# Sustainable farming families — the human resource in the triple bottom line

**Susan Brumby**, Western District Health Service, **John Martin**, Centre for Regional and Rural Development, RMIT University, **Stuart Willder**, Western District Health Service

## ABSTRACT

This paper reports on an innovative approach to rural health designed to influence farmers' behaviour with respect to their family health and well-being. The approach involves collaboration between farmers, farmer industry associations, health services, a university, training providers, and government. Western District Health Service, Hamilton, is conducting the project, in partnership with Farm Management 500, Victorian Farmers Federation, RMIT University and LandConnect Australia. The paper outlines the need for health promotion with farmers, discusses the approach and theoretical basis for the project and provides a summary of the health status of participants from the first year of this three-year project. It also highlights the inconsistencies in how participants think and feel about their health. The initial response from participants is that the evidence-based workshop approach working with peers over a longer period of time to monitor change is one in which they are motivated to learn about health and safety issues, and take positive steps for change. The paper makes policy recommendations relating to health promotion for Australia's different farming communities.

## INTRODUCTION

A major issue facing Australian agriculture is the health of farming families. 'Triple bottom line' thinking in the farming industry focuses on financial (operating surplus per production unit), natural resource (nutrient/ pasture/ environmental management) and human resource (number of persons per production units and the aging of the workforce) indicators. Historically the farming industry has paid little attention to the health of its families[1], even though it is a critical factor in the viability of the industry's human resource, the basis of its productivity, and the future of rural communities. In this paper we report on the Sustainable Farm Families Project (SFF), a three year project which engages farming families informing them about health and safety options and recognises that their family health is essential to enable them to effectively utilise their economic and natural resources to survive and prosper.

Farming life has changed dramatically over the last few decades.[2] The characteristics of Australian farmers need special consideration by health planners, industry and government. Farmers are ageing, working harder, longer and increasingly relying on family members to provide the extra labour needed to survive.[3] Farmers experience higher death and morbidity rates than the Australian population[1], are over represented in farm injury statistics[4,5], and have varying levels of socio-economic disadvantage.[6] As well, residents of rural areas have a below average life expectancy.[7] The Australian Institute of Health and Welfare[8] provides evidence to show that "the general health of rural people is, by urban standards, very poor. Rural populations have above average rates of premature mortality and death through heart disease, cancer and suicide".

This is consistent with research conducted by Fragar and Franklin who noted that male farmers face a 40 per cent increase in age standardised deaths compared with the general male

population.[1] Cancer, farm injury, cardiovascular disease, and suicide account for this increased mortality in the farmer population. International research also highlights hearing deficits.[9] Farm work practices can result in pesticides being taken into the home where children and spouses are exposed.[10] Suicide rates across most age groups for men are higher in rural and remote centres and for women in the 30 to 44 year age group.[11] Whilst the cost of farmer illness, injury and accidents is not known, Fragar and Franklin note that the full costs of farm injury and illness are probably not being borne by the industry.[1] These costs impact across Australian society.

## THE SUSTAINABLE FARM FAMILIES PROJECT (SFF)

In 2003, the Western District Health Service (WDHS) Hamilton, in association with RMIT University, Farm Management 500 and Land Connect Australia were awarded a grant from the Rural Industries Research and Development Corporation's Farm Health and Safety Joint Venture to undertake a three year study of farming family health in broad acre farmers producing mainly beef, wool and grains in Victoria (Benalla, Horsham, Hamilton and Swan Hill including farmers from southern NSW) and South Australia (Clare). This workshop-based project provides participants with information on personal health and well-being and **explores** attitudes to personal health, behaviour, and opportunities for improving health and farm safety outcomes for families who have limited access to health promotion and assessment.

The SFF project is for people who have farmed for more than five years and are aged between 18 and 75 years. It is open to any member of a family farming business and participants are self-selecting, although most come through networks such as Farm Management 500 and the Victorian Farmers Federation. One hundred and twenty-eight participants have commenced the program of whom 70 are men and 58 are women. Forty-seven are couples from farming family businesses. In one family, all three members are participating, and in another family six members (three couples) from a family farm partnership are participating.

Participants will be tracked over three years using baseline health data, pre and post-knowledge surveys and personal action plans. The program will be evaluated from several perspectives and at different stages throughout the project. Ethics approval was granted as per the National Health and Medical Research Council guidelines through the Multidisciplinary Ethics Committee of South West Health Care, Warrnambool, Victoria. The committee made several recommendations including the need to refer participants with fasting cholesterol levels greater than 5.5 mmols to their General Practitioner and to use the Heart Foundation's[12] minimal requirements for exercise.

## THE SFF AIMS AND OBJECTIVES

The SFF project aims to address the health and well-being of farming families through a three year project which tracks their health and injury status, provides them with information relevant to their personal health needs and creates a positive group learning situation with other farmers also interested in improving their health status. The objectives of the SFF are:

- To identify and track farming family health indicators for inclusion in Farm Management quality assurance processes.
- To design and deliver a training program that assists farming families to identify strategies to enhance individual, family health and relevant OH&S practices.

- To communicate project findings to farming families and the health and agricultural sectors.

- To provide information on the relationship between family health, health as a social issue in rural communities and farm productivity.

The hypothesis guiding this action research project is that by informing farmers (men and women) about critical health factors they will change their behaviour, improve their health status and adopt safe working practices. The approach taken in the project is based on Azjen and Fishbein's theory of reasoned action and planned behaviour.[13]

The project engages with farming families through annual workshops, newsletters and their industry association over three years. Farmer health at the individual, group, and industry level is monitored and indicators are incorporated into discussions about the farm business bottom line.

The project is led by Western District Health Service, Hamilton, and has strong support and intersectoral collaboration between agricultural industry, government, university, training and farming lobby groups. These groups include, Farm Management 500, an association of farmers who co-operate around business benchmarking initiatives, RMIT University's Centre for Regional and Rural Development, located in Hamilton, LandConnect Australia, Australian Women in Agriculture, Victorian Farmers' Federation, Meat and Livestock Australia, FarmBis, Victorian Department Primary Industries and major funder Rural Industries Research Development Corporation. Representatives from these groups form the Sustainable Farming Families Steering group.

## OUR APPROACH

Demographic information on the participants is collected using the Victorian Department of Human Services, Service Coordination Tools.[14] This includes age, gender, ethnic background, and profiles on health conditions, health behaviours and psychosocial indicators. These tools are drawn from the health promotion literature, practice reviews and incorporates key consumer information. They are useful in determining risk and the need for further assessment.

At the commencement of each annual workshop a baseline health assessment is undertaken and includes fasting cholesterol, fasting blood sugar, body mass index, waist hip ratio, percentage of fat in body mass, blood pressure and pulse. An optional 30-minute examination and discussion with program deliverers (health professionals) is offered. To date all participants have opted to undertake the 30-minute one-on-one examination and discussion. All participants have a medical health record kept by Western District Health Service, which collects all assessments and referrals. The results from year one form the baseline for this project over the next three years and will enable comparisons with farming family health in other farming sectors.

During the first year's workshop information was presented on the epidemiology of rural health, cardiovascular disease, cancer, stress, diet, food label reading, farm health and injury, gender specific topics and physical activity. An evidence-based resource manual with information on each topic is provided to participants and allows them to fill in learning logs during the two-day workshop. The manual is a resource for them to be supplemented over the life of the project. The health professionals who deliver the program (one male and one female) have backgrounds in nursing, farming and postgraduate qualifications in men and women's health. Following the initial two-day workshop participants were invited to forward a copy of

three specific health and safety actions, which they intend to implement as part of their individual well-being program. The project participants are tracked for three years and their health and safety actions reviewed at 12 and 24-month intervals with their peers in the program.

## Theoretical basis for the workshop based approach

The research design and implementation of the SFF project draws on a number of theoretical perspectives relating to behaviour change, adult learning and evaluation, innovation and evidence-based policy development.

Azjen and Fishbein's[13], theory of "reasoned action and planned behaviour" supports the learning mode experienced by participants in the SFF project. This theory suggests that behaviour changes through

- the sharing of values and beliefs about health of the [farming] peer group
- a common commitment to individual physical and knowledge assessment
- sharing with peers how best to influence health outcomes, and
- understanding the consequences of poor health and safety behaviour on farming families.

Early results suggest that participants think first about their own health, that of their family, and then their farming business. It was evident during the workshops held in the first year, and from Farm Management 500 co-ordinators who report that at the regular monthly meetings held since these workshops, that those participating in the program are keen to discuss their action plans with others, creating interest from non-participants about the need to consider family health in their farming business decisions.

The workshop format is based on Kolb's[15] theory of adult learning. Each workshop topic is introduced by;

- *Exploring personal experiences* — what do I think about the particular health issue?
- *Reflection and discussion* — why do I think like that?
- *Conceptualisation and adding the facts* — What do these health and farming business relationships mean to me, my family and my farm business?
- *Actions* — What will I do with this new information about farming family health, farm safety and our farming business sustainability?

Throughout the workshops participants are encouraged to reflect on their learning and develop a personal action plan using learning logs and personal diary entries to monitor their performance. For example, in the workshop we use the Kolb framework in the section on cardiovascular disease to address the following questions;

- *Exploring personal experiences*
  - How has heart disease affected you, your family and friends?
  - What do you believe are the major causes of heart disease?

- *Reflection and discussion in groups*
  - How do you feel about heart disease, why do you feel like that, what are your experiences?
- *Conceptualisation*
  - What are the facts about the cause of heart disease and how can you reduce the risks
- *Actions*
  - What can you and your family do with this new information?

The project is evaluated using Kirkpatrick's[16] evaluation framework. This approach to evaluation has four levels of measurement and each will be undertaken over the life of the project.

- *Positive experience* — evaluate reaction of participants
- *Conceptual understanding* — evaluate learning of participants
- *Can the learnings make a difference* — evaluate behaviours of participants
- *Demonstrable outcomes* — evaluate results of the workshop

Participant experience is monitored through the use of a workshop survey and focus groups. The 128 participants (54% men, 46% women) all reported 'very favourably' on the workshop and the information it provided relating to their health status and farm safety practices. This initial reaction to their participation supports Azjen and Fishbein's[12] theory of reasoned action and planned behaviour.

Pre and post-knowledge questionnaires evaluated conceptual understanding and also showed a significant increase in knowledge. At the start of the second year of the project 93% of participants had committed to an action plan to improve their health, well-being and safe working practices on their farm. 80% of men and 55% of women were referred for follow up (general practitioners, counselling, dietician, naturopath) applying standards set by the Multidisciplinary Ethics Committee of South West Health Care. After the second year of the project we will be in a position to evaluate the outcomes of the SFF project to aspects of farming business.

Rogers'[17] concept on the diffusion of innovation assists us to understand how new ideas and practice is adopted in groups. His work, which included adoption of innovation among farming communities, defines diffusion as "the process by which innovation is communicated through certain channels over time by members of a social system". The SFF project involves a number of key groups to assist in the early adoption of the health and safety practices advocated in the program. Importantly the most powerful group is the farmers who participate in this program and who meet regularly to discuss farming matters, which now includes health, well-being and safety. The Farm Management 500 group was chosen for this research because they are known as innovators in farm management and can be considered as 'innovators' and 'early adopters' in Rogers' typology. Our rationale in working with this group is to obtain evidence on the relationship between health, farm related accidents and farm business sustainability.

Weiss[18] identifies several different models concerning the relationship between evidence and health policy. Her 'evidence-base' policy approach includes the knowledge-driven model, problem-solving model, interactive model, the political model and the tactical model. Whilst

these can be seen as interrelating, our focus is on the knowledge-driven model where the emergence of new knowledge from research creates pressure for policy implementation in rural health promotion.

## FINDINGS ON HEALTH STATUS AND BELIEFS

Overall both men and women have good general knowledge about health issues in rural Australia but lacked specific information on key aspects. Men, for example, had good knowledge about the health status of people living in rural Australia compared with their metropolitan counterparts, and were aware of the major risk factors for cardiovascular disease, but had relatively poor knowledge on the risk factors for diabetes. They had poor knowledge of the longevity of males and females. Men also had little understanding of the incidence of anxiety, substance abuse or depressive disorders. The latter is now covered in the second round of workshops in 2005. Surprisingly, men had poor knowledge on the methods for treating prostate cancer, but showed a significant improvement in knowledge after this topic was covered in the workshop. Their knowledge of issues relating to male sexual dysfunction, for example treatments for impotence, and diet, were also poor before the workshop.

Women also had good general knowledge relating to health issues, for example the risk factors for cardiovascular disease and the Heart Foundation's[12] recommendations for exercise. They had poor knowledge about the longevity of males and females, the degree of anxiety, substance abuse and depressive disorders in the Australian population. Like their male counterparts, their knowledge of female reproductive/urologic health (and the relationship between diet and health) was poor.

### Men

Male participant ages ranged from 20 to 74, and were evenly spread across the group. The men were Australian born (97%), and of Caucasian origin (100%). At home they all spoke English, were not on a government pension or benefit presenting as typical white, Australian born farmers, consistent with Barr's findings in his research on Australia's farmers: past, present and future.[19] Forty-nine (70%) had never smoked, 15 (21%) had quit smoking leaving only 4 (6%) who currently smoke (where percentages do not tally to 100 not all participants respond). Sixty of the men (86%) reported that they drink alcohol at least once a week with 42 (or 60%) of these drinking alcohol on 2–5 times per week. 8 men (12%) reported drinking more than six standard drinks on at least one occasion each week. A total of 40 men (or 57%) did this at least once a month.

These men were generally active with 54 (81%) reporting that they would accumulate 30 minutes or more of moderate physical activity on most days of the week. 51 of all men (73%) reported that in the past four weeks they were capable of doing 'heavy to very heavy' exercise for at least two minutes.

Sixty-five of these men (93%) reported that their health was, good, very good or excellent. In addition, 20 of these men (29%) reported that they had experienced either 'moderate to severe' to 'very severe' bodily pain in the past four weeks. Twenty-four men also reported that "their health interfered (slightly, moderately or quite a bit) with their normal activities in the past four weeks". Seventeen men (24%) reported that their hearing was fair to poor. In the health assessments 20 men (29%) reported back problems, arthritis, or stiffening of joints/aches and pains. Clearly, there is a mismatch between what they say about their overall general health and what they specifically report on.

When asked what current medications they were taking men reported a wide range of prescription medicines and herbal treatments. Of the 28 different medications, five (18%) were taking the latter.

Twenty-six men (37%) had a hip waist ratio greater than 1. Forty-nine men (70%) had a Body Mass Index greater than 25 placing them in the 'over weight' category which is higher than the Australian population.[8] 31 men (41%) had cholesterol levels greater than 5.5mmols, which is significantly higher than the self reported rates from the Australian Institute of Health and Welfare 1998.[20] Ten (15%) had blood sugar levels greater than 5.5.

In their one-on-one assessments, 30 of the men (43%) reported either stress incontinence, frequent voiding at night or difficulty in their voiding pattern. Only two men reported loss of libido or erectile dysfunction. 49 men (70%) reported joint, muscle pain or back pain, which is more than twice that reported by ABS[21] in its 1989–90 survey, where 29% of people reported having one or more acute or chronic musculoskeletal conditions in the previous two weeks. This also highlights the problem of self-reporting data where respondents typically understate socially undesirable conditions.

Fifty-six (80%) of the men participating were referred for further medical examination. 29 were referred for skin and mucous membrane matters, 24 were for cardiovascular, while others were for gastrointestinal (12), nutrition (6), musculoskeletal (4), urological (4), respiratory (4) and neuro/psychosocial (2). 43 of these referrals were to their family doctor, 8 were self-monitoring, 5 were to a naturopath and 3 refused referral.

## Women

Fifty-three of the women were Australian born (90%) with two from Canada, and one each born in England, New Zealand and the United States. All are of Caucasian origin with English the language spoken at home. Only one woman receives a government benefit or pension.

Female participant ages ranged from 28 to 63 with more representation from women in the mid 40s and mid 50s. 43 (73%) had never smoked, 13 (22%) have quit, and one currently smokes. 38 women (66%) drink alcohol at least once a week with 28 (48%) these drinking alcohol on 2–5 times per week. Only one woman reported having more than six standard drinks on at least one occasion each week. Eleven women (19%) did this at least once a month.

Thirty-nine (67%) women indicated they had participated in breast screening. Of the nineteen (33%) who had not had a screen nine were under 40 years, eight were between 40 and 49 years and two were over 50 years old. While 57 (98%) of the females had had a pap smear, ten had not a test since 2002 or longer. These participation rates for both breast and pap screening are higher than the participation rate in the Australian population.[8]

Like the men the women were generally active with 43 (73%) reporting that they would accumulate 30 minutes or more of moderate physical activity on most days of the week. Thirty-one (39%) of these women reported heavy to very heavy exercise for two minutes during the past four weeks.

Fifty-three women (92%) reported that their health was good, very good or excellent. Thirty-five women (59%) reported that they had experienced very mild (26) moderate (seven) or severe (two) pain during the past four weeks. Sixteen women (27%) reported that their health (slightly, moderately or quite a bit) interfered with their normal activities in the past four weeks.

Ten women (17%) reported depression or postnatal depression as a personal health issue. Five reported asthma and five reported continence issues.

Current medications included a wide range of prescription drugs as well as herbal medicine (some fifteen reports or 33%). Women reported use of a far greater range of medications than men.

Twenty-nine women (50%) had a waist to hip ratio greater than 0.8. Thirteen women (22%) had a BMI greater than 28. Two women had a BMI less than 20. 21 women (36%) had cholesterol levels greater than 5.5, while only four women (7%) had blood sugar levels greater than 5.5.

Thirty women (61%) identified stress incontinence, frequent voiding at night or difficulty in their voiding pattern during the one on one discussion. 24 women (41%) reported they had joint, muscle or back pain.

As with the men there were multiple referrals for a range of conditions. These included twenty-one for cardiovascular, eighteen for reproductive /urological matters, and eighteen for skin and mucous membrane issues while others were for nutrition (eight), psychosocial (seven), respiratory (six), and neurological (four).

Through the workshop process we gather qualitative information from participants about the attitudes and approach to personal and family health. Farming families, for example, participated in the workshop because it provided "*no fuss health assessment and information*", with their farming support group peers. In the focus group discussions participants identified factors that inhibit good health and safety. They included:

- Poor work practices (chemicals, sunlight) — "Lack of time", "not a priority", "cultural thing … always done it this way" "Children in the workplace is a problem".
- Stress management — "Don't know where to go" "We are stressed" "There aren't any mental health problems up here." " We are pretty good up here."
- Balancing farm work and leisure — "Women tend to get upset — we blokes just go out and work."
- The Health System — "We don't have enough information to make a decision" "If you don't know your way around it's hard to know what you can ask for "

There were also references to 'gate keeping' by GPs. An example cited by participants was when they wanted to see a dietician they were advised by medical group receptionists that they must first obtain a referral from a medical practitioner. Participants also commented that they usually waited until they had four or five things wrong with them before seeing their GP as they did not want to waste their time or money. The lack of bulk billing opportunities was also raised as a deterrent.

The information collected in participant action plans also tells us something about what they thought was of use and important to pursue. We have highlighted several comments under the following categories:

- Physical Activity — "Increasing my physical activity for general health" "exercise more, riding, walking 30 minutes x 5"
- Diet — "no idea how easy it was to understand basic label reading" "altering shopping through reading labels" " increase fibre" "avoid high fat and high sugar"

- Improving Farm Safety/prevent injury — (one group is doing a workshop with Workcover), "use ear muffs, bike helmets, protective clothing" "Complete first aid course" "keep all machinery in safe working order" "all covers and shield in place" "work at a pace I can keep up with"
- BMI — "Lose weight — get to normal BMI"
- Stress — "Set aside time for rest and relaxation" " Recognise what stresses me" "Improve communication skills"
- Business — "Health plan should be part of business plan;" "without health you've got nothing"

These findings provide baseline information on the measurable health status of participants. A measure of the effectiveness of our approach in this project will be changes to participant health over the three years of the project. These findings also provide immediate important information to health policy makers about the beliefs and attitudes of the farmers participating in this project.

## DISCUSSION AND CONCLUSION

This description of the first year's data from the SFF project tells us much about the health status of farmers represented in the study as well as their knowledge and understanding of family health. Interesting amongst this information are inconsistencies in farmers' reporting of attitudes to pain, the level of alcohol consumption, understanding about own gender issues and the strategies many of the participants use to address their health through alternative medicines.

Inconsistencies in their own reporting of health and well-being need to be addressed in the workshops for year two. For example, while a large proportion of participating farmers reported a high incidence of pain (29%) and 37% said their health interfered with their normal activities 93% reported their health was good to excellent. This suggests that farmers accept that pain is a normal part of their existence. In addition 43% of men reported symptoms of incontinence, which suggests they accept this as being normal. This is another inconsistency in participant beliefs when there are intervention strategies to manage early stage incontinence.

We will also need to address participant beliefs and attitudes about alcohol consumption. For example, alcohol consumption was high for both men and women, and at a high-risk level.[22] This is especially so when we include the figures for monthly alcohol consumption. This applies to 69% of men and 21% of women in the program.

From a health access and management policy perspective we will need to develop a better understanding about the participant's access to their rural health service. Participant high use of herbal alternative medication might be more a function of ease of access compared with accessing advice through a General Practitioner.

More importantly we will need to address the issue of mental health. While 17% of women reported depression as a current issue no male participant admitted such concerns. Anonymous feedback from participants has put mental health and depression as a high priority for the next round of workshops.

The success of our workshop-based approach, with farmers already collaborating on farm business improvements, suggests this approach creates an opportunity for rural health professionals wishing to engage with their farming community on ways to improve rural

health. Return rates of action plans are currently 120 out of 128 (94%), which is high for this type of intervention.

In the second round of workshops scheduled for year two we have applied the learnings from year one and adapted the workshop accordingly. For example, we are giving men the opportunity to learn about women's health issues, and vice versa. We are also providing information, and creating a discussion around depression/ anxiety and stress management.

## POLICY RECOMMENDATION

Following completion of year one we believe the success of this program is in the benefits of intersectoral collaboration of farmers, their farming industry associations, a rural health service, a university and the actions taken by farming families to change their health, well-being and farm safety practices. Importantly participants are more aware of the relationship between their family health and the success of their farming business. Consistent with Rogers' diffusion of innovation theory we are empowering champions within the farming community creating role models for effective health management for other farmers.

Over the next two years the project will provide longitudinal information on health related outcomes for individual participants. The early lessons from this project lie in the way that such programs are designed and developed. A people-centred, participative approach with peers focusing on tangible health outcomes and business outcomes provides a high level of motivation to take action.

Rural health programs, which seek to change behaviour, must be done in full collaboration with people and the specific industries in these places. They should be people-centred, knowledge-based, built on strong evidence and intersectoral.

## ACKNOWLEDGMENTS

The authors would like to thank the three reviewers who provided valuable feedback on this paper.

## REFERENCES

1. Frager L and Franklin R The Health and Safety of Australia's farming community, A report of the National Farm Injury Data Centre for the Farm Safety Joint Research Venture, Canberra, Rural Industries Research and Development Corporation, 2000.

2. Blainey G The Great Divide, Boyer Lectures, ABC Radio National 25 November 2001 cited 30/12/2004 www.abc.net.au/rn/buyers/stories/

3. Todd H Labour a big issue Dairy Australia www.dairyaustralia.com.au/template 2004

4. Parliament of Victoria Inquiry into the cause and fatality and injury on Victorian Farms, Melbourne, Victorian Parliament, 2004.

5. Troeth J Healthy Farms need Healthy Farmers, Department Agriculture and Forestry, Canberra, 2004

6. Herreria, Magpantay, Aslin, Social profile of Australian Dairy regions, Canberra, Rural Industries Research and Development Corporation, 2004

7. Victorian Department of Human Services. Burden of Disease Report, Melbourne, DHS, 2004.

8. Australian Institute of Health and Welfare, Australia's Health 2002, Canberra AIHW, 2002.

9. McCullagh, M Lusk SL Ronis DL Factors Influencing Use of Hearing Protection Among Farmers: A Test of the Pender Health Promotion Model, Nursing Research; 2002, 51(1):33–39.

10. Thompson, B Coronado G Grossman J Klaus P Solomon C Islas I Curl C Shirai JH Kissel, J Fenske, R Pesticide Take-Home Pathway among Children of Agricultural Workers: Study Design, Methods, and Baseline Findings, The Journal of Occupational and Environmental Medicine, 2003, 45(1): 42–53.

11. Caldwell, TM Jorm AF Dear KBG Suicide and mental health in rural, remote and metropolitan areas, Medical Journal of Australia 2004 181(7): s10–s14.

12. Heart Foundation. How to have a healthy heart 2002, Melbourne, Heart Foundation.

13. Ajzen I and Fishbein M Understanding attitudes and predicting social behaviour, Prentice Hall, Englewood Cliff, New Jersey, 1980.

14. Department of Human Services Primary Care Partnerships: Service Coordination: Tool Templates, 2002, Melbourne, DHS.

15. Kolb DA Experiential learning: Experience as the source of learning and development, Englewood Cliffs, NJ, Prentice Hall, 1984.

16. Kirkpatrick DL Evaluation Training Programs: The four levels, Berrett-Koehler, 1998.

17. Rogers EM. Diffusion of Innovations, 3rd edition, Free Press, New York, 1983.

18. Weiss CH The many meanings of research utilisation, Public Administration Review1979, 39:426–431

19. Barr N The Micro-dynamics of change in Australian Agriculture 1976–2001, ABS, 2004.

20. Australian Institute of Health and Welfare, Health in rural and remote Australia, AIHW Canberra 1998.

21. Australian Bureau of Statistics (ABS) National Health Survey: Summary of Results, Cat.No. 4364.0 AGPS, Canberra 1991.

22. National Health and Medical Research Council Australian alcohol guidelines: Health risks and benefits, 2001, Canberra, Commonwealth of Australia.

## PRESENTERS

**Susan Brumby** is Director Community Services at Western District Health Service in Hamilton, Victoria. She is a registered nurse and midwife, holds a Diploma in Farm Management, a Graduate Diploma in Women's Studies, Graduate in Australian Rural Leadership Program and Masters in Health Management. She was principal of Bellwyn Pastoral Company (beef and wool property) for 12 years, has held several state and national positions in the agriculture sector and maintains an active role in rural communities. Sue is the Principal Investigator of Sustainable Farming Families, a three-year research project funded through the Rural Industries Research Development Corporation (RIRDC) Farm Health and Safety Joint Venture.

**John Martin** holds a B App Sci, Grad Dip Admin, MA and PhD. John is the Director of the RMIT University's Centre for Rural Development based in Hamilton, south-west Victoria. His research initiatives involve rural community development, which includes the health and safety of people in agriculture. Has also won numerous university research grants (Canberra, QUT). John has successfully consulted for the World Bank, ADB, AusAID, and numerous private and public sector organisations over the last 25 years.