

BEME REVIEW PROTOCOL

July 2014

Review Title

A BEME systematic review of the impact of interprofessional education on health and social care practitioners, professional practice, patient/client health and social care outcomes (update)

Review Group Members

Reviewers:

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Team capability to deliver project: The team has varied, extensive experience in the field of interprofessional education (IPE) and is well-placed to deliver this review. They represent an

international balance of researchers, educators and practitioners in the IPE field. *Reeves* is a research leader in the interprofessional field whose publications are cited across the world. He has completed a number of systematic reviews, including the previous BEME IPE review, and works as the editor in chief of the Journal of Interprofessional Care. *Barr* is a world leading expert in interprofessional education, President of the Centre for the Advancement of Interprofessional Education and Emeritus Professor of Interprofessional Education at the University of Westminster. He also holds number visiting professorial roles in institutions across the globe. *Birch* has led work with multiprofessional partner institutions across the south east of England and was leader for the University's international Multidisciplinary Healthcare programme. He moved to the University of West London, as Pro Dean of the Faculty of Health and Human Sciences, where he was awarded the chair of Human Sciences. *Boet* is a staff anaesthesiologist at the Ottawa Hospital and researcher who is particularly interested in interprofessional simulation-based education and crisis resource management. This academic work is undertaken within his broader area of focus - investigating strategies and tools, such as debriefing or cognitive aids, to improve skill retention in healthcare. *Davies* is a nurse leader and manager with executive experience in acute and primary care in the NHS. He has taught on undergraduate and post-graduate programmes for healthcare professionals and is a fellow of the higher education academy. *Kitto* is a sociologist with expertise in the use of empirical and conceptual approaches linked to workplace learning and interprofessional continuing education. He also works as an associate editor on the Journal of Interprofessional Care. *McFayden* he has researched and published in many areas of health, since 2005 in the area of interprofessional education. His main research interests include the psychometric properties of evaluation interprofessional instruments and methodological issues. He is vice chair of the Centre for the Advancement of Interprofessional Education and also works as an associate editor on the Journal of Interprofessional Care. *Rivera* is a geriatrician who provides primary and palliative care to homebound older adults. She received a UCSF Geriatric Academic Career Award with which she is expanding interprofessional geriatric education across the institution. She has a growing expertise in the design and implementation of interprofessional education curricula.

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Background

This BEME review is an update of a previous review which systematically searched the interprofessional education (IPE) literature up to April 2005 and identified 21 high quality studies (Hammick et al., 2007). Specifically, this review found that while IPE was generally well received, enabling knowledge and skills necessary for collaborative working, it was less able to positively influence interprofessional attitudes/perceptions. The review also found that when IPE was employed in quality improvement initiatives, it could help develop practice and enhance service delivery.

Since the publication of this BEME review, the IPE field has continued to grow, globally, in terms of increasing publications and regular international conferences (e.g. Pollard & Miers 2008, Lidskog et al., 2009, Curran et al., 2010; Landon et al., 2013). This updated BEME review is therefore timely given a continued interest and investment in IPE by a range of stakeholders – policymakers, educators, practitioners and researchers. Nevertheless, while the evidence base for IPE has continued to increase, it still remains fragmented in nature, which has meant an ongoing uncertainty about the effects of this type of education (e.g. Reeves et al 2010a; Reeves et al 2013). This creates a further need to update review to assess how the evidence for IPE has evolved in the intervening years.

IPE is an educational activity that is designed and implemented around the world to enhance attitudes, knowledge, skills and behaviours for collaborative practice (Barr et al., 2005; Kitto et al., 2010). Through improvements to clinical practice, it is also regarded as an intervention that will improve the quality of care delivered to patients/clients (Reeves et al, 2010b). As such, IPE has been defined as ‘occasions when two or more health/social care professions learn with, from and about each other to improve collaboration and the quality of care’ (CAIPE, 2002).

Recently, the World Health Organization published a report which outlined the role of IPE in preparing health care providers to enter the workplace as a member of the collaborative practice team (WHO 2010). These sentiments were echoed the publication of another significant policy report that called for the use of IPE that breaks down traditional professional silos in order to promote effective interprofessional collaboration (Frenk et al., 2010).

IPE is increasingly being offered at varying stages in the pre and post qualification of education of many health and social care professions (e.g. Pollard & Miers 2008), as well as a continuing education offering to experienced professionals (e.g. Landon et al., 2013). From the related empirical work, it is possible to see that IPE can have a beneficial impact on learners’ collaborative attitudes, knowledge, skills and behaviours (e.g. Curran et al., 2010; Kitto et al., 2010; Sargeant 2011; Makino et al., 2013).

Given the ongoing emphasis on the importance of IPE to promote collaborative competence and in turn improve the delivery of health and social care processes and outcomes (CIHC 2010; IPEC 2011), attention is needed to understand the evolving nature of evidence related to IPE. As noted above, it is timely to update this review to identify whether there are additional studies that meet the BEME criteria can help inform the IPE evidence base.

Aim and Objectives

The overall objective of this review is to update a previous BEME review (Hammick et al., 2007) to understand how IPE evidence has evolved in the intervening period.

The specific objective of this review is:

Consider the effectiveness of different types of IPE interventions, including their associated cost implications, on a range of outcomes, including impact on the knowledge, skills and attitudes of the learner, and subsequent change in organisational practice and /or benefits to patients/clients.

The review will search, identify and evaluate studies of all types of educational, training or teaching initiatives, involving more than one profession in joint, interactive learning.

Methods

The following inclusion and exclusion criteria will be used in this review:

Types of studies

All research evaluation designs (e.g. action research, case study, ethnographic, experimental, quasi-experimental studies) published from May 2005 to December 2013 will be considered in the review. Studies already described and analysed in the previous BEME review (Hammick et al 2007) will not be included in the updated search, but combined at the analysis phase.

To help understand the range of methods employed within these research designs information on data collection methods (e.g. interviews, questionnaires, and observations) will be recorded. A note of whether these data collection methods are qualitative, quantitative or both will also be made.

Types of intervention

All IPE interventions will be considered for this review. If a comparison group is included, studies that compare to other forms of IPE or other learning will be included. An IPE intervention will be defined as: when members of more than one health and/or social care profession learn interactively together, for the explicit purpose of improving the health or well being of patients/clients. Interactive learning requires active learner participation, and active exchange between learners from different professions.

Types of participants

Among the professional health, social care groups to be included will be: chiropodist/podiatrist, complementary therapists, dentists, dieticians, doctors, hygienists, psychologists, psychotherapists, midwives, nurses, pharmacists, physiotherapists, occupational therapists, radiographers, speech therapists, social workers, care or case co-ordinators, managers.

Types of outcome measures

Outcome measures will be based on Barr and colleagues' (2005) extended version of Kirkpatrick's classic educational outcomes model, which has six levels as shown below.

Level 1 – Reaction: These cover learners' views on the learning experience, its organisation, presentation, content, teaching methods and aspects of the institutional organisation, e.g. time-tabling, materials, quality of teaching.

Level 2a - Modification of attitudes/perceptions: These outcomes relate to changes in reciprocal attitudes or perceptions between participant groups, towards patients/clients and their condition, circumstances, care and treatment.

Level 2b - Acquisition of knowledge/skills: For knowledge, this relates to the acquisition of concepts, procedures and principles of interprofessional collaboration. For skills, this relates to the acquisition of thinking/problem-solving, psychomotor and social skills linked to collaboration.

Level 3 - Behavioural change: This measurement will document transfer of interprofessional skills and learning to workplace, such as support for change of behaviour in the workplace or willingness of learners to apply new knowledge and skills about collaborative work to their practice style.

Level 4a - Change in organisational practice: This relates to wider changes in the organisation/delivery of care, attributable to an education programme, such as: - Interprofessional collaboration and communication, teamwork and co-operative practice, costs to the health and/or social care service.

Level 4b - Benefits to patients/clients: This final level covers any improvements in the health and well being of patients/clients as a direct result of an education programme. Where possible objectively measured or self-reported patient/client outcomes will be used, such as: health status measures, disease incidence, duration or cure rates, mortality, complication rates, readmission rates, adherence rates, patient or family satisfaction, continuity of care, costs to carer or patient/client.

In addition, additional predetermined (e.g. fiscal expenditure) and unintended outcomes (e.g. facilitator burn-out) will also be included. All reported outcomes will be stratified into primary outcomes (from the Barr et al 2005 typology) and secondary outcomes.

Search strategy

To update the previous BEME review which searched for literature up to April 2005, this review will search the following electronic databases: Medline, CINAHL, BEI and ASSIA from May 2005 to June 2014. Papers published in English or French will be included.

Electronic Databases: A standard search strategy will be used, based on the one used for the previous BEME review. It will be adapted for each electronic database and aimed at identifying all types of IPE interventions:

- #1 INTER-PROFESSION* or INTERPROFESSION*
- #2 INTER-DISCIPLIN* or INTERDISCIPLIN*
- #3 INTER-OCCUPATION* or INTEROCCUPATION*
- #4 INTER-INSTITUT* or INTERINSTITUT*
- #5 INTER-AGEN* or INTERAGEN*
- #6 INTER-SECTOR* or INTERSECTOR*
- #7 INTER-DEPARTMENT* or INTERDEPARTMENT*
- #8 INTER-ORGANISATION* or INTERORGANISATION*
- #9 INTER-ORGANIZATION* or INTERORGANIZATION*
- #10 INTERPROFESSIONAL RELATIONS
- #11 TEAM*
- #12 #1 or #2 or #3 or #4 or #5 or #6 or #7 or #8 or #9 or #10 or #11
- #13 MULTIPROFESSION* or MULTI-PROFESSION*
- #14 MULTIDISCIPLIN* or MULTI-DISCIPLIN*
- #15 MULTIINSTITUT* or MULTI-INSTITUT*
- #16 MULTIAGENC* or MULTI-AGENC*
- #17 MULTISECTOR* or MULTI-SECTOR*
- #18 MULTIORGANISATION* or MULTI-ORGANISATION*
- #19 MULTIORGANIZATION* or MULTI-ORGANIZATION*
- #20 PROFESSIONAL-PATIENT RELATIONS
- #21 #13 or #14 or #15 or #16 or #17 or #18 or #19 or #20 #22 #12 or #21
- #23 EDUCATION* or TRAIN* or LEARN* or TEACH* or COURSE*
- #24 EDUCATION; CONTINUING
- #25 EDUCATION; GRADUATE
- #26 #23 or #24 or #25 #27 #22 and #26
- #28 STUDENT PERFORMANCE APPRAISAL
- #29 COURSE EVALUATION
- #30 PROGRAM EVALUATION
- #31 EVALUATION RESEARCH

#32 #28 or #29 or #30 or #31
#33 HEALTH CARE OUTCOMES
#34 EDUCATION* OUTCOMES
#35 #33 or #34
#36 #12 and #21 and #26 and #32 and #35

All abstracts and titles generated from these searches will be reviewed independently by at least two members of the review team.

The full text article will be obtained if the abstract suggests that the intervention resulted in interprofessional exchange, that learning took place, that learner, professional practice, patient care processes or health and satisfaction outcomes are reported and that the intervention was evaluated using an appropriate design (see below).

Other searches: This review will also use networks of groups (e.g. Centre for the Advance of Interprofessional Education, Canadian Interprofessional Health Collaborative, American Interprofessional Health Collaborative) involved in the promotion of IPE to circulate to their membership requests for evaluative articles related to IPE. Conference proceedings from these groups (e.g. All Together Better Health, Collaborating Across Borders) in this area. Any grey literature held by groups will be hand-searched.

In addition hand searches of the leading interprofessional journals (Journal of Interprofessional Care, Journal of Research in Interprofessional Practice and Education, Health and Interprofessional Practice) will be also undertaken.

Given the continued the semantic uncertainty within the IPE field (Reeves 2011), full papers will always be obtained for any disputed abstracts. Also, any disputed full papers subject to scrutiny by a third member of the research team.

Abstraction of included studies

Each paper that meets the inclusion criteria will be abstracted to elicit methodological and outcome information (see data abstraction sheets – Appendix 1 and 2). This abstracted information will be used as the basis for the analysis of review findings.

Data from included studies will be abstracted into one of two coding sheets employed in the previous BEME review:

Where studies have used quantitative data collection methods Quantitative Data Abstraction Sheet will be used – see Appendix 1.

Where studies have used qualitative data collection methods Qualitative Data Abstraction Sheet will be used – see Appendix 2.

In their use in the previous BEME review, these coding sheets ensured consistency across the different approaches to data collection alongside the recognition of the unique features of both approaches.

To ensure consistency two or more members of the review team will independently code a 20% sample of the full papers into the data abstraction sheets. Discussion will occur around discrepancies identified. Any disputes between two reviewers will be resolved by the involvement of a third member of the research team.

Analysis and synthesis

Previous review experience has indicated that very few of the variables coded will be ratio data, some will be interval data, and many will be categorical data, rendering standard multivariate analyses impossible. Thus, non-parametric methods will be employed for the analysis. Where a pooled estimate of the impact of IPE data are available a meta-analysis will be undertaken. Although given the nature of education research in this field, such as analysis will be unlikely.

The previous BEME review employed Biggs' (1993) presage-process-product (3P) model of learning and teaching¹ to help understand IPE research in relation to contextual factors, educational processes and associated outcomes. The 3P model will be employed as an analytical framework to synthesise data from all the included studies. At least two members of the review team will independently distill issues from the papers that can be mapped onto the 3-P model. This work will involve populating the presage, process, product sections with extracted points. Based on this work, a draft narrative will be produced – to be discussed and refined by the review team – who agreed the final synthesised narrative of the included studies linking IPE presage with IPE processes and products. (For further details on the use of the 3P model in our previous review, see Hammick et al 2007).

Timeline

There will be five inter-linked phases to updating this review. It is anticipated that this review will be completed in around 12 months

| Activity | Dates |
|--|--------------------------|
| Phase 1a: Literature searches (electronic databases, grey literature, journal hand searches) | Sept 2014 - January 2015 |
| Phase 1b: Selection of included studies | |
| Phase 2: Abstraction of included studies | Feb-April 2015 |

| | |
|---|-------------------|
| | |
| Phase 3: Analysis and synthesis | May-August 2015 |
| Phase 4: Review report writing | Sept-October 2015 |
| Phase 5: Dissemination (e.g. conferences, social media) | October 2015+ |

Conflict of Interest

The research team has no conflict of interest in performing this review

Plans for updating the Review

With an increasing expansion of interprofessional education, and its evaluation, the team would plan to update the review three years after its publication.

Note

¹ In terms of the three elements of the 3P model, Biggs (1993) viewed ‘presage factors’ as the socio-political context for education and the characteristics of the individuals (planners, teachers and learners) who participate in learning/teaching; ‘process factors’ were regarded as the approaches to learning and teaching that were employed in an educational experience and ‘product factors’ were seen as the outcomes of the learning.

References

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Pollard & Miers 2008 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*; 22:399-416.

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Reeves S, Perrier L, Goldman J, Freeth D, Zwarenstein M (2013). Interprofessional education: effects on professional practice and healthcare outcomes (update). *Cochrane Database of Systematic Reviews* 2013, Issue 3. Art. No.: CD002213.

Sargeant J, MacLeod T, Murray A (2011) An interprofessional approach to teaching communication skills. *Journal of Continuing Education for the Health Professions*; 31:265-7

World Health Organization (2010) *Framework for action on interprofessional education and collaborative practice*. WHO, Geneva.

Appendix 1: Quantitative Data Abstraction Sheet (with explanatory notes)

| CRITERIA | COMMENTS |
|----------------------|--|
| Ref. No: | |
| Citation | |
| Type (jnl, grey lit) | State whether paper has been obtained from a journal/grey literature |

| Educational Initiative | |
|-------------------------------|---|
| Aim/objective of IPE | State aims/objectives (e.g. collaboration; quality of care; flexible workforce; economies of scale or Unspecified). (Also note if aims/objectives are explicit or implicit) |
| Type of IPE | e.g. formal, informal, or a mixture of both |
| Content | e.g. common, collaborative, or a mixture. See note 1 |
| Duration | Months, Days, hours ... |
| Method of learning/teaching | State all methods used, e.g. Received (didactic); Exchange based (participatory); Observation (site visits); Action based (problem-solving); Simulation (role playing); Practice based (placements); Audit; Guideline develop/implement (this last method used widely in TQM/CQI) N.B. Need to be clear in differentiating between 'PBL' as an educational approach and 'problem-solving' as a leaning/teaching method |
| Learning outcomes | Include details on all learning outcomes stated |
| Location | Workplace, college, hospital / clinic / community / urban / rural Also country of origin (US, UK, etc) |
| Participants (number & type) | e.g. social workers, health care managers...community workers...doctors... etc State number from each professional group |
| Sector | Which broad area of health/social care (e.g. acute, community) |
| Level / stage | Undergraduate / graduate / in service |
| Qualification | e.g. whether certificate or not / validation / accreditation |
| Context | e.g. triggers for IPE; helps & hindrances (description of any 'interesting' contextual details). Also following Harden (1998) could include: characteristics of students, topic covered and 'learning situation'. Also add any contextual information on lesson plans, resources needed, available specific resources (e.g. weblinks to materials) |
| Rationale for IPE | State conceptual/theoretical underpinning of the IPE (e.g. androgogy, TQM, CQI, audit). Also state whether rationale implicit or explicit (N.B. only classify as explicit where specific theory identified). |

| Outcomes | |
|-------------------|--|
| Explicit/implicit | Are they implicit or explicit? |
| Reaction | See note 2 |
| Learning | See note 2 |
| Behaviour | See note 2 |
| Practice | See note 2 |
| Other/unspecified | State any other outcomes, or if outcomes are unspecified |

| Methods of evaluation | |
|---------------------------------------|---|
| Aim of Evaluation (Implicit/explicit) | What are the evaluation aim(s)? (Also state whether aims of evaluation implicitly or explicitly stated) |
| Research Design | RCT, CCT, CBA, ITS; specify if qualitative or quantitative; other – BA, BDA, action research, longitudinal, contemporaneous, retrospective – specify when, post-IPE |
| Data collection method | SPECIFIC TYPES - Interviews, questionnaires, other measures – observation, patient outcomes |
| Source of data | Whether from students, patients, course organisers/author's description |
| Data analysis method | Qualitative, quantitative – detail of type |
| Ethics | Have the relevant ethical issues been discussed (e.g. ethical approval obtained)? Provide details |
| Relevance | In terms of contributing new insights? Suggesting further research? impacting on policy/practice? |

| | |
|-----------------------------|---|
| Number of groups (in study) | how many arms in <i>study</i> - e.g. 1 intervention, 2 controls |
| Unit of study | (1,2 or more levels) i.e. individuals <i>as students or professionals</i> and/or clusters of subjects- e.g. organisations, classes/groups of students or professionals |
| Method of allocation | Describe how subjects allocated to group. |
| Allocation concealment | Judge if the study was designed in such a way that the researchers could not bias which subjects went into the intervention group, or the other group Score adequate (A), unclear (B), inadequate (C) or not used (D). |
| Blinding | Judge if subjects and evaluators unaware of which subjects got intervention Score adequate (A), unclear (B), inadequate (C) or not used (D). |
| Power calculation | Was there a calculation made of how big the study needed to be to detect the expected difference? |
| (Original) Sample size | How many participants in each group? (may be at two levels) e.g.: number of classes, number of students |
| Loss to follow up | How many dropouts from each group |
| Significance measures | The mean and the standard deviation (SD), confidence interval for the mean difference, test statistic (t test, F test, chi-square test, etc.) or a p-value |
| Reported biases | These include selection bias, performance bias, attrition bias and detection bias- leave them for now, unless the authors mention a potential bias or confounder. |
| Strength of design | See note 3 |
| Strength of no. | See note 3 |
| Quality of study | See note 3 |
| Quality of information | See note 3 |
| Overall weighting | See note 3 |

Note 1 - Content of IPE

Three categories of IPE:

- Common (where all students/groups learn the same content)
- Collaborative (where students/groups learn about one another in order to collaborate)
- Mixed (where students/groups receive a mixture of above two)

Note 2 - Educational Outcomes

Based on Barr et al (2005) expanded Kirkpatrick outcomes typology:

Level 1 - Reaction

will cover learners' views on the learning experience, its organisation – presentation, content, teaching methods and aspects of the institutional organisation – timetabling, materials, quality of teachers. Second element here is concerned with changes to attitudes to IPE as a result of the event.

Level 2 - Learning

will cover changes in knowledge, skills, competencies and attitudes. Interest here is those aspects that relate to interprofessional work and collaboration. Thus one could concentrate on acquisition of:

Knowledge of facts, concepts, procedures and principles (of work/ skills/ ethics of other professional groups, of group work issues and problems in collaboration).

Skills & competencies – thinking and problem solving (as these relate to collaboration in group tasks), psychomotor (collaboration – specific tasks e.g. minor surgery), social (group leader's skills, ability to work in groups, emotional and educational support of other professionals).

Attitudes to other professionals, to collaborative work.

Level 3 - Behavioural change

measurement will document transfer of learning to workplace. This is inevitably more complex as other factors intervene, such as support for change of behaviour in the workplace or willingness of learners to apply new knowledge and skills. Further difficulties in ascribing changes of behaviour due to learning can be other influences such as changes in legislation or procedures or changes in behaviour other team members.

Here evaluation will need to observe changes in collaborative practices, application of interprofessional skills and competencies and demonstration of altered interprofessional attitudes.

Level 4 - Changes in organisation practice

Structure and process of organisation of care, health outcomes (more long-term). This is the most difficult area to show differences as an impact of one professional's changes in behaviour depend on number of organisational constraints such as individual's freedom of action, position of responsibility in organisation and support for innovation within the organisation. In case of whole team undertaking a learning experience this level becomes a legitimate area for investigation especially if specific tasks and responsibilities of the team are clearly differentiated within the larger organisation.

Note 3

Strength of design

Although problematic to score the strength of a research of a score between 1-4, this categorisation system should allow a rough idea of research design strength (although it is acknowledged to be in favour of quantitative designs). It is anticipated that in the final write-up quantitative and qualitative approaches will be dealt with separately. In meantime, score as follows:

- RCT, CBS, ITS =4
- Longitudinal, action research, BA, BDA (with control group) =3
- BA, BDA =2
- Post intervention study =1

Strength of numbers

A score (from 1-3) of the strength of numbers of participants/professions involved in study. Score as follows:

- more than 30 participants from at least two professions =3
- between 10-30 participants from at least two professions =2
- below 10 participants from at least two professions =1

Quality of study/ research

Degree of appropriateness of design in relationship to aims of evaluation, clear criteria for selection of students, sources of bias/extraneous factors. On a scale 5 to 1 (lowest =1) - (based on judgement).

Quality of information

Clarity of evaluative procedure including validity and reliability, significance related to response rate, degree of generalisability, educational significance i.e. importance of change. Clarity of context descriptives – both education and study, On a scale of 5 to 1 (lowest =1) - (this is again judgmental).

Overall weighting

This figure is calculated by adding together above four scores (e.g. strength of design, strength of numbers, quality of study and quality of information) to provide an overall weighting for each paper.

Appendix 2: Qualitative Data Abstraction Sheet (with explanatory notes)

| CRITERIA | COMMENTS |
|----------------------------------|--|
| Ref. No: | |
| Citation Type (jnl, grey lit) | State whether paper has been obtained from a journal/grey literature |

| Educational Initiative | |
|---------------------------------|---|
| Aim/objective of IPE | State aims/objectives (e.g. collaboration; quality of care; flexible workforce; economies of scale or Unspecified). (Also note if aims/objectives are explicit or implicit) |
| Type of IPE | e.g. formal, informal, or a mixture of both |
| Content | e.g. common, collaborative, or a mixture - See Note 1 |
| Duration | Months, Days, hours ... |
| Method of learning/ teaching | State all methods used, e.g. Received (didactic); Exchange based (participatory); Observation (site visits); Action based (problem-solving); Simulation (role playing); Practice based (placements); Audit; Guideline develop/implement (this last method used widely in TQM/CQI) N.B. Need to be clear in differentiating between 'PBL' as an educational approach and 'problem-solving' as a leaning/teaching method |
| Learning outcomes | Include details on all learning outcomes stated |
| Location | Workplace, college, hospital / clinic / community / urban / rural Also country of origin (US, UK, etc) |
| Participants (number & type) | e.g. social workers, health care managers...community workers...doctors... etc State number from each professional group |
| Sector | Which broad area of health/social care (e.g. acute, community) |
| Level / stage | Undergraduate / graduate / in service |
| Qualification | e.g. whether certificate or not / validation / accreditation |
| IPE Context | e.g. triggers for IPE; helps & hindrances (description of any 'interesting' contextual details). Also following Harden (1998) could include: characteristics of students, topic covered and 'learning situation' |
| Rationale for IPE | State conceptual/theoretical underpinning of the study (e.g. androgogy, TQM, CQI, audit). Also state whether rationale implicit or explicit (N.B. only classify as explicit where specific theory identified). Also add any contextual information on lesson plans, resources needed, available specific resources (e.g. weblinks to materials) |

| Outcomes | |
|---------------------|--|
| Explicit/implicit | Are they implicit or explicit? |
| Level 1: Reaction | See note 2 |
| Level 2a: Attitudes | See note 2 |
| Level 2b: Skills | See note 2 |
| Level 3: Behaviour | See note 2 |
| Level 4a: Practice | See note 2 |
| Level 4b: Patients | See note 2 |
| Other/unspecified | State any other outcomes, or if outcomes are unspecified |

| Methods of evaluation ¹ | |
|------------------------------------|--|
| Aim of Evaluation | What are the evaluation aim(s)? Are aims implicitly or explicitly stated? |
| Sampling | How was the 'sample' obtained. Size? Justification? Saturation of data? Appropriate to address research aim(s)? |
| Data collection | Observations, semi-structured interviews, focus groups, etc? Research setting/context? How data recorded? Data collection modified during research? Data collection address research aim(s)? |
| Data analysis | How was data analysed? (e.g. thematically, triangulation of data, saturation of data). Adequate description? Creditability tests? Analysed with sufficient rigor? If so how? |
| Research relations | Researcher considered their own role with informants? Considers own biases? If so how? Why particular |

| | |
|------------------------|--|
| | research setting selected? |
| Ethics | Have the relevant ethical issues been discussed (e.g. ethical approval obtained)? Provide details |
| Findings | Clearly presented findings? Sufficient data to support findings? What criteria given for selecting examples from data? |
| Transferability | Sufficient details from research setting/context to determine similarities/differences? How transferable are findings to wider populations/settings? |
| Relevance & Usefulness | In terms of contributing new insights? Suggesting further research? impacting on policy/practice? |
| Quality of study | See note 3 |
| Quality of information | See note 3 |
| Overall weighting | See note 3 |

Note 1 - Content of IPE

Three categories of IPE:

- Common (where all students/groups learn the same content)
- Collaborative (where students/groups learn about one another in order to collaborate)
- Mixed (where students/groups receive a mixture of above two)

Note 2 - Educational Outcomes

Based on Barr et al (2005) expanded Kirkpatrick outcomes typology:

Level 1 - Reaction

will cover learners' views on the learning experience, its organisation – presentation, content, teaching methods and aspects of the institutional organisation – timetabling, materials, quality of teachers. Second element here is concerned with changes to attitudes to IPE as a result of the event.

Level 2 - Learning

will cover changes in knowledge, skills, competencies and attitudes. Interest here is those aspects that relate to interprofessional work and collaboration. Thus one could concentrate on acquisition of:

Knowledge of facts, concepts, procedures and principles (of work/ skills/ ethics of other professional groups, of group work issues and problems in collaboration).

Skills & competencies – thinking and problem solving (as these relate to collaboration in group tasks), psychomotor (collaboration – specific tasks e.g. minor surgery), social (group leader's skills, ability to work in groups, emotional and educational support of other professionals).

Attitudes to other professionals, to collaborative work.

Level 3 - Behavioural change

measurement will document transfer of learning to workplace. This is inevitably more complex as other factors intervene, such as support for change of behaviour in the workplace or willingness of learners to apply new knowledge and skills. Further difficulties in ascribing changes of behaviour due to learning can be other influences such as changes in legislation or procedures or changes in behaviour other team members.

Here evaluation will need to observe changes in collaborative practices, application of interprofessional skills and competencies and demonstration of altered interprofessional attitudes.

Level 4 - Changes in organisation practice

Structure and process of organisation of care, health outcomes (more long-term). This is the most difficult area to show differences as an impact of one professional's changes in behaviour depend on number of organisational constraints such as individual's freedom of action, position of responsibility in organisation and support for innovation within the organisation. In case of whole team undertaking a learning experience this level becomes a legitimate area for investigation especially if specific tasks and responsibilities of the team are clearly differentiated within the larger organisation.

Note 3 - Weightings

Quality of Study/Research

Based on the study design, data collection etc. Assess appropriateness of research design to study aims, issues of typicality, issues of reflexivity, ethical considerations and relevance to different stakeholders. On a scale 5 to 1 (lowest =1)

Quality of Information

For example, clarity of approach, sampling, analysis, educational significance i.e. importance of change. Clarity of context descriptives. On a scale of 5 to 1 (lowest =1)

Overall Weighting

Combined the two scores together (quality of study and quality of information) to provide an overall weighting for each paper.

ⁱ Criteria adapted from Critical Appraisal Skills Programme (CASP) Questions to help you make sense of qualitative research.
Available at: www.phru.org/casp/qualitative.html