Appendix A

Development of the First PHEM Curriculum

Appendix Outline

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A.1 Introduction

A.1.1 The clinical practice of Pre-Hospital Emergency Medicine (PHEM) reflects a discrete body of knowledge, skills and competencies. (1,2) In this annex, the development of the competence framework for PHEM is described.

A.1.2 Competence frameworks describe the range of work activities needed to deliver a service. They represent a set of statements defining the relevant underpinning knowledge, technical skills and non-technical skills – collectively referred to as competences. (3) When related to methods of learning, training and assessment, levels of clinical practice and standards of performance, these competences lie at the heart of a curriculum. An agreed competence framework allows a curriculum for PHEM education, training and clinical practice to be developed which complies with the General Medical Council's standards. (4)

A.2 Historical Perspective

A.2.1 Even before its inception in 1996, founder members of the Faculty of Pre-Hospital Care were active in articulating the scope of clinical practice underpinning pre-hospital care. A formative group developed the Diploma in Immediate Medical Care in 1988 and the generic course in Pre-Hospital Emergency Care (PHEC) in association with the British Association for Immediate Care in 1992.

A.2.2 The Faculty has subsequently been active in articulating the scope of clinical practice underpinning all aspects and levels of pre-hospital care. This has included hosting consensus conferences, developing approval and accreditation systems for a wide variety of training courses and introducing, through the production of the Manual of Core Material, the concept of a common generic curriculum for all levels of pre-hospital care. (5) The Diploma and Fellowship examinations in Immediate Medical Care have come to be recognised internationally as benchmarks for basic clinical and operational practice.

A.2.3 In addition to this national educational activity, several operational services across the UK developed apprenticeship style training programmes aimed at ensuring practitioners had the knowledge and skills required to operate safely within their local service. The Emergency Medical Charity, Magpas[1] was the first to introduce the concept of an all-encompassing competence framework based on evidence of unmet need and clinical demand. Following an operational activity analysis and audit of clinical activity and outcomes between 1997 and 2000, Magpas set up a working group to articulate 'core competences'.[2] The group reported internally in November 2001 and their framework formed the basis of their first formal 'Emergency Medical Team' training programme in January 2003. This framework was published in early 2005. (2)

A.2.4 In November 2005, the Faculty, together with Magpas, the London Helicopter Emergency Medical Service (HEMS) and the East Anglian Ambulance Service, hosted a joint competence framework consensus development meeting.[3] The meeting was structured around ten 90-minute themed discussions based on the Magpas framework (table A.1). Each discussion commenced with a brief contextual introduction to the theme or 'work role' followed by 20 minutes of whole group brainstorming around the activities required to fulfil this role. (3,6) Small group

[1]www.magpas.org.uk

[2]Members of the working group: John Eaton (General Practice), Robin Glover (Emergency Medicine), John Hedges (General Practice), Pam Kenny (General Practice), Juergen Klein (Anaesthesia and Intensive Care), Simon Lewis (Emergency Medicine), Rod Mackenzie (Emergency Medicine), Paul Silverston (General Practice), John Scott (General Practice and Paramedic Practice), Howard Sherriff (Emergency Medicine) and Luke Twelves (General Practice).

[3]Attendees at the meeting (Orton Hall, Peterborough, November 2005): Marcus Bailey (Paramedic Practice), John Black (Emergency Medicine), Graham Chalk (Paramedic Practice), Rachel Clements (Emergency Medicine), James French (Emergency Medicine), James Hickman (General Practice), Simon Lewis (Emergency Medicine), Rod Mackenzie (Emergency Medicine), Cliff Reid (Emergency Medicine and Intensive Care), Malcolm Russell (General Practice and Military Medicine), John Scott (General Practice and Paramedic Practice), Lynda Sibson (Paramedic and Nursing Practice) and Matthew Wyse (Anaesthesia).

sessions were then used to attempt to define some of the knowledge, technical skills and non-technical skills underpinning these activities. The whole group then reviewed the *themes*, the lists of grouped activities (referred to as *units*) and the underpinning *elements* of competence. (3)

Table A.1 Original Magpas themes used as prompts for focused discussion.

1.	The Operational Environment
2.	Resuscitation and Clinical Care
3.	Care of Special Groups
4.	Equipment and Monitoring
5.	Analgesia and Procedural Sedation
6.	Pre-hospital Emergency Anaesthesia
7.	Rescue and Extrication
8.	Retrieval and Transfer
9.	Special Incident Medical Support
10.	Major Incident Medical Support

A.2.5 In October 2006, a nationwide questionnaire survey of opinion leaders within UK organisations responsible for pre-hospital care was conducted. (7) Once the results were disseminated in October 2008, it became clear that there was strong agreement related to the scope of PHEM practice and a continued desire amongst practitioners to fully define the underpinning competence framework. The Faculty established the Faculty Curriculum Advisory Group (FCAG) in October 2008 to meet this desire and take forward the competence framework workstream of the Faculty's sub-specialty development programme.

A.3 FCAG Process

A.3.1 The role of FCAG was to advise the Faculty on a competence framework, which would encapsulate the underpinning knowledge, technical skills and non-technical skills of a newly 'qualified' consultant level practitioner in PHEM (level 8 on the Skills for Health framework). Membership of FCAG was open to all those with an interest in PHEM, regardless of professional status or group. Invitations were sent to all those involved in the previous development activity, with a request to cascade the invitation to other healthcare professionals active in the delivery of PHEM. Eighty-eight participants accepted the invitation to join FCAG (listed in the acknowledgements below). Once formed, FCAG utilised a modified nominal group technique (table A.2). (8,9)

A.3.2 Three physical meetings were held over a 12-month period and in different UK locations (Peterborough, December 2008; London, April 2009; Edinburgh, August 2009). Distillation of the ideas generated at the physical meetings was achieved through the creation of focus groups and the use of a web-based project

management and collaboration software suite.[4] Emphasis was placed on developing activity or 'unit' level competences. Once a full set of unit level competences were derived, all FCAG members were surveyed on their level of agreement. Although this final survey led to some refinement of the language used to describe units, there was unanimous agreement on the overall content of the framework amongst the 38 respondents (see acknowledgements – respondents are indicated by an asterisk).

Table A.2 Modified FCAG Nominal Group stages.

(1)	**Introduction and explanation**	This stage was repeated at each physical meeting and detailed explanation was provided on the FCAG website.
(2)	**Generation of ideas**	In contrast to the standard Nominal Group technique, where individual participants generate ideas in isolation, we formed small groups of individuals from different professional backgrounds and asked them to consider a 'theme' or work role. Theme Leads were then chosen to collate and co-ordinate further discussion around each theme and its constituent units.
(3)	**Sharing of ideas**	Ideas about the units were shared at the physical FCAG meetings and all of the ideas generated around each theme and its units were placed on the FCAG website. There was inevitable debate about language and content at this stage.
(4)	**Group discussion**	Frank and open discussion on the FCAG website message and write boards was encouraged, as well as generation of new ideas or changes in categorisation. This process was facilitated by each of the nominated Theme Leads. A 'theme of the week' process was employed to encourage equity of focus. Physical FCAG meetings also allowed each of the Theme Leads to present the collation of ideas around the themes and the units they should contain, and supported further discussion about these.
(5)	**Voting and ranking decisions**	An online survey of the derived competence framework was developed (www.surveymonkey.com). A five-point Likert scale was used to grade participants agreement with the 81 units.

A.4 FCAG Recommendations

A.4.1 The derived competence framework relates to what should be expected of a newly 'qualified' consultant in PHEM in the UK. In the competence framework, themes are overarching areas of professional practice. There are six sub-specialty specific and four generic competence themes within the proposed framework (table A.3).

A.4.2 Each theme comprised a number of discrete work roles or activities which are referred to as units. There were 81 units in the proposed framework. Each unit consisted of grouped or related elements of underpinning knowledge, technical skill and non-technical skill – otherwise referred to as 'competences'. The individual competences are those deemed to be necessary to fulfil the work role or activity and, pending final elucidation, are not reported here. The inter-relation of the six related sub-specialty specific themes and the four generic or cross-cutting themes is illustrated in figure A.1.

[4]basecamp.com

Table A.3 PHEM Competence Themes.

1.	Working within emergency medical systems
2.	Providing pre-hospital emergency medical care
3.	Using pre-hospital equipment
4.	Supporting rescue and extrication
5.	Supporting safe patient transfer
6.	Supporting emergency preparedness and response
A.	Good medical practice
B.	Clinical governance
C.	Team resource management
D.	Operational practice

Figure A.1 Original FCAG Competence framework schematic.

A.5 Discussion

A.5.1 The central methodology used in developing the competence framework was consensus opinion. Consensus meetings and workshops are commonly used methods for developing a collective opinion – especially where research evidence

may be lacking or contradictory. A modified Nominal Group technique was chosen over other consensus development methods because the literature suggests that it generates a greater quantity of unique ideas and results in a marked increase in perceived group satisfaction with the outcome over other methods. (8,9) This is clearly important if the competence framework is to be acceptable nationally.

A.5.2 FCAG addressed the question: What activities constitute the clinical practice of a newly qualified consultant level sub-specialist in PHEM? What was surprising although reassuring throughout this process was that there was very little dissent about the answers. Most debates centred around the language used to articulate the framework units rather than the content. For example, there was inter-specialty discussion regarding the use of the term "critical care". Where such debates occurred, the final decision regarding terminology rested with the majority opinion.

A.5.3 A consistent message conveyed at all FCAG meetings and on the online collaboration site was that 'this all made sense' and reflected the reality of current PHEM practice. This may explain the observed steady decline in engagement from a number of individuals. We hoped that participation would be optimized by having different locations for physical meetings and by utilizing web-based collaboration software. In reality, some individuals expressed dislike for the software and some only attended the nearest meeting – thus limiting their own engagement. Others found the software difficult to use and others reported feeling intimidated by the lack of anonymity and the presence of senior personalities in the group. As a result, physical meetings and online debates and discussions were only consistently supported by approximately half of the full FCAG.

A.5.4 The final survey of agreed themes and units had a response rate of only 43% if the 88 original FCAG members are used as the denominator. In fact, these 38 respondents represented the core of FCAG in terms of engagement and the response rate may therefore be misleading. Nonetheless, we were disappointed with the limited response from the wider FCAG membership. We attribute this to perceived or actual difficulty in using online surveying software or perhaps a wider acquiescence bias. Despite the reduced number, those that did respond represented a diverse mix of healthcare professionals and the consensus on the agreed units within the framework was 100% - thus negating any further voting rounds.

A.6 Completing the PHEM Curriculum – Stage Two: Articulation of Elements

A.6.1 FCAG has now been dissolved and its work absorbed into the Curriculum, Training and Assessment sub-committee of the Intercollegiate Board for Training in Pre-hospital Emergency Medicine. The CTA sub-committee will articulate the specific underpinning knowledge, technical skills and non-technical skills within each unit in the framework and relate these to methods of learning and assessment.

A.7 Acknowledgements

A.7.1 Funding for FCAG administration and physical meetings was provided by the Faculty of Pre-hospital Care and Magpas. Richard Browne, Simon Lewis, John Scott and Alistair Steel provided significant contributions to this report. The Faculty extends its gratitude to those who gave of their time freely to support FCAG. Individuals who completed the final FCAG survey at the conclusion of the process are highlighted with an asterisk.

A.7.2 Gordon Allison (General Practice and Military Medicine), Bruce Armstrong (Nursing Practice), Jonathan Benger (Emergency Medicine), John Black (Emergency Medicine), Anthony Bleetman (Emergency Medicine), Mark Bloch* (Anaesthesia and Intensive Care), Anne Booth* (Anaesthesia), Dave Bramley* (Emergency Medicine), Philip Brown (General Practice), Richard Browne* (Anaesthesia), Mark Byers (General Practice and Military Medicine), Brian Carlin* (Paramedic Practice), Chris Carney (General Practice), Nick Castle (Nursing and Paramedic Practice), Graham Chalk (Paramedic Practice), David Cooksley* (Emergency Medicine), Gareth Davies (Emergency Medicine), Rob Dawes* (Anaesthesia), Charles Deakin* (Anaesthesia), Tristan Dyer* (Emergency Medicine), Dan Ellis* (Emergency Medicine and Intensive Care), Richard Fairhust (General Practice and Emergency Medicine), Jeremy Field* (Anaesthesia), Mark Folman (General Practice), Mark Forrest* (Anaesthesia and Intensive Care), James French (Emergency Medicine), Will Glazebrook (Emergency Medicine), Ian Greaves (Emergency Medicine), Phil Grieve* (Paramedic Practice), Andy Griffiths (General Practice and Military Medicine), Pete Gregory (Paramedic Practice), Matt Gunning* (Anaesthesia), Clare Hayes-Bradley (Anaesthesia), Jeremy Henning* (Anaesthesia), Peter Holden* (General Practice), John Horton (Paramedic Practice), Phil Hyde* (Paediatrics and Intensive Care), Tom Hurst* (Anaesthesia), Victor Inyang (Emergency Medicine), Juliane Kause (Anaesthesia), Tony Kehoe (Emergency Medicine and Military Medicine), Allison Klein* (Emergency Medicine), Juergen Klein* (Anaesthesia and Intensive Care), Colville Laird (General Practice), Mike Langram (General Practice), Simon Le-Clerc* (Emergency Medicine and Military Medicine), Simon Leigh-Smith (Emergency Medicine and Military Medicine), Simon Lewis* (Emergency Medicine), David Lockey (Anaesthesia and Intensive Care), Rod Mackenzie* (Emergency Medicine), Fiona Mair* (Emergency Medicine), Peter Mahoney (Anaesthesia), Rob Major* (Emergency Medicine), Adam Manson* (General Practice and Military Medicine), Syed Masud (Emergency Medicine), John Martin (Paramedic Practice), Randal McRoberts Emergency Medicine), Morgan McMonagle* (Vascular Surgery), Alastair Mulcahy (Anaesthesia), Ian Mursell (Paramedic Practice), Alastair Newton* (Emergency Medicine), Matthew O'Meara (Anaesthesia), Robert Owen (Paramedic Practice), Jane Pateman (Anaesthesia), Brodie Patterson (Emergency Medicine), Zane Perkins* (Anaesthesia), Keith Porter (Trauma Surgery), Cliff Reid* (Emergency Medicine and Intensive Care), Malcolm Russell (General Practice and Military Medicine), John Scott (General Practice and Paramedic Practice), Howard Simpson* (Emergency Medicine), Gary Spitzer* (Paramedic Practice), Simon Standen* (Paramedic Practice), Alistair Steel* (Anaesthesia and Intensive Care),

Ben Teasdale (Emergency Medicine), Andy Thurgood* (Nursing and Paramedic Practice), Simon Topham (General Practice), Darren Walter* (Emergency Medicine), Anne Weaver (Emergency Medicine), Curtis Whittle (Anaesthesia and Military Medicine), Richard Williams (Psychiatry), Mark Wilson* (Neurosurgery), Bob Winter* (Intensive Care), David Wise (Emergency Medicine), Malcolm Woollard (Paramedic Practice), Kelvin Wright (Emergency Medicine), Matthew Wyse (Anaesthesia), David Zideman (Anaesthesia).

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