

## Discussion paper

# Delivering quality improvements in patient care: the application of the Leicester Model of interprofessional education

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### ABSTRACT

**Background** This paper places the importance of evidence-based models of interprofessional education (IPE) within the context of a changing National Health Service (NHS). The coalition government has placed integrated care at the heart of its vision for England's health system. Its principles are to put patients at the centre of the NHS, empower clinicians to lead commissioning and change the emphasis of measurement to quality clinical outcomes. As a result, NHS services are being increasingly tendered along evidence-based care pathways and commissioners are introducing payment by results tariffs, requiring providers to achieve quality outcomes as a requirement of full payment.

**Aim** We argue that in preparing the health and social care workforce for outcome-based practice, the development of technical skills should be complemented with skills for effective teamworking and collaborative practice.

**Methods** This paper shares the achievements of the Leicester Model of IPE which is underpinned by theoretical models of learning and implemented entirely in clinical practice; mixed research methods

demonstrate that its learning potential is as relevant today as when it was first implemented in 1996.

**Results** Our extensive research evidence demonstrates that students and healthcare professionals undertaking these programmes are enabled to perceive care pathways from service and providers perspectives; they gain valuable insights into how teams balance task- and patient-related issues, offer clarity about the team's effectiveness and gain new insights into collaborative opportunities to address patients' needs.

**Conclusion** We demonstrate that models such as ours offer evidence-based solutions which will support the achievement of quality outcomes for service providers, many of whom are reviewing their business plans to address the financial implications of payment by results. The current NHS reforms provide a hugely important lever in which IPE can come of age – in return we need to ensure that our NHS colleagues are informed of its potential.

**Keywords:** evidenced-based model of education, general practice, interprofessional learning, practice-based, primary care

### How this fits in with quality in primary care

#### What do we know?

National Health Service (NHS) reforms are changing clinical service delivery to outcomes focused, whilst interprofessional education (IPE) is becoming increasingly evidence-based and relevant for preparing the future workforce.

#### What does this paper add?

This paper explores the potential of the Leicester Model of IPE to help prepare healthcare teams for effective and efficient collaborative care. We frame the model within the context of today's NHS where payment by results will require primary healthcare teams to pay as much attention to team functioning as they do for clinical competence.

## Introduction

Following decades of innovation, interprofessional education (IPE) as defined by the Centre for the Advancement of Interprofessional Education in the UK (CAIPE),<sup>1</sup> has become a national and international priority.<sup>2,3</sup> In practice, however, IPE remains a 'Cinderella' subject, a 'bolt-on' instead of an integral part of every healthcare professional's training and continuing development.

The General Medical Council (GMC) states that medical students 'must ... work with and learn from other health and social care professionals and students'; their directives are less clear on how the knowledge, skills and attitudes relating to teamworking and collaborative practice should be achieved and assessed. A large variability therefore exists between medical schools concerning how students are prepared for teamworking and collaborative practice and indeed whether it is assessed at all, with few developing an integrated IPE curriculum.<sup>4,5</sup> The journey to mainstream IPE within medical education therefore remains in its infancy.<sup>6</sup>

Once qualified, doctors are expected to develop relevant knowledge, skills and attitudes to work with colleagues from other professions and deliver effective interprofessional practice.<sup>7</sup> This is reinforced within the Foundation Programme where, for example, teamworking is assessed through a 360-degree appraisal, while training for general practice demands appreciation of teamworking.<sup>8</sup>

There is increasing evidence of the benefits of interprofessional practice for team efficiency and IPE for preparing students with the right knowledge, skills and attitudes to work collaboratively.<sup>9–11</sup> Yet despite this evidence, scepticism remains concerning IPE's potential to improve patient outcomes. This may be related to conceptual misunderstandings of interprofessional terms and activities, as well as the practicalities of its organisation and delivery.<sup>12,13</sup> Robust IPE theory, research and evaluation is beginning to

emerge and long-term studies are only just being published.<sup>11,14,15</sup> Much of this disparity results from the lack of agreed theoretical understanding of what constitutes an effective IPE curriculum and how and why this learning should take place.<sup>16</sup> Consequently, there are few agreed assessment measures which endorse and ensure progression for professional practice, especially in medicine.<sup>4,17</sup>

Within the NHS, the emergence of evidenced-based care pathways and payment by results increases the challenges on healthcare providers to deliver efficient, 'evidenced' quality outcomes.<sup>18,19</sup> With full payment dependent on measured outcomes it is no wonder that many providers are reviewing their current business models, concerned about phasing of cash flow and the realistic likelihood of financial claw-backs if quality outcomes are not achieved.

The challenges and financial risks placed on the healthcare providers bring new opportunities for advocates of IPE since we can offer some relief. Providers will need to develop their current workforce for this new environment, however, technical skills alone will not address the wider requirements of delivering safe and effective patient care; a truly integrated interprofessional team can consider solutions to service delivery and enable teams to practice in efficient new ways.<sup>20</sup>

The Leicester Model of IPE (LMIPE) is one of the early entrepreneurial developments which has been hard to mainstream.<sup>16,21</sup> Nevertheless, we have managed to achieve a great deal over the last 12 years, which places this model in a pivotal place to become endorsed as relevant for any integrated IPE curriculum, whether for undergraduate studies or professional practice. We will outline how the model can help teams identify their strengths and weaknesses in order to enhance efficiency and effectiveness and improve patient outcomes.

## The Leicester Model of IPE

The model delivers quality interprofessional learning (IPL) which adheres to the principles of IPE set out by CAIPE.<sup>1</sup> How does the model work? In essence, the LMIPE enables a robust examination of the quality of patient care by combining patient and professional perspectives of what is actually happening at any moment in time as the patient progresses along a care pathway. Practically, it uses a step-by-step approach to re-examine the patient journey using experiential learning, enquiry through case analysis, application of evidence to practice and reflection. The outcome is to arrive at a new understanding of patients' problems. The learning takes place in a dynamic clinical environment in which the student team and the patient's current professional team, work and learn alongside one another. Together, through the educational process, they arrive at new knowledge and understanding to improve patient outcomes. Insights are achieved relating to teamworking and practical solutions to problems are identified along the patient care pathway.

Courses are structured into cohorts of 24–36 students who work together in interprofessional groups of four. The programme commences with an induction and group work preparation. Each small group interviews a patient in their home to understand medical and social care issues impacting on their physical, psychological and social functioning. The patient's priorities and attitudes are explored alongside their relationship with the services involved in their current care. The group then interview the workers of three or four agencies providing care to their patient to explore the strengths and deficiencies of the service, and to compare service priorities with those of their patient. Facilitated by experienced clinical and academic tutors, the student group reflects on each interview to prioritise the issues identified. The education cycle is completed with groups presenting their care management solutions to members of the patient's current professional team, including their managers. The learning cycle is outlined in Figure 1.

Underpinned with robust ethical principles, the model permits active team membership, facilitated through the supervision of a clinical and academic team. It highlights how, when and where team members should work together to effect care through service delivery and design which can focus on the individual, team or health and social care system (Box 1).

The model uses a constructivist approach to learning and adopts a cyclical advance following the stages of the Kolb learning cycle.<sup>22,23</sup> Using reflection, it prepares teams to re-examine their care through patients' experiences of services and addresses the realities of team-based care delivery.<sup>24</sup> Placing the learning at the point of delivery of care ensures social

learning and an appreciation of processes of reflection within a community of practice.<sup>21,25</sup>

The LMIPE is an analytical process which offers a tool for practitioners to assess the quality of their individual and collective practice. The tool can be used by any team member as well as for undergraduate and postgraduate learners. The model has been shown to identify:

- operational issues within team processes
- practical problems of delivering care
- cost saving, patient-centred outcomes
- wasted resources, for example, repeated assessments
- hidden or unexpected issues.<sup>26,27</sup>

## Methods

Over a 10-year period we have evaluated the impact of the learning model using quantitative, qualitative and mixed methods, which are outlined and shared in this paper, and we direct the reader to the published papers for further clarification of these methods.

## Results and outcomes

### Achievements of the model over 12 years

The LMIPE has been adapted for learning for undergraduate and postgraduate students. Following its origins in primary care, the model has been successfully applied to acute hospital care, community rehabilitation hospitals and within mental health teams.<sup>26–28</sup> The model has also been successfully reproduced and implemented across the UK and internationally. Robust educational research has continued to shape its design and adaptability for learning within a range of clinical teams.<sup>16,26–28</sup> Outcomes impact upon patients, professionals, healthcare teams and learners.

Patients feel they are contributing to developing better services and they enjoy sharing their experiences. Many reflect that having students consider their needs has boosted their morale. Although never acknowledged during consent, patient participation has brought about improvements in their treatment and care. A longitudinal examination of the original learning based in inner-city primary care has identified significant impacts of the learning model on patient outcomes and will be submitted for publication in 2012.

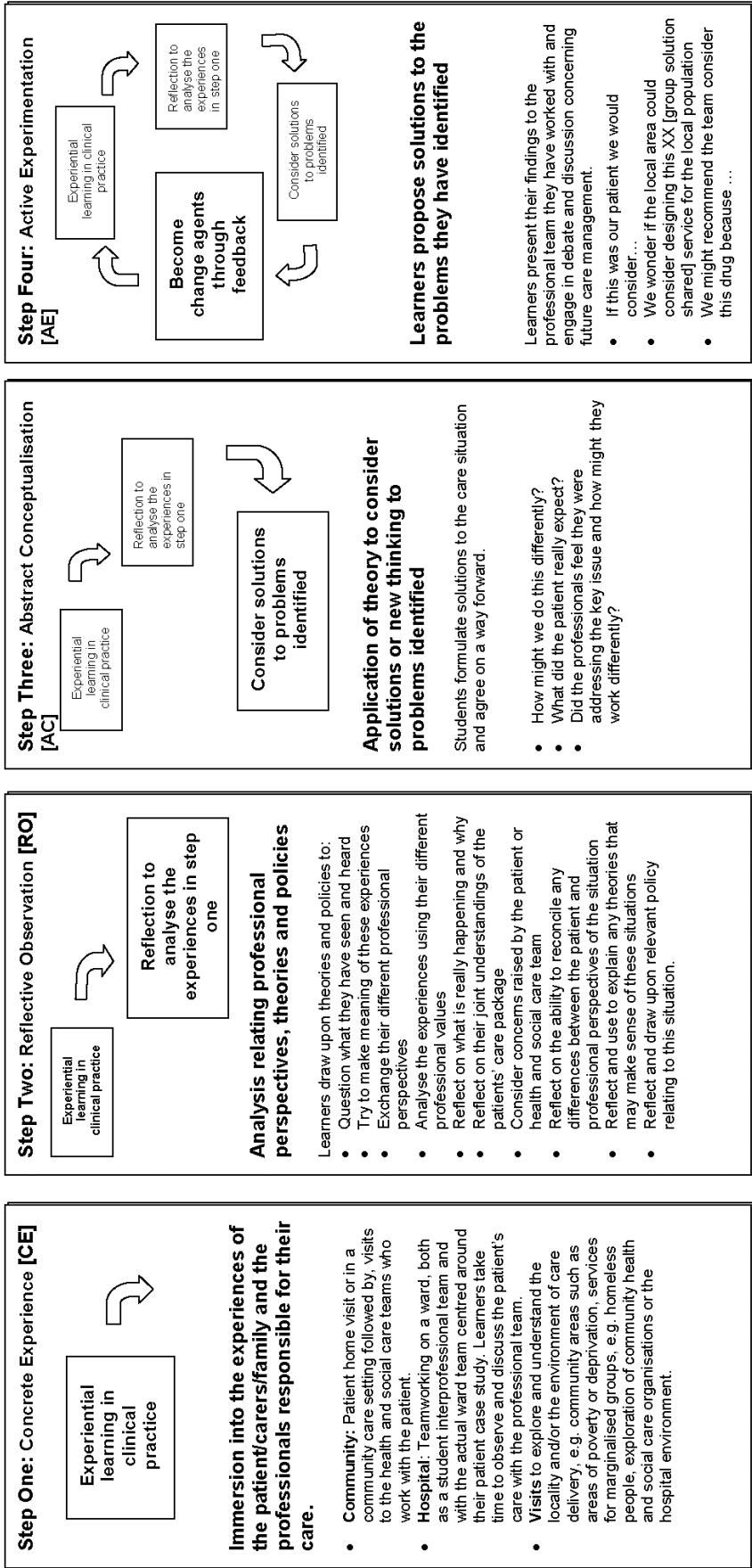


Figure 1 Synopsis of the model adopted from the Kolb learning cycle<sup>23</sup>

### Box 1 Achievements of the Leicester Model

*Two-way learning:* clinical teams (hospital or community) learn with and from the students (pre- and/or post-qualified) who analyse practice and often identify shortfalls.

*Exposes team working:* learning takes place within the complexity of service delivery, learning directly from day-to-day patient and health and social team encounters. Analysis highlights aspects of team-based care.

*Patient outcomes:* as partners in the process patient's concerns and priorities are made visible.

*Adaptable to patient pathways:* learning can address any patient pathway simply by choosing appropriate patients. Patients to date include disabled people, mental health problems and chronic conditions across the life-span.

*Motivation to change:* the cyclical process motivates participants to change and improve current practice.

*Critical enquiry:* the education method which is reflective, experiential and problem solving encourages active learning and critical enquiry.

*Experience being in a team:* learners can experience being in a team in addition to working alongside a clinical team.

*Collaborative care:* in most clinical applications, but especially in primary care, learners value how collaborative practice within health and between health and other statutory bodies enhances patient outcomes.

*Teamworking:* because the learning is in real time, insights of competing service priorities, communication, cultural and language barriers, and issues impacting on day-to-day team-based service delivery are identified.

*Efficiency:* the hosting health and social care team benefit from being kept up-to-date through the exploration of patients' needs.

*Theoretical application:* the model is based on theoretical understanding of learning and can bridge the theory–practice gap.

*Partnerships:* LMIPE facilitates partnerships between higher education institutions and healthcare organisations.

Professional and front-line agencies are driven to keep up-to-date as students challenge their knowledge. Many report actively widening their skills and knowledge base because of these challenges. For others there have been opportunities for career progression as several have taken up opportunities to become clinical teachers. Many report a sense of fulfilment despite often finding the analysis of their practice challenging. All value the student insights into patient situations especially because they rarely have enough time to achieve such detailed analysis or time to listen to family's and carers' insights.

Healthcare teams widen their local referral networks with statutory and voluntary agencies in the community and hospital as a result of the student analysis, which frequently generates recommendations for wider multidisciplinary support for patients. Healthcare teams value student input as a fresh pair of eyes, often providing new information about the patient and family. In one hospital setting, students frequently ensured safer discharges from hospital because they had had time to listen to family issues.<sup>26</sup> Others stated that the students brought fun and encouraged team cohesion. For some clinical teams, this was the first time they had engaged with students and as a result

staff felt valued and motivated. All stated the usefulness of the student's feedback presentations.

Learners endorse the LMIPE as relevant for inter-professional learning. Students developed skills in communication, particularly when challenging each other's perspectives or in preparing feedback assessments. They demonstrated an appreciation of the value of collaborative practice by seeing health teams working alongside social care, education, policing and voluntary agencies. Students positively commented on the opportunity to participate in clinical decision making by contributing their insights and influencing patient management plans.

### Applicability of LMIPE: an example of use for post-qualified learners from primary healthcare teams

From 2002 to 2005 we applied the LMIPE to a range of recently qualified professionals including trainee general practitioners (GPs), student health visitors, practice nurses and newly qualified social workers. The model proved to be valuable for preparing these learners for the collaborative team-based practice which would be expected of them in their future practice.

These findings have been presented at national conferences and we present them here, together with the key lessons concerning sustainability for post-qualified IPE. This course also created a lasting education partnership between the University of Leicester, De Montfort University and Leicester City Social Services.

The learning consisted of a two-day programme in which small mixed professional student teams worked together with a patient living in a socially disadvantaged area. They progressed through the learning cycle, however, in contrast to our undergraduate programmes, these postgraduate learners additionally explored theoretical principles of teamworking, and were given an opportunity to complete a team analysis using the Myers Briggs test.

Course evaluation consisted of a semi-structured questionnaire distributed pre and post course. Scored questions using a five-point Likert scale related to the nine learning outcomes, where one indicated little learning and five a great deal. Open questions asked for analysis of the value of the programme for preparation for practice.

Of the 214 learners (Table 1) the pre and post scores showed a significant self-perceived knowledge gain for all nine learning outcomes, for all professional groups ( $p < 0.005$  to  $p < 0.001$ , Wilcoxon paired signed rank non-parametric test, two-tailed). This is in-line with our other reported evaluations.<sup>16,28</sup>

Analysis of the free-text comments for themes did not identify any negative outcomes. Learners gained insights in the importance of interprofessional collaboration and teamwork as shown by these representative comments:

‘I have been able to examine my role and function within a team.’ (student district nurse)

‘I have been reminded of the importance of communication within teams aiming for the same goal.’ (student health visitor)

‘I will consider more appropriate referrals and use of allied services.’ (GP trainee)

‘Helped me to work more effectively in a team.’ (GP trainee)

‘I have become more aware of the interprofessional approach and its benefits to service users.’ (first year social worker)

Learners felt inspired to promote teamwork, improve interagency communication and make greater use of allied services. They listened to and positively regarded each other’s professions and were able to compromise to address the challenges of delivering integrated clinical services. Ultimately, they were helped to reflect to consider the value an interprofessional approach to benefit patients.

The course required curriculum alignment across many programmes and for this reason it was difficult to sustain when new curricula emerged. The opportunity for these post-qualified students to learn together interprofessionally prior to working in multidisciplinary healthcare teams should be mandatory in our view.

## Discussion

As the NHS Health & Social Care Bill progresses through its readings in the House of Commons the architecture of the NHS continues to change and clinician-led commissioning is well on its way to implementation. Payment by results may well turn

Table 1 Course participants

Numbers of students working together in health and social care 2002–2005

| Year      | General practitioner trainees | Student district nurse | Student health visitor | Student practice nurse | First-year social worker | Student school nurses |
|-----------|-------------------------------|------------------------|------------------------|------------------------|--------------------------|-----------------------|
| 2002 June | 13                            | 4                      | 12                     |                        | 5                        |                       |
| 2003 June | 6                             | 6                      | 6                      |                        | 6                        |                       |
| 2003 Nov  | 22                            |                        |                        |                        | 6                        |                       |
| 2004 June | 18                            | 13                     | 12                     | 2                      | 8                        |                       |
| 2004 Dec  | 11                            | 13                     | 16                     | 1                      | 7                        | 4                     |
| 2005 Nov  | 5                             | 4                      | 4                      | 1                      | 1                        | 8                     |
| Total     | 75                            | 40                     | 50                     | 4                      | 33                       | 12                    |

out to be the lever that IPE has been waiting for in order to transform from its Cinderella-like status to mainstream for the continuing development of NHS teams.

The LMIPE offers a valid approach for learners and all professional practitioners to analyse and propose improvements for patient-centred teamworking. It acts as a catalyst for healthcare teams to review their current activities in order to improve patient outcomes. In some recent adaptations, patients have formed part of the feedback process.<sup>29</sup>

We can demonstrate that the LMIPE robustly demonstrates improvements in outcome-based teamworking, and we therefore postulate that investment in training teams across care pathways will not only improve outcomes, but will also facilitate delivery of financial efficiencies and provider sustainability.

We now need to increase our engagement with healthcare commissioners and providers. They should be informed about the benefits to service delivery that IPE can bring and advised on the logistics of applying IPE models of learning in operational practice.

We believe that evidence of IPE should be a requirement of all new care pathway tenders; however, to mainstream this aspiration the research rigor which underpins the development of evidence-based commissioning should be evident in our educational research. The research agenda should increasingly reflect the outcomes expected of the NHS workforce in terms of patient engagement, integrated care, quality outcomes and cost-efficiency.

The LMIPE is but one of several working within practice settings. We are ready to graduate and become an essential resource to enable effective clinical teamwork.

## REFERENCES

- 1 Barr H. *Interprofessional Education. Today, yesterday and tomorrow*. Learning and Teaching Support Network Occasional Paper No 1. London: Centre for Health Sciences and Practice, 2002.
- 2 Department of Health. *Executive Summary of Creating an Interprofessional Workforce – an education and training framework for health and social care in England*. London: Department of Health, 2007. [www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_078593](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_078593) (accessed 15 November 2011).
- 3 World Health Organization (WHO). *Framework for Action on Interprofessional Education and Collaborative Practice*. Geneva: WHO, 2010. [www.who.int/hrh/resources/framework\\_action/en](http://www.who.int/hrh/resources/framework_action/en) (accessed 15 November 2011).
- 4 Stone J. Moving interprofessional learning forward through formal assessment. *Medical Education* 2010; 44:396–403.
- 5 General Medical Council (GMC). *Tomorrow's Doctors. Outcomes and standards for undergraduate medical education*. London: GMC, 2009.
- 6 Anderson ES and Lennox A. Medicine and team working. In: Littlechild and Smith (eds) *A Handbook for Interprofessional Practice in the Human Services*. Harlow: Pearson (in press).
- 7 General Medical Council (GMC). *Good Medical Practice. Regulating doctors ensuring good medical practice*. London: GMC, 2006.
- 8 General practice training: teamworking. [www.gp recruitment.org.uk/careers.htm#Qualities%20and%20Skills%20required](http://www.gp recruitment.org.uk/careers.htm#Qualities%20and%20Skills%20required) (accessed 15 November 2011).
- 9 West MA, Guthrie JP, Dawson JF, Borrill CS and Carter M. Reducing patient mortality in hospitals: the role of human resource management. *Journal of Organizational Behaviour* 2006;27:983–1002.
- 10 Hammick M, Freeth D, Koppel I, Reeves S and Barr H. *A Best Evidence Systematic Review of Interprofessional Education*. Dundee: Best Evidence Medical Education, BEME Guide 9. AMEE, 2007.
- 11 Pollard KC and Miers ME. From students to professionals: results of a longitudinal study of attitudes to pre-qualifying collaborative learning and working in health and social care in the United Kingdom. *Journal of Interprofessional Care* 2008;22:399–416.
- 12 Reeves S, Goldman J, Gilbert J *et al.* A scoping to improve conceptual clarity of interprofessional interventions. *Journal of Interprofessional Care* 2011;25:167–74.
- 13 Gilbert JHV. Interprofessional learning and higher education structural barriers. *Journal of Interprofessional Care* 2005;19(Suppl 1):87–106.
- 14 Hean S, Craddock D and O'Halloran C. Learning theories and interprofessional education: a user's guide. *Learning in Health and Social Care* 2009;8(4):250–62.
- 15 Anderson ES and Lennox A. The Leicester Model of interprofessional education: developing, delivering and learning from student voices for 10 years. *Journal of Interprofessional Care* 2009;23(6):557–73.
- 16 Reeves S, Golman J and Zwarenstein M. An emerging framework for understanding the nature of interprofessional interventions. *Journal of Interprofessional Care* 2009;23:539–42.
- 17 McNaire RP. The case for educating health care students in professionalism as the core content of interprofessional education. *Medical Education* 2005;39:456–64.
- 18 Campbell H, Hotchkiss R, Bradshaw N and Porteous M. Integrated care pathways. *BMJ* 1998;316:133–7.
- 19 Department of Health. *A Simple Guide to Payment by Results*. London: Department of Health, 2011. [www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_128862](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_128862) (accessed 11 December 2011).
- 20 Pronovost P and Vohr E. *Safe Patients, Smart Hospitals*. London: Hudson Street Press, 2010.
- 21 Lennox A and Anderson ES. *The Leicester Model of Interprofessional Education. A Practical Guide for the Implementation in Health and Social Care*. Higher Education Academy Medicine, Dentistry and Veterinary Medicine Special Report 9. Newcastle: MEDEV, 2007.

- 22 Piaget J. *The Psychology of Intelligence*. London: Routledge and Kegan Paul, 1950.
- 23 Kolb DA. *Experiential Learning*. Englewood Cliffs, NJ: Prentice-Hall, 1984.
- 24 Schön D. *Educating the Reflective Practitioner*. San Francisco: Jossey-Bass, 1987.
- 25 Wenger E. *Communities of Practice: learning, meaning and identity*. Cambridge: Cambridge University Press, 1998.
- 26 Anderson ES and Thorpe LN. Learning together: an interprofessional education programme to appreciate team work. *Clinical Teacher* 2010;7:19–25.
- 27 Anderson ES and Smith R. Learning from lives together: lessons from a joint learning experience for medical and social work students. *Health and Social Care in the Community* 2010;18(3):229–40.
- 28 Kinnair D, Anderson ES and Thorpe LN. Development of interprofessional education in mental health practice: adapting the Leicester Model. *Journal of Interprofessional Care* (in press).
- 29 Anderson ES, Ford J and Thorpe. Learning to listen: Improving students communication with disabled people. *Medical Teacher* 2011;32:1–9.

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## CONFLICTS OF INTEREST

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