Exercise physiologists emerge as allied healthcare professionals in the era of non-communicable disease pandemics: A report from Australia, 2006-2012

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Article title: Exercise physiologists emerge as allied healthcare professionals in the era of non-communicable disease pandemics: A report from Australia, 2006-2012

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Exercise can be prescribed to prevent, manage and treat many leading non-communicable diseases (NCD) and underlying risk factors. However, surprisingly, Australia is one of only a few countries where allied healthcare professionals with specialized university education and training in exercise prescription and delivery provide services within a government-run healthcare system (Medicare). This article presents data on Medicare-funded services provided by accredited exercise physiologists (AEPs) from the inclusion of the profession in the allied healthcare model (January, 2006) to the end of 2012, contextualizes these data in relation to current NCD trends, and outlines recommendations that can potentially help curtail the current chronic disease burden through the further integration of exercise professionals into the healthcare system in Australia, and internationally. From 2006-2012, the number of AEPs in Australia has increased 563%. This rise in AEPs has been paralleled by increased delivery of services for eligible patients with a chronic medical condition (+614%), type 2 diabetes (+211-230%), and of Aboriginal and Torres Strait Islanders descent (+343%). These trends, which were developed through the “early years” of the profession, are encouraging and suggest that AEPs have taken up a vital position within the healthcare system. However, the total number of services provided by AEPs currently remains very low in relation to the prevalence of overweight-obesity and type 2 diabetes in Australia, and services for Aboriginal Australians are very low considering the extreme burden of chronic diseases in these vulnerable populations. We provide some recommendations that may help the exercise physiology profession play a greater role in tackling the NCD burden and shift the healthcare model in a direction that is more proactive, focused on disease prevention and health, including the early identification and treatment of major upstream risk factors.
“If exercise could be packed into a pill, it would be the most widely prescribed and beneficial medicine...” – Robert H. Butler, MD

1. INTRODUCTION

Non-communicable diseases (NCDs) currently account for over 63% of the annual death toll, and over 80% of these deaths occur in low- to middle-income countries.\textsuperscript{1} The leading NCDs globally include cardiovascular diseases, cancers, diabetes and chronic kidney diseases, while the major pathophysiological risk factors for these diseases include overweight/obesity, hypertension, and hyperglycemia.\textsuperscript{1} The economic impact is severe. Between 2010 and 2030, the direct and indirect costs of NCDs are expected to exceed US $30 trillion and push millions of people below the poverty line, while unprecedented strain is expected to be placed on healthcare systems and national economies.\textsuperscript{2}

Few genuine solutions to the global NCD burden have been proposed. However, it has been acknowledged that incredible suffering could be averted and billions to trillions of dollars could be saved if a large proportion of the public were to adopt health-supporting behaviors.\textsuperscript{3} This could occur rapidly if governments were to invest in strategies that promoted and rewarded health,\textsuperscript{2,4} with “health” defined according to the Constitution of the World Health Organization as ‘a state of complete physical, mental and social well-being and not merely the absence of disease’.\textsuperscript{5} By using this definition of health as a reference, the current global burden of disease reveals that healthcare systems have overwhelmingly failed to promote health. Therefore, a paradigm shift in healthcare is desperately required.

Exercise can be defined as physical activity that is planned, structured, repetitive and undertaken to improve or maintain aspects of physical fitness.\textsuperscript{6} A wealth of empirical evidence accumulated over the past several decades has shown that exercise can be used to
prevent, manage and treat many leading NCDs and risk factors.\textsuperscript{7-10} However, surprisingly, Australia is one of only a few countries where allied healthcare professionals with specialized university education and training in exercise prescription and delivery provide services within a taxpayer funded, government-run healthcare system (i.e. Medicare). Since January 2006, accredited exercise physiologists (AEPs) have been providing exercise-related services funded by Medicare Australia. This novel integration of AEPs into allied healthcare is perhaps a fundamental step in progressing toward a healthcare model that is more proactive, focused on disease prevention and health, including the early identification and treatment of the major upstream risk factors (e.g. inactivity, overweight-obesity, metabolic risk). AEPs are well positioned to play a potentially significant role in improving population health and reducing the NCD burden within Australia.

The purpose of this article is three-fold: (1) to present data on Medicare-funded services provided by AEPs from the inclusion of the profession in the allied healthcare model to the end of 2012 (i.e. January 1, 2006 – December 31, 2012), (2) to contextualize these data in relation to current NCD trends, and (3) to outline recommendations that may provide insight to governments and policy leaders in Australia and other nations seeking to curtail the chronic disease burden through the integration of exercise professionals in healthcare. Our article will first be contextualized by providing a brief rationale for the integration of exercise professionals into allied healthcare model, and an overview of how this occurred in Australia.

2. \textit{Why are exercise physiologists needed in the healthcare model?}

Empirical investigations conducted over the past several decades have consistently shown that exercise regimens involving potent methods of aerobic and resistance training can prevent and reverse overweight-obesity,\textsuperscript{11} cardiovascular diseases,\textsuperscript{12} type 2 diabetes,\textsuperscript{13-15} and the risk factors which contribute to these illnesses, including hypertension,\textsuperscript{16,17}
dyslipidemia, insulin resistance, systemic inflammation, and endothelial dysfunction. Effective exercise regimens can also improve immune system function and cancer-specific biomarkers, and hence exercise is known to reduce the risk of many cancers. There is indeed irrefutable evidence of the effectiveness of exercise in the primary and secondary prevention of many leading NCDs and related mortality. Accordingly, regular exercise is universally recommended for health, fitness and NCD prevention by international health agencies. Notably, exercise prescriptions that result in higher levels of physical fitness are associated with the lowest rates of chronic disease, the highest levels of quality of life, and the longest life expectancy. The manipulation of key exercise training variables (i.e. frequency, intensity, duration, specificity, periodization, progressive overload, etc.) is required to optimize improvements in physical fitness, and the application of appropriate behavior change strategies is needed to foster long-term adherence. Further, to maximize outcomes for a given individual, exercise needs to be prescribed and delivered with regard for the functional and disease-related limitations, as well as any domestic, social and occupational constraints. It is therefore important to integrate professionals that have specialist training and expertise in the many factors involved in exercise prescription and delivery within the healthcare system.

3. Exercise physiology emerges as a healthcare profession in Australia

Exercise physiology became a field of scientific research in the late 19th century, and was integrated as a subject of study within the physical education curriculum throughout most of the 20th century. In the 1960’s and 70’s, growth in the scientific study of exercise in health, fitness and sporting contexts led to the emergence of a new academic discipline, exercise science, which combined exercise physiology with other related study areas (e.g., biomechanics, motor control and learning, and psychology). In Australia, the discipline of
exercise science (also known as human movement science) gradually evolved into an academic discipline during the early 1970’s with the establishment of undergraduate programs at the University of Western Australia (1973) and the University of Queensland (1974).  

In 1992, the founding of the Australian Association of Exercise and Sports Science (AAESS), which changed its name to Exercise and Sports Science Australia (ESSA) in 2009 (www.essa.org.au), provided a framework for exercise physiology as a clinical profession, underpinned by the broad discipline of exercise science. The accreditation system for exercise physiology was first implemented in 1996, and the National University Course Accreditation Program (NUCAP) commenced in 2003. In September 2005, the Australian Government announced the inclusion of AEPs as allied healthcare professionals under Medicare, taking effect from January 2006. This enabled patients to claim rebates for healthcare services provided by exercise professionals. AEPs have a defined Scope of Practice (Table 1) and currently work alongside, and in collaboration with, general and specialist medical practitioners, diabetes educators, psychologists, dietitians, physiotherapists, chiropractors, and other allied healthcare professionals. AEPs make significant contributions to patient care in the community, including the private-, workplace-, and veteran-health sectors.

Unlike registered professions such as medicine, nursing and physiotherapy, exercise physiology in Australia is a self-regulated profession. While ESSA is the statutory regulator, it delegates responsibility for university accreditation to the NUCAP executive, which ensures that accreditation matters are dealt with independently, akin to a professional registration board. Curriculum standards are reviewed regularly in close collaboration with practicing professionals and with academic leaders across each of the sub-disciplines of exercise science, and with this the accreditation requirements have continued to evolve.
Currently there are two main models of university preparation to become an AEP: (1) a 3-year exercise science undergraduate degree, followed by a 1 to 2 year post-graduate degree (e.g. Masters degree) in clinical exercise physiology; or (2) a 4-year degree with exercise science and clinical exercise physiology content embedded throughout the course. Clinical placement experiences are a key feature of student training, with NUCAP requiring specific work place learning experiences. Of the 39 universities in Australia, 30 currently offer programs in exercise science, while 23 also offer courses in clinical exercise physiology. Twelve universities currently hold NUCAP accreditation of exercise science or exercise science plus clinical exercise physiology programs, while an additional 9 universities have NUCAP applications in progress or pending at the time of writing.

Since 2006, the year that Medicare first recognized exercise physiology services, the number of AEPs has increased by 563%, approximately ~38% each year (Figure 1). At the end of 2012 there were 2327 AEPs qualified to provide Medicare-funded services.

4. Medicare funded exercise physiology services, 2006 to 2012

According to Medicare, only patients with a “chronic medical condition,” defined as “a condition that has been, or is likely to be, present for at least six months or is terminal,” are eligible to receive services under the Medicare Australia Chronic Disease Management Plan.³⁸ Patients can claim a Medicare benefit (rebate) for a maximum of five visits to an allied healthcare professional per calendar year.³⁸ Eligible allied healthcare services include those provided by Aboriginal healthcare workers, audiologists, chiropractors, chiropodists, diabetes educators, dietitians, mental health workers, occupational therapists, osteopaths, physiotherapists, podiatrists, psychologists, speech pathologists, and exercise physiologists.³⁹ Individuals of self-identified Aboriginal or Torres Strait Islander descent are entitled to the same number of visits as the non-indigenous population; however, these services are provided
under separate item codes. Patients with a diagnosis of type 2 diabetes mellitus are entitled to additional Medicare services provided by diabetes educators, dietitians, and exercise physiologists. Exercise physiology services for patients with diabetes include one assessment and up to eight group services (e.g. group exercise sessions) per calendar year. All programs are general practitioner (GP) centered in that the management plan of the patient is developed and reviewed by the GP, and all referrals for allied healthcare services must come from the GP.

Medicare reports on the use of services are publicly available via the Medicare Item Reports website: https://www.medicareaustralia.gov.au/statistics/mbs_item.shtml. In July 2013, we collated reports using the items code for all exercise physiology services, including exercise physiology services for chronic disease management (Item Code: 10953), exercise physiology services for type 2 diabetes (Item Codes: 81315 and 81110), and exercise physiology services for Aboriginal and Torres Strait Islanders (Item Code: 81115). We also retrieved data on services provided by physiotherapists, dietitians, diabetes educators, and psychologists (Item codes: 10960, 10954, 10951 and 10968, respectively) to contrast services provided by exercise physiologists with these other allied healthcare professions.

4.1 Chronic disease management service (Item Code: 10953)

The number of exercise physiology services provided nationwide under the Chronic Disease Management Plan has increased from 2006 to 2012 (+614%; Table 2). The largest rise occurred between 2006 and 2007 (+118%), and since 2007, the number of services has increased by 19% to 37% annually. Data on the number of services provided per capita and the Medicare benefits paid show similar trends (data not shown). Notably, over 62% of exercise physiology services from 2006-2012 were provided to women, and the use of services by both women and men was highest in those aged 55-64 (data not shown).
To contextualize the usage of exercise physiology ‘chronic disease management’ services in 2012, we reviewed data from the most recent National Health Survey (2007-08) which showed that at least 13 million resident Australians were categorically overweight or obese. Overweight/obesity could fit the criteria of a “chronic medical condition” defined by Medicare, and exercise is a first-line treatment for these conditions. By assuming that each of the 121,926 services in 2012 represented one overweight or obese individual, we estimate that less than 1% of this at-risk population was referred for exercise physiology services in 2012 (i.e. \((121,926/13,000,000) \times 100 = 0.94\%\)).

4.2 Type 2 diabetes services (Item Codes: 81110 and 81115)

Exercise physiology services for patients with type 2 diabetes, including assessment services (Item Code: 81110) and group exercise sessions (Item Code: 81115) have been available since May 1, 2007. In 2007, a total of 972 assessment services (Item Code: 81110) were provided nationwide (Table 2). The number of assessment services increased to 1777 in 2008, the first full year of this service, and increased by 211% between 2008 and 2012 (n=5536). In 2007, 2,681 group session services were provided for patients with type 2 diabetes. The number of group session services increased to 8,495 in 2008 (the first full year of this service) and increased by 230% between 2008 and 2012 (n=28,106). Women received 55% of both assessment and group session services, and the use of services was highest in men and women aged 55-74 (data not shown).

To contextualize the usage of diabetes-related services in 2012 we reviewed data from the most recent National Health Survey (2007-08) which showed that over 721,000 resident Australians had known type 2 diabetes in 2008. Patients with diabetes are entitled to one assessment service (Item Code: 81110) per year; therefore, less than 0.8% of patients with diagnosed type 2 diabetes were referred for an assessment service in 2012 (i.e.
Patients are entitled to a maximum of eight group sessions per year. If we assume that each service represents one patient, approximately 3.9% of patients with diagnosed type 2 diabetes had been referred for exercise physiology group sessions in 2012 (i.e. \( \frac{28,106}{721,000} \times 100 = 3.9\% \)). This is a very low number of services given that exercise is effective in the treatment of type 2 diabetes and its underlying risk factors.\(^\text{15}\)

4.3 Aboriginal or Torres Strait Islanders services (Item Code: 81315)

Exercise physiology services provided to persons of self-identified Aboriginal or Torres Strait Islander descent commenced on November 1, 2008. Only two services were provided nationwide under this scheme in 2008 (Table 2). The number of services increased to 101 in 2009 (the first full year of this service) and increased by 343% between 2009 and 2012 (\( n=447 \)), with the largest rise occurring between 2011 and 2012 (+226%). The majority of services were provided to women (62%), while the use of services by women was highest amongst those aged 45-54 and use of services by men was highest amongst those aged 55-64 (data not shown).

According to the most recent Australian census (2011), there were 548,370 individuals of self-identified Aboriginal and/or Torres Strait Islander descent living in Australia.\(^\text{43}\) To contextualize the use of services by Aboriginal or Torres Strait Islander in 2012, we assumed that each of the 447 services represented one individual, to take the best case scenario, and computed that no more than one-tenth of a percent of this population (i.e. 0.08%) was referred for exercise related services in 2012 (i.e. \( \frac{447}{548,370} \times 100 \)). This is an extremely low number of services given that approximately 60% of indigenous Australians aged 15 and over suffer from one or multiple chronic diseases.\(^\text{44}\) Mortality attributed to chronic disease is 7 times higher in indigenous versus non-indigenous Australians.\(^\text{44}\) In 2006-2010, 68% of
indigenous deaths were due to chronic disease (e.g. cardiovascular disease, cancer, diabetes, respiratory disease, kidney disease). Notably, Indigenous Australians suffer amongst the highest rates of type 2 diabetes and cardiovascular diseases in the world.\textsuperscript{45} Interestingly, the region with the largest proportion of indigenous peoples (i.e. Northern Territory, 26.8\%)\textsuperscript{43} also has the lowest concentration of practicing AEPs. Only 20 AEPs were working in the Northern Territory in 2012.

4.4 Exercise physiology services compared to other allied health professions

In Figure 2 we contrast the number of exercise physiology services (Item Code: 10953) with the number of services provided by other allied health professions that commonly treat individuals afflicted with NCDs under the \textit{Chronic Disease Management Plan}, including physiotherapists, dietitians, diabetes educators, and psychologists (Item codes: 10960, 10954, 10951 and 10968, respectively). Of these allied healthcare professions, physiotherapy and dietitian services were the top services funded \textit{via} Medicare between 2006-2012, followed by exercise physiology, diabetes educator and psychology services. In 2006, physiotherapists provided approximately 1500\% (15-fold) more services than AEPs. From 2007 to 2012, the disparity ranged from 980\% to 1100\% (~10 to 11-fold). Physiotherapy services have increased at an average rate of 28\% annually since 2006 (range 14-50\%).

5. \textit{Summary and recommendations}

The NCD burden within Australia and worldwide is unprecedented and continues to escalate. Current healthcare systems have failed to target NCDs given that the focus remains largely on treating symptoms and advanced diseases rather than promoting health and targeting underlying risk factors, including physical inactivity. Exercise can be applied as a healthcare intervention to help prevent, manage and treat many of the major NCDs.\textsuperscript{7,27}
Therefore, healthcare professionals with university training in exercise physiology could therefore play a significant role in improving population health.

Since January 2006, AEPs have provided services as allied healthcare professionals within the national healthcare system in Australia. From 2006-2012, the number of AEPs in Australia has increased by 563% (~38% per year) (Figure 1). This rise in the number of AEPs has been paralleled by increased delivery of services for patients with a chronic medical condition, type 2 diabetes and of Aboriginal and Torres Strait Islanders descent (Table 2). The trends are encouraging and suggest that AEPs have taken up a vital and important position within allied healthcare. However, the number of services provided by AEPs remains very low in relation to the prevalence of overweight-obesity and type 2 diabetes. Services are even lower for Indigenous Australians and Torres Strait Islanders. Further, the number of services provided by AEPs under the Chronic Disease Management Plan remains much lower than those provided by physiotherapists (Figure 2).

Our analysis of these “early years” (2006-2012) of the exercise physiology allied healthcare profession in Australia can be used to outline some general recommendations that can be applied to help curtail the NCD burden within this country, and abroad:

1. Physical activity and physical fitness should be assessed as risk factors:

Physical inactivity and low physical fitness are major NCD risk factors and should therefore be assessed and recorded routinely by general practitioners and/or allied healthcare professionals. Accordingly, individuals of low fitness and activity should be referred for AEP services. The concept of monitoring physical activity levels is in alignment with the “Exercise is Medicine” strategy, and the view that physical activity is a vital health measure. All other modifiable risk factors are already routinely assessed in general practice, and physical activity should also be assessed routinely by qualified professionals including AEPs and exercise scientists. Further, evidence suggest that higher levels of physical fitness
(i.e. cardiorespiratory and muscular fitness) are associated with lower risk of chronic diseases and all-cause mortality\textsuperscript{33,48,49} and hence the measurement of physical fitness as a risk factor should be considered, particularly given that exercise intervention can effectively improve fitness parameters. Early identification of sedentary and unfit individuals and appropriate goal setting and referral to an AEP service can likely mitigate the NCD burden.

2. **Overweight/obesity should be treated as a chronic disease:** Excess adiposity is well recognized as a major risk factor for many advanced diseases (e.g. hypertension, heart disease, diabetes, stroke, depression, dyslipidemia, various cancers, back pain, etc.). The early referral of such patients under the *Chronic Disease Management Plan* can likely reduce the burden of overweight-obesity and more significant diseases.

3. **Greater referral of patients with type 2 diabetes:** Type 2 diabetes can be effectively treated with exercise regimens involving aerobic and resistance training.\textsuperscript{15} Referral of more patients with type 2 diabetes for assessment and group-based exercise services can potentially contribute to curtailing this disease. The data presented suggest that these services are currently vastly underutilized.

4. **Greater referral of indigenous peoples:** To date, there has been minimal referral of indigenous peoples for exercise physiology services in Australia, and very few AEPs operate in the Northern Territory (n=20), the region with the highest concentration of indigenous peoples. The lack of referral of indigenous peoples represents a significant gap in healthcare delivery given the extremely high prevalence of NCDs in these populations.

5. **National audits of the cost-benefit of AEP services.** The cost-benefit of AEP services in relation to both health and financial outcomes should be analyzed and reported within publically available research reports and publications. AEP services can potentially reduce the NCD burden contributing to lower direct health care expenditures, and indirect expenditures (e.g. lost wages, lost productivity, etc.). Recent estimates suggest that
overweight and obesity result in direct and indirect costs of over $56 billion annually within Australia. While there is strong efficacy data supporting the use of exercise in curtailing the burden of NCDs, the profession must make efforts to demonstrate broader effectiveness and cost-benefit if governments are to increase accessibility to these services.

6. More than five allied healthcare visits per year funded by Medicare: Adaptations to exercise training and the resultant benefits often take several weeks to months to develop. Furthermore, there is often a need for more intensive supervision, particularly early in a program, to ensure proper technique, adherence and behavior change in relation to the exercise prescription. As such, for many previously sedentary individuals, 5 visits may only constitute a period of pre-conditioning and minimal adaptation. Consideration needs to be given to increasing the number of funded visits to allied health care professionals (currently 5 per year) within the Medicare system to apply and monitor long-term behavior change strategies, including exercise. This could include expanding AEP group-based service items beyond diabetes care only. Perhaps a visitation scheme could be developed where patients could report back to an AEP on a bi-monthly basis for follow-up and documentation of intended change.

7. Education of physicians, allied health care professionals and the public: There needs to be greater acknowledgement of the potential health benefits of prescribed exercise training. Clearly, there is a vast evidence base supporting the many physiological, metabolic, functional and psychological benefits of exercise. Healthcare professionals and the public in general may be unaware of many of these benefits, particularly in relation to prevention and treatment of risk factors and chronic diseases. Further, we suggest a different public health message, where the repeated and softened recommendation for ‘more physical activity’ is replaced with recommendations for more vigorous exercise and higher levels of physical
fitness. Public education of the need for more aggressive exercise intervention in individuals more at risk for specific diseases is long overdue.

8. **Shift the healthcare model toward disease prevention and health promotion:**
There is now a need for a system where allied healthcare professionals, including AEPs, can function and be reimbursed within a disease prevention framework. Currently, the AEP is constrained to provide a limited service to individuals with known disease. Economic logic mandates that in order to meaningfully constrain the growing financial burden of disease within the healthcare sector the incidence of disease must decrease, and hence risk factors must be targeted early with more proactive approaches.

9. **Translation to less-developed countries:** The impact of NCDs is greatest in low and moderate income countries. With this in mind, aid to less developed countries could include training, accreditation frameworks, infrastructure, and financial support for the implementation of professional exercise physiology services.

6. **CONCLUSION**

Exercise is a potent weapon against many chronic diseases. Integration of exercise professionals within healthcare systems could provide a fundamental step in tackling the seemingly insurmountable challenge of global NCD pandemics. We have presented evidence that AEPs have taken up a vital and important position within the healthcare system in Australia within just 7 years (2006-2012), and have provided some recommendations which may help this profession strengthen and become more influential in tackling the NCD burden, while shifting to a more proactive model of healthcare.
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REFERENCES


Table 1: Accredited exercise physiologist (AEP) scope of practice (Exercise and Sports Science Australia. AEP scope of practice, June 2012. Available at: http://www.essa.org.au)

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<table>
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<tbody>
<tr>
<td>1</td>
<td>Screening and risk stratifying to ensure the safety and appropriateness of exercise and physical activity interventions;</td>
</tr>
<tr>
<td>2</td>
<td>Assessing a person’s ‘movement’ capacity in people of all ages and levels of health, well-being or fitness;</td>
</tr>
<tr>
<td>3</td>
<td>Development of safe, effective individualized exercise interventions;</td>
</tr>
<tr>
<td>4</td>
<td>Provision of health education, advice and support to enhance health and well-being;</td>
</tr>
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<td>5</td>
<td>Provision of exercise intervention and advice for those at risk of developing a chronic condition or injury;</td>
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<tr>
<td>6</td>
<td>Provision of clinical exercise prescription, for those with existing chronic and complex medical conditions;</td>
</tr>
<tr>
<td>7</td>
<td>Provision of rehabilitation and advice for patients following the acute stage of injury, surgical intervention, or during recovery to restore functional capacity and well-being; and</td>
</tr>
<tr>
<td>8</td>
<td>The above tasks may occur at any level of primary, secondary or tertiary health care, and may include employment or volunteer work at an individual, community or population health level through various employers or industries.</td>
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Table 2: Medicare funded exercise physiology services provided by AEPs, 2006 to 2012

<table>
<thead>
<tr>
<th>Service Description</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
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<tr>
<td>Chronic disease management service (non-specific)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Item Code: 10953</td>
<td>17,054</td>
<td>37,231</td>
<td>48,384</td>
<td>66,463</td>
<td>79,412</td>
<td>95,802</td>
<td>121,926</td>
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<td>Type 2 diabetes – assessment service</td>
<td>N/A</td>
<td>972</td>
<td>1,777</td>
<td>2,856</td>
<td>3,674</td>
<td>4,887</td>
<td>5,536</td>
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<tr>
<td>Item Code: 81110</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Type 2 diabetes – group exercise sessions service</td>
<td>N/A</td>
<td>2,681</td>
<td>8,495</td>
<td>13,398</td>
<td>17,543</td>
<td>23,731</td>
<td>28,106</td>
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<tr>
<td>Aboriginal or Torres Strait Islanders service</td>
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<td>N/A</td>
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<td>101</td>
<td>113</td>
<td>137</td>
<td>447</td>
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<tr>
<td>Total Services</td>
<td>17,054</td>
<td>40,884</td>
<td>58,658</td>
<td>82,818</td>
<td>100,742</td>
<td>124,557</td>
<td>156,015</td>
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</tbody>
</table>

All data presented as number of services provided nationwide; AEP=accredited exercise physiologist; N/A= not applicable
Figure 1: Number of accredited exercise physiologists in Australia, 2006-2012

Figure 2: Number of Medicare funded services provided by exercise physiologists (Chronic disease management service, Item Code 10953) compared to services provided by other allied health care professionals, 2006-2012