



## 2017-18 BUDGET SUBMISSION

A FAIRER AND SMARTER MEDICARE FOR RADIOLOGY PATIENTS

JANUARY 2017



**ADIA**

australian diagnostic imaging association

## ABOUT ADIA

ADIA works to ensure medical imaging remains accessible, affordable and safe for all Australians. A member organisation, ADIA represents medical imaging practices nationwide.



## PRESIDENT'S MESSAGE

This year, more than nine million Australians will access 24 million individual radiology services – including x-ray, ultrasound, CT, nuclear medicine and MRI scans – on the recommendation of their GP or specialist.

More than 5.5 million of those services will attract an average gap of around \$100, and around 300,000 patients will forego being diagnosed at all because of the high cost of radiology services due to Medicare underfunding.

### **Medicare is unfair for radiology patients.**

Patient access to radiology services through the Medicare system has become unfair due to prolonged systemic underfunding and long-term policy failure to address systemic issues. These include:

- **Patient rebates have not been indexed by the Government since 1998**, and patient gaps are increasing by more than 5 per cent each year to meet the shortfall. In 2010, the shortfall was \$570 million per year, and this is growing unabated due to poor Government policy.
- **Staffing ratios in radiology practices are reducing** as practices cut costs to keep services affordable for patients. Radiology services are labour intensive with radiologists and allied health professionals representing 60 per cent of the total cost base.
- **Inaction has created a two-tiered system** – one for those that can afford comprehensive care, and another for those that can't – and bulk billing is difficult to find for complex and expensive services required by patients with serious conditions. When the Government spends less on supporting quality, it is left to patients to make up the cost.
- **Rising costs are having a real impact on patients.** An ABS study last year showed that around 300,000 patients (heavily weighted towards younger Australians) forego early diagnosis each year due to the cost of radiology services. This is particularly concerning for radiology as the services have been deemed necessary by the GP and conditions can remain undiagnosed until it is too late. Patients diagnosed with significant illnesses such as cancer rarely suspect the seriousness of their condition due to seemingly benign or irrelevant symptoms – until a scan proves otherwise.
- **A range of radiology services are so underfunded that they aren't easily accessible** because they are simply not commercially viable. It is little wonder that patients are missing out on getting diagnosed early because of cost. This is not fair.
- **Medicare rebates are not available for more recent innovations** which are now accepted medical practice, like MRI for most breast cancer indications. A woman diagnosed with breast cancer and about to undergo surgery cannot access a Medicare-funded MRI. This is not fair.



- **Policy settings are promoting growth in the wrong services including** growth in churn and inappropriate imaging, and cost-shifting by public hospitals. This means the Government spends more than it needs to, and access to quality care becomes unviable – the health system becomes less efficient in the short-term and costs taxpayers more in the long run. This is a poor policy outcome.

**The Government's pre-election agreement with ADIA shows that policy is moving in the right direction.**

In its pre-election agreement with ADIA, the Government recognised that fees for some radiology services are below cost, that radiology remains a labour-intensive service despite advances in technology, and that structural policy reform is necessary for comprehensive practices to remain viable and provide patients with access to radiology.

This was an encouraging step, and sets the context for a range of commitments on policy. ADIA and the Government are making good progress on implementation of the commitments, including an independent evaluation of the commercial environment in which comprehensive radiology practices operate.

**However, Medicare needs to be fairer and more efficient now.**

To make Medicare fairer for patients and smarter for taxpayers now, three essential changes are required:

1. Indexation needs to be reinstated as soon as possible, because it is unrealistic to think that 1998 rebates are a responsible approach to make Medicare effective in 2017. The funding system is broken and the shortfall is significant.
2. Collaboration is required with the sector to address complex and inter-connected issues and make all spending as efficient as possible. ADIA stands ready to work with the Government to target spending more effectively, as foreshadowed and agreed in the pre-election agreement.
3. Data and sector-specific radiology information needs to be collected and examined by the Department of Health. Good policy requires policy makers to have access to good quality information to ascertain where existing policy is working and where it is not, and to ensure that policy and funding settings promote quality and not churn.

An MBS Review that is focussed on savings after 18 years without indexation is not likely to address the most important issues confronting patients in radiology.

It is therefore important that funding and policy issues as outlined in this submission are seriously considered to produce a roadmap for a fairer and smarter Medicare.

**Dr Christian Wriedt**  
**President**

January 2017

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## RECOMMENDATIONS

### Urgent priority: indexation

1. To avoid accelerated growth in patient gaps and reverse the two tiers of patient access and service quality in radiology, announce an early reinstatement of indexation for radiology services. The eighteen-year freeze needs to end now if the Government is serious about Medicare.

### Improve access and affordability for patients

2. Better billing rules – To protect patients from needing to pay hundreds or thousands of dollars to access radiology, amend Medicare rules and systems to allow patients to pay just the gap upfront through a HICAPS-style billing system.
3. Better MSAC rules – To stop patients missing out on clinically appropriate services recommended by their doctor, review the process and criteria that MSAC uses to determine its recommendations to the Government for radiology services. The guiding principle should be that services which are referred for by specialists at arm's length in significant volumes (i.e. have become 'standard of care') should be listed on the MBS and available to all Australians, not just those that can afford high-cost care. MRI is a mainstream modality and should be more widely available.
4. Better Safety Net rules – To ensure that vulnerable patients referred for radiology are not disadvantaged by the new Medicare Safety Net, the Greatest Permissible Gap should be retained and a 300% benefits cap for radiology should be incorporated into the design.
5. Patient-focussed MBS Review – To establish a clear focus on how Medicare can be improved for patients, the MBS Review should establish working groups with the direction to recommend reforms that deliver better and more streamlined care. This program should commence with a Pilot Study into how breast cancer imaging items, funding and rules could be better directed to support a less challenging patient journey for breast cancer patients.

### Redirect funding into essential, quality care

6. Arm's length referral – To address growth in non-arm's length referred radiology services, close the loopholes in prohibited practices legislation that permit referral even when the referrer has a pecuniary interest in the radiology provider delivering the service. This would ensure that all services are referred for at arm's length from the provider of the service, therefore improving the appropriateness of services and generating savings by removing incentives for churn and repeat imaging.
7. Refocus the scope of diagnostic ultrasound – To reduce the fiscal risks associated with overpaying for high-growth point of care (POC) ultrasound services, diagnostic ultrasound services should be better defined to exclude POC ultrasound, in line with the recommendations of the Diagnostic Imaging Advisory Committee. The savings from this measure should be reinvested into diagnostic ultrasound rebates to make quality, efficient services more accessible for patients.

### Support the viability of private radiology providers

8. Efficient competition – It is not realistic to expect both public and private radiology providers to be viable and efficient if public hospitals are paid more to bulk bill and private providers are restricted to frozen Medicare rebates and are forced to charge high gaps to patients. Therefore, appropriate roles and funding settings need to be clarified for the public and private sectors, including a framework for effective competition that supports efficient provision of radiology by public and private providers. This framework should include the Department of Health working with the sector to understand the pernicious impact on patients of the current model and monitoring growth in the provision of radiology services by the public and private sectors.

### Make quality radiology services available to all patients

9. Quality Framework – To address the trend towards churn-style radiology practice with minimal clinical input, continue working with the sector to implement the Quality Framework for Diagnostic Imaging. This includes developing appropriate professional supervision rules for ultrasound to reflect the range of delivery models now operating in quality practices across metropolitan, regional and rural Australia.
10. Digital health – Work with the radiology sector to develop support and incentives for increased participation by radiology practices in the myHealth Record.





“Gaps are discouraging a significant number of patients – around 300,000 in the last year – from having services...”

## 1. URGENT PRIORITY: INDEXATION

The rebate freeze of eighteen years is turning radiology into a churn model rather than a quality care model, putting patient access to comprehensive care and viability of comprehensive radiology providers at risk. Indexation is the only way to keep gaps down, bulk billing up, and to support affordable access to the full range of diagnostic imaging services for all Australians when they need them – this is what Australians expect from Medicare

Less than one-quarter of radiology services attract a gap, yet ABS data shows that gaps are discouraging a significant number of patients – around 300,000 in the last year – from having services recommended by their doctor.

The evidence also demonstrates that rebate increases are the best way to benefit all patients, because bulk billing rates go up and gaps are contained. For example, the introduction of the 10 per cent bulk billing incentive in November 2009 (an estimated investment of \$180 million per year) increased the bulk billing rate by 3.4 per cent in 2009-10 and 3.2 per cent in 2010-11; and gaps were flat after year-on-year growth averaging 11 per cent over the previous decade:

BULK BILLING RATES AND TOTAL GAPS PAID BY PATIENTS									
	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Bulk billing	63.2	66.1	69.5	72.7	73.9	74.8	76.0	76.9	77.3
Gaps paid (\$m)	382.3	399.5	399.6	405.4	435.7	456.0	479.5	491.8	511.1

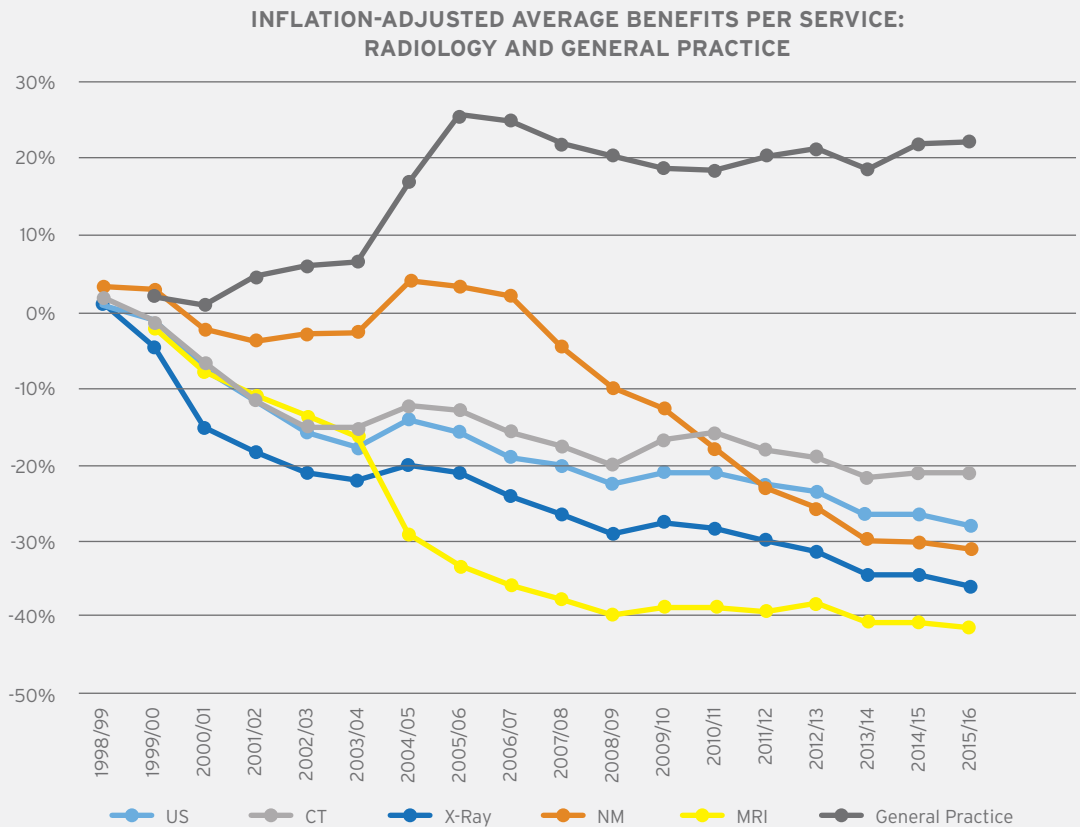
Source: ADIA analysis of statistics provided by the Department of Health

### Patient rebates have been frozen for eighteen years

Almost all patient rebates for radiology are the same or lower than they were in 1998. The real impact of the indexation freeze has been an effective cut to radiology every year:

Service	1998 rebate	2017 rebate	Variation	Fall in real value
Ultrasound: vascular	\$147.00	\$144.10	↓ \$2.90	↓ 39%
Ultrasound: interventional procedure	\$86.70	\$92.75	↑ \$6.05	↓ 34%
CT: chest, abdomen and pelvis	\$528.85	\$480.50	↓ \$48.35	↓ 44%
CT: brain	\$218.70	\$212.50	↓ \$6.20	↓ 40%
Diagnostic mammogram	\$71.15	\$76.10	↑ \$4.95	↓ 34%
X-ray: skull	\$58.65	\$54.85	↓ \$3.80	↓ 42%
MRI: cervical cancer	\$424.60	\$342.75	↓ \$81.85	↓ 50%

On a modality basis, average rebates per service have fallen by between 21 per cent (CT) and 41 per cent (MRI) in real terms, compared to average rebates for GP services which increased by 22 per cent over the same period.



In 2010, Professor Ian Harper noted that a “significant efficiency dividend has been delivered to government” by the indexation freeze.<sup>1</sup> The Government continues to extract a significant efficiency dividend each year, while shifting the cost burden to patients and ignoring the impact on those patients.

#### Patient gaps will reach an average \$100 this year

Patients paid an average gap of \$97.34 on 5.6 million services in 2015-16. On current growth trends (average yearly growth above 5 per cent), the average gap is likely to exceed \$100 during this financial year.

#### AVERAGE GAPS BY MODALITY (2015-16)

	Ultrasound	CT	X-ray	NM	MRI
Average gap	\$105.68	\$149.84	\$52.48	\$104.96	\$183.97
Privately billed services (m)	2.6	0.5	2.2	0.1	0.2
Average yearly growth since 2007-08	5.4%	4.9%	5.7%	1.4%	4.8%

Source: ADIA analysis of statistics provided by the Department of Health

<sup>1</sup>Harper, I. (October 2010), *The Ongoing Challenge of DI Funding: Implications and Issues*.

“While bulk billing rates have increased, they don’t tell the full story..”

### Bulk billing rates are manipulated with increasing waste. Bulk billing rates do not reflect healthy access to quality services

While bulk billing rates have increased, they don’t tell the full story about affordable access, and actually mask what is happening to vulnerable patients who get sick. Too much Medicare spending is not effective, with bulk billing increasing through churn, and growth in repeated services and public hospital volumes. We know that these trends aren’t contributing to increased quality and efficiency, in fact they do the opposite. The system isn’t fair to those who need complex imaging, and isn’t efficient either:

- The increasing market share of bulk billing public hospitals and low-quality churn providers is pushing up the bulk billing rate, while clinically-led comprehensive radiology practices are forced to charge gaps to more patients to make ends meet. Basic services may be bulk billed to more patients, but the patients with more serious conditions who need more complex services in clinically-led practices end up subsidising the rest by paying even more. It is the sickest, not the wealthiest, who are cross- subsidising bulk billing for the rest.
- Underfunded services like mammography and image-guided injections and biopsies are very difficult to find bulk billed or at an affordable price – most practices either don’t offer these services at all, or charge high gaps to non-concession patients (and even some concession patients).

There are almost 500 items in the Diagnostic Imaging Services Table, so the overall bulk billing rate is disguising the much lower bulk billing rate for some services. The rates are lower than the rate of concession patients, indicating a lack of bulk billing even for concession card holders. Common services with low bulk billing rates that that ADIA has data on include:

BULK BILLING RATES AND AVERAGE GAPS: SELECTED UNDERFUNDED SERVICES (2014)				
Item	Service	Upfront	Gap	BB %
59300	Diagnostic mammography	\$155	\$79	56%
	<i>X-ray examination of the breasts to confirm whether signs or symptoms in one or both breasts are benign or indicate breast cancer</i>			
55054	Ultrasound-guided interventional procedure	\$178	\$85	45%
	<i>Procedures such as biopsy, fine needle aspiration or injections to manage pain, performed with ultrasound guidance</i>			
55706	17-22 week pregnancy ultrasound	\$224	\$139	51%
	<i>Ultrasound examination to detect foetal abnormalities and monitor foetal growth and well-being</i>			
55707	Pregnancy ultrasound nuchal translucency study	\$220	\$161	27%
	<i>Ultrasound examination to test for chromosomal abnormalities in a fetus</i>			

Source: ADIA analysis of deidentified Medicare data (2014) provided by the Department of Health

### Rebates are flat while costs increase every year

Access Economics found that the shortfall between Medicare rebates and the cost of providing services was \$33 per service in 2008-09; this was a total shortfall of \$570 million across all Medicare- funded radiology services.<sup>2</sup> The shortfall is likely to be higher today because costs continue to rise while rebates are flat – ADIA expects that this will be confirmed by the independent evaluation currently being undertaken of the commercial pressures facing diagnostic imaging providers.

<sup>2</sup> Access Economics (2010), *Funding of diagnostic imaging in Australia: challenges and policy imperatives*, p.3.

Contrary to popular perception it is not high-tech equipment but labour (radiologists, radiographers, sonographers) which is the largest cost in providing a radiology service:

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**MEAN COST AS A % OF TOTAL COSTS BY TYPE, 2008-09<sup>3</sup>**

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Cost type	%
Labour	59%
Capital	20%
Other	21%

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**The need for indexation is urgent**

It was really pleasing that after months of representations by practices and radiologists, the Government acknowledged that “Advancing technology in many areas of the health system creates a much more efficient and automated service, leading to decreased costs. However this is not the case for most diagnostic imaging services which need specialist doctors to supervise the examination and analyse the results, not machines”.<sup>4</sup>

This was a turning point which led to a commitment by the Government to resume radiology indexation when the current GP rebate indexation freeze concludes. This is currently scheduled for July 2020, but the change needs to be implemented urgently in radiology.

**Recommendation**

1. To avoid accelerated growth in patient gaps and reverse the two tiers of patient access and service quality in radiology, announce an early reinstatement of indexation for radiology services. The eighteen-year freeze needs to end now if the Government is serious about Medicare.

## PATIENT INSIGHT:

### BRAIN TUMOUR

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Over 1,700 Australians are diagnosed with brain tumours every year. Early diagnosis is critical because it enables treatment to be more effective and offers a higher chance of survival.

However, cost is a barrier to early diagnosis of brain tumours for many patients under Medicare.

If a 37 year-old man goes to his GP complaining of hand tremors and auditory hallucinations, he is likely to be referred for an MRI of the head. When the patient calls to make a booking, he will be told that the MRI will cost \$509 upfront, and after he receives his rebate from Medicare the gap will be \$165. Many patients faced with a \$500 fee will decide to wait and hope that the symptoms go away.

By not having the MRI, early diagnosis is missed and the brain tumour may be inoperable.

\* Upfront costs and gaps are averages from ADIA analysis of deidentified Medicare data (2014) provided by the Department of Health

<sup>3</sup> Access Economics (2010), *The costs of diagnostic imaging*, p.15.

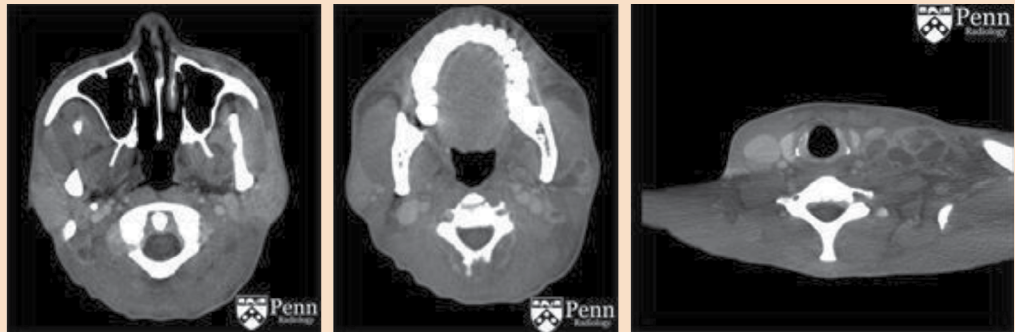
<sup>4</sup> Minister for Health (5 June 2016), *Press release: Coalition plan for access to affordable diagnostic imaging for all Australians*.

## CLINICAL INSIGHT:

### 46 YEAR-OLD MAN WITH ABDOMINAL PAIN, NECK FULLNESS AND WEIGHT LOSS\*

A 46-year-old man is referred by his GP for CT of the neck and chest with contrast, after complaining of three weeks of abdominal pain and left-sided neck fullness, as well as 10 to 15 kilograms of unintentional weight loss over two to three months.

The radiologist would review several thousand images generated by the CT scan:



In this case, the radiologist would consider:

- Whether there is evidence of extensive right-sided cervical lymphadenopathy
- Whether the involved lymph nodes demonstrate rim enhancement
- Whether there is mediastinal and peritracheal lymphadenopathy
- Which vascular structures are compressed by the nodal process seen in the images
- Which glands involved are affected by the nodal process

After considering those clinical questions, the radiologist would consider a range of potential diagnoses:

- Tuberculous cervical lymphadenitis
- Suppurative lymph nodes
- Non-Hodgkin's lymphoma
- Squamous cell carcinoma with nodal metastases
- Papillary thyroid cancer with nodal metastases
- Infectious mononucleosis

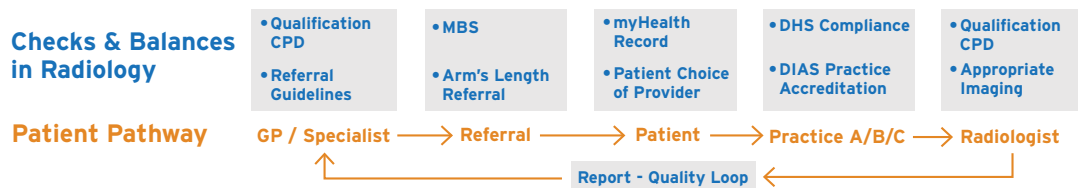
Diagnosis in written report: Tuberculous cervical lymphadenitis

\* Based on case study by Dr Teresa Martin-Carreras, University of Pennsylvania Department of Radiology, Retrieved from <http://www.auntminnie.com>.



## 2. ADDRESS UNDERLYING STRUCTURAL ISSUES TO MAKE THE SYSTEM WORK FOR PATIENTS, PROVIDERS AND GOVERNMENT

The underlying Medicare framework for radiology is a sound one, with built-in checks and balances designed to ensure that patients are only referred for the radiology they need.



We therefore need to make sure that the checks and balances are supported by sensible policy and adequate funding, so that the system works for patients, taxpayers and providers. This Budget submission highlights some of the problem areas that the Government should prioritise for reform.

### 2.1 IMPROVE ACCESS AND AFFORDABILITY FOR PATIENTS

In a fair Medicare system, cost would not dictate who gets the health care they need, but the Australian Bureau of Statistics (ABS) estimates that around 300,000 patients delayed or did not have an imaging service in the last twelve months because of cost.

Less than one-quarter of radiology services attract a gap, yet the ABS data shows that these gaps are discouraging a significant number of patients from having services recommended by their doctor. 3.8% of all patients are delaying or not having radiology at all because of cost – that represents about 12% of the patients who are asked to pay a gap for radiology.

#### WHETHER DELAYED HAVING OR DID NOT HAVE IMAGING TEST BECAUSE OF COST IN THE LAST 12 MONTHS<sup>5</sup>

	15-34	35-64	65+	Total
Delayed having or did not have imaging test because of cost	96,200 (4.6%)	156,300 (4.4%)	22,400 (1.3%)	277,300 (3.8%)

The statistics are particularly concerning because it is younger patients who are most likely to delay or forego radiology services at the highest rates, and at even higher rates than patients delaying or not going to the GP at all when they need to.<sup>6</sup> These are the patients who have the best chance to successfully treat chronic and serious conditions if diagnosed early, but by not presenting for radiology they are likely to need more complex and expensive treatment with slimmer chances of success.

Combined with patients who delay seeing their GP when they need to, it paints a troubling picture of health costs dictating outcomes for some patients. Both the patient and the broader health system lose out when early diagnosis and treatment opportunities are missed. A University of Sydney study found that 8.8% of GP visits result in the patient being referred for imaging<sup>7</sup>, which is about 60,000 patients per year who don't get the imaging they need because they didn't go to the GP.

This means that well over 330,000 patients each year are not being diagnosed – the impact of the indexation freeze on the ongoing effectiveness of Medicare is alarming.

<sup>5</sup> ABS (2016), Customised report.

<sup>6</sup> Based on ABS (2016), Patient Experiences in Australia: Summary of Findings, 2015-16, 'Table 5.2 Persons 15 years and over, Experience of GP services in the last 12 months by age and sex: Estimate', data cube: Excel spreadsheet cat.no. 4839.0.

<sup>7</sup> Britt et al (July 2014), *Evaluation of imaging ordering by general practitioners in Australia, 2002-03 to 2011-12, General practice series no.35*, Sydney University Press, p.22.

### Patients pay the full cost of the service upfront

While high gaps are a barrier for patients needing a radiology service their doctor recommends, the barrier is exacerbated by Medicare rules. When a practice charges a gap (even a gap as little as \$5), patients need to pay the full cost of the service upfront before they can claim their rebate from Medicare – this can be hundreds of dollars for complex services like CT, nuclear medicine and MRI. This makes access to radiology very difficult for vulnerable patients who need clinically complex services which aren't available bulk billed.

#### AVERAGE UPFRONT COST PER SERVICE (2015-16)

Ultrasound	CT	X-ray	NM	MRI	Total
\$210.13	\$442.47	\$100.66	\$470.75	\$540.83	\$217.33

Source: ADIA analysis of statistics provided by the Department of Health

A patient referred for a combined stress and rest test by her GP booked in at an ADIA member practice in Brisbane, but the day before the service called to cancel. She did this twice more, before the practice manager called to enquire as to why she had cancelled the appointment three times. The patient explained that each time she made a booking she would try to save up enough cash to pay the cost of the service upfront (over \$1,050) but would cancel when she realised she couldn't afford to.



In comparison, the average upfront cost for a GP service is \$79, and the Easyclaim billing system is very efficient, with patients being reimbursed instantly by Medicare. This is a far less onerous access barrier for patients.

HICAPS is a payment system which processes private health insurance claims. The system calculates the rebate to be paid by the insurer, which is paid directly to the provider, and requires the patient to pay only the 'gap'.

Financially disadvantaged patients would benefit from being able to pay just the gap upfront, with the provider claiming the Medicare rebate directly under a HICAPS-style system. It is a strange anomaly that patients with private health insurance can pay just the gap at their dentist or physiotherapist through HICAPS, but can't do the same when they need high-cost radiology services – the current system actually discriminates against patients who don't have the capacity to pay large cash amounts on the day.

In assessing the current system, Deloitte Access Economics (2016) noted that the gap upfront model particularly hurts vulnerable patients:

*Overall the full cost up-front payment model is inconvenient for consumers; it results in a more opaque payment model than would otherwise be available; it increases administrative burden ('red tape') through the processing of post-transaction rebates; it disproportionately affects lower-income earners; it is more likely to be confusing for some consumers, particularly those with limited understanding of English or low education levels; and it may lead to adverse outcomes by pushing more patients towards the public hospital system or discouraging them from accessing a DI service. These effects are more pronounced in DI relative to other health services because imaging can be costly, and multiple services can be required concurrently.<sup>8</sup>*

<sup>8</sup> Deloitte Access Economics (2016), *Mind the gap: consideration of an up-front gap only payment model in diagnostic imaging*, p.6



Deloitte also found that due to competition in the radiology sector, a HICAPS-style billing model would not put inflationary pressures on the gaps that patients pay:

*... removing full cost up-front payments for DI services would not be expected to put inflationary pressure on prices. Payment of the gap (alone) up-front is not inflationary as there is effective competition in the sector.<sup>9</sup>*

#### Many services aren't funded by Medicare at all

The MBS has not kept pace with constant advances in technology because the MSAC process is lengthy and imposes very high hurdles for services to be listed. The following radiology services are 'standard of care' and routinely requested by specialists (who refer at arm's length, that is, they have no financial interest in the examination as it is performed at a radiology practice), but are not eligible for Medicare rebates:

#### EXAMPLES OF UNFUNDED SERVICES WHICH PATIENTS ARE FORCED TO FUND THEMSELVES<sup>10</sup>



#### Prostate cancer MRIs saving lives – but only if you can pay



#### Breast cancer patients denied Medicare rebate on vital MRI scans

WOMEN with breast cancer are being denied a Medicare rebate for expensive MRI scans which others with football injuries, headaches and back pain receive.



#### Cancer patient Tracey Ryan's \$60,000 bill for cancer that forced her to raid her superannuation

Tracey Ryan was diagnosed with breast cancer in February 2010. It has since spread to her bones, spine, lungs and liver and she says she was completely unprepared for how much it would cost her.

She needs a PET scan costing \$800 every three months and an MRI costing \$600 every three months, neither of these scans attracts a Medicare rebate.

When a service or procedure isn't funded by Medicare, patients either fund the service themselves (this can be up to \$1000 or more) or miss out. Again, cost is dictating the standard of health care that Australians can access when they get sick.

<sup>9</sup> Deloitte Access Economics (2016), *Mind the gap: consideration of an up-front gap only payment model in diagnostic imaging*, p.6

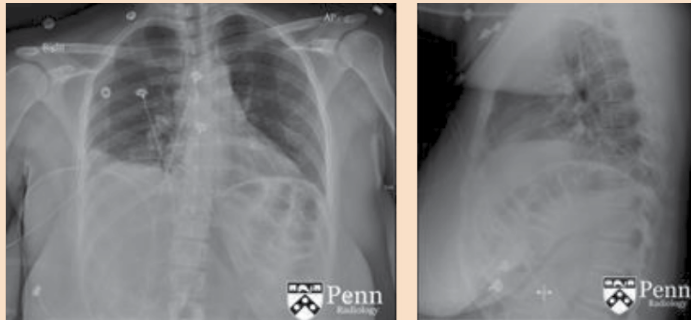
<sup>10</sup> Young, E. "Prostate cancer MRIs save lives – but only if you can pay", WA Today, 9 September 2016; Dunlevy, S. "Breast cancer patients denied Medicare rebate on vital MRI scans", *news.com.au*, 26 December 2015; Dunlevy, S. "Cancer patient Tracey Ryan's \$60,000 bill for cancer that forced her to raid her superannuation", *news.com.au*, 19 July 2014.

## CLINICAL INSIGHT:

### 30 YEAR-OLD WOMAN WITH PALPITATIONS, ORTHOPNOEA AND PLEURITIC CHEST PAIN\*

A 30-year-old woman is referred for x-ray of the chest after two to three days of palpitations, orthopnea (shortness of breath when lying flat), and pleuritic chest pain. Her past medical history is significant for obesity and oral contraceptive use; she travelled to South America five weeks prior and had an abdominoplasty and buttock implants.

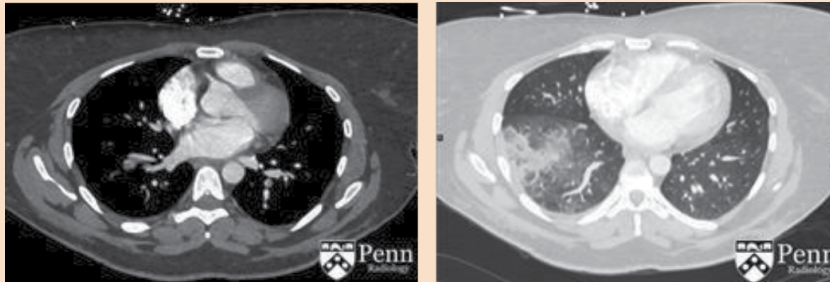
The radiologist would review images generated by the x-ray:



In this case, the radiologist would consider:

- Which lobe the abnormality is found in
- What does the opacity most likely represent
- Whether further imaging or other diagnostic tests are necessary for diagnosis

The radiologist consults with the referring GP, who requests an additional CT of the chest with contrast:



The radiologist would review the chest CT images, and consider whether:

- There is evidence of a saddle embolus.
- The presence of a Hampton hump is diagnostic for a pulmonary embolism.

After considering those clinical questions, the radiologist would consider a range of potential diagnoses:

- Pulmonary emboli
- Atelectasis
- Pneumonia

Diagnosis in written report: Right lower lobe pulmonary emboli with pulmonary infarct

\* Based on case study by Dr Erica Alexander, University of Pennsylvania Department of Radiology, Retrieved from <http://www.auntminnie.com>.

### Reforms to the Medicare Safety Net will hurt radiology patients

Most radiology services occur early in the patient journey, aiding diagnosis which then leads to treatment. The Medicare Safety Net is designed to assist patients who encounter high out-of-pocket costs, however because many patients haven't reached the Safety Net threshold when they have the service, they aren't eligible for Safety Net assistance.

The new Medicare Safety Net announced in the 2014-15 Budget but not yet implemented is very concerning for radiology patients:

- Greatest Permissible Gap (GPG) – For expensive medical services the difference between the Medicare rebate (85%) and the Schedule fee can be very significant. Currently, the GPG rule reduces the difference to \$76.20 by increasing the rebate. This is an important safety net for radiology patients, because radiology has a large number of high-cost services to which the GPG applies. The GPG supports bulk billing and keeps gaps down.

The new Medicare Safety removes the GPG protection, which will significantly cut the rebates for high cost CT, angiography, nuclear medicine and some MRI services.

Unfortunately, these rebate reductions will have to be passed on to patients and many are likely to decide that they simply can't afford to be diagnosed.

#### CASE STUDIES: SERVICES AFFECTED BY REMOVAL OF THE GREATEST PERMISSIBLE GAP

Service	Services in 2015-16	Rebate cut	Role of examination and who will be affected?
57360 CT coronary arteries	50,945	↓ \$25.50	Early intervention for patients with cardiovascular disease allows the best treatment.
61384 Radionuclide colonic transit study	1,332	↓ \$23.65	Slow colonic transit (constipation) is readily treatable with specific drugs and sometimes surgery, but requires definitive diagnosis.
61307 Combined stress and rest study with single proton emission tomography	70,119	↓ \$45.70	Patients with ischaemic heart disease (reduced blood supply to the heart). The study is used to depict the perfusion defect to indicate which vessel(s) are responsible for ischaemia.
61620 PET staging of Hodgkin's or non- Hodgkin's lymphoma	4,091	↓ \$63.45	Essential for staging and monitoring treatment. Drug treatment responses may be entirely dependent on the PET response.
61553 PET malignant melanoma	8,796	↓ \$70.35	Patients either recently diagnosed with malignant melanoma or for review of treatment.
63464 MRI high-risk breast cancer detection	4,096	↓ \$24.00	Patients with genetic risk of breast cancer, or who have multiple family members with breast or ovarian cancer.

- Safety Net benefit cap – The new Medicare Safety Net reduces the gaps which can be recovered by the Safety Net from a total benefit of 300% of the Schedule fee to 150% of the Schedule fee for any Medicare item. ADIA understands that this measure was designed to address instances of overcharging by some specialist groups, and was not targeted at radiology.

“Many patients will decide that they can't afford to be diagnosed.”

The average gaps that patients are paying for the most common services – x-ray and ultrasound – will not be covered by the new Safety Net total benefit of 150%. Many patients will decide that they can't afford to be diagnosed.

RADIOLOGY MODALITIES WHICH EXCEED THE BENEFIT CAP				
	Patients who paid a gap in 2015-16	Average Schedule fee	Average gap	Total benefits payable as % of Schedule fee
X-ray	2.6 million	\$56.68	\$52.48	193%
Ultrasound	2.2 million	\$122.89	\$105.68	178%

#### Access to MRI services is restricted

Unlike other radiology modalities, Medicare-eligible MRI services are limited to machines which are 'licenced'. This means that if patients want to be eligible for a Medicare rebate they cannot go to any MRI provider of their choice; they must attend a provider with a licenced MRI. There is no clinical basis for this policy.

Patients referred for MRI by specialists are particularly limited, because only MRI machines with 'full' licences can provide Medicare-eligible services.

#### Rural and remote radiology

The model of radiology service provision in rural and remote areas is different to metropolitan areas. Due to workforce issues, it is not realistic for radiologists to be available on-site in all rural practices, so providers have innovated using technology to enable radiologists to supervise and report examinations remotely. However, the range of services available is limited compared to practices in metropolitan areas, and patients often need to travel to a regional centre or major city when they require more complex imaging.

Like metropolitan practices, rural and remote practices need to provide sufficient volumes of services to remain viable and maintain access to radiology in their communities. This is more difficult for rural and remote practices because they tend to service smaller populations, so the likely impact of proposed changes to Medicare funding and rules on these practices needs careful consideration.

#### The MBS Review is ignoring the serious issues for patients in radiology

ADIA supports the work of the MBS Review, which is a significant opportunity to reform the Medicare Benefits Schedule and make sure that it reflects contemporary clinical practice and improves patient outcomes. However, the Review is only considering options for savings and has ignored the indexation freeze, fee shortfalls and inappropriate rules which are very evident in radiology.

Accordingly, in early 2016 (in conjunction with the Royal Australian and New Zealand College of Radiologists, Breast Cancer Network Australia and Breast Surgeons of Australia and New Zealand) ADIA recommended to the Minister for Health and the MBS Review Taskforce that the Review consider issues from a patient perspective.

The initial focus would be a Pilot Study of funding and rules for radiology items used to diagnose breast cancer. This is an ideal patient group to consider, because breast cancer patients face a journey through diagnosis, treatment and monitoring is often inefficient, expensive and frustrating - and the issues they face are relevant to other patient groups.

## RECOMMENDATIONS

2. Better billing rules – To protect patients from needing to pay hundreds or thousands of dollars to access radiology, amend Medicare rules and systems to allow patients to pay just the gap upfront through a HICAPS-style billing system.
3. Better MSAC rules – To stop patients missing out on clinically appropriate services recommended by their doctor, review the process and criteria that MSAC uses to determine its recommendations to the Government for radiology services. The guiding principle should be that services which are referred for by specialists at arm's length in significant volumes (i.e. have become 'standard of care') should be listed on the MBS and available to all Australians, not just those that can afford high-cost care. MRI is a mainstream modality and should be more widely available.
4. Better Safety Net rules – To ensure that vulnerable patients referred for radiology are not disadvantaged by the new Medicare Safety Net, the Greatest Permissible Gap should be retained and a 300% benefits cap for radiology should be incorporated into the design.
5. Patient-focussed MBS Review – To establish a clear focus on how Medicare can be improved for patients, the MBS Review should establish working groups with the direction to recommend reforms that deliver better and more streamlined care. This program should commence with a Pilot Study into how breast cancer imaging items, funding and rules could be better directed to support a less challenging patient journey for breast cancer patients.

## PATIENT INSIGHT:

### APPENDICITIS

Around 30,000 Australians are diagnosed with acute appendicitis each year. Early diagnosis of appendicitis can avoid perforation of the appendix (where it bursts or ruptures), which often leads to sepsis and further consequences; and can save the patient emergency surgery, a long hospital stay and long recovery.

However, cost is a barrier to early diagnosis of appendicitis for many patients under Medicare.

If a 39 year-old male goes to his GP suffering ongoing abdominal pain, he is likely to be referred for an ultrasound to locate the source of the pain and rule out an infection. The ultrasound will cost the patient \$174 upfront, and after he receives his rebate from Medicare the gap is \$80.

If the ultrasound results are inconclusive, the GP will usually refer him for a CT. However, when the patient calls to make a booking, he will be told that the CT will cost him \$597 upfront, with a gap of \$189. With costs adding up, many patients will decide not to have the CT and hope for the best.

If the patient does have appendicitis, he has missed the opportunity for early treatment, and will require an emergency appendectomy (removal of the appendix) when it bursts or ruptures.

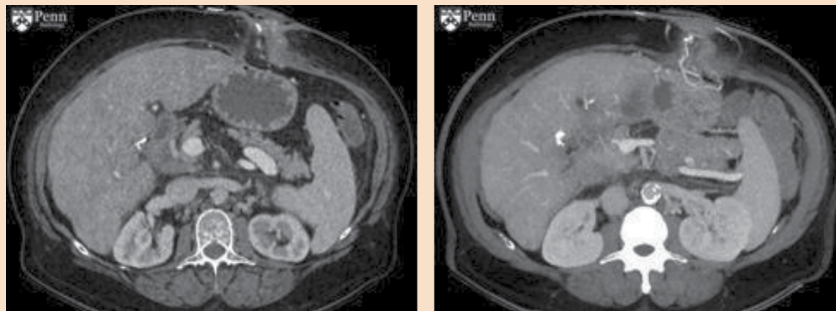
\*Upfront costs and gaps are averages from ADIA analysis of deidentified Medicare data (2014) provided by the Department of Health

## CLINICAL INSIGHT:

### 52-YEAR-OLD MAN WITH BLEEDING STOMA\*

A 52-year-old man is referred for CT of the abdomen and pelvis with contrast after presenting with a history of cryptogenic cirrhosis and diverting colostomy visits with bleeding from the left midabdominal stoma. Physical examination demonstrates diffuse fullness and venous oozing around the stoma site.

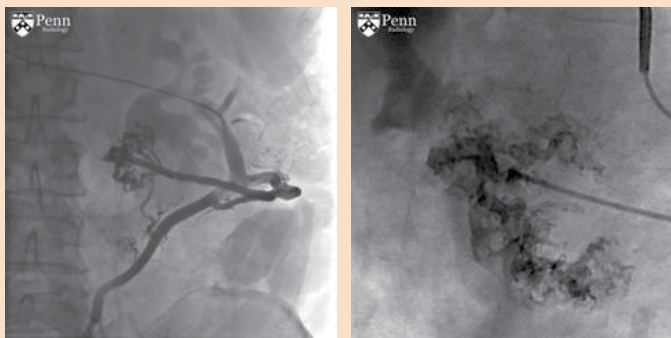
The radiologist would review images generated by the CT scan:



In this case, the radiologist would consider whether:

- There are enhancing vessels within the stoma
- There is small-volume ascites

The radiologist then conducts catheter angiography, which involves guiding a catheter into the area being examined, injecting contrast material into the area, and then capturing images. Images of stomal varices are shown below:



The radiologist performs an interventional procedure called sclerotherapy, which involves filling varicose veins with sclerosant (a mixture of air, sodium tetradecyl sulfate, and lipiodol) to eliminate them.

After considering those clinical questions, the radiologist would consider a range of potential diagnoses:

- Stomal varices
- Parastomal hernia
- Stomal prolapse
- Stomal stenosis
- Peristomal dermatitis

Diagnosis in written report: Stomal variceal bleeding

\* Based on case study by Dr James Chen and Dr Jeffrey Forris Beecham Chick, University of Pennsylvania Department of Radiology, Retrieved from <http://www.auntminnie.com>.

## 2.2 IMPROVE AFFORDABILITY FOR THE GOVERNMENT

In a constrained fiscal environment, the Government needs to direct Medicare funding to its most effective uses, by supporting quality services and improving the appropriateness of radiology services.

### Non-arm's length referral increases inappropriate imaging and churn

Arm's length referral is a pillar of appropriate imaging, as it ensures that the practitioner referring for imaging does not have a financial interest in the service being performed.

Existing prohibited practices legislation (introduced in 2008) was designed to prevent referrers from asking for or receiving benefits in exchange for requesting radiology services. However, the legislation goes short of addressing a broad range of ongoing conflicts of interest in referral practices which are prevalent in services funded under the DIST.

Studies from the United States have shown that physicians are as much as 200 per cent more likely to request imaging performed by their own practice, than physicians referring to separate practices (arm's length referral).<sup>12</sup>

Arm's length referral is an important check and balance in a Medicare system funded by scarce taxpayer dollars.

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Ultrasound is a cost-effective modality for diagnosing a range of conditions. For example, patients with severe abdominal pain can be referred for an ultrasound where their GP suspects gallstones. Ultrasound is widely available, accurate for initial diagnosis of gallstones, and does not expose the patient to ionising radiation.

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This makes it all the more important that diagnostic ultrasound rebates are increased so that bulk billing rates increase and gaps can be reduced. It is a front-line service, so delay in diagnosis caused by high gaps needs to be avoided.

### Point of care ultrasound is remunerated excessively

Point of care ultrasound is ultrasound provided as an adjunct to a specialist consultation or to guide procedures. It is a more limited service than a comprehensive diagnostic imaging examination, yet it attracts the same Medicare rebates as full diagnostic ultrasound services provided in radiology practices. This problem has been known by Government since 2011.

Point of care ultrasound is the main reason for ultrasound services growing by an average 7.5% (services) and 7.6% (benefits) in the last five years. This compares to total growth in radiology, which is 5.3% (services) and 7.1% (benefits). In a report prepared for the Department of Health in 2011, Aspex Consulting identified point of care ultrasound as an area of growth due to changes in medical practice:

*"Whilst a number of specialist diagnostic ultrasound investigations will continue to be required (and performed) by a range of medical specialists, the increasing application of ultrasound as an adjunct to specialist clinical examinations, and to enhance the precision of a range of specialist clinical procedures is anticipated to increase.*

*Basic analysis of the costs of Medicare claims data confirms that the rate of ultrasound use by a range of different medical specialists is increasing"*

Ultrasound is the most underfunded modality, with the lowest bulk billing rate (72.6%) and average gaps of \$106 in 2015-16. This is an important service because it is often the first radiology service that a patient is referred for, used as a triage to ascertain whether the patient is unwell and whether further information will be required using more complex examinations.

## RECOMMENDATIONS

6. Arm's length referral – To address growth in non-arm's length referred radiology services, close the loopholes in prohibited practices legislation that permit referral even when the referrer has a pecuniary interest in the radiology provider delivering the service. This would ensure that all services are referred for at arm's length from the provider of the service, therefore improving the appropriateness of services and generating savings by removing incentives for churn and repeat imaging.
7. Refocus the scope of diagnostic ultrasound – To reduce the fiscal risks associated with overpaying for high-growth point of care (POC) ultrasound services, diagnostic ultrasound services should be better defined to exclude POC ultrasound, in line with the recommendations of the Diagnostic Imaging Advisory Committee. The savings from this measure should be reinvested into diagnostic ultrasound rebates to make quality, efficient services more accessible for patients.

<sup>11</sup> Aspex Consulting (October 2011), *Use of ultrasound by (non-radiology) medical specialists across Australia: Final Report*, pp.111-5.

<sup>12</sup> Scott Gazelle et al. "Utilization of Diagnostic Medical Imaging: Comparison of Radiologist Referral versus Same-Specialty Referral", *Radiology* 2007(2), 517-522.

“...the growth in the public sector share of outpatient services is a significant problem for the Budget.”

### 2.3 SUPPORT THE VIABILITY OF PRIVATE RADIOLOGY PROVIDERS

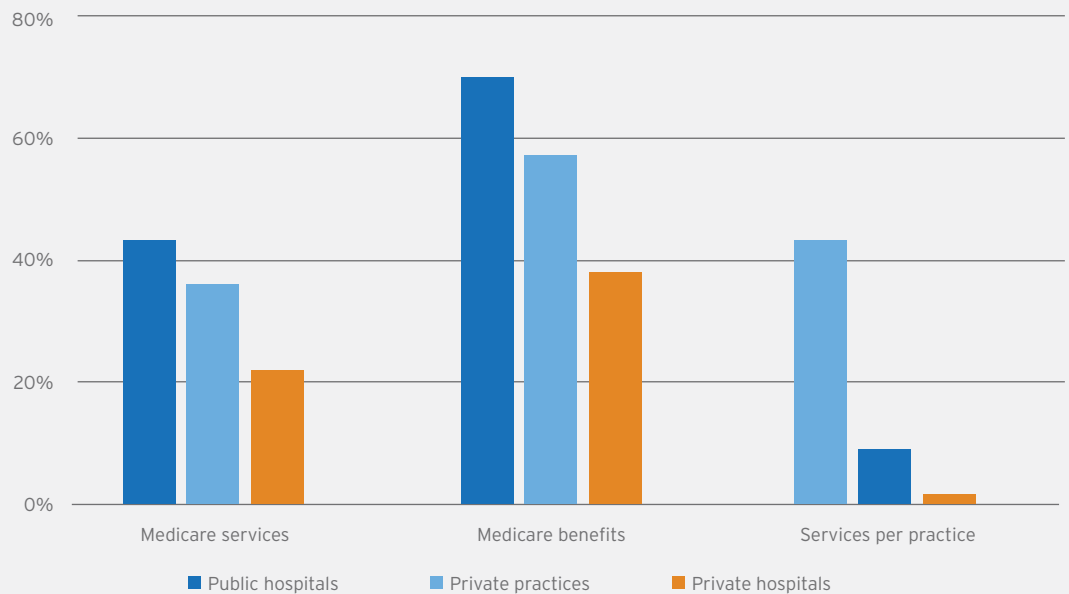
Public hospitals are effectively funded twice to deliver radiology services to outpatients (through Medicare benefits and the Australian Health Care Agreement), which is an inefficient use of taxpayer dollars and gives public providers an unfair competitive advantage over private practices.

The competitive advantages enjoyed by public hospitals over private practices when performing Medicare-funded outpatient services include<sup>13</sup>:

- Premises, equipment and staff are funded by hospital funding through the Australian Health Care Agreement
- Employee-related tax exemptions and concessions
- Hospitals are not required to achieve a commercial rate of return for services to outpatients

These advantages allow public hospitals to bulk bill most outpatient services at significant profit margins, because the cost of delivering the service is already paid for. As a result many have chosen to aggressively target Medicare-funded patients, and previous ADIA analysis showed that public hospitals were the fastest growing provider type between 2004-05 and 2010-11. Anecdotal evidence suggests that this trend has continued, however detailed data on growth by provider type is not currently available.

**GROWTH IN BENEFITS AND SERVICES BY PROVIDER TYPE, 2004-05 TO 2010-11**



Source: ADIA analysis of Medicare data provided by the Department of Health

Every service performed in a public hospital rather than a private practice means additional costs to the taxpayer, because those services are effectively paid for twice. This means that the growth in the public sector share of outpatient services is a significant problem for the Budget.

These distortions in the market reduce the efficiency of private providers, because equipment is under-utilised due to competition from public hospitals that provide free bulk billed services. Most public hospitals have introduced incentive arrangements for radiologists to undertake Medicare-funded work through Rights of Private Practice, which can lead to prioritising outpatients over caring for hospital inpatients. ADIA has been provided with numerous case examples of public hospitals that subject inpatients to long waiting lists for MRI and other complex services, while outpatients (who attract Medicare funding) are given appointments within a day or two.

<sup>13</sup> Verve Economics (2014), *Competitive neutrality issues within provision of outpatient diagnostic imaging services in public hospitals: a submission to the Harper Review*.



**RECOMMENDATION**

8. Efficient competition – It is not realistic to expect both public and private radiology providers to be viable and efficient if public hospitals are paid more to bulk bill and private providers are restricted to frozen Medicare rebates and are forced to charge high gaps to patients. Therefore, appropriate roles and funding settings need to be clarified for the public and private sectors, including a framework for effective competition that supports efficient provision of radiology by public and private providers. This framework should include the Department of Health working with the sector to understand the pernicious impact on patients of the current model and monitoring growth in the provision of radiology services by the public and private sectors.

**2.4 MAKE QUALITY RADIOLOGY SERVICES AVAILABLE TO ALL PATIENTS****Medicare regulations do not support the pivotal role of radiologists in quality care**

Policy and funding settings need to reflect that radiology is not a commodity, it is a specialist medical service for which 60% of the service costs are professional costs – radiologists and allied health professionals. Consistent with being a specialist medical service, Medicare funding should promote value-adding activities by radiologists and practices, so that all patients have access to their professional expertise when it is clinically necessary.

Clinical leadership of radiology services is a crucial pre-requisite to quality, and an on-site radiologist does more than merely interpreting and reporting examinations: among many clinical tasks they supervise and monitor studies, perform image-guided interventional procedures; and ensure that the requested service is appropriate to answer the clinical question posed by the referrer. This leadership role directly impacts upon and improves patient care.

**The Evolving Role of the Radiologist: The Vancouver Workload Utilization Evaluation Study<sup>14</sup>**

“Radiologists spent 36.4% of their time on image interpretation. The proportion of noninterpretative tasks was 43.8%, which includes activities such as protocolling requisitions, supervising and monitoring studies, performing image-guided procedures, consulting with physicians, and directly caring for patients. Total clinical productivity was 87.7%, and radiologists experienced, on average, 6 interactions per hour with other health personnel, of which over 81.2% directly influenced patient care in real time.”

Radiologists also consult with referrers, which is a key indicator of quality practice. Patients benefit directly through improved appropriateness of imaging and more accurate reports. However, radiologists are not paid by Medicare for this service, despite it being essential in many cases for patients to get the best care.

In its pre-election agreement with ADIA, the Government committed to implement the first phase of the Royal Australian and New Zealand College of Radiologists’ recommendations under the Quality Framework, which relate to clinical leadership of radiology services. The first stage of the Quality Framework will clarify professional supervision rules for CT services and contrast administration.

The best setting for radiologists to add value to patient care is in comprehensive practices, which provide a minimum of x-ray, ultrasound and CT (many also offer MRI). This means that radiologists can substitute a more appropriate imaging test (in consultation with the referrer) if necessary, as well as provide a broad range of services including interventional procedures. This is more convenient for patients and more efficient for Government, a true quality service which is the opposite of ‘churn’ medicine.

<sup>14</sup>Dhanoa et al. “The Evolving Role of the Radiologist: The Vancouver Workload Utilization Evaluation Study”, *J Am Coll Radiol* 2013(10), 764-769.

Comprehensive practices led by a radiologist create value for patients and Government, minimise waste, and are where Medicare funding should be targeted to maximise efficiency.

**The sector needs to be supported to embrace e-Health solutions**

With the Australian Digital Health Agency progressing roll-out of the myHealth Record, including access to radiology reports on the Record, it is unclear how radiology practices will participate. Unlike for GPs, there is currently no incentive scheme or remuneration arrangement to support practices to upload radiology reports onto the Record.

**RECOMMENDATIONS**

9. Quality Framework – To address the trend towards churn-style radiology practice with minimal clinical input, continue working with the sector to implement the Quality Framework for Diagnostic Imaging. This includes developing appropriate professional supervision rules for ultrasound to reflect the range of delivery models now operating in quality practices across metropolitan, regional and rural Australia.
10. Digital health – Work with the radiology sector to develop support and incentives for increased participation by radiology practices in the myHealth Record.

**PATIENT  
INSIGHT:**

**MULTIPLE SCLEROSIS**

23,000 Australians are affected by multiple sclerosis (MS) every year. Early diagnosis of MS gives the opportunity for treatment which can ease the symptoms and slow progress of the disease. However, cost is a barrier to early diagnosis of MS for many patients under Medicare.

If a 28 year-old woman goes to her GP with intermittent muscular spasms, pins and needles and loss of balance, the GP may suspect early symptoms of MS. However, only specialists can refer for MRI to diagnose MS, so the GP will refer the patient to a neurologist. The patient may have to wait for an appointment, which will cost her \$210 upfront, with a gap of \$81 once she receives her rebate from Medicare.

The neurologist will refer the patient for an MRI of the spine for demyelinating. However, when the patient calls to make a booking, she will be told that these services will cost her \$518 upfront, with a gap of \$213 once the rebate comes from Medicare. Many patients will decide to not have the MRI, and hope that the symptoms go away.

The opportunity for early diagnosis of MS will be missed.

\*Upfront costs and gaps are averages from ADIA analysis of deidentified Medicare data (2014) provided by the Department of Health

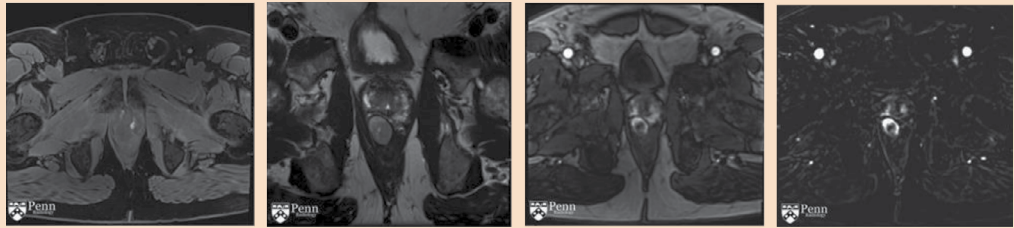
<sup>13</sup> Verve Economics (2014), *Competitive neutrality issues within provision of outpatient diagnostic imaging services in public hospitals: a submission to the Harper Review*.

## CLINICAL INSIGHT:

### 70-YEAR-OLD MAN WITH ABNORMAL DIGITAL RECTAL EXAM\*

A 70-year-old man is referred for MRI of the prostate after his GP found a nodule during a digital rectal exam.

The radiologist would review images generated by the MRI scan (this service is not funded by Medicare):



In this case, the radiologist would consider:

- Whether the mass demonstrates heterogenous enhancement
- The cause of areas of high T1 signal in the prostate
- Which body part the mass arises from

After considering those clinical questions, the radiologist would consider a range of potential diagnoses:

- Lymphoma
- Prostatic adenocarcinoma
- Rectal adenocarcinoma
- Rectal gastrointestinal stromal tumor

Diagnosis in written report: Rectal gastrointestinal stromal tumor

\* Based on case study by Dr Darshan Patel, University of Pennsylvania Department of Radiology, Retrieved from <http://www.auntminnie.com>.



### 3. IMPLEMENTING THE GOVERNMENT'S PRE-ELECTION AGREEMENT WITH ADIA

In June 2016, the Minister for Health announced<sup>15</sup> that pursuant to an agreement reached with ADIA, a returned Turnbull Government would commission an independent evaluation, in consultation with the radiology sector, into the broader commercial environment, including cost pressures, of comprehensive diagnostic imaging practices.

The Government recognised that Medicare fees for some items do not reflect the cost of delivering the service, that costs are increasing in radiology because of the need for specialist involvement in every service, and that the commercial and regulatory environment in radiology is unique and requires structural reform. The Government committed to:

- ensure that diagnostic imaging indexation resumes when the current GP rebate indexation freeze concludes;
- delay the implementation of cuts to bulk billing incentives for non-concession card holders to allow for the evaluation to be completed and the outcomes implemented. These cuts are currently scheduled to commence on 1 July 2017, with investment estimated to be worth as much as \$50 million per year to be targeted to help improve patient access to affordable and safe radiology services to be introduced concurrently;
- introduce the Quality Framework based on the Royal Australian and New Zealand College of Radiologist's recommendations, including for CT imaging, to ensure patients are receiving high quality and safe services; and
- work with the diagnostic imaging sector to deal with broader issues in the sector, including structural reform to address roadblocks to improved efficiency.

ADIA is pleased that the Government is committed to structural reform of radiology under Medicare, and considers that a collaborative approach between the Government and the sector is the most effective means of addressing the issues highlighted in this Submission.

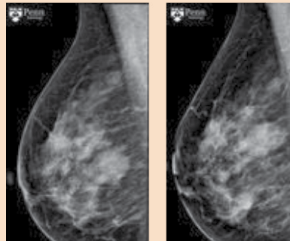
<sup>15</sup> Minister for Health (5 June 2016), *Press release: Coalition plan for access to affordable diagnostic imaging for all Australians*.

## CLINICAL INSIGHT:

### 41-YEAR-OLD WOMAN WITH PALPABLE BREAST LUMP\*

A 41-year-old woman is referred for a mammogram after attending her GP with a palpable, nontender right breast lump.

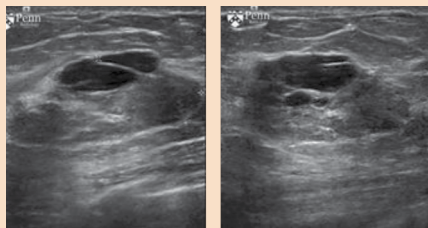
The radiologist would review images generated by the mammogram:



In this case, the radiologist would consider:

- Whether the mass is located in the lateral breast
- Whether the mass is hyperdense
- Whether the margins are circumscribed
- The most appropriate Breast Imaging-Reporting and Data System score based on the images

The radiologist consults with the referring GP, who requests a breast ultrasound and core biopsy (the patient would need to fund the core biopsy privately because Medicare rules do not allow rebates to be paid for two ultrasound services on the same day):



The radiologist would review the ultrasound images, and consider whether the 3.5m mass:

- Demonstrates complex cystic and solid components
- Demonstrates posterior acoustic shadowing
- Is antiparallel in orientation

An ultrasound-guided core biopsy is performed, and the corresponding pathology report described a network of slit-like spaces lined by myofibroblasts with intervening collagen. Immunohistochemistry was positive for vimentin, CD34, BCL2, and CD99.

After considering the clinical questions and pathology findings, the radiologist would consider a range of potential diagnoses:

- Pseudoangiomatous stromal hyperplasia
- Asymmetric glandular parenchyma
- Fibroadenoma
- Phyllodes tumor
- Fibroadenolipoma
- Low-grade angiosarcoma
- Stromal fibrosis

Diagnosis in written report: Pseudoangiomatous stromal hyperplasia

\* Based on case study by Dr James Chen, University of Pennsylvania Department of Radiology, Retrieved from <http://www.auntminnie.com>.



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