

**Governance options for effective interprofessional education: Exposing the gap between education and healthcare services**

**Short Title: Governance options for effective IPE**

Maree O'Keefe<sup>1</sup>, Dawn Forman<sup>2</sup>, Monica Moran<sup>3</sup>, Carole Steketee<sup>4</sup>

<sup>1</sup>The University of Adelaide

| <sup>2</sup> [The University of Derby UK](#)

<sup>3</sup>

<sup>4</sup>

**Corresponding Author**

Maree O'Keefe

The University of Adelaide

Adelaide

South Australia 5005

Ph: +61 8 8313 6864

Fax: +61 8 83133788

maree.okeefe@adelaide.edu.au

## **Abstract**

### Context

The increase in interprofessional models of collaborative practice and identification of health services as interprofessional organisations, sits somewhat awkwardly with traditional governance systems for both health services and educational institutions. Whereas health services have a primary focus on assuring competence and safety for healthcare practice, educational institutions have a primary focus on assuring academic standards within specific qualifications. Bridging the gap between these two systems with a workable option has proven challenging, especially in relation to interprofessional education (IPE).

### Objectives

Given the need to ensure ‘work ready’ graduates within a more interprofessional and collaborative workforce, it is important to review the quality assurance governance models that are in place and to consider which of these existing governance systems, if either, is the more appropriate model for enabling and supporting IPE.

### Methods

This paper describes current issues in relation to governance for quality assurance, summarises the current state of research in the field and discusses potential governance options moving forward.

### Discussion

Given that existing governance models are not meeting the challenges of IPE, there is a need to achieve greater alignment between the academic and health service governing systems.

## **Key words**

Governance, interprofessional practice, activity theory; interprofessional education

## Introduction

The continuum from the beginning of a student's education to that individual's contribution as a fully trained health professional delivering effective care to patients, clients or communities spans many disconnected governance systems. The early part of the educational journey sits predominantly within higher education institutions such as universities where governance has very much an academic focus, including the maintenance of academic standards. There is a focus on student learning outcomes that culminate in the award of an appropriate academic qualification. As the student progresses through their studies they participate in a number of placements within health services. Although the university continues to have primacy in matters of academic quality assurance, the impact of health service requirements for competence and safety to practice become increasingly relevant. These are in part enacted via professional accreditation requirements on universities to ensure student learning outcomes meet specified requirements for safe and competent professional practice in a particular health discipline. Following graduation when the newly qualified health care professional enters health services as an employee, health service quality assurance and governance processes take centre stage.

There are many different governance models for different purposes and a variety of definitions.

However, there are key elements present in most definitions as captured in the following:

*Governance encompasses the system by which an organisation is controlled and operates, and the mechanisms by which it, and its people, are held to account. Ethics, risk management, compliance and administration are all elements of governance (Governance Institute of Australia)*

Across the world there is an interdependency between health profession education and health care delivery systems. Both aspire to the same goal, that is, to serve the health care needs of patients, populations and society at large. Moreover, the ultimate goal of any health education system is to provide a workforce for the health care delivery system. However, despite this link, the two systems largely operate discretely (IOM, 2015, p. 20).<sup>4</sup> Too often, strategic and policy decisions within each

system are made without adequate consultation and consideration of the impact they will have on the other, thus leading to poor alignment of priorities and ultimately, ~~and the risk of to~~ costly and inferior outcomes for patients (Earnest and Brandt 2014)

In Australia in recent years the health practitioner and higher education regulatory landscape has changed significantly with the establishment of the Australian Health Practitioner Regulatory Agency (~~AHPRA~~) and the ~~the~~ Tertiary Education Quality and Standards Agency (~~TEQSA~~) ~~Higher Education Standards Framework (Australian Health Practitioner Regulatory Agency, Tertiary Education Quality and Standards Agency)~~. The existence ~~now~~ of separate regulatory systems around health care and higher education has brought into sharp focus the different quality assurance paradigms in place (O'Keefe and Henderson 2012). For health profession students and recent graduates, the result can be limited alignment between the governance processes that drive student education and to which they are exposed at university, and the governance processes they must adhere to in the health workplace, where, even before graduation they spend significant periods of their tertiary program. This lack of alignment makes more complex the task of optimising quality and thus the ultimate achievement of desired health outcomes for the community. Navigation is made even more difficult by the organisational separation between 'health' and 'education' at all levels of governance structures and the reality that separate organisations generally deliver each. In environments with such system complexity, localised arrangements and alliances (geographical, convenience or other) can evolve as a means to 'get things done'.

The lack of a functional governance system to support and scaffold educational initiatives dooms many. This ~~is~~ particularly the case with initiatives ~~s~~ associated with developing and implementing interprofessional education (IPE) within health profession curricula. The literature is brimming with examples of innovative and well-conceived IPE curriculum initiatives that sit alongside extensive catalogues of barriers and impediments to sustainable implementation (Olson ~~& and~~ Bialocerkowski 2014, Nisbet et al- 2011, McKimm et al- 2010, Ho et al- 2008, Pecukonis et al- 2008, Hoffman ~~& and~~ Redman-Bentley 2012, Kezar ~~& and~~ Elrod 2012, Forte ~~& and~~ Fowler 2009, Fook et al-2013,

Acquavita et al- 2014, Sunguya et al- 2014, Meleis 2016). The disappointment experienced by educators when, for example, an interprofessional curriculum initiative is not successfully sustained can be real. Where significant barriers to success relate to governance issues, these may not be readily appreciated by the local curriculum champions who can only assume that the problem lay with the educational initiative, or indeed, with them.

The increase in acceptance and prevalence of interprofessional health teams delivering services using interprofessional models of collaborative practice as well as the increase in identification of health services as interprofessional organisations (Kuipers et al 2014) presents challenges to traditional governance frameworks in health service providers. The greater the level of interprofessional collaboration in health care settings with attendant requirements for fluidity in structures and relationships between individuals from different disciplines, the greater the complexity that emerges. There are calls for governance systems that support team-work while at the same time coping with the necessary improvisation and, at times, blurring of professional roles within a single instance of patient care (Lingard). Existing models of governance within bodies that support the education of health professionals, such as registration boards, professional accreditation councils and university faculties and schools, are predominantly uni-professional. But by its very nature, IPE sits across many individual disciplines and health professions. The consequence of this is that there are no natural representative organisations with this clear remit or associated interprofessional governance structures or traditions assuring its quality in either the academic or health service contexts. Furthermore, it is not yet clear if any of the existing governance systems, are appropriate for IPE and subsequent interprofessional practice in health care settings. With an increasing focus on achieving a more interprofessional and collaborative workforce, and the need to deliver ‘work ready’ graduates the question must be asked as to which of these existing quality governance systems, if either, is the more appropriate model for enabling and supporting IPE.

### **Interprofessional Education Academic Governance**

Accountability is a key driver of academic governance in higher education institutions today. As recipients of public funding, universities are under mounting pressure to demonstrate that their programs deliver value for money and that graduates will enter the workforce with relevant knowledge and skills to meet industry needs. Academic governance, therefore, is ... *“an important tool to inform the labour market about graduate skills and competencies to guarantee that certain minimum standards are met and to ensure that the qualification awarded meets its stated purpose”* (Hénard & Mitterle, 2010).

Most higher education institutions convene an academic board (or equivalent) to manage academic governance. Academic boards and their committees provide a framework of *“policies, structures, relationships, systems and processes that collectively provide leadership to and oversight of a higher education provider’s academic activities ...”* (TEQSA p. 1, 2017). Their purpose, amongst other things, is to establish standards for teaching, research and educational programs, and to monitor them in a continuous cycle of improvement.

Quality assurance is a primary function of most academic boards and is what Vilkinas and Peters (2014) refer to as an ‘internal focus’ of academic governance. Other, common internally focussed governance activities relate to policy management and control of admissions requirements. Externally focussed governance responsibilities, such as scanning the environment for changes in the sector and developing relationships with external bodies are less evident in academic boards’ terms of reference (Vilkinas & Peters, 2014), which is problematic given the need for institutions to keep abreast of industry needs.

This problem is exemplified further when it comes to governing the quality of IPE. The primary purpose of IPE is to prepare graduates for the health workforce. If governing bodies in higher education are not attuned to the health service sectors’ workforce requirements then standards in the quality of IPE activities will be tenuous at best, and non-existent in worse-case scenarios. Even those boards whose internally focussed processes provide robust oversight of the quality of educational

programs, monitoring the quality of IPE is challenging given that it spans multiple disciplines and programs. These concerns are beginning to resonate more broadly across the higher education academic community as they struggle to work within traditional academic governance structures that are strongly discipline based in a world that is becoming increasingly interdisciplinary (Hannon 2018).

There is very little literature available to guide considerations of appropriate academic governance models for IPE activities to ensure appropriate academic standards are maintained. A recent search over 10 years of publications yielded only 11 articles, none of which addressed academic governance as the central consideration (Steketee and O’Keefe unpublished data). The most common approach encountered was one where governance processes and accountabilities were centralised within the senior academic administration of the higher education institution and relatively independent from any of the participating disciplines. Unsurprisingly, successful oversight of academic quality was largely related to the extent to which stakeholder disciplines were actively engaged in decision making functions. Other approaches referenced tended to describe more distributed roles and responsibilities, or even the creation of completely separate entities outside the institution to implement and monitor IPE activities. In each case the various approaches had particular strengths and limitations in supporting academic leadership and student learning. The persisting challenge of ensuring effective interprofessional governance within traditional university and/or health service structures remained.

An obvious solution to this problem might be for governance bodies in higher education to work more closely with those in the health service sector in assuring quality outcomes for students. However, given the discrepancy between the primary focus of governance for these two entities, models need to be articulated that bridge the governance gaps. If the focus for higher education academic boards is quality control of its educational programs, and the focus for health service providers is the quality of patient care, then models that translate both of these aims are required.

## **Quality and safety standards in health, an Australian example**

As has been identified earlier in this paper, whilst there is an interdependence between health profession education and health care provider systems around the provision of an appropriately trained future health workforce, there is a lack of shared governance models between the two reflecting differing institutional priorities. In Australia as in many other countries, the health provision landscape is complicated by diversity. As a large country comprised of federated states and territories, health services are not delivered by a single entity. A complex mosaic of service provision is funded by a mixture of centralised primary health care funding (from the Federal Government), and hospital and community care funding (from individual State Governments). In addition, both federal and state governments tender Not for Profit and For Profit health providers to deliver services based on particular needs or environmental factors.

Over and above these variations in organisational design across large and small service providers, ~~though~~ there are commonalities in their organisational values, mission statements and strategic plans. A review of governance documents (mission statements, organisational values and strategic plans) from six of the largest national public health service providers reveals a shared foci of client centred care, best practice health care, evidence-based practice, sustainable workforce and innovation in technology (Department of Health and Human Services Tasmania, NSW Department of Health, VicHealth, Queensland Health, South Australia Health, WA Department of Health). However, what was absent was any specific statement on their commitment to provide undergraduate health professional education let alone undergraduate IPE. Whilst one might speculate that this level of operational detail would not be explicitly articulated in higher level organisational plans, the absence of an undergraduate educational focus suggested that educational responsibilities towards the next generation of health professionals may not represent a strategic planning priority in many major health organisations.

Despite this lack of focus on educational activity, virtually all Australian health profession students must complete some formally assessed work-based training (in some cases as much as one third of the duration of their program) in health services external to their academic institutions in order to meet the requirements of their degree and be eligible for professional certification. At local levels a variety of arrangements have evolved between the education institutions and health service providers to allow this training to take place. These include the execution of individual contracts between university programs and hospitals for the provision of student education, the development by health services of internal educational units to coordinate all student (and workforce) educational activities, and a variety of paid and incentivised arrangements to secure the essential clinical placements required by thousands of students every year. Whilst local arrangements have the benefit of reflecting local priorities, there is a need for robust governance structures across the sector to ensure ongoing support and sustainability.

The bulk of responsibility for providing clinical learning (term used here to reflect all work-based learning) often rests with individual frontline clinicians who are already carrying a full caseload. For these clinicians their responsibility to patient care must always come first. The policies to ensure patient safety of individual organisations can at times dictate and possibly limit student access to authentic patient care. In response, many health education programs have introduced simulated interprofessional team training for students.

Leaving aside considerations of the complexities of assuring academic and professional standards, authentic IPE experiences are challenging to replicate in clinical settings as there are limited examples of interprofessional teams positioned to offer interprofessional team based and team assessed student learning. Where these clinical team models do exist, they have often been established as pilot programs or as project funded programs in addition to rather than in place of normal practice (Mellor [et al](#), [Cottrell & Moran](#) 2013). With an emphasis on collaborative practice, IPE is drawn to

governance models built around distributed leadership. Whilst clarifying the exact definition of distributed leadership is difficult, it seems commonly understood to have value in linking collegiality, identity, participation and influence while also accommodating large numbers of actors (Bolden et al. 2009, Gosling 2009) However, this rhetorical function may not translate to more practical applications. In addition, students are usually placed in uniprofessional supervision and assessment settings.

### **Theoretical considerations**

Activity theory may provide some insights into the way in which current institutional governance arrangements in relation to IPE might be examined and understood (Engestrom 2000, Engestrom 2004, Greig et al. 2012, Reid et al. 2015). From this frame of reference, the various goal-oriented activities that are undertaken, such as student learning, patient care, or student clinical supervision, consist of a number of different activity systems. Within each activity system there are people working to achieve a particular objective or object, using various methods and tools whilst also managing the prevailing organisational structures and rules. The overall purpose of these individual activity systems is to achieve an overall outcome that is shared. For example, an overall outcome might be to ensure safe and effective prescribing of medication. Associated activity systems might include teaching health profession students about prescribing (object) and pharmacists checking medication prescriptions provided to patients (a different object but the same overall outcome).

If a change is required to the overall outcome, this may also require changes to one or more objects and associated activities. Sometimes there may be a need to cross the 'boundary' between previously separate activity systems to realign work objectives with those of the new system (Engestrom & Sannino 2010). Such movement between activity systems may be facilitated by so called 'boundary objects'. These are objects that have meaning in multiple activity systems, but that can have different

functions within each individual system (Starr & Griesemer 1989, Akkerman & Bakker 2011). In the example given above, the drug chart in a hospital might represent a boundary object.

One of the attractions of activity theory as a lens to explore aspects of IPE academic governance arrangements, is that it takes account of the inherent flexibility and at times unpredictable nature of interprofessional activity and the impact of contradictions within activity systems. Within any activity system, tensions will arise if the object is difficult to achieve. The IPE literature is awash with these contradictions. As just one example, if there is a curriculum objective to engage students in IPE activities, and a separate objective to achieve an optimally efficient timetable this latter activity may require that activities for students from different professions are not aligned, resulting in tension around trying to achieve both objects. As the timetabling activity is likely closely aligned with institutional governance processes, the overall outcome is likely to be a compromise on what is achieved through the IPE curriculum.

In complex environments, such as universities and health services, many interrelated activity systems will co-exist, and contradictions may arise between different activity systems. Within activity theory if sufficient tension arising from such contradictions is generated, changes to the object of one or more activities may ensue (Engestom & Sannino 2010). Where there is tension between, for example, IPE and discipline teaching, the transformed object might be one where IPE and disciplinary learning occur together. In this context there is the possibility of professional accreditation standards acting as boundary objects facilitating change as they have meaning in both education and health service contexts. The value and potential of accreditation standards in contributing to effective academic governance is not yet fully understood (Boulet & van Zanten 2014), let alone potential applications in IPE.

## **Discussion**

Governance systems at the health services level must cope with many overlaying functions and intertwined activities. Reflecting changing health care practices, there is ongoing debate regarding the

most appropriate governance systems to ensure organisations meet the needs and expectations of their communities, operate within appropriate structures and support the operational delivery of services. These drivers are quite different to those shaping governance systems in universities. When health profession students are undertaking clinical placements in healthcare settings as part of their education, there is a crossing over from education to health service systems with attendant implications for governance (O’Keefe et al- 2016). As an illustration of this complexity, successful management of student clinical placements in health services has represented a real challenge to universities. This is not just in the need to support effective liaison with multiple external organisations, but also to maintain academic governance requirements in an environment that is configured for health care, not education, and one that has a different set of governance foci.

Careful consideration is required to identify the most appropriate level of governance of IPE, be this local health service, regional health services, university or government, state or federal. Closely associated is the consideration of whether to adopt new models of governance or to modify existing systems. If the latter, the nature and extent of changes that might be required to accommodate such an outcome need to be carefully scoped. In some ways the requirements for IPE align more comfortably with the governance systems for assuring quality and safety of health care and those around the quality and appropriateness of health profession practitioner education, than it does with uniprofessional education.

Leaving aside the specific considerations of IPE, there is much to be gained if higher education institutions and health services providers can confirm and articulate the intersection of key governance processes such as quality assurance outcomes. A process of identifying and matching the goals and expectations of educational, professional and health services would highlight gaps or mismatches in such a complex context. Importantly, active promotion of a consistent standard of graduates across the sector and greater relevancy of content, learning and assessment in courses of study would be of universal benefit. While this work appears relatively seamless in principle, the

challenge is in enacting this alignment so that there is congruency across higher education requirements, demonstration of professional standards and providing a safe, competent and appropriately trained health workforce.

For many, considerations of governance are intimately related with considerations about “how power is distributed and shared, how policies are formulated, priorities set and stakeholders made accountable’ (UNESCO, 2017).<sup>6</sup> We would add that in an interprofessional context we need to ensure there are agreements for involvement of all the professions, a commonality of language and a distribution of leadership and power with a clear focus at all times on the end user or patient. There is therefore a need to develop an enduring governance structure for IPE in the health professions – a model that spans and unites sectors and disciplines. Within healthcare many of the senior leadership teams have more than one profession involved. While they might not meet the definition of being interprofessional in terms of being highly collaborative, it is important to recognise what is already in place and build on these foundations.

The challenges articulated in this paper relate to health professions. However, this particular context sits within a broader discussion in higher education around the need to develop ‘boundary crossing governance’ to sustain interdisciplinary education more widely (Hannon et al- 2018). It is possible that the full potential of health profession accreditation standards and processes as a key mediator between education institutions and health services has yet to be realised. Accreditation standards and associated competency statements for the new graduate are ideal boundary objects having meaning in each of the activity systems within education and health services. Within education settings, accreditation standards set out the educational requirements for the new graduate that then shapes the curriculum and defines specific professional learning outcomes. For health services, accreditation standards and competency statements provide clarity as to what can be expected of a newly qualified practitioner. A role for accreditation of health profession education programs in shaping longer term quality improvement and

practice is recognised (Albrebush et al- 2017). Similarly, accreditation standards have been proposed as levers for effective curriculum change in Engineering (Jolly & Mahieu 2016). Moreover, professional societies have been influential in promoting the requirements for and recognition of interdisciplinary research and collaboration in the promotion and tenure policies and practices of universities (Klein & Falk-Krzesinski 2017).

In the case of IPE, integrated governance structures - whereby the two systems work in collaboration with one another - have the potential to better align the goals of health care education and health care practice. Bringing the two together under one unified governance structure would lead to a shared vision and shared accountability which would result in a more streamlined and cost effective approach to policy development and implementation. Reciprocal feedback loops between education and practice would be forged whereby education becomes a central mission of health care practice reforms and, on the flipside, health professional education is informed by health care needs. Such reciprocal arrangements would require a coordinated, collaborative and respectful approach to governance. We argue that a focus on the needs and expectations of both the citizens of the present and the community of the future, as the ultimate purpose of both systems, is critical to the development of an effective integrated governance structure.

When unified under a collaborative governance model, both health and education systems could be rewarded for working together to respond to communities' health needs, rather than focusing on their own discrete agendas. Activities, policies and funding environments would be aligned and focused on improving health and system outcomes. Indeed, joint responsibility for the robust evaluation of health and system outcomes would ensure that the mission of improving health care outcomes remained central to both systems.

## **Conclusion**

There is a need to bring greater alignment between the academic and health service governing systems to better meet the challenges of delivering quality IPE learning experiences for students. Integrated governance structures have the potential to bridge the gap between health professional education and health care practice and provide a road map for reciprocal influence whereby policy leaders in both systems work alongside one another to enact change in a unified and coherent fashion. The ultimate beneficiary of an integrated governance structure are patients. Activities, policies and funding would be aligned and focused on improving health and system outcomes. Indeed, joint responsibility for the robust evaluation of health and system outcomes would ensure that the mission of improving health care outcomes remained central to both systems.

### **Practice points**

- Health services are increasingly expecting education institutions to prepare ‘work ready’ graduates with interprofessional and collaborative skills
- Existing governance models that support high quality health professional education, such as registration boards, professional accreditation councils and university faculties and schools, are currently predominantly uni-professional with either an academic or health care delivery focus
- There is a need to develop an enduring governance structure for IPE in the health professions that spans and unites education and health service sectors.
- Integrated governance structures have the potential to bridge the gap between health professional education and health care practice and provide a road map for reciprocal influence whereby policy leaders in both systems work alongside one another to enact change in a unified and coherent fashion to achieve better health outcomes for patients, clients, carers and the community.

**Notes on contributors (50 word max)**

Maree O’Keefe is Director Curriculum in the Faculty of Health and Medical Sciences at the University of Adelaide. She has held appointments with governance bodies across higher education, health profession, government and not for profit organisations.

Dawn Foreman is Professor of Academic Leadership at the University of Derby, UK and Adjunct Professor at Curtin University, Australia and Auckland University of Technology, New Zealand. Dawn was director of the governance development programme for the Leadership Foundation for Higher Education and Interprofessional Education was the subject of her PhD and many of her publications.

Monica Moran

Carole Steketee is the National Director of Learning and Teaching at the University of Notre Dame Australia. Prior to this role she was Associate Dean Learning and Teaching in the medical school. She is currently the Chair of the University’s Academic Council.

**Acknowledgements**

Nil

**Ethical Approval**

Not required

## Conflicts of Interest

### References:

- Acquavita SP, Lewis MA, Aparicio E, Pecukonis E. Student Perspectives on Interprofessional Education and Experiences. *J Allied Health* 2014;43:e31-e36.
- Akkerman SF, Bakker A. **Boundary crossing and boundary objects**. *Rev Educ Res* 2011; **81**:132-169
- Alrebish SA, Jolly BC, Molloy EK. Accreditation of medical schools in Saudi Arabia: A qualitative study. *Medical Teacher* 2017; 39:sup1, S1-S7, DOI: 10.1080/0142159X.2016.1254746
- Australian Health Practitioner Agency <https://www.ahpra.gov.au/> Accessed November 25 2019
- Bolden R, Petrov G, Gosling J. Distributed leadership in higher education. Rhetoric and reality. *Educational management administration and leadership*. 2009;37: 257-277.
- Boulet J, van Zanten M. Ensuring high-quality patient care: the role of accreditation, licensure, specialty certification and revalidation in medicine. *Med Educ* 2014; 48:75-86
- 8-20.
- Department of Health and Human Services Tasmania Corporate Plan 2016-18. [https://www.dhhs.tas.gov.au/about\\_the\\_department/our\\_plans\\_and\\_strategies/dhhs\\_corporate\\_plan/dhhs\\_corporate\\_plan\\_2016-18](https://www.dhhs.tas.gov.au/about_the_department/our_plans_and_strategies/dhhs_corporate_plan/dhhs_corporate_plan_2016-18). Accessed 16/01/19
- Earnest, M., & Brandt, B.J. (2014). Aligning practice redesign and interprofessional education to advance triple aim outcomes. *Journal of Interprofessional Care*, 28(6): 497–500
- Engestrom Y. Activity theory as a framework for analyzing and redesigning work. *Ergonomics* 2000; 43:960-974
- Engestrom Y. New forms of learning in co-configuration work. *J Workplace Learn* 2004; 16:11-21
- Engestrom Y, Sannino A. Studies of expansive learning: foundations, findings and future challenges. *Educ Res Rev* 2010; 5:1-24

- Forte A, Fowler P. Participation in interprofessional education: an evaluation of student and staff experiences. *J Interprof Care* 2009;23:58-66.
- Fook J, D'Avray L, Norrie C, Psoinos M, Lamb B, Ross F. Taking the long view: Exploring the development of interprofessional education. *J Interprof Care* 2013  
doi:[10.3109/13561820.2012.759911](https://doi.org/10.3109/13561820.2012.759911).
- Gosling J, Bolden R, Petrov G. Distributed leadership in higher education. What does it accomplish? *Leadership* 2009; 5:299-3120
- Governance institution of Australia. What is governance?  
<https://www.governanceinstitute.com.au/resources/what-is-governance/> Accessed November 25 2019
- Greig G, Entwistle VA, Beech N. Addressing complex healthcare problems in diverse settings: insights from activity theory. *Soc Sci Med* 2012; **74**:305-312
- Ho K, Jarvis-Selinger S, Borduas F, Frank B, Hall P, Handfield-Jones R et al. Making interprofessional education work: The strategic roles of the academy. *Acad Med* 2008;83:934-940.
- Hoffman J, Redman-Bentley D. Comparison of faculty and student attitudes toward teamwork and collaboration in interprofessional education. *J Interprof Care* 2012;26:66-68.
- Hénard, F. & Mitterle, A.. Governance and quality guidelines in Higher Education: A review of governance arrangements and quality assurance guidelines. 2010 OECD, Paris.  
<http://www.oecd.org/education/imhe/46064461.pdf> accessed 25/10/19
- Hannon J et al. Sustaining interdisciplinary education: developing boundary crossing governance. *Higher Educ Res Dev* 2018 37:7, 1424-1438
- IOM (Institute of Medicine). Measuring the impact of interprofessional education on collaborative practice and patient outcomes. Washington, DC: The National Academies Press; 2015.
- Jolly AM, Mahieu L. How accreditation agencies can help the necessary change of HEIs towards sustainable development practices. *International Journal of Environment and Pollution (iJEP)* 2016;6:29-34, [dx.doi.org/10.3991/ijep.v6i1.5336](https://doi.org/10.3991/ijep.v6i1.5336)
- Kezar A, Elrod S. Facilitating interdisciplinary learning: Lessons from project Kaleidoscope. *Change: The Magazine of Higher Learning* 2012;44:16-25.

- Klein JT, Falk-Krzesinski HJ. Interdisciplinary and collaborative work: Framing promotion and tenure practices and policies. *Research Policy* 2017; 46:1055-1061
- Kuipers, P., Ehrlich, C., Brownie, S. (2014). Responding to health care complexity: suggestions for integrated and interprofessional workplace learning. *Journal of Interprofessional Care*, 28(3), 246-248
- Lingard L, Fleming-Carroll B, Lowe M, Rashotte J, Sinclair L, Tallett S. Conflicting messages: Examining the dynamics of leadership on interprofessional teams. *Acad Med* 2012; 87(12).
- Lingard L, McDougall A, Levstik M, Chandok N, Spafford MM, Schryer C. Representing complexity well: a story about teamwork, with implications for how we teach collaboration. *Med Education* 2012; 46: 869–877 doi:10.1111/j.1365-2923.2012.04339.x
- McKimm J, Sheehan D, Poole P, Barrow M, Dockerty J, Wilkinson TJ, Wearn A. Interprofessional learning in medical education in New Zealand. *NZ Med J* 2010;123:96-106.
- Meleis AI. Interprofessional Education: A Summary of Reports and Barriers to Recommendations. *J Nurs Scholarship* 2016;48:106-112.
- Mellor R, Cottrell N, Moran M. “Just working in a team was a great experience...” – Student perspectives on the learning experiences of an interprofessional education program. *Journal of Interprofessional Care* 2013; 27(4): 292-297 doi: 10.3109/13561820.2013.769093
- New South Wales Department of Health Core Values. 2017.  
<https://www.health.nsw.gov.au/careers/ministry/Pages/CORE-values.aspx>. Accessed 16/10/2019
- Nisbet G, Lee A, Kumar K, Thistlethwaite J, Dunston R. Interprofessional Health Education - A Literature Review - Overview of international and Australian developments in interprofessional health education (IPE). 2011. <http://www.health.wa.gov.au/wactn/docs/IPEAUSlitreview2011.pdf>. Accessed 6 Nov 2017.
- O'Keefe M, Wade V, McAllister S, Stupans I, Burgess T. Improving management of student clinical placements: insights from activity theory. *BMC Medical Education*. 2016 16: 219
- O'Keefe M, Wade V, McAllister S, Stupans I, Miller J, Burgess T, LeCouteur A, Starr L. Rethinking attitudes to student clinical supervision and patient care: a change management success story.

- BMC Medical Education. 2014, 14:182 DOI: 10.1186/1472-6920-14-182  
<http://www.biomedcentral.com/1472-6920/14/182>
- O'Keefe M, Henderson A, Jolly B, McAllister L, Remedios L, Chick R Harmonising higher education and professional quality assurance processes for the assessment of learning outcomes in health. Australian Government Office for Learning and Teaching 2014 Australian Government Office for Learning and Teaching. ISBN: 978-1-74361-495-2
- O'Keefe M, Henderson A. Being TEQSA ready – harmonising the layers of regulation. Campus Review 19th March, 2012 <https://www.campusreview.com.au/2012/04/being-teqsa-ready/> (accessed 25 November 2019)
- Olson R, Bialocerkowski A. Interprofessional education in allied health: a systematic review. Med Educ 2014;48:236-246.
- Pecukonis E, Doyle O, Buss DL. Reducing barriers to interprofessional training: Promoting interprofessional cultural competence. J Interprof Care 2008;22:417-428
- Queensland Health Strategic Direction. <https://www.health.qld.gov.au/system-governance/strategic-direction>. Accessed 16/10/2019
- Reid A, Ledger A, Kilminster S, Fuller R. Can the tools of activity theory help us in advancing understanding and organisational change in undergraduate medical education? Adv Health Sci Educ 2015;20:655-668.
- South Australia Health Strategic Plan 2017-2020.  
<https://www.sahealth.sa.gov.au/wps/wcm/connect/public+content/sa+health+internet/about+us/about+sa+health/sa+health+strategic+plan>. Accessed 16/10/19
- Starr SL, Griesemer JR. Institutional ecology, 'translations' and boundary objects: amateurs and professionals in Berkley's museum of vertebrate zoology.1907-39. Soc Stud Sci 1989; 19:387-420
- Sunguya BF, Hinthong W, Jimba M, Yasuoka J. Interprofessional Education for Whom? - Challenges and Lessons Learned from Its Implementation in Developed Countries and Their Application to Developing Countries: A Systematic Review. PLoS ONE 2014;9(5): e96724.

Tertiary Education Quality Standards Agency. TEQSA guidance note: Academic Governance Version 2.3 October 2017 <https://www.teqsa.gov.au/latest-news/publications/guidance-note-academic-governance> Accessed 25/10/2019

Tertiary Education Quality Standards Agency. Higher education standards framework 2015. <https://www.teqsa.gov.au/higher-education-standards-framework-2015>. Tertiary Education Quality Standards Agency Accessed 25 November 2019

United Nations Educational, Scientific and Cultural Organization (UNESCO). Education Quality Framework: 2017. Governance <http://www.unesco.org/new/en/education/themes/strengthening-education-systems/quality-framework/technical-notes/concept-of-governance/> (accessed )

VicHealth Health 2040: Advancing health, access and care. <https://www2.health.vic.gov.au/about/health-strategies/health-reform>. Accessed 16/10/2019

Vilkinas, T. & Peters, M. (2014). Academic governance provided by academic boards within the Australian higher education sector. *Journal of Higher Education Policy and Management*, 36:1, 15-28, DOI: 10.1080/1360080X.2013.825419

Western Australia Department of Health Strategic Intent 2015-2020. <https://ww2.health.wa.gov.au/About-us/Strategic-Intent>. Accessed 16/10/2019