# Submission 016

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Dear Mr Hastie

#### Heart Foundation feedback for Personal Health Promotion Interventions Inquiry

The Heart Foundation welcomes the opportunity to provide feedback to the Health and Ambulance Services Committee (HASC) Inquiry into Personal Health Promotion Interventions Using Telephone and Web-based Technologies.

Due to the epidemic in overweight and obesity that Queensland and the whole of Australia is experiencing, we are pleased to see this Parliamentary Committee looking into the evidence for the effectiveness and cost effectiveness of health coaching interventions to increase physical activity, improve nutrition and reduce weight.

One of the Heart Foundation's strategic goals is to help create physical and social environments that give Australians healthy options and provide information and support to promote their heart health. We want more Queenslanders to be more active, more often, eat healthier and achieve and maintain a healthy weight.

Physical inactivity is a major health problem in its own right and is linked to weight gain and a range of chronic diseases. One of the Heart Foundation's objectives is to increase the levels of physical activity in our community. With 40% of adults and 59% of children in Queensland not being physically active enough to achieve health benefits and two in three adults and one in four children overweight or obese<sup>1</sup>, we need to provide built environments, legislation, policies and programs that support people to be active. As more people walk or cycle, their participation in physical activity increases, which helps to reduce risk factors and improve cardiovascular health in the population.

Queensland adults' consumption of fruit and vegetables is also extremely low (60% and 7%, respectively<sup>1</sup>). By increasing people's consumption of fruit and vegetables we will improve their nutrition and displace the consumption of discretionary foods (currently 37% of daily energy intake in Queensland adults).<sup>1</sup> Increasing people's physical activity levels and improving nutrition will support weight reduction.

#### Prevention as a priority

Prevention includes any measure that aims to avoid or reduce the severity of injuries or diseases, and can include interventions at the community or individual level.<sup>2</sup> As behaviour is influenced by personal factors and the physical and social environments in which people live, work and play, a multi-level and multi-agency approach is needed. Prevention has played an important role in the health gains achieved over the 20<sup>th</sup> century and has the potential to play a major role in the 21<sup>st</sup> century. However, investment in this area has been low.

The Heart Foundation warmly welcomes the priority given to preventive health and the commitment of an additional \$46 million in Labor's *A Healthier Queensland*. We will work with the Queensland Government to support the implementation of these commitments.

The Heart Foundation supports the proposed establishment of a state-wide Queensland Health Promotion Commission (QHPC) (\$7.5 million investment over four years) and the setting up of a Select Parliamentary Committee or other appropriate process to review and guide the QHPC. We believe this kind of focus on prevention will give it the priority it deserves. However, we will continue to advocate for further increases in prevention funding, seeking to increase the commitment to 5% of the whole health budget.

Queensland's health budget takes up more than a quarter of the total state budget. This is unsustainable. Chronic diseases (heart disease, stroke, cancer and diabetes) cause 89% of all deaths and cost Queensland \$7.7 billion.

We must prevent chronic diseases as well as help people with chronic disease stay as healthy as possible by investing in prevention. Government funding to prevention falls well short of best practice at less than 2%. New Zealand spends 7%, Canada 6.5% and Slovakia 5%.<sup>2</sup> Government leadership and coordination is vital as there is no single solution, or organisation, that can effect the behaviour changes required on their own.

Cardiovascular disease is the most expensive disease in Queensland, costing 10% of total allocated recurrent health expenditure at \$2.01 billion in 2011-12<sup>1</sup>. It results in more than 100,000 hospitalisations here every year<sup>1</sup>. Two thirds of Queenslanders are in danger of developing cardiovascular disease as they have at least one of the following risk factors - high blood pressure, high cholesterol, obesity or diabetes<sup>1</sup>.

### Social marketing verses Social advertising

We urge the Committee to refer to the submission from Rebekah Russell-Bennett and her colleagues at QUT that explains that telephone and web-based technologies such as SMS, smartphone apps, gamification, online/mobile games, online quizzes and tools can be used in personal health interventions in two ways, health promotion or social marketing.

There can be confusion about the terms social marketing and health promotion and often they are used interchangeably when they are significantly different approaches. According to QUT's submission, social marketing is the science and practice of behaviour change and involves goods and services that offer a value proposition and incentivises citizens to change their behaviour voluntarily.

Social marketing is one of three approaches that can be used by government and non-profit organisations to bring about social change with the other two being education (health promotion) and law/policy. The three approaches typically work together particularly when the issue is complex, such as obesity, however they each have different aims and outcomes.

In 2010, a House of Lords inquiry in the UK was conducted about changing health behaviour, including social marketing submissions and a case study on obesity and behaviour change. The main relevant outcome of the inquiry was the recommendation that "government needs to be braver about mixing and matching policy measures, using both incentives [such as telephone and webbased interventions] and disincentives to bring about change. They must also get much better at evaluating the measures they put in place". We encourage the committee to have a detailed look into this inquiry and its outcomes.<sup>3</sup>

## Smart State Council Report 2008

We urge the Committee to refer to the report that came out of the Smart State Council which was established in June 2005 as an advisory group to provide high level advice to the State Government. A working group within this Council produced a report in November 2008 on *Queenslanders tackling chronic disease: becoming Australia's healthiest State.*<sup>4</sup> The report recommended an increased focus on prevention and early intervention and noted that

unsustainable demands on the State's healthcare system will continue to grow unless we redefine the balance between maintaining good health and treating disease.

The report also highlighted that for every \$1 spent on disease prevention programs (increasing physical activity, improving nutrition and reducing smoking), there is a return on investment of \$5.60 within five years. They noted that levels of government investment in preventive health are insufficient and recommended an investment in health and wellbeing and disease prevention of \$100 per person by 2010.

Much of what was written in 2008 still holds true today and needs immediate action. We have a lot of evidence on successful interventions in health promotion. They simply need funding, long term financial commitment, coordination and evaluation.

Success over the last thirty years in tobacco control shows that a comprehensive, sustained, funded and coordinated effort can change behaviour. Through social marketing, Quitline coaching services, legislation (restrictions on smoking in public, advertising & promotional bans, etc), taxation, education and litigation, smoking rates have been reduced to an all time low. A similar comprehensive approach to obesity, physical activity and nutrition will pay dividends.

### Evidence around specific health coaching interventions

This submission will now focus on the effectiveness and cost effectiveness of specific health coaching interventions as follows:

- 1. Primary prevention
  - NSW Get Healthy Information and Coaching Services (GHS)
  - o Go for 2 and 5
  - Telephone Delivered Interventions
  - Mobile Health
- 2. Early detection and management of risk
  - Health Navigator
- 3. Chronic disease management cardiac rehabilitation
  - $\circ$  COACH
  - CAP Smartphone App
  - Proactive Heart

#### 1. Primary prevention

#### NSW Get Healthy Information and Coaching Service (GHS)

NSW Get Healthy Information and Coaching Service (GHS) is a free telephone-based service supporting NSW adults to make sustained improvements in healthy eating, physical activity and achieving or maintaining a healthy weight. Since its introduction, the Service has been expanded to be offered to a number of other jurisdictions across Australia. The GHS targets those adults in the community most at need, due to their risk of chronic disease and seeks population level reach to maximise its public health impact.

The GHS includes two levels of service:

- 6 month coaching program: Includes 10 individually tailored calls provided by university qualified health coaches based on behaviour change/self-regulation principles designed to assist with goal setting, maintaining motivation, overcoming barriers and making sustainable lifestyle changes. Printed support materials are also provided.
- Information-only: Provides an evidence-based printed information package on healthy eating, physical activity, and achieving or maintaining a healthy weight.

Additional modules have also been added to the options, such as the Aboriginal program in November 2012 and a diabetes prevention module on 1 July 2013.

Adults aged 18 years and older can enrol in the GHS using a free call phone number or via the website. Potential participants are recruited to the Service via two primary methods:

- Self-referral: Mass media and local promotions
- Secondary and other referral: GP and other health care providers' referral and direct marketing to targeted households that includes a letter of introduction to the Service.

Since its introduction on 23 February 2009 until 31 December 2013, the GHS has received in excess of 46,000 incoming calls, approximately 30,000 are from adults seeking information and support regarding healthy lifestyles, and of these calls nearly half of all callers then enrol in the coaching program.

The total number of visits to the GHS website from February 2009 to December 2013 was 443,011; with 360,474 unique visitors to the site and an average of 77.8% of visitors being new visitors to the website. The number of unique visitors to the website has steadily increased since the website was created in February 2009, with a 7.4 fold increase in visitors between 2009 and 2013.

For 2009 – 2013, during the months when mass media advertising was present, twice as many calls were received than when no advertising was present. Longer term impact of the mass media campaign suggests that participants who cited mass media as their referral source were significantly more likely to enrol in the coaching program.

GP's and other health professionals have been an important referral source to the GHS. There have been increases in the proportion of referrals that have come from health professionals and GP's since the Service commenced in 2009.

GHS participants considerably improved their risk of chronic disease, with improvements in weight, waist circumference, body mass index (BMI), physical activity and healthy eating behaviours. More than half (56.0%) lost 2.5-10% of their baseline body weight and a further 8% of participants lost more than 11% of their initial body weight. Further there have been changes in the proportion of participants who are classified as being obese.

The NSW GHS has also been expanded to be offered to a number of other jurisdictions across Australia, including Queensland. However, since it began in Queensland in 2013, only 3035 Queenslanders have contacted the service, with 558 enrolments in the 6-month coaching service in 2014. Queensland's GHS however was not adequately funded to benefit from the mass media advertising, as the NSW service did. Funding for the current Queensland service is in doubt and for health benefits to be gained in Queensland, as they have been in NSW, continued sustained funding needs to be secured and evaluation must be completed. We urge you to review the submission from the Queensland Department of Health for more information.

#### Go for 2 & 5

The Go for 2&5 social marketing campaign was conducted in Queensland between 2005–2010. The campaign objective was to increase individual fruit and vegetable intake from 3.5 serves per day to 4.5 serves per day per person. Unfortunately the campaign did not actually finish because funding was removed before the final television advertising burst was to be done in September 2010. Therefore, the evaluation was not completed in January 2011 as planned. Unfortunately, it seems the funding was 'lost' when all social marketing campaigns went to the Premiers Department to coordinate so there are some potential learnings here.

A summary of the results is provided below. The Preventive Health Unit has a more detailed report should it be required. The research shows when people eat more fruit and vegetables, it not only

provides essential nutrients and fibre, but it displaces other foods (usually non-essential foods) from their diet and there are also benefits to the economy as outlined below.

- Baseline: Only 7% of Queensland adults were eating enough fruit and vegetables per day.
- Objective: To increase consumption of fruit and vegetables by one serve per adult per day over four and a half years.
- Behaviour/intention after campaign: 57% of respondents had tried to make changes to their diet in last two months (half of these said they had tried to eat more fruit and vegetables, 91% of these reported they had been successful); another 28% reported trying to eat a "healthier" diet.
- Following phase 1: increase 0.4 serves per person per day; following phase 2: increase 0.7 serves; during phase 3: increase of 1.1 serves to 4.6 serves per person per day. This represents a "saving" of \$50M per year in acute treatment services throughout Queensland, also represents an extra \$9.3M retail sales of fruit and vegetables in Brisbane in the first month of the campaign.
- The campaign objective was achieved as individual fruit and vegetable intake increased to 4.6 serves per day per person.

The Heart Foundation's current Queensland budget proposal<sup>2</sup> calls for the Government to invest \$5 million over three years in the "Go for 2 & 5" or similar campaign, to increase fruit and vegetable consumption. The Heart Foundation recommends an additional \$15 million over three years for comprehensive social marketing campaigns to also increase physical activity and reduce smoking.

### Telephone Delivered Interventions

Despite proven efficacy, there are few published evaluations of telephone-delivered interventions targeting physical activity, healthy eating, and weight loss in community dissemination contexts. Findings from the Optimal Health Program, a telephone-delivered healthy lifestyle and weight loss program provided by a primary health care organisation, suggest that telephone-delivered weight loss and healthy lifestyle programs can provide an effective model for use in primary care settings, but participant retention remains a challenge.<sup>5</sup>

In 2014, a study evaluated 24 month outcomes on the effectiveness of a telephone-delivered behavioural weight loss and physical activity intervention, targeting Australian primary care patients with type 2 diabetes. Evaluated outcomes showed modest improvements in weight loss and behaviour change, but lack of changes in cardio-metabolic markers, which may limit the utility, scalability, and sustainability of such an approach<sup>6</sup>.

A systematic review of telephone delivered physical activity and dietary behaviour interventions<sup>7</sup> concluded that telephone interventions achieve behaviour change, but dissemination research indicates that completing all of the telephone sessions and retention are challenging. Other studies have concluded that telephone intervention outcomes can be improved by increasing the dose (completing more telephone sessions), using group conference calls, combining telephone with intervention modalities, text messaging for support and to facilitate self-monitoring, and evaluating the intervention process via applying the RE-AIM framework. Future research needs to address potential capacity of telephone-based interventions to enhance the effectiveness of weight-loss interventions<sup>7</sup>.

Gallegos et al. (2014) found a fully automated text messaging service sending a text message per week to participants appears to improve exclusive breastfeeding duration. The service provides a well-accepted, personalised support service that empowers women to actively resolve breastfeeding issues<sup>8</sup>.

### Mobile Health (mHealth)

Recent research<sup>9</sup> reviewed 400 US mobile apps available through the US iTunes store and found that this technology could have profound application in the prevention of cardiovascular disease or in the treatment of patients with chronic disease such as diabetes and congestive heart failure. However the rapid growth in mHealth has outpaced the science needed to validate the clinical effectiveness (and safety) of health-related applications.

There are seemingly two schools of thought around how so-called health apps, especially those untested and unscientific could be effecting users. Some experts say they 'fuel anxiety' while other defenders of apps say they are 'encouraging healthy behaviour'. Some General Practitioners express concern that some of these types of apps could be replacing medical advice and have the potential to fuel anxiety without any benefit.

App manufacturers have been accused of having a commercial agenda than their customers' wellbeing, with apps purposely designed to make people worry about their health so they would spend more money on health technology, diet products and slimming companies.

While some apps would be seemingly harmless and potential to reduce health risk by encouraging healthy behaviour more evidence needs to be collected and evaluated.

### 2. Early detection and management of risk

**Health Navigator**<sup>10</sup> is a tool for health risk screening in the community, using smart phone and mobile web technology, with the aim of raising awareness of chronic disease risk factors, improving health literacy and navigating the user to appropriate support services.

Launched in April 2014 by Metro North Brisbane Medicare Local and funded by the Australian National Preventive Health Agency, Health Navigator includes questions based on the latest clinical evidence, validated by the National Vascular Disease Prevention Alliance. Since launch, 1842 people have completed a Health Navigator assessment with findings including:

- 206 people identified as being at high risk of cardiovascular disease risk
- 19% with high blood pressure
- 33% at high risk of diabetes
- 70% reported insufficient activity
- 39% were smokers
- Over 600 absolute cardiovascular disease risk assessments were completed during the Project and 80% of practices reported an increase in the use of the absolute risk tool.

## 3. Chronic disease management - cardiac rehabilitation

The Heart Foundation has been urging for a greater government investment in programs which support behaviour change after people have had a heart attack, known as cardiac rehabilitation. The aim of cardiac rehabilitation is to support people to manage their clinical risk factors, psychosocial health and medication compliance, as well as change their lifestyle behaviours such as physical activity, healthy eating and weight management. Collectively, these reduce patients' chances of having repeat heart attacks and the subsequent hospitalisations and the associated costs to the health system, economy (e.g. productivity) and community.

As such, we welcome Labor's commitment in *A Healthier Queensland* to partner the Heart Foundation to boost cardiac rehabilitation by an additional \$1.26 million for programs, including: \$100,000 for State Government improvement of Queensland's Cardiac Rehabilitation Directory with links to Google Maps to build the capacity for online referrals. This will assist clinicians and patients to more easily find and access rehabilitation services. We also welcome the \$250,000 for a State Government/NGO Partnership to develop an electronic version of *My heart, my life* to improve patient access to this post-heart attack support resource.

A greater investment in cardiac rehabilitation is crucial because the total economic cost of just one heart attack is \$281,000<sup>11</sup>. Repeat heart attacks are costing Queensland \$1.6 billion every year and make up more than 30% of hospital admissions for heart attack. Repeat heart attacks are projected to increase by over 40% by 2020, requiring an extra 4,000 hospital beds and costing an extra 1,400 lives each year.

Cardiac rehabilitation boosts recovery, saves health costs and reduces repeat heart attacks. It can reduce hospital admissions by up to 45% in the first 12 months and mortality by 25%. And yet, more than half of Queensland heart attack patients are leaving hospital without a referral to cardiac rehabilitation or access to quality self-management tools.

The Heart Foundation's *My heart, my life* publication is recognised as the highest quality selfmanagement tool to support patients after a heart attack. Heart Foundation research<sup>12</sup> about *My heart, My life* has found that:

- 87% of patients who received *My Heart, My Life* found it useful and the information valuable, containing clear language, easy to understand diagrams, detailed explanations of their conditions and step-by-step information on making lifestyle changes
- 79% of patients stated they would be motivated to make lifestyle changes after reading the resource
- health professionals found the resource useful to provide to patients as a patient education tool, with easy to understand information all contained in one book that prompts patients to ask questions.

We know that people need support to make lifestyle changes from our Heart Attack Survivor Survey 2013 because:

- One in four had not been able to return back to the workforce.
- More than one in two continued to smoke after their event.
- One in six were not regularly taking their medication.

Telephone-delivered secondary prevention programs can significantly improve health outcomes and quality of life and could play a role in meeting the treatment gap for cardiac patients.

#### The COACH Program by the Queensland Government's Health Contact Centre

The COACH (Coaching patients On Achieving Cardiovascular Health) Program was launched by Queensland Health in 2009. It is the first standardised coaching program targeting cardiovascular risk factors and delivered by telephone and mail-out state wide.

The free COACH program is delivered by a qualified health professional over the telephone to Queenslanders who have been diagnosed with one or more of the following conditions, Coronary Artery Disease (CAD), type 2 diabetes, pre-diabetes or chronic obstructive pulmonary disease (COPD). It enables patients to better manage their health and symptoms of chronic disease and has been shown to reduce anxiety, improve perception of general health, mood and fitness.

Researchers audited 1962 patients with cardiovascular disease (CVD) and 707 with type 2 diabetes who completed COACH between February 2009 and June 2013<sup>13</sup>. Statistically significant improvements in cardiovascular risk factor status were found across all biomedical and lifestyle factors measured during the program, including improvements in serum lipid levels, blood glucose, smoking habit and alcohol consumption combined with increases in physical activity.

The COACH<sup>14</sup> Program can assist health service providers by reinforcing the importance of health issues such as medication compliance, risk factor management and regular follow-up appointments with their treating physicians. The COACH Program provides another option for individuals who have limited access or willingness to attend conventional services. However, there is a need for increased referrals into the program.

### Smartphone-based home care model: The Care Assessment Platform (CAP-CR)<sup>15</sup>

In this randomised controlled trial, patients were randomised following a heart attack to a traditional, centre-based cardiac rehabilitation program (TCR) or the Care Assessment Platform (CAP-CR) for a 6-week cardiac rehabilitation (CR) and 6-month self-maintenance period. CAP-CR, delivered in participants' homes, included health and exercise monitoring, motivational and educational material delivery, and weekly mentoring consultations.

The CAP-CR programme was developed according to national guidelines to address all components of a comprehensive CR programme. The CAP-CR platform used a smartphone for health and exercise monitoring, and delivery of motivational and educational materials to participants via text messages and preinstalled audio and video files (including understanding cardiovascular disease (CVD), symptoms and management). The platform included a web portal with participant data for mentors to provide weekly consultations.

CAP-CR had significantly higher uptake (80% vs 62%), adherence (94% vs 68%) and completion (80% vs 47%) rates than TCR (p<0.05). Both groups showed significant improvements in 6-minute walk test from baseline to 6 weeks (TCR:  $537\pm86-584\pm99m$ ; CAP-CR:  $510\pm77-570\pm80$  m), which was maintained at 6 months and showed slight weight reduction ( $89\pm20-88\pm21$  kg) and also demonstrated significant improvements in emotional state (K10: median (IQR) 14.6 (13.4–16.0) to 12.6 (11.5–13.8)), and quality of life (EQ5D-Index: median (IQR) 0.84 (0.8–0.9) to 0.92 (0.9–1.0)) at 6 weeks.

This shows that this smartphone-based home care CR program improved cardiac rehabilitation uptake, adherence and completion. The home-based CR programme was as effective in improving physiological and psychological health outcomes as traditional CR. CAP-CR is a viable option towards optimising use of CR services.

#### ProActive Heart<sup>16</sup>

Telephone-delivered care is convenient, flexible and has been shown to improve behavioural and clinical outcomes following myocardial infarction (MI). ProActive Heart was a randomised controlled trial to evaluate the efficacy of a six-month telephone delivered secondary prevention program for heart attack patients compared with a 'usual care' control condition.

Patients were recruited over a 14 month period (December 2007 to January 2009) through two Brisbane metropolitan hospitals, and randomised to an intervention or control group (n = 225 per group). The intervention commenced within two weeks of hospital discharge delivered by studytrained health professionals ('health coaches') during up to  $10 \times 30$  minute scripted telephone health coaching sessions. Participants also received a ProActive Heart handbook and the *My heart, my life* educational resource to use during the health coaching sessions. The intervention focused on appropriate modification of CHD risk factors, compliance with pharmacological management, and management of psychosocial issues. Primary outcomes were health-related quality of life (Short Form-36) and physical activity (Active Australia Survey).

Significant intervention effects were observed for quality of life (mental health, p=0.02, social functioning, p=0.04 and role-emotional, p=0.03) compared with usual care. Intervention participants were more likely to meet recommendations for physical activity (OR=1.7, 95% CI=1.1,2.7, p=0.02), body mass index (OR=2.1, 95% CI=1.0,4.7, p=0.05), vegetable intake (OR=1.7, 95% CI=1.0,2.8, p=0.04), and alcohol consumption (OR=1.8, 95% CI=1.0,3.2, p=0.05).

We congratulate you on undertaking this inquiry and applaud the initiatives to date as effective community awareness and education campaigns. We are available to appear as witnesses at the public hearing on May 20, if required and look forward to hearing the outcomes.

Yours sincerely

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<sup>16</sup> http://www.biomedcentral.com/1471-2261/9/16/ Accessed 30 April 2015