Regulation and Registration as Drivers of Continuous Professional Competence for Irish Pre-Hospital Practitioners: A Discussion Paper.

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Abstract

Background The Regulatory Body responsible for the registration of Irish pre-hospital practitioners, the Pre-Hospital Emergency Care Council (PHECC), identified the need to implement a continuing professional competence (CPC) framework. The first cycle of CPC (focused on Emergency Medical Technicians) commenced in November 2013 creating for the first time a formal relationship between continuing competence and registration to practice.

Aims To review current literature and to describe benefits and challenges relevant to CPC, regulation, registration and their respective contributions to professionalism of pre-hospital practitioners: advanced paramedics, paramedics and emergency medical technicians.

Methods Online search of Cumulative Index to Nursing and Allied Health Literature (CINAHL Plus with Full Text), Allied and Complementary Medicine (AMED) and 'Pubmed' databases using: 'Continuous Professional Development'; 'Continuous Professional Development'; 'emergency medical technician'; 'paramedic'; 'registration'; 'regulation'; and "profession' for relevant articles published since 2004. Additional policy documents, discussion papers, and guidance documents were identified from bibliographies of papers found.

Results Reports, governmental policies for other healthcare professions, and professional developments internationally for allied professions (e.g., nursing, physiotherapy and medicine) link maintenance of competence with requirements for registration to practice.

Conclusion We suggest that evolving professionalisation of Irish paramedics should be affirmed through behaviours and competencies that incorporate adherence to professional codes of conduct, reflective practice, and commitment to continuing professional development. While the need for ambulance practitioner CPD was identified in Ireland almost a decade ago, PHECC now has the opportunity to introduce a model of CPD for paramedics linking competence and professionalism to annual registration.

Keywords: Continuous professional development; competence; professionalism; paramedic; advanced paramedic; emergency medical technician.

Background

Pre-hospital practitioners in Ireland

Ambulance services in Ireland have undergone significant development in a relatively short period of time, with associated practices now reflecting international best practice. To summarise: Ireland's ambulance service had been associated historically with the transport of patients to infirmaries and workhouses [1] until the Health Act 1970 [2], which provided the statutory basis for the provision of ambulance services by each individual Health Board. Ambulance services were provided subsequently on a regional basis until the formation of the Health Service Executive (HSE) in 2005 and the simultaneous establishment of the National Ambulance Service (NAS). Since then, emergency ambulance services in Ireland have been provided solely by the NAS with exception of Dublin City where Dublin Fire Brigade offers a parallel service through their twelve stations [3].

In 1993, a report from the Irish government [1] stated that the ambulance service 'forms a valued and integral part of the emergency services and 'was used as an extension of the hospital service with the objective of getting the patient into hospital as quickly as possible so that advanced medical treatment could be provided by a medical practitioner'. Hence, the report implied that advanced medical treatment could only take place within a hospital, and that the sole purpose of the ambulance service was patient transfer. However, the same report also recommended a significant improvement in the quality of training provided to ambulance personnel and development of paramedic training. An additional recommendation was the introduction of an advisory body for paramedics to ensure effectiveness of practice. That entity was established in May 1998 as the National Ambulance Advisory Council (NAAC). However, as an advisory body without statutory powers, the NAAC's ability to achieve its objectives was limited [4] and it was replaced in April 2000 by the Pre-Hospital Emergency Care Council (PHECC).

PHECC is an independent statutory agency, established by secondary legislation, making it responsible for standards, education and training relating to pre-hospital emergency care in Ireland [5]. The Council is responsible for the registration of pre-hospital emergency care practitioners in Ireland at all three levels: emergency medical technician (EMT), paramedic, and advanced paramedic (AP). In its 2011-2014 Strategic Plan, the Council expressed its wish to develop a continuing professional competence (CPC) framework to support registered pre-hospital practitioners [6]. The initial three-year cycle of CPC was projected to commence in 2014. At the time of writing, CPC has been introduced for EMTs only (November 2013) and no such system exists for paramedics and advanced paramedics.

Professional development therefore remains a fragmented process. It is expected, however, that PHECC-registered paramedics and advanced paramedics will be required to provide evidence of CPC experience as

part of their re-registration process analogous to requirements of regulating bodies in other health professions, both nationally and internationally [7-14]. While such requirements are promoted as oriented towards patient safety and quality of service, registrants may not be aware of the benefits of CPC or the potential support mechanisms available, including dedicated time off for training, fee reimbursement, and credit recognition [15,16]. Addressing the concerns of those participating in CPC may prove pivotal for such an initiative to be successful [17].

This review will examine the current literature exploring correlations internationally between continuous professional development, regulation and the professionalisation of paramedics, advanced paramedics, and emergency medical technicians. Furthermore, to examine the reported benefits and difficulties encountered by some other healthcare professions such as nursing and physiotherapy, with respect to regulation of CPD, the relationship between CPD and professionalism, and to discuss their relevance in the context of the Irish pre-hospital care professional setting.

Methods

A comprehensive literature search was performed. Papers describing CPC/D in the area of pre-hospital practitioners were collected and read. While there was a noted scarcity of papers focused on this topic, those identified were used to generate the themes used in this paper.

A focused review of the literature was performed on the online Cumulative Index to Nursing and Allied Health Literature (CINAHL Plus with Full Text), Allied and Complementary Medicine (AMED) and PubMed databases using the search terms: 'Continuous Professional Development'; 'Continuous Professional Development'; 'emergency medical technician'; 'paramedic'; 'registration'; 'regulation'; and "profession'. Publications since January 2004 were deemed eligible. Any papers that were not published in English were excluded. Only full original research papers and reviews were included, that is editorial opinions, letters to the editor and other "opinion" based publications were excluded. The abstracts were read to ensure relevance and additional policy documents, discussion papers, and guidance documents were identified from the bibliography of the papers.

Results and Discussion

Is there consensus regarding what Continuous Professional Development is?

Definitions of continuous professional development span an array of professions; each definition focusing on CPD from a different perspective. CPD is commonly used to describe a process of development following a professional training programme. Other terms are used interchangeably, including Lifelong Learning (LLL), Continuing Professional Education (CPE), Continuing Vocational Training (CVT), Continuing Medical Education (CME), Post Qualification Development and Continuing Education (CE) [18,19]. While these terms are commonly associated with the concept of CPD, Henwood *et al* [20] argue that there is a distinct difference between CPD and continuing education (CE), on the basis that CPD reflects the need for a lifelong systematic learning experience whereas CE tends to involve intermittent learning episodes. Dowds and French [21] suggest that CE is less beneficial than CPD due to the passive learning models involved in CE compared to the active and experiential learning models of CPD.

The British Construction Industry Council [22] has adopted what is now one of the most commonly accepted definitions of CPD: *CPD is the systematic maintenance, improvement and broadening of knowledge and skills, and the development of personal qualities necessary for execution of professional and technical duties throughout the individual's working life.* This definition relates entirely to the individual and their 'professional duties' and is not linked to the employer. It was modified slightly by Henwood *et al* [20] and adopted by the College of Radiographers (UK) to make clear the association between 'practitioners' and the 'service provided'.

Specifically related to healthcare professionals, a definition was provided by the UK's Health and Care Professions Council (HCPC), which defined CPD as *a range of learning activities through which health professionals maintain and develop throughout their career to ensure that they retain their capacity to practice safely, effectively and legally within their evolving scope of practice* [23]. The Health Professions Council of South Africa (HPCSA) definition links the individual with the profession in which they work, referring to *knowledge, skills and attitude* but also *ethical attitudes* linked to their code of professional conduct and ethics [24]. With respect to CPD processes, there is general consensus that these are broadly describable as: reflection; planning; learning; and evaluation.

Is CPD an Individual or Shared Responsibility?

There has been considerable debate as to whether responsibility for CPD lies with the individual or the employer. Madden and Mitchell [25] define CPD as *the maintenance and enhancement of the knowledge, expertise, and competence of professionals throughout their careers according to a plan formulated with regard to the needs of the professional, the employer, the professions and society.* The use of the word 'competence' in the context of CPD implies an outcome in terms of performance. Notably, this definition explicitly recognises the employer as a stakeholder in the CPD process. Murphy *et al* [26] argued that employers could use CPD to reduce potential liability by ensuring employees are fit to perform their duties, while Smethers [27] argued that CPD is the individual's own responsibility without implicating employers. Being more encompassing, Henwood *et al* [20] stated that registration bodies, professional bodies, employers, educators, and individuals all have roles to play in CPD.

Who Benefits from CPD?

The Professional Associations Research Network in England [28] conducted research to determine who derives benefit from CPD – the professional, the employer, the profession itself, the general public, or a combination of the above. The authors concluded that all of those stakeholders benefit from CPD. The responsibility for CPD lies with a range of different partners with differing agendas that may not necessarily by synonymous. However, the aspiration, within the healthcare professions, should clearly be that CPD benefits the patient [21]. Indeed, arguably, CPD related to healthcare professionals is a process that involves developing practitioners and maintaining competence for the benefit of society with regard to the needs of the employer and the profession itself. *Patients and their families place their trust in health professionals. They need to be assured that their treatment is up to date and effective and is provided by those whose skills have kept pace with new thinking and new techniques* [29].

A notable paper, reflecting the patient orientation for CPD, described focus groups intended to evaluate the CPD process among general practitioners in Denmark [30], whereby both physician- and patient-directed benefits served as motives for choice of CPD activity among GPs. Activities were chosen based on common patient complaints, as well as the need to be professionally current, supporting the notion that CPD fosters professional development while ultimately striving to improve patient care. However, this was not the sole motivation, as participating physicians also indicated professional fatigue and "burnout" as a driver to attend CPD activities.

Is There a Need for CPD?

CPD provides the framework to ensure health professionals 'retain their capacity to practice safely, effectively, and legally within their evolving scope of practice' [23]. In one systematic review, sixty two out of sixty three studies showed that doctors' performance deteriorated over time and that physicians with more experience may, paradoxically, be at risk of providing lower-quality care [31]. Public opinion surveys (UK) suggested that people expect health professionals to participate in revalidation for their registration to practice and that many believe that this already occurs [32].

Notable National CPD Initiatives

One theory has postulated that the lifespan of knowledge gained in a vocational degree is four years [33]. One Irish report, 'Building a culture of patient safety' [34] asserted that health professionals can no longer be regarded as 'trained for life' upon qualification, and that systems are required to ensure lifelong learning, professional development, and regular competence assurance. The projected outcome would be assurance of a competent workforce of skilled professionals capable of managing patient needs. This publication further stated that employers should ensure that all staff participate in CPD and have appropriate support and resources to do so.

In Ireland, a paper regarding statutory registration of health and social professions produced by the Department of Health and Children [35] outlined discussions that occurred between the Department and various health professionals, including 16 professional bodies (albeit that pre-hospital care was not represented). The discussions involved issues that may be encountered when attempting to form a national registration body for healthcare professionals whereby CPD was identified as a means of retaining registration with relevant regulators. The importance of CPD was emphasised in the document *because of a growing concern about the need to continually retain competence within the profession rather than merely to attain competence at the beginning of one's professional life* [35]. There was recognition of a key distinction between two main categories of CPD: one is to maintain and update professional competence and is profession-specific, while the other focuses on areas of personal development (e.g.,

financial, management and facilitation skills). The professional bodies and the Department both concurred that the focus of CPD should be on maintaining professional competence, and that competence-based CPD should be compulsory for registration. This requirement should be reflective however of the fact that the mode of delivery and time requirements for CPD can be daunting and may diminish a programme's intended beneficial effect [36]. Therefore, it is important to construct CPD delivery to meet the requirements of specific professions and to assess the particular educational needs of the individuals involved.

CPD and Pre-Hospital Professionals

The literature relevant to CPD and registration/regulation of pre-hospital practitioners originates predominately from America, the United Kingdom and Australia, and discusses various tenets relating to the paramedic profession. Caffrey *et al* [37] discussed how the role of the paramedic in the United States has become specialised and how they could contribute more to the health care system through integration of team-based care to a greater extent in non-acute community, inter-facility and tactical responses. The study described the fragmented approach to specialty certification for paramedics and described the influence of regulators and other health care professions on the practice of paramedicine. Paramedicine practitioners, they suggested, should establish a profession-based specialty board to organise and standardise a specialty national certification system and continuous professional development process.

Similarly, Newton [38] discussed the multiple terms used to describe paramedics in the UK: 'practitioner'; 'specialist' and 'emergency care practitioner' and, while doing so, expressed a hope that paramedics with an extended scope of practice continue to use the designation that contains the professional and protected title of 'specialist paramedic'. The introduction of a 'specialist paramedic' is also proposed in an Australian study on industrial paramedics [39], where the authors suggested that an 'industrial paramedic' is 'an advanced clinical practitioner in paramedicine with an expanded scope of practice'. That study further postulates that such practitioners could hold a specialised tertiary qualification and be committed to maintaining their clinical competency through continuing professional development. O'Brien *et al* [40] further discussed the evolution of the Australian paramedic education model from one of post-employment to pre-employment and introduction of a university-based degree programme (similar to that now emerging in Ireland). They also explore how the migration of education for healthcare professions into universities and the higher education sector contributed to the 'legitimation, maturing and as a consequence, 'mainstreaming' of a profession'.

The awareness of a changing and, indeed, developing profession is highlighted in another Australian study [41] asserting that the paramedic profession is in transition, with the nature of paramedic work changing, largely due to increased responsibility for clinical decision-making and treatment. More specifically, the

study describes a greater need for Australian paramedics to make decisions relating to triage, management and referral of patients to other healthcare professionals/facilities. As with the previous Australian paper [40], this study also discussed the change in paramedic education from one of post-employment based education to university and pre-employment model of education. The combination of changes in the education and role of Australian paramedics, the authors suggested, contributed to the 'professionalisation' of the paramedic discipline. They also link the professional status of a discipline to professional regulation through registration or membership of a professional association. This link is also prominent in O'Meara's editorial on the topic [42], where he states that *professional recognition of paramedics through registration, improving educational standards and integration into the health system contributes toward the formation of a professional identity*. That view is reiterated by Donaghy [43] where he suggested that membership of the professional body in parallel with regulation *further endorses our desire to be acknowledged as 'professionals'*. Woollard [44] went even further, describing what constitutes professionalism in UK paramedic practice, in his opinion being: clinical governance; education and research; continuous professional development; self-regulation through professional bodies and registration with the regulatory body. He concluded that it is the external perceptions of paramedics that will determine whether or not the role is viewed as a profession.

Relationships between CPD and Professionalization, Regulation & Registration

Professions have been described as occupations supported and characterised by university education, scholarly research, shared professional knowledge and skills, ethical codes, status in society, autonomy, and accountability to society and the profession itself [45,46]. In the field of paramedic practice, professionalism has been defined as a set of competencies or observable behaviours that are identified in a national competency profile [47] and that extend beyond patient care and initial education to foster a particular approach to one's work [48]. In the broad context of healthcare, there are a number of key principles that are recognised as underpinning statutory professional regulation, including safety and quality of care, confidence in providing that care, and professional standards of a competency-based workforce being assured [32,49]. Aligned with this view, Sir Donald Irvine (British Patient Association) believes that professionalism-led regulation offers the best chance of securing consistent day-to-day practice, provided it is firmly directed towards patients' interests and is vigorously implemented [50].

Australia represents a useful model whereby pre-hospital practice is at the early stages of evolution into being a recognised profession. There, linkage of education, lifelong learning and professionalism [51] has been explored well in paramedicine [52], where Greenwoods' [53] five characteristics of a profession (i.e., a systematic body of theory, authority, community sanctions, ethical code, and a culture) were considered when establishing a registration programme for ambulance personnel. However, it is noteworthy that the lack of a strategic alliance between paramedic and medicine (unlike for instance between Australian

nursing, physiotherapy and medicine) has been viewed as an impediment to professionalisation of pre-hospital care in Australia [52]. In February 2010, the Australian Health Workforce Ministerial Council requested advice on the proposal to include paramedics as a profession in the National Registration and Accreditation Scheme. The project team developed a discussion paper and convened discussion fora. Arising from these, and in the context of key objectives being to attain national registration and regulation, there appeared to be no urgency in achieving such for paramedics in Australia. For example, the New South Wales Government found that *the operational benefits of registration do not appear to outweigh the costs in the short or medium term* [54]. However, a subsequent submission made in response to their discussion paper examining the regulation of the Health Professions in Victoria, (Australia) contended that the absence of regulation of paramedic practice poses a clear threat to the health, safety, and well-being of the public [55]. Despite this, the Australian Health Workforce Ministerial Council made a decision on 10th October 2014 to defer the inclusion of paramedics on the Australian Health Practitioners register. This decision has resulted in the Government of Victoria announcing that it will consider establishing its own paramedic board while Southern Australia and Tasmania have also taken independent steps to attempt to regulate the paramedic profession [56]. The professional body, Paramedics Australasia, is hopeful that national registration for Australian paramedics will be in place by 2015 [57], although, at the time of writing, this was still not the case.

Conclusion

Ireland (and the UK) has stipulated registration requirements for paramedics (albeit differing in that the UK necessitates registration by paramedics only - analogous to Irish advanced paramedics – while Ireland's Regulatory body, the Pre-Hospital Emergency Care Council (PHECC) requires registration for all three levels of ambulance practitioner: EMT; paramedic and advanced paramedic). In Ireland however the progression of paramedic practice has only now begun to emerge as a potential profession in its own right. As a result, Irish pre-hospital practitioners have the advantage of learning from the challenges by colleagues in other countries, such as Australia, to become recognised as regulated professionals. Their evolving professionalism ought to be supported through encouragement of (and contingent on) behaviours that incorporate adherence to professional codes of conduct, reflective practice, and commitment to continuing professional development [10].

Compliance with Ethical Standards

Conflict of interest: All authors declare that they have no conflict of interest, other than that authors S. Knox and M. Hughes are employed by the Irish National Ambulance College, which is engaged in paramedic education.

Ethical approval: This article does not contain any studies with human participants or animals performed by any of the authors.

References

1. Department of Health (1993) Report of the Review Group on the Ambulance Service,. Stationery Office. http://www.lenus.ie/hse/handle/10147/81141 Accessed 19 November 2015
2. Government of Ireland (1970) The Health Act. http://www.irishstatutebook.ie/1970/en/act/pub/0001/sec0057.html#sec57...http:/ Accessed 19 November 2015
3. Health Information and Quality Authority (2011) Pre-Hospital Emergency Care Key Performance Indicators for Emergency Response Times. http://www.hiqa.ie/publications/pre-hospital-emergency-care-key-performance-indicators-emergency-response-times-version. Accessed 19 November 2015
4. Comptroller and Auditor General (1997) Report on Value for Money Examination The Emergency Ambulances Services http://www.audgen.gov.ie/viewdoc.asp?DocID=540&CatID=5&StartDate=01+January+2015. Accessed 19 November 2015
5. The Pre-Hospital Emergency Care Council (Establishment) Order 2000 (Amendment) Order, (2004).
6. Pre-Hospital Emergency Care Council (2011) Strategic Plan 2011-2014. PHECC https://www.phecit.ie/Images/PHECC/Publications%20and%20Media/Strategic%20Plans/Strategic%20Plan%202011-2014.pdf. Accessed 20 June 2015
7. Brady E (2013) Child Protection Social Workers' Engagement in Continuing Professional Development: An Exploratory Study. Social Work Education:1-16. doi:10.1080/02615479.2013.869316
8. Ryan J (2003) Continuous professional development along the continuum of lifelong learning. Nurse Educ Today 23 (7):498 – 508
9. Sturrock J, Lennie S (2009) Compulsory continuing professional development: a questionnaire-based survey of the UK dietetic profession. J Hum Nutr Diet 22 (1):12 – 20
10. Schweitzer D, Krassa T (2010) Deterrents to Nurses' Participation in Continuing Professional Development: An Integrative Literature Review. J Contin Educ Nurs 41 (10):441 – 447
11. Ross K, Barr J, Stevens J (2013) Mandatory continuing professional development requirements: what does this mean for Australian nurses. BMC Nursing 12 (1):9
12. Studnek JR, Fernandez AR, Margolis GS (2009) Assessing Continued Cognitive Competence among Rural Emergency Medical Technicians. Prehosp Emerg Care 13 (3):357-363. doi:doi:10.1080/10903120902935355
13. Schostak J, Davis M, Hanson J, Brown T, Driscoll P, Starke I, Jenkins N (2010) 'Effectiveness of Continuing Professional Development' project: a summary of findings. Med Teach 32 (7):586-592. doi:10.3109/0142159x.2010.489129
14. Henwood SM, Yielder J, Flinton D (2004) Radiographers attitudes to mandatory CPD: a comparative study in the United Kingdom and New Zealand. Radiography 10 (4):251-258

15. Knox S, Cullen W, Dunne C (2013) Continuous professional competence (CPC) for emergency medical technicians in Ireland: educational needs assessment. BMC Emergency Medicine 13 (1):25
16. Knox S, Cullen W, Dunne C (2014) Continuous Professional Competence (CPC) for Irish paramedics and advanced paramedics: a national study. BMC Medical Education 14 (1):41
17. Knox S, Dunne S, Cullen W, Dunne C (2015) A qualitative assessment of practitioner perspectives post-introduction of the first Continuous Professional Competence (CPC) guidelines for emergency medical technicians in Ireland. BMC Emergency Medicine 15 (1):11
18. Houle CO (1980) Continuing Learning in the Professions. Jossey-Bass, London
19. Tann JA, Blenkinsopp, A. Platts, A. (2001) Teaching and Learning at the leading edge: Leading edge practitioners in community pharmacy. Management Learning 32 (2):163-179
20. Henwood S, Edie J, Flinton D, Simpson R (1998) Continuing professional development -- a re-examination of the facts. Radiography 4 (1):5-8
21. Dowds J, French H (2008) Undertaking continuous professional development (CPD) in the workplace in physiotherapy. Physiotherapy Ireland 29 (1):11-19
22. Construction Industry Council (UK) (1986) CPD Information sheets of the professional institution members of the CPD in Construction Group
23. Health and Care Professions Council UK (2012) Your Guide to Our Standards for Continuous Professional Development http://www.hpc-uk.org/assets/documents/10003B70Yourguidetoourstandardsofcontinuingprofessionaldevelopment.pdf Accessed 11 July 2015
24. Health professions council South Africa (2009) Continuing Professional Development: Guidelines for Good Practice in the Healthcare Professions. http://www.hpcsa.co.za/uploads/editor/UserFiles/CPD%20Guidelines%202014.pdf. Accessed 10 September 2015
25. Madden C, Mitchell VA (1993) Professions, standards and competence: a survey of continuing education for the professions. Bristol University, Department of Continuing Education,
26. Murphy C, Cross C, Mc Guire D (2006) The motivation of nurses to participate in continuing professional education in Ireland Journal of European Industrial Training 30 (5):365-384
27. Smethers S (1995) CPD whose responsibility is it? Personnel Training and Education 12 (no. 1):11-12
28. Friedman A, Woodhead S (2008) Approaches to CPD Measurement. PARN, Bristol
29. Department of Health (1998) A First Class Service: Quality in the new NHS. National Stationary Office, London
30. Kjaer NK, Steenstrup AP, Pedersen LB, Halling A (2014) Continuous professional development for GPs: experience from Denmark. Postgrad Med J. doi:10.1136/postgradmedj-2012-131679
31. Choudhry NK, Fletcher RH, Soumerai SB (2005) Systematic Review: The Relationship between Clinical Experience and Quality of Health Care. Ann Intern Med 142 (4):260-273. doi:10.7326/0003-4819-142-4-200502150-00008
32. Secretary of State for Health (UK) (2007) Trust, Assurance and Safety - The Regulation of Health Professionals in the 21st Century. The Stationary Office. http://www.official-documents.gov.uk/document/cm70/7013/7013.pdf. Accessed 8 August 2015
33. Watkins JW, Drury I, Preddy D (1992) From Evolution to Revolution: The Pressures of Professional Life in the 1990s. University of Bristol, Bristol
34. Commission on Patient Safety and Quality Assurance (2008) Building a culture of patient safety: report of the Commission on Patient Safety and Quality Assurance. Stationery Office, Ireland. http://health.gov.ie/wpcontent/uploads/2014/03/en_patientsafety.pdf. Accessed 10 November 2015
35. Department of Health and Children. Ireland (2000) Statutory Registration for Health and Social Professionals Government Publications http://health.gov.ie/wp-content/uploads/2014/03/Statutory-Registration-for-Health-and-Social-Professionals-Report.pdf. Accessed 10 November 2015
36. Ikenwilo D, Skåtun D (2014) Perceived need and barriers to continuing professional development among doctors. Health Policy 117 (2):195-202. doi:http://dx.doi.org/10.1016/j.healthpol.2014.04.006

37. Caffrey SM, Clark JR, Bourn S, Cole J, Cole JS, Mandt M, Murray J, Sibold H, Stuhlmiller D, Swanson ER (2014) Paramedic Specialization: A Strategy for Better Out-of-Hospital Care. Air Med J 33 (6):265-273. doi:10.1016/j.amj.2014.07.020
38. Newton A (2011) Specialist practice for paramedics: a bright future? Journal of Paramedic Practice 3 (2):58-61
39. Acker J, Johnston T, Lazarsfeld-Jensen A, Acker J (2014) Industrial paramedics, out on site but not out of mind. Rural Remote health 14 (2856)
40. O'Brien K, Moore A, Dawson DA, Hartley PR (2014) An Australian story: paramedic education and practice in transition. Australas J Paramedicine 11 (3):1-13
41. Joyce CM, Wainer J, Archer F, Wyatt A, Pitermann L (2009) Trends in the paramedic workforce: a profession in transition. Aust Health Rev 33 (4):533-540. doi:http://dx.doi.org/10.1071/AH090533
42. O' Meara P (2011) So how can we frame our identity? J Paramedic Practice 3 (2):57-57]
43. Donaghy J (2011) Is regulation a necessary evil? J Paramedic Practice 3 (3):109-109
44. Woollard M (2012) Professionalism in UK paramedic practice. J Emerg Prim Health Care 7 (4):9
45. Eraut M (1994) Developing Professional Knowledge and Competence. RoutledgeFalmer Oxon
46. Mahony K (2003) The Politics of Professionalism: Some implications for the occupation of ambulance paramedics in Australia. Australasian J Paramedicine
47. Paramedic Association of Canada (2011) National occupational competency profile for paramedics. http://www.paramedic.ca/site/nocp?nav=02. Accessed 10 November 2015
48. Bowles R (2009) From learning activities to the meaning of life: fostering professionalism in Canadian paramedic education. J Emerg Prim Health Care 7 (4):8p
49. Copnell G (2010) Modernising allied health professions careers: Attacking the foundations of the professions? J Interprof Care 24 (1):63-69. doi:10.3109/13561820902946115
50. Irvine D (2001) The changing relationship between the public and the medical profession. J R Soc Med 94 (4):162-169
51. Mahmood T (2010) Recertification and continuing professional development: The way ahead. Best Pract Res Clin Obstet Gynaecol 24 (6):807-818. doi:http://dx.doi.org/10.1016/j.bpobgyn.2010.04.004
52. Williams B, Brown T, Onsman A (2009) From stretcher-bearer to paramedic: the Australian paramedics' move towards professionalisation. J Emerg Primary Health Care 7 (4)
53. Greenwood E (1984) Attributes of a profession. In: Faszard B (ed) Self-actualization for nurses. Aspen, Rockville, Maryland, Maryland, pp 13-26
54. Department of Premier and Cabinet (2008) Performance Review Ambulance Service of NSW. http://www.ambulance.nsw.gov.au/Media/docs/080703dpcreviewreport-4e4d1818-71fa-4f8d-9bd1-2bb5b8cbdef0-0.pdf. Accessed 8 June 2015
55. Burgess S, Boyle M, Chilton M, Ellis B, Fallows B, Lord B (2003) Monash University Centre for Ambulance and Paramedic Studies (MUCAPS) Submission to the Department of Human Services (DHS), in response to the DHS Discussion Paper examining the regulation of the Health Professions in Victoria. Journal of Emerg Prim Health Care 1 (3-4)
56. Eburn M (2014) Australian Emergency Law. https://emergencylaw.wordpress.com/2014/11/04/victorian-state-registration-of-paramedics/. Accessed 12 July 2015
57. Bange R, Biljon WV (2012) Paramedic Registration: A progress report. https://www.paramedics.org/content/2012/09/Paramedic-Registration-Report-0609.09.pdf. Accessed 10 November 2015