

IHPA Teaching, Training and Research Costing Study

10 February 2015

MTAA response to the public consultation paper



INTRODUCTION

The Medical Technology Association of Australia (MTAA) is the national association representing companies in the medical technology industry. MTAA aims to ensure the benefits of modern, innovative and reliable medical technology are delivered effectively to provide better health outcomes to the Australian community. MTAA member companies cover the spectrum of the industry in Australia, from subsidiaries of major multinational medical technology companies to independent distributors and small and medium-sized Australian innovator companies.

Medical technologies are products used in the diagnosis, prevention, treatment and management of disease and disability. Products range from consumable items such as bandages and syringes, to high technology implantable devices such as cochlear implants, cardiac defibrillators and orthopaedic joints, as well as diagnostic imaging and operating theatre equipment, and products which incorporate biological materials or nanomaterials. The industry is characterised by a high level of innovation, resulting in short life cycles for many products. Medical technology innovation is characteristically incremental in nature. Many medical devices undergo constant development based on feedback from medical practitioners and advances in other sciences relevant to medical technology.

The Australian medical technology industry¹:

- had turnover of approximately \$10.2 billion in 2012-13 (revenue is ~\$11.8 billion if *in vitro* diagnostic (IVD) and dental products are included)
- included over 500 medical technology companies with products listed in the ARTG
- was responsible for ~44,000 medical devices listed on the 2014 ARTG, estimated to represent between 500,000 and one million different devices
- employed more than 19,000 people
- was mainly located in NSW (55%) followed by Victoria (24%) and Queensland (12%)
- imported goods to the value of \$4.4 billion and exported goods to the value of \$1.9 billion in 2013.

The medical technology industry compares favourably in turnover and size with other major Australian industries. The automotive manufacturing industry had revenue of \$11 billion in the period 2011-12, with employment at around 16,289, while the wine industry had revenue of \$7 billion and employment of 13,208 in the same period. In 2011–12, health spending in Australia was estimated to be \$140.2 billion. Australian demand for medical technology is growing due to the ageing population and increased prevalence of chronic diseases.

The medical technology industry is a sector that invests heavily in research and development (R&D). It has been estimated that high technology medical technology companies in the US devote upwards of 20% of their revenue to R&D.² In Australia, the annual spend for R&D in 2011-12 for medical and surgical equipment manufacturing was \$237 million, which was an

¹ Medical Technology in Australia: Key facts and figures 2013, Occasional Paper Series: Sydney. Medical Technology Association of Australia Limited (2013)

² USITC 'Medical Devices and Equipment: Competitive Conditions Affecting US Trade in Japan and other principal foreign markets', March 2007

increase of approximately \$20 million (9%) from the previous year.³ Patent applications by medical technology companies provide a good indicator of innovation, and the number of Australian medical technology patent grants has shown a steady increase since 2009.⁴ These data suggest that there is a strong culture of innovation in Australia.

INDEPENDENT HOSPITAL PRICING AUTHORITY TEACHING, TRAINING AND RESEARCH COSTING STUDY

While the safe and efficient delivery of health services is the main priority of public hospitals, teaching, training and research (TTR) are also important core functions. TTR play an important role in the development of the current and future health workforce, as well as new evidence-based treatments. However, TTR activities increase the cost of health service delivery due to the human and infrastructure resources required to support the supervision of trainees and maintain research capacity. In addition to increasing the cost of patient care, TTR activities also slow the throughput of patients. Given the growing focus on the efficient delivery of health services under Activity Based Funding (ABF), it will become increasingly difficult for public hospitals to adequately resource TTR, unless these activities are explicitly funded.

Therefore, MTA fully supports the work that the Independent Hospital Pricing Authority (IHPA) is currently undertaking in order to inform the development of a TTR classification, which includes the TTR costing study, and welcomes the opportunity to respond to this public consultation paper. Developing a reliable and systematic approach for capturing all TTR activities undertaken within public hospitals (and their associated costs), in order for these activities to be funded under ABF, is a technically challenging exercise.

As the key objective of the costing study is to inform the development of a TTR classification for the purpose of ABF, only activities that are funded by the public purse will be considered. In Australia, like many other countries, the medical technology industry makes a significant contribution to the delivery of TTR activities in public hospitals. Indeed, the public hospital system relies on this partnership, as it could never fund this type of support from public funding sources.

Many of the TTR activities identified in Appendix B of the public consultation paper are also delivered by industry. However, as these activities are not funded by the public purse, they will not be captured by this costing study. It is important that these industry-led activities are included in this study, because while this information may not directly inform the development of a TTR classification, it will help hospitals gain a better understanding of the nature and costs of TTR delivery, as well as aid in planning. This submission provides an opportunity to highlight the types of TTR activities that the medical technology industry provides to Australian public hospitals.

Teaching and Training

Australian public hospitals play a vital role in educating and training the health workforce. It is critical that teaching and training are recognised as core functions of public hospitals, and that adequate funding is allocated for these activities, in order to ensure that Australia has a workforce that is able to continue delivering high quality health services and meet the demands of our ageing population.

³ ABS 81040D009_201112 Research and Experimental Development, Businesses, Australia, 2011-12

⁴ WIPO Intellectual Property Statistics Data Center. Available at: <http://ipstats.wipo.int/ipstatv2/>

Adequate funding of teaching and training programs within public hospitals is particularly important, given the increasing number of Australian medical graduates who will be seeking vocational training in the coming years. Due to a significant clinical and administrative workload, many senior clinicians do not have sufficient time to dedicate to teaching. This tension between teaching and training and the delivery of patient care seems to be worsening. This was clearly evidenced by the findings of a 2009 Australian Medical Association survey, which showed that many junior doctors within public hospitals were not receiving adequate supervision as a result of the focus placed on service delivery, rather than teaching and training.⁵

In order for public hospitals to be able to allocate sufficient protected time to teaching and training, dedicated funding (based on the actual costs of conducting these activities) is essential. MTAA appreciates that aspects of this costing study will be particularly challenging. Specifically, teaching, training and the delivery of patient care often take place simultaneously within public hospitals. As such, it is difficult to identify and separate out these different activities and their associated costs. However, despite this, it is critical that every effort is made in this study to capture all teaching and training activities that are undertaken in public hospitals, including those embedded in patient care, in order to accurately inform development of the TTR classification. While it is the most resource-intensive of the options provided, a one-off study aimed at identifying activities undertaken by clinicians and trainees throughout the course of a shift seems the most accurate method of identifying embedded teaching and training activities.

As discussed, the medical technology industry in Australia contributes significantly to the delivery of teaching and training activities in public hospitals, and is committed to improving patient and health system outcomes. Best practice companies supplying medical technology in Australia employ experienced, trained experts who deliver world class education and training to hospitals and healthcare professionals on the safe and effective use of their products. Companies provide peer-to-peer education and training, fostering collaboration among healthcare professionals in both the public and private sector. Training programs are usually facilitated by leading professionals, with some companies bringing together experts from across the world to deliver best in class training. These activities provide extensive practical and theoretical exposure to evidence-based best practices and techniques. The cost of providing this support is factored into the purchase price of the product. However, in many cases this support continues to be supplied to clinicians and patients for the lifetime of a product, which can be a decade or more. Listed below are examples of the various teaching and training activities that the Australian medical technology industry delivers to healthcare professionals within the public sector.

1. Academic cadaveric courses
2. Academic symposia
3. Proctorships and visiting surgeon programs
4. Fellowship funding
5. Lectures
6. Webinars
7. Product workshops
8. Simulation-based training

MTAA notes that industry-led activities such as training that is required to support the introduction of new clinical techniques or technologies, and Continuing Professional Development (CPD) events, are considered outside the scope of teaching and training for ABF purposes. However, in order to obtain an accurate measure of all TTR activities that

⁵ Australian Medical Association, 2009. Available at: <https://ama.com.au/ausmed/junior-doctors-deliver-mixed-report-card-quality-medical-training>

take place within Australian public hospitals, it is important that these activities are captured by this costing study.

Specific examples of the types of teaching and training activities undertaken by one MTAA member company in Australian hospitals are outlined in Box 1.

Box 1 An example of teaching and training activities undertaken by an MTAA member company in Australian hospitals

The Company

An Australian subsidiary of a US-based multi-national manufacturing products across a range of areas, including cardiovascular, diabetes, neuromodulation, spine and biologics, and surgical technologies.

Surgical Technologies

This business unit is very active within the nursing and registrar community. Below is a list of the teaching and training events which the business delivered during 2014.

- *13 major scientific conferences* - these events are used to promote and market products/therapies at a booth or stand; many are lectured on during physician presentations
- *147 powered surgical setups and 17 systems to support 15 cadaveric surgeon programs* - these workshops are run by Key Opinion Leader (KOL) departments and are attended by registrars and consultants. The programs are recognised by the Royal Australasian College of Surgeons and are accredited with continuing professional development (CPD) points.
- The business held:
 - *8 x ENT MAPSS workshops* across Australia with 112 nurse attendees
 - *6 x Midas Rex ORP workshops* across Australia with 52 nurse attendees
 - *6 x Midas Rex registrar workshops* across Australia with 19 attendees - these workshops specifically train customers in the use, handling and care of products, and are delivered by company representatives
 - *5 x Major didactic nurse education days* with 220 attendees - these events are run by the company who invite specialists to present on topics in their field of expertise
 - *3 x Intra-Operative Neuro Monitoring workshops* with 58 attendees
 - *Various Navigation training sessions* – hands-on small group teaching on Navigation systems
 - *Collaborative Midas/Navigation events* with the Spine business unit

Neuromodulation

This business unit runs two large cadaver workshops per year, provides customisable training plans tailored to the individual needs of the consultant or fellow, provides proctoring and also funds fellowship roles:

- *Cadaver Workshops*
 - During the cadaver workshops, attendees are taught different implant techniques and also attend lectures. Surgical skills courses are also provided to clinicians who request additional training.
- *Customisable training plans (proctoring visits)*
 - The Neuromodulation business organises proctoring visits during which consultants or fellows observe an experienced surgeon three to four times, followed by guidance from the same surgeon during their initial cases. There are approximately 20 to 30 visits organised per year.

Research

Like teaching and training, research is an important function of Australia's public hospitals. The National Health and Medical Research Council (NHMRC) reported that for every dollar spent on Australian R&D, an average of \$2.17 in health benefits is returned.⁶ The benefits from research are translated into improved clinical outcomes and patient care. The Department of Health Strategic Review of Health and Medical Research (McKeon Review) recommended that health and medical research should be fundamentally embedded in the health system.⁷

The McKeon Review identified that it is very difficult to quantify the level of investment in health and medical research undertaken in hospitals. Importantly, public consultations undertaken as part of the Review revealed that in hospitals, funding originally allocated to research was often used to cross-subsidise other services, while the time spent by professional staff on research activities, as well as the outputs of research, were rarely audited.⁸

Clinical trials undertaken within public hospitals play an important role in improving Australia's healthcare system, and hospitals that participate in clinical trials have been shown to deliver better outcomes for patients. Specifically, hospitals that have a high participation in clinical trials were found to have a 4% lower level of non-compliance with clinical guidelines and a 2.5% lower mortality rate compared with hospitals that did not undertake any clinical trials.⁹ Industry-sponsored trials in particular, provide many direct and indirect benefits for participating hospitals. These include enhancing Australian expertise in trial conduct, enhancing the global profile and research links for Australian researchers, ensuring early access for patients to innovative medical technologies, and providing funds for research infrastructure and academic projects.¹⁰

While industry funds a significant proportion of clinical trials, a large part of the direct costs of research undertaken within Australian public hospitals is funded by external grants awarded by bodies such as the NHMRC and Australian Research Council (ARC). However, these funding schemes are limited in their scope, are extremely competitive, and do not cover all of the costs of research. Therefore, hospitals are still required to cover indirect research costs associated with maintaining research capability, as well as any gaps in direct research funding. As such, MTAA fully supports the work that IHPA is currently undertaking in order to identify the resources required to support research activities within public hospitals, and their associated costs.

It should be noted that this costing study may encounter obstacles when trying to capture inputs and outputs of research covered only by state or territory funding (as per the ABF definition), as many hospital research units rely on a hybrid of public and private funding sources. Data collection may be more successful if all research within public hospitals is captured, and then split by funding source and accurate FTE. This would remove the risk of over or under reporting, and would also provide valuable information for hospitals and other stakeholders, including industry, on the proportion of research undertaken in public hospitals that is industry funded. Specific feedback on Appendix B 'Proposed TTR data items' is as follows:

⁶ Strategic Review of Health and Medical Research in Australia – Better Health Through Research, Commonwealth Government, April 2013

⁷ Ibid

⁸ Ibid

⁹ Ibid

¹⁰ Value of Industry Sponsored Clinical Trials in Australia – Inaugural Survey of Investigator Perceptions on the Value of Industry Funded Clinical Research. NSW Clinical Trials Business Development Centre, 2011

Section B.4 Resources associated with maintaining research capability

- This should also capture cross departmental costs i.e. where research spans departments e.g. including pathology labs and radiology.

Section B.5 Outputs of research endeavor during data collection period

- The number of hospital research ethics committee (HREC) approved research projects is a logical measure, but it is also stated that 'value' will be measured, although this is not defined. Is 'value' simply the total study planned budget as at the ethics approval stage? Care would need to be taken with this measure, as the budget at this stage may not accurately reflect the total cost of a study, and does this represent the 'value' of this research?
- Peer reviewed papers are a good metric. However, it may be difficult to capture these, as this would rely on investigator/research group self-reporting (public online databases may not show hospital affiliation on all papers), and would need to identify peer reviewed papers that are solely a product of the health research unit i.e. not research that has been undertaken as part of a multicenter study or in conjunction with private hospitals, or research that has received industry support (as the definition of research for ABF excludes these).
- Another valid research output measure would be the number of competitive grants (e.g. NHMRC) awarded, as these rely on the demonstration of an ongoing, strong research capability.

CONCLUSION

MTAA fully supports the work that IHPA is undertaking in order to inform the development of a TTR classification, including the TTR costing study. As the peak body representing the medical technology industry in Australia, MTAA understands the interaction between industry, healthcare professionals and the hospital system. Therefore, we strongly believe that the considerable contribution the industry makes to TTR activities in public hospitals, and the expertise it provides, should be recognised in this work. We look forward to providing further input during the targeted consultations for this study.