Community Pharmacy Agreement Research and Development Grants Program and this project will investigate many issues identified in workforce substitution;
- Enhanced use of technology to support a professional service role—for example, the electronic transmission of prescriptions, increased automation, etc.;
- Streamlining workflow practices in pharmacies to release the time of pharmacists for provision of cognitive services (PGA 2000).

5. Pharmacy rationalisation

The NPWRG has suggested that further amalgamation of community pharmacies, leading to the creation of larger pharmacies, would provide a better platform for the delivery of cognitive services, although it was noted that, in the past, closures meant some pharmacists leaving the profession altogether. Members of the NPWRG have noted that some operators make a commercial decision to open for long trading hours for competitive reasons, not always in response to consumer demand.

Supply to hospital pharmacy

As nearly a third of all hospital pharmacists have postgraduate qualifications, finding replacements for this highly qualified and experienced workforce is extremely difficult. Training issues make the recruitment of pharmacists from community to hospital practice labour intensive; recruiting from this sector must be viewed as an investment in the future supply of suitably qualified staff, and appropriate retention strategies would be needed to support such a recruitment strategy (O'Leary et al, 2001). Instead of attempting to impede the movement of pharmacists from hospital to community practice (that is arrest the 'leakage'), one objective could be to engineer an *enhanced* ebb and flow of pharmacists between the two forms of practice. Some of the mechanisms for doing this are discussed below:

- hospital pharmacy practice could be marketed to older community pharmacists, in conjunction with refresher training programs;
- the gap between 'private' and 'public' sector pharmacy practice could be narrowed;
- hospital practice could become an 'on-the-job training ground' for community pharmacists wishing to improve their clinical skills in preparation for advancing their community practice towards delivery of more cognitive pharmacy services;
- joint mentoring programs could be developed for young pharmacists across both the community and hospital sectors, to equip them for a professionally satisfying role in the future.