NSW PRODUCTIVITY COMMISSION
'Kickstarting the productivity conversation' Discussion Paper November 2019

Submission by Medtronic Australasia

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INTRODUCTORY REMARKS

Thank you for the opportunity to contribute to your 'Kickstarting the productivity conversation' discussion paper on improving productivity in New South Wales (NSW) through ongoing reform.

For over 40 years, Medtronic Australasia has been based in New South Wales. We are now headquartered in Macquarie Park with over 500 employees based in this state.

We will not comment on all the areas of focus of the discussion paper but will provide comments on the areas that relate most directly to Medtronic's operations in NSW, or our expertise as a medical technology company.

We would also be happy to discuss these issues in more detail with the Productivity Commission as you progress with your process.

ABOUT MEDTRONIC

Making healthcare better is our priority, and we believe medical technology can play an even greater role in improving people's lives.

As a global leader in medical technology, services and solutions, Medtronic improves the health and lives of millions of people each year. We believe our deep clinical, therapeutic and economic expertise can help address the complex challenges — such as rising costs, aging populations, and the burden of chronic disease — faced by families and healthcare systems today. But we can't do it alone. That's why we're committed to partnering in new ways and developing powerful solutions that deliver better patient outcomes.

Medtronic provides a wide range of products, therapies and services with the emphasis on providing a complete continuum of care to diagnose, prevent, treat and monitor chronic and acute conditions. Our technologies encompass several areas, including:

- Cardiac Rhythm Disease Management (pacemakers, defibrillators);
- CardioVascular (heart valves, surgical ablation, coronary & endovascular stents);
- Neurovascular (revascularisation and embolisation technologies)
- Venous (endovenous therapy);
- Diabetes (insulin pumps & continuous glucose monitoring);
- Neuromodulation (neurostimulation including brain, spine & sacral, intrathecal baclofen pumps);
- Spine & Biologics (fixation & stabilisation plates, rods & screws);
- Surgical Technologies (ear, nose & throat and surgical navigation equipment); and,
- Minimally Invasive Surgical Therapies (stapling, trocars and access instruments).

Since the late 1940s, we have been working with others to alleviate pain, restore health, and extend life.

We are now among the world's largest medical technology, services and solutions companies, employing more than 85,000 people worldwide, serving physicians, hospitals and patients in more than 160 countries.

In 2018, we served more than 71 million patients around the world – or 2 patients every second.

Learn more at www.medtronic.com.au

SECURING THE BEST PATIENT OUTCOMES – THE IMPORTANCE OF VALUE BASED HEALTHCARE

Around the world, healthcare providers, governments, and payers are under intense pressure to improve patient outcomes while reducing costs. We believe the solution lies in a transition to value-based healthcare (VBHC).

We define VBHC as an effort to develop and deploy products, services and integrated solutions that improve patient outcomes per dollar spent in the healthcare system.

This is achieved by putting the patient at the centre of care by measuring value in terms of long-term patient outcomes rather than short-term transactions.

The World Economic Forum estimates that $6.5bn is spent globally on healthcare every year, but that anywhere from 30 – 50% of this spend is wasted.[1] The OECD has also identified that "a significant share of health spending makes only a modest contribution to improving patient outcomes. Worse, some health resources are not just spent on low-value care, they are wasted."[2]

This is unsustainable given the challenges facing our communities — such as rising costs, aging populations, and the burden of chronic disease.

A more coordinated, connected network where technology empowers providers to deliver better care to patients throughout their health journey and where outcomes that matter to patients are prioritised relative to the cost, is needed. The patient must be at the centre of care.

But what can this look like?

For patients undergoing a complex procedure, this might mean therapy optimisation that protects them from harmful complications and readmissions. In common surgeries that have a wide variance in outcomes, such as hip and knee replacements, this could mean grouping services for patients and physicians throughout the entire episode of care to ensure consistent and positive results. And for people with chronic diseases, this entails collaboration with patients and their clinicians to help manage the condition.

Around the world, Medtronic has partnered to deliver innovative, patient-focused VBHC projects where we share accountability for patient outcomes. These projects demonstrate not only our commitment to better health outcomes globally, but our commitment to partnering to deliver solutions that address the fundamental challenges posed to health systems.

Overall, Medtronic recognises that this type of healthcare transformation is complex and will take time. As the Economist Intelligence Unit has noted "VBHC requires nothing less than a paradigm shift from a supply-driven model to a more patient-centred system where payments

[1] World Economic Forum, Value in Healthcare, 2017
[2] OECD, Tackling Wasteful Spending on Health, 2017

are no longer made to providers for the volume of services but for the outcome of treatment(s)."[3]

There are a number of topics raised in the discussion paper which align themselves with Value Based Healthcare, including outcomes budgeting, resource utilisation, the role of information technology and data assets and the value of reforms that reduce pressure on the health budget over the longer term. We will not consider these elements in further detail here, but strongly support consideration of their role as part of a transition to VBHC.

Innovative service delivery models are also part of operationalising Value Based Healthcare in NSW. Whilst NSW is leading the country on VBHC policy, more innovative approaches to procurement and purchasing in the health sector that enable innovative partnerships over the longer term is essential to transitioning the healthcare system to a patient-focussed, outcomes-based model. Such approaches include competitive dialogue and require a shift away from short-term budgeting.

Medtronic is involved with a number of innovative partnerships globally as part of our commitment to sustainable health systems and VBHC that we would be happy to discuss with you in more detail. We would also be happy to share our insights and experience on Value Based Procurement.

COMMENTS ADDRESSING CONSULATION QUESTIONS

Workforce productivity and chronic disease management

Your discussion paper mentions the finding that: *"People in the workforce who suffer from chronic illnesses are estimated to earn slightly less than their healthy counterparts (between 1.0 per cent and 5.4 per cent less for a range of conditions)."*

Medical technology has the potential to help with the more effective management of chronic conditions. For instance, through technology to assist with the management of Type 1 and Type 2 diabetes.

Type 1 Diabetes (T1D)

In NSW, there are 41,000 registered cases of Type 1 diabetes.[4] T1D accounts for 8.9% of all diabetes across Australia (9.7% in NSW) and is increasing in prevalence.[5] There were 799 new cases of T1D in NSW in 2017, or 10.8 new cases per 100,000 population.[6]

To live with diabetes is to live in fear of a hypoglycaemic event. Severe hypoglycaemic events are a result of blood sugar levels decreasing to below normal levels. The complications can range from seizures, to complete loss of consciousness. This can be extremely dangerous, especially if it occurs when sleeping. If a severe event is not managed appropriately, it can lead to coma and death. It is estimated that around 23% of severe hypoglycaemic events require medical attention.[7]

[3] The Economist Intelligence Unit, Value-based Healthcare: A Global Assessment, 2016
[4] NDSS National Diabetes Map, 2019
[5] NDSS National Diabetes Map, 2019
[6] AIHW, Incidence of insulin-treated diabetes in Australia, May 2019
[7] Hammer, et al, Costs of managing severe hypoglycaemia in three European countries, *Journal of Medical Economics*, 2009; 12(4): 281–290

Diabetes patients also experience several other physical and psychosocial challenges in managing their condition that can affect both their private and working lives.[8]

In addition to hypoglycaemia, if blood glucose remains too high (hyperglycaemia), T1D patients can experience tiredness, thirst and frequent urination. Longer term complications associated with poor glucose level control can lead to blindness, amputations, heart disease and strokes.[9]

In addition, diabetes also affects workforce productivity and has broader economic impacts.[10]

> *"Elimination of diabetes can prolong life years lived by the whole population and increase the amount of productive years lived. Employers and government should be aware that having diabetes affects work force productivity and implement prevention programs to reduce the impact of diabetes on the workforce."*[11]

The management of diabetes involves constantly trying to keep blood glucose within safe levels. In addition to diet and exercise, T1D is managed through insulin replacement and monitoring of blood glucose levels.

There is technology, such as insulin pumps, which has made the clinical management of T1D easier and can improve quality of life.

The insulin pump is a small medical device that mimics the way a healthy pancreas functions.

The pump replaces the need for frequent injections by delivering precise doses of insulin 24 hours a day. Medtronic's MiniMed® 670G is the first and only insulin pump approved in Australia that automatically adjusts basal (background) insulin based upon sensor glucose values to help increase time in range, with fewer highs and lows.

However, there remains limited access to insulin pumps. Only 10 per cent of Australians with T1D use a pump,[12] lower than in many other developed countries with a similar disease burden.[13]

Insulin pumps not only decrease medical attention costs but also overall health expenditure. Evidence shows that insulin pump therapy, especially when combined with Continuous Glucose Monitoring (CGM), achieves effective glucose control, less hypoglycaemia and improved quality of life for people with T1D.[14]

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[8] Baker IDI et al, *diabetes: the silent pandemic and its impact on Australia*, 2012
[9] Kedia, N. *Treatment of severe diabetic hypoglycemia with glucagon: an underutilized therapeutic approach*. Diabetes Metab Syndr Obes, 2011;4:337-46
[10] Magliano, D, et al, *The productivity burden of diabetes at a population level*, American Diabetes Association, 2018
[11] Magliano, D, et al, The productivity burden of diabetes at a population level, American Diabetes Association, 2018
[12] Australian Institute of Health and Welfare, *Insulin pump use in Australia*. Diabetes series number 18. Cat. no. CVD 58, 2012, AIHW: Canberra
[13] *Australian Type 1 Diabetes Research Agenda*, Juvenile Diabetes Research Foundation, Sydney, 2010
[14] Pickup JC, Sutton AJ. *Severe hypoglycaemia and glycaemic control in Type 1 diabetes: meta-analysis of multiple daily insulin injections compared with continuous subcutaneous insulin infusion*. Diabet Med. 2008 25(7):765-74
Misso ML et al. *Continuous subcutaneous insulin infusion (CSII) versus multiple insulin injections for type 1 diabetes mellitus*. Cochrane Database of Systematic Reviews 2010, Issue 1
Yeh HC et al. *Comparative effectiveness and safety of methods of insulin delivery and glucose monitoring for diabetes mellitus: a systematic review and meta-analysis*. Ann Intern Med 2012;157(5):336-47
Pickup JC et al. Glycaemic control in type 1 diabetes during real time continuous glucose monitoring compared with self monitoring of blood glucose: meta-analysis of randomised controlled trials using individual patient data. British Medical Journal 2011;343: d3805
Bergenstal RM et al. Effectiveness of sensor-augmented insulin-pump therapy in type 1 diabetes. N Engl J Med 2010;363(4):311-20

Lower HbA1c (glycated haemoglobin) is associated with significantly lower risk for microvascular complication development.[15] Intensive treatment, associated with significant HbA1c reduction[16], is associated with 57% risk reduction in non-fatal heart attack, stroke or death from cardiovascular disease[17], compared to conventional treatment.

In addition, better glucose control has been shown to reduce the following Type 2 complications[18]:

- 41% reduction in amputation or fatal peripheral vascular disease;
- 20% reduction in microvascular complications (e.g. kidney disease and blindness);
- 21% reduction in death related to diabetes;
- 15% reduction in heart attacks;
- 12% reduction in stroke.

There are costs involved with the effective management of diabetes for individuals.

Funding through the National Diabetes Services Scheme (NDSS) and private health insurance are the two primary avenues for patients with T1D.

The NDSS provides funding for Continuous Glucose Monitoring and consumables for eligible patients – being those under 21, concessional status with high clinical need, and women with T1D who are planning pregnancy, pregnant or in the immediate post-pregnancy period.

Eligible private health insurance policies usually support patients with the costs of insulin pumps. For those without access to private health insurance, the cost of an insulin pump can be prohibitive.

So, while the technological solutions exist to assist with some of the challenges of diabetes, unless a patient is able to afford the appropriate level of private health insurance or meets the criteria set by the NDSS, access can be limited.

As such, we support your consideration of the issue of workforce productivity and chronic disease management and how to ensure the most appropriate technology to support the management of chronic conditions in New South Wales is available to patients that require it.

> *"Diabetes imposes a very large burden on the Australian population, not only in terms of health and well-being but also in terms of productivity. This burden is set to increase into the future as the prevalence of diabetes increases. This underscores the importance of prevention and adequate control of diabetes. Devotion of funds to this cause should be viewed as a (worthwhile) investment rather than, traditionally, as an expenditure."*[19]

Remote patient monitoring can also contribute to the more effective management of chronic conditions outside of a hospital setting, including reducing hospitalisations.

A recent CSIRO trial of home telemonitoring by patients with chronic conditions found[20]:

[15] Skyler JS. J. Endocrinol Metab Clin North Am. 1996;25(2):243-254
[16] DCCT Research Group. N Engl J Med. 1993; 329(14): 977-864
[17] DCCT/EDIC Research Group. N Engl J Med. 2005;353(25):2643-265
[18] Stratton IM et al. *BMJ* 2000; 321:405–412.
[19] Magliano, D, et al, The productivity burden of diabetes at a population level, American Diabetes Association, 2018
[20] CSIRO, Home Monitoring of Chronic Disease for Aged Care, 2016

- reduced mortality by more than 40%;
- reduced hospital admissions by 53%;
- reduced length of stay when admitted by almost 76%;
- reduced MBS and PBS expenditure by 46% and 26%.

We strongly support your consideration of telehealth options and encourage you to consider how to ensure that innovative telehealth solutions are enabled through appropriate reimbursement mechanisms.

Medtronic Australasia is a founding member of an alliance of industry participants, aligned with the Medical Technology Association of Australia, focussed on improving Connected Care frameworks across Australia. We would be happy to facilitate time for you to discuss the barriers in the telehealth market with this group of industry participants.

Workforce and human capital

This discussion paper considers some really important issues about the workforce. It is important that medical workforce planning is able to adapt to the latest technological innovations.

For instance, how does robotic assisted surgery impact on the workforce and can it assist in prolonging surgeon life?

How do the advancements in stroke treatment services over recent years impact on the clinical workforce?

There are also some potential learnings from the implementation of Value Based Healthcare initiatives that address some of the issues around medical workforce scope of practice. For instance, we understand the Dental Health Board of Victoria has seen some positive results from its VBHC pilot around optimal scope of practice.

Ensuring training, funding, registration processes keep up to date with technological innovations is essential in enabling a robust workforce that is able to adapt to the technological developments in the medical sector.

One of the other issues to consider as part of the regulatory and cultural barriers that could be preventing health professionals from optimal performance is funding arrangements, particularly for professions such as endocrinologists and diabetes educators. For instance, do reimbursement mechanisms through the MBS adequately address the time, care and management of diabetes patients required of endocrinologists or diabetes educators?

Regulatory Framework

Forward looking regulation that supports competition and innovation is essential for highly regulated but innovative companies that operate in the medical technology sector.

Time to market for medical devices based on regulatory approval and reimbursement regimes varies throughout the world.

Our sector is regulated by the Therapeutic Goods Administration, but there are important levers that the state government can pull to ensure that patients have access to the most innovative technological solutions, particularly when these innovations will improve patient outcomes and broader economic productivity. This can be achieved through processes that

enable innovative technology to enter the public health system without delay, or address other deficiencies in access for patients.

Forward-looking regulation that supports innovation and competition

Whilst we appreciate that the regulation of medical devices is an area of responsibility for the Federal Government, the approaches you have outlined to develop "an adaptive and iterative approach to test what is needed in terms of the regulation for new technology or business models" would enhance the timeframes in which patients in NSW get access to the most innovative technologies and treatment.

Any innovative improvements that can be created to bring to market safe and effective medical technology innovations, for instance by creating ad-hoc regulatory sandboxes as you have suggested, would be welcome.

CONCLUDING REMARKS

Medtronic appreciates the opportunity to provide comments in relation to this broad ranging discussion paper about ensuring the future productivity of New South Wales.

We would be happy to provide additional information about the contents of this submission, or any other aspects of our business and operations in New South Wales should this be of value to the Commission.