

# **Patient/service user involvement in medical education: A Best Evidence Medical Education (BEME) systematic review**

Protocol

## **Review team**

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PM developed the MBBS programme in UCLAN, as well as the masters in GP programmes, has significant experience in assessment and interprofessional education

MF is the lead for Quality Management at Blackpool, has experience in Cochrane systematic review and is the medical education research manager in Blackpool, as well as having experience as a senior medical librarian.

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Keywords: patient involvement, service user involvement

## **Abstract**

Patients and service users have always been vital to medical education. There is a wide range of degree in the extent to which patients are involved in health professional education and many variables in the ways they are involved. There is a need for an up to date systematic review of the literature that examines the range of such involvement, the potential outcome of such works and 'why' such involvement impacts on medical students and postgraduate trainees. Data search will take place independently by at least two authors with disagreement solved by reaching consensus. Quality of study design and interventional presentation will be assessed. Synthesis will occur at three levels – descriptive, meta-analysis and meta-ethnography, where sufficient data is available.

## Background

*'To study the phenomenon of disease without books is to sail an uncharted sea, while to study books without patients is not to go to sea at all.'*

Sir William Osler

Patients and service users have always been vital to medical education, but in the past this role has been largely as a learning resource, illustrating conditions, pathologies or signs for examination. Since the 1980s, actively involving patients in healthcare has been of increasing prominence in UK government policy with a requirement that 'patient and public involvement should be part of everyday practice in the NHS and must lead to action for improvement.' (Department of Health 2007). Clearly, this has impact on postgraduate and undergraduate education.

The language of patient involvement is controversial. The term 'patient' has illness connotations that have led to the acceptance of the term 'service user' more widely in the UK. Conversely, the term 'user' has negative connotations associated with illicit drug use in the US. As there is no consensus on this issue, both terms will be used interchangeably within this document.

There is wide variation in the extent and manner of patient involvement in health professional education. The Cambridge framework developed by Spencer et al (2000) describes the classification of the setting of involvement; Tew et al (2004) describe a framework for classifying the extent of involvement; whilst recently, Towle (2010) has integrated these two frameworks to produce a taxonomy with elements of both these models (Table 1) to characterise the depth and impact of involvement. These works have highlighted the significant heterogeneity in service user involvement within medical education, but don't set out to systematically review or synthesis evidence in this area.

A previous narrative review (Spencer 2015) describes many works that primarily seek to characterise 'what' involvement is taking place and whether such works are effective at enhancing learning encounters. There has also been a previous literature review that was similarly focussed (Morgana 2009). However, both these review were not systematic and attempt no synthesis of evidence. Therefore, there is a need for an up to date systematic review of the literature. This review must address three different aspects through synthesis of the evidence base. These are those aspects described within Cook's (2009) taxonomy of medical education research: Descriptive (what involvement), Justification (whether involvement has an impact on learning outcomes, as classified by Kirkpatrick's hierarchy) and Clarification (how and why such learning may lead to this impact). This particular element is one that has not been previously addressed and indicated as an area of work needed (Spencer 2015).

## **Review question**

Our review will address patient / service user involvement in both undergraduate and postgraduate medical education from three perspectives, as defined by Cook's (2009) Taxonomy:-

- In what contexts and for what purposes are patients/service users' being involved in undergraduate/postgraduate medical education? (Description)
- What contribution does their involvement make to learning? (Justification)
- What factor(s) enable that contribution to occur (including pedagogical and theoretical considerations)? (Clarification)

Finally, these findings will be used to address this final question:-

- What recommendations can be made regarding the implications of these findings on patient and service user roles within medical education

## **Methods**

### Inclusion criteria

- Studies describing the employment of patients / service users in any fashion with Towie's Taxonomy, as long as this is deemed core to the package described (individual interventions, full programmes or curricular will be considered).
- Studies that assess the intervention at any level of Kirkpatrick's hierarchy (Yardley 2012) and using any primary methodology (comparative, before and after and none comparative studies).
- Studies must be within medical education including undergraduate, postgraduate or continuing medical education
- All study dates will be considered
- Only studies in English will be considered (resource requirement)

### Exclusion criteria

- Studies without any form of assessment of effectiveness on Kirkpatrick's Hierarchy described
- Papers that describe an educational intervention, programme or curriculum that involve patient / service users as a minor component of a larger package.
- Papers that describe the employment of people who take on a simulated role, including simulated patients or actors (to ensure authenticity)
- Studies involving other health professional learners as the primary learner group

## **Search terms**

TBC

(Medicine OR Medical) AND (Education OR Training OR Teaching OR Learning OR Curriculum OR Curriculum design OR Curriculum development OR Curriculum delivery OR assessment OR Curriculum planning OR Curriculum implementation OR Assessment OR Student recruitment OR Course design OR Course development OR Course delivery) AND (Service user OR patient OR Consumer OR User OR Public) AND (Involvement OR Collaboration OR Contribution OR Joint venture

OR Partner OR Partnership OR Participation OR Patient-centred OR Strategy OR Engagement OR Family-centred OR Professional development OR Consultation OR Advocacy OR Opinion)

- #1 Medical Education
- #2 Medical training
- #3 Medical teaching
- #4 Medical Course
- #5 Graduate medical education
- #6 Postgraduate medical education
- #7 Continuing medical education
- #8 Communication skill\*
- #9 health Course\*
- #10 medical Learning
- #11 medical Retraining
- #12 medical Competence\*
- #13 medical Pre-test\*
- #14 medical Post-test\*
- #15 Undergraduate medical education
- #16 Undergraduate medical Curriculum\*
- #17 medical Curriculum\*
- #18 medical Intervention\*
- #19 medical Curriculum
- #20 medical assessment
- #21 medical implementation
- #22 #1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16 OR #17 OR #18 OR #19 OR #20 OR #21
- #23 Patient
- #24 Client
- #25 Service user
- #25 Volunteer
- #26 youth
- #27 Children
- #28 instructor
- #29 Consumer
- #30 User
- #31 Carer
- #32 Relative
- #33 Family
- #34 Old people OR elderly OR aged OR Young people
- #35 Public
- #36 Lay
- #37 #23 OR #24 OR #25 OR #26 OR #27 OR #28 OR #29 OR #30 OR #31 OR #32 OR #33 OR #34 OR #35 OR #36
- #38 Involvement
- #39 Collaboration
- #40 Contribution
- #41 Joint venture
- #42 Partner
- #43 Partnership
- #44 Participation
- #45 Patient-centred

#46 Strategy  
#47 Engagement  
#48 Family-centred  
#49 Professional  
#50 development  
#51 Consultation  
#52 Advocacy  
#53 Opinion  
#54 #38 OR #39 OR #40 OR #41 OR #42 OR #43 OR #44 OR #45 OR #46 OR #47 OR #48 OR #49 OR  
#50 OR #51 OR #52 OR #53  
#22 AND #37 AND #54

Databases – Electronic searches will be completed of Medline, Embase, CINAHL and Psycinfo. Additionally, Abstracts from the last 5 years of AMEE annual meeting proceedings will be hand searched, as well as abstracts of included studies.

Scoping search – an initial scoping search was completed on the 3<sup>rd</sup> July 2015 of the four key databases. This gave a significantly high number of articles with very poor yield – a total of 30,000 results were obtained. This was surprising as this initial search strategy was taken from the Morgana (2009) review directly and far fewer results were reported. Considering this review had approximately 30 articles that may be relevant, the yield from our search was approximately 1 per 1000 results. Further refinement with a new scoping search was completed and the search completed in November 2015 has now reduced results obtained by 75% whilst improving the yield to a much more reasonable 5% potential papers.

The search will be performed and all citations reviewed by at least two authors. If any title or abstract potential meets the inclusion, it will be requested in full for full screening. Any disagreements in these judgements will be resolved by seeking a third author's opinion and reaching consensus on judgements. An author not involved with the search will review and assess consistency of first 200 judgements. If less than 90%, remediation will be instigated to ensure consistent judgements.

Similarly, all full papers will be reviewed against the inclusion criteria by two authors and similarly judgements made independently with disagreement solved by involving a third author and reaching consensus.

### **Data extraction**

A data extraction form will be devised and piloted, based on BEME guidance (Hammick 2010). This will be completed within Microsoft excel to allow rapid review and sharing of extracted data.

Key items included will be:-

- Study design details (Methodology of evaluation of study intervention)
- Setting and local context of programme / intervention / curriculum
- Details of user involvement, as per the existing framework (Towle et al, Table 1)
- Quality assessment within 5 dimensions (see below)

- Outcome measures of study and results, characterised by Kirkpatrick’s hierarchy
- Content of education presented – full data or Inks to appendices / outside sources

Extraction will again be completed by two authors independently and dispute resolved by involving a third review team member and discussing until a full consensus can be reached.

### Quality assessment

Whilst there have been many different methods employed to assess quality within the context of health education systematic review, no consensus method exists to judge risk of bias.

The team have decided to align with the requirements in the STORIES statement (Gordon 2014). This highlights key items to be extracted and considered amongst primary studies within a high quality Systematic review in medical education. Quality will not in any way be linked to the level of outcome or forum of publication, as has previously been discussed (Yardley 2012). Instead, this will only be used to categorise outcomes.

There are two major areas that will be considered. The first is the quality of the intervention being presented. A visual RAG ranking system will be employed to judge the quality of the paper in question. Items will be judged to be of high quality (Green), Unclear quality (Yellow), low quality (Red). These will cover core areas of reporting (Gordon 2014).

The second is interventional study design. Given the huge variety of study types that are expected, rather than making judgements as to quality, data will be extracted and presented to readers.

These judgements will be made independently by two reviewers, with a third consulted if there is disagreement. To ensure that poor reporting alone is not judged, rather than the underlying quality of the primary education and study design, if items are judged as unclear or low quality, authors will be contacted to offer additional information. The items to be judged are shown in Table 2. No paper will be excluded based on this quality assessment.

Bias source	High quality	Unclear quality	Low Quality
<b>Underpinning bias</b>	Clear and relevant description of theoretical models or conceptual frameworks that underpin the study	Some limited discussion of underpinning, with minimal interpretation in the context of the study	No mention of underpinning
<b>Curriculum bias</b>	Clear description of the process and outcomes of the curriculum / syllabus / assessment design	Some limited description that will not facilitate replication	No mention of curriculum
<b>Setting bias</b>	Clear details of the educational context and learner characteristics of the study	Some description, but not significant as to support dissemination	No details of learner characteristics or setting

<b>Pedagogical bias</b>	Clear description of relevant pedagogy employed to support delivery	Some pedagogical alignment mentioned but limited detail as to how applied	No details of pedagogy
<b>Content bias</b>	Provision of detailed materials (or details of access)	Some elements of materials presented or summary information	No educational content presented
<b>Conclusion bias</b>	Conclusions of the study reflect the findings	Some mismatch between the conclusions and findings	No correlation between the findings and conclusions

**Table 2. Quality assessment of interventional reporting**

## Synthesis of evidence

### Descriptive synthesis (Description)

A descriptive analysis will take place, summarising the data from the extraction form, to focus on describing summary data regarding: Study type, education type, collaboration details and outcomes of the primary study. Additionally, content related to the quality assessment indices will be extracted, including where relevant any additional content or appendices. The inclusion of key details that focus on the education being described and assessed by the included studies will be a unique addition not addressed in previous reviews of the patient / service user literature.

### Meta-analysis (Justification)

If suitably homogenous outcome data are presented (considering educational and methodological heterogeneity as highlighted in the quality assessment), meta-analysis may be employed to consider the impact of patient involvement on the outcomes. This will be assessed by calculating odds risk (OR) to establish the statistical significance of any differences OR for dichotomous variables or the weighted mean difference for continuous variables with 95% confidence intervals.

### Meta-ethnographic synthesis (Clarification).

Meta-ethnography is a qualitative synthesis technique which involves synthesis of the findings of qualitative studies. Dixon-Woods *et al* describe three key features to meta-ethnography: the mapping of key themes and concepts across studies (which may parallel a thematic analysis approach); the identification and resolution of any contradictions and the building of a general interpretation based on the data. As with other qualitative synthesis techniques there are often a number of variants on the exact processes. The distinguishing feature here is that this type of synthesis allows the authors to build an interpretative layer which may extend beyond the interpretations provided by the original included studies. The education itself, as well as the discussion section of the primary studies will be included as data sources in the analysis, allowing

consideration of the interplay between these two elements and as such allow the question of why such education is effective to be considered.

## **Feasibility**

### **Methodology and Expertise**

The proposed BEME collaboration methodology is robust and is proven to be successful.

The Principal Investigator and co-investigators are existing members of a BEME International Collaboration Centre; a partnership between Blackpool Teaching Hospitals and the University of Central Lancashire which aims to advance the field of evidence synthesis in medical education locally and nationally. The team has a strong academic interest and track record in health education evidence synthesis, as well as practical teaching to all groups of health professionals in both undergraduate and postgraduate training. This wide range of skills and mix of experience offers the team significant opportunities to complete scholarly works in the field. The Principal Investigator, moreover, is a member of the BEME editorial and executive boards.

The local interest in this project has been heightened by the significant activities of a local service user group, COMENSUS. With 10 years expertise, these lay and unprofessional service users offer significant input to all stages of the UCLAN MBBS programme. In line with the subject of the review, a service user from COMENSUS will be invited to join the team, along with the service user facilitator. They will not carry out primary data collection or analysis, but sit on all group meetings, input on all drafts of the work at both planning and write up phase.

Finally, we have now secured funding for a research assistant part time for 12 months to support the project.

### **Transfer to practice**

This review is seeking to consider several potential dimensions with the primary study data. By considering more than simply whether such input is effective, but describing in detail the full range of involvement and most importantly asking how and why such involvement may have impact, it is expected that the review will complement classification systems with practical evidence. Additionally, a conceptual framework may begin to be built to understand the theoretical impact of service user involvement and thus support researchers and curriculum planners in the future.

### **Timescales**

The proposed duration of the review is 12 months. Given the existing investment of human resources and the proven track record of the BICC team in producing systematic reviews and undertaking peer reviews, the objectives of the project are achievable within this timeframe.

	Month														
Work stream A: Cochrane Reviews	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Write and submit protocols	X	X	X													
Data Searching and selection process				X	X	X										
Data extraction and consensus							X	X	X							
Data analysis										X	X	X				
Write up of final review													X	X	X	

## References

- Department of health (2007). Patient and public involvement in the NHS. Available at: <http://www.publications.parliament.uk/pa/cm200607/cmselect/cmhealth/278/278i.pdf> Accessed on 23rd July 2015
- Gordon M, Gibbs T. STORIES statement: Publication standards for healthcare education evidence synthesis. *BMC Medicine* 2014, 12:143 doi:10.1186/s12916-014-0143-0
- Issenberg SB1, McGaghie WC, Petrusa ER, Lee Gordon D, Scalese RJ. (2005) Features and uses of high-fidelity medical simulations that lead to effective learning: a BEME systematic review. *Med Teach*. 27: 10-28.
- Morgana A, Jonesbpages D. 2009. Perceptions of service user and carer involvement in healthcare education and impact on students' knowledge and practice: A literature review. *Med Teach* 31:82-95
- Spencer J, Blackmore D, Heard S, McCrorie P, McHaffie D, Scherpbier A, Gupta TS, Singh K, Southgate L. (2000) Patient-oriented learning: a review of the role of the patient in the education of medical students. *Med Educ* 34 :851–7.
- Spencer J. Can Patients Be teachers (Health foundation report). 2011. Available at: <http://www.health.org.uk/sites/default/files/CanPatientsBeTeachers.pdf> [Accessed on 21st September 2015].
- Tew J, Gell C, Foster S. (2004) Learning from Experience. Involving Service Users and Carers in Mental Health Education and Training. Nottingham: Higher Education Academy/National Institute for Mental Health in England/Trent Workforce Development Confederation. ISBN 0-9541709-2-X, <http://www.mhhe.heacademy.ac.uk/silo/files/chapter0pdf.pdf>. [Accessed 2 November 2009.]
- Towle, A., Bainbridge, L., Godolphin, W., Katz, A., Kline, C., Lown, B., Madularu, I., Solomon, P. and Thistlethwaite, J. (2010), Active patient involvement in the education of health professionals. *Medical Education*, 44: 64–74. doi: 10.1111/j.1365-2923.2009.03530.
- Yardley S, Dornan T. Kirkpatrick's levels and education 'evidence'. *Med Educ*. 2012 Jan;46(1):97-106. doi: 10.1111/j.1365-2923.2011.04076.x.

Table 1. Spectrum of involvement: this taxonomy describes a continuum of patient involvement. In all instances we assume that patients represent their true selves (not a simulation). The taxonomy is grounded in six attributes (A–F) and six levels (1–6)

A	B	C	D	E	F
Degree to which the patient is actively involved in the learning encounter	Duration of contact with learner	Patient autonomy during the encounter	Training for the patient	Patient involvement in planning the encounter and curriculum	Institutional commitment to patient involvement in education
1 Paper-based or electronic case or scenario					
Patient is focus of a paper-based, electronic or web-based case or scenario	None	N/A	N/A	None	Low
2 Standardised or volunteer patient in a clinical setting					
Patient encounter with student is scripted and serves as an example to illustrate or reinforce learning (e.g. teacher asks patient to provide student with history or student practises a clinical examination)	Encounter-based	None	None	None	Low
3 Patient shares his or her experience with students within a faculty-directed curriculum					
Patient is invited to share experience; faculty members plan the encounter but patient determines personal comfort and level of participation	Encounter-based	None–low	Brief, simple	None	Low
4 Patient-teacher(s) are involved in teaching or evaluating students					
Patient is given preparation for specific teaching role, may actively question students, may be involved in giving feedback and evaluating students' performance	Variable	Moderate	Structured, extensive	Low–moderate	Low–moderate
5 Patient-teacher(s) as equal partners in student education, evaluation and curriculum development					
Patients are involved in many aspects of educational delivery, development and evaluation, beyond specific courses to the curriculum as a whole; this is a true partnership in which patients make meaningful and valued contributions	Moderate–extensive	High	Extensive	Moderate–extensive	Moderate

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Degree to which the patient is actively involved in the learning encounter	Duration of contact with learner	Patient autonomy during the encounter	Training for the patient	Patient involvement in planning the encounter and curriculum	Institutional commitment to patient involvement in education
6 Patient(s) involved at the institutional level in addition to sustained involvement as patient-teacher(s) in education, evaluation and curriculum development for students					
As (5) but with additional institutional policies that ensure involvement in decision-making bodies within education	Extensive	High	Extensive	High	Hi

Towle, A., Bainbridge, L., Godolphin, W., Katz, A., Kline, C., Lown, B., Madularu, I., Solomon, P. and Thistlethwaite, J. (2010), Active patient involvement in the education of health professionals. *Medical Education*, 44: 64–74. doi: 10.1111/j.1365-2923.2009.03530.x