

SUBMISSION TO THE SENATE INQUIRY INTO OUT-OF-POCKET COSTS IN AUSTRALIAN HEALTHCARE

Australian Diagnostic Imaging Association

ADIA represents medical imaging practices throughout Australia, both in the community and in hospitals. It promotes the ongoing development of quality accreditation standards and appropriate funding settings so that Australians can have affordable access to quality medical imaging services. This supports medical imaging's central role in the diagnosis, treatment and management of a broad range of conditions in every branch of medicine.

MAY 2014



ADIA Submission: Senate Inquiry into out-of-pocket costs in Australian healthcare

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Every year, diagnostic imaging helps literally millions of ill, injured and scared Australians from across the country. Every day, it saves lives and money through early detection, better treatment and improved surgery. But this essential service is fast becoming unaffordable - particularly for those who need it most.



20 MILLION IMAGING PROCEDURES A YEAR

- Positron Emission Tomography (PET)
- Ultrasound
- MRI
- General X-ray
- Multi Slice CT Scan
- Mammography
- DEXA (Bone Densitometry) Scan
- Fluoroscopy
- Nuclear Medicine
- Alzheimer's Disease
- Arthritis
- Bone fractures
- Cancer
- Cerebral Palsy
- Chronic Pain
- Colitis
- Crohn's Disease
- Cystic Fibrosis
- Dementia
- Diabetes
- Epilepsy
- Heart Disease
- Kidney Disease
- Lung Conditions
- Motor Neurone Disease
- Multiple Sclerosis
- Osteoporosis
- Parkinson's Disease
- Pregnancy
- Sleep Disorders
- Soft Tissue injuries
- Spina Bifida
- Stroke

Universal access to diagnostic testing and screening is one of the cornerstones of illness prevention and early treatment limiting the impact of illness on the individual and community.

- Brett, Awaiting Diagnosis, NSW 2260.

Indexation is a fair and honest method to keep up with costs and provide better service for a very essential service to modern day human health.

- Roy, Prostate Cancer, Arthritis, Diabetes, Kidney Disease, QLD 4680.

As an ageing Australian this issue (indexation) is important to me.

- Judy, Arthritis, SA 5165.

Sometimes my healthcare is left unattended because of the cost.

- Christine, Arthritis, VIC 3216.

I am on a pension however with the amount of testing I need to have due to my cancer the gaps all add up. I am holding off an MRI at the moment because of the cost.

- Lenna, Breast Cancer, SA 5095

Medical imaging is one of the essential elements of the medical industry - it is one of the great "medical marvels" - imaging should be indexed as are parliamentary (super) pensions.

- Robert, Prostate, Heart Disease, NSW 2324.

I am a GP. I see people every day for whom affording imaging is a problem. Increasing rebates especially for ultrasound is vital and introducing more rebates for MRI.

- Dr Katherine, Breast Cancer, QLD 4070.

Living in a regional area, local comprehensive, affordable medical imaging is vital. We have to travel to see specialists, therefore important that we have some services local.

- Theresa, Arthritis, QLD 4655.

In many cases patients need to travel long distances to access these services and it is important they do not incur further out of pocket expenses in receiving these specialist services.

- Julie, Breast Cancer, VIC 3400.

Many doctors recommend MRI for correct diagnosis. There is NO Medicare rebate for this. Having had 2 in last 12 months I have found the cost prohibitive. A review of a rebate would be welcome for many.

- Helen, Breast Cancer, NSW 2154.

Some people prefer to suffer than seek medical advice as they can't afford with all the costs of living increasing. Hope to see a change (to indexation) for the population soon.

- Yadhav, WA 6054.

Having been bankrupted partially due to medical expenses and needing at least annual CT scans (indexation) is essential for me and people like me.

- Dolores, Lymphoma QLD 4670.

These services are not an "optional extra" for me. They are critical in keeping me mobile & reducing my overall burden on the public health system.

- Debra, Arthritis, WA 6051.

Prevention is better than cure. Make these services affordable so that people can seek help when they need it.

- Jean, WA 6231.

Absolutely ludicrous that imaging isn't indexed. This is such an increasingly important part of medicine/diagnosis/treatment without invasive surgery.

- Giles, Foot Injury, TAS 7009.

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Key points

- Diagnostic imaging is an indispensable feature of modern medicine, playing a part in the diagnosis and treatment of conditions from arthritis through to guiding brain surgery.
- Medicare fees for diagnostic imaging have not been indexed since 1998, unlike other Medicare services. This is in effect an ongoing year on year policy of real cuts to patient rebates.
- Labour costs are the primary driver of the cost of delivering diagnostic imaging services, accounting for 60 per cent of the cost. The growth in labour costs is the main reason for the average unit cost per service being \$162, against an average rebate of \$124. This shortfall is growing.
- This is the reason for patient gaps in diagnostic imaging growing by 44 per cent since 2007-08, around 8 per cent each year. These gaps now average \$88 per service, and as high as \$157 for MRI. Worse, gaps tend to be the highest for clinically complex services which are the most underfunded by Medicare – Australia’s sickest patients rely upon these services.
- Many public hospitals charge gaps for clinically complex services, and the bulk billing rate in the public and private sectors are very close. The public hospital bulk billing rate was 76% in 2010-11, contrary to the belief of some patients and policy makers that all services provided to public hospital outpatients are bulk billed.
- A significant number of essential MRI and PET services are not funded by Medicare at all, with patients required to pay for the entire cost of service (which can be more than \$1,000) out of their own pockets.
- Delaying or foregoing diagnostic imaging services means that patients and taxpayers miss out on the benefits of early diagnosis and treatment. When patients’ illnesses and conditions are more advanced by the time they commence treatment, health outcomes are negatively affected, and the cost to them and the taxpayer increases.
- At the time of writing, the National Commission of Audit recommended a \$15 co-payment for general patients and a \$5 co-payment for concessional patients, for all Medicare services. ADIA considers that the Government should only introduce a co-payment for diagnostic imaging services if it balances this additional contribution from patients by indexing Medicare rebates for diagnostic imaging. This is achievable if the Government also implements a package of measures in diagnostic imaging to increase the efficiency of existing funding.

Recommendations

Recommendation 1:

The Government should reinstate indexation of patient rebates for diagnostic imaging services.

Recommendation 2:

The Government should implement the Quality Framework in diagnostic imaging as soon as possible to ensure that all services meet minimum standards.

Recommendation 3:

As a first step, the Government should increase the Schedule fees of services that are funded at less than 50 per cent of the cost of delivering the service.

Recommendation 4:

The Government should list all clinically-necessary MRI services on the Medicare Benefits Schedule.

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1. Diagnostic imaging is central to modern medicine

Diagnostic imaging is a cornerstone of modern medicine, offering improved diagnosis and treatment to improve patient outcomes and reduce downstream costs in our health system. For these benefits to be realised, it is critical that all patients who need diagnostic imaging services can access affordable, high quality services, underpinned by appropriate policy and funding settings.

In 2012-13, over 21 million services were provided through Medicare, with the Australian Government investing \$2.7 billion.

Diagnostic imaging is a specialist medical service provided in most cases upon request by a GP or specialist. In a quality practice, radiologists or nuclear medicine physicians, who are specialist medical practitioners, may evaluate whether the requested examination is clinically appropriate for the patient, and provide advice to the referrer on which examination is best suited to answer the clinical question.

The images are then produced by allied health professionals operating under radiologist or nuclear medicine physician supervision, with the radiologist available to attend the patient during the examination if required. This is particularly important for examinations which use ionising radiation such as CT, or where the patient is administered a contrast agent to improve the visibility of body structures.

The images are interpreted by a radiologist or nuclear medicine physician in a written report to the referrer. In urgent or unusual matters, they may contact the referrer by telephone.

2. Diagnostic imaging is not appropriately funded

Medicare is the largest funder of diagnostic imaging services

Medicare is the largest funder of Australian diagnostic imaging services, with \$2.7 billion in benefits paid for Medicare-funded services in 2012-13. Patients paid gaps for those Medicare-funded services of \$474 million.

Sources of diagnostic imaging funding: 2012-13

Medicare benefits	\$2.7 billion
Patient gaps on Medicare services	\$0.5 billion
Third-party funded services	\$0.3 billion
Unfunded MRI and other advanced services	\$0.1 billion
Australian Government funding: Public hospitals	\$0.7 billion
State and Territory Governments funding: Public hospitals	\$0.8 billion
Total	\$5.1 billion

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Medicare fees for diagnostic imaging are constrained

Diagnostic imaging rebates have not been indexed since 1998. The Government and the diagnostic imaging sector working collaboratively under several Memoranda of Understanding (MoU) between 1998 and 2008 to ensure that funding was sufficient to deliver quality service while being sustainable for the Government.

However, when the final MoU expired in June 2008, the then Minister for Health and Ageing did not reinstate indexation. This is in effect an ongoing year on year policy of real cuts to patient rebates.

*The real story of diagnostic imaging fees: 1998 to 2014**

Service	1998 fee	2014 fee	Variation (16 years)	Fall in real value
56301 CT – chest	\$305.05	\$295.00	↓ 3%	45% ↓
58103 X-Ray – spine	\$58.95	\$55.10	↓ 7%	46% ↓
63001 MRI – head	\$475.00	\$403.20	↓ 15%	51% ↓
55238 Ultrasound – vascular	\$172.90	\$169.50	↓ 2%	44% ↓

*Based on 100% of Schedule fees

The period of these cuts generating desirable efficiencies across the sector has now passed, and practices are being forced to reduce services or increase patient gaps.

Recommendation 1:

The Government should reinstate indexation of patient rebates for diagnostic imaging services.

For many services, funding does not cover the cost of service

Access Economics found that patient rebates do not cover the unit costs of most diagnostic imaging services, with the average rebate of \$124¹ falling 23 per cent short of the forecast average unit cost per service of \$162 in 2011-12.² This shortfall will continue to grow so long as rebates are frozen.

For many services there is absolutely no relationship between the cost of service and the rebate, generally because of the specialist and allied health professional time required to perform the examination. This is particularly relevant for services such as Ultrasounds of the prostate, Fluoroscopy, and interventional procedures. For example,

- A barium swallow meal (Medicare item 58909) attracts a rebate of \$76.50. This service requires a nurse, technologist and radiologist for 30 minutes, and use of a contrast agent.
- A joint injection under Ultrasound control (Medicare item 55848) attracts a rebate of \$92.75. This service requires a nurse, sonographer and radiologist for 45 minutes, and use of a contrast agent, pain relief, steroid and needles.

¹ Department of Health, *Diagnostic Imaging Medicare Data*, 20 November 2013

² Access Economics, *Average practice, and bulk billing practice tables for ADIA*, 2010

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Labour costs are the main driver of increasing service costs

Contrary to what some people presume, labour costs – primarily radiologist and allied health professional input – are the largest cost component in providing a quality diagnostic imaging service. Access Economics found that labour accounted for 60 per cent of service costs, while depreciation of imaging equipment accounts for between 5 and 10 per cent.³

In a competitive market with health sector labour costs rising by an average 3.5 per cent each year since 2008-09⁴ against rebates which are not indexed, many practices find it difficult to maintain the quality of patient services. Practices are forced to economise on radiologist and allied health professional input, such as the amount of time a radiologist devotes to interacting with patients, or reduce the training or qualifications of their staff.

ADIA is aware of practices which are opening without a radiologist being available to attend the patient when required, due to Medicare supervision requirements being unclear and not enforceable. Unless patients are protected by a Quality Framework, competitive pressures and underfunding mean that this practice model is likely to become more prevalent.

Recommendation 2:

The Government should implement the Quality Framework in diagnostic imaging as soon as possible to ensure that all services meet minimum standards.

The Quality Framework, developed by ADIA and the Royal Australian and New Zealand College of Radiologists, is supported by the diagnostic imaging sector through the Diagnostic Imaging Advisory Committee. It includes proposals to strengthen requirements around professional supervision of services.

Where rebates are significantly below the cost of a service, practices find it difficult to maintain those services unless they are able to charge their patients significant gaps. This undermines access to essential services for many vulnerable patients.

Recommendation 3:

As a first step, the Government should increase the Schedule fees of services that are funded at less than 50 per cent of the cost of delivering the service.

Some essential services are not funded by Medicare

Medicare does not fund all diagnostic imaging services, with the range of PET and MRI services listed on the Medicare Benefits Schedule being particularly narrow. This limits access to these services to patients who can afford to pay the full cost of the service out of their own pockets. Essential MRI services which are currently not available on Medicare include:

³ Access Economics, *Average practice, and bulk billing practice tables for ADIA*, 2010

⁴ Australian Bureau of Statistics, *6345.0 Wage Price Index (December 2013)*

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- breast, ensuring the most appropriate evaluation and treatment of patients, particularly those aged under 50 who are either at high risk or have a previous history of breast cancer;
- prostate, enabling earlier detection, recognition of the more dangerous tumours and identifying the best treatment regime;
- pelvis, for the evaluation of conditions such as perianal fistulae and inflammatory bowel disease; and
- kidney, liver and pancreas, to identify and characterize malignant growths to allow tailored treatments.

Recommendation 4:

The Government should list all clinically-necessary MRI and PET services on the Medicare Benefits Schedule.

The bulk billing incentive is biased towards lower cost services and hurts the sickest patients

The bulk billing incentive for diagnostic imaging was introduced in 2009, and provides an increased rebate of 10 per cent of the Medicare fee (15 per cent for MRI) for bulk billed services.

The bulk billing incentive has created a perverse incentive for practices to bulk bill as many services as possible. Some practices look to maximise their bulk billing rates by increasing patient gaps for their non-bulk billed services, which are usually the most clinically complex and have high levels of professional input, to subsidise their bulk billed services.

The burden of these higher gaps tends to fall on the sickest patients, who rely on the most complex services to expedite diagnosis and get on with their treatment. This represents a two-tiered system, where patients with routine illnesses and conditions are bulk billed, while the sickest patients – who often require multiple services and also face out-of-pocket costs in other parts of the system – are expected to subsidise everyone else.

3. Patients – particularly our sickest patients – are paying higher and higher gaps

Gaps are growing in all modalities

Out of pocket costs for non-bulk billed services are growing at rates significantly higher than inflation, and averaged \$88 in 2012-13 (\$158 for MRI), with patients contributing \$475 million to their cost of their care. The growth in gaps was 9.8 per cent in 2010-11, 7.0 per cent in 2011-12 and 4.7 per cent in 2012-13.⁵

⁵ Department of Health, *Diagnostic Imaging Medicare Data*, 20 November 2013

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Growth in average gaps by modality: 2007-08 to 2012-13

	Ultrasound	CT	X-Ray	NM	MRI	Total
Average gap 2007-08	\$69.17	\$102.19	\$33.80	\$93.79	\$126.17	\$61.09
Average gap 2012-13	\$94.01	\$131.92	\$51.46	\$99.42	\$157.67	\$88.02
Growth from 2007-08 to 2012-13	35.9%	29.1%	52.2%	6.0%	25.0%	44.1%

Diagnostic imaging gaps tend to be higher than those for GP (average \$29 in 2012-13) and specialist services (average \$57).⁶

Clinically complex services used by the sickest patients attract the highest gaps

Clinically complex services such as Fluoroscopy, interventional procedures (including guided injections) and certain Ultrasound examinations require high levels of input by radiologists and allied health professionals. These are the services which have been the most affected by the sixteen year indexation freeze, and are the most underfunded – as well as being the services required by our sickest patients.

For these services to be viable, practices are forced to charge ever increasing gaps, pushing the burden onto vulnerable patients who bear the brunt of high costs in many facets of our health system. Some of these patients are left to choose between financial hardship or refusing or delaying essential diagnosis and treatment.

Patients pay high out of pocket costs for unfunded services

For services which are not funded by Medicare, patients pay the full cost of service. These costs can be more than \$1,000 for an MRI with contrast or a PET scan. This can be very difficult for patients who require essential services such as a prostate MRI to identify the best treatment regime for prostate cancer.

Outpatients pay high gaps for many services delivered by public hospitals

Many patients and policy makers operate under the misconception that all public hospital outpatient services are bulk billed. This is not the case.

The public hospital bulk billing rate in 2010-11 was 76 per cent.⁷ Many public hospitals, like private practices, cross-subsidise their services and charge high gaps for clinically complex services or do not offer them at all.

⁶ Medicare Statistics

⁷ ADIA analysis of LSPN data provided by the Department of Health

4. Patients are missing out on early diagnosis and treatment

Over the last two years, over 5000 patients have reported their concerns about diagnostic imaging funding to ADIA, in particular the financial hardship caused by rising out of pocket costs for diagnostic imaging services. Many of these patients have been forced to delay or forego essential services.

When patients delay or forego diagnostic imaging services, they miss out on the opportunity for early diagnosis and treatment – meaning that illnesses and conditions are more advanced by the time they are able to access treatment (often through admission to hospital). Where illnesses and conditions are more advanced, patients are often exposed to further high out of pocket costs.

Patients are putting off essential diagnostic imaging services

“Sometimes my healthcare is left unattended because of the cost.”
Christine, arthritis, Victoria 3216

“I am on a pension however with the amount of testing I need to have due to my cancer the gaps all add up. I am holding off an MRI at the moment because of the cost.”
Lenna, breast cancer, South Australia 5095

5. Taxpayers are paying higher downstream health costs



Imaging enables many diseases and conditions to be detected at a treatable stage (for example, CT has provided invaluable new data which assists in the earlier detection and treatment of colon cancer). This allows for earlier and less intensive treatment. Diagnostic imaging also ensures that treatment is more accurate, increasing effectiveness and reducing the duration of treatment.

Where patients do not access essential diagnostic imaging services for which they have been referred, treatment tends to be more expensive as conditions and illnesses are more advanced. The Government pays for this more expensive treatment, which often includes invasive surgery and additional time spent in hospital. This increases overall health system costs, and diverts resources from other parts of the health system where funding could be spent more efficiently.


6. The role of private health insurance

Current Government policy does not permit private health insurers to fund out of hospital diagnostic imaging services. If the Government were to consider changing this policy, ADIA would consult with other stakeholders in the diagnostic imaging sector to formulate a policy on the appropriate role for private health insurers in funding diagnostic imaging services.

Diagnostic Imaging – Benefits to Patients




Modality	Patients who need services	Key Concern	Why Australians need this service	Risk of underfunding
Ultrasound 	Pregnancy/Obstetrics	Date pregnancies; Locate pregnancies (detect potentially fatal ectopic pregnancies); Detect foetal abnormalities; Locate the placental position; Monitor foetal growth & well-being.	Ultrasound is <u>absolutely essential</u> for managing a pregnancy.	Without ultrasound, women risk very poor pregnancy outcomes. These can include undetected foetal abnormalities, problems with the placenta and risk of death to mother and child. Without ultrasound, doctors and hospitals face significant liability costs for children born with severe (and potentially unnecessary) life-long disabilities.
	Many examples of infection in the abdomen and pelvis . A common one is Gallstones. Another is appendicitis. 	Detect gallstones, associated infection, dilated bile ducts and plan surgical technique. Diagnose appendicitis and whether there are complications. E.g. has it ruptured forming an abscess or spread throughout the abdomen, which are potentially lethal? Without ultrasound, the Surgeon must guess the cause of pain. He can't plan surgery properly without knowing where to cut or what he's aiming for. Can't undertake key-hole surgery if unknown source of problems.	Ultrasound helps to confirm the source of abdominal pain in the patient and what it is the surgeon needs to treat. Ultrasound is <u>absolutely essential</u> for diagnosing and treating gallstones.	Missed or incorrect diagnoses with resultant mortality or morbidity for the patient. Surgeon at risk of being sued by patients for incorrect or missed diagnoses.

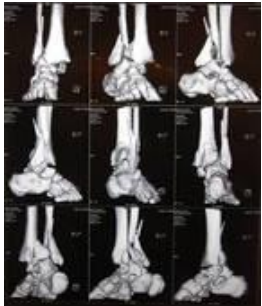

Diagnostic Imaging – Benefits to Patients

Modality	Patients who need services	Key Concern	Why Australians need this service	Risk of underfunding
	Cancers in the abdomen , e.g. Liver tumours where bowel cancer tends to spread.	Ultrasound is used to follow-up stability or growth of cancers, e.g. those that have spread to the liver.	Ultrasound is used to follow cancer progress, once the initial work-up has been done by CT. Ultrasound is easier and there is no radiation dose for this follow-up treatment.	Can't follow cancer progress and treat recurrences early.
	Breast cancer	Ultrasound used to guide biopsy of breast cancers. It is easier than using mammography to guide biopsy, if you can see a mass on ultrasound.	Doctors and specialists use ultrasound in preference to mammography in young patients with a lump or to monitor known masses or guide biopsy. This is because it's easier for patient and doctor (quicker, easier positioning, no breast compression) and no radiation dose.	If mammography is used instead of ultrasound, patients face a radiation dose. If young patients don't have access to ultrasounds, there is a heightened chance doctors may miss their cancers which are often hidden in the dense tissue.
	Paediatrics (children)	In children, ultrasound is used on many body parts. One example, <u>ultrasound detects hip dysplasia in newborns</u> . This means hips can be treated with splints while the hips are soft (mainly cartilage). Follow improvement each week and this is easily done with ultrasound.	Ultrasound is widely used safely with children. A missed baby hip dysplasia is very painful, difficult, expensive and invasive to treat if left too late (beyond 12 weeks).	Dysplastic hips would not be recognised until late in the disease process with high ongoing morbidity and costs for treatment later in life.
	Musculoskeletal (e.g. Bursa, tendons, joints, soft tissues). A common example for use is tendon tears. Common one is rotator cuff tendon tears and bursitis in the shoulder due to bony spurs or trauma.	Musculoskeletal (e.g. Bursa, tendons, joints, soft tissues) damage is very common and debilitating.	Musculoskeletal damage can't diagnose or treat appropriately without images. If not diagnosed, long term damage and disability can be caused.	Shoulder rotator cuff tendon tears if left too late when they are fully torn and retracted, cannot be repaired. Ongoing morbidity and lack of function. Common in the workforce age population. Reduced productivity of workforce.


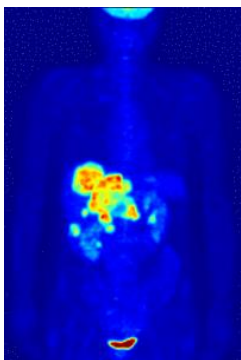
Diagnostic Imaging – Benefits to Patients


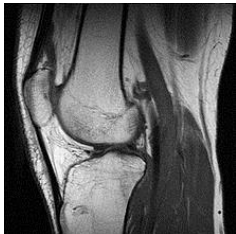
Modality	Patients who need services	Key Concern	Why Australians need this service	Risk of underfunding
	Vascular – veins and arteries. Most well known is deep vein thrombosis (DVT).	<p>Deep vein thrombosis is potentially lethal.</p> <p>Frequent air travelers and young mothers on the pill are all susceptible.</p> <p>Regular monitoring with ultrasound is required.</p>	<p>Can't diagnose DVT without ultrasound.</p> <p>Untreated DVT can send a blood clot to the brain or lung, triggering a stroke or death.</p>	<p>Ultrasound is used to identify musculoskeletal damage and treat it early with far less complications. Patients with DVT risks potential death if undiagnosed (via pulmonary embolus; thrombus breaks off and lodges in the lung). More invasive treatments (filter required to be inserted) if the thrombosis is found too late and is extensive. Less extensive thrombus is treated with medication only. Chronic venous insufficiency (includes varicose veins) with complications of poor peripheral circulation (e.g. poor wound healing) more likely if occlusive, extensive thrombosis occurs which damages the venous valves.</p>



X-Ray   	Arthritis – degenerative	Very common disease. Surgeons need an x-ray to plan their joint replacement surgery. (Timing, type of prosthesis, predict complications, etc.)	Quick, simple, easy method of establishing the degree, following progression and planning surgical treatment of osteoarthritis.	No x-ray = no diagnosis, Doctors can't plan surgery or other treatments. Patients are left with reduced movement and chronic pain.
	Fractures – e.g. falls in the elderly.	X-ray provides the first line of investigation after a fall to look for hip fracture.	X-rays are essential for early diagnosis and surgery.	Older people risk premature death if they don't have their hip fracture diagnosed and treated promptly.
	Pneumonia	Early diagnosis and appropriate treatment.	X-rays allow doctors to plan appropriate treatment and follow improvement.	No chest x-ray = no accurate diagnosis or guidance to aid antibiotic treatment regime and check progress.
	Heart failure	X-ray allows accurate diagnosis and confidence that the correct drugs are being used to treat the correct condition, i.e. heart failure. Chest x-ray will exclude other causes of shortness of breath in the patient.	Diagnosis and appropriate treatment. Follow improvement.	No chest x-ray = no diagnosis, inaccurate treatment and possibly preventable death.
	Lung cancer	<p>X-ray provides the easiest first line of investigation to look for lung cancer.</p> <p>In summary, x-rays often used to confirm that the clinician is treating the correct condition that is suspected clinically. X-rays can find unexpected things that change management for that patient. E.g. <i>It's not arthritis after all; it's a tumour in the adjacent bone!</i> E.g. <i>The patient isn't short of breath from their heart failure, they have a lung cancer!</i></p>	Chest x-ray is the first step in diagnosing lung cancer early.	<p>Without x-ray - patients will miss an early diagnosis.</p> <p>Without x-ray, the cancer will be detected too late. It will be inoperable with poorer prognosis and higher mortality rate.</p>

<p>Computed Tomography (CT)</p>  	<p>Cancers – brain, chest, body, bones, neck, lymph nodes, paths of spread (as broad examples)</p>	<p>Early diagnosis, accurate staging (how far has it spread?), appropriate treatment, monitor progress, diagnose complications, pick up recurrences early.</p>	<p>Detect cancer early while it's still curable. If left too late, then the cancer may grow around surrounding vital structures and cannot be surgically removed. CT essential for staging cancer spread and hence guiding appropriate treatment options</p>	<p>Early and accurate detection and diagnosis of cancers the only way a patient may survive.</p> <p>Cancers presenting at a late incurable stage = inappropriate staging and hence inappropriate management. E.g. Reach surgery without knowing it is inoperable without a CT first for staging.</p>
	<p>Fractures</p>	<p>Early diagnosis and treatment</p>	<p>Some fractures are very hard to see on plain x-rays. CT will pick up a scaphoid fracture in the wrist, for example. In addition, complex fractures can often only be assessed with CT and hence the appropriate treatment cannot be decided until this test is done.</p>	<p>Missed fractures. They don't heal properly and long term complications and remedial treatments. Preventable hospitalisation may result.</p>
	<p>Biopsy and therapeutic guidance – i.e. Get the needle tip in the right spot.</p>	<p>Accurate needle placement for biopsy of masses to determine whether they are cancers. Another example, accurate needle placement for injection of anti-inflammatory for management of back pain, for example.</p>	<p>Accurate needle tip placement.</p>	<p>Avoids surgical biopsy if we place a needle through the skin and use CT to guide needle tip to the spot to obtain tissue for pathology. Avoids surgery if steroid injection around nerve roots in the spine relieves symptoms.</p>
	<p>Infections and other collections such as haematomas (bleeds) – e.g. needed to find abscesses in the abdomen, chest, brain and elsewhere.</p> <p>CT is used to guide drainage tubes placed into the abscess to drain it non-surgically.</p>	<p>CT is very effective for locating the source of infection. Sometimes a patient merely has vague pain and a fever, or only a fever and you need to find the infection to know where/what/how to treat.</p>	<p>CT provides the best and quickest way to scan a large part of the body to find an infective source. Essential to guide placement of drainage tube and check for resolution and when to pull the tube out.</p>	<p>Without CT, doctors won't find the infection. The patient may become septic and go into shock and die. The treating physician will be sued if they don't organise a CT for such patients.</p>

	Spine Since patients are unable to obtain a Medicare rebate from GP referrals for MRI (better investigation for spinal conditions), GPs order a CT of the spine to diagnose the cause of back pain in all age groups.	Diagnose cause of back pain. Good for looking at the bones (e.g. Tumours or fractures of vertebrae). Radiation dose compared to MRI.	Patients either need a CT or an MRI to diagnose disc lesions, spinal cord or nerve root compression (all very chronically painful conditions) and plan treatment.	If CT is not undertaken, there may be uncertainty as to cause of back pain and the patient may be treated for an incorrect condition. Critically, without a CT, the patient may miss a bone, spinal or soft tissue tumour.
	Chronic lung disease	Helps chest physicians to diagnose and manage patients with chronic lung diseases, such as interstitial lung disease.	CT guides physician treatment. Makes sure treatment is working. CT is used to identify recurrences.	Without CT, physicians are working in the dark not knowing exactly what they are treating and whether it's working. Risk of being sued if management is inappropriate or delayed.
	Cardiac diseases	CT is used to provide early and correct diagnosis of coronary artery disease.	The use of CTs allows the doctor to influence patient behaviour to take medication, etc. to improve coronary artery disease. A CT will indicate if there is a need for interventional procedures, if necessary.	Without a CT, coronary artery disease can go undiagnosed. If this happens, it is inevitable that the patient will eventually suffer a heart attack and possibly die from a treatable disease.

<p>Positron Emission Tomography (PET)</p>  	<p>Skin cancer (melanoma)</p>	<p>PET enables the early and accurate detection of disease and its extent. PET enables accurate treatment options offered to cancer patients.</p>	<p>PET often stops surgical oncologists cutting out tumours when the disease has spread beyond respectable limits.</p>	<p>Without PET, cancer patients do not have the ability to accurately choose the most cost-effective treatment option.</p>
	<p>Lymphoma</p>	<p>PET may offer patients the opportunity of being treated without the need for surgery.</p>	<p>PET stops radiation oncologists treating a lump when there are smaller deposits of tumour that also need treatment elsewhere in the body and these deposits are not identifiable by other imaging modalities.</p>	<p>Without access to PET, doctors are unable to accurately map out where on the patient to give radiation treatment. Doctors only find that smaller deposit elsewhere at a later time and have to subject the patient to another round of radiation therapy.</p>
	<p>Lung cancers and staging of many other cancers</p>	<p>CT can see the lymph nodes of cancers. However, it can only be used to diagnose a lymph node as abnormal (containing cancer cells) when it has increased in size or altered its internal texture (looks darker on the scan). PET can detect the abnormal cancerous lymph nodes while they are still “normal” looking in size and density on CT. PET detects the nodes with tumour that need to be included in the treatment zone, and which would otherwise have been ignored if a CT alone had been done.</p>	<p>Access to PET discourages medical oncologists from using drugs that are not working to shrink the cancer.</p>	<p>Without access to PET, oncologists would be unable to stop or foreshorten an expensive drug therapy regimen to treat a cancer. Without PET, doctors can’t see when the drug is not working. A cancer patient may be subject to unnecessary suffering or the wrong treatment.</p> <p>PET enables doctors to stop treating cancers when they aren’t responding to treatment.</p> <p>Prevents the aggressive treatment of patients with expensive and nasty drugs when they have a lump that is not a cancer.</p>

<p>Magnetic Resonance Imaging (MRI)</p>  	<p>Brain cancers</p>	<p>MRI allows for early detection, monitor progress, diagnosis of complications (e.g. After surgery).</p>	<p><u>MRI is essential to manage cancers appropriately.</u></p>	<p>Without MRI, patients face inappropriate or late diagnosis and treatment.</p>
	<p>Multiple sclerosis</p>	<p>MRI = early diagnosis and can allow doctors to exclude other causes for symptoms (e.g. Cancers). MRI means the patients' progress can be properly monitored and adjustment can be made to the type and length of treatment.</p>	<p>MRI is essential to help diagnose and manage MS. Doctors can't see early disease on CT. Patient symptoms are often intermittent or minor and overlooked unless easy access to MRI for diagnosis.</p>	<p>Missed or mis-diagnosis of MS can mean effective treatment is delivered too late. MRI allows specialists to choose a non-ionising DI service.</p>
	<p>Knees – cartilage and ligament tears. Many other joints, too. Hips, shoulders, wrists, ankles, etc.</p>	<p>MRI enables patients' to receive appropriate diagnosis and management.</p>	<p>Only reliable way for orthopaedic surgeons to plan and manage the repair to their patient's knees.</p>	<p>Undiagnosed cartilage tears leads to ongoing morbidity. <u>Surgeons will often refuse to operate without MRI.</u></p>
	<p>Spine – Disc protrusion and nerve impingement</p>	<p>MRI allows for the appropriate diagnosis and establish best management regime. Exclude other sinister cause for back pain, e.g. cancer in the bones of the spine.</p>	<p>MRI offers doctors the most effective way to accurately diagnose and manage disc and other soft tissue conditions relating to the spine.</p>	<p>Without access to affordable MRI, patients may undergo more invasive testing such as biopsy or surgery to diagnose the lesions.</p>
	<p>Accurately characterise body masses, e.g. Adrenal tumours, liver lesions.</p>	<p>Only MRI can diagnose with accuracy what some of these lesions in the liver and adrenal are (as examples).</p>	<p>Only modality which can diagnose these lesions.</p>	<p>Patients undergo less tailored operations</p>
	<p>Cancer - the extent of the disease in many body parts, e.g. Chest, neck, pelvis (cervix, uterine, prostate cancers), etc.</p>	<p>Accurate staging of disease spread.</p>	<p>Plan surgery accurately and remove as much tumour as possible or preserve as much normal tissue as possible.</p>	<p>Patients can receive timely treatment and know that the surgery is as accurate as possible. The trauma of losing unnecessary healthy tissue is lessened.</p>

Bone Densitometry (BMD) 	Osteoporosis	<p>Early diagnosis.</p>	<p>Osteoporosis leads to fractures if left untreated. (Spinal and hip fractures are common ones in the elderly).</p>	<p>Without BMD, patients can end up having fractures and the complications. This can lead to hospital admission, rather than simply treating osteoporosis by medication.</p>
Mammography 	Breast cancer	<p><u>Early detection saves lives.</u> Appropriate treatment options offered to patients with cancer (assess extent of disease and type of surgery, radiation or drug therapy required). Mammography used to guide biopsies.</p>	<p>Mammography detects cancer when it is small and hasn't spread = better rate of survival. Less morbidity associated with treatment if surgery is all that is required for a small cancer, rather than drugs and radiation therapy in addition to surgery.</p>	<p>Without access to affordable mammograms, patients would be detected later with breast cancer and their prognosis for recovery would be poor.</p>