PRODUCTIVITY COMMISSION SUBMISSION

THE PRESENT SITUATION

1. The Dermatology Workforce

- There are currently approximately 340 practising dermatologists in Australia. 307 of these are Fellows of the Australasian College of Dermatologists (ACD). This equates to a ratio of 1 practitioner per 58,800 head of population. These figures represent a significant increase in absolute workforce numbers compared with 1997, when AMWAC assessed the Dermatology workforce.

Table 1

	1987	**1997**	**2004**
Dermatologists	197	275	340
Australian Population	16,500,00	18,000,000	20,000,000
Pop^{n} per Dermatologist	83,000	66,500	58,800
Training Positions		42	61

The study recommended that 10 new training positions be created by 2001 in order to meet its projected demand growth. This number has been exceeded by the ACD.

- The Issues Paper and data obtained informally by the ACD suggest that whilst absolute numbers of practitioners may be increasing, the current trend towards reducing working hours in the medical workforce means that full time equivalent numbers may not be reflected in the numbers presented above.
    - Part of this phenomenon has been explained on the basis of feminisation of the workforce:
        - A recent survey of the NSW Faculty of the ACD indicated that 37.7% of the 125 practising Dermatologists in NSW and the ACT were female.
        - Adjustment for FTE reduced the number of Dermatologists to 97 with the female proportion being 32.7%. The female dermatologists averaged 77% of the patient contact hours worked by their male colleagues.
        - Currently 51.6% of College trainees are female.
        - The average age of male Dermatologists in the NSW Faculty is 51.0 years and for females it is 47.7. A large proportion of the male Dermatologists working part-time were aged over 65 whereas few female Dermatologists were represented in this age group.
        - These figures clearly indicate that the feminisation of the Dermatology workforce is likely to continue.
- The AMWAC study defined an “optimum Dermatology Service” as including provision of services currently excluded from MBS funding (e.g. Cosmetic Dermatology).

- Traditionally conditions whose management attracts MBS funding are regarded as personal priorities whereas those excluded from MBS funding are considered as discretionary. It is arguable that the community regard access to MBS funded services as being of greater significance.
- With increasing affluence the Australian population has elected to expend more on non essential treatments, including cosmetic surgery.
- This is perceived as a lucrative sub-specialty and is attracting increasing numbers of Dermatologists.
- Availability for traditional (MBS funded) disease intervention in Dermatology is therefore restricted as a greater proportion of patient contact time spent attending to cosmetic services (not funded through the MBS)

- Other submissions and the Issues Paper have indicated that a maldistribution of services rather than an absolute deficit characterises the current medical workforce:
    - The AMWAC study identified a significant maldistribution of Dermatologists on a State by State basis. Complete data regarding rural and regional workforces was not available.
    - Shumack et al studied accessibility of Dermatology services to rural, regional and remote populations. The data were extracted in 1999. The results are presented in Appendix 1.
    - Rural, regional and remote populations have been identified as requiring particular attention, given both their demonstrated poorer health outcomes and the logistic difficulties involved in providing adequate services:
        - Smaller communities cannot support full-time Dermatology services on an economic basis.
        - Options for the provision of services to these communities include:
            i. Periodic Specialist Outreach Services
                - Some are currently funded by programmes such as MSOAP but this programme has its limitations:
                    - Pre-existing outreach services are excluded from MSOAP funding to their relative disadvantage.
                    - Funding models overlook the cost of maintenance of services at the dermatologists' principal practice whilst the practitioner is absent.

            ii. Appropriately funded transport services for communities to allow disadvantaged patients to access specialist services at other centres

            iii. Teledermatology
                - Teledermatology services are provided by a number of Dermatologists.

- There is currently no HIC funding arrangement to support the provision of such services and they are provided on a pro bono basis.

- Anecdotal evidence suggests that certain outlying and underprivileged urban areas may also have limited local access to specialist services:
  - The nature of these populations is diverse and includes:
    i. Underprivileged and disadvantaged groups (high unemployment, indigenous communities, large concentration of social welfare recipients):
       - Low proportion of full fee paying patients makes practice less economical where fee-for-service funding prevails than in more affluent suburbs.
    ii. Dormitory suburbs:
       - Day-time population levels are unlikely to generate sufficient demand to support a full-time specialist practice.

2. Training Programmes:

- Training for Fellowship of the ACD is currently five years:
  - Trainees rotate through different training positions annually in the first four years of the scheme and then spend a final senior registrar year in dedicated senior programmes.
  - Training programmes including the rotation programmes for each of the trainees are organised within each State ACD Faculty.

- The ACD endorses the concept of vocational-style training as the most appropriate for incorporating both academic and experiential components of training for specialist practice:
  - All training positions must be accredited by the ACD as meeting criteria. prescribed by the College. These criteria are in the public domain.
  - All positions are periodically re-accredited.

- The bulk of training currently takes place in teaching hospitals. The ACD considers this essential for comprehensive training in multisystem disease and team based as well as multidisciplinary management of patient.

- The ACD has significantly expanded the number of training positions available:
  - The ACD has no lien over funding of public hospital training positions and consequently no control over the availability of such positions. There have

been very few new training positions opened in the public hospital system since the AMWAC study in1997.

- Amongst the new positions opened are a number of funded positions established overseas where trainees rotate for a maximum one year of their training.
- The ACD has supported private funding of trainees since the 1980's in the Skin and Cancer Foundations initially in NSW, then Victoria and now Queensland.
- The ACD has been an innovator in private practice training and had three training positions in the pilot Networked Training Scheme. Two of these positions have continued to be funded following the completion of the pilot study. The College believes that a component of training in private practice is desirable for all trainees. A taskforce has been established within the ACD to examine the issues associated with introduction of a component of private practice training for all trainees.

- Outside of the Networked Training Scheme and a number of outreach rural private practice training positions funded through the MSOAP and RASTS programmes, there remains as yet no formalised funding model for training in private practice.
    - Private practices that take in Dermatology trainees do so at significant cost:
        - Supervisors must reduce patient throughput to allow adequate supervision and teaching of trainees;
        - Trainees have no access to specialist MBS rebates, reducing their capacity to earn fees for the practice;
        - Trainees will usually sustain a significantly lesser case load than qualified specialists, reducing fee income for the practice;
        - Practices are faced with increased administrative costs; and
        - Practices are faced with increased on costs such as worker's compensation insurance, superannuation guarantee payments and indemnity insurance.

      There is currently no funding arrangement that allows for consideration of these costs.

TERMS OF REFERENCE OF PRODUCTIVITY COMMISSION REPORT

1. Institutional, Regulatory and other factors influencing Workforce:

- There are significant disconnects between the various levels of delivery of health services; regulation of health care professionals and standards; health workforce education and vocational training; and policy development.

- Universities carry responsibility for curriculum development for undergraduate medical training. Both universities and clinical schools at teaching hospitals share responsibility for clinical training for undergraduates but the funding for this training is derived from State government funds:

- Whilst individual Dermatologists may be involved in both curriculum development and undergraduate teaching, the ACD has no formal role at the present time in these processes.

- Postgraduate specialist training in Dermatology is currently conducted by the ACD:
  - Training is predominantly conducted in positions in Public Hospitals.
  - Whilst the ACD has responsibility for curriculum development and, in some States, trainee selection; it has no control over resources allocation by Hospital administrations and State governments.
  - The ACD has consistently had difficulty obtaining funding for new training positions in order to continue to expand the Dermatology workforce to adequately meet demand.
  - There is considerable inherent tension within the Public Hospital system between its service role (i.e. meeting directly community demand for service provision) and its training role (i.e. training the new generation of specialist practitioners):
    - Dermatology services in Public Hospitals are seen to predominantly fulfill the latter role and hence are rated a low priority by hospital administrators dealing with budgetary constraints.
    - Vocational training positions for specialist training are funded from the clinical budgets of these institutions.
    - The supervision and teaching of these trainees is performed largely on a pro bono basis by participating Dermatologists.
    - The true cost of training specialists is hence concealed within clinical budgets resulting in the tensions described above.

  - The ACD endorses the development of coordinated policies directing funds to hospitals to provide training opportunities where community needs can be demonstrated.
  - The ACD is exploring introducing a component of private practice training for all trainees but limitations in funding through the MBS and lack of other appropriate funding models have impeded this process.

- Regulation of medical practice is largely the responsibility of State and Territory authorities:
  - Each State or Territory maintains its own register of medical practitioners.
  - The ACD considers it essential that registration requirements and practice classifications/restrictions be complementary across all jurisdictions.
  - The ACD considers that current registration processes are sufficiently dissonant between jurisdictions as to impede free movement of professionals between States and Territories. This is of particular importance for practitioners located in border regions who may be required to practice in more than one jurisdiction.
  - Only Qld and SA currently maintain a specialist medical register:

        - The ACD considers it essential that consumers may be assured that qualifications claimed by practitioners are sufficient to sustain a claim of expertise in their field of practice.
        - The ACD considers it essential that nationally uniform registration procedures are established and that complementary legislation and regulations ensure that an effective register of specialist qualifications can be maintained.
- The capacity for recruitment of Overseas Trained Specialists to meet demand for specialist Dermatology services is limited by:
    - State, Territory and Commonwealth recognition and registration processes:
        - The ACD currently advises the Australasian Medical Council regarding the suitability of training of OTSs seeking recognition of their qualifications in Australia.
        - Lack of uniform procedures between jurisdictions and poor application of Area-of-Need processes present both impediments to recruitment and raise the possibility of inappropriate recognition or registration.
    - The character and extent of overseas training and practice in Dermatology compared with the circumstances that prevail in Australia:
        - The experience of the ACD when assessing OTS is that few have the training or experience necessary to move directly into unlimited Dermatology practice in Australia.
        - Certain candidates demonstrate a degree of knowledge and experience sufficient that a relatively short period of supervised practice (in controlled settings and with limited registration) would be enough, following successful summative assessment, to enable recognition for unlimited Dermatology practice.
        - There are no stable funding models nor any dedicated training positions for such OTS training, despite attempts by the ACD to secure these:
            - The ACD recommends that a model for stable funding be developed to allow consistent recruitment policies.
            - The ACD is prepared to structure supervision and training programmes for OTS so long as clear pathways for recognition are agreed and adhered to.
            - The ACD is currently developing a skin cancer treatment module for OTS education, with support from the Department of Health and Aging.

- Responsibility for regulation of practice within hospitals is usually devolved to special credentialing or clinical privileges committees established within each institution:

- These procedures define practitioners' access to public hospitals and hence the services that they may offer, including inpatient bed admission rights, operating theatre access and outpatient services.
- There exists little concordance between institutions with regard to procedures, practice classifications and access rights.
- The ACD considers that the absence of uniformity serves as an impediment to efficient service provision.

2. Structure, Distribution, Effectiveness and Efficiency of the Workforce:

- The ACD considers that insufficient data exists to accurately characterise the Dermatology workforce. It recommends that the College be given assistance to perform a complete survey of the current Dermatology workforce including both College Fellows and others.

- The ACD endorses the current structure of the MBS which centres the primary delivery of health care in the private sector upon General Practitioners:
    - The ACD considers that whilst the Commonwealth underwrites the cost of delivery of health care in the private sector it is essential that a filter be interposed between community demand and provision of services. Under the current system this is provided by General Practitioners.
    - The ACD considers it to be essential that General Practice remains a viable and effective specialty; and that General Practitioners continue to play a central role in individual patient care:
        - The manner in which general practitioners perform this role will consequently influence demand for and utilisation patterns of Dermatology specialist services.
        - General practitioner training should reflect community disease patterns:
            - The ACD believes that there is room for up-skilling of general practitioners in the assessment and management of skin disease.
            - The ACD is currently working with GPET, the RACGP and the ACRRM to ensure that curricula and training are comprehensive and appropriate.

        - The referral system when operating optimally allows the general practitioner to monitor patient care in a holistic sense and ensure that interventions are appropriate.
        - Influences and providers that operate outside the referral system have the capacity to confound cost effective care by causing duplication and impeding access to appropriate specialist services.

    - The ACD does not accept that the universal electronic health record will serve as a panacea for erosion of the role of general practitioners.

- The ACD considers that the efficiency and appropriateness of utilisation of Dermatology specialist services needs to be critically analysed.

- The ACD does not endorse the suggestion that compulsion or provider number limitations will serve to correct any maldistribution of service availability to certain communities:
    - The decision by medical practitioners to reside in and service centres away from privileged urban areas in necessarily a complex one:
        - Studies have previously shown that both personal and professional considerations are influential:
            - Social isolation,
            - Educational opportunities for children,
            - Career opportunities for spouses and children,
            - Professional isolation:
              -availability of locums
              -professional support and mentoring
              -lack of suitably trained paramedical and other staff
            - Restrictions on practice:
              -restrictions imposed by government regulation
              -restrictions imposed by funding prioritization
            - Economic

    - The ACD recommends that the Commission carefully analyse why these choices are made, and why it appears to be more difficult to successfully place Australian graduates in these areas:
        - It may be necessary to develop complete packages for practitioners expediting resolution of any or all of impediments to recruitment.
        - Provision of specialist services may not be economical on a full-time basis:
            - Outreach services require the complementary presence of an involved and up-skilled general practice service
            - Specialists traveling from urban centres to provide outreach services face a duplication of costs as they must both maintain their primary practice and service their outreach destination:
              -current funding models provide, when available, subsidies for outreach surgeries but do not compensate for primary practice costs incurred in the absence of fee income while the practitioner is away.
              -policies limiting fees risk making these services uneconomical compared with the primary practice (particularly when down-time for travel and social and personal dislocation are also considered)

- The ACD considers it unlikely that market forces alone will successfully force specialist Dermatologists to move to these areas unless a significant oversupply was created to generate enough economic pressure:
    - The increasing demand for discretionary services not supported by the MBS means that Dermatology graduates may compensate for a localised reduction in traditional disease-related demand by moving to provision of other services such as Cosmetic Dermatology.
    - The increasing feminisation of the workforce has resulted in an increasing proportion of the Dermatology workforce prepared to work part-time.
    - There is a capacity under the MBS to determine and manage demand for one's own services, even in the context of the referral system, to both limit and enhance earning capacity.

3. Factors affecting Demand:

- Measures of workforce adequacy represent a synthesis of the effects of demand for and availability of service providers:
    - These two parameters are not independent:
        - Increasing availability may stimulate demand
        - Decreasing availability may conversely inhibit demand

    - Inefficient utilisation of specialist services (such as by provision of repeated treatment episodes requiring basic skill levels only) will serve to decrease availability without demand increasing:
        - The appropriateness of referral patterns will directly impinge on this effect
        - Utilisation patterns of specialist services may be influenced by cost considerations:
            - Public hospital outpatient services where fees are not levied may encourage inefficient utilisation of specialist services particularly where community general practices do not bulk bill.
            - Specialists may later their service profile away from less lucrative fields or community groups to protect or enhance practice profitability

    - Teaching of specialist trainees will reduce availability with no demand affects:
        - Trainees will require access to repeated treatment episodes often requiring lower skill levels to acquire clinical and surgical skills
        - Supervision and teaching of trainees will reduce Specialist Dermatologist availability

- There is no accurate measure of demand for Dermatology services:
    - The majority of identifiably "skin related" MBS funded patient episodes are provided by General Practitioners.

- The referral system for MBS funded specialist Dermatology care distorts demand in the pure market economy sense, hence waiting lists will represent a synthesis of:
    i. General Practitioner referral patterns:
        - Choice of specialist type (e.g. Dermatologist / Physician / Paediatrician / Surgeon / Radiation Oncologist etc)
        - Choice of case (i.e. simple vs. complex)
        - Type of referral (i.e. circumscribed vs. indefinite)
    ii. General Practitioner competence.
    iii. General Practitioner availability:
        - Time constraints may influence referral threshold
        - Limited availability may restrict on-referral
    iv. Availability of specialist Dermatologist services.
    v. Relative availability of other specialist services with overlapping competencies.

- Capacity to meet demand for Public Sector services is controlled by State and Territory instrumentalities such as Area Health Services, Public Hospital administrations etc.:
    - Where funding priorities are directed elsewhere and capacity to provide services is constrained ("demand management"), the referral system may result in redirection of referrals:
        - Waiting list analysis will provide an underestimate of demand in these circumstances.
        - Substitution of specialty may result in less efficient service provision and compromised outcomes.

- The AMWAC study has demonstrated that utilisation of specialist Dermatology services increases with population age:
    - 40% of Dermatologists' time was spent with patients aged 61 and over.
    - 35% of time was spent with patients aged 35 and under.
    - The ABS estimates that the median age of the population rise from 33.1 years in 1993 to between 39.4 and 41.8 years in 2041:
        - The proportion of the population aged 65 and over will increase from 11.7% (2.1 million) to 12.78% (2.56 million) in 2006.
    - It is likely that an aging population will result in an increasing proportionate demand for specialist Dermatology services.

THE FUTURE

- Planning for future specialist Dermatologist workforce size will need to consider:
  i. Demand projections:
    - Informal modeling performed by the ACD, the AMWAC study and population health data suggest that demand for medical services is likely to increase:
      - The extent of demand shifts may be extrapolated from current service levels modified by allowance for demographic change.
      - The capacity of the workforce to meet extrapolated demand growth will depend on a critical assessment of the existing specialist Dermatology workforce and the capacity of the current training system to increase through-put of qualified specialists.
      - Current patterns of utilisation of specialist skills and appropriateness of referral to specialists need to be critically analysed.
      - The ACD considers that there is currently insufficient data to accurately model the specialist Dermatology workforce and recommends that it receive funding to undertake such a study.

  ii. Demand diversion / modification methods:
    - The ACD is currently involved in development of programmes to up-skill general practitioners in the management of skin disease to help modify demand:
      - It is anticipated that a more skilled general practice workforce would be less likely to refer patients requiring lower skill or training levels for treatment.
      - Community attitudes to general practitioners would need to be directed to enhance the role of general practitioners and increase public trust of their skills and training
      - General practitioners' attitudes to service provision need to be explored:
        - Inappropriate referral patterns may be attributable to attitudinal factors such as:
          - Risk averse attitudes with regard to fear of litigation
          - Undervaluing of general practitioner services under the MBS increases the need to maintain a patient throughput that is not consistent with comprehensive service provision.

    - The ACD regards the formalisation of policies regarding Teledermatology as a priority in assisting in demand diversion:
      - Legal liability issues need to be formalised.
      - Funding arrangements with access to MBS reimbursement for patients will help provide a sound economic basis for this service.
      - The ACD is prepared to assist in development of standards.

  iii. Workforce demographic projections.
    - In 2004 the NSW Faculty of the ACD conducted an informal survey and modeling of the State's specialist Dermatologist workforce:

- The average age of the Fellows in NSW was 51:
  - In the1997 AMWAC study the national average was 45.8
- The average age of trainees nationwide was 32.8yrs:
  - The projected average age at completion of training for NSW trainees was 35.9yrs (median 37.5)
  - Anecdotally it was felt that these findings indicated a significant increase in the age of trainees
- The ACD also surveyed university medical schools:
  - .The lack of demographic data collected by some institutions was alarming and indicated a complete neglect of such considerations during course planning processes.
  - It was noted that a number of universities had moved to graduate medical programmes.
  - This had resulted in an increase in the national average age of medical graduates.
  - The ACD recommends that planning of university medical courses should include due consideration of the demographic effects of intake policies and course structures.

- The ACD is concerned that adverse demographic shifts in the medical workforce may undermine attempts to enhance the workforces capacity to meet increased demand:
  - An aging workforce will result in a top end reduction in availability of service providers
  - Statutory changes may effectively restrict the size of the workforce:
    - by imposing retirement policies
    - by requiring continuity of practice and so restricting registration for females attempting to return to practice after maternity leave
  - The ACD has noted an increase in the age of trainees entering the scheme:
    - This is attributed to demand for training positions outstripping supply resulting in increased competition for positions:
      - Candidates are forced to present increasingly impressive curricula vitae so delaying entry into the scheme
      - This phenomenon is unlikely to have been noted by training streams where a continuing service requirement allows streaming into training schemes (e.g. RACP)
      - The ACD recommends that a study be conducted to analyse career pathways for specialist training candidates to ensure that this trend can be halted if not reversed.
  - This phenomenon may also serve to confound attempts to encourage graduates of specialist training schemes to move to rural, regional and remote communities since many at time of completion of training now have partners, children (often of school age) and mortgages – they may be considered to be rusted into the major centres.

iv. Capacity of training systems to increase through-put:

- The capacity of the training scheme to increase through-put will be influenced by:
    1. Funding:
        - Public hospital training costs are currently concealed within clinical budgets:
            - Failure to appropriately structure funding for private practice training will limit the capacity of the ACD to recruit practices as teaching facilities.
            - This exacerbates the tensions between service provision and training responsibilities
            - The ACD recommends that funding for training be clearly identified within public hospital budgets; that it is quarantined from funding fluctuations and that it is responsive to demand projections.

        - Private practice training funding is poorly structured and marginal:
            - A stable funding model needs to be developed to ensure that private practice training is economically viable:
                - Trainees must have access to appropriate MBS rebate schedules
                - Practices must be reimbursed for increased administrative costs and employment costs
                - Supervisors must be reimbursed for loss of income stream while teaching.

    2. Availability of tutors:
        - Poor funding of private practice training will restrict the ability top recruit practices
        - Factors in the public hospital system that may reduce the capacity to recruit supervisors for the training scheme include:
            - Poor or under-funded facilities
            - Restricted access to facilities
            - Appointment restrictions as cost cutting measures
            - Restrictive or inconsistent credentialing processes
        - The ACD notes that these circumstances prevail in most jurisdictions at present and that remedial action should be a priority.

v. Distribution of workforce:

- It is often claimed that training in rural centres will encourage practitioners to ultimately to settle there after training is completed:
    - Impediments to developing training positions in rural areas include:
    - Inadequate facilities
    - Statutory restrictions to practice

    - Poor funding arrangements (resulting in difficulty in recruiting supervisors)
    - Unstable funding arrangements (the ACD cannot endorse training positions where funding for a full training cycle is not secured)
    - Poor travel facilities (travel time is down time for both supervisors and trainees – poor regional aviation services limit accessibility)

- The ACD recommends demand modifying techniques such as Teledermatology be supported by the MBS to encourage wider access.
- The ACD recommends that funding models for outreach services are reassessed and improved to increase attractiveness:
    - It should be recalled that in this context the rural centres are in competition with the specialists' urban practice centres.
    - Specialists conducting outreach services are accepting long and often uncomfortable travel conditions; social and personal dislocation as well as the other matters listed above.
- The ACD does not accept that restriction of provider number access or other punitive policies would be successful in encouraging specialist Dermatologists to provide rural services given the capacity to move out of the MBS system into cosmetic and other non-rebated medical practice.

APPENDIX 1

Access to Dermatologists

- 88.5 per cent of the Australian population resides within 80 kilometres of the nearest dermatologist. Within the states and territories, the highest accessibility is in the ACT (100 per cent), New South Wales (93.9 per cent) and South Australia (90.9 per cent), while the lowest accessibility levels are in Tasmania (75.2 per cent) and the Northern Territory (52.2 per cent).
- There are more than 100 localities with more than 200 persons situated more than 80 kilometres from the nearest dermatologist in New South Wales (114), Victoria (118), Western Australia (121) and Queensland (176). The lowest number of localities is 30 in Tasmania.
- Throughout Australia, 2.06 million persons, or 11.5 per cent of the population, reside more than 80 kilometres from the nearest dermatologist. The lowest proportions are in ACT (0 per cent), New South Wales (6.1 per cent) and South Australia (9.1 per cent), with the highest inaccessibility levels occurring in Tasmania (24.8 per cent) and the Northern Territory (47.8 per cent).
- Among the indigenous population, nationally 60.2 per cent of the population lives within 80 kilometres of the nearest dermatologist. Highest accessibility levels are in New South Wales (80.6 per cent), Victoria (72.9 per cent) and South Australia (73.7 per cent), while lowest levels prevail in Western Australia (42.9 per cent) and the Northern Territory (19.2 per cent).

Accessibility/ Remoteness Index of Australia (ARIA)

Relative remoteness and accessibility, as measured by the Accessibility/ Remoteness Index of Australia (ARIA), is depicted on this map by isolines (lines of equal ARIA values). ARIA interprets remoteness as access to a range of services, some of which are available in smaller and some only in larger centres. The remoteness of a location is measured in terms of distance travelled by road to reach a service centre. The accessibility index uses a continuous floating point variable with values between 0 and 12 where 0 indicates high accessibility and 12 high remoteness.

For more information on ARIA, refer to the Department of Health and Aged Care Occasional Paper Series No. 6 or the Departments web site at www.health.gov.au

Localities with > 200 Persons Outside 80km

State	Population 200 - 500	501 - 1000	1001 - 2000	> 2000
ACT	0	0	0	0
NSW	41	22	22	29
VIC	44	29	18	27
SA	22	18	11	10
QLD	60	45	30	41
WA	46	28	24	23
TAS	12	5	6	5
NT	21	12	6	8
Total	246	159	116	143

Population Characteristics

State	Indigenous Population Outside 80km	Total	%	Non-Indigenous Population Outside 80km	Total	%	Total Population Outside 80km	Total	%
ACT	0	2,870	0.0	0	296,375	0.0	0	299,245	0.0
NSW	19,701	101,456	19.4	349,519	5,937,233	5.9	369,220	6,038,689	6.1
VIC	5,607	21,448	26.1	462,781	4,352,072	10.6	468,388	4,373,520	10.7
SA	5,567	20,409	26.3	124,774	1,407,534	8.9	130,141	1,427,943	9.1
QLD	38,309	95,321	40.2	520,089	3,273,523	15.9	556,378	3,368,844	16.6
WA	28,947	50,720	57.1	299,848	1,675,375	17.9	328,795	1,726,095	19.0
TAS	4,773	13,889	34.4	109,427	445,771	24.5	114,200	459,660	24.8
NT	37,388	46,268	80.8	55,845	148,833	37.5	93,233	195,101	47.8
Total	140,092	352,581	39.8	1,922,263	17,536,716	11.0	2,062,355	17,889,097	11.5

Legend

Localities further than 80km from a dermatologist

- < 200 persons
- 200 - 500 persons
- 501 - 1000 persons
- 1001 - 2000 persons
- > 2000 persons

Area within 80km of a dermatologist

Area outside 80km from a dermatologist

ARIA Isolines

200 0 200 400 600 800 1000 Kilometres

Data Sources
Population data: ABS Census 1996
Locality data: AUSLIG TOPO250K database
ARIA isolines: GISCA
Dermatologist location data: Dr Adrian Lim, St George Hospital, Sydney, January 2000

Map Prepared by GISCA
University of Adelaide
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