

inFARMation: improving farmer access to health services

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Challenging weather conditions, regulatory changes and uncertain markets as well as limited access to health services may contribute to high rates of mental health issues and suicide within Australian farm families.

In response to these issues key stakeholders were invited to an inaugural Rural Hunter Service Providers Network meeting held in Scone NSW in May 2006. A multi-sectored, multi-levelled and multi-method community action plan was developed to improve community linkages, promote information exchange, hold mental health first aid training and conduct health service data mining. An Allied Health Community Health Team was established to undertake the data mining. This team participated in the 2006, 2007 and 2008 Allied Health Hunter New England Health Data Mining Workshops and ongoing consultation with an international expert in data mining, Professor Epstein, Hunter College, New York.

This paper will present and discuss the findings of the Upper Hunter Farm Family Data Mining Project. The project analyses electronic client data to report on the pattern and profile of farm family clients' uptake of health services. Significantly when client characteristic data was linked to service intervention data a different pattern of service usage for male and female farm clients emerged. The findings of the data mining project are regularly reported back to the health service and the Rural Hunter Service Providers Network to improve service planning and performance monitoring. This evidence informed practice has the potential to shape rural policy development which is responsive to rural context and reflects the changing needs of farm families.

inFARMation was a finalist at the 2007 Hunter New England Health Quality Awards and was nominated for the 2007 NSW Premiers Awards.

The context

Challenging weather conditions, regulatory changes and uncertain markets as well as limited access to health services may contribute to high rates of mental health issues and suicide within Australian farm families.¹ Farm families are historically perceived to only have a limited uptake of health services. The barriers to accessing services identified in the literature include the stigma associated with acknowledging and seeking mental health information; alcohol misuse, social and geographic isolation and limited service options.² Alarming the literature suggests that deaths from suicide of male farmers and workers are approximately double that of the Australian male population.³

The NSW Farmers Drought Summit, held in Parkes in May 2005, highlighted the emotional impacts of the drought. With the encouragement of the key note speaker Jeff Kennett, Chairman beyondblue, the 2000 farmers in attendance spoke publicly of their fears and anxieties about the personal, family and business impacts of the drought.⁴

In response to the issues, the NSW Farmers invited key rural mental health stakeholders to a forum in June 2005 to discuss how to best work together to address rural and remote mental health issues. A formal Rural Mental Health Network was formed and a NSW Farmers Blueprint for Maintaining the Mental Health and Wellbeing of the People on NSW Farms was developed. This multi-sectored 23 point

collaborative action plan, is the NSW Farmers Blue Print to improve and maintain the mental health and wellbeing of the people in farming in NSW, by using all available resources efficiently and effectively.⁴

The key network partners, including NSW Health, Centre for Rural and Remote Mental Health, Australian Centre for Agricultural Health and Safety, Department of Primary Industry, NSW rural financial counsellors group, beyondblue, Blackdog Institute, welfare agencies, and Country Women's Association, joined forces to promote and deliver drought assistance initiatives in particular:

- Mental health first aid training. The literature suggests that most participants subsequently provide support to people with mental health problems and that this support generally has positive effects.⁵
- Local service provider networks. The literature suggests that developing links between the rural financial counsellors, who have been identified as a first contact for rural people in crisis⁶ and the psychological/social support counselling services would improve on the referral processes and build on the local mental health system capacity.⁷ Social network analysis conducted by FARMLINK¹ in town C concluded that the local service provider networks are not only about increasing or improving the referral process. Increased links in information exchange and in working together are also important and indicate greater local mental health capacity building by the mental health services.

Within this macro context, on a micro level, key interagency stakeholders from Upper Hunter community agencies, community and mental health and rural support workers were invited to a planning day in Scone in May 2006.

Multi-levelled rural community engagement in health should produce a system that recognises and responds to community needs in a way that is consistent with both community and health service norms and values. It will develop capacity of community and health professionals and draw appropriately on community resources.⁸

A multi-sectored, multi-levelled and multi-method community action plan⁹, which identified community needs and strategies to assist service providers in their work with farming families, was developed. This plan included strategies to improve community linkages, promote information exchange within and between rural services, collaborate to hold mental health first aid training and farm family gatherings, as well as conduct health service data mining.

The goal of this plan was to increase farmers access to health and community services, in particular counselling services. More responsive services and incorporating needs from communities themselves are expected to lead to better health outcomes.⁸

A cross agency working party was also established to action the development and launch of a resource tool. The working group tapped into the service strengths of the network agencies for example strategic planning, resource development, promotion, evaluation and financial capacity. Jock Laurie the president of the NSW Farmers launched the resource tool at "inFARmation" in October 2006 and encouraged the farmers who attended to look out for each other in tough times. Twenty local community and health services displayed information. Over two hundred farmers attended and took home information and phone numbers to ring in times of need.

The challenge was how to effectively measure the impact and outcomes of the interventions to promote access of farm clients to health and community services. Community health relied on anecdotal information and did not report on farm family service usage and uptake. Health service research was needed to evaluate existing Community Health Services as well as innovative collaborative rural initiatives to increase farm clients access to mental health and wellbeing services.¹⁰

Planning and implementation of the data mining project

Parallel to the work of the Rural Service Support Network an allied health data mining project team was also established in May 2006 to harness Chime data and report on farm family service uptake of community health services.

Data-mining is a retrospective approach to practice research, with practice wisdom and principles used to identify potential variables in the research, including predictors, intervening variables and dependent variables.¹¹

Clinical data-mining can be used by practitioners to answer questions that arise from their practice, using information they routinely collect about their own clinical work and their clients.¹² The data collected for the purpose of the program evaluation does not intrude on services being offered or on the privacy of patients.¹³ Data mining projects highlight fundamental problems and gaps in recording as well as in replications of information.¹⁴ The results raised more questions than they answered, a finding common to data mining research¹¹ and so do other forms of research when they are done properly.¹⁵

The research conducted by the Data-Mining Team prompted a shift from a “discipline focus” to “issue focus” through knowledge development in key areas, strengthening a team approach and documenting the outcomes of team work.¹⁴ Thus promoting the transition of allied health professions from a position of being informed primarily by practice wisdom and generalised theory, to practice informed by their own evidence, reflexion and theory testing.¹⁶

The multidisciplinary data-mining team comprised of department heads and clinicians with representation from social work, psychology, occupational therapy, dietetics, physiotherapy and speech pathology. The allied health professionals or their departments did not receive either funding or backfill. The use of available data without the costs associated with data collection and data entry, enable the team to complete an evaluation without external funding.¹³

Initial project aim

The initial project aim was track service provision to farm families through service mapping to increase understanding of current service contact. The information extracted would be used as a baseline outcome measure to assess service initiatives and a basis for targeted internal service planning as well as external planning in particular in partnership with the Rural Hunter Service Providers Network.

Project target group

In consultation with the Chime team and the Ag Health Unit, the data-mining team developed a project definition of a farm client. A farm client was defined as someone who primarily lives on farm and defines themselves as a farmer.

Accessing clinical data

The data-mining team:

- consulted with the Hunter New England Health Professional Officer of the Human Research Ethics committee who confirmed the project's status as quality improvement

- developed a coding process for identifying farm clients registered on Chime, which involved typing in the words “farm client” on the third line of address
- in consultation with the Chime team, on the basis of reflective practice insight and clinical awareness, developed and agreed on a list of existing Chime data categories that would form the search variable for future Chime reports. Age brackets were also established based on the life cycle.

Ongoing consultation with Professor Irwin Epstein, an international expert in data mining

The project participated in the Hunter New England Health Allied Health Data-Mining Workshops conducted by Professor Irwin Epstein, Helen Rehr Professor of Applied Social Work Research in Health, Hunter College, New York.

In June 2006 Professor Epstein made the following recommendations to:

- develop a clear plan for analysis of the data which considers distributions of the variables and links gender to service intervention
- re-structure the search categories into an inventory namely client characteristics (demographic data and alerts), interventions (category of service) and outcomes (a challenge and an opportunity as health does not have clear outcome measures)
- target client groups who are not currently accessing services.

In June 2007, an initial snapshot of 84 farm clients was presented to Professor Epstein. This report linked client characteristics of geographical location and age to type of service intervention. This report suggested an increase in farm clients accessing both community health and in particular counselling services, following the formation of the Rural Hunter Service Providers network. This data formed the basis of a successful application which was awarded finalist at the Hunter New England Health Quality Awards and the NSW Premiers Awards. Professor Epstein recommended that the team extend the client characteristics search to include gender and marital status.

In 2008, a follow up snapshot report of 131 farm family clients was presented to Professor Epstein. This report linked client characteristics namely gender, age breakdown and marital status to service intervention data as well as two variables namely the formation of the network and major falls of drought breaking rain. Professor Epstein made the following recommendations:

- the data is reliable
- to concentrate on the variables of gender, age and service intervention
- while one could never be sure of the causal connection, one could correlate weather and mental health service uptake.

The practice-based research methodology

Clinicians were asked to retrospectively code farm clients and then clients were coded by a combination of administration and clinicians on an ongoing basis. The coding process ensured that farm clients would appear in chime reports at the point of service contact, both retrospectively and prospectively.

A data request was then made to the Chime team. This data request included search variables including:

- demographic data including gender and age distribution
- intervention data including the service accessed and time point of access (month and year).

A non identifying excel spread sheet was forwarded by the Chime team to the data-mining team for analysis. This spread sheet listed client referrals per month from July 2002 to January 2009. Client referral were reported per individual health service discipline as well as total community health service referrals. The number of farm client referrals was analysed retrospectively and prospectively of the formation of the NSW Farmers Rural Mental Health Network and the Rural Hunter Service Providers Network.

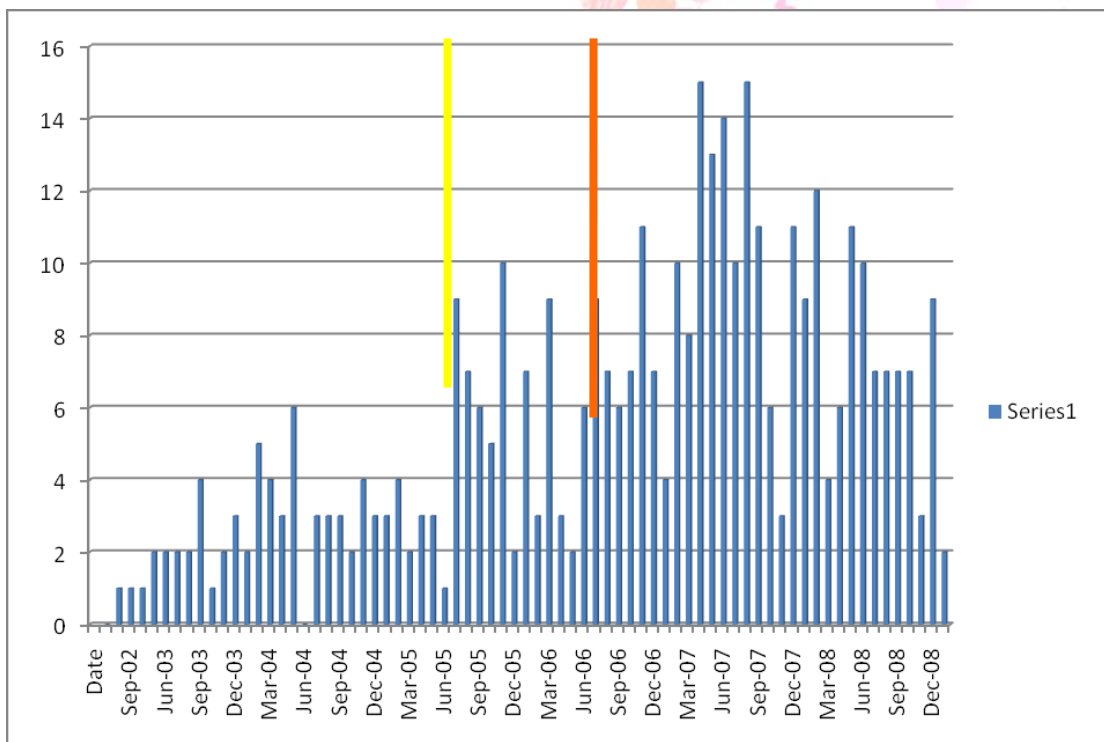
Individual farm client referrals were further broken down into geographical place of residence, gender, age and marital status categories, as well as where appropriate and available individual services provided by the health disciplines.

Outcomes and evaluation

A snapshot of 158 farm family clients accessing community and mental health services has been identified. These farm clients were referred to a total of 404 community and mental health services.

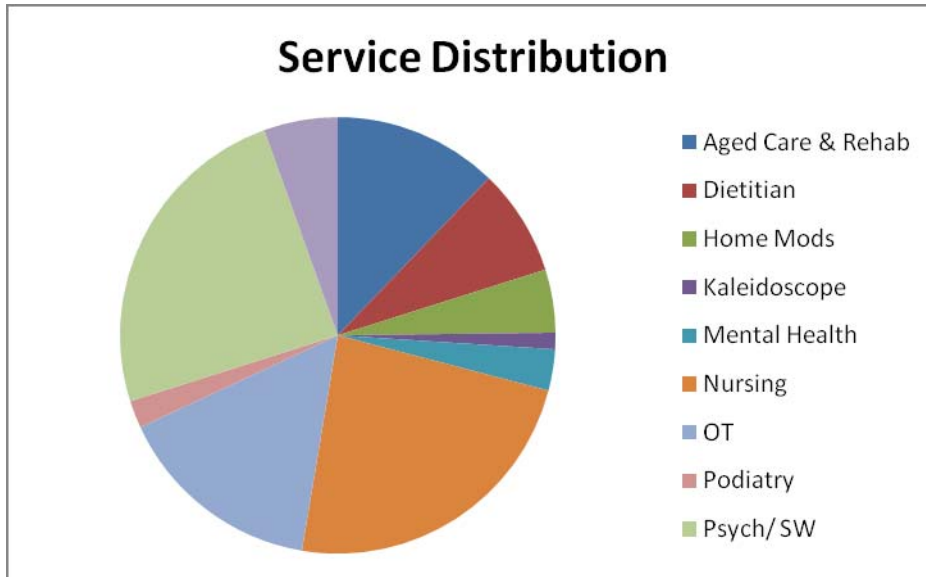
The data suggests that there was a significant and sustained growth in the identification of and the number of farm clients contact following the formation of NSW Farmers Rural Mental Health Network in June 2005 and the subsequent formation of the Rural Hunter Service Providers Network in May 2006. Prior to these initiatives only a small number of farm clients were recorded or identified accessing community health services. The number of identified farm client referrals continued to grow even though the Upper Hunter had benefited from major falls of rain.

Graph 1 Farm clients referral to community health services



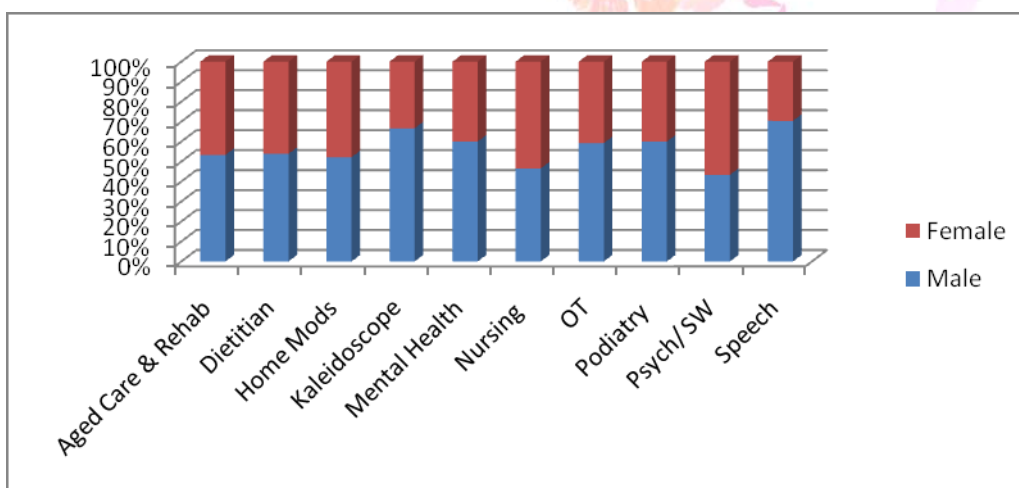
Farm clients were accessing a broad range of and often multiple community health services. The most frequently accessed services were psychology/social work, followed by community nursing and occupational therapy. Many of the farm clients identified themselves as never married, divorced or widowed.

Graph 2 The distribution of community health services accessed by farm clients



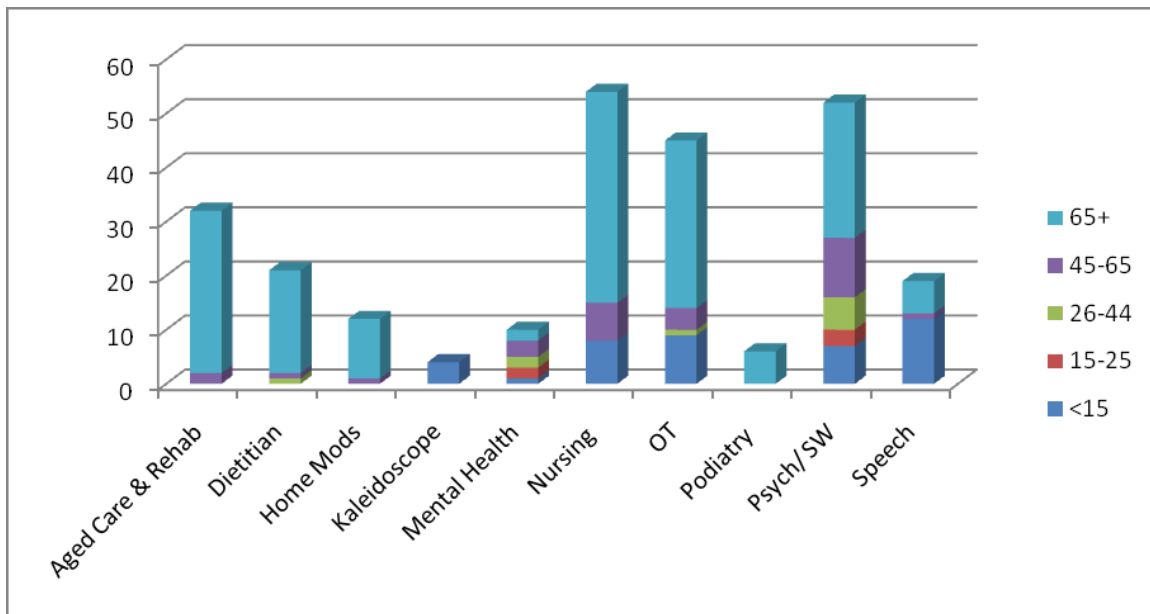
Nearly 50% of farm clients accessing community health services were male. This figure reduced to 43% for psychology/social work clients and slightly more than 50% of farm clients accessing mental health services were male.

Graph 3 The gender of farm clients accessing community health services

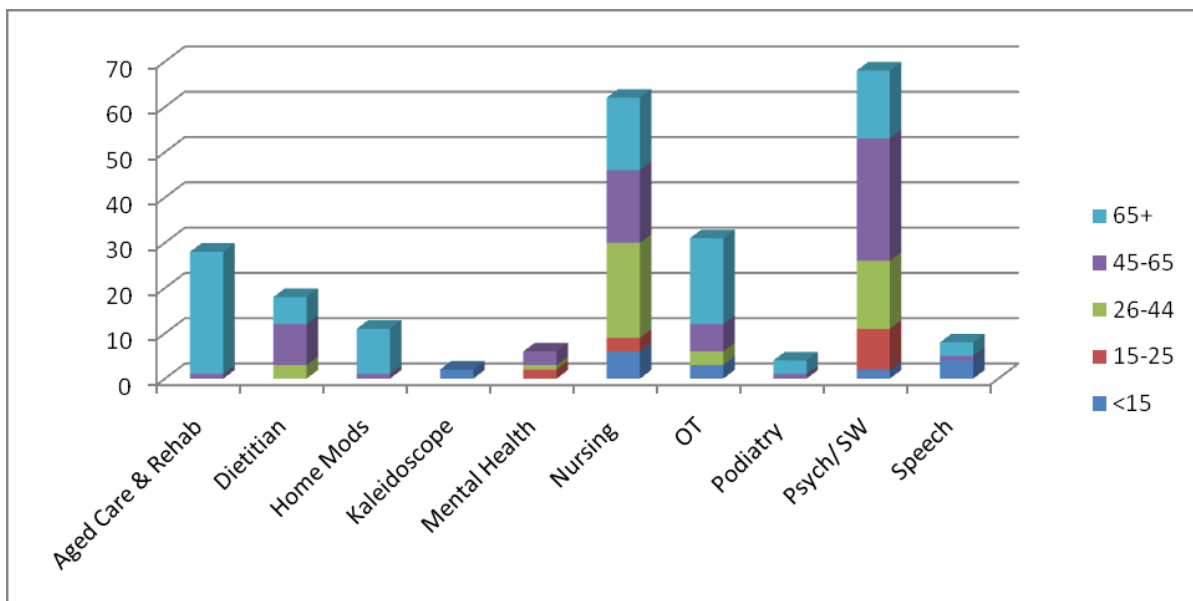


When farm client characteristics of gender and age were linked to service intervention, then distinct patterns of service usage emerged. Significantly both elderly and younger male farm clients were accessing community health services including psychology/social work. There was a higher frequency of male farm clients than female farm clients aged <15 and 65+ years accessing community health services.

Graph 4 Age profile of male farm clients accessing community health services



Graph 5 Age profile of female farm clients accessing community health services



Discussion

The results of the data mining suggest that increased numbers of farm clients are being identified accessing a broad range of community health services following the formation of the NSW Farmers Rural Mental Health Network in 2005, the Rural Hunter Service Providers Network and the commencement of the data mining project in May 2006. The number of farm client contacts continued to grow even though the Upper Hunter farmers have experienced drought breaking rain.

It is not possible to derive the exact number of farmers from the 2006 Census data, given that the Census combines three primary industry sectors. However the data does suggest that a farmer client base of

approximately 1350 people existed in the three postcode areas of Muswellbrook, Scone and Merriwa.^{17,18,19}

Data mining reveals that approximately 50% of the farm clients accessing community health services and 43% of farm clients accessing psychology/social work are male. Further analysis of Chime gender breakdown reports suggests that male farm clients are accessing psychology/social work at a higher rate than the general community.

Initial service data released on the Medicare funded mental health services²⁰ and the Lifeline telephone counselling service²¹ reveal that these services are twice as likely to be accessed by women.

The majority of Lifeline callers²¹ were aged between 35 and 44 years, with a higher proportion of female callers aged between 45-64 years in rural and remote areas. This result is similar to the community health farm client female profile. Lifeline also states that a high percentage of rural/remote area callers reported to be married. Over 50% of farm clients accessing psychology/social work were recorded as never married, divorced or widowed.

An initial report on Medicare funded mental health services²⁰ found:

- women 25-44 years were the greatest beneficiaries of the MBS measures
- boys aged 5-14 years appear to be the only male group gaining access to MBS items more frequently than their female peers
- the uptake of new Medicare items relating to the use of social workers, occupational therapists and mental health nurses is negligible.

Further analysis of the Chime data referral resource report revealed that there were no recorded referrals made to psychology/social work by either the drought support workers or the rural financial counsellor. Although the clinicians involved with the inFARMation project report to have regularly linked farm clients to these services, cross referral is not currently captured or available through Chime reports. Interrelate, a partner in the Rural Hunter Service Provider Network, also reports a substantial increase in farm clients accessing their counselling services.

Conclusion

The two authors, who are both practicing and experienced clinicians, enjoyed reading the literature, linking theory to practice and analysing Chime data to reveal the outcomes of the new initiatives. The need to keep an open mind is always important in data-mining or for any research.

One of the identified limitations of the project was the reliance on busy clinicians and administration staff to code farm clients retrospectively and on receipt of referral over a period of years. Another limitation was the projects reliance on the busy Chime team to prioritise our data request, forward timely data results and clarify any areas of concern.

The project results demonstrate the outcomes of multi-level rural community engagement and working together to develop and deliver collaborative action plans to improve community linkages, promote information exchange, as well as hold mental health first aid training and farm family gatherings.

The identification of farm client contact across a range of health disciplines and services supports the imperative to provide targeted training in mental health literacy, mental health, building networks and maintaining interagency relationships. Such training would support rural clinicians and develop the rural

workforce to achieve timely, appropriate, effective and responsive health care with a focus on early intervention.

The identification of unique gender profiles of farm clients accessing community health services provides valuable practice based evidence to improve farm clients' pathways to health care. Community health provides a unique range of early intervention services which complement the services provided by its network partners including the Medicare funded mental health services and Lifeline. The evidence informed practice has the potential to shape rural policy development which is responsive to rural context and reflects the changing needs of farm families.

Consistent with the collaborative nature of the project, the project findings are regularly reported back to the Centre for Rural and Remote Mental Health, the health service and the Rural Hunter Service Providers Network to improve targeted service planning and performance monitoring. The extent and nature of farm client service uptake of the counselling and support services provided by the network partners, is beyond the scope of the data-mining team and requires further research and reporting.

One area to be addressed is the finding that no referrals have been recorded to be made by the rural financial counsellors and the drought support worker to psychology/social work.

Further research is required to track the farm client's pathway into health and between the Community Health team. The current Chime referral reports only reveal the referral source of individual health services.

Acknowledgments

The authors would like to thank

- Upper Hunter Community Health Staff
- Michael Talbot and the Chime Team
- Dr Irwin Epstein
- Dr Judith Crockett CSU

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Presenter

Phoebe Begg has a BA Soc Stud (Sydney) and is project leader of information. Phoebe has worked as a social worker with Upper Hunter Community Health, based at Scone, NSW, since 1995. She has strong community links and extensive rural experience in health, local government, TAFE, not-for-profit and community/corporate entrepreneurial partnerships. Phoebe has particular interest in community development and strengths-based practice.