



Senate Committee
Enquiry into Diagnostic Imaging and MRI
Submission from the Peter MacCallum Cancer Centre
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Background:

The Peter MacCallum Cancer Centre (Peter Mac) is one of the world's leading cancer research, education and treatment centres globally and is Australia's only public hospital solely dedicated to caring for people affected by cancer.

Points addressed in this submission:

- 1/ Role of appropriate and evidence based diagnostic imaging in cancer management and its growth.
- 2/ Role of CT imaging in follow up and restaging of cancer and its funding, and growth in use and its cost effectiveness.
- 3/ Role of specialist MRI indications for Cancer diagnosis and staging.
- 4/ Interventional radiology techniques.
- 5/ The specialist multidisciplinary approach to cancer care, where diagnostic imaging fits and the current resourcing challenges.
- 6/ Role of the public institution for highly subspecialist care, opinion and teaching and training of radiographers and fellowship trained oncological radiologists.
- 7/ Review , reinterpretation and storage of imaging studies performed external to the institution for which there is no resourcing internally.

1

The initial diagnosis of cancer almost always requires some sort of diagnostic imaging, and frequently image guided biopsy of suspected lesions for tissue typing allowing the tailoring of treatment based on individual response. Several of the new specific therapeutic agents available require strict criteria for diagnosis and tumour typing before giving appropriate treatment. Given the specialist skills required in reporting the scans, imaging performed outside of the organisation is often required to be re-reported by our specialist radiologist team.

Currently we are not reimbursed for this work and as a result are having to cap our current activity levels to ensure we have capacity to report these scans. Diagnostic imaging is also used at regular intervals throughout a patient's cancer treatment, this can either be to monitor the response to treatment or detect recurrences of cancer. Due to the increase in incidence of cancer we are seeing huge demand for imaging services across all modalities; this is further impacted by the significant increase in clinical trials,



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where patients require rigorous imaging above standard of care as part of the protocols. Pleasingly over the years due to improved technology, the complexity of the images (specifically CT) has increased, while the speed and radiation dose for each examination has greatly reduced. In contrary to this, the time it takes to report a scan has increased as despite digital technology and efficiencies with voice recognition dictation software the images still require detailed interpretation.

2

CT scanning with volumetric, multiplane and multiple body region scans is the norm for diagnosis, staging, follow-up and assessment of complications in cancer patients. It is rapid to perform, easily tolerated, safe and robust. The radiation doses per scan have reduced to levels similar to normal background radiation received by every individual in Australia per year of 2.4 mSv. The interpretation times have been balanced through the use of digital image handling, computers, and the size and number of images that form one examination, with an overall increase in workload for the radiologist.

The reimbursement for Outpatient CT remains through Medicare funding, while inpatient studies do not attract this funding. This unplanned anomaly of funding allows Public hospital Radiology sections to fund some of the rest of the work and equipment of the department by the outpatient billings, however only in part and this only minimally addresses the overall growth and cost of providing the service.

It is essential that the funding model for inpatient scans is addressed in order to allow services to fund their own expansion. The system as a whole benefits from the greater access and rapid nature of the imaging assessment and this leads to less bed days, and more rapid decision making by the clinicians treating the patients.

3

MRI is very useful for certain aspects of staging and assessing particular body areas and particular cancer types, however is not a replacement for CT in the general staging setting. As MRI is also not valid to assess the chest or bowel in the way CT is. Specifically MRI is useful to assess for Brain or Spine metastasis, and for staging and follow-up of, Prostate cancer, Gynaecological cancer, Rectal Cancer, Liver Cancer (HCC) Myeloma and other hematologic disorders involving the bone marrow.

Despite this, current funding is not available for all of these indications, and sometimes only for an initial staging scan. Not infrequently the initial scan is obtained before being assessed at public institutions such as Peter Mac and may have to be re-evaluated by the radiologist or on occasions repeated if not performed to standard, and without reimbursement. Similar to CT scanning, if the examination is performed as an inpatient or on a non-licensed MRI scanner it attracts no Medicare funding. The funding provided via state governments for inpatient management has never accounted for the growth and complexity and use of MRI in this setting.

4

There have been great advances in interventional techniques over the last decade. Treatment of cancers with some of these techniques shows evidence based utility. These include microwave and radiofrequency direct ablation of tumours, and also intra-arterial chemoembolization or administration of chemotherapy or radiopharmaceuticals directly to the affected organ or cancer obviating systemic use.

Further to this biopsy using Ultrasound, CT, Mammographic and now MRI guidance is also used in many cancers to obtain the initial sample for histologic typing of the cancer, or to demonstrate response to treatment or change in tumour type over time or with treatment – known as individual cancer therapy.



Many patients now rely on these techniques to manage their symptoms for example safely remove pleural fluid or abdominal fluid (ascities) using paracentesis usually with Ultrasound imaging.

Again, the funding is not uniform or sufficient to cover the costs, and is available per procedure for outpatient procedures, however is not individually valued for inpatient management via state funding.

5

Most patients in institutions such as Peter MacCallum Cancer Centre are managed by a team of Oncologists, Surgeons, Radiation Oncologists, Pathologists and Radiologists and Nuclear physicians. The forum for this management discussion is frequently a weekly MDM or MDT conference.

10 – 40 patients may be reviewed at such MDTs and while there is Medicare related funding for clinicians attending where a patient discussion takes a certain time (15 minutes or more) this does not account for the Radiologists time which is similar in preparation for every patient no matter if it takes ½ an hour per patient or 5 minutes in the meeting itself.

The radiologist input is in the preparation of the imaging examinations to show during the conference. This requires many hours of preparation, virtually the same as re assessing the entire examination for each patient. In the case of cancer, the radiologist must look at all the previous and prior examinations for any change in lesions or disease progression, regression. For example if an MDT takes 1 hour and there are 20 patients, this would take a radiologist between 2-4 hours to prepare, even though the time showing the one or two images during the MDT may be only a minute or two per case. This work has never been given a value, and can account for a significant proportion of the radiologist's entire workload. It is often also the time that the most teaching and training of Fellows or registrars takes place. External imaging studies must also be reviewed, and sometimes are the only ones available if it is the initial presentation, so that the institution has not received any reimbursement for this work. MDM funding currently does not address this.

6

Tertiary and Quaternary public institutions such as PMCC are the resource to train and teach the next generation of Radiographers and subspecialist Radiologists. With regard to the radiology registrars and fellows, who may provide a preliminary report on many examinations or assist with MDT preparation, there is considerable time spent going through these examinations with them, and this is usually longer than if the Consultant Radiologist reported the examination independently without this teaching.

This sort of training does not occur in the private system. As such at least 50-60% of the specialist oncological radiologists time is spent not primarily reporting imaging examinations or performing interventions but in teaching, training and MDT meeting preparation, which is not addressed in any resourcing or funding model. It is also the duty of Radiologist in this setting to research, audit and consider new and better ways of providing imaging for this patient group, in order to reduce the time spent in hospital for patients and to make the imaging more effective and more efficient and useful to the management of the particular cancer and its side effects. No direct resourcing of this is provided and most is done in personal time.

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Many if not most patients who attend a tertiary or quaternary public hospital such as PMCC for their cancer treatment will come with some initial imaging studies that have been performed by an external imaging provider, commonly a private or corporate entity. These have received reimbursement, paid to



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the initial provider; however these examinations will require assessment by the Consultant radiologist, either to determine eligibility for a particular therapy or to stage the cancer accurately according to recognised staging systems.

The primary report will infrequently have addressed this and a thorough reinterpretation is required. Specific, detailed, measurement of lesions according to staging systems such as RESIST are generally required and not usually provided in the primary external source report. In some circumstances the examination, although having detected the cancer has not been performed in an optimised way to allow for accurate staging or assessment and may need to be repeated as an inpatient without reimbursement.

This is particularly a problem for MRI where only the initial staging examination is recognised for reimbursement (such as with rectal and cervical cancer). However, in terms of volume and numbers it is the CT examinations that are most commonly reassessed. A formal report is not usually given as this is perceived to have medico legal implications; however the opinion will be incorporated into the subsequent imaging report, or documented at an MDT or on a case by case basis by the attending clinician in the patient's notes. In the setting of a tertiary quaternary cancer hospital like Peter Mac, this may account for 10% of the consultant radiologist's work.

The secondary issue is also that these external examinations will need to be retrieved or uploaded onto the Image storage and viewing system (picture archive and communications system, or PACS). This involves specific trained staff and accounts for 10-25% of the entire storage requirements on a Digital image storage system, which in itself is of considerable cost.

Summary:

Growth in the number, size and complexity of Diagnostic Imaging has occurred by many multiples over the last decade and specifically is seen in the setting of cancer management. Recognition of this growth and contribution in delineating correct management pathways has not been made in the setting of Public hospital funding, particularly for inpatients.

Vast efficiencies given the electronic and digital workflow have seen much resource efficiency, particularly with Radiographers and Radiologists, however the overall workload has increased per individual. CT scanning remains the backbone of diagnostic imaging in cancer and needs to be reimbursed appropriately despite the patient's location as an inpatient or outpatient.

Certain oncologic specific MRI indications are still not recognised adequately by reimbursement. There may be a consideration of providing institution specific funding for MRI, for its particular major specialities and where there are subspecialist Radiologists in the field with fellowship training and credentialing

A large amount of the work of the Consultant Radiologist in the setting of Public radiology and specifically Oncologic radiology is not accounted for by reimbursement of the institution, particularly utilising the MDT setting and the time to prepare for the MDT meetings, the teaching and training, and the review, interpretation and accurate staging of studies already performed outside the public institution and already having received reimbursement by the primary provider.