Submission to the Productivity Commission Health Workforce Study on Podiatry in the Australian Healthcare Setting

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This submission is in two parts.

The first part aims to provide contextual background to the podiatric profession and how it currently sits in the Australian health care setting. An overview of the key constraints to the provision of appropriate and timely podiatric care to the Australian community is provided.

The second part of this submission addresses the major questions posed by the Productivity Commission Circular Terms of Reference for the Health Workforce Study.

Contextual Background

Podiatry – Role and Scope of Practice

As providers of comprehensive foot care, podiatrists play an important role in the maintenance of mobility and consequently general health and independence of all members of the community. Along with the treatment of painful and debilitating foot problems, the podiatrist is a valued member of the health care team, conducting targeted screening and risk prevention, providing prophylactic and invasive treatment strategies which may delay or prevent hospitalisation and devising therapeutic care plans which facilitate mobility and activity.

In all States of Australia and the Australian Capital Territory, podiatry is a registered health profession and is defined by the various Registration Acts. To become a podiatrist, a practitioner must complete a Bachelor of Podiatry and be registered to practise in the appropriate state.

Post-graduate studies, including Graduate Diploma, Masters and Doctorate, are available to podiatrists at several Australian Universities. In some states, additional qualifications are legislatively recognised, allowing prescription and supply of a range of S4 medications.

Further background information on the scope of practice and areas of specialisation in podiatry is provided in Appendix One.

Current Status of Podiatry in the Australian Health Care System

Podiatry is a profession in high demand. In 1992, based upon twenty-year projections of current data, the Australian Institute of Health and Welfare (AIHW) reported that the demand for podiatry services was growing approximately twice as fast as population growth. Although the podiatry workforce increased by 43% between 1991 and 1999 (AIHW, 1999), the number of podiatrists looking for work has fallen from 4.2% to 0.5% (AIHW, 1999). These figures indicate that podiatrists are being quickly absorbed into the labour force in an attempt to meet the increasing demand for podiatry services in the community.

The recent inclusion of podiatry in the Medicare Plus initiative further demonstrates the unmet demand for podiatry services in the community. Since the program commenced late in 2004, there have been just over 29,000 claims for podiatry services and 17,000 clients have been referred to a podiatrist. With just over 2200 registered podiatrists in Australia, podiatry, on a per capita provider basis, has significantly exceeded other allied health groups in terms of uptake and occasions of service, which is probably a reflection of the limited availability of other subsidised podiatry services.

The situation in rural locations is particularly problematic. In 2001, the Rural Health Policy Sub Committee of the Australian Health Ministers Advisors Committee (AHMAC) reported that podiatry ranked highest across the states and territories as the health discipline most in need of recruitment and retention support. (AHMAC, 2001). General practitioners were responsible for this rating, indicating the recognised need for podiatric services by the general medical fraternity.

The demand for podiatry in Australia is further demonstrated by its listing on the Australian Government, Department of Employment and Workplace Relations (DEWR) National Skills Shortage List and the Australian Government, Department of Immigration and Multicultural and Indigenous Affairs (DIMIA) Migration Occupations in Demand List (MODL). DEWR has reported that podiatry shortages are national and widespread (2003). Given the identified podiatry workforce shortages in Australia, overseas professionals are currently needed to assist in meeting the community demand.

There are several reasons for the increased demand for podiatry services including: a rapidly increasing prevalence of diabetes and awareness of associated foot problems, the ageing Australian population; and an increased awareness of sports medicine, preventative care and allied health services in general.

Whilst some additions to funding for podiatry services have recently been made, these are insufficient to meet the community need. Overall, there are several key areas which pose constraints that prevent appropriate care being delivered at the right time, and include :-

- Education - incentives to train podiatrists are limited compounding labour force shortages due to the relatively low number of podiatry graduates annually. This is illustrated by recent closures of podiatry courses in two states, with the universities citing course delivery cost as the major driving factor.
- Lack of funding – podiatry services are not adequately funded to meet community need. Many people can not afford to pay for services privately and these people may go without podiatric care.
- Scope of Practice – barriers to podiatrists practicing to the full extent of their scope of practice impairs the recruitment and retention of practitioners in the workforce. Examples include a lack of access to restricted S4 prescribing rights and Medicare rebates for podiatry patients requiring diagnostic imaging.
- Career pathways – avenues for career advancement and commensurate remuneration are limited, particularly in the public setting. This also adds to problems recruiting and retaining podiatrists in the workforce.

The Productivity Commission Health Workforce Study: a Submission on Podiatry in the Australian Healthcare Setting

1. What are the institutional, regulatory and other factors across both the health and education sectors affecting the supply of podiatrists, such as their entry, mobility and retention:

Workforce Entry

Podiatry courses are closing at a time when the demand for podiatric services is high

The state of podiatry education in Australia is in urgent need of review. In the past two years, two of Australia's five programs in podiatry have announced closure or suspension of intake. These closures have been difficult to comprehend, given they have come at a time when community demand for podiatry services is high and expected to increase – therefore employment opportunities for graduates is excellent. Popularity of podiatry programs is high and courses attract quality students with tertiary entrance rank (TER) scores between 80 and 93 in 2005.

Inadequate tertiary funding for undergraduate training

In both cases, the reason for closure was cited as cost of course delivery. Under the current Commonwealth Grant Scheme, universities receive just under half the amount of annual per-student funding for the education of a podiatrist, than for a student in dentistry or medicine. Yet, the cost of course delivery is comparable, particularly with regard to the integrated clinical component of training.

Clinical practice requires rapid, efficient, high level clinical, moral and ethical decision-making almost impossible to simulate in classroom settings. Only in actual clinical settings can students gain real time experience in clinical decision-making. Podiatry students gain a proportion of their clinical experience in private clinics, resourced and staffed by the universities. These clinics provide a valuable community service, offering care provided by students under the supervision of an experienced clinician but at a reduced-fee in view of the nature of the service. There is however no fee subsidy provided by either federal or state health departments.

Historically, universities have funded capital set-up and recurrent costs. In terms of running costs, universities supply some academic staff, although the level of supervision required to ensure the safety of patients and students presents a resource challenge, when compared with subjects where lectures can be delivered to large groups of students at a time. Factors such as infection control compliance and the invasive nature of some podiatry work add to the need for control over staff:student ratios. In addition the clinic operations must provide an enriching student experience whilst delivering quality patient care and covering the cost of all consumables and supplies such as disposable gloves, dressings, instruments and technical equipment and support.

No incentives to facilitate or encourage fieldwork training

The other mechanism for providing clinical experience is fieldwork in hospitals or community health centres. Podiatrists in most states and territories are covered by a relevant allied health award, however few of those awards provide financial incentives for experienced clinicians to offer student supervision, nor are workplaces themselves rewarded for offering clinical experiences. Yet there is capacity for students to provide some level of service delivery, particularly as they reach the latter stages of their training. For those committed clinicians who wish to offer student placement experiences, one of the barriers is the lack of physical space and equipment – capital funding for patient chairs, instruments and other equipment, along with a room equipped with basic facilities, is often not available to accommodate a student. Finally, although around 75% of podiatrists work in private practice, placements in this setting are limited due to the associated business inefficiencies and financial implications.

Recommendations:
The current per student allocation for podiatry is $7,392. By comparison, students in medicine and dentistry attract $15,422, and nursing students $9,733.

- Podiatry should be afforded National Priority status on the Commonwealth Course Contribution Schedule, along with nursing and teaching, in order to provide an incentive for universities to offer podiatry places.
- Podiatry should be moved from cluster 6 to cluster 9 on the Commonwealth Course Contribution Schedule in line with commensurate programs such as dentistry and medicine.
- The allied health awards should be structured so as to reward podiatrists for providing student supervision and clinical placement experience.
- Similarly, workplaces should be rewarded for facilitating student placement experiences – for example with a loading in funding and service agreements.

Workforce Mobility

Registration
Podiatrists are governed by the relevant legislation in the state or territory in which he/she chooses to practice. In each jurisdiction, the legislation is different. The Commonwealth Mutual Recognition Act facilitates free movement between jurisdictions, however a registration application and fee is still required for each practice location. Podiatrists practising in rural border areas face double registration fees and occasionally contradictory application of legislation, such as the Boards' policies on infection control or regulation of advertising. In addition, there is considerable duplication of administration across the seven existing Boards which may inflate the costs passed on to registered practitioners, however it could also be argued that consumers benefit from a governing authority which operates in the context of the local setting.

Of concern to the profession over recent years has been the application of competition policy to registration acts which dilute the powers of the registration boards and restricts their jurisdiction to only registered podiatrists. For example in Victoria an unqualified person providing invasive footcare services would not be subject to the same standards of practice, such as infection control, applied to podiatrists. Furthermore, in the event of an adverse incident, there is no formal avenue for complaint, nor is there any guarantee the practitioner would carry professional indemnity insurance. In the open marketplace, the cost of compliance can make it difficult to compete with unregulated providers. The profession has recently revised its policy on podiatry assistants, in order to provide guidance to podiatrists seeking to delegate appropriate duties and ensure that anyone undertaking this role does so safely and competently.

Recommendations:
Registration is strongly supported by the podiatry profession. It is recommended, however, that all people providing footcare be subject to the same level of scrutiny via a formal registration process. Given the emphasis of professional registration i on public health and safety, a fair and equitable system promotes accountability to all health care workers.

Workforce Retention

Professional burnout impacts upon retention rates of podiatrists in the workforce
In their 2003 report, DEWR noted that "the younger members of the profession are reasonably mobile, and typically expect to hold a number of positions early in their career before settling into longer term employment. This is partly due to the considerable capital costs and administrative/management skills associated with establishing a private practice. These costs have increased substantially with more rigorous requirements for infection control and increased costs for professional indemnity cover."

Like many health professions, podiatrists have reported high levels of burnout. In a recent study, key work stressors identified were quantity/quality of work, geographic and professional isolation, lack of patient's and peer's understanding of the podiatrist's work, and demanding patients (Mandy & Tinley, 2002)

Anecdotal evidence suggests that too many podiatrists leave the profession to pursue alternative careers. Factors include:-

- Use of skills / scope of practice – for example, the podiatry program in Victoria was extended to incorporate a range of pharmacology subjects (as indicated by the Poisons Advisory Committee in response to formal request from the profession for access to limited range of S4 drugs) Yet, 5 years on, podiatrists remain unable to prescribe and the skills acquired go unpractised.
- Lack of career pathway - few incentives to develop clinical skills and expertise. In most settings, rewards are associated with administrative duties and managerial responsibilities, rather than developed expertise which brings direct benefit to patients and enhances job satisfaction.
- Limited financial rewards – the difference in remuneration between a recent graduate and podiatrist of long-standing averages around $10,000. After 10 years of practice, the potential for salary increase or other financial rewards are severely limited.
- Cost of skills development - for those who choose to grow and develop in their chosen profession, post-graduate education and research opportunities are limited with many of the universities unable to create an acceptable business case for cost-effective programs given the small target market. Where available they are full-fee paying however there are no subsequent financial rewards post-qualification.
- Cost of participation – the combined cost of registration, insurance and other professional commitments often render part time work prohibitive. With a highly feminised workforce, and a large proportion at child bearing age, many female podiatrists are deterred from returning to practice following childbirth or child rearing.
- Small business skills – as a general rule, financial rewards can be found in private practice, however practitioners face considerable financial risk at the outset and require a range of business skills which have to be acquired in addition to professional qualifications.
- Hours of work – hours of work are often long (AIHW, 1999) and involve repetitious and physically demanding work. Fatigue and work place injury (particularly of the hands and back) are issues which many podiatrists face and if persistent and significant can result in job discontinuation.

Recommendations:
The solutions to these issues are complex and extensive, however the following major recommendations are offered for consideration:

- Strategies to increase the podiatrist's scope of practice in alignment with their level of training need to be adopted. For example, granting all podiatrists in Australia access to restricted S4 prescribing rights and providing Medicare rebates for podiatry patients requiring diagnostic imaging tests. (Please refer to Point 2 for further details on Scope of Practice issues in podiatry)
- Provide mechanisms through which podiatrists can develop their professional skills and expertise and an environment to support such practice. This may take place either through formal studies or via other schemes such as workplace initiatives. Support for skills development needs to be improved through both financial support / rewards and time off work allowances.
- Remuneration needs to be commensurate with the level of experience and duties of the position with a suitable structure for pay review over the whole term of a podiatrists working career. Awards need to recognize advanced clinical skills and expertise which enhance patient care and not be based solely on rewarding podiatrists who take on increased administrative duties.
- Adequate workplace practices for podiatrists need to be further investigated and recommendations for sound occupational health and safety practices put into place. Work conditions need to be assessed and modified where indicated to reduce workplace injuries and burnout.

2. Features of the structure and distribution of the podiatry workforce and its consequential efficiency and effectiveness:

For many podiatrists, their capacity to deliver efficient and effective care is hampered by systems which are not conducive to best patient care. In addition, whilst podiatry care may be the most effective option for preventing or treating a range of foot and lower limb conditions, patient access is often restricted by funding limitations.

Podiatrists' skills are under-utilised

There are a range of barriers which prevent full application of knowledge and skills gained in Australian podiatrists' undergraduate training programs.

For nearly forty years, podiatrists in Australia have been licensed to administer injectable local anesthetic agents. Despite considerable attention to pharmacological studies in undergraduate training and the regular need for access to a limited range of relevant preparations, podiatrists in most (but not all) states remain unable to prescribe S4 medications. Their patients are frequently forced to seek additional medical intervention, with treatment plans either delayed or upturned and care delivery fragmented. Where access is denied, the profession has made regular submissions for change with strong rationale, even making substantial changes to course delivery or personal investments in qualifications upgrades, however the profession has been unable to obtain an extension on prescribing rights.

In another example of unnecessary and wasteful practice, diagnosis and treatment are frequently delayed as patients must be referred to a third party (doctor) to facilitate referral for a range of diagnostic tests, such as ultrasound to diagnose the cause of heel or arch pain, or microbiology to identify the organism responsible for a case of athletes foot. Whilst these services are accessible, the absence of Medicare rebate either unnecessarily inflates the cost to the patient or increases costs to the system by introducing an additional doctor consultation in order to generate the referral. For over ten years, podiatrists have referred for plain x-rays of the foot without incident and their patients are afforded equivalent benefits – the same right of referral is required for other relevant diagnostic services.

Podiatrists who have undertaken post-graduate training to perform deep tissue and bone surgery are poorly utilised. This highly skilled group of practitioners are accessible only through private hospitals and even then, the rebates and benefits are substantially less than for the same service provided by orthopaedic surgeons. The issues pertaining to surgery are dealt with in a separate submission from the Australasian College of Podiatric Surgeons.

Recommendations:

- Regulatory change is required to provide podiatrists' patients limited access to relevant and appropriate S4 pharmaceutical agents.
- Medicare benefits should be payable for certain diagnostic imaging for the foot and lower limb, when requested by a podiatrist.
- Medicare benefits should be payable for particular pathological testing, when requested by a podiatrist.

Funding for podiatry is not structured to reflect patients' needs

Medicare initiative improves access but in a limited way

In July 2004 allied health practitioners and their patients welcomed the announcement of Medicare rebates for services. Given that there are few public sector positions (around 80% of podiatrists work in private practice) it is not surprising that the rate of uptake through this initiative has been considerable.

However, there are a range of unresolved issues which mean that frequently either the podiatrist is never paid for service provided OR the patient is never reimbursed OR the patient is unable to access the service, including:-

- Lodgement of care plan – patients require a valid GP referral to access the service, however payment eligibility is only triggered when the GP *lodges a claim with the HIC* for completion of a GP Management Plan AND a Team Care Arrangement. The HIC will

honour payment if the podiatry claim is resubmitted again at a later date, after the payment for the GPMP and TCA has been paid, however there are cash flow implications for small business. The associated uncertainty over payment (anecdotally, up to one in five claims are rejected) has led to most podiatrists requiring up-front payment from patients seeking care under the scheme.

- Validity of referral – it is not uncommon for patients to be issued with referrals for more than five visits across the spectrum of allied health professionals (either by the same GP, or several GPs.) Once again, if the service is rendered, someone is out of pocket. Unless the patient contacts the HIC in the presence of the podiatrist to confirm validity, there is no way of knowing whether the patient has exceeded the number of visits available in a calendar year. In addition, podiatrists have reported situations where the GP has issued a referral at the request of the patient but on enquiry from the podiatrist, confirmed there is no Care Plan and the GP has no intention of preparing one.
- Paper trail – a signed copy of the referral must be submitted when lodging for each claim, even if the one referral is valid for five visits.

In addition to administrative complexities, there are also factors which limit the level of access. Whilst the Australasian Podiatry Council is not advocating for free and open access to podiatry for all Australians, there are instances where this is the only mechanism to ensure affordable access to podiatry. Given that many GPs have refused to participate in the initiative, there are patients who are simply unable to access podiatry due to lack of referral. In addition, the restriction to only five visits is plainly inadequate for an individual with diabetes and lower limb complications. Often only one or two visits are allocated, as the GP is forced to spread the five visits across the spectrum of required allied health services. The podiatrist conducts an assessment and develops a treatment plan which is not executed as the patient cannot afford to continue with care.

Recommendations:
The rate of uptake of this initiative for podiatry reflects the paucity of public sector services and the overall need for podiatry services. Improvements could include:-

- Removal of the need for GP referral, coupled with more stringent criteria for access.
- Removal of the limit of five visits per year across all allied health services, replaced with limitations linked to access criteria
- Introduction of audit mechanisms, in keeping with those in place for the medical profession.

Private health insurance – suited to primary care?
Podiatrists are skilled operators who rely heavily on manual dexterity and practice infection control at a level commensurate with hospital sterilisation services. Nail and soft tissue surgery is a core competency for all podiatrists yet few private health funds offer a differentiated benefit for this permanent treatment solution. Similarly, the consultation services of a podiatrist may be funded, but the foot orthoses necessary to alleviate pain or disability is not, nor the wound dressing which could facilitate more rapid healing and prevent hospitalization of a person with diabetes. Podiatrists who choose to undertake post-graduate training in deep tissue and bone surgery face a range of regulatory and reimbursement barriers to practising at the full range of their abilities – health funds limit the rebates provided and there is no Medicare rebate available to their patients.

The podiatry profession has frequently argued for more adequate benefits for their patients with private health insurance on the basis that this relatively inexpensive form of primary care prevents costly morbidity and hospitalization. Health funds counter that ancillary tables operate under separate cost centres from hospital tables. There appear to be no incentives to encourage preventive primary care.

Funding systems which limit best practice and stifle multidisciplinary care
It is not just in the private sector that only certain services are resourced. Many public sector podiatry services face similar challenges. Whilst the professional consultations may be available at little or no cost, there is often no funding for other fundamental elements such as wound dressings, orthoses or medical grade footwear. Treatment cannot proceed and the consultations are virtually wasted. In nursing homes, where the need for podiatry services are obvious, some limited funding for podiatry consultation is allocated by aged care facilities. . However this is only in the case of high care residents and generally only to facilitate a consultation every three months. In the case of low-care residents, who are often quite mobile, but present with significant foot pathologies, resources are limited and residents are required to self-fund treatment..

For many health professionals one of the more frustrating aspects of clinical practice in the primary care setting is that despite the overwhelming evidence supporting the concept of coordinated multidisciplinary care, the capacity to freely refer patients from one service to another is often limited. Invariably different access criteria apply for different funding agencies. Understanding referral mechanisms and eligibility criteria for each agency can be a challenge. Many podiatrists in public sector positions are funded from multiple sources, all with different access criteria. Sources of referral, such as GPs and other allied health professionals, can quickly become frustrated and disenchanted when their patients are rejected from accessing the service.

Recommendations:

- Recognition and funding for modalities other than pharmaceutical preparations would facilitate the timely execution of care plans and further improve patient outcomes.
- Streamlining sources of funding would ensure consistency of reporting and accountability across the different services and service providers and also assist patients navigating the system.
- Removing barriers to cross-discipline referral would improve multidisciplinary communication, facilitate consistency in care planning and enhance patient outcomes.

3. Factors affecting demand for podiatry services

Overall, podiatry services are increasing in the general community as more people become aware of the benefits of good foot health. For example, a review of data from the Private Health Insurance Administration Council (PHIAC) provides strong evidence that not only is the growth in the podiatry labour force being fully absorbed by the market but, that utilization of podiatry services is increasing at a rate twice that of labour force growth. Whilst podiatry still represents a relatively small percentage of the health economy, comprising only 3.3% of all ancillary health dollars, its rate of growth is remarkable. Spending on podiatry, as a percentage of all ancillary spending has grown 176% in eight years (PHIAC, 2003).

The strong uptake of podiatry services in the recently introduced Medicare Plus initiative (as indicated by the number of claims for podiatry services) and the listing of podiatry on both the National Skills Shortage List and the Migration Occupations in Demand List (MODL) further highlight the significant demand for podiatrists and podiatry services.

The reasons for the increased demand for podiatry services are several including: a rapidly increasing prevalence of diabetes, the ageing Australian population and an increased awareness of sports medicine and allied health services in general.

Diabetes
Current data on the prevalence of diabetes in Australia indicates that about 940,000 Australians over the age of 25yrs have diabetes - the incidence and associated rates of morbidity and mortality amongst indigenous Australians, is significantly higher.

Foot problems are one of the most common reasons for hospitalisation because diabetes can lead to loss of circulation and protective sensation in the lower limb – the risk of ulceration, infection and lower limb amputation associated with simple problems such as corns or ingrown toenails is consequently increased. International best practice guidelines recommend an annual foot assessment at minimum to prevent serious complications. Given that studies of the general population suggest the prevalence of general foot problems to be around 40%, it is not then surprising that demand for podiatry services is increasing.

Podiatrists have demonstrated significant cost-savings in the management of severe foot complications. An estimated 10% of people with diabetes develop peripheral circulatory disease, whilst the figure for neuropathy (loss of protective sensation) ranges from 10-80%. In a recent Victorian project (DRFDS, February 2005), the Diabetes Related Foot Disease Service provided additional community based resources to enable people with severe diabetes related foot complications to be managed in the community, in order to prevent their condition deteriorating to the point that they need acute hospital inpatient treatment.

The average length of stay for people admitted for treatment of severe diabetic foot conditions is 7.1 days and the average cost of a total inpatient episode is $80,698. By comparison, DRFDS calculated the annual average cost of maintaining a person with a severe diabetes related foot condition in the community is approximately $2,000. Furthermore, for the patient group studied over a 14-month period, they demonstrated improved wound healing, reduced amputation rates and a 24% reduction in foot-related hospital admissions, despite an overall 18% increase in general admissions reflecting worsening of the patients' overall complex conditions.

Ageing Australia
The immediate benefits for the ambulant elderly receiving podiatry care is improved mobility and independence, with reduced likelihood of hospitalisation or institutionalisation (Bowling & Grundy, 1997). The risk of foot abnormality increases with age, including quantifiable peripheral nerve and vascular disease, which is coupled with an inability to adequately care for feet and increasingly inappropriate footwear choices (Plummer & Albert, 1996). The need for podiatric care increases as a result, with estimates of up to 85% requiring intervention for both ambulatory and institutionalised older persons (Robinson, 1989; Helfand et al, 1998). Several studies indicate that despite the benefits of podiatry services, elderly people under-utilise this valuable service and less than half those with foot problems seek advice and treatment (White & Mulley, 1989; Munro & Steele, 1998; NSW Health Dept, 1991.)

For some years now, returned servicemen have been able to access private podiatrists with benefits payable direct to the podiatrist by the Department of Veterans Affairs. Figures indicate the number of Veterans accessing podiatry services is increasing significantly, with the total number of Veterans increasing by 49% from 69,336 in 1994/95 to 103,540 in 1998/99. This may reflect increased access for a broader proportion of the Veteran Community with altered eligibility criteria introduced in recent years, however it is also a direct reflection of the ageing demographic of the Veterans.

Summary

The Australasian Podiatry Council welcomes the COAG's interest in the health workforce and urges improved coordination between federal and state governments across both the health and education sectors to ensure adequate supply of appropriately trained and qualified practitioners.

Measures which allow podiatrists to operate across the full scope of practice for which they are trained would improve job satisfaction and reduce loss of skilled workers.

Timely access to primary care services improves patient outcomes - there are benefits in investment in podiatry care where demonstrated cost savings are achievable.

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Appendix One

Podiatry Background Information and Scope of Practice

Podiatry has been a registered health profession since the 1960's. The key role of a podiatrist is to improve mobility and enhance the independence of individuals by the prevention and management of pathological foot and ankle problems and associated morbidity. This is achieved by providing expert advice on foot health, including assessment and diagnosis of foot and ankle pathology. Providing appropriate biomechanical, medical, surgical or primary care treatment of the foot and ankle, or referral to other disciplines as required, is all within the scope of practice.

As primary contact health practitioners, podiatrists maintain and enhance locomotive function to ensure the health of the foot and lower limbs, to alleviate pain, and to reduce the impact of systemic diseases of the foot and ankle. Podiatrists help to reduce the incidence of painful and disabling foot conditions, particularly in the elderly; help to prevent and manage foot complications of diabetes or other diseases; diagnose and treat sports injuries of the lower limb; and in children, help prevent foot and ankle problems from developing later in life.

Actual problems treated by podiatrists (as distinct from preventative health care practices), include disorders of the skin and nails (for example callouses, corns, ingrown toenails), injuries, deformities, problems secondary to biomechanical or other structural problems, and other less common conditions. Treatment can be prophylactic (as in the long term care of skin and nails), curative, (resulting in the discharge of the patient from care in relation to their presenting problem — for example, after surgical treatment of a problem), or fall within the realm of "optimisation" of the patient, whether this be in relation to sport, for example, or to maximise mobility and stability in the elderly.

Over the past two decades the scope of practice of podiatrists has been evolving. The major impetus for this includes; advancements in education and an increase in postgraduate study undertaken by podiatrists, advances in technology, increased multidisciplinary team involvement in patient care, and legislative change (influencing areas of practice such as diagnostic imaging and the restricted use of selected S4 pharmaceuticals) This highlights the need for modern educational courses that will be able to provide for (and continue to support) a developing scope of practice as it evolves in response to community need, and the findings of the literature. Within the general scope of practice of podiatry, there are various areas of special interest and/or specialization. These are discussed further below.

Areas of Special Interest / Specialisation in Podiatry

Diabetes and Chronic Disease Management

Podiatrists have become increasingly involved in the management of foot complications secondary to chronic disease processes, such as diabetes, peripheral vascular disease and systemic arthritis. Clinical podiatry care is now recognised as essential in reducing diabetes-related lower-extremity amputation in people who have identified risk factors and foot pathology. It has been demonstrated that regular podiatry care protects patients against amputation even in the presence of peripheral vascular disease. In one study, for example, patients with peripheral vascular disease who received podiatry care were 5.64 times less likely to experience a lower-extremity amputation than those who did not (Sowell, 1999).

Clinical podiatry care for people with high-risk foot problems involves a range of different interventions. These include: regular assessment for foot ulcer risk factors; management of pathological skin and nail disorders; foot care and footwear education; support for appropriate self care behaviour in patients and their carers; and ongoing liaison with other health professionals involved in patient care.

The management of serious foot complications such as ulcers and infections requires a higher, more specialised level of expertise, and is ideally delivered by a multidisciplinary tertiary hospital team (Edmonds, 1986; Frykberg, 1997; Campbell, 2000). The concept of the multidisciplinary diabetic-foot clinic is well established, with several studies undertaken to evaluate the effectiveness of this approach in managing diabetes-related foot ulcers and preventing amputations (Thomson, 1991; Larsson, 1995; Knowles, 1996).

Podiatrists are key members of multidisciplinary foot ulcer clinics, and at some tertiary hospitals these clinics are coordinated by the podiatry service. The scope of practice for podiatry in this area is continually evolving as advances in research, practice and technology emerge.

The current scope of practice for managing complex foot ulceration includes requesting and interpreting diagnostic tests such as x-rays and specimen collection (eg. fluids, soft tissues and bone) for microscopy and culture; sharp debridement of necrotic tissues; implantation of human dermal replacement products; dressing selection: and, total contact casting therapy.

In conditions such as rheumatoid arthritis and osteoarthritis, podiatrists play a key role in the management of foot pain and prevention of orthopaedic foot deformity. Swelling, pain, loss of flexibility, joint deformity and thinning of the skin are common results of long-term inflammation and arthritis. Peripheral vascular disease and peripheral neuropathy are less common complications which can occur which place the foot at increased risk of serious problems such as ulcers and infections. Management of the arthritic foot may include: regular assessment for foot ulcer risk factors; orthotic therapy for functional foot problems and deformities; management of skin and nail pathology; wound care; foot care and footwear education; and, surgical correction of deformities such as hammer toes, bunions etc.

The area of chronic disease management is specialised and predominantly practiced by podiatrists employed in the public sector. Undergraduate podiatry programs in Australia currently prepare graduates to practice at a very basic level in this area. There is a recognised industry need to develop a postgraduate stream for this specialised area of practice that enables podiatrists to develop and achieve recognition for advanced skills and knowledge in these areas.

Aged Care

The elderly are at an increased risk of developing disorders, as the body is generally in decline and less able to respond to the processes of disease. The presence of chronic disorders is a common element in treating an aged care patient as they frequently have an increased incidence and severity of disorders. Patients often present with multiple co-morbidities, which can result in complex presentations requiring intensive assessment and treatment. For example, a combination of factors such as vascular and neurological disease and reduced mobility, coupled with an inability to adequately care for feet and increasingly inappropriate footwear choices, can result in a patients foot care requirements being categorised as high risk.

These circumstances indicate an increased need for podiatry care, with estimates of up to 85% requiring intervention for both ambulatory and institutionalised older persons. As such, aged care requires a team management approach and podiatrists participate in multi-disciplinary team meetings to plan care for both in-patient and day hospital patients. This role incorporates:

- Intensive assessment of patients to determine the extent of morbidities and their effect upon foot health and the capacity of the patient to respond to treatment. This includes requesting and interpreting diagnostic tests such as x-ray and microscopy.
- Clinical treatment relevant to the management of pathological skin and nail disorders; regular assessment for risk factors contributing to pressure areas or ulceration; management of at-risk patients by the initiation of prevention strategies; treatment and management of ulcers and pressure areas; assessment of footwear requirements, and foot care and footwear education.
- Liaison with carers/relatives involved in both direct and indirect patient care including providing information and/or education relating to ongoing care requirements.
- Assistance with the rehabilitation of patients to restore and maintain their mobility through treatment, assessment and prescription of footwear and foot orthoses, and, education on falls prevention.

Falls in older people are a major public health concern, with one in three people aged over 65 suffering a fall in any given year. Falls are one of the principle reasons for admission to hospital or permanent care facilities (Sherrington & Menz, 2003). The UWA Injury Research Centre found that 18,706 people over the age of 65 attended emergency departments in WA because of falls in 2001. The average cost to the health system of these falls was $6497 per episode, resulting in a

total cost of $83 million (Hendrie et al, 2003). Podiatrists have become increasingly involved in research into the cause and prevention of falls in the elderly, with a number of studies published in peer reviewed journals.

Podiatrists also participate in the strategic development of aged care services through the Aged Care committees and Operation Groups and representation on Aged Care Clinical Executive and Divisional structures.

For the estimated half a million people over the age of 65 with Type II diabetes, recently published Guidelines for the Management of Type II Diabetes advocate for regular foot assessment, along with regular podiatry intervention (DAGDC, 2001*)*. This further demonstrates that the demand for podiatry services will increase and practitioners will require a clear understanding of the medical, surgical and podiatry needs of older patients. The proposed curriculum would ensure that graduates have the skills to make well-informed patient assessments.

Minor surgery

Minor podiatry surgical procedures can be referred to as ambulatory surgery performed under local anaesthetic and conducted in an office or outpatient environment. Podiatrists practice surgery of the foot in all states of Australia, using local anaesthesia where appropriate. Most nail and soft tissue procedures performed by podiatrists are undertaken in practice rooms, community health centres and in some hospitals.

Podiatrists perform procedures under local anaesthesia, such as ingrown toenail, excision of plantar warts, scars and hyperkeratoses, percutaneous tenotomies and digital exostectomies. Patients usually present to a podiatrist via self-referral although referrals by general practitioners are increasing as the collaboration between the two professions strengthens.

Podiatrists are expected by the public and by medical practitioners alike to be able to manage superficial infections such as occur with common ingrown toenail (IGN), foot abrasions and ulcerations. For example, the immediate management of an infected IGN requires the administration of local anaesthetic, a minor surgical procedure to remove the affected section of toenail and hypergranulation tissue, and frequently the prescription of an appropriate course of oral antibiotics.

The long-term management of recurrent IGN involves the administration of a local anaesthetic and may require an oral sedative, post-operative narcotic analgesics and possibly antibiotics. All medications used are S4 Poisons.

Enhanced undergraduate training is required, therefore, in general medicine, medical pharmacology and surgical podiatry, together with increased time spent on basic medical sciences such as pathology and microbiology to ensure eligibility and competence to use S4 Poisons.

Sports podiatry

The field of sports podiatry has developed since the early 1980's as jogging became popular and the incidence of foot and foot-related leg and knee injuries increased with recreational and professional sporting endeavours. Podiatrists need to have extensive knowledge of lower limb anatomy, biomechanics and musculoskeletal pathology. Physical therapy techniques and the application of applied biomechanics to the design and manufacture of foot orthotic devices have become an important part of clinical podiatry. Podiatrists often work in association with sports medicine practitioners and require a broad understanding of sports medicine, orthopaedic surgery and medical imaging principles (bone scanning, computed tomography and magnetic resonance imaging) in order to be a competent member of the sports medicine team. They should have a working knowledge of fitness and exercise programs to be an effective member of sports management. This enables practitioners to identify broader risk factors for injury and injury prevention.

Foot surgery

Surgical podiatry is an increasingly important area of podiatry. While it is envisaged that training in foot surgery will remain a post-graduate pursuit, an expanded undergraduate program providing the necessary medical and surgical background knowledge is required for further study in foot surgery to be undertaken. The postgraduate podiatry programs currently provided are academically based. They provide graduates with essential medicine, pathology, medical imaging, pharmacology and podiatric surgical theory required for surgical podiatry training. Graduates who are interested in acquiring practical skills in foot surgery do so via additional postgraduate training through the Australasian College of Podiatric Surgeons.

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EXECUTIVE SUMMARY

An analysis of the costs of acute inpatient treatment of people with severe diabetes related foot complications and a specialist preventive community-based service.

February 2005

The Diabetes Related Foot Disease Service is a collaboration between Doutta Galla Community Health Services, Melbourne Health (Royal Melbourne Hospital), Moreland Community Health Services and Royal District Nursing Service.

The service is funded by the Department of Human Services Hospital Admission Risk Program

The Royal Melbourne Hospital

ACKNOWLEDGEMENTS

The authors gratefully acknowledge the contribution of the following people to this report:

- Anita Spring, Micaela Byers and Paul Heland (the HARP Diabetes Related Foot Disease Service Team) for their invaluable enthusiasm, advice and assistance regarding all aspects of the community-based service.
- The Clinical Epidemiology and Health Service Evaluation Unit, Royal Melbourne Hospital for their assistance with data analysis.
- Annette Gilchrist, Health Information Systems, Royal Melbourne Hospital for her explanations regarding inpatient coding, and her assistance with the identification of the relevant inpatient target group.
- Matthew Laing, Performance Management Unit, Royal Melbourne Hospital for his assistance regarding the provision and explanation of the inpatient costing data.
- Members of the Clinical Advisory Panel for the benefit of their experience and expertise in management of diabetes related foot conditions and community service provision.

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February 2005

EXECUTIVE SUMMARY

Introduction

This study identifies the costs involved in the provision of care for people with severe diabetes related foot complications in two clinical settings: acute hospital inpatient treatments and specialist preventive services provided in the community.

Both settings have a place in the care continuum for management of this complex, chronic and potentially debilitating condition. The cost of these treatments cannot be directly compared, as the acute and community services cannot be substituted for each other. We are not proposing that the community based service can take the place of hospital based treatment. Rather, with the benefit of the cost data available and the clinical outcomes identified for the HARP client group over the last 18 months, we can draw some conclusions about the ability of a preventive service to reduce subsequent demand for acute services and consequently, its impact on total care costs for the patient group.

Diabetes Related Foot Disease Service

The Diabetes Related Foot Disease Service was established in October 2002, funded by the Hospital Admission Risk Program. The service provides additional community based resources which enables this client group to be managed in the community, in order to prevent their condition deteriorating to the point that they need acute hospital inpatient treatment.

The service is a collaboration between Doutta Galla Community Health Services, the Royal Melbourne Hospital (RMH), Moreland Community Health Services and the Royal District Nursing Service (RDNS).

It provides specialist podiatry and nurse wound consultant services to prevent and manage severe, chronic diabetes related foot problems in the community with the aim of

- preventing the progression of chronic complications arising from diabetic foot problems
- reducing the likelihood of hospitalisation (reduced ED presentations and admissions)
- reducing amputation rates among patients
- improving patients' quality of life.

Methodology

The study identified the following:

a) The cost of acute inpatient management of people with severe diabetes related foot conditions at RMH, through a retrospective audit of all patients admitted in the 2003 calendar year for a pre-determined number of diagnostic codes which indicated that the primary cause of admission was a diabetes related foot condition.

b) The cost of sub-acute rehabilitation following lower limb amputation, based on an average cost per bed-day for Level 1 rehabilitation.

c) The cost of the provision of community based care via the Diabetes Related Foot Disease Service, based on a retrospective analysis of the direct and indirect costs of treatment of ten patients over 3 months (October-December 2003), selected as representative of the client group.

It is important to note that this is a simple cost analysis. It is not aa full economic evaluation as it does not include any comparisons between the costs, outcomes or consequences of the acute, sub-acute or community services as measured by such outcomes as quality of life or life years gained, etc.

Acute Admission Costs

The average length of stay in the acute hospital of people admitted for treatment of severe diabetic foot conditions was 7.1 days, with a median of 2 days (range 0 to 77 days).

The average and median costs of acute inpatient admissions were $8,135 and $3,587 respectively, with a range from $346 for a patient having a same day admission but who did not undergo any procedures to $78,066. The costs per patient over one year (for those patients who had more than one admission during that year) were $10,694 (average) and $5,484 (median).

Sub Acute (Rehabilitation) Admission Costs

Length of stay for those patients who required a rehabilitation admission after their acute hospital stay was 74.6 days (average) and 49 days (median). This is in addition to the acute inpatient stay.

The average cost of the total inpatient episode for those patients who required a lower limb amputation, including both the acute and rehabilitation components was $80,698.

Community costs

The average cost of treatment per patient for three months for the lowest risk patients (category 3) was $153. The average cost of three months treatment for the higher risk patients (categories 4, 5 and 6) was $540, $992 and $599 respectively.

Given the small number of patients in the sample, and the variation of costs within each risk category, the overall average cost of patients may be more useful. Based on the average cost of treatment for three months ($487), the annual average cost of maintaining a person with a severe diabetes related foot condition in the community is approximately $2,000.

Patient outcomes in the community based Diabetes Related Foot Disease Service

Only one of the 10 patients in the sample had a hospital admission during the audit period (October- December 2003) for management of the lower limb complications. Of the remaining nine patients, six had no admissions to RMH during the time of the audit, October 2003 to August 2004. Three patients were admitted to RMH during this time for reasons unrelated to their diabetic foot condition.

For the Diabetes Related Foot Disease Service as a whole, patients between October 2002 and 31 December 2004, patients demonstrated positive outcomes, namely:

Improved wound healing: 92% of patients had a history of ulceration prior to admission to the service. 80% of patients did not develop a new wound after involvement with the service. 75% of wounds were healed within each six month reporting period.

Reduced amputation rates: 46% of the patient group had a history of amputation prior to admission to the project. 6% of patients (16 out of 212) have required an amputation since involvement with the service.

Reduced hospital admissions: A review of 50 clients who had been enrolled in the Diabetes Related Foot Disease Service for 12 months or more, revealed that the group had had 33 admissions for care of their diabetes related foot condition to RMH in the 12 months prior to enrolment compared to 25 admissions in the 12 months after enrolment, a reduction of 24%. Over the same period, admissions for the group for all causes increased by 18%, reflecting the worsening of their complex conditions over time.

These 50 people represent just under a quarter of the 212 clients of the service to the end of December 2004. We are unable to provide pre- and post-recruitment data over 12 months matched periods for the remaining clients at this stage, as they have not yet been enrolled in the service for 12 months. Extrapolation of the number of admissions to 200 clients over 12 months suggests a reduction of approximately 32 admissions.

Discussion

The Diabetes Related Foot Disease Service is not a substitute service for acute inpatient care of diabetes related foot conditions, but adds a new and necessary service to the overall model of care for this client group. It provides expert treatment, maintenance and preventive services to high risk patients, combined with patient education in self-management techniques, which results in wound prevention and healing and/or prevents deterioration that may require hospital admission.

The community service breaks the cycle of re-admission that is common among this patient group. It also promotes best practice management of this at risk group, coupled with improved communication and service integration.

When a client of the community service does require an acute admission, this is more likely to be planned, timely and less acute, with fewer complications and, consequently, a shorter length of stay.

The service is highly regarded by clients who value their improved health outcomes, ease of access and the relationship developed with the service staff. Clients also report improved understanding of their condition and ability to self-manage.

The Diabetes Related Foot Disease Service has demonstrated that it can prevent or slow deterioration in diabetes related foot conditions which results in better health outcomes for patients (increased wound healing and reduced amputation rates and significant reductions in hospital use).

This additional preventive component of care costs an average of $2,000 per year per patient. Our evaluation data suggest an approximate saving of 32 admissions over 12 months. The service's annual operating cost of $314,000 (for 2004-05) equates to the cost of approximately 40 acute admissions, based on the mean cost of $8,135. Using the median cost ($3,587), this equates to 90 admissions. These calculations do not include

any rehabilitation component or reflect the very high cost of amputations which may be prevented (average cost $80,000).

The cost impact does not reflect improvements in patients' quality of life, mobility and confidence, avoidance of disability or ability to maintain their employment while being treated in the community, nor does it include the impact on carers' quality of life and employment.

The calculations made here reflect short term savings only. Given the progressive nature of diabetes, variables such as patient compliance, diabetes duration and development of co-morbidities over time may impact on costs. However these would probably impact on cost of both settings. Similarly, given the limited duration of the Diabetes Related Foot Disease Service (just over two years) and the fact that it operates as a service, not a randomised control trial, we cannot estimate to what extent the preventive community intervention will reduce the need for acute hospitalisation for this patient group in the longer term as their condition progresses.

Conclusion & Recommendations

The Diabetes Related Foot Disease Service is effective in improving health outcomes for the patient group, indicated by increased rates of wound healing, reduced incidence of new wound development, and reduced incidence of amputation. Patients of the service report high levels of satisfaction with the treatment they receive, increased knowledge of their condition and improved self-management and with accessibility.

The Diabetes Related Foot Disease Service does not provide a substitute for acute inpatient care of severe diabetes related foot conditions, but is a preventive service which should be included in the overall care continuum for management of this complex, chronic and potentially debilitating condition.

The costs identified in this study indicate that, at an approximate investment of $2,000 per year per patient for management in the preventive community service, the cost of the service is likely to be covered to a substantial extent by savings from prevented hospital admissions, with significant additional and unquantified benefits in improved patient outcome and overall service integration.