

National Institute of Complementary Medicine

Cost Effective Applications of Complementary and Alternative Medicine

February 2011

The following document was prepared by Strategic Project Partners (SPP) to summarise key findings of the Report:

***Cost Effectiveness of Complementary Medicines* commissioned by NICM
and delivered by Access Economics in August 2010**

NICM is an Australian Government initiative, supported by the NSW Government and hosted by the University of Western Sydney

1. BACKGROUND

Australian consumers have embraced the use of complementary and alternative medicine (CAM). Two in three Australians have used complementary medicines over the past 12 months and approximately 42% of these use CAMs to prevent or manage chronic, high priority health problems. The growth in use of CAMs over recent years is supported by a growing body of scientific knowledge on their effectiveness and understanding of how they work. However, the widespread use of CAMs in Australia is not yet reflected in national health policy or in the scale of quality information available to inform health practitioners and consumers on the most appropriate CAM use.

The National Institute of Complementary Medicine (NICM) was established to provide leadership and support for strategically directed research into complementary medicine and translation of evidence into clinical practice and relevant policy to benefit the health of all Australians.

As part of NICM's efforts to inform the effective integration of complementary medicine into routine healthcare, the institute commissioned *Access Economics* to undertake a series of studies assessing the cost effectiveness selected CAM interventions. Four of the five CAMs assessed were found to be cost effective as alternative or adjunctive treatments for national health priority health conditions including:

- Omega-3 fish oils for secondary prevention of heart disease
- Acupuncture for chronic low back pain
- St John's wort for mild to moderate depression, and
- An herbal combination for osteoarthritis.

2. STUDY SCOPE AND CRITERIA

The Access Economics review considered previously reported clinical data and assessed the financial implications of a variety of CAMs in terms of the impact on direct healthcare costs. The CAMs assessed in this study included:

1. Fish oils for prevention of further cardiovascular disease in heart attack patients
2. Acupuncture for chronic non-specific lower back pain
3. St John's wort for mild-moderate depression
4. Fish oils for rheumatoid arthritis
5. A proprietary herbal blend (Phytodolor) for osteoarthritis

2.1. Definition of Cost Effective Interventions

DALYs: Disability Adjusted Life Years or DALYs are widely used as a measure of disease burden. This measure was developed by the World Health Organisation (WHO) and can be thought of as a measure of the normal/healthy years of life lost due to disease. The number of DALYs deemed to be lost due to a disease is based on consideration of the mortality rate as well as the length and severity of any disability/impact on the normal life of disease sufferers. Any effective treatment can be assessed in terms of the reduction in disease burden or the number of DALYs avoided due to treatment.

DALYs and cost effective interventions: This study assessed CAM treatments relative to WHO guidelines on what constitutes a cost effective intervention. WHO guidelines articulate cost effectiveness in terms of the cost to reduce disease burden by 1 Disability Adjusted Life Year (DALY). The table below outlines WHO cost effectiveness criteria.

WHO GUIDELINES FOR COST EFFECTIVE INTERVENTIONS

COST EFFECTIVENESS	WHO GUIDELINE	CRITERIA IN AUD*
Not cost effective	Cost is >3 times GDP per capita per DALY avoided	>\$156k/DALY
Cost effective	Cost to is 1-3 times GDP per capita per DALY avoided	\$104k-\$156k/DALY
Highly cost effective	Cost to is <1 times GDP per capita per DALY avoided	<\$52k/DALY

*Based on figures for Australian GDP per capita in 2008/9

The cost effectiveness of each specified CAM was assessed with respect to the *incremental costs* and *incremental reductions in DALYs* compared with conventional comparator treatments.

3. STUDY RESULTS

3.1. Fish oils for secondary prevention of cardiovascular disease

Approximately 310,000 Australians suffer from chronic heart disease. These patients are at high risk of further heart attack or other cardiovascular diseases. Collectively, cardiovascular diseases are responsible for 46,600 deaths annually and are a significant contributor to disability. The total Australian direct healthcare costs attributed to cardiovascular disease is \$5.9 billion p.a.¹

It has been clearly established in the medical literature that fish oil consumption prevents further cardiovascular disease (e.g. heart attack and stroke) in patients who have experienced a recent heart attack. This study assessed the value of complementing standard care for heart attack patients with omega-3 fish oil supplements, where the fish oil supplements were commenced within 3 months of experiencing a heart attack.

Fish oils were found to be “highly cost effective” for the prevention of secondary cardiovascular events. The cost of this intervention was only \$2,000 per DALY saved. This is well below the WHO threshold for a highly cost effective treatment (i.e. GDP or \$52,000 AUD). Use of fish oil supplements resulted in a 41% decrease in total mortality rate and has potential to reduce the total disease burden by 19,400 DALYs annually.

These findings are consistent with those of previous studies and lend further weight to WHO, NHMRC, National Heart Foundation (Aust), and American Heart Association recommendations on the use of omega-3 fish oil supplements to reduce the risk of heart disease.

3.2. Acupuncture for chronic non-specific lower back pain

Chronic lower back pain is a leading cause of disease burden in Australia, affecting an estimated 1.9 million Australians. In addition to the significant direct health care costs associated with pain management, chronic back pain is associated with an increased risk of depression and substantial indirect economic impacts due to the burden on carers and impact on productivity. These indirect economic impacts have previously been estimated at up to 4 times the direct health care costs.²

This study assessed the cost effectiveness of:

- i) Acupuncture in *combination* with conventional treatments (medication, physiotherapy, exercises, education), and
- ii) Acupuncture as an *alternative* to conventional treatments

Acupuncture was demonstrated to be highly cost effective for the management of lower back pain when used in *combination* with conventional treatments. The additional cost of treatment was \$18,960 per DALY avoided (considering the impact of treatment on both back pain and associated depression). However, acupuncture was found not to be cost effective as an *alternative* to conventional treatments.

This study result supports the approach of international best practice leaders in managing lower back pain, such as the UK National Institute for Health and Clinical Excellence (NICE), who recommend patients are offered a course of acupuncture alongside conventional therapies.

¹ AIHW Australia's Health reports for 2008 and 2010

² Access Economics, 2007

3.3. St John's wort for mild-moderate depression

Approximately 340,000 Australians suffer from (diagnosed) mild-moderate depression. Psychological therapies and exercise are the recommended first line of treatment for people. However, where additional pharmacological treatments are recommended, previous clinical studies suggest St John's wort may be an appropriate alternative.

The Access Economics review demonstrated that **St John's wort is a suitable lower cost alternative to standard antidepressant treatments**. It was just as safe and effective as standard care, had lower levels of side effects and fewer patient withdrawals from treatment.

Treatment with St John's wort costs \$146 less per patient per year than conventional antidepressants. The potential saving, if 50% of current patients were to change from conventional pharmaceutical treatments to St John's wort, is \$25 million p.a. In addition, there would be a corresponding reduction in disease burden of 24.5 DALY p.a. due to subsequently reduced treatment switching.

3.4. Fish oils for rheumatoid arthritis

An estimated 510,000 Australians are affected by rheumatoid arthritis. This condition causes pain and inflammation in the joints, often affecting the knees and hips. This in turn restricts the ability of many patients to maintain an active and healthy lifestyle. Highest incidence rates are observed in older population groups.

Fish oils have previously been shown to be effective in managing symptoms associated with rheumatoid arthritis. This study assessed the cost effectiveness of fish oil supplements in combination with short term non-steroidal anti-inflammatory drug (NSAID) use (3 months) to manage joint pain and inflammation and reduce the side effects associated with longer term NSAID use (over 12 months). **In this instance, fish oils were found not to be cost effective method of reducing disease burden due to rheumatoid arthritis** when compared with conventional NSAID treatment.

3.5. An herbal blend (Phytodolor) for osteoarthritis

Osteoarthritis is one of the most common forms of arthritis. It affects more than 1.6 million Australians and is responsible for 86,000 hospitalisations annually. Although conventional pharmaceutical treatments offer some relief, side effects restrict their use in some patients. For example, NSAIDs are associated with increased risk of gastrointestinal bleeds and are contraindicated in patients with a history of asthma and heart disease. The UK Foundation 'Arthritis Research Campaign' has previously reported a proprietary herbal blend ('Phytodolor') as having high safety and effectiveness for management of the pain and inflammation associated with osteoarthritis.

The Access Economics study concluded that not only does Phytodolor result in fewer side effects than the principal non-steroidal anti-inflammatory drug, Voltaren, **Phytodolor is a lower cost alternative to this conventional NSAID treatment**. Based on current price estimates, treatment with Phytodolor would deliver a saving of up to \$102 per patient per annum compared with Voltaren. In practice, osteoarthritis patients use a variety of NSAID medications. Therefore, the total potential health care savings are dependent both on the cost effectiveness of Phytodolor relative to Voltaren and relative to other commonly used NSAIDs. However, if 30% of all osteoarthritis patients are assumed to currently use Voltaren then a change in the recommended treatment to Phytodolor would result in a total reduction in treatment costs of up to \$48 million p.a.

4. CONCLUSIONS AND OTHER OPPORTUNITIES FOR CAMS

The above results demonstrate that CAMs are not only effective in a range of chronic health conditions, but they can offer a genuine opportunity to reduce disease burden in a cost effective manner. The CAMs discussed above represent only small subset of those available, other examples of effective CAMs (not assessed as part of this study) include:

- Calcium and vitamin D supplements to reduce the incidence/severity of osteoporosis (700,000 Australians diagnosed with osteoporosis and osteoporosis-related medical costs were \$1.9 billion in 2007)^{3,4}
- Multivitamin and multiminerall supplementation in the elderly to maintain general wellbeing
- Pre- and post-operative oral nutritional supplementation for lower gastrointestinal tract surgery

It is important that CAMs continue to be assessed for both efficacy and cost effectiveness to ensure that policy makers, health practitioners and consumers have the information required to allow appropriate and informed integration of CAMs into routine healthcare.

5. THE ROLE OF NICM

The National Institute of Complementary Medicine was established in 2007 with funding support from the Commonwealth and NSW Governments and hosted by the University of Western Sydney, the institute has strong ties with complementary and alternative medicine researchers and industry representatives across Australia.

NICM has helped build the groundswell of collaborative efforts to develop the evidence base needed to inform integration of CAMs into routine healthcare. Over the past 3 years, NICM has provided a critical focal point for Complementary and Alternative Medicine industry stakeholders. It established 3 collaborative centres on Traditional Chinese Medicines, Natural Medicine and Neurocognition, and Nutraceuticals and Herbal Medicine, conducted critical research to validate the efficacy and cost effectiveness of CAMs, and strengthened ties both between industry and researchers and amongst individual research groups. The institute is keen to continue to build on its past success and facilitate activities that:

- Provide consumers and health practitioners with evidence to inform decision making relating to use of complementary medicines and reduce risk
- Inform Government on health investment and policy outcomes
- Reduce healthcare costs, and
- Grow the complementary and alternative medicine sector in Australia.

6. FURTHER INFORMATION

Additional information on this study (including the full Access Economics report) and on other NICM activities is available from the NICM web site: www.nicm.edu.au

³ AIHW Australia's Health 2010

⁴ Osteoporosis Australia figures