Regional Inequality in Australia
Economic References Committee

Regional Inequality for patients reliant on Radiologists on-site for diagnostic imaging and intervention in Regional Victoria and Queensland. Key facts comprise:

- **The calculation of Radiologist DWS status is based on a Statistical Local Area (SLA3) which does not necessarily reflect scarcity when the broader actual patient catchment or Health Region are considered;**
- **Patients in regional areas are more reliant on centralised healthcare resources for specialised care.** The SEIFA index in Toowoomba, Ballarat, Bendigo and Shepparton demonstrates inequality in terms of socio-economic status which manifests in increased healthcare needs;
- A **solution is proposed** to provide ministerial or delegate intervention in the discretionary approval of a DWS exemption in Regional practice locations when defined criteria are demonstrated;
- **Patients in regional areas are significantly disadvantaged in terms of Radiologist cover compared with Metropolitan areas.**

Contents

Submitted by **Able Medico Advisors**.

Overview

There are significant benefits to patients, requesting practitioners, clinical staff and the community from having a Radiologist deployed full time within an imaging practice.

There is a shortage of Radiologists willing to relocate themselves and families to regional centres like Toowoomba, Ballarat, Bendigo and Shepparton. Labour Market Testing since 2015 has failed to attract non-DWS Radiologists and no 19AB Exemptions have been relevant.

The current logic within the Medicare system which calculates District Workforce Shortage for Radiologists has two inherent problems:

- The system cannot distinguish between Radiologists located in a regional practice with those undertaking reporting from Major Cities or other locations via Tele-radiology;
- The system does not take into account the broader patient catchment or Health Region which is greater than the Statistical Local Area (SLA3) used in the Medicare model.

The result is significant inequality in terms of:

- Regional practices have ongoing and significant difficulty in securing sufficient Radiologists to satisfy patient demand;
- Reliance on locums - who are high cost, do not provide clinical training for regional staff, and are not present long enough to form clinical relationships with requesting practitioners in the region;
- Reliance on tele-radiology to relieve on-site Radiologists but which does NOT provide a full diagnostic imaging service to patients, clinical staff nor requesting practitioners;
- Patients need to travel long distances to access specialist care.

The **terms of reference** specifically addressed in this submission comprise:

- Fiscal policies at Federal, State and local government levels from the perspective of early and effective diagnostic imaging reduces health costs in the longer term;
- Improved co-ordination of Federal, State and local government policies. Victorian Health do recognise these locations as Area of Need, but this is not recognised by Medicare owing to its DWS modelling;
- Regional development from the perspective that a practice-based Radiologist enables greater investment in the imaging technology and services available at Regional level rather than reliance on Major city or Metropolitan locations;
- Regional based Radiologists provide education to clinical team members within a practice and also enhance requesting practitioner understanding of diagnostic imaging;
- Enhancing local workforce skills through education which provides attractive regions for young radiographers and sonographers, nursing and clerical staff to remain in regional practices rather than relocate to Major cities;
- Building human capital in locating willing overseas qualified specialists in regional locations.

The **recommendation** proposed is:

A mechanism for an additional 19AB Exemption to be granted under conditions where a Regional practice can provide evidence that DWS based on Health Region served demonstrates that DWS based on SLA3 does not reflect community equality.

Radiologist within a Practice Benefits

The most effective benefits to Patients, Requesting Practitioners and Imaging team members for Rural Non-Hospital practices occurs with the following:

- Permanently deployed Radiologist within the practice;
- Accredited general radiology reporting skills;
- Accredited Tier A interventional skills;
- A 5-year commitment to the practice.

For Rural Hospital practices this may be enhanced by:

- Accredited Tier B interventional skills.

The table below shows the Benefit Impact from varying grades of Radiology Service typically provided in Rural Practice locations:

	Level of Radiologist Practice Commitment on site			
	Tele-Radiology only	**Locums occasionally plus Tele-Radiology**	**Locums**	**Full Time**
General Reporting	Permitted with telephone consultation with staff or requesting practitioner if required	Permitted	Permitted	Permitted
Contrast Injections	Not permitted	Permitted for Radiologist on-site but dependent on locum competency and willingness		Permitted
All Interventional procedures	Not permitted	Permitted but dependent on locum competency and willingness		Permitted
Training and guidance for Clinical team members	Sub-optimal, rare and telephone basis. Highly ineffective professional development.	Sub-optimal, rare and telephone basis. Highly ineffective professional development.	Sub-optimal and rare. Highly ineffective professional development.	Ongoing on the job and formal feedback for team members. Highly effective professional development.
Information sessions for Requesting Practitioners on site	Requesting Practitioner initiates the call on most occasions.	Locum may initiate the call for adverse findings only.		Frequent Radiologist initiated phone calls. Periodic face to face meetings providing information sessions.

	Level of Radiologist Practice Commitment on site			
	Tele-Radiology only	**Locums occasionally plus Tele-Radiology**	**Locums**	**Full Time**
Building trust with Patients	No patient contact.	Minimal patient contact generally.		Known within the community. Face to face for specific case management.
Building trust with Requesting Practitioners	Minimal contact with Requesting Practitioners.			High level of trust and collaboration in patient management.
Outcome	**Sub-Optimal**	**Sub-Optimal**	**Average**	**Ideal**

District Workforce Shortage Calculation

What are the key components of DWS?

The key components of DWS comprise the following:

- The latest Medicare billing statistics comprising all active Medicare billing (includes full time and part time billing);
- The latest estimates of the Australian resident population as provided by the Australian Bureau of Statistics (ABS); and
- Local area boundaries that are defined by the Department with consideration of the ABS Australian Statistic Geography Standard (ASGS).

How are Geographical Areas identified for Specialists?

DWS classifications for Specialists are provided for geographical areas that are referred to as SLA3 boundaries. SLA3 boundaries are determined using the ASGS.

Statistical Local Area (***SLA***) boundaries do not necessarily align with postcode or suburb boundaries.

How is DWS calculated for Specialists?

The Medicare billing statistics and ABS population data are used to determine the average number of FTE specialists of a type within each SLA3 per 100,000 residents.

The number of FTE specialists per 100,000 persons is then compared with the national average number of specialists per 100,000 persons to identify DWS areas.

DWS determinations are updated annually (generally February of each year).

When applying the Medicare provider number restrictions under section 19AB of the Health Insurance Act 1973 (the Act), DWS areas for medical specialties are defined as:

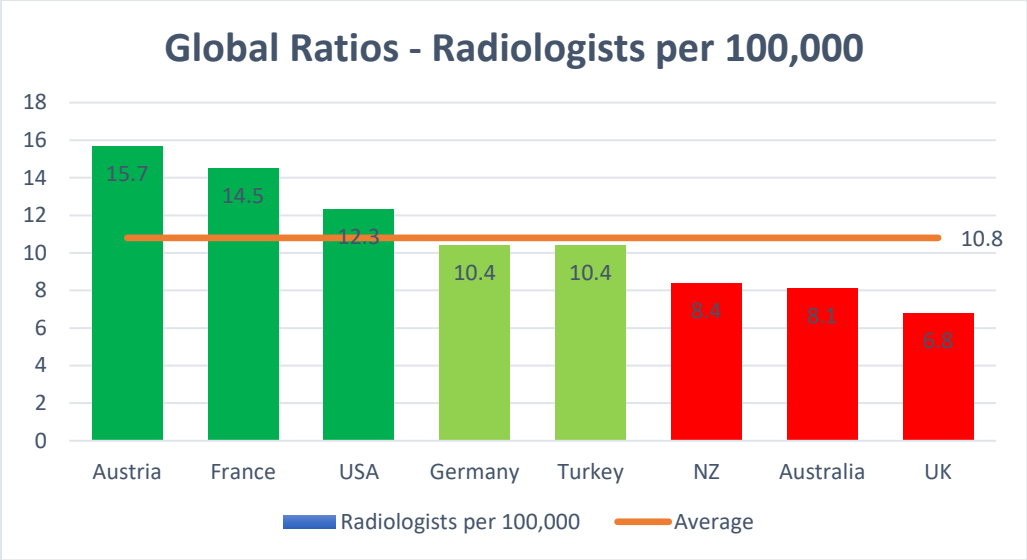
- **A SLA3 that is classified as outer regional (RA3), remote (RA4) or very remote (RA5) under the ASGS, or**

- **A SLA3 that is classified as a major city (RA1) or inner regional areas (RA2) under the ASGS that has a lower FTE specialist per 100,000 person's ratio than the current national average.**

It should be noted that for some medical specialties (for example Nuclear Medicine Physicians) the average number of FTE equivalent specialists is not applied, due to the low number of specialists across Australia. These specialties are considered to be in acute shortage, and all areas of Australia are considered to be DWS.

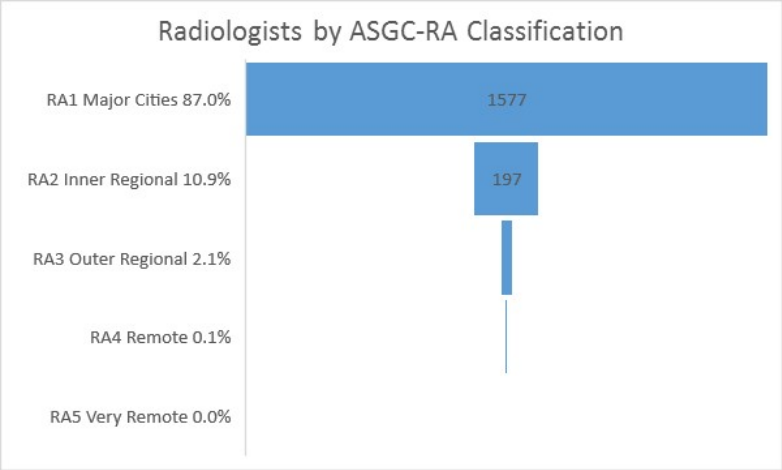
Radiologist FTE Ratios

Medicare do NOT publish the Average Radiologist per 100,000 persons ratios. The table below shows global ratios for Australia and New Zealand[1], Europe[2] and the USA[3].

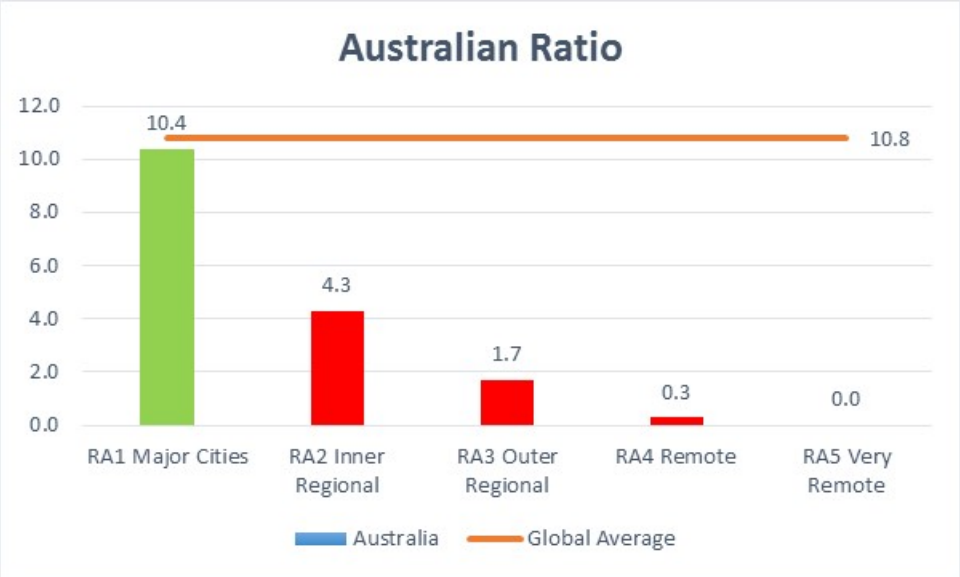


The RANZCR College from its annual activities report provides the following in terms of geographical deployment of its Radiologist members.

This data enables the following chart showing the Australian Radiologist ratio per 100,000 in terms of the ASGC-RA classification scheme.



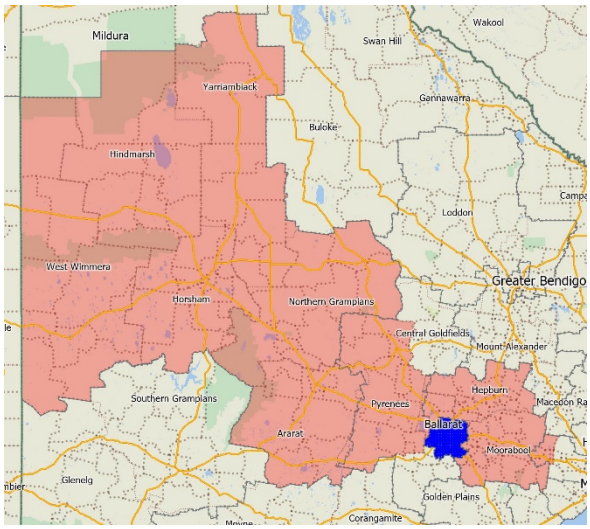
[1] Source: RANZCR Activities Report: Essential data on clinical radiology … training, workforce and research activities
[2] Source: Knoema Physicians by Medical Specialty 2016
[3] Source: Harvey L Neiman Health Policy Institute (2013) USA


Australian Ratio
12.0
10.0
8.0
6.0
4.0
2.0
0.0
10.4
10.8
4.3
1.7
0.3
0.0
RA1 Major Cities
RA2 Inner Regional
RA3 Outer Regional
RA4 Remote
RA5 Very Remote
Australia
Global Average

DWS Inequality in Regional Victoria

We would like to demonstrate the inequality with consideration of the locations in Ballarat, Bendigo and Shepparton.

Inequality in Ballarat



The Ballarat DWS Statistical Local Area is shown on the chart in BLUE. The Grampians Health Region is shown in ORANGE and the primary centre for provision of health services to this entire region is centred on Ballarat.

46% of patients attending imaging services in Ballarat reside outside the DWS SLA3.

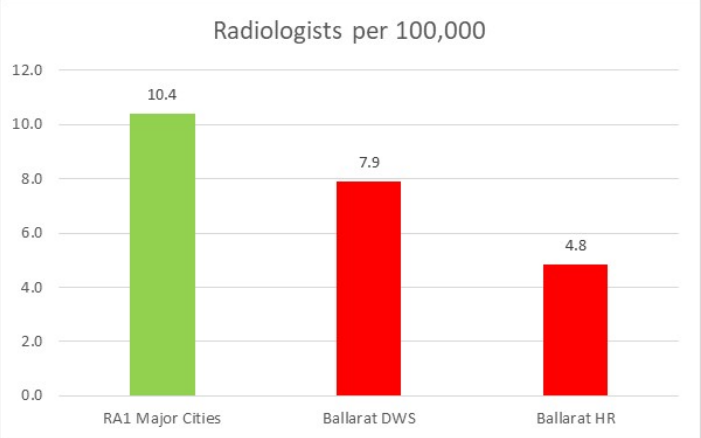
The SEIFA index of 960 for the Health Region is an indicator of socio-economic inequality which is known to manifest itself in increased health risks and need for health services.

All areas outside the Ballarat DWS SLA3 are DWS for Radiologists.

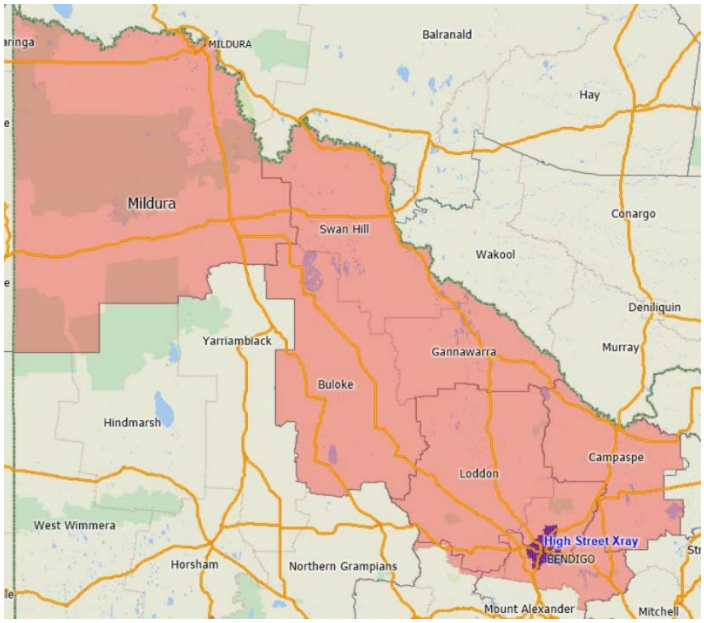
When considering Ballarat alone the ratio is slightly below that for RA1 Major cities. Which explains why Ballarat is NOT DWS for Radiologists.

However, when the actual patient catchment or Health Region is considered then the ratio is half that of Major cities.

Inequality in DWS status for the Ballarat Health Region.



Inequality in Bendigo



The Bendigo DWS Statistical Local Area is shown on the chart in BLUE. The Loddon Mallee Health Region is shown in ORANGE and the primary centre for provision of health services to this entire region is centred on Bendigo.

57% of patients attending imaging services in Bendigo reside outside the DWS SLA3.

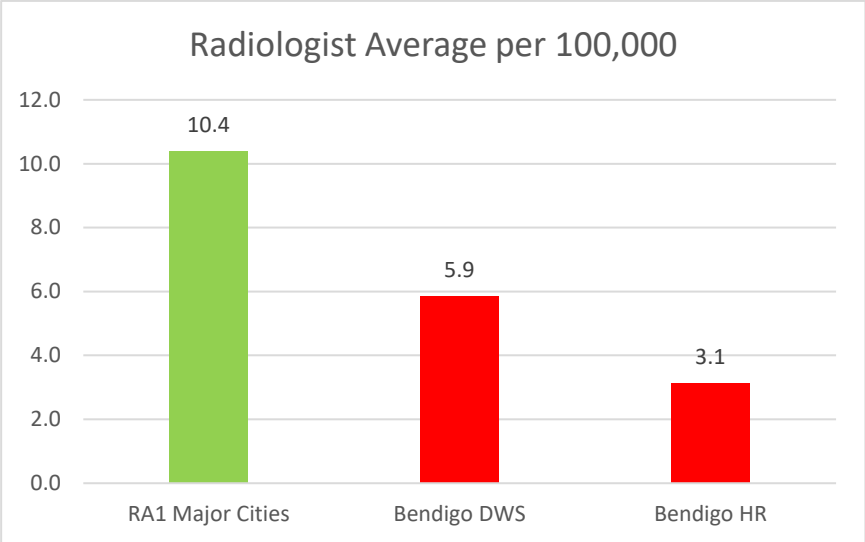
The SEIFA index of 949 for the Health Region is an indicator of socio-economic inequality which is known to manifest itself in increased health risks and need for health services.

All areas outside the Bendigo DWS SLA3 are DWS for Radiologists.

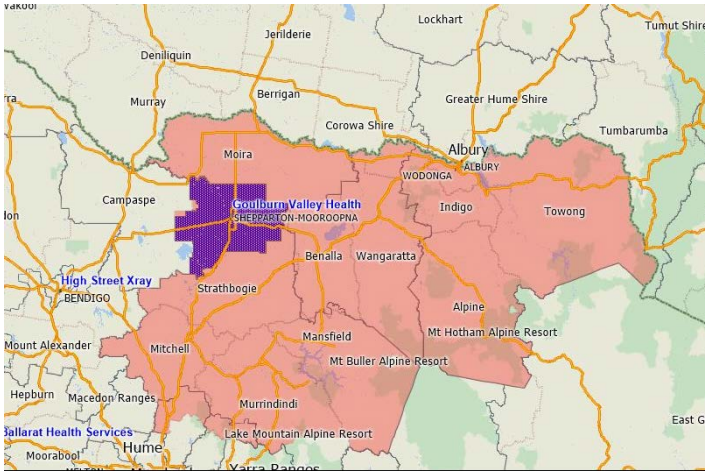
The inequality in Bendigo is more apparent.

One half the major city ratio based on using the DWS SLA3.

And almost one quarter the major city ratio when taking into account the patient catchment in the Health Region.



Inequality in Shepparton



The Shepparton DWS Statistical Local Area is shown on the chart in BLUE. The Hume Health Region is shown in ORANGE and the primary centre for provision of health services to this entire region is centred on Shepparton.

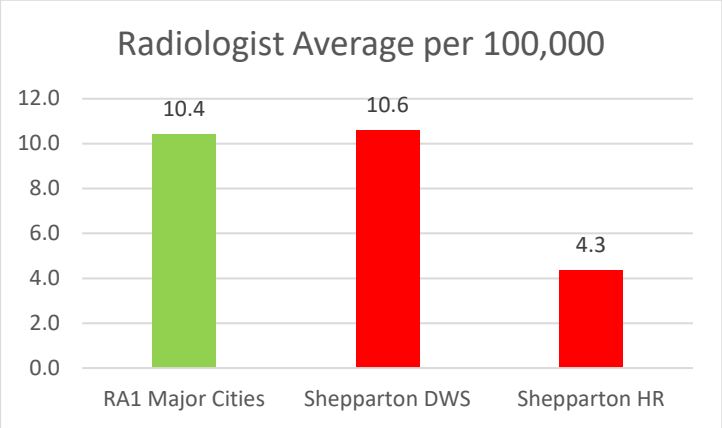
77% of patients attending imaging services in Shepparton reside outside the DWS SLA3.

The SEIFA index of 961 for the Health Region is an indicator of socio-economic inequality which is known to manifest itself in increased health risks and need for health services.

All areas outside the Shepparton DWS SLA3 are DWS for Radiologists.

When considering Shepparton alone the ratio is slightly above that for RA1 Major cities. Which has two outcomes:

- It explains why Shepparton is NOT DWS for Radiologists;
- It reinforces that the number of Radiologists located in Shepparton are based there to service the broader Health Region;



However, when the actual patient catchment or Health Region is considered then the ratio is one fifth that of Major cities.

Inequality in DWS status for the Shepparton Health Region

Melbourne has more DWS locations than Regional Victoria

The Medicare DWS (in green) for Radiologists in the Melbourne metropolitan area demonstrates the Inequality further where the patient catchment more closely matches the DWS area rather than the far larger actual health areas in regional Victoria.

68% of the population in the Melbourne region live in areas which are DWS for Radiology.

ZERO% of patients in Shepparton, Bendigo and Ballarat live in an area which is DWS for Radiology.

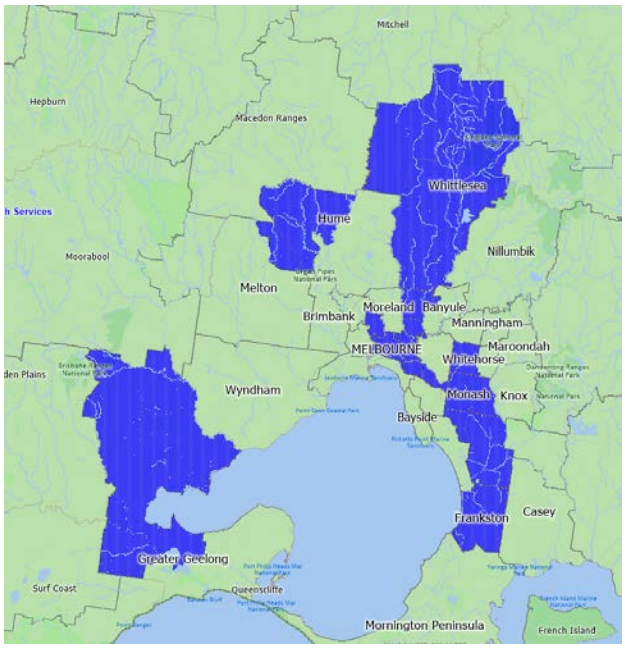
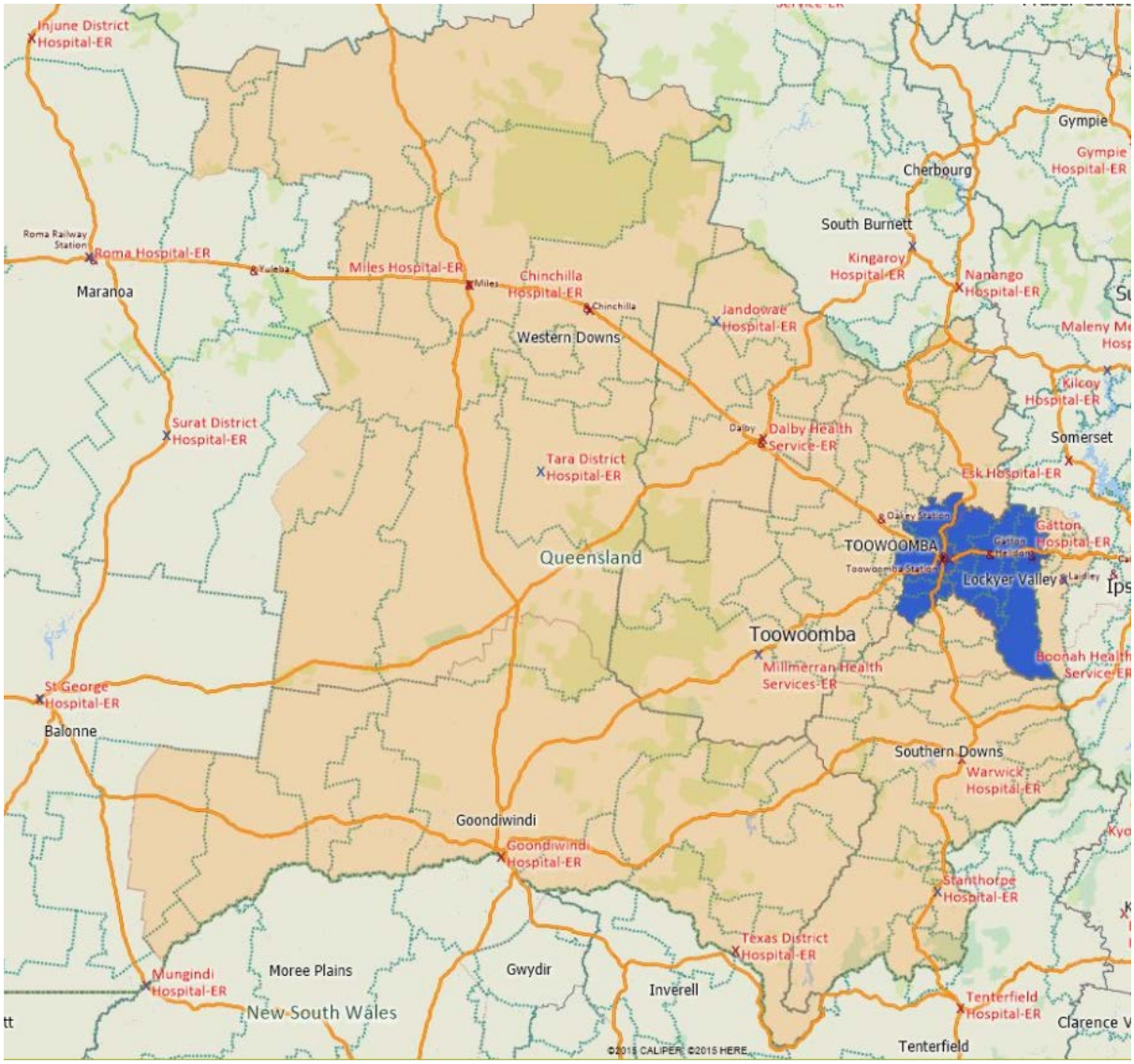


Figure 1 DWS areas in greater Melbourne

DWS Inequality in Toowoomba and the Darling Downs

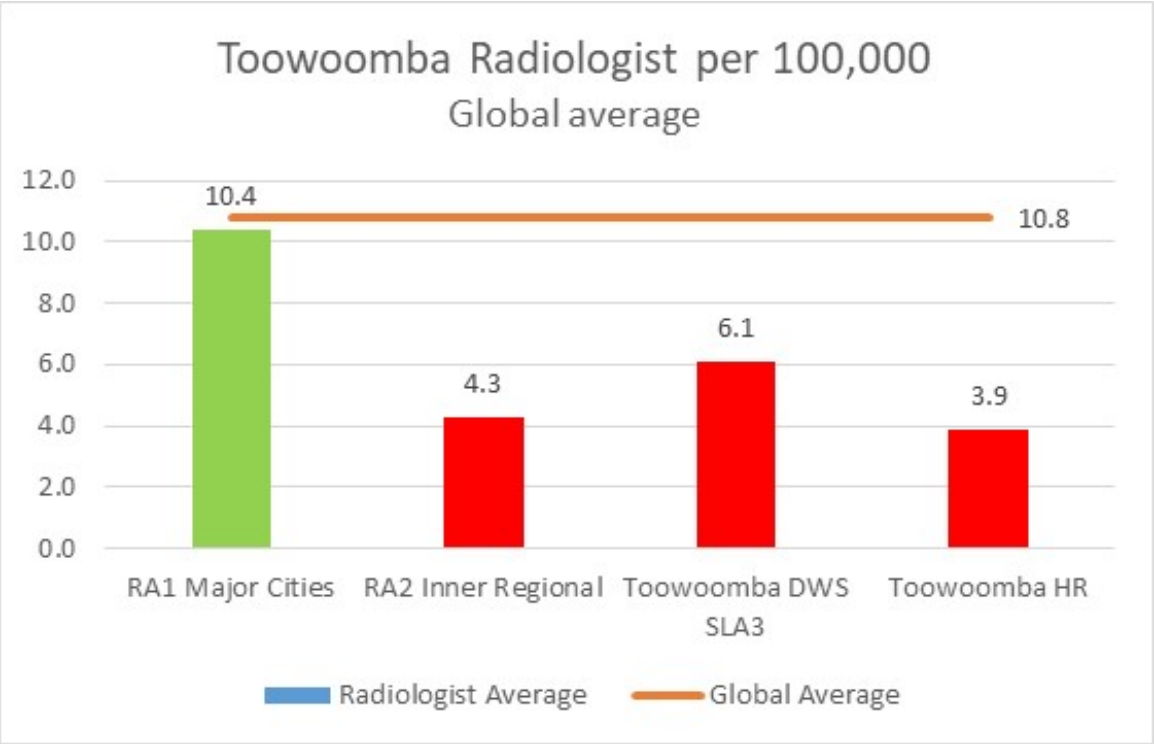
The Toowoomba DWS Statistical Local Area is shown on the chart in BLUE. The Darling Downs Health Region is shown in ORANGE and the primary centre for provision of health services to this entire region is centred on Toowoomba.



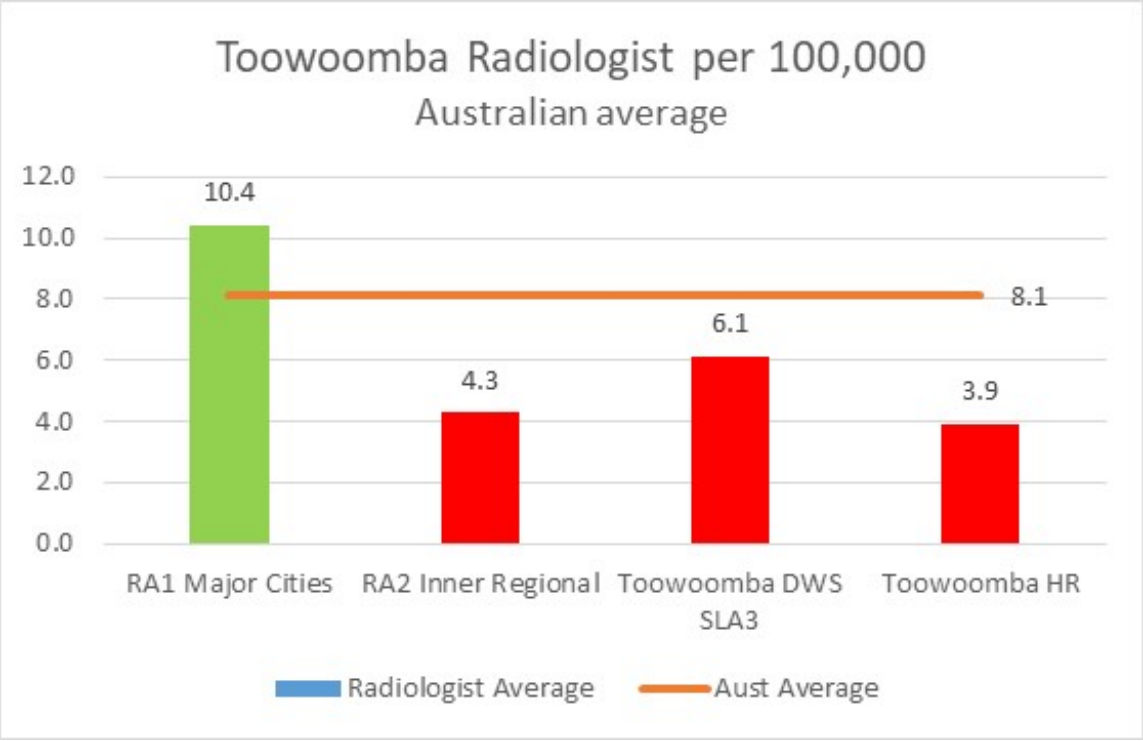
Key Facts comprise:

1. **26% of patients attending imaging at the Darling Downs Imaging practice live outside the Toowoomba DWS SLA3;**
2. **42% of the population in the Health Region live outside the Toowoomba DWS SLA3;**
3. **11 radiologists are located in the Health Region (including 9 in Toowoomba). They provide reporting services to imaging practices located outside the Toowoomba DWS SLA3 and provide coverage in the Health Region;**
4. **The Health Region covers 79,660 sq km with the furthest distance being 350+km from Toowoomba;**
5. **Toowoomba is the health hub for the region and beyond.**

The chart below provides a comparison between ratios for RA1 Major cities in Australia (10.4) and the Global Average (10.8) compared with the Toowoomba DWS and the Health Region (HR).



The chart below shows the same geographical location ratios but compared with the Australian Average of 8.1 Radiologists per 100,000.

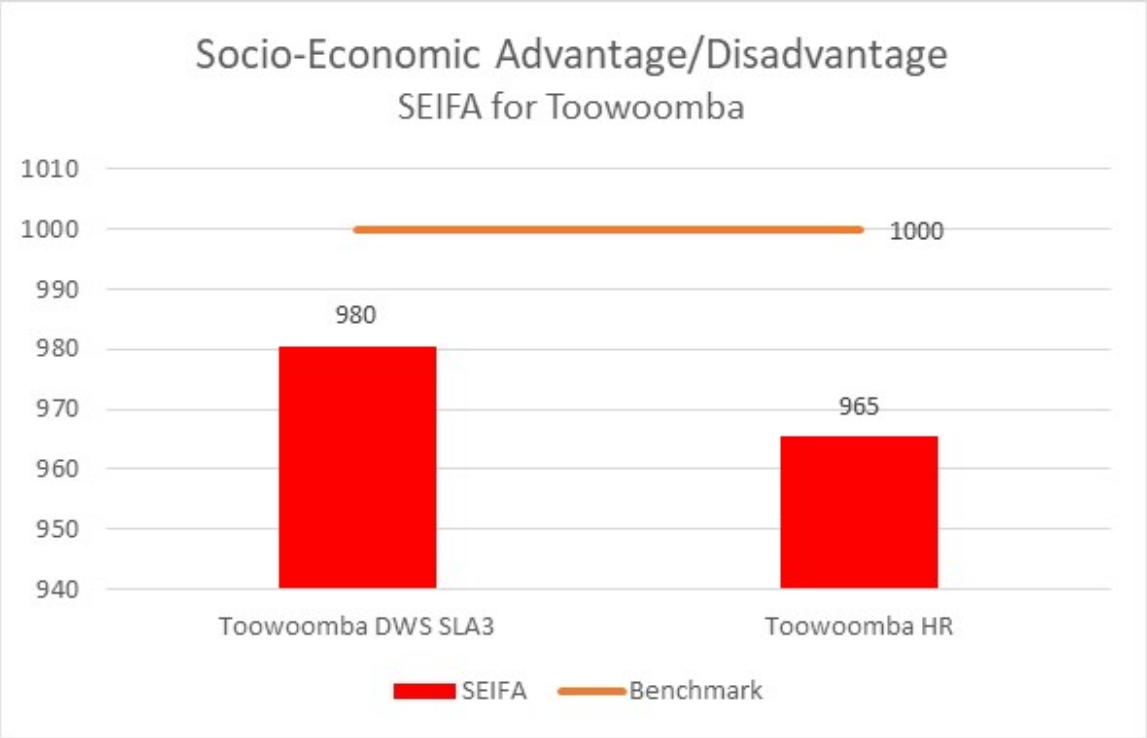


Key Facts comprise:

1. **The ratio within the Toowoomba DWS SLA3 is well below Global Standards and also below that for the Australian average;**
2. **More significantly the ratio for the Toowoomba HR is well below both Global, Australia and also the RA2 Inner Regional average;**
3. **The Medicare calculation of DWS based on Toowoomba SLA3 does NOT accurately reflect the patient catchment served within the Health Region;**
4. **The patient community within the Darling Downs Health Region is disadvantaged in comparison to those in RA1 Major City and RA2 Inner Regional communities.**

Socio-Economic Status for Toowoomba

SEIFA is a key measure of socio-economic condition [4]by geographic area and there is a proven relationship between socio-economic disadvantage and various health and educational outcomes. Any geographic area with a SEIFA score below 1000 is considered to be at a socio-economic disadvantage.



[4] Australian Bureau of Statistics, Socio-Economic Indexes
http://www.abs.gov.au/websitedbs/censushome.nsf/home/seifa

Key Facts comprise:

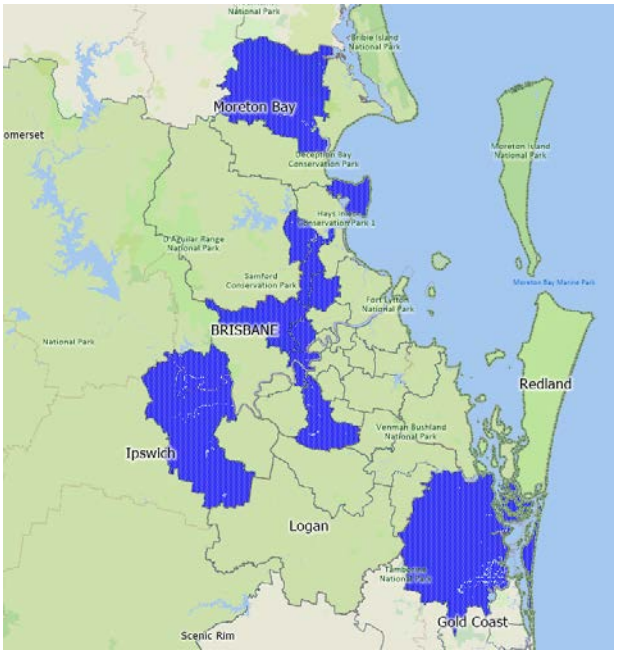
- **SEIFA lower than 1000 manifests itself in increasing health needs within the community;**
- **The Health Region has a growing aged population with aging increased health needs. 19% of the population is aged 65 years or greater compared with the Australian metropolitan average of 13.7%;**
- **The geographical features of the region in terms of size and distance mean that patients needing access to specialist care need to travel long distances to Toowoomba.**

Brisbane has more DWS locations than the Darling Downs Regional area

The Medicare DWS (in green) for Radiologists in the greater Brisbane area demonstrates the inequality further where the patient catchment more closely matches that used in the DWS calculation.

70% of the population in the Brisbane region live in areas which are DWS for Radiology.

ZERO% of patients in Toowoomba live an area that is DWS for Radiology, yet that area must service the population resident in the much larger Darling Downs region.



Recommended Action to Overcome Inequality in Regional DWS

The solution is intended to be simple and comprises the following approach:

- For RA2 Inner Regional practice locations and above they need to provide evidence of the DWS Statistical Local Area in terms of specialists FTE's; AND
- Provide evidence of the actual patient catchment to form a Health Region. For the health region also provide an analysis of specialist FTE's; AND
- Where it is proven that the Health Region is disadvantaged compared to RA1 Major Cities or the DWS SLA3 calculation then either the Minister or a delegate can make a discretionary decision to allow a DWS specialist for a specific practice location.

In the case of Toowoomba, Ballarat, Bendigo and Shepparton an additional DWS Radiologist permitted for each location would start to reduce the inequality and bring an increasing level of Major city diagnostic imaging and interventional services to those health regions.

Regional Inequality in Australia
Economic References Committee

Regional Inequality exists for patients seeking access to Medicare funded MRI.

Key facts comprise:

- Regional communities are reliant on centralised specialist services. They tend to have lower socio-economic status, higher health status indicators and a greater reliance on Medicare funded healthcare than those living in Major Cities;
- Patients in Regional communities have less access to Medicare funded MRI - in terms of accessibility they are 29.8% worse off than Major Cities;
- MRI is an imaging technology of significant benefit to patients. The presence of MRI in a practice also expands the range of specialist services provided to the community. Additionally it attracts and improves retention rates of diagnostic imaging staff;
- Lack of access to Medicare funded MRI may result in the use of Xray or CT with resultant exposure to radiation does;
- There is no open process to make application for MRI licences in order for the Inequality to be judged and a decision made on specific criteria.

Contents

Submitted by **Able Medico Advisors**.

Overview

There are significant benefits to patients, requesting practitioners, clinical staff and the community from having access to Medicare rebates for MRI. In Regional Australia this access is more limited.

- Regional health services provide coverage to patients in a broader catchment than metropolitan locations;
- Patients in regional locations often travel significant distance to access specialist services;
- Patients in regional locations may delay specialist consultation owing to transport or cost;
- Per head of population patients in Major Cities have 29.8% greater access to Medicare funded MRI;
- Regional communities often have significantly lower socio-economic status and higher health status indicators than communities in Major Cities. There is a high reliance on public health services.

There is no current process to request a Medicare rebate for an MRI. Licences have been granted at the discretion of the Federal Health Minister outside the tender process. These have been largely in metropolitan locations with one exception.

The result is significant inequality as follows:

- Regional practices cannot offer Medicare rebated MRI services with impacts on patients in terms of cost, time and early diagnosis;
- Increased use of less appropriate imaging technology such as Xray or CT as Medicare rebates are available to patients for these technologies, with resultant increased radiation exposure to patients;
- Patients need to travel long distances to access specialist care.

The **terms of reference** specifically addressed in this submission comprise:

- Fiscal policies at Federal, State and local government levels from the perspective of early and effective diagnostic imaging reduces health costs in the longer term;
- Regional development from the perspective of improving the healthcare infrastructure and support for regional communities;
- Enhancing local workforce skills through education which provides attractive regions for young radiographers and sonographers, nursing and clerical staff; and Radiologists to remain in regional practices rather than relocate to Major cities where MRI is more prevalent;
- Building human capital in locating willing overseas qualified specialists into regional locations.

The **recommendation** proposed is:

An open process to enable application to be made for MRI licences in Regional areas meeting specific criteria.

Benefits of MRI

Multiple factors are contributing to increasing MRI usage including:

- New MRI applications;
- Rapidly expanding and aging local population;
- Higher radiation awareness and the preference for MRI over ionising radiation modalities such as CT;
- Expanding clinical services within Regional Health Districts; and
- Expanded MRI services attract and retain specialists with greater clinical expertise.

There are two categories of benefits to patients comprising:

- Specific sub-specialty benefits for patients; and
- Generic benefits from the use of MRI in contrast to other imaging modalities.

Specific Sub-Specialty Benefits

Subspecialty Services include:

- Oncology
- Neurology
- Trauma Management
- Paediatric services
- Cardiac services

Oncology

Head and Neck Tumours

MRI is the modality of choice for accurately staging primary head and neck cancers and the extent of any associated lymph nodal metastases. Primary sites in tongue base, floor of mouth larynx etc can be only assessed with MRI and CT has limited role.

Breast and Lung Cancer

MRI with contrast enhancement is used to compliment Ultrasound and Mammography in the preoperative evaluation of Breast Cancer. MRI imaging is required for disseminating metastatic cancers such as Breast and Lung in the investigation of:

- Spine for spinal cord compression; and
- Brachial Plexus involvement/peri neural spread.

Brain Tumours

MRI is the major diagnostic modality for the diagnosis, preoperative planning, and follow-up of Brain tumour. The following clinical signs of disease can be assessed only with MRI:

- Characterising brain tumour biology;
- Guiding therapy;
- Assessing therapeutic response;
- Detecting early treatment failure;
- Distinguishing tumour recurrence from treatment effects; and
- Predicting clinical outcome.

Gynaecological Cancer

MRI is used routinely in the staging of cervical cancer as the preoperative test of choice.

Colorectal Cancer

All patients with newly diagnosed colorectal cancer should receive a staging MRI within a week of diagnosis for pre-surgical planning and staging. Accurate determination of the extent and spread of the cancer is pivotal in optimising treatments and improving patient outcomes.

Hepato Biliary Cancer

MRI imaging is the non-invasive test of choice for evaluation of the biliary tree. Patients with known HBV/ HCV receive a serial liver MRI to monitor the status of the liver and exclude Hepatocellular Carcinoma.

Lymphoma and Haematological Cancers

MRI imaging is pivotal in providing an accurate preoperative diagnosis of CNS Lymphoma and providing a differential diagnosis from GBM which is non-operative. MRI of the spine is routinely required in the follow up of Lymphoma cancers to assess the treatment response and exclude spinal cord compression.

Neurology

Stroke Service

MRI full brain imaging with diffusion and perfusion techniques enables excellent assessment of all vascular territories and exceptional delineation of acutely infarcted tissue.

MRI provides superior detection of small and posterior circulation stroke. At least 15% of all ischemic strokes occur in the vertebro-basilar region (posterior circulation). MRI is superior to CT in imaging the vertebro-basilar territory. MRI can detect multiple small acute embolic infarcts. Use of MRI reveals that 5% of suspected ischaemic stroke patients have other pathology and that 10% have a bleed.

Patients who have had a TIA have a 24–29% estimated risk of stroke in the first 5 years after the event. MR Imaging is ideally performed within 72 hrs of the event.

Multiple Sclerosis & Neuro Myelitis Optica

Dementia, Alzheimer's & Parkinson's

MRI is a valuable tool in the initial assessment of patients with cognitive decline. Diagnosis of Fronto-Temporal dementia or AD can be established only on MRI.

MRI also plays a pivotal role in the initial assessment of movement disorders like Parkinson 's disease, Epilepsy management is heavily dependent on the use of MRI to exclude a treatable cause of epilepsy.

Trauma Management

MRI is the modality of choice for the investigation of spinal cord injuries and brachial plexus pathologies.

Paediatric Services

MRI is particularly suited to paediatric examinations. Avoidance of exposure to radiation is key.

Cardiac Services

Cardiac MRI may be utilised in the investigation of the following pathologies:

- Structure and Function;
- Congenital Anomaly;
- Tumours/ Masses;
- Viability and Function; and
- Myocardial Abnormality – HOCM, RV Dysplasia.

Generic MRI Benefits to Patients

MRI is particularly useful for the scanning and detection of abnormalities in **soft tissue structures** in the body like the cartilage tissues and soft organs like the brain or the heart. MRI is the Gold standard diagnostic tool for these. Common uses of MRI in diagnosis comprise:

- Tumours of the chest, abdomen or pelvis;
- Diseases of the liver, such as cirrhosis and abnormalities of the bile ducts and pancreas;
- Inflammatory bowel disease such as Crohn's disease and ulcerative colitis;
- Heart disease such as congenital heart disease;
- Malformations of the blood vessels and inflammation of the vessels;

MRI enables the discovery of abnormalities that **might be obscured by bone** with other imaging methods;

MRI scans have **specific advantages over X-rays** as they can:

- Show swelling and inflammation; and
- Show both three-dimensional and cross-section images of the body without repositioning the patient;

Patients do not receive a Radiation dose from MRI so it is safe for patients vulnerable to the effects of radiation such as pregnant women or babies;

MRI scans can provide information about the **blood circulation** throughout the body and blood vessels and enabling detection of problems related to blood circulation;

MRI scans provide **very detailed diagnostic pictures of most of the important organs and tissues** in your body and are sometimes able to show unique information that other tests are unable to show;

Safety studies have found **no long-term negative effects** from MRI scans;

Unlike the **contrast media** used in X-rays, the contrast dye used in MRI scans (gadolinium chelate) does not contain iodine and **rarely causes allergic reactions**;

Advanced techniques such as diffusion, spectroscopy and perfusion allow for **precise tissue characterisation** rather than merely "macroscopic" imaging;

MRI is non-invasive and has fewer complications. A comparison could be MRI Brain versus 4 vessel Cerebral Angio;

MRI is a **cost-effective** diagnostic imaging tool.

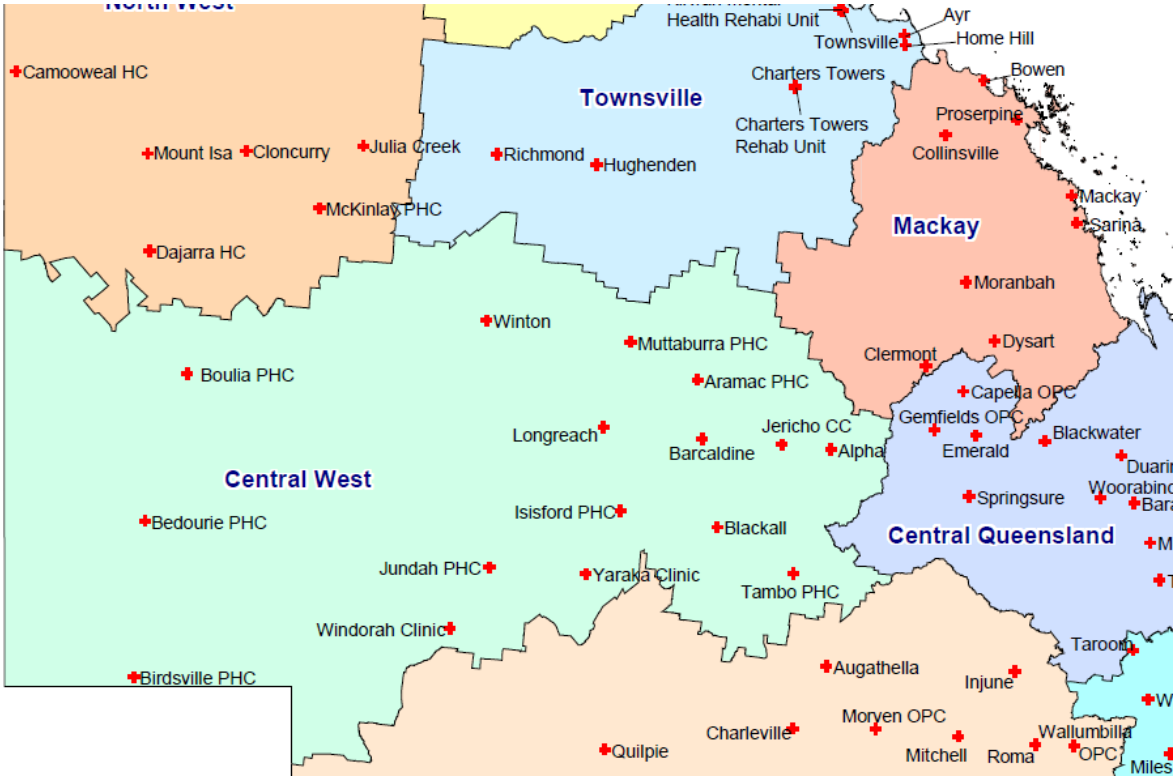
MRI offers a **wide scope of application** for Radiologists:

- Imaging value across all body area (Neuro, MSK, Abdomen, Pelvic, Neonatal, Cardiovascular, Breast), and
- All patient demographics from paediatric to geriatric;

MRI diagnostic capabilities continues to grow each year with further research providing new sequences, faster scans and new disease targets.

Example: Limited Access in Mackay

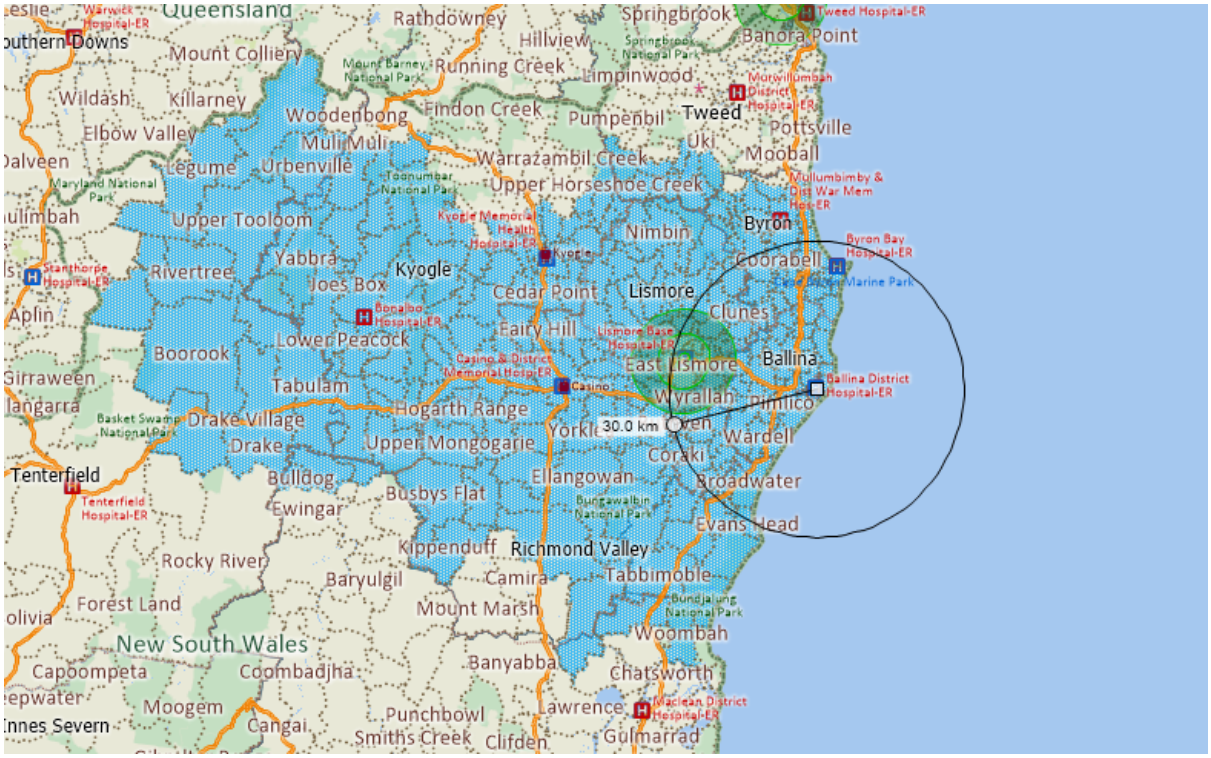
There is one full Medicare rebated MRI located in Mackay, within the Base Hospital. The MRI in the **Mackay Health District** also provides services for patients located in the **Central West** where no rebated MRI are provided.



PRACTICE CRITERIA	**SOCIO-ECONOMIC CRITERIA**
Comprehensive practice YES On-site radiologist YES Integrated RIS/PACS YES DWS for Radiology YES Practice Zone is 1 MRI per 106324 persons Patient Catchment is 1 MRI per 166812 Metropolitan comparative is 1 MRI per 86819 7 Hospitals in Patient Catchment with ED and 2 Hospitals without ED	SEIFA 1002 Lower level of private health insurance Higher unemployment Higher low-income families Higher single parent Higher disability support and aged pensioners Higher rental assistance **High reliance on Medicare funded healthcare**
HEALTH STATUS INDICATORS	**COMPARATIVE SCORES**
Higher self-reported poor health status Higher smokers Higher physical inactivity Higher obesity Lower daily intake of fruit Higher people with at least 1 of 4 factors Higher cancer incidence Higher avoidable mortality and death rate Higher ED presentations **High health status indicators**	193.2 for the Practice Zone (benchmark 166) 193.9 for the Patient Catchment (benchmark 142) **Score highlights need to consider another MRI licence in Mackay to serve the patient catchment.**

Example: Limited Access in Ballina

Ballina is a region that is characterised by a growing population, large proportion of aged over 65, higher levels of health status indicators and very low socio-economic status. There is a high level of delayed medical consultation owing to lack of transport.



PRACTICE CRITERIA	**SOCIO-ECONOMIC CRITERIA**
Comprehensive practice YES On-site radiologist YES Integrated RIS/PACS YES DWS for Radiology YES Practice Zone is ZERO MRI per 90748 persons Patient Catchment is 1 MRI per 142514 Metropolitan comparative is 1 MRI per 86819 2 Hospital in Patient Catchment with ED and 2 Hospitals without ED	SEIFA 950 which is VERY LOW Lower level of private health insurance Higher unemployment Higher low-income families Higher single parent Higher disability support and aged pensioners Higher rental assistance **High reliance on Medicare funded healthcare**
HEALTH STATUS INDICATORS	**COMPARATIVE SCORES**
Higher self-reported poor health status Higher smokers Higher physical inactivity Higher obesity Lower daily intake of fruit Higher people with at least 1 of 4 factors Very High cancer incidence Higher avoidable mortality and death rate Higher ED presentations High ATSI population **High health status indicators**	179.5 for the Practice Zone (benchmark 166) 258.4 for the Patient Catchment (benchmark 142) **Score highlights need to consider another MRI licence in Ballina to serve the patient catchment.**

Recommended action to overcome Inequality in Regional access to Medicare funded MRI

A solution to provide an open application process which comprises meeting specific criteria covering:

- **Patient catchment** serviced and comparison with metropolitan MRI per 100,000 patients;
- Evaluation of the **practice location** comprising: MRI located within a comprehensive facility with an on-site FTE Radiologist and geographically accessible RIS/PACS; DWS status;
- Evaluation of the **referrer base** comprising number of Medicare rebatable MRI within the patient catchment; Hospitals with and without ED; distance to MRI; number of GP and specialists, and patient presentations;
- Evaluation of **socio-economic data** to determine the ability of the patient community to afford MRI services and their reliance on public funded health services;
- Evaluation of **health demographic data** to determine the state of health in terms of level of aged population; level of ATSI population; obesity; smokers; diet; cancer incidence; child and youth mortality; at risk alcohol consumption; GP and specialist presentations; ED presentations.

Each of the **criteria are weighted** to provide an overall score enabling comparison and decision making.

A **prototype model comprising 47 criteria** for a Practice Zone (30k for Regional) and actual Patient Catchment was used to evaluate a benchmark location versus the two examples:

		Scores		Population	
Suburb	State	Zone	Catchment	Zone	Catchment
Redcliffe	QLD	166.0	142.2	131386	289623
Ballina	NSW	179.5	258.5	90748	142514
North Mackay	QLD	193.2	193.9	106324	166812

In short both Ballina and North Mackay **rank higher** for both the practice zone and the actual patient catchment.