

Community programs to improve cardiovascular health and cancer prevention

A preliminary review of programs in rural Australia

S Jones, L Fragar

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Authors: S Jones, L Fragar

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Researcher Contact Details

Australian Centre for Agricultural Health and Safety
University of Sydney
PO Box 256
Moree NSW 2400

Phone: 02 6752 8210
Fax: 02 6752 6639
Email: aghealth@health.usyd.edu.au

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SUMMARY

This preliminary examination of programs that promote cardiovascular health for Australian rural communities has identified 12 programs that have been the subject of an evaluation, including prevention and promotion services offered by General Practitioners. These programs have been described based on reports that are publicly available. Each program was described according to the following criteria:

- Objectives and interventions
- The target population
- Inclusivity
- Level of evidence for effectiveness of interventions being promoted
- Level of evidence of effectiveness of program in achieving objectives
- Linkage to primary health service and local follow up of people identified as at risk

Recommended interventions being promoted have been soundly based, however, aside from the GP-based services, the level of evidence for the strategic approaches being made were not high, and it is recommended that investment be made in rigorous studies to determine their effectiveness.

In terms of programs that best meet the evidence criteria, are economic and are likely to be accessible across rural Australia, a modification of the *Pit Stop* approach would appear to be the 'best bet', with provision for local adaptation to community and sector needs, Local community versions of community-wide programs such as group or family activity such as *10000 Steps Rockhampton* and *Heart Foundation Walking* could be considered to complement a program such as *Pit Stop*.

The question to be considered by those responsible for rural population health in Australia is "*Should cardiovascular health promotion programs be targeted specifically to farming people in a community, or should community programs take more care to include the farming sector?*"

1. PURPOSE

The purpose of this small study is to identify and describe currently available Australian programs aimed at engaging communities in programs that aim to improve cardiovascular health and fitness (including Type-2 diabetes), and to examine their evidence base, effectiveness, suitability and accessibility for Australian farmers and farm families.

2. BACKGROUND

This study has been prompted by three key factors:

1. Earlier work of the Australian Centre for Agricultural Health and Safety that defined higher death rates for Australian male farmers and farm managers for myocardial infarction and for prostate, rectal, skin and brain cancers (Fragar LJ et al, 1997);
2. Public awareness of the importance of maintaining health, cardiovascular fitness, and cancer prevention, with the agriculture industries being among others that are developing an interest in improving access of their workforce to advice and services that promote their health and wellbeing (Rural Industries Research and Development Corporation, 2008); and
3. A recently growing number of programs that offer opportunities for people, often men, to have screening and advice for key factors such as blood sugar, blood pressure, cholesterol, diet, activity and lifestyle, and which the farming sector can participate.

Those with responsibility for development of policy and programs to address cardiovascular health of rural populations, including farming populations, are interested in examination of the currently available programs, in order to incorporate the most appropriate and cost-effective existing programs into health promotion activity.

Issues that are relevant to such decision-making include ensuring that the evidence-base for programs has been established, and that there are robust linkages to primary health care services such as general practitioner or local health services to ensure follow-up of persons identified as being at risk. It could be argued that any promotion program that engages people would be serving a useful role in raising awareness, however, publicly supported programs need to demonstrate their cost-effectiveness as well as there being no risk of participants deferring action to have their annual medical check-up, their medications reviewed or their cancer screening. An example from the cancer prevention area might be that if there is promotion of self examination for breast cancer, this could may result in deferral of regular mammography – considered to be the most important and effective screening.

Hence there was identified a need to identify currently available programs, and to examine these and address a number of concerns including the evidence base for available programs, the effectiveness of linkages with primary health care services, inclusivity (ie accessibility by minority groups such as rural Indigenous people and farmers of non-English-speaking background, gay and lesbian farmers); the suitability

of such services for farming people, the capacity of programs to be accessed by all farming people and the sustainability of programs (Fragar, 2007) .

Taking a population health policy perspective it would then be appropriate that those programs that satisfy these criteria be promoted to rural doctors and primary care service providers, and to farming communities, and be incorporated into health promotion programs. Where there is inadequate evidence for programs, then resources for formal evaluation should be allocated to generating the evidence.

This study is a *preliminary* examination of programs and approaches that address cardiovascular health and fitness, including prevention Type 2 diabetes.

3. METHOD

The review was conducted as a desk study.

Health promotion programs aimed at improving cardiovascular disease risk factors were identified, in the main, by internet searches that included:

- Australian Divisions of General Practice websites
- University websites such as the University of Queensland and the University of Sydney
- State health websites such as Queensland Health and Victorian Government Health Information websites
- The Australian Government Department of Health and Ageing website.
- Database searches using Cinahl, Pubmed and Medline.

Due to the relatively high number of programs that were identified preference was given to those programs conducted / piloted in rural areas, programs that have been formally evaluated and programs that are currently available for delivery in rural communities.

Information about these programs was obtained via internet, database searches and by contacting relevant individuals such as the project co-ordinator where no publicly available information was available. In some cases detailed information about the program was not available; consequently an evaluation of the program was not completed. Programs were described using the following preliminary criteria:

- The target population
- Inclusivity
- Objectives and interventions
- Level of evidence for effectiveness of interventions being promoted
- Level of evidence of effectiveness of program in achieving objectives
- Linkage to primary health service
- Follow up of people identified as at risk

Program evaluations and evidence to support program interventions was obtained via keyword database searches. Databases used include Medline, Cinahl, Pubmed and the Cochrane Collaboration. Program evaluations and evidence to support program interventions was evaluated using the coding scheme for levels of evidence developed for the Australian National Public Health Partnership (Rychetnik L et al, 2002), where

the highest level of evidence of effectiveness in answering the question is by reports of more than one randomised controlled trials (RCTs) that address the question. Table 1 briefly describes the levels of evidence.

Table 1: Hierarchies of study design and designation of levels of evidence

Source: Rychetnik L et al, 2002

Study design	Level of evidence*
Systematic review of all relevant randomised control trials (RCT)	I
Properly designed RCT	II
Well-designed pseudo-randomised controlled trial (e.g. alternate allocation)	III-1
Comparative studies (or systematic reviews of such studies) with concurrent controls and allocation not randomised, cohort studies, case-control studies, or interrupted time series with a control group	III-2
Comparative studies with a historical control, two or more single arm studies, or interrupted time series without a parallel control group	III-3
Case series, post-test or pre-test/post test, with no control group	IV

* Lower numbers indicate a higher level of evidence; higher numbers indicate a greater potential for bias.

4. RESULTS

Fifty two (52) health promotion programs were identified. These are listed in Attachment 1. Sufficient information to describe programs was only available for 12 community based programs, and these have been described, in addition to a broad description of General Practitioner based cardiovascular health promotion services. More summarised information relating to each of the programs that have been described are available as an accompanying volume to this report (VOLUME 2). Not all references are cited in this document. The complete set of references is contained in the accompanying volume.

4.1 Community Programs

A tabulation of summary findings for each of the 12 community-based health promotion programs is provided (Table 1).

Origin and ownership of programs

Many of the programs have been devised through an initiative of a local rural community, and, with support of government at state or federal levels, have been further developed for wider implementation, or for continuation into fully developed programs. For example, the *Greater Green Triangle Diabetes Prevention Project* and the *Go For Your Life Diabetes Prevention* program started as community trials and then the successful components were used to develop and implement *Life! Taking Action on Diabetes* which is being disseminated all over Victoria. Similarly *10 000 Steps Rockhampton* was originally implemented in Rockhampton and is now being disseminated all over Queensland. Programs such as *Pit Stop* and the *Wellington Challenge* also started as small community programs and now guidelines have been developed to assist other communities implement similar programs. The *Sustaining Farm Families* education program also began as a local initiative in Victoria, and has been delivered in other states.

Dorrigo Active Community is a project that was based on a carefully designed community needs assessment (focus groups) taking into account needs and perspectives of the different sectors in the local community.

On the other hand, the programs run by the Heart Foundation (*Heartmoves* and *Heart Foundation Walking*), while designed for local community implementation have a more national origin and exposure.

Population being targeted, rural population coverage and access to programs

Programs varied to a degree in the population that they targeted, depending on the issue that the programs had been designed to address. Table 2 lists the 12 community-based programs according to the target population, and separates the programs that specifically address diabetes prevention.

Table 2: Community-based promotion programs listed according to population targeted

Target population	Cardiovascular health focus*	Type- 2 diabetes prevention focus
Whole community	<ul style="list-style-type: none"> • 10000 Steps Rockhampton • Dorrigo Active Community • Heart Foundation Walking • WellingTONNE Challenge 	
Men in community	<ul style="list-style-type: none"> • Men's Shed • Pit Stop 	
Men in work setting	<ul style="list-style-type: none"> • Foundation 49 – Decades of life • Healthy Men Ballarat 	
Persons at risk	<ul style="list-style-type: none"> • Heartmoves 	<ul style="list-style-type: none"> • Greater Green Triangle Diabetes Prevention • Go for your life Diabetes Prevention
Farmers of 5 or more years in industry	<ul style="list-style-type: none"> • Sustainable Farm Families 	

* may include other issues eg cancer, mental health

Interventions being promoted and evidence base for intervention

The majority of programs are intervention programs to address lifestyle factors such as physical activity levels and diet with the goal of reducing the incidence of chronic illness. Four of the 12 programs (*10 000 Steps*, *Dorrigo Active*, *Heart Foundation Walking* and *Heartmoves*) are programs where the intervention is aimed at increasing physical activity levels. There is strong evidence (Level I) supporting the position that regular physical activity is beneficial and reduces the risk of chronic diseases such as cardiovascular disease and diabetes. More specifically there is level II evidence to support that regular walking (*Heart Foundation Walking*) reduces cardiovascular risk factors and improves overall health and well being and there is level II evidence to support the beneficial effects of moderate intensity physical activity on health and well being (*Heartmoves*)

Three of the programs are lifestyle interventions addressing physical inactivity, as well as poor diet and weight (*Greater Green Triangle Diabetes Prevention Project*, *Go for your Life Diabetes Prevention*, *WellingTONNE Challenge*). There is Level I evidence to say that improving diet and increasing physical activity levels brings about beneficial changes in cardiovascular risk factors. There is level II evidence to say that lifestyle interventions aimed at improving diet, increasing physical activity levels and losing weight can reduce the risk of developing Type 2 diabetes amongst a population with impaired glucose tolerance.

Pit Stop had strong evidence to support some of its screening tests but in some cases the evidence did not support use of the test.

- Waist to hip ratio – Level III
- Sit and reach test – evidence did not support the use of this test.
- Smoking quiz – Level I
- Information about testicular self examination – evidence does not support the use of this test.
- Provision of information about skin self examination – Level II

Information relating to the specific tests used in some screening programs was not available (*Sustainable Farm Families*, *Healthy Men Ballarat*, *Foundation 49*) consequently; their evidence base has not been evaluated.

Types of programs being delivered and evidence base for intervention

The 4 programs that focus on increasing physical activity use a range of means to encourage community-wide activity such as walking.

The programs that base their service on screening tests are targeting males only (*Pit Stop, Healthy Men Ballarat* and *Foundation 49*). In all three programs individuals who participate in screening are given advice and feedback on their performance and if necessary are encouraged to visit an appropriate health professionals in most cases their General Practitioner.

One program, *Sustainable Farm Families* provides both screening and intervention - due to both its comprehensive screening program and educational program. This was the longest running program and the only community-based program to offer more than one follow up assessment with three courses over a two year period.

In terms of delivery of programs, the smaller community based programs such as *Dorrigo Active* and the *WellingTONNE Challenge* were implemented by health professionals in the local area. *Dorrigo Active* assisted locals to obtain health and fitness qualifications and implement fitness activities within the community. Programs such as *10 000 Steps, Pit Stop* and *Heart Foundation Walking* can be implemented using guidelines. Programs that require more specific skills and aptitudes such as the two diabetes lifestyle modification programs, *Heartmoves* and *Sustainable Farm Families* require trained facilitators for implementation.

Table 3 lists the nature of linkage to local primary health care services. A number of programs are planned and implemented by the local service providers, and hence it can be assumed that general systems to ensure follow-up of people at risk, and records maintenance are in place.

Table 3: Nature of linkage to local primary health care services*

Program	Delivered by local primary health care service providers	Individuals referred to local health service providers	No linkage
10000 Steps Rockhampton	X		
Dorrigo Active Community	X		
Foundation 49 – Decades of life		X	
Greater Green Triangle Diabetes Prevention	X		
Go for your life Diabetes Prevention		X	
Healthy Men Ballarat	X		
Heart Foundation Walking			X
Heartmoves			X
Men's Shed			X
Pit Stop	(X)	X	
Sustainable Farm Families		X	
WellingTONNE Challenge	X		

* Primary health care services include general practitioners, local community health services

While most programs are promoting lifestyle changes for which there are high levels of evidence that supports the change, the strength of **evidence of effectiveness for the delivery strategies** that have been used in the 12 programs is quite variable, and demonstrates the need for rigorous evaluation studies of these programs.

For the 2 programs (*Greater Green Triangle Diabetes Prevention, Go for your life*) that are addressing diabetes prevention, there is Level II evidence that supports the use of lifestyle modifications programs to reduce the risk of developing diabetes in individuals with impaired glucose tolerance (Tuomilehto J et al, 2001)

There is Level I evidence that professional advice and guidance with continued support can encourage people to be more physically active in the short to mid-term (Lawlor D et al, 2001).

However, evidence for other strategic approaches is at a lower order. For example, for the workplace-based programs (*Foundation 49, Healthy Men Ballarat*) there is only Level IV evidence available that demonstrates that workplace diabetes education and screening was successful in engaging men and getting them to attend their General Practitioner (Aoun S and Johnson L, 2002).

For those programs that are promoting multiple interventions, systematic review of randomised controlled trials found that **the use of multiple risk factor intervention has no effect** on mortality due to coronary heart disease in the general population (Ebrahim S et al, 2006).

Costs of programs

The costs to participants in most cases has been free. *Dorrigo Active* had a small fee of \$3 for participation in some classes / activities. *Heartmoves* is implemented by local fitness leaders and there is a cost involved to participate in some instances. The *Foundation 49* program is paid for by employers to cover cost of running the program (as a not for profit organisation).

All but 2 programs (*Foundation 49* and *Men's Shed*) received funding from either state or national government. Investment in a program has ranged from as much as \$2.5 million in the *Heart Foundation Walking* program to approximately \$37 000 for the *Wellington Challenge* program. Information pertaining to the amount of funding received and total cost of program was not always available.

Table 4 summarises the reported level of investment in each program by funding bodies and the cost per participant in the program. It does not include additional costs of participants or local organisers

In some instances, for example, *Dorrigo Active*, the cost per participant will be a much lower figure than is displayed, as there were a range of activities across different communities. The cost of \$640 is per active exerciser at the time of evaluation.

Table 4: Level of investment and cost per program participant

Program	Investment by funding body	Number participants to time of reporting	Cost per participant
10000 Steps Rockhampton	\$800000 initial trial + \$150000 for dissemination	60 642 members	\$15.70 per member
Dorrigo Active Community	\$160000	250 in exercise programs + other participants	<\$640 per participating exerciser
Foundation 49 – Decades of life	Not available		
Greater Green Triangle Diabetes Prevention	\$195610 for implementation +\$160000 for evaluation	237	\$1500.46
Go for your life Diabetes Prevention	Not available		
Healthy Men Ballarat	\$78761.06		\$1158.25
Heart Foundation Walking	\$1.7m government +\$1m National Heart Foundation (2007)	>7000 walkers	<\$380 per walker
Heartmoves	Not available		
Men's Shed	Not available		
Pit Stop	Not available		
Sustainable Farm Families	\$141189	128	\$1426
WellingTONNE Challenge	\$36676 to implement in Wellington +\$50000 toolkit development for other communities	371	\$98.86 ((\$233.63 including kit development)

Effectiveness of programs – results of evaluations

Evaluation reports were not available for a number of the programs. For the *Dorrigo Active* program a copy of the evaluation could not be found by the project coordinator or the evaluator. A formal evaluation will become available in December 2008 for the *Greater Green Triangle Diabetes Prevention* program.

For those programs that have undertaken an evaluation, or been subject to external evaluation, the evaluation design did not produce evidence at a high level. Evidence levels ranged from Level III (*Pit Stop*) to V (*Men's Shed*). Most evaluations were of

pre- and post- test design measuring clinical indicators and behaviour change (Level IV) evidence. Most program evaluation is completed immediately after or during the program, and longer term health and behavioural impacts are unknown. *Sustainable Farm Families* was the longest running program extending for three years, and its evaluation includes an economic analysis of impact.

Table 2: Summary descriptions of 12 community-based health cardiovascular health promotion programs identified as potentially suitable for farming communities

Intervention / Program	Target population and criteria for participation	Availability	Service (Screening/ intervention)	Level of evidence for intervention and delivery na=not available	Delivery (Trained presenter or guidelines)	Linkage to primary health service	Cost of participation / implementation	Funded by	Evaluation - Level of evidence for effectiveness of program
10 000 Steps Rockhampton Central Queensland University, Queensland	Entire population	Initially implemented in Rockhampton, however the program is now being disseminated throughout QLD and nationally via the internet	Promotion to increase physical activity levels. Whole community interventions eg; <ul style="list-style-type: none"> Local mass media campaigns Promotion of PA through General Practice. Improving social support. Influencing local policy and environmental change. Community micro grant scheme. 	Intervention I (Systematic review of RCTs) <ul style="list-style-type: none"> Physical activity improves overall health and well being. Delivery See Evaluation I (Systematic review of RCTs) <ul style="list-style-type: none"> Professional advice and guidance with continued support can encourage people to be more physically active in the short to mid-term. 	Initial implementation in was by a Rockhampton based, multi-disciplinary physical activity task force. The program can now be delivered using guidelines available on the internet.	The program was funded by QLD Health. Community partners for the program included the Capricornia Division of General Practice and local health service.	Approximately \$800 000 for the initial trial in Rockhampton. A further \$150 000 was provided for dissemination of the program.	The initial program 10 000 Steps Rockhampton and future dissemination programs were funded by Queensland Health.	III (Controlled trial) Controlled trial indicated that the program was successful in increasing physical activity levels.
Dorrigo Active Community Project Mid North Coast Area Health Service, NSW	Entire population	Dorrigo Community	Intervention to increase physical activity levels within the community in order to reduce the incidence of hypertension and CV disease.	Intervention I (Systematic review of RCTs) Physical activity improves overall health and well being. Delivery na	Implemented by local health professionals. As part of the program 7 local community members completed fitness leader training and continue to run a range of classes.	The program was implemented by the Mid-North Coast Area Health Service, NSW.	\$160 000	The Rural Chronic Disease Initiative funded by Australian Department of Health and Ageing	External evaluation report can not be located.
Foundation 49 – Decades of life health assessments Cabrini Institute, Victoria (Not-for-profit organisation)	Men of all ages. Work settings	Melbourne Victoria.	Using <i>Decades of Life</i> approach, age-specific screens include: <ul style="list-style-type: none"> Blood pressure Height and weight (Body Mass Index) Finger prick - blood sugar level, total cholesterol Screening questions for a number of different conditions, depending age and personal history 	Intervention I (Systematic review of RCTs) supports screening and interventions to reduce hypertension and lipid disorders. Delivery No evidence was found to support age specific health screening IV (Pre and post test) Workplace diabetes education and screening was successful in engaging men and getting them to attend their General Practitioner	Trained staff from Foundation 49 or training of an in house nurse or health promotion officer.	No direct link, however patients identified as at risk are provided with information for their General Practitioner.	Not stated	Cabrini Health and paid for by individual employers.	No evaluation identified.

Intervention / Program	Target population and criteria for participation	Availability	Service (Screening/ intervention)	Level of evidence for intervention and delivery na=not available	Delivery (Trained presenter or guidelines)	Linkage to primary health service	Cost of participation / implementation	Funded by	Evaluation - Level of evidence for effectiveness of program
Greater Green Triangle Diabetes Prevention Project Greater Green Triangle University Department of Rural Health, Warrambool Victoria	Individuals with pre-diabetes (identified by risk factor screening and impaired glucose tolerance). Exclusion criteria applied.	Greater Green Triangle (Hamilton, Horsham, Mount Gambier) Elements of this study were used to develop and implement the Life! diabetes prevention program which is accessible across Victoria.	Lifestyle intervention program to prevent progression from pre-diabetes to Type II diabetes.	Intervention II (2 x RCTs) Evidence supports the use of lifestyle modifications programs to reduce the risk of developing diabetes in individuals with impaired glucose tolerance. Delivery See Evaluation	Trained staff (3 day intensive training program)	Participants were recruited through their local medical practice and the intervention is run by nurses and allied health professionals from the local area.	\$195 610 for implementation of the program plus an additional \$160 000 to complete research and evaluation. (160000 + 195 610) / 237 = \$1500.46 pp	Australian Department of Health and Ageing as part of the National Diabetes Prevention Initiative.	IV The program was successful in reducing the risk of developing diabetes by 23%.
Go For Your Life Diabetes Prevention Program Victorian Department of Human Services	Individuals 50 years and over suffering from pre-diabetes (impaired glucose tolerance), identified by opportunistic screening.	Victoria Elements of this study were used to develop and implement the Life! Diabetes program which is accessible across Victoria.	Intervention to prevent progression from pre-diabetes to Type II diabetes	Intervention II (2 x RTCs) Evidence supports the use of lifestyle modifications programs to reduce the risk of developing diabetes in individuals with impaired glucose tolerance. Delivery See Evaluation	Trained facilitators	Patients identified as at risk by opportunistic screening are referred to their General Practitioner for further tests. Those patients identified as having impaired glucose tolerance are referred to the program by their General Practitioner	Not stated.	Victorian Government	External Evaluation report available in December 2008.
Healthy Men Ballarat Ballarat and District Division of General Practice, Victoria.	Male blue collar workers	Ballarat, Victoria.	General Health screening program.	Intervention na Delivery See Evaluation V (Pre and post test) Workplace diabetes education and screening was successful in engaging men and getting them to attend their General Practitioner.	Conducted by trained health professionals such as GPs and nurses. The project team participated in a training / briefing session.	Screening is conducted by local health professionals. Men identified as at risk are referred to the relevant health professional in the local area	\$78 761.06 \$1 158.25 pp	Victorian Department of Human Services	IV The program evaluation found small positive changes in overall health statistics and behaviours at the three month follow up.

Intervention / Program	Target population and criteria for participation	Availability	Service (Screening/ intervention)	Level of evidence for intervention and delivery na=not available	Delivery (Trained presenter or guidelines)	Linkage to primary health service	Cost of participation / implementation	Funded by	Evaluation - Level of evidence for effectiveness of program
Heart Foundation Walking Australian Heart Foundation	All people in a community setting	Program is available in communities all over Australia	Intervention to increase physical activity through community based group walking programs.	Intervention II Regular walking can improve cardiovascular risk factors and general health and well being. Delivery See Evaluation	Can be implemented by untrained individuals with the use of guidelines.	N/A	In 2007 / 2008 the program received \$1.7 million in government support and a further \$1 million from the National Heart Foundation.	National Heart Foundation and the Australian Government.	IV (Longitudinal impact evaluation) The program successfully increases the physical activity level of participants.
Heartmoves Australian Heart Foundation	Older adults, particularly those with health conditions such as diabetes, heart disease, arthritis and other chronic illness	Program is available in communities all over Australia.	Intervention to increase physical activity levels.	Intervention II Moderate intensity physical activity is sufficient to increase aerobic fitness, improve balance, increase lower body strength, decrease blood pressure, reduce risk factors for metabolic syndrome Delivery See Evaluation	Trained fitness / health professionals. Fitness professionals must complete a three day training course to become accredited.	No direct link. Health professionals can refer patients to the program and will receive on going feedback on their progress.	Not stated	National Heart Foundation	IV (Cross sectional pre and post test evaluation) The program successfully engages and retains participants and has been shown to increase physical activity levels amongst high risk populations.
Men's Shed Menshed Australia Ltd. A not-for-profit company	Men	Program is available in communities all over Australia.	Engagement of men in addressing men's health – physical, emotional and social within a community	Intervention No specific cardiovascular health intervention Delivery See Evaluation	Guidelines	No formal linkage. There is some evidence that men are referred to men's shed by health care providers.	Varies between sheds. Ensuring sustainability is an important part of the development of a Men's Shed.	Community owned	V (descriptive study / qualitative feedback)
Pit Stop Gascoyne Public Health Unit. Western Australia Country Health Services.	Men, but some communities modify to include women.	Developed in Western Australia, however Pit Stop programs are run in communities nationally. Organisations can order a Pit Stop kit to facilitate implementation	General health screening program including; 1. Waist to hip ratio 2. Sit and reach test 3. Smoking quiz 4. Drinkcheck Quiz. 5. Blood pressure measurement 6. Provision of information about testicular self examination. 7. Provision of	Intervention III Evidence does not support use of this test. I III – V I Evidence does not support use of this test. II - V Delivery Level of evidence =	Implemented by health professionals with the use of guidelines.	No formal linkage but the program is commonly implemented / conducted by a local health service.	The Pit Stop 2007 resource cost \$250. The cost of setting up Pit Stop at public events can vary from \$800 to \$3000 for a space.	Western Australian Government and Gascoyne Public Health Unit.	IV (pre-and post evaluations)

Intervention / Program	Target population and criteria for participation	Availability	Service (Screening/ intervention)	Level of evidence for intervention and delivery na=not available	Delivery (Trained presenter or guidelines)	Linkage to primary health service	Cost of participation / implementation	Funded by	Evaluation - Level of evidence for effectiveness of program
			information about skin self examination.	Negative (Systematic review of RTCs found that the use of multiple risk factor intervention has no effect on mortality due to CHD in the general population					
Sustainable Farm Families Western District Health Service Hamilton Victoria	Individuals aged between 18 and 75 years and have been involved in the farming business for more than 5 years.	The program is implemented across Victoria and in selected rural locations nationally. The location of the workshops is often dependent on the industry in the area.	Screening program and educational intervention. Annual workshops over three years. Screening includes: <ul style="list-style-type: none"> • Obesity-related indicators. • Blood sugar level. • Blood pressure. • Cholesterol level. Pulse rate Behaviour change includes: <ul style="list-style-type: none"> • Increased physical activity • Improved diet. 	Intervention I I (Systematic review of RCTs) Physical activity improves overall health and well being. I (Systematic review of RCTs). Compared to no advice dietary advice increased fruit, vegetable, fibre intake, decreased saturated fat and overall caloric intake however it is uncertain how long these changes were maintained (7). Delivery Level of evidence = Negative (Systematic review of RTCs) found that the use of multiple risk factor intervention has no effect on mortality due to CHD in the general population	Trained facilitator	No formal linkage to primary health service, however participants are referred to local health care providers as required.	\$141 189 to deliver the program to 128 participants in 5 communities (\$1426pp).	Victorian Government	IV (pre and post test economic analysis)

Intervention / Program	Target population and criteria for participation	Availability	Service (Screening/ intervention)	Level of evidence for intervention and delivery na=not available	Delivery (Trained presenter or guidelines)	Linkage to primary health service	Cost of participation / implementation	Funded by	Evaluation - Level of evidence for effectiveness of program
WellingTONNE Challenge	Adults in the Wellington area who are: <ul style="list-style-type: none"> • >18 years. • BMI > 25. • Not pregnant. • Not taking any weight loss medication. 5. Not undertaking any medical weight loss procedures.	Wellington community	Intervention to reduce the risk of cardiovascular disease and diabetes by losing weight, increasing physical activity levels and improving diet.	I (Systematic review of RCTs) Physical activity improves overall health and well being. Delivery See Evaluation	The program was designed and implemented by the Wellington Community Health Centre. There are now guidelines available to assist in implementation	The Program was designed and implemented by the Wellington Community Health Centre and other local health professionals were encouraged to become involved.	\$36 676 for implementation of the program and \$50 000 for development of the tool kit for rural communities to implement.	The Rural Chronic Disease Initiative funded by DOHA	IV (pre and post test evaluation)

4.2 Lifestyle promotion and preventive health interventions by General Practitioners

Origin and ownership of programs

There are two consultation types that have been defined by the Australian Government Medicare system rebate for a preventive health consultation:

1. The 45-49 health check – where health checks are undertaken for patients in the 45-49 year age group with risk factors for chronic disease.
2. Regular screening for chronic diseases such as heart disease and cancer within the general health check.

The recommended services are described in guidelines for screening programs including frequency of screening depending on individual risk factors, age groups and appropriate interventions. The guidelines (The Red Book) have been developed by the Royal Australian College of General Practitioners, with intensive review of the literature and evidence, and with support of the Australian Government. Guidelines cover a range of conditions; however for the purpose of this report recommendations for screening for cardiovascular disease and behaviour risk factors such as smoking and poor diet, and cancer checks have been summarised in VOLUME 2. These are most relevant to the age groups and demographic targeted (Royal Australian College of General Practitioners, 2005).

Interventions recommended and evidence base for intervention

Table 3 summarises the characteristics of recommended cardiovascular health interventions for provision by General Practitioners in the course of consultations with patients. There are high levels of evidence for the recommended cardiovascular health screening regimes for use in the preventive health GP consultation. Levels of evidence and strength of recommendation vary from I to V and A to C respectively depending on the intervention / screening protocol. Each recommendation is supported by evidence.

Screening is conducted by the individual's regular general practitioner, and there is potential for GP practice nurses or other practice personnel to be part of practice-based programs.

Cost of participation / implementation

A Medicare rebate of \$100 is available for bulk-billing for completion of the 45-49 year health check. Other services are subject to the usual costs of consultation and Medicare rebate.

Availability and accessibility

General Practice services are generally available across rural Australia, although they are thinly spread, and waiting lists for non-urgent appointments are growing in many rural centres. However, recommendations and schedules outlined in the *Red Book* have been developed with the busy GP practice requirements in mind.

Evidence of effectiveness of the program

There is strong evidence to support the effectiveness of General Practitioner advice / intervention and on behaviour change such as quitting smoking (Petrella RJ et al, 2002), and increasing physical activity (Stead LF et al, 2008). However, to date there is no published information to indicate the uptake of the 45-49 year health checks by GP's, and there is limited available information on how General Practitioners are identifying people eligible for the health screen.

Table 3: On-on-one assessment, prevention and promotion intervention by General Practitioner consultation

Intervention / Program	Target population and criteria for participation	Availability	Service (intervention / screening) Level of evidence for or against intervention	Delivery (Trained or guidelines)	Linkage to primary health service	Cost of participation / implementation	Funded by	Level of evidence for effectiveness of program
45 – 49 year old Health Check	Adults aged 45-49 years at risk of developing a chronic illness	Nationally. Most rural communities	Smoking Average risk = assess every 12 months (IA) Increased risk = assess every 6 months (IA – IIIA)	Guidelines for General Practitioners.	Screening is conducted by General Practitioners	Medicare rebate of \$100 per patient	Medicare, The Australian Government	Evidence Level I Brief simple advice about quitting smoking from a General Practitioner can increase smoking cessation rates.
Guidelines for preventative activities in general practice 6th edition (Red Book)	General Practitioners	Nationally Most rural communities	Weight Average risk = assess every 2 years (IA) Increased risk = assess every 12 months (IA-III A) Identified risk = assess every 6 months (IIIB) Nutrition Average risk = assess every 2 years (IB) High risk = assess every 6 month (IB) Early detection of problem drinking Average risk = assess every 3 years (IIB) Increased risk = assess every 12 months (IA) High risk = assess at first consult and then monthly (IA) Physical activity Average risk = assess every 12 months (IIIB) Increased risk = assess every visit (IV) Blood pressure Average risk = assess every 2 years (IA) Increased risk – assess every 12 months (IIA) High risk = assess every 6 months (IA) Cholesterol and lipids Increased risk = assess every 5 years (IA) High risk = assess every 1-2 years (IA) Very high risk = assess every 12 months (IA) Type 2 diabetes Increased risk = assess every 3 years (IIIB) High risk = assess every 12 months (IIIB) 1.	Guidelines for General Practitioners.	Screening is conducted by General Practitioners	Medicare rebate depending on length and type of consultation	Medicare, The Australian Government	Evidence Level I Brief interventions by General Practitioners can increase physical activity levels amongst patients.

5. DISCUSSION

This study has not reviewed an exhaustive list of all programs available nationally, due to time and resource limitations. Preference to inclusion in the list of programs that have been described has been given to programs that are still available; were implemented / trialled in rural areas; and had a formal evaluation completed. Notwithstanding these limitations, it is clear that a growing number of communities and agencies have initiated imaginative and important programs that are having an impact on their participants; although the strength of evidence for impact is disappointing at this stage.

5.1 Strengths and weaknesses of program types

The common strength of most programs that were described is the sound evidence base of their screening and intervention recommendations addressing prevention of cardiovascular disease. Available evidence does not support some other elements of *Pit Stop* (such as testicular self-examination for early detection of cancer), however, this is a program that has demonstrated its capacity to adapt on the basis of evaluation and feedback - in a sense the *action research model* in action. *Men's Shed* is not primarily a program to prevent cardiovascular disease, but may provide a setting for some men who would otherwise not participate in programs to do so.

Basic criteria to be considered by those planning to invest in cardiovascular health promotion for farming communities will include cost per participant, evidence for effectiveness of strategic approach, potential access of rural communities (including farmers) across rural Australia, integration with local primary health care services, and sustainability (taking into account the difficulty in recruitment and retention of health professionals).

The evidence for effectiveness of strategic approaches across the community-based programs was not so strong, except for the General Practitioner based programs. There is a clear need for funding bodies to invest in controlled trials or cardiovascular health promotion programs, so that confidence is increased for those programs that appear to be successful in their pre- and post- evaluations. Randomised controlled trials are perceived as expensive and difficult to implement; however, the question of the most effective strategies to increase adoption of cardiovascular health interventions is perhaps one of the most important research questions for rural Australia.

The evidence suggests that programs that focus on single or just a limited number of issues are more likely to be effective. On this basis, the programs that focus on increasing physical activity as a key outcome, for example, *10000 Steps Rockhampton* and *Heart Foundation Walking* appear to be more likely to be effective, than those addressing multiple risk factors.

A major issue for rural communities scattered across the vast area of Australia remains as to how to make programs available that are economic and sustainable. At this stage, the most widely available primary health care services are General Practitioner and Community Health services. Each has been demonstrated to have a

role in cardiovascular health promotion, and diabetes prevention. The attraction of extending GP based services includes the relatively strong evidence base for effectiveness, and the cost being included in current Medicare rebate arrangement. However, the obvious problem associated with the busyness of rural GP services means there is probably little room to significantly increase the workload with an expanded cardiovascular health program.

A mix of the *Pit Stop* approach, with some modification based on the experiences of other programs, is an attractive option on the following bases:

- Using the Guidelines, local community health, or other service providers such as Divisions of General Practice, could run the program, and link it with local primary health care services for follow up.
- The program has the potential to focus on just a few components at a time at any location, and this could be defined by community needs assessment that would enhance community ownership. Communities can set their targets, and focus on key outcomes. This is a key strength of the *Dorrigo Active Community* program
- The program can be delivered in a range of local settings to ensure participation of different sectors, such as farmers and different age groups, and has been adapted to include women; and
- The program is low cost

Mobilising the community to take up physical activity in programs such as *10000 Steps Rockhampton* and *Heart Foundation Walking* can be included in community programs.

The more specialised programs including the workplace health checks and *Sustainable Farm Families* are probably less accessible and sustainable at this stage of their development. The key issues to be addressed for these are:

- The need for specially trained, skilled professionals to deliver the program
- The cost per participant. While the same concern could be expressed for the 2 diabetes prevention projects, these deliver an intervention for people who have been identified as being at risk. The workplace checks and *Sustainable Farm Families* programs are delivering a relatively high cost service for an otherwise healthy population.
- The less direct linkage to local primary health care services.

However the important experiences gained through these programs should inform the whole issue of cardiovascular fitness over time.

5.2 Key questions for further examination

There are two key questions that need to be considered and will be taken up with rural health service providers and farming groups. These are:

1. *Should cardiovascular health promotion programs be targeted specifically to farming people in a community, or should community programs take more care to include the farming sector?*

The case can be made that programs that are tailored for farmers will be more effective in engaging farmers. This case has not been proved for health promotion programs, although delivery of generic programs in setting where farmers gather, such as field days and sale yards, do provide opportunity for groups of farmers to participate.

There is concern that farmers have become more physically and socially isolated and that this has added to the risk of poor mental health outcomes, and ways of providing opportunity to improve and maintain connection with others in their community is important to their health and wellbeing. Community-based programs may offer one such opportunity.

2. *How can the majority of farming people be engaged in health promoting activities?*

This is a key question for those responsible for the health of rural communities. Each rural region and community will have different mechanisms for engaging their farming sector, and action to identify relevant networks and opportunities is required.

CONCLUSIONS

This preliminary examination of programs that promote cardiovascular health for Australian rural communities has identified 12 programs that have been the subject of an evaluation, including prevention and promotion services offered by General Practitioners. These programs have been described based on reports that are publicly available. Each program was described according to the following criteria:

- Objectives and interventions
- The target population
- Inclusivity
- Level of evidence for effectiveness of interventions being promoted
- Level of evidence of effectiveness of program in achieving objectives
- Linkage to primary health service and local follow up of people identified as at risk

Recommended interventions being promoted have been soundly based, however, aside from the GP-based services, the level of evidence for the strategic approaches being made were not high, and it is recommended that investment be made in rigorous studies to determine their effectiveness.

In terms of programs that best meet the evidence criteria, are economic and are likely to be accessible across rural Australia, a modification of the *Pit Stop* approach would appear to be the ‘best bet’, with provision for local adaptation to community and sector needs within communities. Local community versions of community-wide programs such as group or family activity such as *10000 Steps Rockhampton* and *Heart Foundation Walking* could be considered to complement a program such as *Pit Stop*.

The question that should be considered by those responsible for rural population health in Australia is “*Should cardiovascular health promotion programs be targeted*

specifically to farming people in a community, or should community programs take more care to include the farming sector?”

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Attachment 1: Health Promotion Interventions Identified

- 10 000 Steps.
- 10 Ways to a Healthy Heart.
- 45 Year Health Check.
- Adopt a Rural Practice.
- Barraba on the Move.
- Better Health Self Management Course.
- Dorrigo Active Community Project.
- Easy Moves for Active Aging.
- Eat Well be Active.
- Eating for a Happy Mind and Body.
- The Empowerment Program.
- Find Thirty.
- Food for Thought.
- Foundation 49 Men's Health.
- Go for your Life Diabetes Prevention Program.
- GP Exercise Referral Scheme.
- The Greater Green Triangle Diabetes Prevention Program.
- Healing Program – Healthy Eating Activities for Indigenous Groups
- Healthy Blokes – Sunshine Coast Regional Health Program.
- Healthy Men.
- Heart of the Grampians.
- Heartmoves – Heart Foundation.
- HELP (Healthy Eating and Lifestyle Program).
- Hot Steppers Pedometer Program.
- Just Walk It.
- Kimberly Active Project.
- Life Scripts.
- Life Style Risk Factor Program.
- Life! Initiative.
- Lighten Up.
- Mall Walks, Dandenong.
- The Man Model Program.
- Men's Shed.
- The "On Track" Program.
- One Step Ahead.
- Parisian Challenge.
- Pedal Power – Ride To Work.
- Proactive.
- Pryme Movers.
- Skin Watch.
- SNAP (Smoking, Nutrition, Alcohol and Physical Activity).
- SPAN (Sustainable Physical Activity In Neighborhoods).
- Starting Block Physical Activity Program.
- Staying Fit and Health – Centre for Physical Activity and Aging.
- Staying Young In Young.
- Steps to a Healthier Life.
- Sun Smart Info Sessions Act.
- Sustainable Farm Families.
- Talk About Weight Group.
- Well Women's Cancer Screening.
- Wellbeing Wendouree.
- WellingTONNE Challenge.