Primary health care in rural and remote Australia: achieving equity of access and outcomes through national reform

A discussion paper

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Abstract

Despite many rural and remote initiatives over recent years, the health needs of many Australian communities are still not adequately met. Residents of rural and remote communities continue to show poorer health outcomes than residents in metropolitan centres, while the health of Indigenous communities remains unacceptable. Many rural and remote communities experience ongoing difficulties in recruiting and retaining an appropriate and adequately trained medical and health workforce, while residents face increasing difficulties in accessing appropriate care in situations where integration and continuity of care are woefully inadequate. Health authorities and funding remains oriented to treatment and curative care services, while many of the upstream determinants of Indigenous, rural and remote health are poorly addressed.

That many rural and remote communities are unlikely ever to receive the range of medical and health services characteristic of large urban centres should not be a matter of major concern, so long as rural and remote Australians have adequate access to appropriate high quality primary health care (PHC) services as and when they are required. Currently, significant impediments inhibit the quest to ensure equitable access to appropriate primary health care for many rural and remote Australians.

Evidence indicates that there is no one model capable of servicing the health needs of diverse rural and remote communities. Moreover many small rural and remote communities require alternative approaches to health care and models of health service delivery different to those which have traditionally characterised rural Australia. Most importantly, service models must vary in order to take account of the specific geographical, social, economic and cultural contexts that differentiate the many rural and remote communities scattered across more than 7½ million square kilometres and which are home to more than 7 million Australians.

Equally apparent from the evidence of effective and sustainable rural and remote PHC services is that they are underpinned by several critical components which operate at both the macro-scale and the meso-scale. At the macro-scale an agreed PHC policy framework and strategic plan with agreed targets and indicators is essential. Funding needs to be sufficient and financing arrangements need to be sufficiently flexible to drive the other necessary components of multidisciplinary practice, community engagement, IT, infrastructure and workforce capacity building required at the service level.

Because ‘no one size fits all’, the focus of service models should be on ensuring that key service requirements and community needs are met. This requires systemic changes relating to:

- regional models designed to maximise access to appropriate comprehensive PHC,
- financing arrangements that resource communities independently of workforce availability,
- a service focus on health promotion and early intervention,
- multidisciplinary teams that maintain a strong medical input,
- adequate infrastructure to support an appropriate medical and health workforce, and
- a mechanism for monitoring progress against agreed indicators and targets, ensuring quality and accountability for all players.

Only then can there be any certainty in the provision of PHC services to meet the needs of rural and remote communities where population sizes are usually insufficient to sustain traditional models of service provision.

1. Introduction

Residents of rural and remote communities experience poorer health outcomes and exhibit higher health need (AIHW, 2008a, 2008b). Health workforce shortages and maldistribution (Productivity Commission, 2005) and higher out-of-pocket expenses are particular barriers, especially in more remote areas (AIHW, 2005; AIHW 2008a). The proportion of Indigenous people increases with increasing remoteness (AIHW, 2005), and Indigenous health outcomes lag well behind those of other Australians (ABS & AIHW, 2008).

This metropolitan-rural differential reflects the higher proportion of Indigenous people, but there are generally poorer non-Indigenous health outcomes in rural areas relative to major cities (AIHW, 2008b).[3] Poorer educational outcomes, lower incomes and generally lower socio-economic circumstances contribute to these poorer health outcomes (BITRE, 2008). Importantly, access to services is worse in these areas of highest need (AIHW, 2005).

'Closing the gap in Indigenous health status' and 'improving distribution and equitable access to services' have been identified as national priorities (NHHRC, 2008). Improving access to acceptable, adequately resourced, sustainable models of PHC in rural and particularly remote areas, where health outcomes are worse and there is a high proportion of Indigenous residents, will redress the gap in health outcomes in a country that otherwise ranks well internationally in terms of its health system and life expectancy.

In this paper we have focused on primary health care (PHC) services because there is compelling international evidence about the strong relationship between primary care provision and improved health outcomes (for example Shi & Starfield, 2000; Macinko *et al.*, 2003, Gulliford *et al*., 2004, Starfield *et al*., 2005; McDonald & Hare, 2004; Powell Davies *et al*., 2006). PHC is cost-effective and its focus on prevention and promotion is increasingly relevant in a time of rapidly rising chronic diseases and their precursors. Our goal is to outline the requirements for sustainable PHC models to service rural and remote areas of Australia (See Box 1).

Rural and remote areas comprise many diverse settlements, including pastoral, farming, mining, tourism and Aboriginal and Torres Strait Islander communities. The social and economic determinants of health vary across these communities. These underlying determinants must inform the design of any PHC service. In this discussion paper we describe principles and components of PHC services which can be adapted to this heterogeneous rural and remote population, consistent with the needs of each community and region.

This discussion paper:

i. highlights the importance of geographical context on health services, practice and outcomes;
ii. briefly outlines existing impediments to sustainable, accessible, appropriate primary health care to residents of small rural and remote communities;
iii. summarises evidence of effective primary health care models;
iv. outlines the principles and provides a framework for the provision of effective primary health care to residents of small rural and remote communities;
v. presents a timetable and implementation and evaluation strategy to monitor impact of new models of care on health outcomes.

[3] The topic of Indigenous health care and services is not dealt with in detail here as it is the subject of another National Health and Hospitals Reform Commission Discussion Paper.

Box 1 – Definitions

Primary health care:
Refers to '…essential health care based on practical, scientifically sound and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation and at a cost that the community and country can afford to maintain at every stage of their development in the spirit of self-reliance and self-determination. It forms an integral part both of the country's health system, of which it is the central function and main focus, and of the overall social and economic development of the community. It is the first level of contact of individuals, the family and community with the national health system bringing health care as close as possible to where people live and work, and constitutes the first element of a continuing health care process' (WHO, 1978).

Rural and remote areas:
Refer to those areas outside of Major Cities in the Australian Standard Geographical Classification System. This means that about one-third (32%) of Australians live in rural and remote areas—29% in regional areas and 3% in remote areas (AIHW, 2008a).

Model:
Is defined as '…a specific configuration of the vision of primary healthcare, the resources, organisational structure, and practices. Each configuration is conceptually distinct and empirically observable at a given time and in a defined context' (Lamarche *et al*., 2003).

2. Rural and remote health – key contextual issues for service delivery, practice and health outcomes

Existing rural-urban health inequalities and inequities are unacceptable because they mean that rural and remote residents are disadvantaged in terms of their prospects and opportunities for social and economic wellbeing (equity and rights). Health inequalities include life expectancy, higher rates of many diseases and underlying risk factors – including tobacco use, hypertension, obesity, and excessive alcohol consumption – that are related to social status, but amenable to preventive and health promotion approaches. Some are specific to rural areas, such as injury from farming accidents and motor vehicle accidents resulting from poor roads, long distance and excessive speed (Veitch, 2008). Understanding how these risk factors determine health needs and health status helps inform appropriate health service planning and service provision.

Geographical location (accessibility to and availability of appropriate health services) and rural and remote environments (including socioeconomic status, lifestyles, and indigeneity) are undoubtedly the hallmark characteristics of rural and remote Australia. There is ample evidence about how rural and remote contexts shape the nature of practice and service delivery (Wakerman, 2004; Wakerman & Humphreys, 2002; Humphreys *et al*., 2003, Bourke *et al*., 2004; RDAA & Monash University, 2003). Hence the need to tailor PHC service policy responses to the context of rural and remote populations is paramount.

The tyranny of distance and lack of transport are major impediments to accessing health care for many rural Australians. Health care systems servicing the needs of rural and remote Australians cannot be seen apart from the transport system that either takes services to the people or brings patients to those services. Health transport may be required at different points within the health care system (Humphreys, 2002) - at the point of entry (such as facilitating attendance at primary medical care); at the interface of different parts of the health care system (such as transferring patients between institutions); where continuing patient access is required (such as rehabilitation, day care, care of the chronically ill); and for the maintenance of social and psychological health (including access to social, cultural and recreational amenities).

In rural and remote Australia, the dispersed nature of the population places heavy cost burdens on both consumers and providers of health care services because of the

distances they are required to travel to access and provide health care. Historically, ambulance service, the Royal Flying Doctor Service (RFDS) and Patient Assisted Travel Schemes (PATS) play key roles. For many people, the cost of travel is a major barrier to health care. Poor roads and lack of public transport represent the most immediate problem. Increasing centralisation of health services in major regional centres has resulted in longer journeys for patients (often disrupting home life), increased costs in accessing health services, and increased reliance on private and community transport providers for residents without private transport.

The preference of rural residents for locally provided health care services reflects not only the costs and time associated with accessing services, but equally importantly, the significance of localism and attachment to place as important determinants of behaviour, especially where the local milieu provides significant support from family, friends and community. The importance of 'localism' helps explain why moves to rationalise local services attract such concerted opposition among rural residents.

History has shown that mainstream health programs alone fail to meet specific rural and remote health needs, and specific rural policies and services to address the distinctive health care requirements of residents living in these regions are required (The Auditor General, 1998). As a result of high need and relatively low resources, rural and remote areas have become an 'incubator' of new ideas and service delivery models – arguably the best example of which remains the Royal Flying Doctor Service (Humphreys, 2002). Many alternative models for delivering an effective and appropriate level and mix of health services to rural communities of different sizes and types have emerged (see Box 2). These models evolves largely because many rural and remote communities are too small to support all the services needed by residents, are characterised by an oversupply of acute beds alongside gaps in service functions such as palliative and respite care; and because existing services have a limited capacity to ensure continuity of care, fail to recognise the importance of close inter-sectoral links, and do not facilitate the effective monitoring of the health outcomes.

Box 2: Typology of 'innovative' rural and remote models

CONTEXT Rural-remote continuum	PHC MODEL & EXAMPLES	MAIN DRIVERS UNDERPINNING MODEL
RURAL Larger, more closely settled communities ↓ **REMOTE** Small populations dispersed over vast areas	**Discrete Services** • 'Walk-in/walk-out' model • Viable models of General Practice • University clinics	Population numbers are usually sufficient to meet essential service requirements (although some supports are still needed to address workforce recruitment and retention).
	Integrated Services • Shared care • Co-ordinated Care Trials • PHC teams • Multi-Purpose Services	Service integration resulting from pooled funding maximises efficiencies and access to locally available services. Single point-of-entry to the health system helps to co-ordinate patient care and reduces the need for travel.
	Comprehensive PHC Services • Aboriginal Controlled Community Health Services	Community participation, service flexibility to meet local circumstances, and access to services are critical components where few alternative ways of delivering appropriate care exist.
	Outreach Services • 'Hub-and-spoke' models • Visiting services • 'Fly-in, fly-out' services • Telehealth/telemedicine	Periodic outreach services (sometimes co-existing with other models) provide care to communities too small to support permanent local services.

Despite these numerous 'innovative' models of service delivery, few have been evaluated in terms of their impact on health outcomes. Indeed, despite promising starts, many have not been sustained, with the result that many communities still lack adequate health services and residents often forego care at times of need. In view of this, it is appropriate to consider what are the critical factors driving the need for changes in health care models and what impediments exist that preclude our quest to achieve equitable access to health care regardless of geographical or socio-economic circumstances.

3. Drivers of health care change

The provision of adequate, appropriate and sustainable PHC services presents a huge challenge in a dynamic and constantly changing environment. Moreover, because of the direct and indirect impact of PHC services on health outcomes, our discussion of how best to meet the specific health needs of rural and remote residents cannot exclude consideration of broader environmental, social, cultural, economic, and political processes operating both within Australia and globally.

Foremost among the current drivers of change impacting on rural and remote areas are the following:

- *Demographic change* - the ageing of society associated with the 'baby boomer' generation has resulted in a dramatic increase in the prevalence of chronic diseases and greater use of health services;
- *Changing epidemiology* - the increase in chronic conditions associated with population ageing is leading to an urgent need for integrated/seamless care provided by multi-disciplinary teams of health providers;
- *Workforce changes* - while rural and remote health services are characterised by an ageing health workforce, changing values of the new generation of graduates and reluctance to take up rural practice is making workforce succession planning increasingly difficult;
- *Fiscal constraints* - in the absence of ubiquitous resources, escalating costs under conditions of limited resources underpin debate about how to fund the health care system and what voters are prepared to pay through the public system;
- *Increased consumer expectations* - the widespread availability of electronic information about health care through the internet has increased demand for access to the full range of care;
- *Alternative models of delivering services* - following de-institutionalisation and the rationalisation and centralisation of many services, there has been an increasing move to care in the home and community. Unfortunately, funding has not always followed;
- *Increased role of technology* - improvements in diagnostic and invasive procedures have lessened the need for extended hospitalisation. At the same time, the high costs, need for centralised expertise, and increased service threshold requirements have resulted in diminished access to care for many dispersed populations;
- Changing *emphasis from treatment to wellness* - over recent years there has been greater focus globally on public and population health. The importance of 'damming the river upstream' rather than coping with 'the deluge downstream' requires a health system response to key risk determinants operating in rural and remote environments in order to facilitate effective primary prevention and early intervention.

Critically important too is the need to recognise future drivers of change. Already we are seeing the effect of rising energy costs on behaviour and the global economy. Regardless of whether health service provision policies are predicated on taking people

to services or services to people, the increasingly high cost of petrol in a society where private transport is so dominant is having an immense impact on patterns of access to health care. Despite the benefit of agglomerating many health services at one site, centralised services that do not provide an hub-and-*spoke* or *outreach* facility (emphasis added) will fail to adequately service the health needs of dispersed rural and particularly remote populations.

Climate change too will affect health outcomes, both directly and indirectly. Already we are seeing the impact of extended drought on the economic base and viability of many rural and remote communities and the livelihood of their residents, while the deleterious affects on the mental health of farming families are all too obvious (Fraser *et al*., 2005; Page & Fragar, 2002).

Population movement to regional and urban centres may result from the decline of small rural and remote communities. This is very much dependent on contemporary public policy decisions.

While we cannot accurately predict the future, we can build robust and adaptable health care systems which facilitate strong change management capacity. Factors such as community readiness and participation, and flexible funding arrangements will be critical to this adaptability. These circumstances also provide new opportunities. For example, the considerable revenue from a carbon emissions trading scheme can be strategically invested in national infrastructure, such as telecommunications and public transport in rural and especially remote areas, in order to enhance access to services and increase opportunities to sustain livelihoods more generally.

4. Current impediments to improved rural and remote health service models

Until relatively recently, residents and health care providers in rural and remote Australia have been subject to the transposition of urban service models which often do not adequately take into account the contextual issues – geographical, sociological and demographic - summarised above. Despite evidence about the cost-effectiveness of PHC, public debate remains largely focused on hospitals; while many health services focus on individual transactions and disease management rather than ongoing self-management, continuity of care and health promotion.

Furthermore, despite evidence of sustainable, innovative rural and remote models in Australia, there exist significant systemic impediments to the provision of appropriate sustainable health services that must be addressed. These include:

- *Inflexibility in existing funding streams* – inability to move resources across programs limits the ability of health services to respond to community needs and changes within the system and in the community generally;
- *Insufficient funding* – there is substantial evidence of under allocation for Indigenous health services (AIHW 2008c) and workforce shortages in rural and remote areas (AIHW 2005);
- Inbuilt perverse incentives for *cost shifting* between Commonwealth and State governments. Commonwealth-state relations continue to be a complex and fraught area. The pattern has been generally one of Commonwealth funding being utilised to overcome state under-servicing in rural and remote PHC;
- *Poor co-ordination and fragmentation* in health program funding – divided responsibilities for funding different health programs limit the scope for an integrated approach to health care politically, as well as limiting continuity of care on the ground;

- A funding focus on *remuneration of service providers*, particularly GPs, rather than the needs of consumers, leading to a significant degree of supplier induced demand. That is, a financing system which is neither person-centred nor needs-based;
- A *disease-based rather than primary health care focus* – many rural communities would benefit from financing structures that support models emphasising a primary health care approach which focuses on the determinants of health, disease prevention and early intervention; and
- The *shortage and maldistribution of the health workforce* in rural and remote regions – where funding is provided for an episode of care on a fee-for-service basis, rural areas which are characterised by a reduced availability of health providers effectively forego resources to which communities are 'entitled', thereby exacerbating geographical inequities in the provision of health services.

These various impediments exist at different levels of the health care system (see Box 3), such that an appropriate response requires systemic change rather than 'tinkering' with existing models or funding more 'innovative pilots'.

Box 3: Impediments to PHC reform

HEALTH SERVICE LEVEL[4]	CURRENT PROBLEMS WITH EXISTING SITUATION
Macro Level *Policy enablers*	• Legislative roles and responsibilities fragmented • Policies and plans outmoded or non-existent • Inadequate health investment & fragmented financing • Provider incentives misaligned • Inadequate health service performance monitoring & evaluation • Inter-sectoral links overlooked
Meso Level *Health care organisation and links to community*	• 'Rationalisation' of existing services without replacement with sustainable services appropriate to context • Failure to organise care for chronic conditions – uncoordinated episodic care • Health worker shortage, lack of skills and expertise • Interventions not evidence-based • Failure to adequately address prevention • Infrastructure lacking for coordinated, integrated care • Failure to connect with local community resources
Micro Level *Patient interaction*	• Failure to empower patients to participate in their care • Poor patient interaction and continuity of care

5. PHC goals underpinning the provision of rural and remote health services

Currently, by world standards, Australians have an excellent health care system (Podger, 2006; AIHW, 2008b). Nonetheless, in rural and remote areas, there is an unmet need for more accessible, comprehensive PHC services characterised by multidisciplinary approaches designed to meet the needs of an ageing population and increasing prevalence of chronic illness. This is manifest in the health gap between metropolitan and rural Australia.

In recommending changes to ensure the maintenance of, and improvements to, this system, it is vital to agree on the goals and directions of health care services. Consistent with the National Health and Hospitals Reform Commission (2008) and the National Health Performance Framework (2004), the following principles guide the direction of our discussion and recommendations for improved health services for rural and remote communities. Services should be:

[4] Adapted from World Health Organisation, 2002: *Innovative care for chronic conditions*, Geneva, WHO

- *Accessible and equitable:* ensuring services are available according to need and are paid for according to capacity to pay;
- *Responsive*: consumer focussed services that are needs-based and responsive to individual differences, cultural diversity and preferences;
- *Early intervention*: greater focus on maintaining wellness, strengthening illness prevention and early intervention to maintain optimal health;
- *Comprehensive:* co-ordination of multiple providers in the face of increasing incidence of complex chronic diseases, and provision of seamless pathways that maximise continuity of care;
- *Safety and quality of care*: appropriate, timely, effective care in line with best available evidence;
- *Efficient*: given fiscal constraints, services must minimise cost and maximise value for money through building on effective preventative approaches and providing seamless pathways that maximise continuity of patient care;
- *Sustainable*: health services must be based on appropriate models, adequately funded and sufficiently flexible to respond to changing needs of consumers and providers; and
- *Accountable:* service performance should be monitored in a transparent way, with patient, provider and funder responsibilities clearly delineated.

Pursuit of these goals highlights the fact that service provision for rural and remote communities is a complex issue involving multiple considerations and players. It follows that the importance of an over-arching rural and remote PHC policy and plan that clearly specifies goals and holds all players accountable for performance cannot be under-estimated.

6. Evidence of what works in rural and remote areas

Over recent years several reviews of 'innovative models', one specific to rural and remote communities, have compared PHC models across countries (Marriot & Mable, 2000), within countries (Weatherill, 2007; Lamarche *et al*., 2003; Wakerman *et al*., 2006), and PHC reform internationally (Naccerella *et al*., 2006; McDonald *et al*., 2006). Whilst there is a general agreement that 'one size does not fit all', a number of model typologies emerge (see Box 4).

The three typologies presented have in common the discrete, stand alone GP model. They then diverge along axes of level of integration, financing mechanism and level of community involvement. Lamarche et al. (2003) concluded that no one model meets all needs of effectiveness, quality, access, continuity, productivity and responsiveness. From their taxonomy, a combination of integrated community & professional co-ordination models is seen as optimal.[5] Marriott and Mable (2000) aggregated a variety of 'Rural and Indigenous' models. In rural and remote Australia, population size and distribution are critical factors in designing PHC services – 'successful' models have invariably addressed diseconomies of scale by aggregating a critical population mass, whether it is a discrete population in a country town or a dispersed population across a region (Wakerman *et al.*, 2006; Humphreys *et al*., 2008).

[5] Subsequent personal communication with Lamarche has indicated that this taxonomy has been expanded to six PHC organisation models consisting of three Professional Contact Models (closed to new patients-solo contact model, closed-group contact model and opened-group contact model); two Professional Coordination Models (Integrated with PHC organisations and Integrated with the System); and one Community Model (the Integrated Community Model).

Box 4: Typologies of rural and remote models

MARRIOTT & MABLE (2000)	LAMARCHE *et al* (2004)	WAKERMAN *et al* (2006)
• Physician & PHC practices - GP practices	• Professional contact - Family physician private practices, walk-in clinic	• Discrete Services - Stand alone GP practices
• Intermediary, vertically integrated models - purchaser or intermediate (between funder and provider) responsible for providing continuum of care	• Professional coordination - fundholding, HMOs	• Integrated Services- various models of integration & co-ordination of services with focus on continuity of care
• Health centres - heterogeneous group but generally single site, not-for-profit, multi-disciplinary, often rostered, and with community boards	• Non-integrated community model healthcare service centres with governance involving the public; stand alone	• Comprehensive PHC Services - full range of clinical, preventive & health promotion activities
• Rural & Indigenous organisations - a variety of models recognising contextual issues of isolation, scope of practice etc	• Integrated community model - healthcare service centres with governance involving the public; strong linkages to other elements of the health system, IT connectivity	• Outreach Services - non-resident visiting services from hub or within network
		• Virtual Outreach Services - IT/Telehealth

Humphreys *et al*. (2008) identified the general principles that underpin the development of effective PHC services in Australia, which can then be applied in different contexts. Weatherill (2007) distinguished a number of *foundational elements* (PHC teams, information infrastructure, knowledge gathering & diffusion) from *transformational elements* (leadership, putting citizens at the centre of their care and a focus on health outcomes). Wakerman *et al*. (2006) also made a distinction between a number of essential *environmental enablers* (appropriate policy, compatible Commonwealth and State relations, & community readiness) and *essential service requirements* (funding, workforce, governance/ management/ leadership, infrastructure & linkages). The 'principles' synthesised from these studies are summarised in Box 5.

PHC services in small rural and remote communities will only be effective and sustainable within a constantly changing demographic and economic environment when planning takes account of the need for comprehensive, sustainable and systems-based solutions that address all components in an integrated way (Wakerman *et al*., 2006). Notably, this study showed that, whilst workforce remains a critical issue, it may be significantly de-emphasised when other linked 'essential service requirements' are addressed.

In reviewing the literature on innovative rural and remote PHC models, a number of findings highlight barriers to health service reform in relation to the provision of rural and remote services. One overwhelming finding is the dearth of rigorously collected evaluations of rural and remote health services in relation to health outcomes. Indeed, Weatherill (2007) comments on the general reluctance among governments and health care leaders to set targets and be held accountable for progress. In one Canadian-Australian comparative study, the authors noted a lack of 'strong evidence ….. of the

Box 5: Elements of PHC service models

MARRIOTT & MABLE (2000)	LAMARCHE et al (2003)	WAKERMAN et al (2006)	WEATHERILL (2007)
Essential elements	**Aspects of primary healthcare**	**Environmental enablers**	**Foundational elements**
• Citizens participation in management and planning	• Vision: the beliefs, values and objectives of players	• Policy	• PHC teams
• Citizen choice (acceptability in urban context & availability in rural)	• Resources: the quantity and variety of resources available	• Commonwealth-state relations	• Information infrastructure
• Rostering – patients rostered to given GPs	• Organisational structure: legislation, regulations, agreements, and other arrangements that govern and guide players	• Community readiness	• Knowledge gathering & diffusion
• Capitation – funding for rostered individuals	• Practices: processes behind production of activities and services	**Essential service requirements**	**Transformational elements**
• Physicians in groups	• Effects: the desired change in results of primary healthcare over time	• Funding	• Leadership
• Health information systems	• Environment: the context in which players operate, and the other systems with which they interact	• Workforce	• Putting citizens at the centre of their care
• GP gatekeeping to specialists		• Governance/ management/ leadership	• Health outcomes focus
• Multidisciplinary practice		• Infrastructure	
• Quality – ie CME, accreditation, planning & evaluation, information systems, rural training, prevention initiatives, group practice & multi-disciplinary teams		• Linkages	

superiority of any one model' and 'systematic, policy-informing evaluation of primary care innovations' (Hutchinson *et al*., 2001), a finding that does not appear to have changed significantly over ensuing years in Canada wherein there was 'a substantial disconnect between the support for primary healthcare renewal and that provided for primary healthcare research' (Russell *et al*., 2007).

A related barrier to reform or generalisation of innovation that is common to Canada and Australia is the Federal/Provincial or Commonwealth/State division of powers 'in which the federal government accuses provincial governments of failing to manage the health care system in keeping with public needs and national standards, while the provinces complain about niggardly revenue transfers and federal meddling in provincial affairs' (Hutchinson *et al*., 2001). McDonald *et al*. (2006) observed that there

has been no 'sustained focus' on the Commonwealth/State PHC interface beyond trials and pilots.

Whilst the models that emerge from the reviews of effective and sustainable PHC service provision are not directly comparable, a number of common, interlinked key themes emerge. These include the need for adequate funding and appropriate financing mechanisms; multidisciplinary practice; community participation; improved health information systems; and vision or leadership.

Internationally there appears to be a trend away from a fee-for-service to a blended payment system for general practitioners, which balances the incentive to stint on care under capitation and to over-service with fee-for-service. In their comparison of PHC models across Canada, Finland, the Netherlands, United Kingdom, Australia and the United States of America, Marriott & Mable (2000) comment that 'Australia stands alone as having little fundamental change in primary care settings or overall organisation … most primary care is still provided by small, often single-handed physicians/GP practices funded on a fee for service basis'. Although the authors describe a trend away from solo practices in all countries other than Australia, there has, in fact, been a trend away from solo practice in Australia: from 1998/9 to 2006/7, the proportion of solo practices dropped from 17.9% to 8.2% (Britt *et al*., 2008).

Australia is also described as standing out by having a flat structure, lacking vertical integration, in which primary care providers operate, by and large, independently of the rest of the health system (Marriot & Mable, 2000). Hutchison *et al*. (2001) highlighted the privileging of physicians and acute care in the Canadian health system and described '…a system dominated by small-group and solo physician providers … by placing physicians at the heart of decision-making at all levels, federal and provincial policymakers were left with few and feeble policy levers to influence the organisation and delivery of medical care. Moreover, 'primary care innovations … were at odds with context-setting policies'. The predominant 'professional contact' model in Canada, wherein clients seek out physicians, is a significant issue on the Canadian PHC reform agenda. Similarly in Australia reforms have had to build around the resistance of doctors to move away from the fee-for-service model. There has also been an incremental accretion of multiple workforce and incentive programs such that 'Australia is close to reaching the limits of using specific financial incentives to reward quality' (McDonald *et al*., 2006).

Given current workforce issues and the epidemiological profile of developed nations, there is a generally recognised need to move more emphatically to multidisciplinary team practice (Lamarche *et al*., 2003, Romanow, 2002, Weatherill, 2007). There is a need for flexible funding arrangements that refocus on multidisciplinary practice and prevention targets.

Importantly, there is also a need for appropriate community participation in governance, and for the purpose of enhanced self-management. 'Putting citizens at the centre of their care' (Weatherill, 2007) and engagement of the community in governance have been identified as central to the success of health reform.

Improved health information systems will monitor service performance as well as enhance self-management (Lamarche *et al*., 2003, Romanow, 2002, Wakerman *et al*., 2006, Weatherill, 2007). Adequate information technology and support is an essential infrastructure element. This will also enable telehealth and the use of personal electronic health records. Re-educating or empowering individuals to take greater control over their own health and disease is facilitated to a large degree on appropriate IT. For example, Kaiser Permanente, the largest health maintenance organisation in the

US, gives patients access to their own on-line health information and health management plans.

Finally, there is an overarching need for effective change management processes to ensure timely, evidence-based PHC improvements. This should include change management support for teams to deal with changing teams and demands.

7. What is the recommended model and what is required to make it happen

Given Australian and international evidence, what does an effective model of health care for rural and remote populations look like? Central to sustaining an effective model is the need to meet service range and threshold requirements. That means ensuring a sufficient population to support the range of services required. In Australia, a regional arrangement of service delivery will aggregate a sufficient population that will support an appropriate range of health, aged care and community services. A regional approach can also take into account the distinct nature and differences characterising many of Australia's regions and the strong identification residents have with their locales. Developing a regional model will enable optimisation of community input, responsiveness to local needs, and access for intra-regionally mobile residents (Warchivker *et al*., 2000). In a regional model, appropriate centralisation of some service functions (for example, recruitment and financial services) may inevitably be necessary, while decentralisation of service delivery to meet access requirements of consumers can be maximised. Multiple PHC models may co-exist within the region. For example, discrete GP practices viable within a larger regional centre may also sustain some outreach 'hub-and-spoke' arrangement for delivering services to smaller communities within their catchment area (Wakerman *et al*., 2006). It is important that regional population size be not so large that responsiveness to local issues is diminished; and not so small that the population threshold that would support an essential range of services not be met.

Because 'no one size fits all', the focus for PHC models should be on ensuring that key service requirements and community needs are met rather than concentrating excessively on the details of how any one or more models are configured. No one model for organising, funding and delivering primary care is superior to another. Nonetheless, there are consistent principles that we have described which, when applied, are predictors of successful outcomes (Humphreys *et al*., 2008). While the focus should be on clinical and health outcomes rather than structural change, some changes will be required in order to ensure models are underpinned by vital components necessary to ensure appropriate and sustainable care.

Key amongst these components underpinning effective regional models are multidisciplinary practice, infrastructure and financing. Multidisciplinary practice is critical and has broad implications for undergraduate, postgraduate and vocational education and training, as well as ongoing support for multidisciplinary team practice. Adequate physical and IT infrastructure underpin health service capacity, particularly in more remote areas. A single source of funding, based on population needs, is important to maximise flexibility to respond to changing regional needs, such as those resulting from population movement.

Two assumptions underpin the following descriptions of the critical components of regional models of service delivery. Firstly, in order to build and sustain effective rural and remote primary health care services we need to build robust systems which consist of linked, interdependent components. Service sustainability (ongoing ability to deliver appropriate quality care responsive to changing needs) requires systemic solutions with respect to funding arrangements, workforce, infrastructure, governance, management

and community engagement, and not simply the promotion of more pilot and demonstration primary care models. These components are described in more detail below. In seeking to develop and maintain appropriate PHC services to meet the needs of rural and remote residents, it should be recognised that a focus solely on funding or improving just one or two of these components is unlikely to create the degree of robustness necessary to ensure sustainability.

Secondly, access to care is supremely important and this means that health services require some appropriate local presence. While some administrative functions can be centralised in order to maximise efficiency, the need for, and benefit of, 'services *in situ*' with respect to emergency care, health promotion activity, ongoing rehabilitation and maintenance of care is evident.

The components necessary to ensure appropriate, effective and sustainable PHC services for rural and remote communities are:

- **A policy framework.** An agreed framework for PHC is critical in articulating a common vision that guides investment, capacity building and service development (Powell Davies *et al*., 2006). Multiple programs, multiple funding streams and unclear accountabilities between State/Territory and Commonwealth governments make for a policy situation that results in high transaction costs for services, confusion and lack of flexibility and adaptability at service level. A national rural and remote health policy and plan is required, agreed by both levels of government, in order to guide the further development of rural and remote health services.

  The plan will have agreed indicators and targets. The indicators will be consistent with national health indicators, but may have some rural and remote health specific aspects. For example, both emergency and elective transportation to specialist services is a key issue for the bush. The national plan will take account of the specific geographic and socio-economic context that differentiates rural and remote areas from metropolitan areas, and forms the basis for funding to be streamed from multiple programs but focused on agreed outcomes. Furthermore, the focus of rural and remote health service planning should be on ensuring integrated, co-ordinated, and seamless care for the patient. In the words of McDonald & Hare (2004: 4): 'much of the success relies on a well integrated primary and community health service system that is adaptive and flexible and has the capacity to respond to changing needs and emerging models of care'.

  The national administrative apparatus required to implement, monitor and ensure ongoing revision of the plan will include a well-resourced Office of Rural Health, within which *all* rural-specific health programs will be located. The comprehensive integration of this multiplicity of programs is critical to ensure more efficient implementation at regional level. The Office will also have responsibility for monitoring expenditure and activity in rural and remote areas of mainstream health programs and initiatives in order to ensure equity of access and health outcomes across metropolitan and non-metropolitan populations.

- **Funding of rural and remote PHC services.** Evidence suggests that funding levers can be very effective in driving changes required to ensure the provision of effective PHC service. These vary from specific funding initiatives used in Australia to situations overseas 'where PHC has been contracted/ commissioned to deliver core services as well as a broader range of service, depending on local needs, capacities and service gaps' (McDonald *et al*, 2006). Clearly there needs to be a sufficient funding quantum to underpin a sustainable service and ensure equitable remuneration for practitioners. Funding of services should be needs-based.

Currently, the inverse care law applies whereby those in greatest need have least access to services. Population-based funding will assist to redress health inequalities by directing funding to population groups with higher needs. Needs-based funding will also be less dependent on the presence of a general practitioner, as is now the case, and allow for more flexible use of funds to meet population health needs (Powell Davies *et al*., 2006). Funding can and will drive the other necessary components of the service, for example multidisciplinary practice, community engagement, capacity building, IT infrastructure for enhanced monitoring and service quality.

The implications for funding arrangements are considerable. Funds pooling can be effective, as multi-purpose service arrangements have shown. However, we favour blended payments including an underlying capitation system[6], with weightings for health status, remoteness/access disadvantage and mobility which could form the basis of a more equitable funding mechanism.[7] Blended payments balance perverse incentives to stint on care under capitation and to over-service with fee-for-service payments. They will also assist with refocusing on disease prevention and multidisciplinary practice. The cost of care of a chronic condition, for example, should include standard monitoring, treatment and effective secondary prevention by a range of health professionals and be bundled into a capitation payment to a service, with appropriate monitoring and reporting of clinical outcomes for the practice.

'Funds following the patient' will also take account of current population changes resulting from inter-regional migration, as well as possible future population movements resulting from climate change, changing fuel costs and other economic and environmental drivers. Continuity of care with one practitioner or one team results in better preventive care, patients who feel more able to care for themselves in future, better recognition of problems, less recourse to medication as a first-line treatment, better patient compliance with prescribed medication, fewer hospitalisations and lower total costs.

A fundamental financing question relates to the responsibilities of State/Territory and Commonwealth governments, and the linked issue of co-ordination of care across private (usually GP) and public (usually state/Territory) providers. We favour a single source of funding for all PHC services with a regional purchasing mechanism. If the Australian Government were to assume responsibility for all PHC service funding, funding would be allocated on a capitation scheme as outlined above to Regional Health and Community Service Authorities. Each Authority will be charged with the responsibility for developing regional plans, with maximal community input, for the co-ordinated delivery of community and health services to that catchment area and its population. Monitoring to ensure that regional targets were met would also be the responsibility of the Authority.

- **Workforce.** Understandably, given shortages in many rural and remote areas, workforce has been the dominant policy focus over the past 15 years. Insufficient numbers and maldistribution of the health workforce remain ongoing problems despite a range of incentives and educational programs, although the latter invariably have a long lead time and the outcomes are yet to come to full fruition.

[6] New Zealand commenced with a voluntary enrolment period of two years during which a charge process was put into place to move towards comprehensive enrolment (King 2001).

[7] For example, some remote Aboriginal health services have been 'cashed out' at twice the average MBS per capita expenditure, with an additional two times weighting for the additional costs of provision services in remote areas. They also bulk bill.

In overcoming workforce barriers, effective PHC models also need to take account of non-health sector issues that diminish the attractiveness of many rural and remote communities to health professionals. These include opportunities for spouse employment, housing, childcare and education. Equally important to recruitment measures is the need to maximise retention of existing staff. Measures that ensure professional satisfaction, reward service and provide career paths help reduce avoidable turnover, and, in turn, benefit patients in terms of quality and continuity of care.

Attracting and retaining sufficient numbers and mix of health professionals will be predicated on (1) in the short term, improved support for existing and available practitioners through adequate remuneration, Continuing Professional Development, locum relief and improved human resource management practices more generally; (2) recognising and properly remunerating the role of existing practitioners, particularly in the absence of doctors, such as Remote Area Nurses (see multidisciplinary practice below). This will require further development of the Medical Benefits Scheme to allow appropriately accredited nurse practitioners and other disciplines to be able to directly access relevant items; (3) in the medium term, systematically addressing non-workforce health system issues described here will mitigate workforce recruitment problems; (4) accelerate the development and accreditation of para-medical disciplines such as remote nurse practitioners and physician assistants; and (5) in the longer term, increasing the numbers of health science students of rural origin and exposing metropolitan students to rural and remote practice.

- **Multidisciplinary practice.** Quality and safety must not be compromised. While the role of doctors remains pivotal, service delivery arrangements will involve a wide range of non-physician health care providers. Given workforce issues, the growing need to refocus on prevention and, importantly, the different expectations of post- baby boomer generations of health science students which include the desire to work in a team environment, multidisciplinary practice will ensure both more efficient and appropriate practice, maximising quality management.

  Multidisciplinary practice has a number of implications relating to funding, education and training. With 'funds following the patient', each patient will have choice of care from an appropriate range of professionals, each playing a specific role. For a diabetic, for example, a funded bundle of care will include services from a range of professionals including a GP, practice nurse, podiatrist, nutritionist and ophthalmologist. Each will provide a specific service in their area of expertise, with a nominated coordinator of the care package.

  There is also a related need for interprofessional education. Whilst many postgraduate and continuing professional development programs are multi-disciplinary, there is little or no comprehensive interdisciplinary undergraduate education in the health sciences in Australia. Financial incentives to universities to reform undergraduate programs and develop 'collaboration ready' graduates will be required. We also require support for PHC teams as they establish themselves in the workplace. Otherwise we run the risk of losing these 'collaboration-ready' graduates if the flexibility and interprofessional support and practice they expect are not available.

- **Community engagement** at all stages is critical in order to gauge community needs, facilitate broad stakeholder acceptance of changes and to ensure that services are adaptable and responsive to patient and community needs while still providing an acceptable work environment for primary care providers. Many good intentions and

programs flounder because of failure to adequately deal with the socio-cultural context of behaviour, excessive dependence on a 'top-down' approach, failure to consult, lack of community participation and involvement. The model of community participation will vary from place to place, but should be an integral component of any PHC service. This might range from monitoring patient satisfaction in a solo general practice, to community fora for larger practices, through to community control with an elected board of governance. As a required component of a PHC service, community participation needs to be monitored and appropriately funded. For example, some Aboriginal community controlled health services have shown excellent results through a process of 'deep community consultation', selection of community representatives to health committees and overall board of governance, and subsequent extensive governance training over a period of time. This sort of model requires adequate funding. This could be a calculated part of the capitation fee, or a sliding scale of payment depending on the nature and degree of community participation.

- **Governance**: As in all business and community organisations, effective management, strong governance and visionary leadership are central to success and sustainability (Wakerman *et al*., 2006). Rural and remote communities often lack sufficient depth of management and governance experience, and only have a relatively small pool from which managers and leaders are drawn, without which services remain vulnerable. Good governance is linked to community participation. There are various successful models in different contexts. The important principles recognise that (1) governance is critical, (2) community participation improves responsiveness, appropriateness and thereby access, and (3) community participation in governance – including planning, monitoring and change management - needs to be adequately funded.
- **Management**: Lack of quality and depth of management are significant problems that limit the effectiveness of rural and remote health services (Weymouth *et al*., 2007, Wakerman & Davey 2008). As a critical part of the health team, health service managers should have accreditation and employment requirements consistent with those of other health disciplines. Formal registration or formal qualifications should be required. Support for appropriate education and ongoing professional development should apply to managers as it does to other health professions. Within rural and remote services, where distance management is important, training should specifically ensure managers who are competent in implementing:
    - Careful recruitment in order to select competent, autonomous staff who have devolved authority.
    - Monitoring systems and effective feedback.
    - Regular lines of communication.
    - Scheduled management visits.
    - Periodic 'times out' at head office for staff to ensure consistency and provide pastoral care as needed.
    - Prompt management response as problems arise.

  As with other health professional groups, health service managers should be formally linked to award conditions and remuneration.
- **Information systems.** Improved information systems are critical to both quality of care and accountability to funders and the community. Service quality and improved co-ordination of care (particularly between primary, secondary and tertiary providers) is reliant on adequate and appropriate information management

systems. Evidence-based decision making is critical to improving the efficiency and effectiveness of care. There needs to be an accelerated program of introduction of shared electronic health records across PHC services, thereby enhancing single point-of-entry activity. Linking capitation payments to reporting will assist on the one hand; training, education and adequate remuneration will facilitate enhanced introduction and use on the other.

Monitoring and evaluation of the performance of health services should be integral and ongoing. The ability to report against regional plans and a national rural and remote health plan ensures accountability to funders and the communities being serviced. In Australia, lack of high quality national data to allow the linking of inputs, activities, outputs and outcomes is an impediment to evidenced-based health service development.

- **Infrastructure** required to support information technology, communication, quality improvement, care co-ordination, and staffing is crucial. For many remote and small rural communities workforce limitations include lack of accommodation for both community-based and visiting health professionals. This basic infrastructure requirement should be met with adequate capital infrastructure funding. As well as accommodation, co-location of health professionals and single point-of-entry will assist with better team practice and coordination. Infrastructure should include the use of standard treatment protocols to ensure consistency, appropriateness and quality of practice. The Central Australian Rural Practitioners Association (CARPA) Standard Treatment Manual is an excellent example. Protocols should be incorporated into health information system software. Lastly, practice management is essential to efficiency.

- **Telehealth and telemedicine:** Despite dramatic advances in transport and communications technology, the tyranny of distance remains the single most important impediment for rural people. Telehealth and telemedicine (the real time delivery of health and medical services at a distance between two or more locations using technology-assisted communications) have been widely used in Australia over recent years as a means of overcoming problems of access to health care and the shortage of health professionals in rural and remote areas. Telehealth encompasses *communication* (including email, fax, telephone, video-conferencing, e-therapy, online groups); *information management* (including data bases and internet), and *patient assessments and management* (including clinical consultations, case management systems including co-ordinating disability services, mental health video-conferencing, virtual clinics, telepharmacy, teledermatology, telepsychiatry, teleradiology, and telepathology). Almost by definition, telehealth shares many of the characteristics of successful outreach or hub-and-spoke arrangements. Telehealth has been largely driven by the desire of governments, health services and rural consumers for improved access to quality health care in a way that saves patient travel and other costs.

  Evidence to date shows that the utilisation of telehealth and telemedicine remains patchy and is not used to full potential. Educational and administrative uses for telehealth appear effective, viable and likely to grow. In contrast, several ongoing issues require resolution in relation to its use in clinical applications. These include *bureaucratic* barriers, such as outstanding medico-legal issues, remuneration for providers, and patient inconvenience by picking up costs of service; *procedural* barriers such as privacy and confidentiality of clients (including security of client files); lack of infrastructure and inequity of technology access particularly in remote areas, speed of line, equipment failure and internet problems, consistency and

compatibility of equipment and standards, oversell by vendors, and issues of image quality and patient safety; and *participant hurdles* such as lack of doctor-patient interaction, intrusiveness of technology coming between workers and clients, dependence on individual clinical champions, lack of acceptance and/or unrealistic expectations of recipients, changes in traditional procedures of medical practice, and the need to ensure that the service respond to needs of rural health professionals and clients and not become just a service initiated from the city (Wakerman *et al*., 2006).

Despite significant government funding and advocacy, there is widespread agreement that the potential of telehealth applications has yet to be realised. Moreover, despite the high take-up rate by many rural and remote Australians (especially farmers) of new technology or new forms of communications, the overwhelming preference of most rural Australians is still for locally available, face-to-face services. This dominant preference for local face-to-face interaction has important implications for funders and providers of health related services

- **Transportation:** Lack of transportation is increasingly a barrier to access to health services in rural and remote regions. While it is unrealistic to expect all services, particularly many specialist and allied health services, to be available in all communities, equity of access means not disadvantaging those people living in rural and especially remote areas. The many problems with current patient transport schemes, including out of pocket expenses, lack of support for escorts or carers and inconsistencies across jurisdictions, for rural and remote residents have been well documented (Australian Senate Standing Committee on Community Affairs, 2007). Rising fossil fuel prices have exacerbated many of these problems.

  National consistency in levels of support provided for patients requiring care away from home is required. The Australian Government can take a lead in developing standards. A single national funder would obviate the need to harmonize across the different jurisdictions. There also need to be clear national criteria for escorts or carers. With a single national funder, allocation to Regional Health Authorities according to population size, dispersion and remoteness would allow a more efficient local response. Some rural residents cannot afford the up front costs of travel and accommodation. Regional Health Authorities could issue vouchers prior to travel which would overcome this barrier to access. For some communities, special needs should also be considered. For example, in areas with a substantial Indigenous population, liaison officers may be necessary.

  Many remote areas have no public transport. Revenue from a carbon trading scheme, increased government investment in roads, public transport, and incentives to private transport operators would improve access to a range of services to rural and remote residents. In remote areas, this investment might also decrease the excess motor vehicle accident related deaths and disability in rural areas.

- **Healthy communities and intersectoral action.**

  Improved health outcomes for residents of rural and remote communities depend on changes and improvements in areas other than health services *per se*. Primary health care takes account of important social, economic and environmental determinants of health outside of the health sector (Turrell *et al*, 1999). 'The revolving door through which we approach health is more likely to involve social, economic, financial and environmental policies than health services' (Hayes, 1986, 503). Hence behavioural considerations (including smoking, alcohol consumption, diet and physical activity, risk taking and safety practices), and environment (including social factors such as education, occupation and the working environment, the living environment, culture,

social networks and support, as well as physical factors such as housing, water and food quality, efficient sewage disposal, and other physical environmental hazards) assume great importance.

Throughout rural and remote Australia, many communities are struggling to maintain their existing populations, let alone to increase their size. The impact of economic restructuring on the rural sector, market fluctuations, climatic vagaries, the rationalisation of public and private services, and the associated process of rural depopulation means that many rural and remote communities are at risk of falling below the critical threshold for maintaining existing health services.

Currently and into the future, the drivers of regional development and regional decline are critical considerations for health service planners. The sustainability of many small rural and remote communities in Australia is in question. The impact of climate change, resultant changing rainfall patterns and water availability, and rising oil costs on many agricultural communities has been profound. Erosion of their traditional economic base and de-population calls into question the viability of these communities. This has implications in terms of new opportunities for economic development (such as improving land management practices and tree plantations within a carbon trading scheme), as well as implications for health services.

A critical reciprocal relationship exists between services, especially health services, and sustainable communities. Residents will remain if they can be assured of sustainable livelihoods and access to services. At the same time, there will be a critical level of population below which sustaining a locally available, safe and affordable range of PHC services may not be viable. Models will therefore need to change with changing demographics. A needs-based funding formula as recommended above will assist with ensuring continuity of health services within a region with population movements.

At the same time, all PHC services should be encouraged to link with and advocate for other relevant sectors such as education, environmental services, employment programs etc. Health professionals can be powerful advocates, especially in smaller rural and remote communities. Improved infrastructure and robust IT systems can facilitate employment in non-metropolitan locations. Local employment in the health sector also contributes directly to these upstream determinants.

A detailed action plan for change is beyond the scope of this paper. Nevertheless, given the need for significant systemic change related to these various interlinked components, it is reasonable to expect a description of the next steps and a timetable for change. These are described in the next section.

8. Timetable

Optimal rural and remote health requires some form of public intervention since many of the influences adversely affecting the health status of rural and remote communities reflect shortcomings associated with dependence on the market place. For this reason health planning plays a critical role in determining the availability and use of resources in relation to health needs.

Health planning incorporates both formulation and implementation of policies. Policy (the framework of principles and objectives that guide decision-making and activity) must be accompanied by explicit strategies to guide the process by which scarce resources are allocated in order to achieve specified goals and objectives. A successful planning strategy incorporates consideration of what is feasible in terms of resources and technical considerations as well as taking account of the opportunities and

constraints characterising the broader political context. Pre-requisites for successful implementation of policies include flexibility in order to cope with changing circumstances, adequate consultation and involvement by all those affected, suitable co-ordination of activities, careful timing, and monitoring throughout to ensure that objectives are being met and in order to avoid unintended effects.

In reviewing progress of rural and remote health policy it is apparent that all too frequently good intentions never materialise into action. Despite many (often unco-ordinated) initiatives, programs and policies relating to health in rural and remote communities over the last fifteen years, the health care needs of many rural and remote Australians continue to be neglected. The effect of implementation failure is that it often engenders considerable cynicism among target groups in relation to health planning.

Our discussion paper has emphasised the need for systemic changes. Such changes require an implementation strategy that outlines actions and responsibilities, monitors progress and evaluates impacts and outcomes. While a detailed implementation strategy is beyond the scope of this discussion paper, Box 6 summarises immediate, short-, medium– and long-term activities, including critical pre-requisites and an associated evaluation framework to monitor progress against objectives.

We propose that the immediate next steps need to lay the groundwork for the development and implementation of a national rural health policy and plan. These are necessary to co-ordinate and bring greater efficiency to the multiple current rural programs, and to identify and prioritise significant gaps which relate to funding, infrastructure, community participation etc. These next steps involve further consolidation and strengthening of the Office of Rural Health (ORH) and development of a strategic framework to co-ordinate Commonwealth and State/ Territory programs (see Box 6).

The Office of Rural Health, working with the States and Territories, will:

- consolidate all Commonwealth rural and remote health programs, some of which remain outside of the present structure;
- collaborate with States and Territories to map existing services and resource allocation as it applies to key components such as workforce, infrastructure and transportation;
- finalise funding arrangements. This will entail determination of a needs-based funding formula that ensures equity of access to services for rural and remote regions by taking into account the higher costs and increased complexity of delivering care in rural and remote communities, and the greater needs of, and access difficulties confronting, these groups;
- develop targets, performance measures and establish reporting requirements for a National Rural Health Policy and Plan; and
- ensure co-ordinated action outside of the health sector by working with all other government departments that have an impact on rural, regional and remote community development.

Actions are then required at both the macro- and meso-levels, and should be undertaken in tandem. At the macro level, the next concern should be to develop an over-arching evidence-based rural and remote health policy and plan agreed by Commonwealth, State and Territory governments, the implementation and monitoring of which is overseen by the Office of Rural Health. Only then will government have the franchise and resources to maintain a comprehensive national approach to rural and remote health, and the means to monitor progress against accountability of authorities charged with the responsibility for improving health outcomes.

At the meso-level, measures necessary to ensure appropriate infrastructure, IT, governance and workforce supports should be implemented. These components are critical to ensuring the provision of high quality, sustainable services. Such measures would accord with the principles and strategic goals set within the overarching policy framework designed to ensure optimal health for rural and remote Australians. Community input into governance structures and funding models is essential to maximise the appropriateness and responsiveness of services.

Box 6: Timetable of strategic actions

Scale	Getting started	Short term (1 year)	Medium term (5 years)	Long term (10 years)
Macro	• Consolidate Commonwealth rural programs • Identify gaps/ overlaps across Commonwealth & state programs • Develop a 'rural communities needs index' as a basis for funding formula • Identify a quantum by which rural health funding needs to be increased over the longer term to achieve equitable outcomes • Research/data collection to underpin national strategy performance measures	• National rural & remote PHC policy & plan • Agreed funding strategy and financing arrangements between Commonwealth, State & Territory governments • Establish Regional Health Authorities with mandate to deliver comprehensive PHC within catchments • Agreed sentinel service performance indicators • Commence voluntary enrolment	• Process of accountability & review • Comprehensive evaluation strategy for assessing service inputs in relation to service outputs and health impacts • Complete enrolment	• Revised PHC policy in line with health outcomes • Comprehensive assessment of health outcomes
Meso	• Consult with communities re planning, governance structures & identify funding models that maximise responsiveness to local communities to meet their identified priorities	• IT & health service data collection in place • Governance and management support provided within regions • Strategy to ensure infrastructure necessary for integrated care • Multidisciplinary workforce remuneration, recruitment and retention supports in place	• IT links with all other agencies • Health service performance indicators reviewed against inputs	• Comprehensive evaluation of health service co-ordination against health outcomes • Health service delivery monitored according to access, quality, equity, affordability, responsiveness, and appropriateness
Micro		• Service accreditation	• Comprehensive evaluation of patient satisfaction	• Communities empowered to fully participate in health service planning

9. Conclusion

Rural and remote Australia comprises a diverse range of environments and communities characterised by significant social, economic and geographical differences. The formulation and implementation of any rural and remote health policy or program must take into account the specific circumstances of each region. This discussion paper has deliberately avoided being prescriptive of specific model types because evidence indicates the need for models to adapt according to specific rural and remote contexts. As we have indicated, the specific types of PHC service model that work well in rural and remote communities comprise many forms – ranging from comprehensive primary health care models, shared care models, hub-and-spoke and outreach models, co-located models, network models and even discrete models (Wakerman et al., 2006; Humphreys et al., 2002; Humphreys et al., 2008; McDonald & Hare, 2004).

Underpinning them all, however, is the need for systemic change to ensure that all those components necessary to ensure effective and sustainable rural and remote PHC services are met. Only then can there be any certainty in the provision of PHC services appropriate to meeting the needs of rural and remote communities that fall outside of the large regional centres where population sizes are usually sufficient to sustain traditional models of service provision. Once developed, such 'comprehensive primary health care services … have the most impact in improving access for disadvantaged and vulnerable groups, and providing cost effective high quality of care mainly for the prevention, early intervention and management of chronic disease' (McDonald & Hare, 2004: 4).

While seeking to maximise rural and remote access to health care, our focus on primary health care services highlights the need for a population approach, a focus on the determinants of health and the causes of ill-health, and a concern with the promotion of health and the prevention of disease, injury and premature death rather than curative treatment alone. Such an approach is not to deny the complementary roles and intersection between public health and curative health care activities. That many rural communities are unlikely ever to receive the range of medical and health services characteristic of large urban centres should not be a matter of major concern, so long as rural Australians have adequate access to appropriate PHC services as and when they are required. Evidence indicates that small rural and remote communities require alternative approaches to health care and models of health service delivery from those which have traditionally characterised rural Australia.

Considerable care must be taken to ensure that service provision models relate to the specific contexts in which health needs arise and health practitioners and services operate. Recent evidence from the United Kingdom and South Australia shows how easily opposition can be mounted to inappropriate models that are transplanted into rural and remote environments without adequate consideration of their impact on service access. For example, while poly-clinics evolved in the UK as a 'means of centralising services to offer more integrated, patient-focused care, they resulted in diminished access for rural patients … To maximise accessibility, choice of location is critical' (Imison *et al*., 2008). Care must be taken to ensure that ‘super-clinics’ do not have similar inadvertent consequences in terms of access to care or workforce recruitment and retention.

In suggesting greater devolution to regional health service planning, the responsibility and accountability of governments remain paramount. Rural and remote communities remain strong, but have become increasingly cynical of government rhetoric and policies, and even more concerned about their increasing loss of ownership of health

and health-related services. Any moves by governments towards devolution of responsibility for health care to the local level must not result in an abrogation of their responsibility for ensuring the adequate provision of health care to all rural and remote Australians.

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References

Australian Bureau of Statistics (ABS) & Australian Institute of Health and Welfare (AIHW), 2008: *The Health and Welfare of Australia's Aboriginal and Torres Strait Islander Peoples*, Canberra: ABS & AIHW.

Australian Institute of Health and Welfare (AIHW), 2005: *Rural, regional and remote health—indicators of health*, AIHW Cat. No. PHE 59. Canberra: AIHW.

Australian Institute of Health and Welfare (AIHW) 2008a: *Rural, regional and remote health: indicators of health status and determinants of health*, Rural health series no. 9. Cat. No. PHE 97. Canberra: AIHW.

Australian Institute of Health and Welfare 2008b: *Australia's Health 2008*, Cat. no. AUS 99. Canberra: AIHW.

Australian Institute of Health and Welfare 2008c: *Expenditures on health for Aboriginal and Torres Strait Islander peoples 2004–05*, Health and welfare expenditure series no. 33. Cat. no. HWE 40. Canberra: AIHW.

Australian Senate Standing Committee on Community Affairs 2007: *Highway to health: better access for rural, regional and remote patient*, Canberra: The Senate.

Bourke L, Sheridan C, Russell U, Jones G, DeWitt D & Liaw ST, 2004: Developing a conceptual understanding of rural health practice, *Australian Journal of Rural Health*, 12(5): 181-186.

Britt H, Miller GC, Charles J, Bayram C, Pan Y, Henderson J, Valenti L *et al*., 2008: *General practice activity in Australia 2006-07*, Canberra: Australian Institute of Health and Welfare.

Bureau of Infrastructure, Transport and Regional Economics (BITRE), Department of Infrastructure, Transport, Regional Development and Local Government, 2008: *About Australia's regions.* Canberra: BITRE.

Fraser CE, Smith KB, Judd F, Humphreys JS, Fragar LJ & Henderson A, 2005: Farming and mental health problems and mental illness, *International Journal of Social Psychiatry*, 51(4): 340-349.

Gulliford MC, Jack RH, Adams G, Ukoumunne OC, 2004: Availability and structure of primary medical care services and population health and health care indicators in England. *BMC Health Services Research*, 4:12.

Hayes M, 1986: Your good health: access to health and health care in northern Ireland, *Regional Studies*, 20(6): 493-504.

Humphreys JS, 2002: Health service models in rural and remote Australia, *in* D. Wilkinson & I Blue, *The New Rural Health: An Australian Text*, Oxford University Press, 2002, 273-296.

Humphreys JS, Jones JA, Jones MP, Mildenhall D, Mara PR, Chater B, Rosenthal DR, Maxfield NM & Adena MA, 2003: The influence of geographical location on the complexity of rural general practice activities, *The Medical Journal of Australia*, 179: 416-420.

Humphreys JS & Dixon J, 2004: Access and equity in Australian rural health services, *in* J. Healy & M. McKee, *Health Care: Responding to Diversity*, Oxford University Press, 89-107.

Humphreys JS, Wakerman J, Wells R, Kuipers P, Jones J & Entwistle P, 2008: 'Beyond workforce': a systemic solution for health service provision in small rural and remote communities, *Medical Journal of Australia*, 188 (8 Suppl): S77-S80.

Hutchison B, Abelson J & Lavis J, 2001: Primary care in Canada: So much innovation, so little change, *Health Affairs*, 20: 116-131.

Imison C, Naylor C, Maybin J, 2008: *Under one roof: Will polyclinics deliver integrated care*, Kings Fund, London.

Lamarche PA, Beaulieu M-D, Pineault R, Contradriopoulos A-P, Denis J-L *et al*., 2003: *Choices for Change: The Path for Restructuring Primary Healthcare Services in Canada*, Ottawa: Canadian Health Services Research Foundation. http://www.chsrf.ca/final_research/commissioned_research/policy_synthesis/pdf/choices_for_change_e.pdf Accessed 18.04.08.

Macinko J, Starfield B & Shi L, 2003: The Contribution of Primary Care Systems to Health Outcomes within Organization for Economic Cooperation and Development (OECD) Countries, 1970–1998, *Health Services Research*, 38: 831-865.

Marriot J & Mable AL, 2000: *Opportunities and potential: A review of international literature on primary care reform and models*, Ottawa: Health Canada.

McDonald J, Cumming J, Harris M, Powell Davies G & Burns P, 2006: Systematic Review of Comprehensive Primary Health Care Models, APHCRI, ANU http://www.anu.edu.au/aphcri/Domain/PHCModels/Final_25_McDonald.pdf

McDonald J & Hare L, 2004: *The contribution of primary and community health services: Literature review*, UNSW, Sydney.

Naccarella L. Southern D, Furler J, Prosser L, Scott A & Young D, 2006: *Siren Project: Systems Innovation and Reviews of Evidence in Primary Care: Narrative Review of Innovative Models for Comprehensive Primary Health Care Delivery*, Canberra: Australian Primary Health Care Research Institute.

National Health and Hospitals Reform Commission, 2008: *Beyond the Blame Game: Accountability and performance benchmarks for the next Australian Health Care Agreements*, Canberra: NHHRC.

National Health Performance Committee, 2004: *National report on health sector performance indicators 2003*, AIHW cat no. HW178, Canberra, Australian Institute of Health and Welfare.

Page AN & Fragar LJ, 2002: Suicide in Australian farming, 1988-1997, *Australian and New Zealand Journal of Psychiatry*, 36: 81-85.

Podger AS, 2006: A model health system for Australia - Part1: Directions for reform of the Australian health system, *Asia Pacific Journal of Health Management*, 1: 10-16.

Powell Davies G, Hu W, McDonald J, Furler J, Harris E & Harris M, 2006: Developments in Australian general practice 2000-2002: what did these contribute to a well functioning and comprehensive Primary Health Care System, *Australian and New Zealand Health Policy*, 3: 1-10.

Productivity Commission, 2005: *Australia's Health Workforce*, Research Report, Canberra.

Romanow RJ, 2002: *Building on Values: The Future of Health Care in Canada – Final Report*, Ottawa: Commission on the Future of Health Care in Canada.

Rural Doctors Association of Australia and Monash University School of Rural Health, 2003: *Viable Models of Rural and Remote Practice*, Kingston, RDAA.

Russell G, Geneau R, Johnston S. Liddy C, Hogg W & Hogan K, 2007: *Mapping the future of primary health care research in Canada: A report to the Canadian Health Services Research Foundation*, Ottawa: CHSRF.

Shi L & Starfield B, 2000: Primary Care, Income Inequality and Self-Rated Health in the United States: A Mixed level Analysis, *International Journal of Health Services*, 30: 541-555.

Starfield B, Shi L & Macinko J, 2005: Contribution of Primary Care to Health Systems and Health, *The Millbank Quarterly*, 83: 457-502.

The Auditor General, 1998. *Planning for Rural Health*. Canberra: Australian National Audit Office.

Veitch C, 2008: Environmental determinants. Invited paper at the Inaugural Rural and Remote Health Scientific Symposium, 6-8 July. Brisbane.
http://nrha.ruralhealth.org.au/otherconferences/docs/RRHSS%20authors%20papers17Jun08.pdf

Wakerman J & Humphreys JS, 2002: Rural health: why it matters, *Medical Journal of Australia*, 176: 457-458.

Wakerman J, 2004: Defining remote health, *Australian Journal of Rural Health*, 12(5): 210-214.

Wakerman J, Humphreys J, Wells R, Kuipers P, Entwistle P & Jones J, 2006: A Systematic Review of Primary Health Care Delivery Models in Rural and Remote Australia 1993-2006. Australian Primary Health Care Research Institute, Canberra.
http://www.anu.edu.au/aphcri/Domain/RuralRemote/Final_25_Wakerman.pdf

Wakerman J & Davey C, 2008: Rural and Remote Health Management: 'The Next Generation Is Not Going To Put Up With This' *Australia Pacific Journal of Health Management*, 3: 13-18.

Wakerman J, 2008: Innovative rural and remote primary health care models—what are the research priorities? *Invited paper at the Inaugural Rural and Remote Health Scientific Symposium*, 6-8 July. Brisbane.
http://nrha.ruralhealth.org.au/otherconferences/docs/RRHSS%20authors%20papers17Jun08.pdf

Warchivker I, Tjapangati T & Wakerman J, 2000: The Turmoil of Aboriginal Enumeration: Mobility and Service Population Analysis in a Central Australian Community, *Australian and New Zealand Journal of Public Health*, 24 (4): 444-9.

Weatherill S, 2007: *Primary Health Care Transition Fund, Laying the Groundwork for Cultural Change: The Legacy of the Primary Health Care Transition Fund*, Ottawa: Health Canada.

Weymouth S, Davey C, Wright J *et al*., 2007: What are the effects of distance management on the retention of remote area nurses in Australia? *Rural Remote Health*, 7:652.

World Health Organisation, 1978: *Declaration of Alma Ata, Report on the International Conference of Primary Health Care*, Alma Ata, USSR: World Health Organisation.

Websites

http://www.anu.edu.au/aphcri/Spokes_Research_Program/index.php

http://www.chsrf.ca/about/index_e.php