

SUBMISSION to the Senate Enquiry into “Availability and accessibility of diagnostic imaging equipment around Australia”

## ***A perspective from a University Health Sciences Centre Imaging Department***

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## **MACQUARIE MEDICAL IMAGING AND ISSUES ARISING FROM MRI FUNDING**

### **EXECUTIVE SUMMARY**

- Macquarie Medical Imaging (MMI) is an integral part of Macquarie Health (MQ Health).
- MQ Health is a unique academic health sciences precinct for which no precedent exists in Australia.
- As a public private partnership with Macquarie University, MMI spans both State and Commonwealth responsibility and to a large extent is excluded from financial support mechanisms that strictly private or publicly operated medical imaging facilities benefit from. This in turn limits the availability and accessibility of medical imaging services available to some patients.
- We would like to extend an open invitation to the senate enquiry committee to visit MMI (and MQ Health) to examine first-hand how this unique model of health care and medical imaging expertise is benefiting patients.

### **BACKGROUND**

Macquarie Medical Imaging (MMI) is a joint venture between Macquarie Connect Pty Limited, Macquarie University and Cyclopharm Limited.

MMI was established as part of Macquarie University Health Sciences Centre (MQ Health) to provide integrated clinical, research and academic services of the highest quality. Our philosophy was to deliver a comprehensive medical imaging service that would meet the needs of a tertiary referral centre and associated health sciences within an academic environment. To achieve this objective, we installed the best equipment and integrated all aspects of radiology with nuclear medicine and PET imaging. We directly delivered images electronically into the operating theatres, wards and

clinics. We also started multidisciplinary team meetings for several specialties and sub-specialties that brought medical imaging into clinical care decision making, providing patients with the best options for their care and ongoing management.

MQ Health is the first university-led integrated health campus in Australia. It brings together world-class clinical care, teaching and research to provide an integrated approach to holistic patient treatment, discovery and continuous learning. Underpinned by the philosophy – Heal. Learn. Discover. – MQ Health integrates Macquarie University Hospital (MUH), the University’s Faculty of Medicine and Health Sciences, Macquarie University Clinical Associates (MUCA) and clinical components of the Faculty of Human Sciences. Clinical and academic services delivered via MQ Health are organised into seven signature clinical programs which support the intersection of specialty expertise in MUH and our generalist and specialist clinics with the academic strategy of the Faculty. Through this structure, MQ Health provides services across the continuum from primary through to tertiary care in an integrated, evidence-based and patient centric manner. Our seven clinical programs and associated disciplines are depicted in the figure below.

<b>CLINICAL PROGRAMS</b>	<b>Neurosciences</b> • ENT and Head and Neck Surgery • Neurology • Neuropsychology • Neurosurgery • Ophthalmology	<b>Cardiovascular and Respiratory</b> • Cardiology • Cardiothoracic Surgery • Respiratory Medicine • Vascular Medicine and Surgery	<b>Cancer</b> • Clinical Haematology • Medical Oncology • Radiation Oncology
	<b>Surgery and Gastrointestinal</b> • Colorectal Surgery • Gastroenterology • General and Upper GIT Surgery • Plastic, Reconstructive and Maxillofacial Surgery • Urology and Gynaecology	<b>Bone and Joint</b> • Hand Surgery and Therapy • Orthopaedics and Sports Medicine • Rheumatology	<b>Primary and Generalist Care, Allied Health and Diagnostics</b> • Allied Health • Endocrinology • General and subacute medicine • General Practice • Medical Imaging

MUH is also the first paperless hospital in Australia with an electronic medical record system, has Australia’s first Gamma Knife for the treatment of brain metastatic tumours, two da Vinci Surgical robots, intra-operative CT and a hybrid Operating Theatre with a Siemens Artis Zeego angiography suite. MQ Health via the Faculty of Medicine and Health Sciences is investing significantly in both undergraduate and postgraduate academic programs and research endeavours in medicine and health sciences.

MUH, as a tertiary facility with advanced technology and unique expertise in a number of areas, cares for many patients outside its local catchment area including Regional NSW and interstate. Our MQ Health Clinics (and MMI by extension) also service a diverse patient population including local and international students, staff, community members and local, rural and interstate patients. As a not-for-profit centre, MQ Health practices discretionary bulk billing and no-gap charging for patients (including students) who can otherwise not afford to pay for their care.

To meet the clinical and research requirements of MQ Health, MMI has made a commensurate level of investment and now has two high-end 3T MRI scanners providing both structural and functional imaging as part of a comprehensive diagnostic and interventional medical imaging service including PET/CT. The MMI Picture Archiving and Communication System (PACS) is provided to MUH and the Clinic to allow clinicians to view all radiology, nuclear medicine and PET imaging performed both at MMI and within MUH as part of the patient’s electronic medical record.

### **INCREASING COMPLEXITY OF MEDICAL IMAGING**

Medical imaging is becoming increasingly complex and generic MRI protocols are often not suitable for many of the patients referred by specialists at MQ Health. The technical staff at MMI work closely with the radiologists, nuclear medicine physicians and directly with the referring doctors to customise scans for the specific needs of their patients. This facilitates better clinical assessment and ultimately improves management of the patient. Some of the scans performed at MMI are available at very few, if any, other centres in Australia. Indeed stereotactic MRI scans performed for intra operative surgical guidance and for Gamma Knife can only be performed at MMI for logistical reasons. Patients often attend Specialist Clinics at MQ Health already having had an MR imaging done elsewhere, but have further imaging done at MMI because of the specialist nature of the imaging requirements.

### **MEDICARE ELIGIBILITY AT MMI AND ITS IMPACT ON PATIENT CARE**

MMI was granted partial Medicare eligibility on one of the two 3T MRI scanners, which provides our patients with access to Medicare benefits for GP referred items but very few specialist referred items. Most MQ Health patients, as they are referred by specialists, need to travel and source their MRI studies from practices with a full Medicare-eligible MRI scanner outside of MQ Health campus if they cannot afford to pay for the entire cost of the MRI scan, often still leaving them out of pocket due to co-payments, time and transport costs. In addition, these studies are then not available in the MMI PACS as part of the MUH patient electronic medical record or are not compatible with the image guidance systems in the operating theatre or in the Gamma Knife. As many patients seen at the MQ Health Clinics are admitted to MUH for their treatment, MRIs performed outside are not easily accessible by the MUH medical staff.

MUH inpatients who require urgent MRI scans, often due to rapid clinical deterioration in complex disease states or from post-operative complications, cannot wait or be expected to leave MUH to attend an MRI practice with a full Medicare-eligible MRI Unit. Transporting such a patient is neither safe nor economical. These patients then have to bear the full cost of the MRI performed at MMI.

Macquarie University has now been accredited by the Australian Medical Council to start a medical school. In 2018 Macquarie University will enrol its first students into the new Doctor of Medicine program. The radiologists and nuclear medicine physicians from MMI will be involved in teaching part of this medical program.

### **TERMS OF REFERENCE**

These comments are specific to the provision of MRI services by MMI and the issues that arise from not having a full Medicare Eligibility.

#### **a. Geographic and other disparities in access to diagnostic imaging equipment:**

- MRI is a complex imaging modality and there are innumerable types of scans that can be performed. This is particularly true for tertiary referral centres like Macquarie University and MQ Health Clinics. The MRI scanning protocols used at MMI were developed over several years being incrementally refined by both the reporting radiologists and the referring specialists. This is in stark contrast to many MRI practices that try to achieve volume to maximise revenue from a full Medicare-eligible MRI unit that only offer generic MRI scans. For some patients, requiring specialist assessment and care at MQ Health, an MRI performed using a generic MRI scanning protocol is unlikely be adequate. These complex

patients have the least ability to afford an MRI scan without the assistance of a Medicare benefit.

- The nature of MQ Health means that MMI provides services to patients that attend the many specialty groups in medicine and surgery at MQ Health. Although the partial Medicare Licence was most welcome, it does not help most of the complex patients that attend specialists at MQ Health Clinics or are admitted to MUH.
- The effective catchment area of MQ Health is large and extends well beyond the geographic local catchment area. It includes regional areas and patients also come from interstate for assessment and treatment. Full Medicare-eligible MRI Units held by practices in the regional areas do not necessarily benefit these patients as these regional area MRI practices do not offer these customised MRI scans that were developed at and are provided by MMI. Inpatients of MUH that require an urgent MRI pay the entire cost of the scan and the out of pocket cost can be very significant if several MRI were required during an admission.

**b. Arrangements for Commonwealth subsidy of diagnostic imaging equipment and services:**

- MMI currently only has a partial Medicare eligibility for one of the 2 MRI scanners. Our patients can only access a Medicare benefit for the limited number of GP referred items and 12 Specialists referred items (as compared to over 100 items for full Medicare eligible MRI Scanner). MQ Health patients are not eligible for a Medicare Benefit if imaged on the MMI partial Medicare-eligible MRI for the majority of conditions treated by MQ Health specialists.
- There was neither Commonwealth nor NSW State subsidy for the purchase nor the operation of the MRI Scanners at MMI.
- There is no current process to apply for full Medicare eligibility for MRI.

**c. Out-of-Pocket cost for services that are not subsidised by the Commonwealth and the impact of these on patients:**

- MMI has a policy of bulk billing for all Medicare Eligible MRI which only includes GP referred items and only 12 Specialists referred items (as compared to over 100 items for full Medicare eligible MRI Scanner) as MMI only has partial Medicare-eligibility for one its two MRI scanners.
- All other MRI scans performed at MMI, most of which are specialist referred, are fully paid for by the patient as the partial MRI Medicare eligibility held by MMI does not cover the vast majority of Specialist referred items. There is a significant out of pocket cost to patients who were referred by specialists to MMI. Patients with financial hardship that cannot afford these out of pocket costs are forced to seek MRI studies at practices with a full Medicare-eligible MRI scanner who often do not perform the specialised scans offered available at MMI.
- The most significant financial impact is on inpatients at MUH who require MRI scans for emergency medical conditions often in the postoperative period. These are the most vulnerable patients and in a situation where they have no option but to bear the full cost of the MRI scan. This inequitable situation is not seen in any other comparable hospital in Australia.

**d. The respective roles of the Commonwealth, States and other funders in ensuring access to diagnostic imaging services:**

- The Commonwealth Government has the primary responsibility to provide funding for privately owned MRI scanners. With a partial Medicare-eligible MRI unit the Commonwealth Government provides some funding to MMI, however the majority of MRI scans performed at MMI on both inpatients and outpatients receive no Medicare benefit. At MMI the patient

provides more funding than the Commonwealth Government. This includes DVA patients who also have to pay the full cost of MRI for the vast majority of specialists referred items.

- Usually State governments fund both the equipment and the operations of the MRI scanners at Public Hospitals for the benefit of inpatients. But most of these MRI scanners also received full Medicare eligibility from the Commonwealth, hence benefit from a dual funding model. The state government has no financial role to play in medical imaging of private hospital inpatients or patients of private medical imaging practices. Given that MUH is a university owned hospital and is not funded by the State the MRI scans at MMI receive no funding from the NSW State Government.
- Private health insurance in Australia provides limited support to inpatients for the cost of their MRI Scans, paying only the difference between the Medicare benefit paid and the Medicare Schedule fee. Private Health Insurance does not fund outpatient imaging. As MMI does not have a full Medicare-eligible MRI, inpatients, even though privately insured, do not have access to this Private Insurance funding.
- The divide between State and Commonwealth health funding and the rules around Private Health Insurance has created a very difficult and unfair situation for patients where an MRI Scanner at MMI at MUH is neither eligible for a rebate from Medicare nor from Private Health fund because it doesn't have a full Medicare-eligible MRI and has no State Government support. However these patients, who pay both the Medicare levy and private health insurance premium, still have to pay full cost of for their MRI scans when in their most vulnerable state.

### **SUGGESTED CHANGES**

Health is a significant cost to the government and the allocation of scarce resource is complex. The current MRI licensing system has been successful at constraining costs and, with the relatively recent incremental expansion of limited item numbers, allowed patients referred by General Practitioners to access Medicare benefits. This has greatly improved diagnostic yield and, at the same time, reduced radiation exposure from the overuse of CT, which has tremendous public health benefits. The increased number of Medicare Eligible MRI scanners in regional areas has also greatly improved access.

A not-for-profit tertiary hospital such as MUH and as part of MQ Health, with eminent specialists and sub-specialists, attract a high proportion of patients from outside the local catchment area including Regional NSW and interstate who cannot afford significant out of pocket costs . We believe that it is essential to support imaging centres within university teaching hospitals to reduce the cost to the patient and improve their care. We also believe that the cost, in the case of MMI, of a Medicare Eligible MRI will be a relatively small incremental cost to the health system but provide a significant financial relief to the patients of MQ Health for the following reasons

1. Most of the patients referred by MQ Health specialists for MRI already (somewhat inconveniently) source their MRI at imaging practices with a Medicare Eligible MRI hence for this group of patients a Medicare Eligible MRI at MMI will be essentially cost neutral to the health system.
2. The inpatients of MUH who require urgent MRI scans, represent a small number of MRI users. This is the main additional cost to the Commonwealth Government as the full cost is currently being borne by patients.

There should be a process for applying for Medicare-eligibility for MRI that is transparent, permanent and based on the needs of clinical management and access.

## **CONCLUSION**

1. MMI is a high end practice that has radiology, nuclear medicine and PET that services MQ Health, the health and medicine program of Macquarie University and includes Macquarie University Hospital and Clinic, which is a tertiary referral centre.
2. MQ Health has large speciality programs including one of the largest neurology and neurosurgical programs in Australia with a significant proportion of these patients coming from regional areas and interstate. This will continue to grow with the new Doctor of Medicine program starting in 2018.
3. MMI was granted only a partial Medicare eligibility for its MRI scanner which has meant that most of the patients of these specialist programs within MQ Health do not have access to a Medicare Benefit. Patients either pay for their MRI scans themselves or source the study outside of the MQ Health campus funded by Medicare.
4. Inpatients of Macquarie University Hospital who are too sick to leave the hospital and need an urgent MRI pay the full cost of the MRI when they are at their most vulnerable. This includes DVA patients who also have no access to Medicare Benefits for MRI as inpatients of MUH.
5. We request that practices that provide services to tertiary referral hospitals located within Universities with a medical school be provided with a full Medicare eligibility for MRI, similar to public tertiary referral hospitals in Australia. This will not only benefit the sickest patients at a relatively small cost to the health system, but also encourage private investments in high end hospitals which can manage complex clinical conditions and hence will reduce congestion in the tertiary referral public hospitals.

Thank you for the opportunity to present our perspective of this complex problem. The issue of allocation of scarce health resource is diabolical in its complexity and impact. We put forward our specific situation for your consideration and request that you consider recommending a small modification to the existing system for this specific situation to support a relatively small number of patients.

Yours Sincerely

**Pon Anura – for and on behalf of :-**

**Pon Anura** - Managing Director, Macquarie Medical Imaging

**Professor Patrick McNeil** - Executive Dean, Faculty of Medicine and Health Sciences and Managing Director, Macquarie University Clinical Associates

**Ms. Carol Bryant** - Chief Executive Officer, Macquarie University Hospital

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