A review of allied health workforce models and structures

A report to the Victorian Ministerial Advisory Committee for Allied Health

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Executive Summary

This report is a review written for the Victorian Ministerial Advisory Committee (MAC) on Allied Health. It is a synthesis of the main evidence and key lessons for policy makers in shaping and directing effective models of care, which involve the allied health workforce.

It highlights approaches to the effective deployment of the AH workforce in order to achieve improvements in the cost effectiveness of care, with the intention of informing and enabling progress in this policy area.

The review takes a macro level approach to the examination of AH workforce models. It is based on a synthesis of available evidence, shaped by a rapid review. The main emphasis is on learning lessons from previous policy reviews and systematic reviews, which provide the highest level of available evidence.

Key findings of the review are highlighted under six different aspects of evidence and scope for action:

The Allied Health workforce contribution could be strengthened by greater visibility
Despite the fact that AH in Australia comprise 18% of the workforce the bulk of health policy and funding attention remains focused on medicine and nursing and their impact on quality of care and economic outcomes. This has limited AH workforce visibility and constrained its strategic leverage as part of the reform agenda.

This review has found that AH workforce issues have been addressed internationally and nationally under four main but inter-dependent areas:
1. Workforce models: single discipline care to multi- and inter-disciplinary care, integrated care, collaboration, and coordination
2. Scopes of practice: full, expanded and advanced, and new non-traditional roles
3. Settings: services delivered 'close to home', community chronic condition management and primary health care for prevention and restoration of function
4. Skills management – using the skills-mix to substitute for traditional providers of that care; this relies on acceptance of substitution and availability of substitute staff.

Victorian AH has made some selective but significant progress along this path, but there continues to be limitations on overall progress. Where there is a narrow focus on workforce, particularly on the AH workforce as an input, and insufficient attention to "big picture" aspects of health reform, then there can be insufficient attention to outputs and outcomes. This places constraints on the scope to achieve significant and sustainable health improvements. There is often not sufficient strategically-focused attention on:
- Substitution effect – for quality at affordable price
- Shifting the relative balance of care provision from acute to primary
- A health and well-being approach, with upgraded focus on prevention
- New and flexible models of care
- The likely efficiency gains require sufficient up-front investment to make them realisable.

Information is power – but only when it is the right information
Available research that shows the effectiveness of AH is usually specific to a professional group (when in fact they are often part of larger multidisciplinary teams) or focuses narrowly on a condition and the specific outcome measures that they are solely or directly responsible for influencing

To increase visibility and engage in broader policy discourse, the measurement of the AH workforce contribution needs to be more aligned with workforce reform priorities and particularly with condition audit data in long term care pathways.

As part of the process of broadening out the "measurable" impact of the AH workforce, consideration can be given to the range of evidence based concepts, measures and indicators that can be used to assess the impact of health reforms. It should be noted however, that there has been limited progress in applying these approaches within the policy context of the health workforce. Most are derived from the literature on economics/ health economics, and many require significant data set availability as well as the resources to undertake and interpret the analytics.

A variety of models must be considered to maximise the Allied Health contribution
Understandably AH have focused on areas of role change where they have most influence and control. These are largely single discipline and focus on expanded or advanced roles. The catalysts for change in these examples are often reported as substitution for more costly forms of care in high pressure or high cost settings and reduction in waiting lists or 'time to care'.

However, outputs and outcomes from these changes are:
- largely reported under quality criteria as cost effectiveness is hard to assess as a single contributor
- are not embedded in a wider whole-of-workforce reform. This piecemeal approach prevents full exploitation of the substitution and supplementation effects across all roles delivering care to consumers
- hindered by senior medical /nursing staff concern around potential erosion of their roles
- may be criticised as advancement for the profession rather than driven by patient need and local contextual needs.

Less attention is given to achieving full scope of AH practice and contributing to the broader reform objectives. The current reform environment, especially for AH, seems to be characterised by continued piloting of scopes of practice and models. Equal attention needs to be given to systematically embedding the learning from the pilots into mainstream care and at what point this happens. This is often as much about culture change as actual evidence provision.

The Allied Health contribution will be maximised through connection and contextualisation
This review has highlighted that there is a major opportunity to increase strategic certainty for AH. This involves strategic connections between the allied health workforce and the other health workforce elements, which in combination comprise the "Health workforce" component of effective health systems.

To reduce any constraints and limitations to achieve full engagement of the AH component of the health workforce there needs to be clarity on role and contribution within and between different AH workforce elements and in the context of the broader workforce, as well as more consistent and higher level "visibility", and a relatively larger evidence base on effectiveness.

This can in part be achieved by more effective work across the different professions, disciplines and occupations that comprise the AH workforce; this should be combined with a willingness of these occupations to also take the lead on working across other professional and educational boundaries. It also requires consistent "messaging" in non-technical terms to the broader policy and public domain about the contribution being made by the AH workforce.
Functional analysis and health outcomes should be the focus of Allied Health development

Much effort within the allied health workforce has been focused on defining the meaning of AH in order to place individual professions and occupations. This has the effect of constructing artificial boundaries between what in practice is contributed collectively (and sometimes in an integrated manner) by different parts of the workforce, and has detracted from determining how these professions all contribute to optimising functions.

Clearer AH dynamics have been proposed from using four broad groupings. These are
- Allied Health : therapy,
- Allied Health : diagnostic and technical/ manufacturing,
- Allied health : scientific
- Allied Health : complementary services.

In this approach, rather than a focus on "who is in and who is out", the AH disciplines are located in their primary mode of delivery (functionality).
This also effectively assists with the mapping of which functions are best delivered on the basis of a single profession and which are best delivered as multi-modal and multi-disciplinary, and of the vertical and horizontal substitution, delegation and supplementation which can be used in the pursuit of economic outcomes.

One key limitation in determining the impact of workforce productivity, or cost constraint, or access, or quality and technology on large scale reconfigurations is that evidence is uncertain or lacking for these as individual elements. Subscribing to a multi-modal approaches may be a way of enhancing the interactions and functionality across the four identified AH groupings.

Integrated care is a strong platform for optimising allied health workforce contribution
AH roles often depend on interfaces across care teams and across sectors of care, with a focus on long term care conditions and working toward better health and wellbeing, supported by AH diagnostic disciplines. As such, "integrated care" would seem to be a strong platform for AHP given these modes of delivery and range of paradigms of care.

Integrated care underpins an effective combination of service and workforce models which can deliver:
- Macro level systems: structures, processes and techniques to reduce fragmentation and to fit with the health needs of populations across the continuum of care
- Meso level organisational integration: coordination of care for particular groups of patients and population via organised provider networks, pooling of skills across boundaries, with standardised referral procedures, service agreements, joint training, and shared information systems
- Micro level management of individuals: through case-managed multidisciplinary team care, with a single point of contact and coordinated care packages.

There is growing evidence about the scope for integrated care to provide a framework in which AH workforce could take on a more prominent role. A rapid review on integrated care generally accepted that integrated care models have a positive effect on the quality of care, health outcomes and patient satisfaction, but was less clear on how cost effective they were, and that the evidence-base was rather weak. It concluded that integrated care should be seen as a complex strategy to innovate and implement long-lasting change in the way services in the health and social-care sectors are delivered.

There is not a one size fits all prototype.
There is not one single/universal model or approach which AH can adopt to deliver better outcomes as context will be the strongest driver of the type of reform of the AH workforce must engage in.

To support full engagement there are several key aspects which must be given consideration:
- The bottom up drivers (geographic, population, clinical, professional, regulatory contexts) will determine what workforce reform is required.
- "Full scope" should be considered; not just "extended scope ".
- How to implement change will require as much attention as the 'what to change'.
- Continual piloting should be reduced in favour of implementation of available evidence.
- Clinical leadership and organisations must support the introduction and use of appropriate substitution workforce elements such as assistants.
- A whole-of-workforce approach to reform should be used to ensure change is scalable, sustainable and replicable.
- The scope for different uses of teleheallth / e-technology must be considered by all AH disciplines as an enabler, depending on location and profession.

Next steps

This review has identified a range of key sources in the evidence base on health workforce and reform. It has become apparent that there is relatively little detailed and compelling evidence related to the contribution of the allied health workforce. It does not reflect an absence of contribution by the workforce, but rather a relative lack of examination of the workforce with the objective of achieving broader policy engagement and influence.

There are several areas for action to improve the evidence base and shed more light on the role and contribution of AHPs. This will require a broad based, policy oriented perspective as single professions and more broadly as an AH collective to address their varying workforce challenges. This will enable engagement with policy makers and communities at large.

The main challenges, which serve as the focus for these collaborative efforts include:
- greater clarity of role, purpose and contribution of the allied health workforce to meet consumer needs and priority health targets
- action to address incomplete data on the workforce,
- research to contribute to cost/benefit analysis and demonstration of value of allied health workforce roles
- determining effective skills-mix and task shifting within the AH workforce
- more support for inter-professional education/ team working
- delivery of a culture that supports change readiness and is not focused on professional protection.

The evidence tells us there are three main aspects to create strategic certainty and effectively position AH to be "visible" on the health policy agenda:
- shape the strategy related to the health priorities and local drivers (context)
- select the models, scopes and skills management required appropriate to the context (the benefit plan)
- build the change capacity for consistent implementation and disseminate what works (visibility). This could be taken forward, for example, by fully adapting and "populating" the Canadian Optimising Scopes framework for the Victorian context.

1. Introduction

Against a backdrop of global health sector skills shortages and increasing demand, and in the context of health reform and cost containment measures in many countries, it is critical that the allied health workforce receives sufficient and proportionate policy attention to enable it to make an optimal contribution to meeting health needs.

At the moment, this is not happening fully in many countries and contexts. In part this is because the workforce is often a newer element in the health system. Allied Health (AH) may not be as "visible" or have developed the policy influencing mechanisms that are used by longer established and larger in number professions such as medicine and nursing. In part it can also be because some policy makers do not understand fully the extent of contribution that is being made, and could be made, by the AH workforce.

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2. Methodology

2.1 Who is in scope?

This report covers the 27 AH professions represented on the MAC (see Appendix 1).
These broadly include those that deliver therapy services and social care, those that provide diagnostic services, those that provide evidence and research, those that produce goods and those delivering complementary care.
In terms of comparisons with the AH workforce between jurisdictions in Australia and between Australia and other countries in other countries, this categorisation presents both similarities of grouping but also some key differences.

2.2 What is in scope?

The purpose of the review is to determine where AH should be strategically positioned for maximum impact on the health reform agenda. In short, this means identifying where the greatest impact on the health system can be achieved through increased productivity[1] for AH workforce, better use of AH skills for best care at an affordable price.

As the primary aim of any focus on workforce productivity is to improve the ability to meet consumer and health population needs and targets, health workforce models and structures are examined within a broad context of health reform. The scope does not extend to evidence on clinical practice.

2.3 The review structure

The review takes a macro level approach to the examination of AH workforce models. Given project constraints of time and resources, it is neither a systematic review nor does it use primary research. It is based on a

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[1] The definition used by the Productivity Commission in Australia's Health Workforce (2005) is used throughout this paper : being the relationship of inputs (resources and processes) to outputs (technical efficiency) and outcomes (costs effectiveness)

synthesis of available evidence, shaped by a rapid review of relevant research, literature and "grey literature" policy documentation, supported by information provided by key informants. The main emphasis is on learning lessons from previous policy reviews and systematic reviews, which provide the highest level of available evidence.

The report summarises the key evidence on effective models of workforce and service delivery involving the AH workforce, as currently covered by the remit of the MAC on AH. This includes:
- identifying key Australian and international evidence,
- the models which have greatest potential for alignment with stated priority reform agendas, both existing best practice and promising emerging models
- the treatment of single discipline through to multi/interdisciplinary models
- reporting on what works [1] - how 'success' is defined and measured, and
- setting out key lessons for policy makers on how barriers to implementing change and reform have been overcome, and enablers to positive change have been identified and harnessed.

It covers
- scopes of practice (full, expanded, advanced) and new roles
- skills mix (multidisciplinary, interdisciplinary and transdisciplinary models)
- skills management (for complementation, substitution, supplementation)

It examines the implications for:
- action at state, organisational, team and individual levels, and
- the work across the continuum of care (from community to acute care and different sectors) where consumers seek the right service, right time, right place, right provider.

It does not address the workforce issues for each and every one of the 27 professions. Rather, principles are derived to guide future work, in demonstrating how AH positively does, or can, contribute to the reform agenda and achieve desired health outcomes.

3. The drivers of change

The priorities of government world-wide in relation to health care provision are broadly and consistently about achieving and sustaining a better match of supply to demand and improving health outcomes, irrespective of resource availability, funding models and nature of health systems.

Most jurisdictions are engaged in reform around the following broad priority areas [2]:
- developing a system that is responsive to people's needs
- improving peoples' health status and experiences
- expanding service, workforce and system capacity
- increasing the system's financial sustainability and productivity
- implementing continuous improvements and innovation
- increasing accountability and transparency
- utilising e-health and communications technology.

The Victorian Government platform is likely to be consistent with other national and international processes of re-configuration and reform, focusing on
- managing costs
- improving workforce productivity
- quality
- access
- technology (as both enabler and future driver) [3]

These five elements are increasingly viewed in the light of the constraints imposed by a focus on traditional roles of single health disciplines, particularly when limited to medicine and nursing, and by fragmentation across sectors and geography ('silo' approaches). This has highlighted the need to invest in:

- multidisciplinary care
- workforce models derived from competencies and skills required, rather than traditional ownership of roles
- a focus on person centred care and community health literacy
- value in a more mixed workforce, which can be flexible and adaptable.

4. Understanding allied health

In Australia AH comprise 18% of the workforce, (and therefore a similar volume to the medical workforce) and delivers 200 million services per year [4].

The term "allied health" covers a range of different professions and workers, many of which are relatively small in number compared to the larger professions of nursing and medicine. In the case of the MAC in Victoria, this title covers 27 different professions and occupations.
Assistants are increasingly included in the literature and reporting on AH workforce.

Descriptive national overviews of the numerical profile and distribution of the AH workforce in Australia (not necessarily covering all 27 groups) can be derived from regular AIHW reports, and from recent "one-off" reports by HWA.

At the time of this review, the most recent AIHW report was from 2013, and reported on 2012 data[5]. This AIHW report was the first on the AH practitioners covered by the introduction of the National Registration and Accreditation Scheme (NRAS) in 2010. These include:

- psychologists,
- pharmacists,
- physiotherapists,
- occupational therapists,
- medical radiation practitioners,
- optometrists,
- chiropractors,
- podiatrists, and
- osteopaths.
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(For further workforce data see Appendix 2)

Despite the basic workforce profile data that can be derived from national reports, there remain limitations and gaps in the overall national picture about who the AH workforce is, where it is working, and what is its contribution to population health.

For example, one information gap is the AH split between the public and private/ not- for- profit sectors.
For those 11 covered under NRAS these data will be available and increasingly useful over time. For the others the data is lacking; but we do know that the split varies by profession: radiographers work largely in the public sector, while others – such as podiatrists and physiotherapists – have greater numbers in other sectors.

There are a range of highly relevant issues, which must be addressed in order to ensure that the AH workforce has the right "visibility" to policy makers:

Clarity of roles in order to understand their contribution, outputs and potential, rather than the distraction of trying to define the various constituent groups within the AH workforce better

Other health referrer or user groups have a poor understanding of AH.
In 2013 the Australian Medicare Local Alliance identified a need to publish a guide for members[6] so that "

the unique depth and breadth of skills, knowledge and roles of Allied Health professions are understood, valued and appropriately utilised within the development and delivery of primary care". In 2014 PHCRIS focused an entire research round up to understand the role and contribution of AH, creating better visibility for the primary health care system [7]

Workforce planning is usually predicated on large volume workforce groups to ensure the efficacy of the modelling. AH have received less attention because of the relatively small numbers of the component disciplines. This affects workforce planning for AH; developing AH career progression; and ensuring that being a "small number" does not mean there is a lack of recognition that AHP roles are critical links in the health care chain

There is no universally definitive list of what constitutes an "allied health profession" (AHP) or workforce, and different countries have different definitions of which professions make up the AH workforce (see Appendix 3 for national and ISCO examples).The outcome is that for international comparisons, the AH workforce is largely "missing" as identifiable categories:
- The World Health Organisation (WHO), in its "World Health Workforce Atlas" uses 6 categories to analyse and provide country comparisons of the "health workforce": Physicians, Nursing and Midwifery personnel, Dentistry personnel, Pharmaceutical personnel, Environment/public health workers, and Community health workers.
- The OECD, covering the 34 high income countries, presents its workforce analysis under 7 categories: physicians, midwives, nurses, "caring personnel", dentists, pharmacists, and physiotherapists.

Therefore commonly used comparative data sources do not allow identification or analysis of all AH workforce at a similar level of dis-aggregation

A bigger challenge is ensuring that the AH workforce is fully recognised in our national level health planning and policy making, and is also visible in cross country comparisons.

Australian AH may also be limited in their reach and influence by the fact that peak bodies representing them cover different groupings and the avenues to Commonwealth Government are not always clear[2]. For example
- Allied Health Professionals Australia (AHPA) includes 22 AH professional bodies and uses a broader functional definition of AH and represent almost 78,000 allied health professionals
- Services to Australian Rural and Remote Allied Health (SARRAH) , exists to provide advocacy, support and professional development for rural and remote allied health professionals, but does not stipulate which professions.

It is understandable that there is a need to aggregate up to create a small enough number of staffing indicators to have policy utility. However, in this process of aggregation, the AH workforce loses out, in part because of a lack of common roles/ titles/ professions across jurisdictions, systems and countries, and in part because of the small number issue.

 In total, the allied health workforce may be large, but it is comprised of a broad range of discrete and operationally different professions, including aides and assistant grades. The challenge is to ensure that this broad grouping received appropriate visibility and acknowledgement in policy, planning and management of health systems and services.

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[2] Although all state and territory governments now have Chief AH Advisors who are the focus of such policy matters and the Commonwealth Department of Health has recently announced a CAHA within a broad portfolio of primary health care.

5. Lessons from health sector reform

5.1 Introduction

Health sector reform is a recurring theme in many countries and systems. This is driven by the policy objectives of improving the balance of supply and demand, and implementing more efficient ways of delivering health services and meeting population health goals. Most of the recent attempts to achieve significant and large scale change in terms of health system performance, responsiveness and productivity have taken account of the workforce, both as an enabler for change and, if not fully engaged, as a potential barrier to change. This is unsurprising in a labour intensive sector with a range of well-established stakeholders with their own priorities and professionals interests.

The pursuit of the Victorian Government for workforce productivity in health has centred on:
- Flexibility and adaptability through skills-mix and teamwork
- Competencies driven change
- Less silos / boundaries across the workforce (professional, organisational, geographical)
- Patient or person centred care supported by greater health literacy
- Improved information to drive services

This broad based health workforce reform agenda is in alignment with the direction and priorities emphasised in health sector reform programs in a range of other systems, jurisdictions and countries. Reviewing lessons learned from these other programs gives some insights for policy makers in Victoria.

5.2 Lessons from broad-based workforce reform

Within Australia, the seminal review of the health workforce by the Australian Productivity Commission, published in 2006 [8] retains relevance in terms of key analysis and findings:

"Workforce shortages and the increasing demands of an ageing community are placing mounting pressures on Australia's health care system. Improving preventative health care, increasing the number of training places and retaining more of those currently employed are all important strategies, but they don't go far enough".

The Commission recommended an integrated set of national actions which would result in a more sustainable and responsive health workforce. The proposed workforce arrangements were designed to:
- drive reform to scopes of practice, and job design more broadly, while maintaining safety and quality;
- deliver a more coordinated and responsive education and training regime for health workers;
- accredit the courses and institutions and register health professionals in nationally consolidated and coherent frameworks;
- provide financial incentives to support access to safe and high quality care in a manner that promotes innovation in health workplaces.

Recent reviews of the evidence on "what works" in health sector reform and the facilitators, including the health workforce element, have included reports by the Kings Fund UK[9], the Health Foundation[10], the Nuffield Institute[11], and for the Saskatchewan Ministry of Health (Canada)[12] , Health Workforce Australia (HWA)[13] and Victorian Department of Health [14] .

Key findings derived from these reviews of the evidence include:
- Overall, the evidence does not suggest that service reconfiguration, including moving to a more community-based model of care, will always deliver significant savings.
- Improvements in quality can be achieved through reconfiguration, but these are greater for specialist services, and service improvement strategies may deliver more significant improvements than reconfiguration in some contexts.

- Engagement of health professionals as part of the process of change is critical.
- Whilst 'sufficient' availability of experienced medical and nursing staff is repeatedly highlighted as being important, there is limited evidence on what is the optimum level and mix of staff, of what type and over what time period, in particular care contexts. A focus on AH, despite acknowledged supply problems, is largely absent
- There is no 'optimal design' for local services; their configuration will depend on the local context and the specialty-specific balance between access, workforce, quality, finance, and use of technology
- Those responsible for planning services need to look across the full care spectrum to ensure the most efficient distribution of services, to remove duplication, and to ensure that patients receive the right care, in the right place, at the right time.
- Proposals should be underpinned by detailed workforce and financial plans with supporting service improvement strategies.
- Examples of good practice and successful innovation and improvement, should be systematically disseminated and adopted for better exploitation by the wider system.
- Removing strategic uncertainty is a critical success factor.

HWA reported the critical success factors in delivering effective Models of Care (Queensland Health)[15]. The key factor was removing 'strategic uncertainty'. This involves:
- providing the legislative scaffolding for an industrial framework in which the role could be implemented and supported, including a regulatory or at least an accountability framework
- reducing ambiguity in and modifications to strategic directions, both locally and at higher levels, as this impacted on resource allocation, both financial and human
- creating a clear framework in which the role could be delivered, which included
- clarity of purpose for the role; and
- minimising competing projects and priorities being undertaken simultaneously, because of the burden this would place on resources and project management.

In respect to workforce, the Health Foundation in the UK reviewed the evidence on large scale change in the health sector. It reported that the factors helping or hindering organisations to work across boundaries were the need for: clear roles and responsibilities; joint training and ongoing support for staff; addressing challenges to professional identity; and avoiding role confusion. A similar emphasis on staff engagement was emphasised in the review of lessons learned in large scale organisational change, conduced for Saskatchewan Ministry of Health in Canada.

The Kings Fund reported "compelling evidence" that NHS organisations with high levels of staff engagement – where staff are strongly committed to their work and involved in decision-making – deliver better quality care with indicators such as lower mortality rates, better patient experience, lower rates of sickness absence and staff turnover were reported[16].

Research on workforce redesign highlights that a traditional and narrow focus on **staff types** and scopes of practice serves to ignore the **skills** needed for the right care, right time and place and the most effective use of those skills. A more systematic approach, working back from local context **combines**:
- scopes of practice (full, expanded, advanced) and
- skills mix (single disciplines and assistants; multidisciplinary, interdisciplinary and transdisciplinary models) and
- skills management (requirements of complementation, substitution, supplementation to meet contextual needs and organisational supports and governance)[17].

More dynamic role boundaries (see Figure 1 below) have been driven by changing models of care and consumer need and typified as:
- diversification – new work or new ways of performing work or redistribution of tasks
- specialisation – adoption of increasing levels of expertise in a specific discipline adopted by a select group of the profession
- horizontal substitution – role overlap with roles of another with similar training and expertise

- vertical substitution – profession delegation of tasks to others and assistants [18].

Figure 1
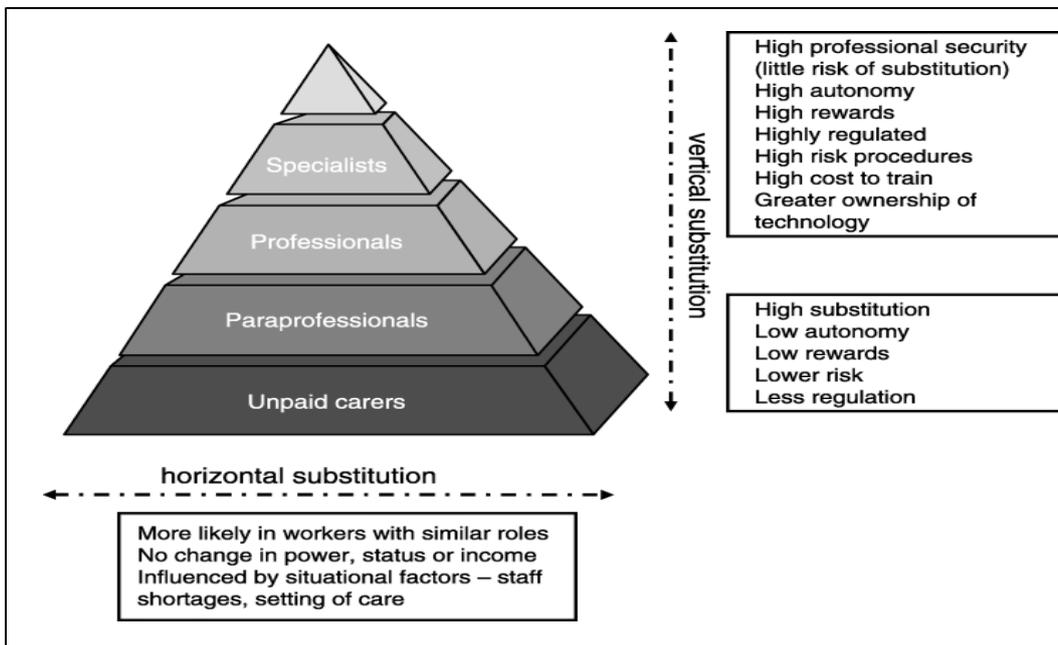
Lessons from the NHS workforce redesign [19] have been split into

1. Consequences
   - costs of not choosing the right response
     A poorly planned redesign may even result in increased costs and decreased quality
   - productivity did not always flow due to professional resistance

2. Unexpected outcomes
   - service substitution : redesigning the health care workforce is not a quick fix to control costs or improve the quality of care. The expectation that substitution of "less costly workers for more expensive ones" can control costs only works if the latter "completely cease providing the care that is transferred"
   - increasing service costs can be related to unmet need or unidentified need
   - substitutability : other parameters may change as a consequence
   - trade-offs between risks of fragmentation and benefits of specialisation: the creation of teams that are too large increases costs and may reduce continuity ; on the other hand improved consumer outcomes can be associated with fewer types of care workers during the episode

3. Lessons learnt
   - redesign the work before the workforce (but do both) :
     Changes in skill mix and role definitions should be preceded by a detailed analysis and redesign of the work performed by health care professionals. Redesign of workforce can only occur if the service or work is also redesigned or analysed and context for change clarified – " if skill mix is the solution, what is the problem?" [20]
   - clarify and support new / changed roles and responsibilities :
     New roles and responsibilities must be clearly defined in advance, and teamwork models that include factors common in successful redesigns such as leadership, shared objectives, and training should be promoted [21]
   - deliver the benefits of teamwork :
     A relatively robust evidence base confirms that the quality of teamwork is directly and positively related to quality of patient care

- provide statutory guidance and regulation to remove the barriers of demarcation and self-interest
- focus on existing staff and roles first :
  It is easier to acquire increased skills than create new roles and acquire specialists.

World-wide attention has focused on integrated action to meet the complexity of health needs. This has driven the development of a number of conceptual frameworks. These aim to capture the learning and progress implementation. They cover:

1. Workforce: for example
   - complementary roles on the micro (clinical integration), meso (professional and organisational integration) and macro (system integration) levels [22]
   - mapping out where we are (describing the insufficiencies of the present health care system); where we want to be (highlighting the vision statement and target outcome indicators for patients, health care professionals, and the health care system); and a model of how we can get there (focusing on various levels of structural inputs that influence the optimisation of health care professional scopes of practice and supportive models of care)[23] .

2. Service delivery (within and across sectors) and condition management for example
   - successful models of comprehensive care for older adults and those with chronic conditions[24] [25]
   - broad approaches to working across health economies, sectors and organisations to provide more efficient and effective care, suggest that large-scale transformational change is only possible when organisations work jointly or in collaborations. There is little comparative information about the pros and cons of the approaches described [11].

These all attempt to make sense of combining levels of action at state (policy, funder), organisation (governance), team and individual (providers/ professional). This recognises that
- the effects of any one role change must flow-on into the redesign of other parts of the workforce to achieve net productivity
- the action of one discipline alone cannot easily be measured as responsible for population health outcomes
- one team or organisation alone cannot expect to effect the scale of change required.

There are many pockets of good practice and examples of successful innovation and improvement. However, these good ideas are often not disseminated and adopted by the wider system in a systematic way or, take a long time to spread. This prevents meaningful exploitation of the evidence for the best strategies for the context of need and continues the practice of piecemeal approaches to reform[26].

5.3 Lessons from Allied Health workforce change and reform

Victorian AH have been engaged in considerable reform work where bottom-up organic growth in response to local problems has been supported by top down policy as a whole-of-AH process, from the Office of Chief Allied Health and the Victorian Health Workforce Branch. Some 30 project reports were examined in this review. The themes of reform were:
- mostly focused on scopes of practice and their substitution effects; the expectation that the impact on efficiency would be measured was often by default reported as quality (19 projects) (see section 6.3)
- a few focused on multidisciplinary care and collaborative structures (6 and 3 projects respectively).

Some examples of Victorian AH role redesign projects are provided at Appendix 4.

Collectively these projects can be viewed under the Workforce Innovation Grants Program 2010-11 and 2013-14 and under the Better Skills, Best Care Program 2005-2011, (the learning from six years of health workforce innovation and reform in Victoria) for those projects before 2008[27].

The key lessons from Better Skills, Best Care are related to using a better skills mix (including support staff) and potential for AH (and nursing) to substitute for medical care ; leadership at clinician and executive level ; consumers acceptance of new workforce models and receiving care from different types of substitute workers; a successful workforce reform agenda needs an enabling industrial relations strategy; and a progressive change in culture at health service level ; and determination of when a pilot should become a widely implemented reform. In parallel, the use of assistants to enhance AH skills-mix has been a major initiative. A Victorian statewide implementation program (2012–14) has increased the numbers and utilisation of allied health assistants (AHAs) to build allied health capacity and access, and sustainable cultural change has been achieved in many therapy-based disciplines.

A recent review on the evidence base about AHP in Australia [28] identified:
- little health services research is focused on AHP interactions and collaborations with other health professionals, and the reporting often lacking detail about specific professions
- research by and about AHPs is hampered by their diversity and relatively small numbers within specific professions
- other barriers include- fragmentation, inadequate integration of their services, a relative paucity of research, diversity of settings, and the fact that AHPs often provide complex multidisciplinary interventions with outcomes that are difficult to measure.

A similar review conducted by the Health Foundation and Nuffield Institute in the UK[29] concluded that despite the size of the AH workforce and the broad scope of care, comprehensive data on the impact AHPs have on the quality of care is not routinely collected. The report notes that "Integration is a given for most AHPs, whose roles very often depend on interfaces across care teams – and across sectors of care. Yet despite the size and importance of the AHP workforce, AHPs are rarely the subject of major policy debates and there is a concern that their contribution to care is often hidden, overlooked or potentially undervalued". The report concluded that "many AHPs are well primed to address some of the key challenges facing the future of health and care, in particular the need to understand the pattern of service delivery for patients with long-term conditions and more complex needs".

Systematic reviews regarding extended roles for "AHP"s (paramedics, physiotherapists, occupational therapists, radiographers and speech and language therapists) have concluded that:
- a range of extended practice roles for AHPs have been promoted, and are being undertaken, but their health outcomes have rarely been evaluated, and as such, there is little evidence about how to best introduce such roles, or how to best educate, support and mentor these practitioners[30].

- there is overwhelming support for extended scope of practice, despite most articles being descriptive or discursive in nature (76%), but little in the way of robust evidence to exemplify effectiveness or safety of extended scope of practice in physiotherapy[31].

The New Ways of Working Programme for Allied Health Professionals (UK) was a national move to disperse responsibility in multi-disciplinary teams with a person centred/recovery focus, within the field of mental health care. As part of the programme, a collection of good practice/innovation examples was produced. These reflected the range of work in which AHPs were involved for service development/ change and positive practice for service users and carers. The programmes were categorised into four themes, Education and Training, New Roles, System Reform and Working in Teams[32].

Five case studies, four in Canada, and one in Finland, described a recipe for success for the design and implementation of effective, team-based primary health care for people living with chronic illness.
The ingredients included:
- effective leadership, both at the clinical and senior management levels;
- clear roles and responsibilities for team members, so that the patient gets the right care, at the right time, from the right provider;
- a common philosophy and shared values underpinning the team-based delivery of care;
- an electronic health/medical record system; and

- patient-centred programs and support services, combined with effective (usually electronic) self-assessment and self-management tools [33].

An Australian review of the roles and responsibilities of AHAs found benefits from the introduction of the AHA role in healthcare, including: improved clinical outcomes; increased patient satisfaction; higher-level services; and allowed more "free" time for AHPs to concentrate on patients. Clear advantages were associated with the use of AHAs to support allied health service delivery, but also barriers in the form of blurred role boundaries, raising issues relating to professional status and security[34].

HWA also concluded the value of Assistants and Support Workers generally (including AHAs) was enhancing the skills-mix. This generated capacity to improve service delivery and allowing for a re-focus of delivery to areas of need; workforce flexibility and team efficiencies; and better client outcomes; but where organisational supports were in place. It determined that as well as the change investment required for successful and consistent implementation, the key success factors were overcoming barriers around professional perceptions and unpreparedness of organisations and professionals to use assistants; introducing supervision and delegation, and ongoing skills training; and clarity around their roles and functions. However, it noted that there was persistent and continued piloting of assistant roles, as the evidence of their use and impact was not being shared and networked[35].

HWA commissioned and evaluated work on expanded scopes of practice[36]. The broad success factors were:
- innovations being compatible with the values and needs of the host organisation;
- readily observable benefits, be clearly effective and/or cost effective; and be perceived as low risk
- incremental change appears to be more acceptable than disruptive change, because it cannot be achieved without the support of the broader health workforce
- expanded scope practitioners tend to be clinical leaders because of the level of prior experience and training needed for the roles, but importantly, they were capable of genuine inter-professional collaboration and respected the contribution of other members of the healthcare team
- training experienced practitioners to take on specific tasks can improve access and continuity of care and free others for more complex patient care. The economic impact of these innovations is necessarily limited by the scale and length of local implementation and the resources available. It is difficult to detect the effect of a relatively small 'dose' of any innovation above the noise of other concurrent changes in the workplace.

It was also stressed that the implementation of any model also needed to be able to answer:
- Has this workforce reform generated benefit for patients, their families and carers?
- Has it strengthened the capacity of our health workforce?
- Has it delivered economic value for the health system?

"When there is reasonable evidence that a contribution has been made at all three levels then broader implementation of an innovation can be recommended".

HWA work across 52 national projects for expanded scopes of practice, multidisciplinary teams and aged care reform distilled the following key lessons for any workforce redesign[37]:
- Innovations must lead to a productivity gain.
- Innovations must be consumer-focused and ensure the quality and safety of care delivered is maintained or improved.
- Reforms should be based on evidence of what works from either national or international sources.
- Reform initiatives should be co-designed with and have co-investments by implementation partners.
- Local and national evaluation partners should be engaged in the design phase to optimise the research questions and expected evidence and outcomes.
- System change leadership capacity must be developed and maintained across the whole of the workforce to deliver large-scale change.
- Initiatives must build capability and explore roles based on a better balanced skill mix to meet community need rather than traditional professional demarcations.

- A whole of workforce approach to reform should be used to ensure change is scalable, sustainable and replicable. That is the change in one role must be accompanied by changes (release of functions) in other roles to get a net productivity effect.
- Working across boundaries reveals a high level of common core competencies in all roles irrespective of level of practice (typically being working in multidisciplinary teams, communication, leadership
- and health literacy)
- Reforms must span boundaries, geographical, jurisdictional, organisational and/or professional.
- Sustainability must be planned for at the beginning and throughout the reform.

The NHS in Scotland published a ten year review of progress in the utilisation of AHP staff in 2011[38]. The review identified several key elements which had enabled a growing contribution of AHPs across the period, including the introduction of new ways of working; improvements in governance, research and development; improved career pathways and continuing professional development opportunities for AHP staff (e.g. advanced practice roles); a more systematic and responsive approach to workforce, recruitment and retention. The review also set out the central focus for the future development of AHP services in relation to overall service improvement and contribution (see Table 3 below).

Table 3
NHS Scotland: central focus for the development of AHP services (2011)
- Play a central role in reshaping older people services by leading the delivery of community-based rehabilitation and re-ablement approaches working through effective partnerships across health and social care
- Release health and social care resources within the community by using AHP expertise to underpin supported self-management, enablement and independent living approaches within the communities they serve
- Work as first point of contact practitioners to support early diagnosis and intervention in primary care and provide an alternative to outpatient referral
- Actively support reductions in the number of unplanned admissions to hospital and/or care settings through targeted early and anticipatory interventions as part of multi-professional teams
- Reduce length of stay and improve patient flow through enhanced recovery and early supported discharge
- Release capacity in AHP services to deliver these improvements through productive and modern working practices such as effective triage and tele-rehabilitation.

http://www.health.heacademy.ac.uk/doc/resources/ahpscot_10year.pdf

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6. Key findings of the review

In this section of the report, key findings of the review are highlighted, synthesised, and their implications for potential further work is identified. The findings are summarised under six different aspects of evidence and scope for action:

6.1   The Allied Health workforce contribution could be strengthened by greater visibility
6.2   Information is power – but only when it is the right information
6.3   A variety of models must be considered to maximise the Allied Health contribution
6.4   The Allied Health contribution will be maximised through connection and contextualisation
6.4   Functional analysis and health outcomes should be the focus of Allied Health development
6.5   Integrated care is a strong platform for optimising allied health workforce contribution
6.6   There is not a one size fits all prototype

6.1 The Allied Health workforce contribution could be strengthened by greater visibility

Despite the fact that AH in Australia comprise 23% of the workforce, and therefore a larger volume than the medical workforce, the bulk of health policy and funding attention remains focused on medicine and nursing and their impact on quality of care and economic outcomes.

As noted above, and has been identified in other countries such as the UK, this has limited AH workforce visibility and constrained its strategic leverage as part of the reform agenda[39]. One recent Australian review of the allied health workforce contribution to quality noted that "Unless the complexity of AH activities, responsibilities, and service-delivery patterns can be expressed in service-specific ways, the value of AH therapy services will be overlooked when healthcare quality is evaluated and reported[40]."

One result of this lack of visibility is that the AH role in guidelines for effective care is limited. There are some good examples to build upon (National Institute for Health and Care Excellence (NICE), on the management of stroke (2010), hip fractures (2012) and rheumatoid arthritis (2013)) [32] and the Australian National Chronic Disease Strategy (2005), but overall there is much scope for more effective action in this policy area..

This review has found that AH workforce issues have been addressed internationally and nationally under four main but *inter-dependent* areas:
1. Workforce models : single discipline care to multi- and inter-disciplinary care, integrated care, collaboration, and coordination
2. Scopes of practice: full, expanded and advanced, and new non-traditional roles
3. Settings: services delivered 'close to home', community chronic condition management and primary health care for prevention and restoration of function
4. Skills management – using the skills-mix to substitute for traditional providers of that care; this relies on acceptance of substitution and availability of substitute staff.

Victorian AH has made some selective but significant progress along this path.

However, there continues to be limitations on progress. This is because of a narrow focus on workforce with insufficient attention to "big picture" aspects of health reform. This places constraints on the scope to achieve significant and sustainable health improvements. There is often not sufficient strategically-focused attention on:
- Substitution effect – for quality at affordable price
- Shifting the relative balance of care provision from acute to primary
- A health and well-being approach, with upgraded focus on prevention
- New and flexible models of care
- The likely efficiency gains require sufficient up-front investment[41].

One example of policy orientated priority setting for the AH workforce was reported at a conference in the UK as per below

Empowering allied health professionals to transform health and care services. December 2014 The King's Fund Conference http://www.kingsfund.org.uk/events/empowering-allied-health-professionals-transform-health-and-care-services
Linda Hindle, Lead AHP, NHS Public Health England states there needs to be clarity about current AHP contribution around: - Increasing strategic connections   - What could we do more at scale   - How we measure our impact   - How we communicate our public health role within our professions   - Communicating our role to wider stakeholders   - Influencing research   And at local level she describes what AH should be doing: - Promote what you do already   - Develop conversations about public health with decision makers   - Support the (local health) priorities (and targets)   - Evaluate and write up what you do   - Can you do more?

6.2 Information is power – but only when it is the right information[42]

Currently, available research that shows the effectiveness of AH is usually specific to a professional group (where in fact they are often part of larger multidisciplinary teams) or focuses narrowly on a condition and the specific outcome measures that they are solely or directly responsible for influencing[43].

To increase visibility and engage in broader policy discourse, the measurement of the AH workforce contribution needs to be more aligned with workforce reform priorities and particularly with condition audit data in long term care pathways. One example is the he work by the National Clinical Lead for AHPs in the NHS in England (2012) is an implementation guide for AHPs and highlights the need for them to 'optimise the full potential of informatics to improve the services [they] deliver' and demonstrate their cost-effectiveness[44].

As part of the process of broadening out the "measurable" impact of the AH workforce, consideration can be given to the range of evidence based concepts, measures and indicators that can be used to assess the impact of health reforms. It should be noted however, that there has been limited progress in applying these approaches within the policy context of the health workforce. Most are derived from the literature on economics/ health economics, and many require significant data set availability as well as the resources to undertake and interpret the analytics.

These key measurements include[45]:
Utility
- visits;
- emergency room/accident and emergency department visits;
- hospital (re-) admissions;
- length of hospital stay;
- hospital days

Cost effectiveness: benefits of the intervention in terms of natural units (cost effectiveness),
- such as life years gained, reduction in blood pressure, etc.,
- in a synthetic overall health measure (cost-utility), such as quality adjusted life years (QALYs)

Cost and/or expenditure:
- 'cost': cost of providing a particular service (health, nursing, social care),including the costs of procedures, therapies, and medications where applicable
- 'expenditure': amount of money paid for the services, and from fees, which refers to the amount charged, regardless of cost
- avoided cost : costs caused by a health problem or illness which are avoided by a given intervention.

In practice, there is relatively little published evidence and analysis using these "standard" indicators and approaches to evaluation which have focused on the health workforce in general, and on the allied health workforce in particular. For example, whilst there is a body of evidence describing a range of measures purporting to relate to healthcare quality, most of them relate medicine, or nursing (and to hospital based care), and none are specific to allied health[46]. There are a few examples of cost-effectiveness studies, and systematic reviews focusing on workforce skill mix, but there is not an evidence base of sufficient depth or coverage to provide a platform for policy advice or cross jurisdiction comparative analysis of "technical efficiency".

In addition, whilst the priorities of need (population health and individual health) are clear and similar in any jurisdiction, there remain questions about "allocative efficiency"- are allied health workforce efforts concentrated on those care groups and care priorities where they can have optimal effect and most sustained impact? For example, is the AH workforce focusing care on the following, in a way that is systematic and evidence-based, as well as being "visible"?
- Children ready for school / early years (language development, nutrition, physical skills, emotional development, vision)
- Making every contact count (particular emphasis on obesity, physical activity, smoking and alcohol)
- Improving health for older adults (nutrition, falls, maintaining independence, dementia, social isolation, mobility)
- Focus on emotional wellbeing for parity with physical health[47.]

6.3 A variety of models must be considered to maximise the Allied Health contribution

Understandably AH have focused on areas of role change where they have most influence and control. These are largely single discipline and focus on expanded or advanced roles, which the range of reported Victorian AH reforms reflect [23].

The catalysts for change in these examples are often reported as substitution for more costly forms of care (medical intervention) in high pressure or high cost settings (such as Emergency Departments or imaging services) and reduction in waiting lists or 'time to care'.

Attention has also been paid to the use of assistant or technical roles (as the substitute workforce) supporting AHPs for a range of therapy, social care, and community and aged care services.

However, outputs and outcomes from these changes are:
- largely reported under quality criteria (see Appendix 4), as cost effectiveness is hard to assess as a single contributor[48]
- are not embedded in a wider whole-of-workforce reform. This piecemeal approach prevents full exploitation of the substitution and supplementation effects across all roles delivering care to consumers[49]
- hindered by senior medical /nursing staff concern around potential erosion of their roles
- may be criticised as advancement for the profession rather than driven by patient need and local contextual needs.

Whilst much academic attention has been paid to extended specialised roles for AH professionals such as podiatrists, little work has addressed the likely impact of these policy changes on non-specialist, 'generalist'

podiatry practice. For example, in a recent UK based review of the implications of workforce redesign in podiatry, three key themes emerged, reflecting concerns about the future of generalist podiatry practice in the NHS, a perceived likelihood that generalist care will move inexorably towards private sector provision, and a growth in support worker grades undermining the position of generalist practice in the mainstream health division of labour. It concludes that up skilling generalist practitioners is the strongest defence against marginalisation[50]. However, it would seem this ignores the principle reason for redesign in the context of reform, which is the overall improvement of care and population health.

Less attention has been given to how achieving full scope of AH practice can contribute to broader reform objectives. The opposite can be seen in the adoption of hospital medical specialisation, resulting in a gradual erosion of the generalist or full-scope models[51].

In order to prevent this occurring, if a single discipline is the focus of role design, then the following workforce considerations must be considered:
- What are the priority health drivers
- What is the upward substitution (for other professional disciplines)
- What is the downwards delegation (to other disciplines/ assistants)
- What is horizontal supplementation or substitution
- Can this be done through full scope of practice/ why is expanded scope considered
- What is the potential economic impact
- What is the anticipated change in access and quality?

Each of these level inputs has to be managed:
- Micro level inputs – within your own sphere of influence
- Meso level inputs – at organisation wide level
- Macro level inputs – what are the guidelines (eg supervision and delegation), education, economic, and regulatory contexts at systems and statewide level.

Australian rural and remote services have made considerable inroads to manage economic and distributional issues through role changes. These localised solutions shift the focus away from traditional roles towards providing a broader range of services, changing models to align with cost priorities, and collaborating with GPs. They are often seen as geography-specific, but many actually have key lessons for the metropolitan system, in particular how to follow the patient journey across sectoral boundaries.

The current reform environment, especially for AH, seems to be characterised by continued piloting of scopes of practice and models. Equal attention needs to be given to systematically embedding the learning from the pilots into mainstream care and at what point this happens. This is often as much about culture change as actual evidence provision [46].

6.4 The Allied Health contribution will be maximised through connection and contextualisation

This review has highlighted that there is a major opportunity to increase strategic certainty for AH. This involves strategic connections between the allied health workforce and the other health workforce elements, which in combination comprise the "Health workforce" component of effective health systems. The other five "building blocks" of an effective health system are Health service delivery; Health information systems; Access to essential medicines; Health systems financing; and Leadership and governance[52].

To reduce any constraints and limitations to achieving full engagement of the AH component of the health workforce there needs to be clarity on role and contribution within and between different AH workforce elements and in the context of the broader workforce; more consistent and higher level "visibility"; and a relatively larger evidence base on effectiveness.

If the AH workforce is to be fully connected, both with other parts of the workforce, and within the broader health system context these critical questions must be answered:
- what elements of allied health workforce contribution could be done more 'at scale', that is replicated at increasing volumes and across more settings with the same or better outputs
- how to measure allied health workforce impact,
- how to communicate the public health component of the role within the allied health workforce professions, as well as the clinical and primary health care roles,
- how to communicate its role to wider stakeholders,
- how to influence research on the allied health workforce and its contribution which demonstrates both economic evaluation and quality of care?

Meeting these challenges can in part be achieved by more effective work across the different professions, disciplines and occupations that comprise the AH workforce; this should be combined with a willingness of these occupations to also take the lead on working across other professional and educational boundaries. It also requires consistent "messaging" in non-technical terms to the broader policy and public domain about the contribution being made by the AH workforce. A recent conference presentation in the UK sets out this challenge

Conference presentation: Empowering allied health professionals to transform health and care services 9 Dec 2014 The King's Fund, London
http://www.kingsfund.org.uk/events/empowering-allied-health-professionals-transform-health-and-care-services
Prof David Oliver : President Elect, British Geriatrics: Service needs to be " a multidimensional, interdisciplinary diagnostic process to determine the medical, psychological and functional capabilities of a frail older person, assess their environment and social support, in order to develop a co-ordinated, integrated plan for treatment and long-term follow-up"   His challenge to AHP is: • Could be better self-advocates–celebrating what you offer and getting that wider attention   • Strength in numbers?   • Ensuring that when workforce is planned, AHPs are never an afterthought   • In the vanguard of offering solutions to wicked problems "what about us"? *e.g. many of key issues raised in Francis (Report 2013) & response concern nutrition, loss of function, discharge*   • Role flexibility in future workforce   • Sometimes responsible for convoluted system rules, hand-offs, duplication of assessment/referral   • Academic and research presence and contribution to training of other disciplines

6.5 Functional analysis and health outcomes should be the focus of Allied Health development

As noted above, much effort within the allied health workforce has been focused on defining the meaning of AH in order to place individual professions and occupations. This has the effect of constructing artificial boundaries between what in practice is contributed collectively (and sometimes in an integrated manner) by different parts of the workforce, and has detracted from determining how these professions all contribute to optimising function[53] , which is viewed as the most common outcome.

Clearer AH dynamics have been proposed from using four broad groupings. These are
- Allied Health : therapy,
- Allied Health : diagnostic and technical/ manufacturing,
- Allied health : scientific
- Allied Health: complementary services.

In this approach, rather than a focus on "who is in and who is out", the AH disciplines are located in their primary mode of delivery (functionality). A degree of semi - permeability exists across the four bands for disciplines which straddle more than one function. This also effectively assists with the mapping of:

- which functions are best delivered on the basis of a single profession and which are best delivered as multi-modal and multi-disciplinary
- the vertical and horizontal substitution, delegation and supplementation which can be used in the pursuit of economic outcomes.

One key limitation in determining the impact of workforce productivity, or cost constraint, or access, or quality and technology on large scale reconfigurations [54] is that evidence is uncertain or lacking for these as individual elements.

However, in the search for the "right" models to deliver better functional outcomes (both workforce efficiencies-cost; and population health outcomes – cost effectiveness) there is a strong momentum for multi-modal approaches. For example:

- Medical clinical leadership is clear about "multidimensional, interdisciplinary, diagnostic process to determine the medical, psychological and functional capabilities of a frail older person, assess their environment and social support, in order to develop a co-ordinated, integrated plan for treatment and long-term follow-up"[55.] This may be condition or complex-needs specific but the learning is about what these models can achieve that single discipline models cannot – more holistic management through coherence of actions and starting from the consumer need[56]
- Broader workforce approaches identify the efficacy of multi-model approaches [57]. Six key factors have been identified to ensure that low-cost does not mean low-quality: Pathways, People, Procurement, Environments, Technology and Management. These factors are inter-dependent and the models are "dictated by the size and nature of the markets they serve".

Subscribing to these multi-modal approaches may be a way of enhancing the interactions and functionality across the four identified AH groupings.

6.6 Integrated care is a strong platform for optimising allied health workforce contribution

AH roles very often depend on interfaces across care teams and across sectors of care, with a focus on long term care conditions and working toward better health and wellbeing, supported by AH diagnostic disciplines. As such, "integrated care" would seem to be a strong platform for AHP given these modes of delivery and range of paradigms of care. The challenge is to ensure that we look across sectors for coherence. Whilst there is relatively good information on public sector AH in Australia, there is less focus on ensuring private sector AH can optimise their contribution to be an equal part of the integrated solution.

Integrated care underpins an effective combination of service and workforce models which can deliver:

- Macro level systems: structures, processes and techniques to reduce fragmentation and to fit with the health needs of populations across the continuum of care
- Meso level organisational integration: coordination of care for particular groups of patients and population via organised provider networks, pooling of skills across boundaries, with standardised referral procedures, service agreements, joint training, and shared information systems
- Micro level management of individuals: through case-managed multidisciplinary team care, with a single point of contact and coordinated care packages[58].

There is growing evidence about the scope for integrated care to provide a framework in which AH workforce could take on a more prominent role. A Kings Fund's review on integrated care at the system level reported on evidence and experience from around the world and concluded that integrated care brings benefits[59]. The Kings

Fund noted that these benefits often arise when factors are in place that are not usually studied in formal evaluations by health services; these factors include effective leadership and skills in implementing complex service interventions.

A more recent EU funded rapid review[60] of systematic reviews and meta-analyses on integrated care generally accepted that integrated care models have a positive effect on the quality of care, health outcomes and patient satisfaction, but was less clear on how cost effective they were, and that the evidence-base was rather weak. It concluded that integrated care should be seen as a complex strategy to innovate and implement long-lasting change in the way services in the health and social-care sectors are delivered.

6.7 There is not a one size fits all prototype.

There is not one single/universal model or approach which AH can adopt to deliver better outcomes as context will be the strongest driver of the type of reform of the AH workforce must engage in [61]. Therefore, to support full engagement of the AH workforce and to optimise its contribution there are several key aspects which must be given consideration:

1. The bottom up drivers (geographic, population, clinical, professional, regulatory contexts) will determine what workforce reform is required. This needs to be judged first and foremost from the perspective of what is best for the patient, not the service or staff. It needs to be matched by top-down support[62].

    Regions have a key role to play because they are close to their populations and have the power and skills to develop efficient public health policies that may help to reduce health disparities by changing the distribution of the social determinants of health[63].

    The new Primary Health Care Networks and their relationship with LANs would seem to offer a primary focus of engagement for all types of AHP (planning, delivery, research). However, there is little health services research focusing on AHP interactions and collaborations with other health professionals, and the reporting often lacks detail about specific professions. Research by and about AHPs is hampered by their diversity and relatively small numbers within specific professions. Other barriers include fragmentation, inadequate integration of their services, and there is a relative paucity of research, diversity of settings, and the fact that AHPs often provide complex multidisciplinary interventions with outcomes that are difficult to measure[64].

2. "Full scope" should be considered; not just "extended scope "
    The review of the Queensland Models of Care identified the need for significant progress towards achieving full scopes before expanded scope is considered[65].
    "Clinicians need to work to their full scope of practice. We will challenge the 'myths' of what is possible and be open to new ways of working and models of care. We need to break down traditional barriers between professions, build clinician leadership and promote a culture of respect for each other's knowledge and skills"[66].

    Facilitating change towards full scope of practice is primarily dependent on redefining organisational processes, reviewing team roles and functions, further education and training (often the first consideration) where necessary, and supporting changes in team culture.

    So location-specific roles and tasks for AHP   may include first contact in the care pathway (audiologists autonomously receiving and triaging referral); making direct referrals to medical specialists (psychologist to paediatrician); requesting investigations (e.g. plain x-ray by podiatrists), prescribing equipment and consumables (e.g. home enteral nutrition); admission decisions (e.g. into subacute care; short stay), and criteria-led discharge. It is important to recognise where this should be delivered through working at full scope without recourse to expanded, or advanced, scope.

3. How to implement change will require as much attention as the 'what to change'.

Better Skills, Best Care garnered a number of key findings over the seven years of its existence:
- successful workforce redesign and reform requires leadership at health service executive and clinical levels
- consumers are accepting of new workforce models and receiving care from different types of health workers in workforce substitution models, when provided with timely and appropriate levels of information about the change
- providing health services with examples of success and tools is rarely sufficient to drive reform up-take in the absence of other system incentives
- health workforce reform is about achieving cultural change. It takes time, active leadership and the change management approach is critical
- a successful workforce reform agenda needs to encompass three strands: activity to progress role reform (including substitution); an enabling industrial relations strategy; and a progressive change in culture at health service level to increase the competence of health service leaders to deliver workforce change (including executives and clinicians).

4. Continual piloting should be reduced in favour of implementation of available evidence.
This requires embedding the evaluation of impact and a clear departmental pathway and decision-making process to determine when a pilot should become a widely implemented reform[67].

5. As redesign of roles often relies on availability of other substitution workforce, clinical leadership and organisations must support the introduction and use of appropriate substitution workforce elements such as assistants.   Successful implementation requires consistency in:
- clear authorisation of the priorities to use assistants in the model of care, and a shared understanding across workforce, managers and employees
- planning how to use the mix to drive a new way of working and discontinue the old ways
- protocol-driven care to bridge the transfer of tasks from one group to another
- human resource management and support for middle managers, consultation with key stakeholders and appropriate incentives to retain assistants
- team productivity measurement to support revision of roles and skills mix of the care team [62].

6. A whole-of-workforce approach to reform should be used to ensure change is scalable, sustainable and replicable.
If the focus of reform only encompasses one role then this is unlikely to lead to a productivity gain. It may only increase service uptake and costs around unmet need. The flow-on effects of a single intervention must enable and deliver change (and thus increased productivity) in other workforce groups to make a sustainable difference.

7. The scope for different uses of teleheallth / e-technology must be considered by all AH disciplines as an enabler, depending on location and profession. However, the commonality is that it is a mechanism to help staff manage workflow more efficiently and for consumers be an active part of their care. This is viewed as a key factor in delivering low cost and high quality care[68].

6.8 Next steps

This review has identified a range of key sources in the evidence base on health workforce and reform. The main lessons synthesised from these sources are summarised below in the table. It has become apparent in the reviews that there is relatively little detailed and compelling evidence related to the contribution of the allied health workforce. This absence has been noted in Australia and in other high income countries. It does not reflect an absence of contribution by the workforce, but rather a relative lack of examination of the workforce with the objective of achieving broader policy engagement and influence.

Some of the reasons for the limited evidence base have been discussed in this paper. These include:
- an absence of visibility related to the diversity of services provided and roles undertaken within the umbrella heading of "allied health"
- AH workforce is deployed throughout the continuum of care, in multiple settings and often in relatively small numbers. This means that the workforce is often low density but widespread and it cannot replicate the profile that, for example, medicine enjoys through both its broad base and the narrow, high profile, specialist base.

The review has revealed a number of key lessons and explored the success factors for delivering strategic certainty. They can be summarised as follows:

Steps	Element	References used
1	USING A FUNCTION-BASED APPROACH TO UNDERSTANDING ALLIED HEALTH	Turnbull
2	DETERMINING STRATEGIC INTENT FOR AH WORKFORCE REFORM	
3	a) Context : local priorities, target condition groups, organisational environment / services Anticipated strategic benefits (tied to measurement)	Hindle Nolte WHO-EU Bohmer & Imison Bougeault
4	b) Systems thinking • What should AH be responding to • What is AH doing • Why - rationale • Where does AH need to be positioned • What should it be influencing?	WHO Imison Grimmer Nelson Oliver Valentijn Better Skills, Best Care Vic PHCRIS
5	WORKFORCE MODELS	
	Determine where full scope of practice should be achieved, to work in single disciplines through to multi-,inter-,transdisciplinary modes: • In what skills – mix • What scale of implementation	Better Skills Vic Qld Health HWA
	Expanded scope of practice ONLY where: • full substitution can occur • delegation of routine roles is possible • the context / priorities are clearly articulated • the impact on cost and effectiveness can be measured	Kings Fund Bohmer & Imison
	Governance which articulates inter-dependent needs • Scopes of practice change AND • Skills – mix AND • Management of skills for enhancement, scale, substitution etc	Dubois and Singh Bougeault
	Integrated Care, where the factors are clear • Drivers – quality, health outcomes, or cost effectiveness • For target conditions • For complex service interventions, not possible by one organisation or team alone • For contemporary health needs (eg early intervention)	Curry & Ham , Kings Fund Euro WHO Raven Martinex Gonzalez Boult HWA
6	ENABLERS	
	MACRO: structural MESO : organisational MICRO : individual / team clinical	Nelson (Canadian Academy) Valentjin Grimmer (both) Nancarrow Bougeault
7	SUCCESS FACTORS Visibility	
	Visibility through clarity of roles and contribution, service *and* workforce redesign, culture, leadership, guidelines and policy/ regulatory support, dissemination	KPMG De Silva (PHCRIS) Health Foundation

The challenge for those working within allied health, and representing them in broader policy discourse, is to achieve a step change in policy influence. This requires marshalling the available evidence and by commissioning new evidence that "speaks" to this broader audience in a language, which engages and influences. The challenge for policy makers is to access and give fuller consideration to this evidence in determining overall policy direction in funding and planning optimum service effectiveness, as it grows more detailed and complete.

7. Looking forward: Strategic positioning of the allied health workforce

7.1 Introduction

This review highlights that there has been progress in analysis and identification of policy solutions to AH workforce challenges. There is, as yet, less evidence on impact and outcomes, despite a growing evidence base.

The AH workforce, as individuals, as professionals, and as a major component in the overall health workforce is making a significant and growing contribution to health improvements, but this contribution remains under-recognised in many health systems and countries.

There is also no one 'best model' solution for AH to adopt as the key is, in fact, connecting and contributing to local priority drivers and systems. Responding to context will be the strongest determinant of how well AH positions itself in the health environments.

There are several areas for action to improve the evidence base and shed more light on the role and contribution of AHPs. This will require a broad based, policy oriented perspective as single professions and more broadly as an AH collective to address their varying workforce challenges. This will enable engagement with policy makers and communities at large.

The main challenges, which serve as the focus for these collaborative efforts include:
- greater clarity of role, purpose and contribution of the allied health workforce to meet consumer needs and priority health targets
- action to address incomplete data on the workforce,
- research to contribute to cost/benefit analysis and demonstration of value of allied health workforce roles
- determining effective skills-mix and task shifting within the AH workforce
- more support for inter-professional education/ team working
- delivery of a culture that supports change readiness and is not focused on professional protection.

The evidence tells us there are three main aspects to create strategic certainty and effectively position AH to be "visible" on the health policy agenda:
- Shape the strategy related to the health priorities and local drivers (context)
- Select the models, scopes and skills management required appropriate to the context (the benefit plan)
- Build change capacity for consistent implementation and disseminate what works (visibility).

There will also be a need to look forward to identify likely broader and higher level changes in the Australian health policy and funding framework to identify opportunities for securing change. For example, the new Primary Health Networks look set to take on a more developed role in the commissioning and procurement of services (such as GP and hospital care)[69]. This could provide an opportunity to focus on more integrated models of care and commissioning health services that focus on outcomes rather than volume.

The aim will be strengthening primary care to keep people out of hospitals. If one body is responsible for purchasing primary care (such as GPs) and secondary care (predominantly hospitals it would be expected that

better use of intensive GP interventions could reduce the use of considerably more expensive hospital care. This will depend on the strength of multidisciplinary care around GP interventions. AH will need to be prepared for this critical role and the process of commissioning[70].

Whilst pooling of state and Primary Health Network budgets and focusing on joint commissioning of integrated services would be a major advance on the current siloed approaches to funding and service delivery, this would involve commitment from both state and Commonwealth governments and require a bipartisan approach for success over the longer term.

7.2   A framework to understand the strategic positioning of AHP

Irrespective of AH discipline or the extent of coverage of any decision to work collectively, there is a need to have a framing focus for such efforts, to ensure consistency, applicability, and outcome focus. One such framework, which appears to have real relevance, is the Canadian model on optimizing scopes of practice[71]. This provides a robust mechanism from which to strategically position AH in the Australian reform agenda (see Figure 2).
It provides a logical analysis around:
- What AH needs to respond to and where 'we are', describing the insufficiencies of the present health care system
- Where it needs to be: highlighting the vision, context and target outcome indicators for patients, health care professionals, and the health care system.
- What it should be doing/ influencing and how AH can get there via attention to the enablers at practice level (micro inputs), organisational level (meso inputs) and structural or systems level (macro inputs)

Systematic mapping of the AH contribution in this manner:
- identifies the key health priority and policy challenges that AH must strategically contribute to
- the responses from AH – the results and current limitations
- establishes the priorities for optimising the contribution and effectiveness of the allied health workforce and appropriate visibility and evidence gaps; and within the broader reform agenda
- how AH should get there, singly and collectively and why it is doing that (evidence related to cost, quality, access)

Full development, and orientation, of such a framework is a strategic role of such as group as the Ministerial Advisory Committee for AH.

Figure 2: Optimising Scopes of practice. New Models of Care for a New Health Care System: (2014)

CONCEPTUAL FRAMEWORK:
Scopes of practice that support innovative models of care that better address population health needs and a transformed Health Care System

WHERE WE ARE

Current Canadian Health Care System characterized by insufficiencies around:

- Accessibility – particularly for marginalized and disadvantaged populations
- Care provided outside of business hours
- Wait times
- Health promotion including patient involvement and self-management
- Appropriate use of health care providers and resources
- Chronic care management
- Mental health care
- Elderly and end-of-life care
- Fiscal effectiveness and sustainability

HOW WE CAN GET THERE

Evaluation & Performance Measurement

Enablers and strategies for circumventing barriers towards innovative models of care optimizing scopes of practice

MICRO INPUTS
MESO INPUTS
MACRO INPUTS

WHERE WE WANT TO BE

A transformed health care system characterized by:

- A move from supply to need focused (needs determine models to scopes)
- A move from professional to patient focused
- A move from isolated, siloed professionals to teams based on non-conventional and conventional providers
- A move away from historic long term credential SoP to a model of team defined tasks to meet population needs; team allocates resources and responsibilities (task certification process to ensure competency)
- Individual regulation to combined/team accreditation
- Performance monitoring and evaluation that is aligned with these principles
- Funding groups rather than individuals (not necessarily health outcomes - process outcomes, reduction to ER)

MACRO INPUTS – Structure Level

Education & Training Context
- Education needs/requirements
- Assessment/standards/competencies

Economic Context
- Funding
- Financing
- Remuneration

Legal & Regulatory Context
- Legislation/Form of regulation
- Registration requirements
- Provider accountability

MESO INPUTS – Institution Level

- Governance
- Labour/CQI Processes
- Unionization
- Technology form & content
- Provider supply & retention
- Geography

MICRO INPUTS – Practice Level

- Team composition
- Team vision
- Degree of hierarchy
- Professional cultures
- Communication
- infrastructure

List of insufficiencies from: Nosmith L., Ballem P., Baxter R., Bergman H., Colin-Thomé D., Herbert C., Keating N., Lessard R., Lyons R., McMurchy D., Ratner P., Rosenbaum P., Tamblyn R., Wagner E., & Zimmerman B. (2010). Transforming care for Canadians with chronic health conditions: Put people first, expect the best, manage for results. Ottawa, ON, Canada: Canadian Academy of Health Sciences.

In order to develop fully such a framework for the specific purposes of the AH workforce in Victoria, the AH roles and functions and impact on other roles (whole of workforce approach) need to be considered at systems, organisational, professional, and clinical integration levels.

The outline frame set out below identifies key questions which need to be asked and answered, and draws from several key evidence/ policy sources, including the Framework to measure quality for AH care[72]; a model for Australian allied health aimed at flexibility in changing health service delivery and the workforce[73]; the "Fit for purpose" integrated care models for an ageing population Kings Fund[74]; a comprehensive conceptual framework based on the integrative functions of primary care[75]; and a focus on enhancing primary health care integration [76].

WHAT DOES AH DO CURRENTLY?	PRIMARY MODEL OF SERVICE DELIVERY ACROSS : • Diagnostic, therapy, production, scientific, and, complementary • For priority disease categories and priority presentations • In all settings eg public acute thro to community private PHC, depending on primary mode of service delivery eg delivery or care coordination • Provision of evidence or production of goods
HOW DOES AH DO IT?	WORKFORCE MODELS I SERVICE MODELS SCOPES- full, expanded, advanced; assistants, non-traditional roles SKILS MIX – for economic , quality, and access outputs SKILLS MANAGEMENT – vertical and horizontal substitution, delegation , supplementation , and complementation DISCIPLINE: single ; multi-d; inter-d; trans-d, & integrated care across sectors TECHNOLOGY enablement for access / self-management ORGANISATIONAL ENABLERS: governance, industrial frameworks, statewide guidelines and protocols, use of technology.
WHAT HAPPENS AS A RESULT?	OPTIMISING FUNCTION PROVISION OF EVIDENCE: • service effectiveness, access & responsiveness, • workforce productivity, costs and demand management ,substitutive care – not supply induced demand , flexibility • evidence for clinical approaches
WHERE DOES AH NEED TO BE (POSITIONED)?	ADDRESSING 3 ECONOMIC OUTCOMES: Utilisation - What could we do more at larger scale Cost effectiveness: natural units eg (QALYs) Cost and/or expenditure USING SIX KEY FACTORS to ensure that low-cost doesn't mean low-quality: Pathways, People, Procurement, Environments, Technology and Management. (KPMG)
HOW CAN AH INFLUENCE CARE? WHAT SERVICE IS MOST EFFICACIOUS?	VISIBILITY Effectiveness against the productivity priorities AH roles in clinical guidelines for effective care Enterprise: Improvement Maps/ leadership; Radical upgrade in prevention- health and well-being and multidimensional CCC Entrepreneurship: New and flexible models of care Economic Evaluation: Efficiency and investment

Appendix 1: Disciplines under the Victorian Ministerial Advisory Committee for Allied Health

Therapy disciplines	Science disciplines
Art Therapy	Audiology
Chiropractors	Biomedical Scientists
Dietetics	Diagnostic Imaging Medical Physicists
Exercise Physiology	Medical Scientist
Music Therapy	Laboratory/ Medical Technicians
Occupational Therapy	Nuclear Medicine Technology
Oral Health- hygienist and therapist	Optometry
Orthotics and Prosthetics	Orthoptics
Osteopathy	Pharmacy
Physiotherapy	Radiography (Medical Imaging Technology)
Psychology	Radiation Therapy
Podiatry	Radiation Oncology Medical Physicists
Social Work	Radiography (Medical Imaging Technology)
Speech Pathology	Sonography

Allied Health Professional Australia's (AHPA) Definition of 'Allied Health Professions'
AHPA uses and builds on Professions Australia's definition of a profession with additional specifications:
An allied health profession is one which has:
- a direct health consumer care role and may have application to broader public health outcomes
- a national professional organisation with a code of ethics/conduct and clearly defined membership
- requirements
- university health sciences courses (not medical, dental or nursing) at AQF Level 7 or higher,
- accredited by their relevant national accreditation body
- clearly articulated national entry level competency standards and assessment procedures
- a professionally defined and a publicly recognised core scope of practice
- robust and enforceable regulatory mechanisms

and has allied health professionals who:
- are autonomous practitioners
- practise in an evidence-based paradigm using an internationally recognised body of knowledge to
- protect, restore and maintain optimal physical, sensory, psychological, cognitive, social and cultural
- function
- may utilise or supervise assistants, technicians and support workers.

Appendix 2: Allied Health Workforce data in Australia

AIHW (2013)

The AIHW report summarised that, in 2012, the total number of allied health practitioners (as defined above by AIHW) registered in Australia was 126,788:
29,387 (23.2%) psychologists
27,025 (21.3%) pharmacists,
23,934 (18.9%) physiotherapists,
14,307 (11.3%) occupational therapists,
13,376 (10.5%) medical radiation practitioners,
4,564 (3.6%)   optometrists,
4,533 (3.6%)   chiropractors
3,885 (3.1%)   chinese medicine practitioners
3,783 (3.1%)   podiatrists,
1,729 (1.4%)   osteopaths
265 (0.2%)   Aboriginal and Torres Strait Islander health practitioners, registered.

The proportion of registered practitioners actively employed in their profession ranged from 76.2% for psychologists to 92.3% for podiatrists.

Health Workforce Australia published a series of assessments on individual allied health professions in 2014, within a broader focus on health workforce dynamics[77]. These include physiotherapy, podiatry, optometry, pharmacy, and dietetics

HWA's assessment of this workforce focused on three components:
1.   An assessment of existing workforce position – used to assess whether workforce supply matches demand for services (whether the workforce is in balance or not) at this point in time.
2.   A set of indicators – collectively called the workforce dynamics indicator – used to highlight aspects of the current workforce that may be of concern into the future.
3.   Comparison with other registered health occupations.

HWA reported a national assessment of 19 health occupations including several that fall under the "allied health workforce" title.
The most prominent identified areas of concern in the allied health workforce were:
- the duration of training (longer lead in time) (e.g. optometrist, osteopath, pharmacist, psychologist)
- relatively high dependence level on internationally trained professionals (e.g chiropractor, medical radiation practitioner, optometrist, pharmacist, physiotherapist, traditional Chinese medicine practitioner) and
- older age profile (psychologist and traditional Chinese medicine practitioner).

Allied Health Assistants
Health and community services currently employ 1,375,000 health and social assistance workers (12 per cent of the population). A conservative estimate identifies a further increase of 427,000 workers by 2025 (35 per cent), with an increased reliance on VET qualified workers [78]
However, the exact numbers of AH assistants within that volume are not definable or reported.

Appendix 3: International Variations in Definitions of the AH workforce

In the UK, sixteen health and care professions/occupations are regulated by the Health Professions Council (HPC, http://www.hpc-uk.org), with whom all practising AHPs are legally required to be registered. It currently has around 328,000 registrants. In the USA, the term "allied health" is used as a looser categorisation of professions or occupations, and some of the allied health professions have personnel regulation through licensure that is controlled by each of the 50 States. The US Health Professions Career and Education Directory lists more than 60 occupations generally considered to be "allied health", however many are different levels within the same overall field or discipline (e.g. physical therapist/physical therapist assistant), or have generic names/titles (e.g. clinical assistant and medical assistant).

The standard definition of classifications of occupations most used in this type of approach is the International Standard Classification of Occupations (ISCO).

Tables 1 and 2 show how health profession and health "associate profession" occupations are categorised by ISCO. It becomes clear immediately when examining these tables that the allied health workforce is not fully categorised or differentiated. A cursory glance at Table 1 shows that some allied health categories – physiotherapists, dieticians/ nutritionists, audiologists/speech therapists receive their own (or dual) classification; and some others such as occupational therapists and podiatrists are covered explicitly, but in combination, within a catch-all category of "Health professions not elsewhere classified".

Table 1: Health profession classification

2211	General Medical Doctors
2212	Specialist medical practitioners
2221	Nursing Professionals
2222	Midwifery Professionals
2230	Traditional/complementary medicine profs
2240	Paramedical practitioners
2261	Dentists
2262	Pharmacists
2263	Environmental and occupational health and hygiene profs
2264	Physiotherapists
2265	Dieticians and nutritionists
2266	Audiologists and speech therapists
2267	Optometrists/ophthalmic opticians
2269	Health professionals not elsewhere classified (OT, podiatrist etc.)

The issue is even more pronounced for the "associate" role (Table 2). Only physiotherapy technicians/ assistants get their own billing; most other AHP categories are combined together and largely individually invisible, in the "Others not classified elsewhere" category

Table 2: Health "associate profession" classification

3211	Medical Imaging/equipment techs
3212	Med/path lab techs
3213	Pharmaceutical techs and assistants
3214	Med/dental prosthetic techs
3221	Nursing associate profs
3222	Midwifery associate profs
3230	Trad/compl med associate profs
3251	Dental assists
3252	Medical records techs
3253	Comm health workers
3254	Dispensing opticians
3255	Physiotherapy techs/assts
3256	Medical assistants
3257	Environmental and occupational health inspectors and associates
3258	Ambulance workers
3259	Others not classified elsewhere
3211	Medical Imaging/equipment techs

Source: ISCO (http://www.ilo.org/public/english/bureau/stat/isco/isco08/index.htm)

The allied workforce becomes even less visible at a higher level. The World Health Organisation (WHO), in its "World Health Workforce Atlas", uses 6 categories to analyse and provide country comparisons of the "health workforce": Physicians, Nursing and Midwifery personnel, Dentistry personnel, Pharmaceutical personnel, Environment/public health workers, and Community health workers.

OECD, covering the 34 high income countries, presents its analysis on health services and health workforce under 7 categories: physicians, midwives, nurses, "caring personnel", dentists, pharmacists, and physiotherapists. This means that another commonly used comparative data source does not allow identification or analysis of all allied health workforce at a similar level of dis-aggregation.

Appendix 4: Examples of Victorian pilots of role redesign

Diagnostic and Interventional Angiography Procedures St Vincent's hospital.	Role Expansion Within An Integrated Model Of Care Increase in volume of the full scope of practice workforce Rationale: Lack of interventional radiologists Senior DSA Medical Imaging Technologist (MIT) resources increased from 2.0 to 4.0 EFT Outcomes: a better workflow within a model of patient care for each unit.
Sharing Advanced Practice on Allied Health : Optometry **Neville Turner, Jonathan Jackson Australian College of Optometry**	Expanded roles for optometrists Shifting locus of care to PHC setting; triage/ intervention by non-medical workforce Outcome: • Seeing patients who otherwise would be seen in a hospital setting ; increased secondary care by acting as an onward referral location for patients with stable disease that require regular monitoring • Significant impact on reducing the Hospital waiting list and the number of new patients attending the Gen Eye Clinic increased • direct pathway for patients in need of Special Eye Clinic services • Step in improving workforce capacity and productivity by improving the utilisation of the existing skilled optometry workforce
Back pain Assessment Clinic (BAC) in Primary Care (Melbourne Health and Partner services - INWMML, Doutta Galla and Merri CHS) **Workforce Innovation Grants Program 2013-14**	Collaborative Model Of Care Advanced scope of practice for the physio and multidisciplinary care with a rheumatologist for people with LBP Current BAC referrals to specialist outpatient Neurosurgery, Orthopaedic or Rheumatology consultation; may wait longer than 18/12 for appointment (if referral deemed 'non-urgent'). Extended delays lead to the development of chronic symptoms, unrealistic expectations, costly and unnecessary tests and poorer health outcomes. Collaborative structure and principles to underpin service models and meet local health targets, top diseases and ASCs with target outcomes
Speech Pathology advanced practice Monash Health **M O'Rourke**	New role – substitutive care Fibre-optic endoscopic evaluation of swallowing • occured to meet service need, workforce shortage or to address waiting list or patient flow issues. • a restriction of practice prior to a formal credentialing process • Aiming to replicate overseas evidence of improved functional outcomes; reduction in pneumonia rates and more likely to leave hospital on standard diets
Multidisciplinary Post-operative Joint Replacement Surgery Clinic (Melbourne Health, St Vincent's Hospital, Alfred Health)	Expanded scope of practice Role Expansion: senior physiotherapists in certain orthopaedic cohorts = more accessible, efficient and flexible service delivery model. Substitution: consultants' time to be utilised to maximum effect, now focus on the more complex cases, or on patients who may require additional surgical intervention. Access: Waiting times for clinics may be reduced, with further flow-on benefits to the hospital and community.
Alfred Hand Therapy Clinic	Advanced practice OT / Hand Therapist • Elective Surgery screening • Therapist-Led Outpatient Review Clinic Rationale = surgery wait list blowouts ;Busy outpatient clinic • Consultant and registrar time taken up with 'review appointments' • Opportunity to release time for 'new' appointments or complex reviews • Substitute the need for specialist surgical outpatient review appointments with lower cost Allied health review appointments for specified conditions
Evaluation Of A Multidisciplinary Triage Model In The Persistent Pain Service At Austin Health **Prepared for the Workforce Branch, DHS Victoria November 2008**	Expanded scope of practice Expanding the role of the pain service's physiotherapist to perform triaging work. Outputs: • 32% reduction in acceptance of inappropriate referrals • 3-week interval between referral time and communication of triage decision to patient and GP. No communication previously. • 25 % increase in new appointments made for patients accepted to service • 8% reduction in missed first appointments • 6% increase in patients who are managed by physiotherapist and psychologist without input from pain physician. • Elimination of triaging responsibilities for the physician, allowing more time for clinical work
Victorian Department of Health Allied Health Assistant	Implementation program Greater utilisation of an assistant workforce is an important aspect of Victoria's approach to

	support workforce sustainability and improve the system's capacity to meet the community's health needs into the future and delivering related capacity for advanced practice opportunities for allied health practitioners. http://www.health.vic.gov.au/workforce/reform/assistant.htm
Scoping of an advanced radiographer role in Breast Screen Victoria (BSV)	Advanced Role BSV capacity for sustained improvement in the key performance area of the timeliness of service delivery, is primarily influenced by radiologist availability./ insufficient radiologist numbers. The 'bottlenecks' in the program were identified at the reading stage which resulted in delays in advising women of the outcomes, New approaches are being trialled to manage this supply problem: the project is to determine whether expanding the role of radiographers to include reading and reporting on screening mammograms is a viable approach

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