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STRATEGIC RESEARCH ALLIANCE FINAL REPORT

Review of Continuing Professional Development in Nursing

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Executive Summary

Introduction:

Continuing Professional Development (CPD) is important in generating and sustaining capability and in ensuring high quality, person-centred, safe and effective nursing care. In the UK, changes to models of funding for nursing CPD have raised concerns about the opportunities available for nurses to meet the requirements for revalidation of registration, their ability to provide adequate supervision of future students in relation to the new NMC standards of proficiency, and the potential impact of reductions in CPD access to nursing recruitment and retention.

Contemporary evidence suggests that it is not only the opportunity to access CPD that is important to the provision of quality care, but also the ability to transform knowledge and skills learnt into practice within diverse practice settings. The purpose of CPD therefore is not only transformation of an individual's practice but also transformation of workplace culture and context. For the purpose of this report, we follow Manley and Jackson (2020) in suggesting that transformation "implies radical ways of doing things to reflect the values aspired to; it is not about quick wins or key performance indicators." There is then a need to understand the evidence about what factors maximise CPD impact at the individual, team, organisational and system level.

Following initial scoping work, the Strategic Research Alliance (SRA) working group, in consultation with Professor Kim Manley and Carolyn Jackson, agreed to complete a rapid review to consider this evidence focusing on the specific question:

What are the factors that enable or optimise CPD impact for learning, development and improvement in the workplace at the individual, team, organisation and system level?

Methods:

This report presents the process and results of a six stage review methodology developed by Levac et al (2010).

Inclusion and exclusion criteria for the review were developed using a Population, Exposure, Outcome (PEO) framework. The population included registered nurses in comparable health service contexts (Europe, North America, and Australasia) in all acute or community settings. The exposure was 'Continuing Professional Development', and outcomes were measures of transformation of CPD in the workplace.

Search terms related to this PEO framework were developed and the databases subsequently searched were: the British Nursing Index, the Cochrane Library, CINAHL, HTA database, King's Fund Library, and Medline. Searches were limited to publications from 2002 to 2019 (August). This start date relates to when the Nursing & Midwifery Council (NMC) took over responsibility for monitoring post-registration education and practice.

Papers were not limited by study design but opinion papers, news articles, non-English papers, and those focusing on mandatory training, undergraduate student nurse training and healthcare professions other than nursing were all excluded.

Analysis of returned studies was completed in two stages. The first stage was a descriptive narrative summary of studies organised by study design (reviews, quantitative, qualitative and mixed methods studies). The second stage was an integrative summary of the findings from stage one.

Findings:

From an initial return of 3790 papers and reports, 39 were retained for review after applying inclusion and exclusion criteria. Included studies were undertaken in Australia (n=13), Canada (n=5), Sweden (n=5), UK (n=12) and the US (n=4). Five papers were reviews and the other studies used a wide range of quantitative (n=8), qualitative (n=13) and mixed methods (n=13) approaches. The work covered a breadth of acute and community health settings and contexts as broad as intensive care, emergency departments, neonatal care, palliative care, mental health care, learning disability care, children's and family services and older people's care.

Key messages from the review can be summarised as follows[1]:

Individual:

- Self-driven, critically reflective engagement with CPD transforms practice for individual nurses
- Individual motivation to engage in CPD is primarily driven by a desire to provide high quality, person-centred, safe and effective care. CPD should therefore have patient benefit and direct relevance to clinical practice at its core
- Embedding learning activities in the workplace ensures CPD is relevant to practice thereby generating positive change for individuals and teams in, through and from practice in real time
- Off-site CPD is more effective when combined with an integrated work-based component enabling application of theory to practice and vice versa
- Activity learning in the workplace (rather than formal teaching) is a preferred model for CPD

Team:

- Workplace and work-based, activity-based CPD focused on whole teams is effective in improving relationships and communication. It facilitates a high challenge, high support peer environment, increases critical reflection and helps embed learning into diverse practice settings
- Practice settings that have a culture where knowledge creation and utilisation are seen as a positive and collective activity are key to optimising CPD impact and this is heavily influenced by workplace leadership

Organisation:

- Individual and team motivation to engage with and embed CPD learning needs to be valued and supported within the immediate clinical setting to achieve maximum impact
- This support includes the mobilisation of resources to create the time and space to engage with and embed learning
- Providing CPD support also relies on organisational leadership that both values and acts to generate a culture of learning at all levels of the organisation
- Aligning CPD across organisational, clinical setting and individual requirements, that have person-centred, safe and effective care at the centre, helps resource allocation and promotes acceptance and expectation of transformational change in the workplace
- A move away from hierarchical managerial structures to more inclusive leadership approaches helps empower individuals and teams to identify learning needs and to embed learning into everyday practice

[1] There was very little evidence available to report on findings of CPD impact at the health care system level.

- Practice development approaches can be effective in ensuring whole organisation and system commitment to a culture of learning as they embed shared vision and values to create positive change
- Maximising CPD impact can be enabled by strong links between health services and academic partners that work collaboratively to identify and meet workforce learning requirements

1. Background

As part of the University of Sheffield (UoS) Strategic Research Alliance (SRA) work with the Royal College of Nursing (RCN), the SRA working group identified the area of nurses continuing professional development (CPD) to be an important issue for consideration. Concerns have been raised about the impact of reductions in the budget for workforce development (largely used to fund CPD for nurses) of over 60% in England in recent years (Royal College of Nursing 2018).

After initial scoping work, collating information from professional and policy reports, and from informal conversations with nine key stakeholders (from RCN-Scotland, RCN-Northern Ireland, RCN-Wales, HEE, HEI and in senior positions in NHS Trusts), it was recognised that considerable research relating to CPD had been completed by colleagues then based at the England Centre for Practice Development (ECPD), Canterbury Christ Church University. Conversations with these colleagues highlighted key questions where evidence exists but has currently not been fully collated and synthesised. These questions were:

- How can I demonstrate that CPD makes a difference (to my practice and the people experiencing care and services/communities)?
- How can I demonstrate that my facilitation of others CPD makes a difference to the people providing and experiencing care/ services/communities?
- How can I demonstrate that my workplace culture is effective in facilitating CPD learning into practice?

Following conversations with the SRA working group, it was agreed that the University of Sheffield SRA team would complete a rapid evidence synthesis of CPD work around these core questions supported through consultation and collaboration with two colleagues who were then Director and Co-Director at ECPD; Professor Kim Manley and Carolyn Jackson. This report is the product of that review. We had intended to complete the sixth-step of the process, the consultation, as a series of face-to-face consultation events but this was interrupted by the Covid-19 pandemic. We therefore completed this consultation via a remote process.

2. Rationale

The aim of CPD is to sustain competence, and introduce new skills (Ross et al. 2013), protecting the public by providing ethical, effective, and safe practice (Nursing and Midwifery Board of Australia 2016). It is also important in helping meet the changing needs of society, in ensuring care is person-centred and compassionate, and in enabling progression up and across career frameworks.

Yet the United Kingdom (UK) has a comparably small CPD requirement of 12 hours per year compared to other countries worldwide (average of 30 hours per year) (European Union Health Programme, 2013; Tran et al., 2014) and recent reductions in access to CPD in the UK has raised a number of potential concerns for both the nursing profession, and the public. First, nurses may face difficulties in meeting the CPD requirements for revalidation, which the NMC advise should not include mandatory training (Nursing and Midwifery Council 2017; Royal College of Nursing 2018). Second, there are concerns that, without adequate mentoring training, nurses will be underprepared to supervise future students in attaining the new standards of proficiency (Council of Deans of Health 2016, Royal College of Nursing 2018, Nursing and Midwifery Council 2018). Third, there are concerns over the impact of CPD reductions on nursing recruitment and retention (House of Commons Health Committee 2018). Finally, an association between level of nursing qualification and patient safety has been identified but little work has been undertaken on how access to CPD impacts safe and effective care (European Union Health Programme 2013, Aiken et al. 2018). One available review suggests that inability to undertake CPD influences patient safety and quality of care, compounds issues surrounding competence to practice and professional registration, and adversely affects job satisfaction, recruitment and retention (Coventry 2015).

In addition to the above, contemporary work suggests that it is not only the opportunity to access and complete CPD that might be important to the provision of quality care, but also the ability to transform knowledge and skills learnt through CPD into practice within the clinical setting (Jackson et al, 2015): undertaking CPD alone is not sufficient for patient benefit if it is not able to be applied within the practice context. This research makes clear that:

> *"… in order for CPD to be effective it has to address all of the outcomes for individual, team, service and organisational transformation because they are interrelated and interdependent."* (p.104)

To this end, it is important that the purpose of CPD is not only transformation of an individual's practice, and the composite capabilities and competences required for service provision in response to a changing context, but also transformation of the workplace culture and context (Manley et al, 2018; Manley & Jackson, 2020). In this way, skills and knowledge can be effectively mobilised in order to achieve maximum impact for safe and effective care. Indeed, as West and Lyubovnikova (2013) highlight, opportunities for health care team members to take reflexive time-out (as occasioned by CPD) generates effective team functioning resulting in improved individual and organisational outcomes. Similarly, a meta-analysis by Tannenbaum and Cerasoli (2013) demonstrated how team debriefing can improve individual and team effectiveness by up to 25%.

There is therefore a need not only to understand the evidence around the impact of CPD for the individual nurse but also to understand its impact on patient and health outcomes, in relation to service delivery and to understand the contextual factors that facilitate knowledge mobilisation and the uptake of CPD within clinical settings.

2.1 Definition of terms

Continuing Professional Development (CPD) –"*a life-long process of active participation by nurses in learning activities that assist in developing and maintaining their continuing competence, enhancing their professional practice, and supporting achievement of their career goals*" (Pool et al, 2013) OR "*a process of planned activities based on performance review and setting of explicit targets for good clinical practice with the aim of improving actual quality of patient care*" (Bynum et al, 2010)

Alternative terms - continuing nursing education; life-long learning; professional skills development (RCN, 2016).

Knowledge mobilisation- (KM) is concerned with improving the dissemination and implementation of research, and is a term used interchangeably with 'knowledge transfer', 'knowledge translation', 'knowledge exchange', implementation, dissemination and diffusion (Rowley et al. 2012, Ward 2017).

For the purpose of this review we are excluding evidence relating to mandatory workplace training (e.g. fire safety training, moving and handling, safeguarding adults and children, basic life support) (Royal College of Nursing, 2016).

Nursing practice – Nursing practice has been defined as "*The use of clinical judgement in the provision of care to enable people to improve, maintain, or recover health, to cope with health problems, and to achieve the best possible quality of life, whatever their disease or disability, until death*." (Royal College of Nursing, 2014).

Nurse - Registered practitioners, from first level nurses up to advance practice nurses and nurse consultants (variety of titles).

Patient Outcomes – The holistic combination of clinical outcomes (such as mortality and morbidity) and the personally experienced aspects of care (such as satisfaction and subjective wellbeing) (Davies, 1994).

Practice context – the place in which nursing practice (as defined above) is provided – this includes not only acute and clinical ward settings but also community settings such as residential homes, nursing homes, general practice, and a person's home.

Service user – Someone in receipt of 'nursing practice' by a 'nurse' as defined above.

Service delivery and organisation – The structures and processes through which nurses (as defined above) providing services are expected to work.

Uptake of CPD – The way that CPD (as defined above) is utilised, mobilised and incorporated into individual nursing practice and/or into service delivery and organisation.

Work-based learning (WBL) - The everyday work of health care is the basis for learning, development, enquiry and transformation in the workplace. WBL requires skilled facilitators who are able to integrate multiple organizational agendas and draw on a wide range of appropriate skills and resources for simultaneous learning, development, enquiry and transformation. WBL is also recognized by active learners who learn with, and from, each other in a variety of formal and informal learning situations and approaches. Systems are in place in the workplace for providing assessment, feedback and support and for enabling learners to investigate, evaluate and transform their practice and work environment. WBL is enabled by organization-wide learning philosophy and a supportive infrastructure. The consequences of WBL include individual/personal, interdisciplinary/team and

organizational effectiveness. WBL aspires to enable all those involved in WBL, and those benefiting from it, to flourish and grow (Manley et al, 2009. P.121).

Workplace learning – The way in which skills are upgraded and knowledge is acquired at the place of work through day to day work activities and social interactions with others. It is an ever present practise occurring through customary work systems. It is often described as activities that support learning in through and from practise in real time. (Cacciattolo, 2015).

3. Methods

To complete this work we undertook a rapid evidence review which have been described as:

> *"… reviews that use accelerated or abbreviated (streamlined) methods as compared to traditional systematic reviews "* (National Collaborating Centre for Methods and Tools, cited in, Booth et al, 2016: 175).

When assessing the evidence base relating to the impact of nursing CPD and on the factors that influence CPD uptake, we sought to establish whether there are any previous reviews in the field and how much evidence and what type and quality of data exists from primary empirical studies[2].

We based our approach to the review on a framework developed by Arksey and O'Malley (2005), and refined by Daudt et al (2013). The key steps were:

- Identifying the research questions
- Identifying relevant studies
- Study selection and quality assessment
- Charting data
- Summarising and reporting results
- Consultation exercise

3.1 Review question

The following question guided the evidence review:

What are the factors that enable or optimise CPD impact for learning, development and improvement in the workplace at the individual, team, organisation and system level[3]?

3.2 Identifying relevant studies

We used a sensitive search strategy to scope the field across key electronic nursing, medical and allied health databases. Databases included: the British Nursing Index, the Cochrane Library, CINAHL, HTA database, King's Fund Library, and Medline.

Studies were not limited by design or methodology but the following were excluded:

- Opinion / general discussion papers
- News articles
- Non-English language papers

[2] See: https://epoc.cochrane.org/sites/epoc.cochrane.org/files/public/uploads/EPOC%20Study%20Designs%20About.pdf

[3] Although intended to be a part of this review, there was very little evidence produced from the papers returned in relation to demonstrating CPD impact at the wider health care system level. The current focus on care in the UK is about integration across health and social care boundaries emphasising the importance of a person/citizens journey as an integrated approach that aids communication and continuity. This is also supported by the WHO strategy.

- Mandatory training, undergraduate student nurse training (e.g. baccalaureate, pre-reg*), and other healthcare professions.

Key search terms (Table 1.) were developed from the preliminary work outlined in the Background section.

Table 1. Search terms

Term (AND)	**Synonym (OR)**
Registered Nurse	nurse
	nurses
	nursing
Professional development	CPD
	Develop*
	Educat*
	Learn*
Outcome: transformation of knowledge	Mobilis*
	Mobiliz*
	Translat*
	Transfer
	Exchange
	Implement*
	Disseminat*
	Diffus*
	Optimis*
	Transform*
	Impact
	Enable*
	Indicat*
	Metrics
In the Workplace	Workplace
	Place-based
	Culture

3.3 Study selection criteria and quality assessment

Inclusion and exclusion criteria were developed using the PEO framework: Population, Exposure, Outcome and this framework is set out below:

Population: Registered nurses in comparable health service contexts: Europe, N.America, Australasia

Exposure: Completed Continuing Professional Development (as defined above)

Outcome: Measures of transformation of CPD in the workplace

Contexts: all acute or community settings of care.

Timespan: Searching dated from January **2002** when the Nursing & Midwifery Council (NMC) was formed and took over responsibility from the United Kingdom Central Council for Nursing, Midwifery and Health Visiting (UKCC) for monitoring the post-registration education and practice (PREP)

standards, including the completion of 35 hours of CPD every three years as part of these standards[4]. Searching finished at the end of November 2019.

Study selection was conducted in two stages. First, all titles and abstracts were screened for relevance by one reviewer (a sub-section independently checked by a second reviewer). Those that seemed to report empirical results of the impact of nursing CPD or the uptake of nursing CPD, were then considered by at least two reviewers independently against the inclusion/exclusion criteria. Disagreement was resolved by a consensus. Second, studies that met detailed inclusion criteria were obtained and again considered by at least two reviewers independently and disagreement resolved by reaching consensus this time involving the external consultant partners. Reasons for exclusion of these obtained full papers was documented. Due to the rapid review nature of this review, backward and forward citation searching to identify possible further papers for inclusion was not completed.

EndNote was used to manage references.

The quality of included studies was assessed using the Critical Appraisal Skills Programme (CASP) tools (https://casp-uk.net/) or alternative tools where a study type was not covered by the CASP tool portfolio.

The findings of the study selection process are presented as a flow chart (Figure 1.) using the format suggested in the PRISMA statement (Moher et al. 2009).

3.4 Summarising and reporting results

In line with how others have approached rapid reviews, the stage of data extraction into individual forms for each included paper (the 'charting data' stage) was curtailed and data was extracted directly from each paper into a single, combined table (Booth et al, 2016 p.174). This facilitated a more rapid synthesis of evidence.

This review returned a variety of review, quantitative, qualitative and mixed methods papers. The summarising of the results therefore required both a narrative description of included studies and an integrated summary of them. Integrative summaries are particularly useful when considering a large body of literature on a broad topic (Booth et al, 2016, p.257) as is the case with this review.

For the narrative description, papers were grouped and analysed by study type. For the integrative section, a further process of analysis was employed by mapping the data in the review papers to findings from a previous study (Jackson et al, 2015). This study employed realist methods to develop four robust theoretical propositions to explain the mechanisms by which CPD generates positive outcomes for individual, team, service and organisational transformation. The integrative analysis used the Context, Mechanism and Outcome (C-M-O) indicators (see Appendix I) developed for each of these theoretical propositions and mapped the papers returned in the current review to these to test their relevance and the strength of evidence available for each of these four propositions. This mapping is detailed in Appendix II.

3.5 Consultation exercise

According to Arskey & O'Malley (2005), this stage only works where the results of the work are germane to the group included in consultation. We had anticipated using the expertise and links we have with the RCN to run consultation events with such groups across the four nations of the UK. However, this process was curtailed by the Covid-19 pandemic. Instead, we produced a "consultation

[4] The process of PREP was replaced by the more formal, mandatory, process of revalidation by the NMC in April 2016. However, the same requirement with regard to 35 of CPD every three years remained.

report" and elicited the views from these key stakeholders via a remote consultation process. This stage is presented in Chapter 5.

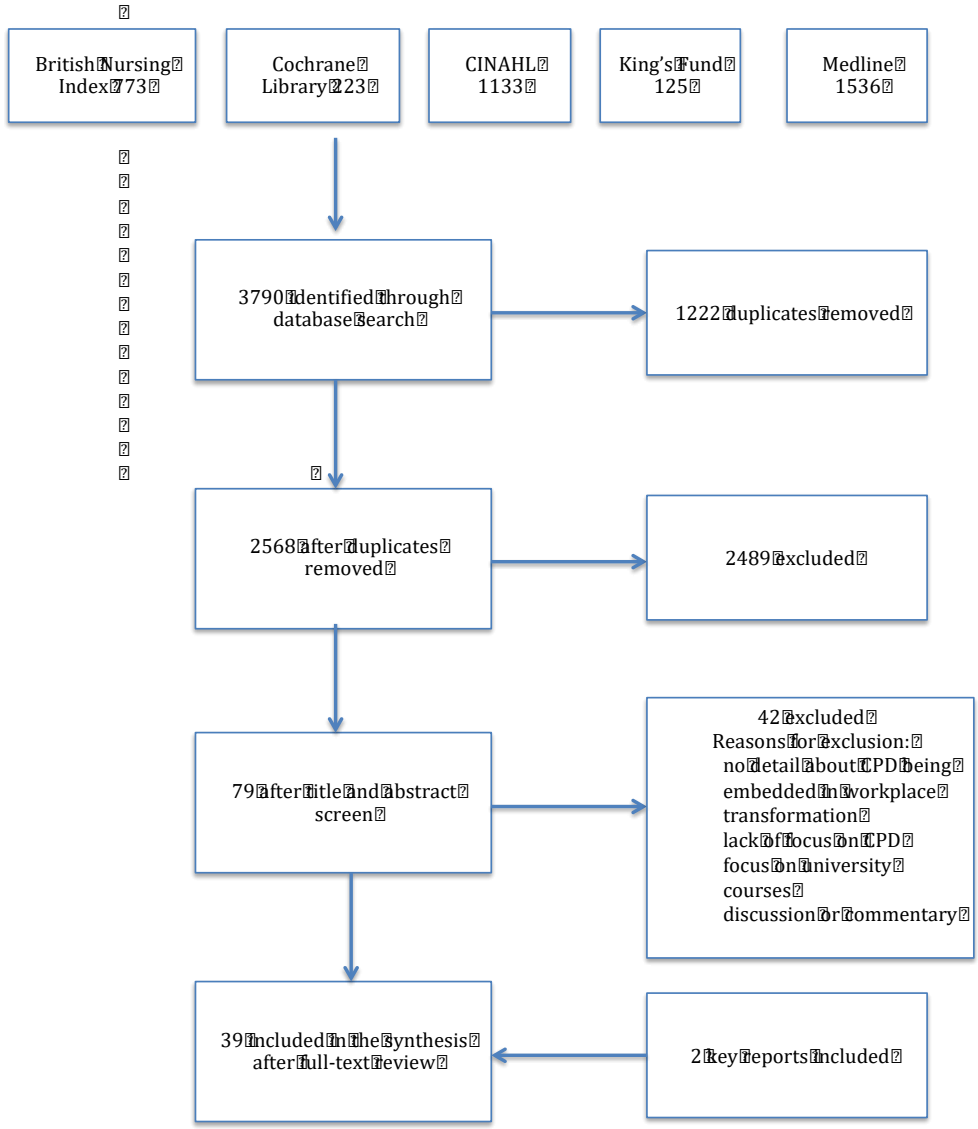
4. Findings

4.1 Study characteristics

The review retrieved 3790 papers, reduced to 2568 after removing duplicates. After title and abstract review, 79 full text papers remained. Further exclusion of 42 papers following full text review resulted in 37 papers being retained. Two further reports were identified and added resulting in **39 papers being included for full review**. The majority of exclusions related to lack of focus on CPD intervention or lack of information about impact on workplace transformation.

Included studies were undertaken in Australia (n=13), Canada (n=5), Sweden (n=5), UK (n=12) and the US (n=4). Five papers were reviews and the other studies used a wide range of quantitative (n=8), qualitative (n=13) and mixed methods (n=13) approaches. The work covered a breadth of acute and community health settings and contexts as broad as intensive care, emergency departments, neonatal care, palliative care, mental health care, learning disabilities, children's and family services and older people's care.

Figure 1. PRISMA diagram



4.2 Narrative analysis

4.2.1 Reviews

There were five review studies authored by; Davis et al (2016), Eddy et al (2016), Haywood et al (2012), Williams et al (2015), Williams (2010).

Three study teams were based in Australia (Davis et al., 2016; Eddy et al., 2016; Williams et al, 2015) with two of these being based in the same research Faculty (Davis et al., 2016; Eddy et al, 2016). The remaining two studies (Haywood et al.,2012; Williams, 2010) were based in UK institutions.

The time periods covered by the five reviews extends from 1980 to 2014. Two covered studies starting much earlier than the current review (Davis et al, 2016; Eddy et al, 2016), two sat within the timeframe of the current review (Haywood et al, 2012; Williams et al, 2015) and one did not state the time frame of its search (Williams, 2010).

The exact CPD focus of the five review studies varied. The systematic review by Davis et al (2016) was closest in focus to the current review. It considered the qualitative evidence available to understand acute sector registered nurses and enrolled nurses CPD experiences in the workplace and the factors within workplace culture that influence these learning experiences. Eddy et al (2016) completed a systematic review of qualitative work focusing on the experiences and reflections of registered health professionals involved in teamwork education in acute hospital settings. This work therefore had a narrower topic focus (i.e. only teamwork-based learning) than the current review but also breadth in including health professionals other than nurses. Haywood et al (2012) completed a scoping review of the issues surrounding participation in, and factors that influenced, CPD for registered nurses and allied health professionals. They included any type of study design. They make no comment about setting but included papers suggest it covers community as well as acute settings. Williams et al (2015) focused on organisational barriers to the implementation of Evidence-Based Practice (EBP). This scoping review covered all health care disciplines. Again, no specific comment is made about inclusion or exclusion regarding setting but the returned papers show it included community as well as acute settings. While the focus of this review is on EBP rather than CPD, there is sufficient overlap in terms of conceptualisation for it to be included in this current review. Williams (2010) completed a literature review of work-based learning for registered nurses. No information is provided about the settings covered and there seems a strong emphasis on the conceptual evaluation of work-based learning for nurses – though consideration is also given to the applied nature of this.

Findings:

There was significant coherence of findings across the review studies.

First, individual nurses were noted as being best placed in recognising and taking responsibility for their own CPD learning and this required processes of critical reflection (Davis et al, 2016; Williams, 2010). Factors that helped individual motivation to undertake CPD activities included: perceived relevance to their role; a desire to provide high quality, safe and effective care; peer attitude and valuing of learning; and a desire for career progression and concomitant remuneration (Haywood et al, 2012). However, such self-motivation needed to be supported at both the clinical setting level and organisational level (Davis et al, 2016; Eddy et al; 2016; Haywood et al, 2012; Williams et al, 2015; Williams, 2010). At the clinical setting level, adequate time and staffing levels to facilitate active learning from everyday practice were required (Davis et al, 2016; Eddy et al; 2016; Haywood et al, 2012; Williams et al, 2015; Williams, 2010).

Second, a clinical setting environment that fosters and develops respectful team relationships and garners a culture where knowledge creation and utilization is recognised as a collective activity is also key to effective CPD experiences (Davis el at, 2016; Eddy et al, 2016; Haywood et al, 2012; Williams, 2010; Williams et al, 2015). Linked to this, a desire at the clinical level to empower individuals (or teams) that have completed CPD to embed learning into the workplace (i.e. a clinical setting that embraces workplace transformation) was recognised as crucial (Davis el at, 2016; Eddy et al, 2016; Haywood et al, 2012; Williams, 2010; Williams et al, 2015). Workplace learning and team-based learning were particularly effective in generating and facilitating such workplace changes and transformation (Eddy et al, 2016; Williams et al, 2015). This is linked to another important finding, that the resources for workplace learning are diverse and include; patient narratives, peer learning and role modelling from senior staff and the mutual valuing of capability and potential between junior staff and mentors or preceptors (Davis et al, 2016). Basing CPD on organisational priorities, linked to needs assessment and patient benefit, can help ensure appropriate investment, managerial buy-in and therefore acceptance (and expectation) of transformational change in the workplace (Eddy et al, 2016; Haywood et al, 2010; Williams et al, 2015). Clinical managers therefore need to lead from the front in integrating organisational support, aligning CPD opportunities with both clinical and organisational priorities through individual nurse appraisal processes in ways that motivate and maximise CPD benefit to the individual and the service (Eddy et al, 2016; Haywood et al, 2012; Williams et al, 2015).

Third, ensuring this proactive and transformational CPD environment for the individual and their practice setting requires leadership at the organisational level. Organisational understanding of the advantages of transformational workplace CPD (rather than traditional, off-site training) values and nurtures the aligning of priorities, the release of required resources and the embedding of learning into the clinical setting (Eddy et al, 2016; Davis et al, 2016; Haywood et al, 2012; Williams et al, 2015). This requires organisational readiness, organisational buy-in and a supportive culture and infrastructure that values CPD. Importantly, such a lead can necessitate a move away from hierarchical managerial structures to those that look to foster and develop individual nurses, and each clinical setting as reflexive leaders (Eddy et al, 2016; Williams, 2010; Williams et al, 2015). In short, an optimal workplace culture is central for nurses to experience valuable and relevant CPD in the workplace (Davis et al, 2016).

4.2.2 Quantitative studies

There were eight quantitative studies authored by; Arnetz & Hasson (2007), Bradshaw et al (2007), Fairbrother et al (2016), Heaven et al (2006), Jones (2015), Rankin et al (2013), Wallin et al (2006), Warren et al (2016).

All eight quantitative studies were from individual researchers or research teams with no overlap. Two studies were led from Australia (Fairbrother et al, 2016; Jones, 2015) one from Canada (Rankin et al, 2013), two from Sweden (Arnetz & Hasson, 2006; Wallin et al, 2006); two from the UK (Bradshaw, 2006; Heaven et al, 2006) and one from the US (Warren, 2016).

The health care professional focus across the eight studies was quite consistent; all studies except one (Wallin et al, 2006) focused solely on registered nurses (RN's), the exception also included 'practical nurses' who have shorter training and less autonomy than RN's.

The setting or focus for the studies varied. Four studies covered acute and community settings (Fairbrother et al, 2016; Heaven et al, 2006; Jones, 2015; Warren, 2016), one covered only elderly care

settings (Arnetz & Hasson, 2006), one covered a mental health care setting (Bradshaw et al, 2006), while two focused on very specific aspects of acute care; Emergency Department (Rankin et al, 2013) and neonatal care (Wallin et al, 2006).

Studies varied in terms of CPD intervention/focus and research design. ***Four were controlled study designs***. Arnetz & Hasson (2006) conducted a prospective, non-randomised, control intervention of an educational tool to improve competence, psychosocial work environment and work satisfaction in elderly care organisations. Bradshaw et al (2006) used a quasi-experimental controlled design to assess the additional impact of workplace-based supervision on knowledge and attitude of mental health nurses toward individuals with psychosis following a psychosocial intervention programme. A secondary outcome measure here was used to assess the symptoms and social functioning of the service users; this is one of the few studies in the review to consider service user impact. Heaven et al (2006), conducted a randomised control trial looking at the impact of additional clinical supervision provision following attendance of clinical nurse specialists (from a range of specialities in both acute and community settings) on a communication skills workshop. Rankin et al (2013) used a randomised control design to look at the effectiveness of additional support to improve Emergency Department nurses triage skills during a 6 week, web-based workshop. ***Four were survey designs***. Fairbrother et al (2016) used a cross-sectional survey to correlate Evidence-Based Practice (EBP) skills and behaviours with demographic, job satisfaction and burnout indexes in senior nurses across acute and community settings. Jones (2015) used a pre-post survey design to look at changes in coaching practices among a group of nurse managers who were offered additional training in embedding coaching skills in a health district that covers acute and community settings. Wallin et al (2006) used a repeated measure survey of perceptions of work contextual factors to identify predictors of organizational improvement over time among staff (mainly 'practical' and registered nurses) working in four neonatal units. Warren et al (2016) used a cross-sectional survey to look at the attitudes, beliefs, and perceptions toward organizational readiness for implementation of EBP among Registered Nurses working in a diverse acute/community system.

Findings:
There was some coherence of findings relating to the current review question across the quantitative studies.
First, embedding learning (CPD) activities in the workplace generates positive change. For example, Arnetz & Hasson (2006) demonstrated that a CPD toolbox intervention promoted a sustained (18 month) improvement in competence, psychosocial work environment and work satisfaction in nurses working in an elderly care setting. Fairbrother et al (2016) showed that work environments (acute and community) which promote academic development act to increase job satisfaction and make staff more likely to engage with and implement Evidence-Based Practice (EBP) which ultimately improves care quality. Similarly, Wallin et al (2006) demonstrated that organisational improvement could be achieved by developing a learning and supportive workplace for staff working in neonatal units.

Second, when learning (CPD) takes place away from the workplace, subsequent intervention to embed this learning through the workplace increases the impact of that learning. Bradshaw et al (2007) showed that additional workplace supervision following an off-site CPD intervention improved the knowledge and attitude of mental health nurses toward individuals with psychosis. Importantly, this study also showed improved symptoms and social functioning of the service users of these nurses: one of the only studies to show a direct link between CPD and improved patient outcomes. Heaven et al (2006) showed that those nurses (acute and community) who received additional support following an offsite CPD intervention to improve communication skills demonstrated greater transfer of learning into the clinical setting (a greater use of open questions, negotiation and response to cues disclosed).

Jones (2015) showed that additional workplace based 'coaching the coach' support following offsite training for senior nurse managers had a positive impact on work performance for nurse managers, nurse unit managers and their staff. Rankin et al (2013) showed that the impact of web-based learning could be enhanced by the addition of a workplace project component. Those emergency care nurses that completed this additional element had improved accuracy in triaging patients appropriately leading to fewer errors of clinical importance.

Third, there is a close relationship between learning opportunities and transformational nurse leadership[5]. Jones (2015) highlighted enhanced teamwork, improved listening skills and improved ability to facilitate problem solving among staff (rather than fixing problems for them) following a 'coaching the coach' CPD intervention. Wallin et al (2006) demonstrated a strong association between staff learning opportunities and transformational leadership among nurses working in neonatal care. This was linked to enhancing participatory management and involving staff in decision making. Warren et al (2016) showed that a three-pronged approach focusing on nursing (acute and community) leadership, education and practice helps nurture a spirit of inquiry that facilitates and encourages the use of Evidence-Based Practice.

4.2.3 Qualitative studies

Beal & Riley (2019), Carlson & Bengtsson (2015), Chapman (2006), Farrell (2016), Fox et al (2005), Goudreau et al (2015), Govranos & Newton (2014), Lees & Meyer (2011), Manley et al (2014), McCauley et al (2014), Mulcahy et al (2018), Rivas & Murray (2010) Sandahl et al (2013).

All thirteen qualitative studies were from individual researchers or research teams with no overlap. Five studies were led from Australia (Farrell, 2016; Fox et al, 2005; Govranos & Newton, 2014; Mulcahy et al, 2018; Rivas & Murray, 2010), one from Australia and New Zealand (McCauley et al, 2014), three from the UK (Chapman, 2006; Lees & Meyer, 2011; Manley et al, 2014), two from Sweden (Carlson & Bengtsson, 2015; Sandahl et al, 2013); and one each from the United States (Beal & Riley, 2019) and Canada (Goudreau et al, 2015).

The health care professional focus across the thirteen studies was reasonably consistent. Eight studies explored the experiences of nurses only (Beal & Riley, 2019; Chapman, 2006; Farrell, 2016; Fox et al, 2005; Goudreau et al, 2015; Govranos & Newton, 2014; Mulcahy et al, 2014; Rivas & Murray, 2010). Alongside RNs, one study recruited medical professionals (Sandahl et al, 2013), another included allied health professionals (Carlson & Bengtsson 2015) and one included all health professionals (Manley et al, 2014). Of the remaining two studies, one sought the views of managers from across health, social care and education sectors (Lees & Meyer, 2011) and one focused on mental health practitioners but did not detail the professions of participants (McCauley et al, 2014).

The setting of the studies was relatively consistent. Nine covered acute care settings (Beal & Riley, 2019; Carlson & Bengtsson, 2014; Farrell, 2016; Fox et al, 2005; Govranos & Newton, 2014; Goudreau et al, 2015; Manley et al, 2014; Mulcahy et al, 2018; Rivas & Murray, 2010). One study focused on intensive care as a particular setting within acute care (Sandahl et al, 2013). The remaining three studies focused on community care (Chapman, 2006), mental health care services (McCauley et al,

[5] We consider transformational leadership as that which creates a culture that recognizes everyone as a leader of something, motivates and enables employees to pursue high standards, and develops team building, trust, and open communication (McCormack et al, 2002)

2014) and inter-professional practice across health, social care and education sectors (Lees & Meyer, 2011).

The focus and design of the studies varied. **Five focused on attitudes toward and experiences of CPD**, rather than a specific intervention. Beal & Riley (2019) conducted cross-sectional interviews with senior nurse leaders to consider how organisational practices supported scholarly nursing practice across a career. Chapman (2006), completed cross-sectional interviews with community nurses who had completed one of four work-based learning modules over the previous two years in order to explore their perceptions of implementing CPD learning and on quality of patient care. Farrell (2016) conducted cross-sectional focus groups to explore nurses' perspectives on iPhone use. Fox et al (2004) conducted longitudinal focus groups at 2-3 months and 6-9 months after nurses started at a hospital to ascertain what new staff perceived as appropriate support from the organisation to assist integration. Govranos & Newton (2014) used sequential focus groups and interviews to explore nurses' values and perceptions of CPD and the factors that impact on continuing education in the ward. **The remaining eight studies all reported on CPD interventions**. **Three reported complex, practice development interventions** (Manley et al, 2014; McCauley et al, 2014; Mulcahy et al, 2018) deploying a variety of cyclical action learning models that aimed to facilitate improved self-reflection, transform workplace culture and ultimately improve patient care. All three used a combination of learning strategies delivered in a variety of settings but all with the workplace as the main focus. **Two reported on off-site CPD interventions**. Carlson & Bengtsson (2015) conducted cross-sectional focus groups and analysed longitudinal reflective journal accounts from health professional participants, 6 months after completion of an advanced level course on preceptorship in clinical practice. Lees & Meyer (2011) conducted cross-sectional interviews with a range of health, education and social care middle-managers one year after their participation in interactive learning CPD aimed at enhancing collaborative working to meet local challenges regarding children and young people's services. **Three reported workplace-based CPD interventions**. Goudreau et al (2015) completed a longitudinal evaluation using focus groups, interviews and journal analysis with participants, managers and the researcher to assess the implementation of a competency-based intervention (30-minute reflective practice groups) for newly graduated nurses. Rivas & Murray (2010), completed a cross-sectional, open-question survey with nursing staff to evaluate the impact of an action-learning set intervention aimed at leading the team toward systematic practice improvement. Sandahl et al (2013) completed observations and cross-sectional interviews with staff to evaluate the effectiveness of a simulation based team-training programme aimed at improving inter-professional working in intensive care.

Findings:

There was some coherence of findings relating to the current review question across the quantitative studies.

First, all 13 studies found that CPD contributed to individual learning (Beal & Riley, 2019; Carlson & Bengtsson, 2015; Chapman, 2006; Farrell, 2016; Fox et al, 2005; Goudreau et al, 2015; Govranos & Newton, 2014, Lees & Meyer, 2011; Manley et al, 2014; McCauley et al, 2014; Mulcahy et al, 2018; Rivas & Murray, 2010; Sandahl et al, 2013). Individual learning in the workplace requires self-motivation and critical thinking (Govranos & Newton, 2014; Manley et al, 2014; McCauley et al, 2014; Rivas & Murray, 2010), facilitated through reflexive discussions (Goudreau et al, 2015), and by interactions with more senior colleagues, preceptors, or clinical educators (Fox et al, 2005, Rivas & Murray, 2010; Lees & Meyer, 2011). Motivation to engage in CPD optimised learning (Goudreau et al, 2015). Motivating factors included a commitment to provide safe and effective patient care (Govranos & Newton, 2014; Gourdreau et al, 2015; Rivas & Murray, 2010; Sandahl et al, 2013), willingness to learn (Goudreau et al, 2015), and clear relevance and benefit of the learning activity to clinical practice

(Chapman, 2006; Sandahl et al, 2013). A lack of commitment and motivation notably hindered learning for the individual and the group, if learning was taking place in a group setting (Goudreau et al, 2015; Lees & Meyer, 2011). For some, learning that took place outside of the workplace was found to lack relevance (Lees & Meyer, 2011, Sandahl, 2013). Other barriers to individual learning related to the workplace culture, for example, lack of time (Chapman, 2006; Govranos & Newton, 2014; Sandahl et al, 2012), lack of preceptorship provision due to staff shortages (Fox et al, 2005), and issues with accessing knowledge via smartphones due to lack of organisational support (Farrell, 2016).

Second, in addition to the impact on individuals, several studies identified the benefits of CPD to teamwork (Carlson & Bengtsson, 2015, Lees & Meyer, 2011). For example, CPD for preceptors was found to impact on the ability of individuals to provide support to others in the team (Carlson & Bengtsson, 2015). Participants felt the programme increased their competence, abilities and professional status, and that CPD not only enabled them to support junior members of their team, but also enabled them to develop their individual skills in reflective practice. Mulcahy et al (2018) discovered that organisational support of team-led practice development enables widespread ownership and engagement, leading to proactive change. Knowledge translation was enhanced through a facilitator role, enabling individual and team development, and improved outcomes for patients (Mulcahy et al, 2018). Furthermore, inter-professional learning can lead to an increased understanding of the roles and pressures of others, improving inter-professional relations (Lees & Meyer, 2011). Practice development initiatives in particular have been shown to have a significant impact on individual, team, workplace and organisational culture, improving working practices and increasing team confidence in making changes (Manley et al, 2014; McCauley et al, 2014; Mulcahy et al, 2018). A further feature of a positive team workforce culture was adaptability to new ways of learning in the workplace, for example through new technology (Farrell, 2016), practice development initiatives (Mulcahy et al. 2018; Rivas & Murray, 2010), and inter-professional knowledge sharing (Lees & Meyer, 2011). The impact of a positive workplace culture to newly qualified staff was evident in the value of one-to-one preceptorships and a friendly team environment (Carlson & Bengtsson, 2015; Fox et al, 2005; Govranos & Newton, 2014).

Third, managers' perceptions of CPD learning were found to be fundamental to the successful implementation of this learning in practice (Goudreau et al, 2015; Manley et al, 2014; McCauley et al, 2014). For example, Farrell (2016) reported the potential value of using technology in facilitating work-based learning in everyday practice but recognised that this was reliant on support from organisational leaders. It follows that strong leadership is crucial to designing the optimum work environment for learning to occur (Manley et al, 2014; Rivas & Murray, 2010) and to support sustained improvements in practice and patient care (Manley et al, 2014; Sandahl et al, 2013). The role of senior nurses should entail empowering nurses (Beal & Riley, 2019; Manley et al, 2014) and such empowerment has been considered crucial to ensuring commitment to lifelong learning and to foster a change in nursing culture (Govranos & Newton, 2014). Strong leadership and role modelling were characterised by the promotion of CPD to individual staff (Beal and Riley, 2019), facilitating mentorship programmes (Fox et al, 2005; Govranos & Newton, 2014) and empowering team members to contribute to service improvement (Manley et al, 2014; McCauley et al, 2014).

Finally, while there is a strong emphasis on nurses owning their practice and career path, professional development must also be an explicit value of the whole organisation (Beal & Riley, 2019; Govranos & Newton, 2014; Manley et al, 2014; McCauley et al, 2014; Sandahl et al, 2013). Suggested indicators of effective workplace culture for learning are; person-centred care, enabled teams, and a supportive workplace and organisational culture of learning (Manley et al, 2014; McCauley et al., 2014). The workplace and organisational context enable transformation of individual practice. In several studies,

a positive workplace culture was found to enable effective CPD through the provision of; strong leadership, sufficient resources, adaptability to new ways of learning, and support for new staff (Beal and Riley, 2019; Carlson & Bengtsson, 2015; Farrell, 2016; Fox et al, 2005; Goudreau et al, 2015; Govranos & Newton, 2014; Lees & Meyer, 2011; Manley et al, 2014; McCauley et al, 2014; Mulcahy et al, 2018; Rivas & Murray, 2010; Sandahl et al, 2013). Senior leaders are key to promoting professional development (Beal and Riley, 2019). The prioritisation of CPD through the provision of sufficient resources, such as time and staffing, was an important indicator of a positive workplace and organisational culture. Protected time to learn from others and reflect on clinical practice was found to be crucial to many participants (Beal and Riley, 2019; Govranos & Newton, 2014, McCauley et al, 2014; Rivas & Murray, 2010). Partnerships with academic institutions were also recognised as important to providing opportunities for staff development (Beal and Riley, 2019).

4.2.4 Mixed methods

Augustsson et al (2013), Baumbusch et al (2017), Billon et al (2016), Curran et al (2019), Harris et al (2007), Henderson et al (2015), Hughes (2005), Illing et al (2019), Jackson et al (2015), Manley et al (2018), Owen et al (2014), Tobiano et al (2019), Williamson et al (2015).

The studies by Illing et al (2019) and Jackson et al (2015) are large, significant pieces of work, directly relevant to the UK context, and are summarised more fully in Appendix III.

Twelve of the 13 papers were from individual researchers or teams. The exception being the work by Jackson et al (2015) and Manley et al (2018). These cover the same study, the first being a full report, the second an academic paper. Two papers were from Australia (Henderson et al, 2015; Tobiano et al, 2019), three from Canada (Baumbusch et al, 2017; Curran et al, 2019; Harris et al, 2007), one from Sweden (Augustsson et al, 2013), five from the UK (Billon et al, 2016; Hughes, 2005; Illing et al, 2019; Jackson et al, 2015; Manley et al, 2018) and two from the U.S. (Owen et al, 2014; Williamson et al, 2015).

The health care professional focus across the 13 studies varied. Five studies focused solely on Registered Nurses (Baumbusch et al, 2017; Henderson et al, 2015; Hughes, 2005; Tobiano et al, 2019; Williamson et al, 2015), two included nursing assistants and practical level nurses alongside RN's (Augustsson et al, 2013; Harris et al, 2007) and seven included a variety of health and social care professionals (Billon et al, 2016; Curran et al, 2019; Illing et al, 2019; Jackson et al, 2015; Manley et al, 2014; Manley et al, 2018; Owen et al, 2014).

The setting or focus of the studies varied. Two studies focused on elderly care - one in residential settings (Augustsson et al, 2013) and one in hospital settings (Baumbusch et al, 2017). One study focused on people with intellectual difficulties (Billion, 2016), one on palliative care (Harris et al, 2007) and one on intensive care (Tobiano et al, 2019). One study focused on the practice development of newly qualified nurses in an acute hospital setting (Henderson et al, 2015), one on improving hospital sepsis care (Owen et al, 2014) and one study focused on the use of mobile technology (m-learning) across acute and community settings (Curran et al, 2019). One study focused on RN perceptions of CPD (Hughes, 2005) one on RN perceptions of EBP (Williamson et al, 2015) and three focused on how workplace-based CPD approaches can improve safe and effective care (Illing et al, 2019; Jackson et al, 2015; Manley et al, 2018) - these three studies covered acute and community settings.

The mixed methods study designs were also very varied. **Four studies used pre-post intervention survey designs supported by qualitative methods to add depth** to the survey findings. Augustsson et al (2013), used pre-validated measures, assessing organisational climate, culture, systems and

structures, at baseline, 6 and 12 months following a workplace-based intervention to improve residential care for older people. This was supplemented with qualitative interviews with participants and with managers immediately after and at 14 months after intervention. Baumbusch et al (2017), used two pre-validated measures, assessing perceptions of nursing care of older people and knowledge of aging, at baseline, immediately after and 3 months following an off-site CPD intervention to improve care of hospitalised older people. This was supplemented with a qualitative focus group involving course participants and interviews with participants' managers. Billon et al (2016) used two pre-validated measures, assessing the impact on health care skills and confidence, at baseline and immediately following off-site simulation training to improve ability to work with people with intellectual difficulties. This was supplemented by a qualitative, open-response questionnaire. Owen et al (2014), used a pre-validated measure of readiness for inter-professional learning before and immediately after the first CPD activity and then a specifically developed measure with quantitative statements and open-questions to evaluate the impact of a simulation-based inter-professional education programme to improve sepsis care. **Six studies used a cross-sectional survey design with qualitative work assisting with survey design or adding depth and process data** to the study. Curran et al (2019), undertook qualitative telephone interviews to develop a cross-sectional survey (that also incorporated some pre-validated measures) to explore the adoption, use and acceptability of mobile-learning technology in CPD. Harris et al (2007), used a post-intervention survey to assess self-reported change and improvement in palliative care after completion of an off-site course in comprehensive, advanced palliative care. Qualitative interviews one-year post programme then looked at the implementation of the learning where participants functioned in a Palliative Care Resource (PCR) role. Henderson et al (2015), used a cross sectional survey, which incorporated pre-validated measures, to explore newly qualified hospital nurses' perceptions of a structured clinical support programme. Qualitative focus groups were then completed to add depth to the survey findings. Hughes (2005) used a cross-sectional survey (developed specifically for the study) followed by qualitative interviews with some survey participants to explore nurses' perceptions of CPD. Similarly, Williamson (2015) used a cross-sectional survey, incorporating a pre-validated scale and five open qualitative questions, to explore nurses' perceptions of EBP. One study (Tobiano et al, 2019) combined semi-structured observation of interactions and discussion during ICU nursing rounds, followed up with a cross-sectional survey (that also included four open questions), to evaluate the implementation of nursing rounds as an educational strategy in intensive care. **Three studies used embedded case study designs drawing on principles of realist synthesis** to develop strategies for achieving effective CPD in healthcare. Jackson et al (2015) and Manley et al (2018) report on the same study that used a realist review of the literature followed by a wide ranging approach to stakeholder consultation to test and refine emerging theoretical propositions. Illing et al (2019), similarly used a realist review followed by applied case studies, online survey and routinely collected data to test and refine emerging theoretical propositions.

Findings:

There was some coherence of findings relating to the current review question across the mixed methods studies.

First, embedding learning (CPD) activities in the workplace generates positive change for individuals. For example, Augustsson et al (2013), demonstrated that a series of workplace study circles; improved perceptions of palliative care for older people; promoted greater empathy with older people and their relatives; highlighted the importance of communication (as opposed to a care task focus) and led to a greater understanding of co-workers' ways of working. Harris et al (2007), reported nurses acquiring new information, skills and resources for improving palliative care practice for those attending a

combined off-site and workplace training programme in advanced palliative care. Henderson et al (2015), showed an increased sense of belonging, accomplishment, worth and engagement for newly qualified RN's following attendance at a hospital-based (through use of preceptors) graduate programme. Tobiano et al (2019), demonstrated that intensive care Nursing Rounds positively influenced the application of evidence in practice, identified areas for practice improvement and improved the ability to communicate clinical information. Such benefits from workplace CPD reflect finding that individual motivation to learn is improved if learners see the direct relevance of CPD to their work (Jackson et al, 2015, Manley et al, 2018).

Second, Off-site CPD learning could also be effective in improving individual health professional's perceptions and expertise in working with hospitalised older people (Baumbusch et al, 2017), with those with intellectual disabilities (Billon et al, 2016) and in palliative care (Harris et al, 2007). This fits with the findings of Hughes (2005) that the prime motivations reported by nurses for undertaking CPD were improving care and improving practical skills. However, barriers and frustrations were also experienced when trying to implement off-site CPD learning. Hughes (2005) identified that some nurses found reflective practice difficult and this created challenges to improving their own practice or in seeking to transform practice within the workplace setting. Linked to this was evidence of a dissociation of CPD from lifelong learning when CPD was target driven (to maintain registration) rather than related to transforming practice (Hughes, 2005). It is notable that Baumbusch et al (2017) identify that while there were no changes in knowledge after the course (or at 3 months) the qualitative data suggested that the changes in perception become integrated into practice over time once learners were back in the workplace setting. As Illing et al (2019) suggest, successful CPD learning therefore involves not only knowing what to change, but also how to make changes to practice and service delivery.

Importantly, strong relationships between health care services and academic partners were seen as critical to enabling a culture of scholarly nursing practice and circumventing some of these on-site/off-cite CPD concerns (Beal & Riley, 2019; Govranos & Newton, 2014; Illing et al, 2019; Jackson et al, 2015; Manley et al, 2018).

Third, there was evidence of how CPD impact is enabled (or constrained) at the team or organisational level. Hughes (2005) suggests that nurses see CPD as not only beneficial to their personal development but also to those around them with the ultimate aim of improving care. Illing et al's (2019) work links to this by showing how targeting CPD directly at patient benefit increases individual learner motivation and helps align this learning to shared workplace and organisational goals. Augustsson et al (2013) showed how workplace-based study circles unified staff who did not usually work together (including managers), created opportunities to see how others perceived elderly care situations and thereby helped critical reflection at both individual and team level. Harris et al (2007) showed improvements in palliative care practices across the organisation as CPD participants implemented learning through; formal and informal education with staff; development and implementation of workplace resources and policies; acting as consultants in difficult cases and improved communications with patients and families. Tobiano et al (2019) highlighted an increase in knowledge translation into practice following ICU nursing rounds as a result of shared, inter-disciplinary learning and enhanced teamwork. In a similar way, Owen et al (2014) showed how a simulation-based, inter-professional education programme could help improve team working in sepsis care by increasing commitment to collaborative working and generating greater appreciation of roles and thereby more appropriate allocation of responsibilities for different aspects of sepsis care. Jackson et al (2015) and Manley et al's (2018) study provides robust evidence demonstrating that, for CPD to be fully effective, it has to address all of the outcomes for individual, team, service and organisational transformation, because

they are interrelated and interdependent. However, they further suggest that transformation of workplace culture and individual professional practice should be given priority as are important pre-requisites for service and organisational change. They propose that a focus on the development of individual professional practitioners as transformational leaders promotes enhanced team effectiveness in the workplace and thereby capitalises on CPD resources and investment.

These relationships require workplace and organisational commitment - influential and transformational nurse leaders are crucial in facilitating, enabling and enacting this commitment, developing these relationships and releasing individual learning potential.

Fourth, support, particularly managerial support, plays a vital role in whether CPD has impact within the workplace. While Augustsson et al (2013) demonstrate positive results for the individuals involved with the CPD programme, participants remained sceptical about opportunities for implementing change, felt this was a managerial responsibility and, 14 months after the intervention, there was little memory of anything concrete that had been implemented or who's responsibility that had been in the action plans produced. Illing et al (2019) suggest that ongoing monitoring and evaluation of CPD implementation could help reduce such confusion. Williamson et al (2015) point out that heavy workload and lack of time act to reduce motivation to learn among nurses while good managerial leadership plays an important role in helping implement EBP learning. Hughes (2005) also highlights how lack of managerial support to implement change following CPD attendance creates a cycle of frustration and apathy, whereas leadership that promotes creativity and welcomes new ideas can lead to improved staff and patient outcomes. Similarly, Harris et al (2007) note that while there were organisational gains in improved palliative care practices following CPD attendance, the full impact of this was restricted when managers perceived that learning was linked to individual development rather than organisational transformation. Illing et al (2019) demonstrate that when learners have appropriate support structures (learner networks, peers, managers, influential change champions), it helps maintains momentum for change and suggests that whole team training can reduce resistance to change. Importantly, it is also noted by Beal & Riley (2019) and Illing et al (209) that robust relationships with academic partners can ensure aligning of workforce learning (CPD) needs between health services and Higher Education partners.

4.3 Integrated Summary

Following on from the previous sections which have described the findings from each type of study, this section presents a synthesis of the review findings presenting them as individual, team and organisational CPD impact. [NB as noted earlier, there was insufficient evidence available in relation to CPD impact on the system to report here].

Individual:

Individual nurses were noted as being best placed in recognising and taking responsibility for their own CPD learning (Davis et al, 2016; Illing, et al, 2019; Williams, 2010) and there was strong evidence that such individual learning needs to be self-driven through critical reflective practice (Chapman, 2006; Davis et al, 2016; Goudreau et al, 2015; Govranos & Newton, 2014; Haywood et al, 2012; Illing et al, 2019; Jackson et al, 2015; Manley et al, 2018; McCauley et al, 2014; Rivas & Murray, 2010; Sandahl et al, 2013; Williams, 2010). However, certain factors are precursors that inspire and motivate this self-reflective engagement with CPD. There was strong evidence that the major motivations are a desire to improve provision of high quality, safe and effective care (Govranos & Newton, 2014; Gourdreau et al, 2015; Haywood et al, 2012; Hughes, 2005; Jackson et al, 2015; Manley et al, 2018; Rivas & Murray, 2010; Sandahl et al, 2013) and a concomitant need to see the direct relevance

of CPD to clinical practice (Chapman, 2006; Haywood et al, 2012; Illing et al, 2019; Sandahl et al, 2013). There was some evidence that peer attitudes to learning and a desire for career progression are also important motivators in positive CPD engagement (Haywood et al, 2012; Illing et al, 2019; Jackson et al, 2015; Manley et al, 2018). Having person-centred, safe and effective care at the core of CPD learning can therefore be inspirational and transformational (Illing et al, 2019; Jackson et al, 2015, Manley et al, 2018). However, despite this, and with only a couple of exceptions (Bradshaw et al, 2007; Illing et al, 2019; Rankin et al, 2017), there was little empirical work that looked directly at the impact of CPD on patient/citizen or community outcomes.

There was strong evidence that embedding learning (CPD) activities in the workplace (across a range of clinical settings) harnesses this desire to see patient benefit and relevance to practice and is therefore more likely to generate positive change for individuals (Arnetz & Hasson, 2006; Augustsson et al, 2013; Fairbrother et al, 2016; Harris et al, 2007; Henderson et al, 2015; Illing et al, 2019; Jackson et al, 2015; Manley et al, 2018; Tobiano et al, 2019; Wallin et al, 2006). Conversely, learning taking place outside the workplace was sometimes found to lack relevance (Lees & Meyer, 2011, Sandahl, 2013) and could lead to frustration when practitioners were trying to implement learning that may not be understood as relevant by managers or even peers (Hughes, 2005). It is therefore important that CPD identifies not only ***what*** and ***why*** practice needs to change but also ***how*** to make changes to practice and service delivery (Illing et al, 2019). Even when learning takes place away from the workplace, there was some evidence that attaching subsequent, clinically-based activities focused on embedding learning increases CPD impact in a range of clinical contexts (Baumbusch et al, 2017; Bradshaw et al, 2007; Heaven et al, 2006; Jones, 2015; Rankin et al, 2013).

There was moderate to strong evidence that forms of situated learning involving activity-based methods (such as action learning sets, nursing rounds, study circles), rather than formal teaching, were a preferred (and effective) form of CPD especially when this involved teams of staff who normally work together (Chapman, 2006; Goudreau et al, 2015; Illing et al, 2019; Lees & Meyer, 2011; Rivas & Murray, 2010). However, strong relationships between health care services and academic partners were seen as critical to enabling a culture of scholarly nursing practice and circumventing some of the on-site (situated learning)/off-site (formal education) CPD concerns (Beal & Riley, 2019; Govranos & Newton, 2014; Illing et al, 2019; Jackson et al, 2015; Manley et al, 2018).

Team:

There was some evidence that CPD focused on whole teams was effective. This approach was valuable in improving working relationships among the nursing team (but also inter-disciplinary relationships when training involved Allied Health Professionals) leading to more effective communication and improved clinical practice (Augustsson et al, 2013; Fox et al, 2005; Owen et al, 2014; Rivas & Murray, 2010; Sandahl et al, 2013; Tobiano et al; 2019). Team based CPD was particularly effective in embedding and translating learning into the clinical setting through developing shared knowledge, values and outcomes (Eddy et al, 2016; Illing et al, 2019; Jackson et al, 2015; Manley et al, 2014; Manley et al, 2018; Mulcahy et al, 2018; Williams et al, 2015), reducing resistance to change (Illing et al, 2019), and in facilitating constructive peer challenge and critical reflection at the individual and team level (Jackson et al, 2015; Manley et al, 2014; Manley et al, 2018; Sandahl et al, 2013; Tobiano et al; 2019).

There was strong evidence that clinical team settings with a culture that recognises the importance of support structures for embedding learning (learner networks, peers, preceptors, managers, influential change champions), and where knowledge creation and utilisation are valued and seen as a collective activity, are key to maintaining momentum for change and optimising CPD impact (Davis el at, 2016; Eddy et al, 2016; Haywood et al, 2012; Illing et al, 2019; Jackson et al, 2015; Manley et al, 2014; Manley et al, 2018; Williams, 2010; Williams et al, 2015).

Organisation:

There was strong evidence that individual and team motivation to engage with and embed CPD learning needs to be supported through strong leadership within the immediate clinical setting if maximum impact is to be achieved (Augustsson et al, 2013; Davis et al, 2016; Eddy et al; 2016; Goudreau et al, 2015; Harris et al, 2007; Hughes, 2005; Haywood et al, 2012; Manley et al, 2014; McCauley et al, 2014; Williams B, 2015; Williams C. 2010; Williamson et al, 2015). Clinical managers therefore need to lead from the front, aligning CPD opportunities with both clinical and organisational priorities through individual appraisal processes and team goals in ways that motivate and maximise benefit to the individual, team and service (Beal & Riley, 2019; Eddy et al, 2016; Haywood et al, 2012; Illing et al, 2019; Jackson et al, 2015; Manley et al, 2014; Manley et al, 2018; Williams et al, 2015). Importantly, such support includes the mobilisation of resources that ensure adequate time, staffing levels and funding to facilitate active learning and its implementation (Beal & Riley, 2019; Eddy et al, 2016; Govranos & Newton, 2014; Haywood et al, 2012; Illing et al, 2019; Jackson et al, 2015; Manley et al, 2014; Manley et al, 2018; McCauley et al, 2014; Rivas & Murray, 2010; Williams et al, 2015; Williamson et al, 2015). Lack of such support creates frustration (Hughes, 2005), reduces motivation to learn (Williamson et al, 2015), and constrains the ability to implement learning (Farrell, 2016; Hughes, 2005; Harris et al, 2007).

Such support, particularly resource mobilisation, is not only the responsibility of clinical managers; it also requires engagement from the whole organisation. There was strong evidence that the provision of this support relies on organisational leadership that both values and acts to promote a collegiate culture of learning and a spirit of inquiry at all levels (Davis el at, 2016; Eddy et al, 2016; Haywood et al, 2012; Illing et al, 2019; Jackson et al, 2015; Jones, 2015; Manley et al, 2014; Manley et al, 2018; Rivas & Murray, 2010; Wallin et al, 2006; Williams et al, 2015; Williamson et al, 2015). There was strong evidence that basing CPD on organisational priorities, linked to needs assessment and patient benefit, can help ensure appropriate investment, individual and managerial buy-in and therefore acceptance (and expectation) of transformational change in the workplace (Eddy et al, 2016; Haywood et al, 2010; Illing et al, 2019; Jackson et al, 2015; Manley et al, 2014; Manley et al, 2018; Williams et al, 2015). Importantly, this can necessitate a move away from hierarchical managerial structures to more inclusive leadership approaches that look to involve, foster and develop individual nurses, teams, and whole clinical areas, in collaborative ways that facilitate critical reflexive leadership (Eddy et al, 2016; Illing et al, 2019; Jackson et al, 2015; Jones, 2015; Manley et al, 2014; Manley et al, 2018; Wallin et al, 2006; Williams, 2010; Williams et al, 2015).

There was strong evidence that practice development approaches can be an effective means of ensuring this whole organisation commitment to a culture of learning. These approaches promote the development and enactment of shared values, encourage critical reflection, peer challenge and collaborative problem solving, and thereby act to shift individual, team, workplace and organisational culture in ways that increase confidence in suggesting and implementing change (Manley et al, 2014; McCauley et al, 2014; Mulcahy et al, 2018). Fostering practice development approaches and maximising CPD impact can be enabled by strong links between health services and academic partners that work collaboratively to identify and meet workforce learning requirements (Beal & Riley, 2019; Govranos & Newton, 2014; Illing et al, 2019; Jackson et al, 2015; Manley et al, 2018). These relationships require workplace and organisational commitment - influential and transformational nurse leaders are crucial in enabling and enacting this commitment, developing these relationships and releasing individual learning potential (Beal & Riley, 2019; Govranos & Newton, 2014; Illing et al, 2019).

5. CPD Consultation response integration and analysis

There were twelve responses to the step-six consultation from England (n=4), Northern Ireland (n=1), Scotland (n=5) and Wales (n=2). The majority were from nurse academics (n=7) with the remainder being from those in senior nursing roles or senior professional lead roles (n=5).

For the purpose of this report the results are collated below under each of the three question areas[6].

Q1. *What might the recommendations be that you would want to highlight from these review findings*?

An important point highlighted by most respondents was that individuals need the motivation and enthusiasm for learning that comes from seeing the benefits experienced by people receiving care. This was perceived to have implications for measuring the outcomes and impact of CPD for those accessing services – though it was noted this was not straight forward. CPD should therefore have direct relevance to clinical practice and improved quality care at its core. This is more likely to be the case with workplace learning including team learning, coaching and mentoring which facilitates the embedding of knowledge and associated practice transformation.

It was further recognised that individual and team attitudes to CPD (including motivation and enthusiasm) will depend on the workplace culture to achieve ownership and sustainable change and transformation. In addition to learning new skills and knowledge, individuals and teams need to understand the principles of knowledge translation. To make sustainable transformational changes in practice and in the delivery of services is as fundamental as understanding what good evidence is, and how to use it.

Workplace culture is determined by the quality of leadership as well as the facilitation of complex change. If the culture facilitates positive staff relationships and a commitment to learning, development (including critical thinking) and improvement then individuals and teams will have opportunities to innovate, embed and implement new knowledge and skills in the workplace. Practitioners, including clinical managers, therefore need to lead from the front enabling learning by fostering respectful relationships, and aligning CPD opportunities with both clinical and organisational priorities. Importantly, such support includes the mobilisation of resources that ensure adequate time, staffing levels and funding to facilitate learning. Organisations also need to demonstrate commitment to CPD and a readiness to change by enabling leaders and motivating teams and individuals in facilitating practice transformation. Evaluating the individual, team and organisational benefits of CPD is key to engendering commitment and releasing resources.

Some limitations of the work were highlighted. There was a feeling from some working in Higher Education Institutions (HEI) that the report was limited in its utility for them given the emphasis on workplace learning. However, it was noted that the importance of links to academic institutions and colleagues was highlighted in the report. We believe it is important to work collaboratively across systems with all stakeholders (including HEI's) to develop an integrated approach to learning, development and improvement that optimises opportunities for practitioners to learn in, through and from practice and thereby maximises opportunities for knowledge translation and changes in practice. Furthermore, the importance of work-based learning, and the relevance to practice of CPD, mentioned in the report, were recognised as key and resonated with the experience of those working in HEI's. There was also some concern expressed that, in the report, CPD is focused on particular forms

[6] Where respondents did not provide comments under these three headings the research team placed them where they thought most appropriate.

of knowledge, or privileges particular forms of knowledge, specifically a dominant pedagogical focus on training. However, we believe the report has moved beyond such models, not least in highlighting how workplace transformation theories (e.g. Jackson et al, 2015; Manley et al, 2018) are based on all forms of educational pedagogy drawing on contemporary theories of learning that are transformational.

Q2. *Given the papers included and their findings, do you think anything is missing in terms of the key messages presented*?

The majority of comments stated that little or nothing was missing from the report. Others made suggestions for a shift in focus or highlighted areas that could or should have been covered and both of these are addressed below.

As noted under Q.1, some working in HEI's suggested that a lack of emphasis on CPD leading to academic award meant the report was limited in its application to academic settings. There is a need for an integrated approach to post-qualifying education that supports nurses as they progress. We agree about the importance of integration but believe that HEIs should also be looking to offer accreditation to organisations to support bottom up transformational change where service improvement and clinical excellence are encouraged. They should also be incorporating patient and family feedback on experiences to strengthen their approach to workforce development and CPD.

Linked to this, two respondents noted the reduction of funding for specialist nurse training, particularly that in mental health nursing. We would suggest this funding issue goes beyond just specialist nurse training and that we need to be considering integrated training across professions as a way to maximise funding efficiency.

Some thought it important to note that nurses do not work in isolation and that a focus on learning with other colleagues might therefore be preferable. CPD that embraces the multi-disciplinary or multi agency context mirroring their clinical speciality might have greater impact, authenticity and application. As an aspect of this, some highlighted the issue of limited (and even complete lack of) funded CPD for support staff, particularly health care assistants. Not considering this interdisciplinary nature of CPD therefore limits the potential of this review work.

Again, as noted under Q.1, some felt that the discussion of the review did not challenge the dominant paradigm of CPD and how this sits with contemporary nursing knowledge and practice and that future work should consider different pedagogical paradigms. While the review exposes the contemporary focus on technico-rational knowledge translated into behavioural competencies, it does not then go on to consider how knowledge underpins all aspects of practice and what professionals need to do to retain that practice. This can create or sustain an idea that CPD is somehow a purely pragmatic and a-theoretical concern – something the report hopefully highlights is certainly not the case. Similarly, it was pointed out that there is currently an opportunity to link CPD to policy drivers (including the NHS Peoples Plan) to support career retention and development, including through the apprenticeship scheme, and we would agree it is important to seize this opportunity.

Q3. *From this review, and in your experience, what do you think are the key areas of evidence that are lacking in relation to nursing CPD? What are the main research questions that remain*?

There was noted to be a challenge in determining who sets the agenda for CPD and whether this should be determined by service need and line manager or by individual registrants. Any advice/guidance that might help individual registrants have more autonomy on the direction of their CPD was therefore said to be welcome. This is where an integrated approach to developing CPD

becomes really important in aligning individual and service needs and maintaining person-centred safe and effective care at the core.

Several respondents commented about the importance of being able to demonstrate the impact of CPD/learning on practice and particularly on patient and community outcomes (but also on outcomes for the individual nurse, the team and for service delivery). However, it was also recognised that measuring such impact was complex and difficult.

For some working in HEI's, it was felt there was a need to focus work on the link between CPD and academic credit, academic thinking, and how these further links to succession planning and career progression. This possibly says something about the institutional drivers for CPD within HEI's and the need for income generation. Again, an integrated approach could help consider and meet the needs of various stakeholders.

There were concerns expressed that, while rhetorically recognising the value and centrality of reflective and reflexive practices, there are few sustained models of support for this. In addition, particularly in times of crisis such as Covid-19, there can be a reversion back to funders, such as Health Education England, focusing resources on technico-rational forms of knowledge and training. However, this crisis has also demonstrated that individuals, teams and organisations are skilful and innovative in adapting and flexing their practice.

Several respondents provided suggestions for specific research questions/topics and these are:

- What is the direct impact of CPD to person-centred, safe and effective practice?
- How do organisations support the continuous and integrated development of professionals without the focus being on 'classroom-based' activity connected with technico-rational forms of knowledge and training methodologies?
- What are the essential characteristics of a sustainable holistic model of professional post-registration nursing learning and development?
- What is the economic impact of providing CPD opportunities at a Trust and systems level - including the economic impact on recruitment, retention and career development?
- What, if any, are the differential impacts of different types of CPD (face to face / blended / online continuum etc.)?
- What are the opportunities for clinical academic careers and what are the benefits of completing CPD focused on increasing nursing research capacity?
- How can CPD practices best link to succession planning and career development?

5.1 Reflections on the consultation responses:

It was extremely pleasing that the report was predominantly well received and that many of the findings of the review resonated with the respondents. As with all reviews, this one had a specific focus; in this case examining the factors that enable or optimise CPD impact for learning, development and improvement in the workplace. As a consequence, research and evidence on other important and closely related nursing CPD issues were not included in this review as highlighted in some of the consultation responses. Three areas in particular seem to stand out that would warrant future investigation (either to collate existing evidence or in conducting new primary research). These are:

1) Understanding more about how the impact of CPD could be effectively evidenced in improving service delivery and person-centred care was highlighted as a key concern. This is important in terms of individual and team motivation for full engagement in CPD but also important in terms of driving and securing organisational commitment and resourcing staff learning and development. Adequate evidence of the impact of CPD on service delivery and person-centred care could help demonstrate the cost-effectiveness of different models of CPD. While CPD impact indicators have been suggested for the individual, team and organisational aspects of the system (Jackson et al, 2015) there is currently a gap integrating this with patient and family experiences and feedback to determine the difference it makes in practice and service improvement.

2) The relationship between workplace learning environments and HEI's. In particular, there seems to be a need to consider how CPD can be funded (in economically efficient ways) to maximise these links and relationships in a way that best promotes effective, person-centred care whilst simultaneously facilitating individual nurse's personal development, satisfaction, regulatory requirements and career progression. One aspect of this is the place of formal academic accreditation and professional credentialing. Another is building appropriate, sustainable models for career development to support the continuous and integrated development of nursing professionals. These are based on a further key aspect; how the CPD agenda is set – how are priorities determined and who is responsible for this. This is likely to be a particularly pertinent question in the Covid/post-Covid context.

3) The place of inter and multi-disciplinary learning and CPD was flagged as an important consideration not sufficiently covered in the review (perhaps not surprising as the review had a nursing CPD specific focus). This issue was present in the review findings but only briefly– though many of the studies were based on multi-professional samples. We agree with the respondents who noted that nursing CPD does not exist in a vacuum and are aware of previous excellent work looking at the advantages of inter- and multi-disciplinary learning and how this facilitates workplace transformation. However, there may be a need for further work in this area in the current Covid/post-Covid context.

The above three points potentially contain an array of future research areas and questions within them that require further consideration.

6. Conclusion

This rapid review provides useful information about the factors that help maximise CPD impact. Individual motivation to engage in CPD is driven by a desire to provide high quality care and is best realised through critical self-reflection. Embedding CPD in the workplace encourages active learning, ensures CPD is relevant to practice, and thereby generates positive change for individuals, teams and, ultimately, patients. If CPD impact is to be maximised, such learning needs to be fully supported within clinical and organisational settings that value knowledge creation and utilisation as collaborative activities, and that have improved care quality and outcomes as an explicit, collective aim. Integration of CPD across all levels of the health system is crucial in ensuring the translation of learning into practice. Organisational leadership that facilitates inclusive approaches to learning, develops shared values and goals, and aligns CPD across individual, clinical setting and organisational requirements, helps to create a culture of transformational change in the workplace.

6.1 Limitations and evidence gaps

This work has some of the limitations associated with rapid reviews. We did not complete a phase of backwards and forwards citation searching which may have generated further relevant papers for inclusion. In addition, although critical appraisal was completed, we did not link this to a formal process of weighting the evidence when completing either the descriptive or the integrative analysis. The quality of the studies varied, however, all that met the criteria had something important to contribute to the review and none were therefore excluded because of quality. The relatively broad scope of the review led to a diversity of research designs and clinical settings in the papers returned that posed challenges for integrating and drawing conclusions from findings. Nevertheless, this breadth of scope also had the advantage of being able to view evidence across these diverse sources in ways that illuminate similarities in respect of the key issues identified.

From the papers reviewed, there are areas that are currently sparse in evidence (though, as noted above, the rapid nature of this review may mean that such evidence exists and was just not captured). First, despite person-centred care being a driving motivation for CPD engagement, evidence showing direct impact of CPD to patient benefit (beyond the level of CPD that focuses on developing a specific skill competence) was lacking. Although three studies touched on patient benefit (Bradshaw et al, 2007; Illing et al, 2019; Rankin et al, 2017) this tended to be as a secondary outcome measure or as an incidental finding. This has implications regarding what might currently be missing in terms of learning from patient experience and patient outcomes when commissioning CPD. Second, evidence of CPD impact at wider health and social care system level was limited. Although some work focused on whole systems approaches to understanding CPD (Beal & Riley, 2019; Illing et al, 2019; Jackson et al, 2015; Manley et al, 2018), these systems still tended to be local rather than Province, Region, State, or Country based; that is, they were still primarily focused on individual organisations. Trying to show CPD impact at a wider health care system level would create challenges in terms of the tools and indicators that could identify such impact.

6.2 Next steps

The next stage of the SRA work within its Education strand will be to build on this review work. We will prioritise the areas highlighted as gaps or as important for future study, and then identify a feasible research question for the team to address over the next two years.

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Appendix I – Transformational theories: context, mechanisms and outcomes

Theory 1: Transformation of individual practice

Mechanism	Context	Outcomes
M1 Facilitated support and reflection M2 Developing skill in reflection and self-awareness M3 Self-assessment M4 Learning that is self-driven	**Workplace context:** C1 Opportunities for CPD that are work based C2 Culture of inquiry, learning, application and implementation **Organisational context:** C3 Enabling organisations that value work based learning & development	**Person/individual related:** O1 Increase self-awareness O2 Increase self-confidence, and increased perceived self-efficacy[7] O3 Transformational learning, new knowledge, & continuing motivation to learn O4 Empowerment, self-sufficiency and self-directing **Role related:** O5. Person centred safe & compassionate practice experienced by service users O6. Role clarity & opportunities for role innovation and development O7.Career development & progression O8. Meaningful positive engagement with change

Theory 2: Transformation of skills

Mechanism	Context	Outcomes
M5 Assessment of systems and team skills and competences M6 Identifying systems & service needs/gaps M7 Expanding & maintaining skills and competences through a range of different ways M8 Developing team effectiveness	**Workplace context:** C4 A focus on team competences and effectiveness rather than just the individual **Organisational context:** C5 Value for money in the use of human resources and investment **Healthcare context**: C6 The need for staff in contemporary healthcare to be adaptable and flexible responding to ever changing healthcare needs	**Outcomes for service users:** O9 Improved continuity and consistency experienced by service users **Outcomes for staff/team:** O10 Better and sustained employability O11 Career progression O12 An effective cohesive team/ increased team effectiveness **Outcomes for organisation/system** O13 Better integration of services O14 Better partnerships with services and agencies O15 Better value for money from human resources through substitution and reduced duplication

Theory 3: Transformation of knowledge

Mechanism	Context	Outcomes
M9 Helping people to reflect on the quality and range of knowledge they use in practice M10 Blending and melding different types of knowledge to guide practice M11 Facilitating dialogues about how to use knowledge in practice M12 Facilitating active inquiry and evaluation of own and collective practice and learning M13 Developing practical and theoretical knowledge of leadership, facilitation evaluation and cultural aspects influencing knowledge translation in practice	**Workplace context:** C7 Engaging with and using different types of knowledge in everyday practice C8 Active sharing of knowledge in the workplace	**Workplace/Team outcomes:** O16 Knowledge used in and developed from practice O17 A knowledge-rich culture **Team & Organisational outcomes** O18 Active contribution to practice development/inquiry O19 Innovation & creativity

Theory 4: Transformation of workplace culture

Mechanism	Context	Outcomes
M14 Developing shared values and a shared purpose M15 Facilitating the implementation of shared values through feedback, critical reflection, peer support and challenge M16 Evaluating experiences of shared values relating to person centred, safe and effective care from both service users and staff M17 Creating a culture that enables individual personal growth, effective relationships and team work M18 Developing leadership behaviours	C5 Context has explicit shared values and purposes C6 Organisational readiness to change	**Service users:** O20 Improved service user and provider experiences, outcomes and impact **Staff/team:** O21 Sustained person centred, safe and effective workplace culture O12 An effective cohesive team/ increased team effectiveness **Organisational:** O22 Increased employee commitment to work and learning O23 Organisational leadership and human behaviours O24 Increased organisational effectiveness

Appendix II- Mapping of papers to theoretical propositions

Paper	T1: Transformation of individual's practice through CPD	T2: Transformation of skills to meet changing healthcare needs through CPD	T3: Transformation of knowledge. Enabling knowledge translation through CPD	T4: Transformation of Workplace culture/context to implement workplace values related to safe and effective care through CPD
1. Arnetz, J. E., & Hasson, H. (2007). Evaluation of an educational "toolbox" for improving nursing staff competence and psychosocial work environment in elderly care: results of a prospective, non-randomized controlled intervention. *International journal of nursing studies*, *44*(5), 723-735.	M2 (p.731) M3 (p.731) C1 C2 (p.731) 02 (p.731) 03 (p.731)		M9 (p.731) M13 (p.731) 017 (p.731)	M17 (p.731) M18 (p.731) 023 (p.731)
2. Augustsson, H., Törnquist, A., & Hasson, H. (2013). Challenges in transferring individual learning to organizational learning in the residential care of older people. *Journal of Health, Organisation and Management*, *27*(3), 390-408.	M2 (p.399) M3 (p.399) O4 (p.401) – lacking O8 (p.399)	O12 (p.401) – lacking	M12 (p.399) – lacking M11 (p.399) M15 (p.399) M9 (p.399) O18 (p.401) – lacking O16 (p.401) O18 (p.399) – lacking O17 (p.399) – lacking	M17 (p.399) – lacking C6 (p.399) – lacking O24 (p.402) – lacking O21 (p.401) O12 (p.401) – lacking
3. Baumbusch, J., Shaw, M., Leblanc, M. E., Kjorven, M., Kwon, J. Y., Blackburn, L., ... & Wolff, A. C. (2017). Workplace continuing education for nurses caring for	M1 (pg.8) M4 (pg.6, 7) M2 (pg.8, 9)	M5 & M6 (pg.8) M8 & C4 (pg.9) C6 (pg.6, 7)	M9 & M12 (pg.6, 7, 8) C8 (pg.7, 8)	M16

hospitalised older people. *International Journal of Older People Nursing*, *12*(4), e12161.	C1/C3 – lacking (pg. 9, 10) C1 (pg.9) O1 O2 (pg.7,8) O3 (pg.8); O8 (pg.7, 8)	C4 (pg.7)	O16 & O18 (pg7, 8)	
4. Beal, J. A., & Riley, J. M. (2019). Best organizational practices that foster scholarly nursing practice in Magnet® hospitals. *Journal of Professional Nursing*, *35*(3), 187-194.	M1 (pg.190, 192) M2 (pg.192) M4 (pg. 190) C2 (pg.189; 190, 191, 192) C3 (pg.189; 190) O3 (pg.191, 192) O5 (pg.191, 192) O6 (pg.191) O7 (pg.189, 190, 191) O8 (pg.191)	M8 (pg.189, 191, 192) C4 (pg.189, 191) C5 (pg.189, 190) C6 (pg.189) O10 (pg.189, 190) O11 (pg.189, 190, 191) O12 (pg.189, 191) O13 (pg.190 O14 (pg.189, 190) O15 (pg.189, 190)	M9 (pg.189, 192) M11 (pg.192) M12 (pg.189, 192) M13 (pg.192) C7 (pg.189) C8 (pg.190) O17 (pg.189, 190) O18 (pg.192)	M14 (pg.189, 190, 192) M15 (pg.192) M16 (pg.192) M17 (pg.189, 190, 191, 192) M18 (pg.191, 192) C5 (pg.189) C6 O12 (pg.189, 191) O20 O22 (pg.190) O23 (pg.190, 191, 192) O24 (pg.190)
5. Billon, G., Attoe, C., Marshall-Tate, K., Riches, S., Wheildon, J., & Cross, S. (2016). Simulation training to support healthcare professionals to meet the health needs of people with intellectual disabilities. *Advances in Mental Health and Intellectual Disabilities*, *10*(5), 284-292.	M2 (p.288) M3 (p.288) O1 (p.288, 289) O2 (p.288) O3 (p.287, 288)	M7 (p.289) M8 (p.289)	M9 (p.288) M10 (p.289) M12 (p.289) C7 (p.288) C8 (p.289)	

	O6 (p.289)		O16 (P.288) O17 (p.289) O18 (P.288, 289) O19 (P.288)	
6. Bradshaw, T., Butterworth, A., & Mairs, H. (2007). Does structured clinical supervision during psychosocial intervention education enhance outcome for mental health nurses and the service users they work with?. *Journal of psychiatric and mental health nursing*, *14*(1), 4-12.	M2 (p.7) M3 (p.7) C1 (p.7) O3 (p.7) O5 (p.8)		M9 (p.7) O18 (p.7)	M16 (p.8) O20 (p.8)
7. Carlson, E., & Bengtsson, M. (2015). Perceptions of preceptorship in clinical practice after completion of a continuous professional development course-a qualitative study Part II. *BMC Nursing*, *14*(1), 41.	M2 (p.5) M4 (p.4) C2 (p.4) O1 (p.4) O2 (p.4) O3 (p.4) O4 (p.4,5) O6 (p.5) O7 (p.5) O8 (p.4)		M11 (p.4) M12 (p.4,5) M13 (p.4) C8 (p.4) O17 (p.5) O18 (p.4) O19 (p.4)	M15 (p4.4) M17 (p.4,5) M18 (p.4) O23 (p.4)
8. Chapman, L. (2006). Improving patient care through work-based learning. *Nursing Standard, 20*(41), 41-46.	M2 (p.43) C1 (p.43, 44) C2 (p.43,44) C3 (p.44)	M4 (p.44) M5 (p.43) M6 (p.43) M8 (p.43) C4 (p.43)	M9 (p.44) M12 (p.43,44) M13 (p.44) C8 (p.43,44)	M18 (p.43) C6 (p.43) O21 (p.43) O22(p.43,44) O23 (p.43,44)

	O2 (p.43) O3 (p.44) O4 (p.43, 44) O7 (p.43) O8 (p.43, 44)	C6(p.43)	O16 (p.44) O18 (p.43) O19 (p.43)	
9. Curran, V., Fleet, L., Simmons, K., Lannon, H., Gustafson, D. L., Wang, C., ... & Wetsch, L. (2019). Adoption and use of mobile learning in continuing professional development by health and human services professionals. *Journal of Continuing Education in the Health Professions*, *39*(2), 76-85.	M2 (p.79) M4 (p79) C1 (p.79) C2 (p.79) O3 (p.79) O4 (p.79)	M7 (p.79) C6 (p.80)- lacking	M9 (p.79, p81) M10 (p.81) C7 (p.79, 81) O17 (p.80) 019 (p.79)	M17 (p82) Lack of M17 (p.80) M18 (p.82) O23 (p.80)- lacking
10. Davis, K., White, S., & Stephenson, M. (2016). The influence of workplace culture on nurses' learning experiences: a systematic review of qualitative evidence. *JBI database of systematic reviews and implementation reports*, *14*(6), 274-346.	M2 (p.285, p.291) M3 (p.285) M4 (p.282, p.285) C1 (p.289, p.290) C2 (p.282, p.287) C3 (p.282, p.289) O2 (p.282, p.289) O4 (p.287) O8 (p.290)	Not M7 (p.288) C5 (p.288) C6 (p.287, p.288) C6 (p.287)- lacking	M10 (p.287, p.289, p.290) M11 (p.287, p.290) M12 (p.291) C7 (p.287, p.290, p.291) C8 (p.288)- lacking C8 (p289, p.290, p.291) O16 (p.290) O17 (p.285, p.291) O18 (p.291)	M17 (p.282, p.287) M17 (p.287, p.288)- lacking M18 (p.287) O20 (p.287)
11. Eddy, K., Jordan, Z., & Stephenson, M. (2016). Health professionals' experience of teamwork education in acute hospital settings: a systematic review of qualitative literature. *JBI database of systematic reviews and implementation reports*, *14*(4), 96-137.	M1 (p.109, p.111) M2 (p.109) O1 (p.109)	M7 (p.109) M8 (p.109, p.111)	M9 (p.109) M10 (p.109) M11 (p.110) Lack of M11 (p.110)	M15, M17 (p.106)- lacking M15 (p.106) M17 (p.106) M18 (p.108)

	O2 (p.110, p.111, p.112) O3 (p.111) O7 (p.109) O8 (p.109, p.111)		C7 (p.109) C8 (p.109)	O20 (p.108, p111) O21 (p.108) O12 (p.108) O24 (p.111)
12. Fairbrother, G., Cashin, A., Rafferty, R., Symes, A., & Graham, I. (2016). Evidence based clinical nursing practice in a regional Australian healthcare setting: Predictors of skills and behaviours. *Collegian*, *23*(2), 191-199.			M9 (p.196)- lacking M10 (p.196)- lacking C7 (p.196)- lacking O17 (p.196) O17 (p.196)- lacking	
13. Farrell, M. (2016). Use of iPhones by nurses in an acute care setting to improve communication and decision-making processes: Qualitative analysis of nurses' perspectives on iPhone use. *JMIR mHealth and uHealth*, *4*(2), e43.	M4 (p.3, 4) C1 (p.3,4) C2 (p.3,4) C3 (p.3,4) O3 (p.3)	M8 (p.3) C4 (p.3)	C8 (p.3) O12 (p.3) O18 (p.3) O19 (p.3)	M17 (p.3) C6 (p.4) O12 (p.3) O24 (p.4)
14. Fox, R., Henderson, A., & Malko-Nyhan, K. (2005) 'They survive despite the organisational culture, not because of it': A longitudinal study of new staff perceptions of what constitutes support during the transition to an acute tertiary facility. *International Journal of Nursing Practice, 11*(5), 193-199.	C1 (p.197) C2 (p.196) C3 (p.196) C3 (p.196)- lacking		M10 (p.196)	
15. Goudreau, J., Pepin, J., Larue, C., Dubois, S., Descôteaux, R., Lavoie, P., & Dumont, K. (2015). A competency-based approach to nurses' continuing education for clinical reasoning and leadership through	M2 (p.576) M3 (p.576) M4 (p.576) C1 (p.576)	M8 (p.576) C4 (p.576) C5 (p.576)?	M10 (p.576) M12 (p.576) C8 (p.576)	M17 (p.576) M18 (p.576) O12 (p.576) O21 (p.576)

reflective practice in a care situation. *Nurse education in practice*, *15*(6), 572-578.	C2 (p.576) C3 (p.576) O1 (p.576) O2 (p.576) O8 (p.576)	O9 (p.576) O12 (p.576)	O19 (p.576)	O24 (p.576)
16. Govranos, M., & Newton, J. M. (2014) Exploring ward nurses' perceptions of continuing education in clinical settings. *Nurse Education Today, 34*(4), 655-660.	M2 (p.658) M3 (p.658) M4 (p.658) C1 (p.657, 658) C2 (p.657) C3 (p.657,659) O4 (p.658) O7 (p.657, 658)	M8 (p.658, 659)	M10 (p.658) M11 (p.658) M12 (P.659) M13 (p.659) O17 (p.657, 658)	M17 (p.657)
17. Harris, D., Hillier, L. M., & Keat, N. (2007). Sustainable practice improvements: impact of the Comprehensive Advanced Palliative Care Education (CAPCE) program. *Journal of palliative care*, *23*(4), 262-272.	M2 (p.267, 269) C1 (p.269) C3 (p.269) O2 (p.267) O3 (p.269) O6 (p.267, 269) O8 (p.269)	M5 (p.269) M6 (p.269) C4 (p.270) -lacking O9 (p.269)	M9 (p.268) M12 (p.269) O18 (p.269)	M17 (P.267) -lacking C5 (p.269) C6 (p.269) C6 (p.270) -lacking C8 (p.269) O16 (p.269) O21 (p.269)
18. Haywood, H., Pain, H., Ryan, S., & Adams, J. (2012). Engagement with Continuing Professional Development Development of a Service Model. *Journal of allied health*, *41*(2), 83-89.	M1 (p.86) M3 (p.85) M4 (p.85) C2 (p.85) C3 (p.85)	M5 (p.86) M8 (p.86) C4 (p.86) O9 (p.86) O10 (p.85)	M12 (p.85? p.86) M13 (p.85) M13 (p.86) – lacking C7 (p.85) O18 (p.86)	M16 (p.86) M17 (p.85,86) O20 (p.86) O21 (p.86) O22 (p.85) O24 (p.86)

	O5 (p.86) O7 (p.86)	O11 (p.85)		
19. Heaven, C., Clegg, J., & Maguire, P. (2006). Transfer of communication skills training from workshop to workplace: the impact of clinical supervision. *Patient education and counseling*, *60*(3), 313-325.	M1 (p.317, 318) M2 (p.317, 318, 320, 321) C1 (p.317, 318, 320) O1 (p.317, 318, 320, 321) O3 (p.317, 318)	M5 (p.321) -lacking M8 (p.317, 318, 320, 321) O12 (p.317, 318, 320, 321)	M9 (p.317, 318, 321) M11 (p.320) M13 (p.320)	O12 (p317-321) O21 (p317-321)
20. Henderson, A., Ossenberg, C., & Tyler, S. (2015). 'What matters to graduates': An evaluation of a structured clinical support program for newly graduated nurses. *Nurse Education in Practice*, *15*(3), 225-231.	M1 (pg.228,229) M2 (pg.229) C1 (pg.228) C2 (pg.228) C3 (pg.228) O2 (pg.228) O4 (pg.228) O3 (pg.228)	M8 (pg.229) O12 (pg.229)	M9 (pg.228, 229, 230) M11 (pg.228, 229, 230) M12 (pg.228, 229, 230) C8 (pg.228, 229, 230) O16 (pg.228, 229, 230) O17 (pg.228, 229, 230) O18 (pg.228, 229, 230)	M15 (pg.228, 229, 230) M17 (pg.228, 229, 230) O12 (pg.229) O22 (pg.228)
21. Hughes, E. (2005). Nurses' perceptions of continuing professional development. *Nursing Standard (through 2013)*, *19*(43), 41.	M1 (pg.46, 47) -lacking M4 (pg.43, 44) M2 (pg.45/46) C2 (pg.45, 46, 47) -lacking C3 (pg.45, 46, 47) -lacking O2 (pg.43,44)	O11 (pg.43,44)	M9 (pg.44 M11 (pg.44) M12 (pg.44) C8 (pg.44) O18 (pg.44)	M17 (pg.44) C6 (pg.45, 46, 47) -lacking C6 (pg.48)

	O5 (pg.45) O7 (pg.43, 44)			
22. Illing, J., Corbett, S., Kehoe, A., Carter, M., Hesselgreaves, H., Crampton, P., ... & Ikah, D. (2018). *How Does the Education and Training of Health and Social Care Staff Transfer to Practice and Benefit Patients? A Realist Approach*. Newcastle University: Durham University: University of York.	M1 (p6) M2 (p6) M4 (p6) O5 (p6)	M6 (p6)	M11 (p6) C8 (p6)	M16 (p6) M17 (p6) C6 (p6) O21 (p6) O23 (p6)
23. Jackson, C., Manley, K., Martin, A. & Wright, T. (2015) *Continuing professional development (CPD) for quality care: context, mechanisms, outcome and impact: Education Outcomes Framework: round 2 funding: final report January 2015.* Research Report. Canterbury Christ Church University, England Centre for Practice Development.[7]				
24. Jones, K. (2015). Two related narratives: learning from an evaluation of a short coaching workshop and a pilot coaching project. *International Practice Development Journal, 5*(2).	M1 (pg.4,5,6) M2 (pg.4) C1 (pg.4,5) C2 (pg.4,5) O1 (pg.4) O2 (pg.4,5,6,7) O4 (pg.4) O6 (pg.5)	M7 (pg.4) M8 (pg.5,6) C4 (pg.5,6) O12 (pg.5,6)	M9 (pg.4,5) M11 (pg.4,5) M12 (pg.4,5) M13 (pg.4,5,6) C8 (pg.4,5) O16 (pg.4,5) O17 (pg.4) O18 (pg.4,5)	M15 (pg.4,5) M17 (pg.4,5) M18 (pg.4,5,6) O12 (pg.5,6) O22 (pg.4) O23 (pg.5)
25.	M1 (p.86) M2 (p.86)		M9 (p.86, p.87) M11 (p.86, p.87)	M14 (p.87)

[7] This report and paper comprise the work led to the development of the four theories of transformation and therefore have not been mapped here.

Lees, A., & Meyer, E. (2011). Theoretically speaking: use of a communities of practice framework to describe and evaluate interprofessional education. *Journal of interprofessional care*, *25*(2), 84-90.				
26. Manley, K., O'Keefe, H., Jackson, C., Pearce, J., & Smith, S. (2014). A shared purpose framework to deliver person-centred, safe and effective care: organisational transformation using practice development methodology. *International Practice Development Journal*, *4*(1), 1-31.	M1 (p.6,7) M2 (p.6,7) M3 (p.6,7) C2 (p.7) C3 (p.11) O1 (p.7) O6 (p.7) O7 (p.19) O8 (p.24)	M7 (p.7) M8 (p.10,11) C4 (p.10) O11 (p.19) O14 (p.11)	M12 (p.7,12) M13 (p.12) C8 (p.12, 21) O17 (p.21) O18 (p12) O19 (p.11)	M14 (p.5,10,11,16) M15 (p.17) M16 (p.21) M17 (p19,20) M18 (p12) C5 (p.11,12) C6 (p.9) O12 (p.13) O21 (p12) O22 (p24) O23 (p13,24) O24 (p.24)
27. Manley, K., Martin, A., Jackson, C., & Wright, T. (2018). A realist synthesis of effective continuing professional development (CPD): A case study of healthcare practitioners' CPD. *Nurse education today*, *69*, 134-141. [NB see footnote 6 above]				
28. McCauley, K., Cross, W., Moss, C., Walsh, K., Schofield, C., Handley, C., … Hardy, S. (2014). What does practice development (PD) offer mental health-care contexts? A comparative case study of PD methods and outcomes. *Journal of psychiatric and mental health nursing, 21*(8), 724-737.	O1 (p. 735) O4 (p. 731)	O12 (p.735)	M9 (p. 731) M10 (p. 731) M11 (p. 731) M12 (p. 731) 016 (p.732)	M16 (p. 731) O18 (p.735) O20 (p.735)
29.	M1 (pg.6,7,8)	M8 (pg.6)	M9 (pg.6,8)	M15 (pg.8)

Mulcahy, M., Lowry, C., Hoban, K., & Perry, L. (2018). Perspectives and experiences of nurses as facilitators within a Practice Development program. *Collegian*, *25*(1), 3-10.	M2 (pg.7) M4 (pg.7) M8 (pg.6) C1 (pg.6) O2 (pg.6,8) O5 (pg.6,8) O6 (pg.6,8) O8 (pg.6,8)	C4 (pg.8) O9 (pg.6,9) O10 (pg.8) O12 (pg.6,8)	M11 (pg.8) M12 (pg.6,8) M12 & M13 (pg.7) M13 (pg.6,8) O16 & O17 (pg.6) O18 (pg.6, 8)	M17 (pg.6,8) M18 (pg.6,8) C6 (pg.8) O20 (pg.6) O12 (pg.6,8) O21 (pg.8) O22 (pg.6) O23 (pg.6,8)
30. Owen et al (2014) Owen, J. A., Brashers, V. L., Littlewood, K. E., Wright, E., Childress, R. M., & Thomas, S. (2014). Designing and evaluating an effective theory-based continuing interprofessional education program to improve sepsis care by enhancing healthcare team collaboration. *Journal of interprofessional care*, *28*(3), 212-217.	M2 (pg.215) M3 (pg.215) C1 (pg215) –was a workplace-based intervention C2 (pg.215) C2&3 (pg.216) O1 (pg.215) O3 (pg.215) O6 (pg.215/216)	M8 (pg.215, 216) C4 (pg.216) O12 (pg.215, 216) O13 (pg.215, 216) O14 (pg.215, 216)	M9 (pg.215) M11 & M12 (pg.215, 216) C8 (pg.215, 216) O16 (pg.215, 216)	M14 (pg.215) M15 (pg.215) O12 (pg.215, 216)
31. Rankin, J. A., Then, K. L., & Atack, L. (2013). Can emergency nurses' triage skills be improved by online learning? Results of an experiment. *Journal of Emergency Nursing, 39*(1), 20-26.	M1 (pg.23) M3 (pg.23) C1 (pg.22) O2 (pg.23) O3 (pg.23) O5 (pg.23)	O9 (pg.23, 24)	O16 (pg.23, 24)	O20 (pg.23, 24)
32.	M1 (pg.184)	M6 (pg.183, 184)	M9 (pg.184, 186)	M14 (pg.183, 186)

Rivas, K., & Murray, S. (2010). EXEMPLAR: our shared experience of implementing action learning sets in an acute clinical nursing setting: approach taken and lessons learned. *Contemporary nurse*, *35*(2), 182-187.	M2 (pg.186) M4 (pg.184) C1 (pg.183, 184) C2 (pg.184, 186) O2 (pg.186) O3 (pg.186) O4 (pg.184)	M8 (pg.186) O12 (pg.184, 186)	M11 Pg184, 186) M12 (pg.184, 186) M13 (pg.184) C8 (pg.184, 186) O16 (pg.184, 186) O18 (pg.186)	M15 (pg.183, 186) M17 (pg.184, 186) M18 (pg.184) C5 (pg.183) O12 (pg.184, 186) O17 (pg.184) O23 (pg.184)
33. Sandahl, C., Gustafsson, H., Wallin, C. J., Meurling, L., Øvretveit, J., Brommels, M., & Hansson, J. (2013). Simulation team training for improved teamwork in an intensive care unit. *International journal of health care quality assurance, 26*(2), 174-188.	M2 & M3 (pg179, 183, 184) C1 (pg.178) C3 (pg181) O2 (pg.178) O4 (pg.178) O5 (pg.178,183) O6 (pg183)	M8 (pg.178, 183) C4 (pg.178, 183) O9 (pg.178, 183) O12 (pg.178,183)	M9 (pg.178) M11 (pg.178) M12 (pg.178) C8 (pg.178) O18 (pg.178)	M15 (pg.178) M16 (pg.178) M17 (pg.178, 183) M18 (pg.179) C6 (pg.183) O20 (pg.178) O12 (pg.178, 183) O23 (pg.179)
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Appendix III- Detail of two large UK studies

Study One: Jackson, C., Manley, K., Martin, A., & Wright, T. (2015). *Continuing professional development (CPD) for quality care: context, mechanisms, outcome and impact: Education Outcomes Framework: round 2 funding: final report January 2015*. Canterbury Christ Church University England Centre for Practice Development.

Background:

Following publication of the HEE Education Outcomes Framework (EOF) in 2013, this funded report aimed to develop and test a CPD Impact Tool that identifies mechanisms for measuring the impact of learning on individual, team and organisational effectiveness in relation to improvements in quality of care and patient outcomes in the workplace.

Method:

This work used realist synthesis and evaluation approaches to understand and unpack the mechanisms by which an intervention (CPD) works (or fails to work). In doing so, it focuses on providing explanations for why interventions may or may not work, in what contexts, how and in what circumstances, and for whom.

In *Phase One*, data were derived from a literature review, stakeholder surveys, consultation with an international expert reference group (IERG) of education providers and facilitators, and documentary analysis of CPD learning outputs. Synthesis of data led to development of a theoretical framework (termed the CPD Impact Tool) for understanding the context in relation to the provision of CPD, its drivers, outputs and impact. In *Phase Two*, the CPD Impact Tool was tested with CPD providers and CPD learners through seven regional workshops and in consultation with the IERG. Quantitative data from the workshops was used to refine the outcomes and indicators and qualitative data was considered and accordingly used to develop the transformation theories.

Findings:

Findings demonstrated that the main purpose of CPD is the delivery of person-centred safe and effective evidence informed care in the workplace. Findings further indicated that this is achievable through the fourfold purposes of:

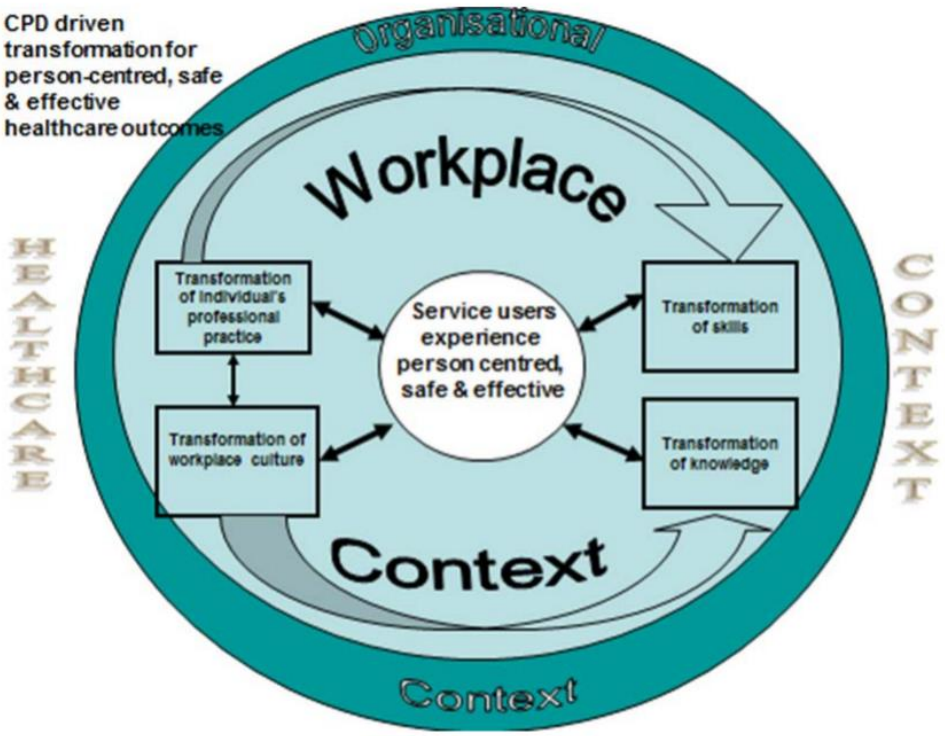
1. Transforming individual professional practice.

2. Bringing about social change through learning and achieving social values in the workplace.

3. Updating, developing, and making use of knowledge in the workplace.

4. Being useful to the changing needs of society.

Figure 1: Four Main Purposes of CPD



A range of important indicators and outcomes were evidenced that helped identify CPD effectiveness at the individual, team, service and organisational level.

Table 1: CPD indicators of effectiveness

Individual & Team Impact Indicators	**Service & Organisational Impact Indicators**
Self-efficacy (self-awareness and self-confidence)	
Shared vision and values	Shared vision and values for the service/organisation
Role clarity	
Interdisciplinary team working	Integrated team working
Collaborative decision–making	Patient at the heart of decision making (including patient experience and patient safety metrics)
Peer learning and review.	
A sustained person centred safe and effective culture	Person centred, creative and innovative learning culture
	Organisational awareness and intelligence

	Systematic mechanisms for capturing best and poor practice
	Systems of shared governance
	Effective staffing levels

Conclusions:

For CPD to be fully effective it has to address all of the outcomes for individual, team, service and organisational transformation, because they are interrelated and interdependent. **However, there is a need to focus on some areas before others** if the primary purpose of CPD is to be achieved optimally and consistently. **Transformation of workplace culture and individual professional practice are important pre-requisites** to the other two sub purposes of CPD.

The workplace and organisation are key influencers on whether outcomes of CPD are achieved for the individual. This is because both the workplace and the organisation can negatively or positively impact on what is considered important to focus on in terms of learning and development content, using the workplace as a learning resource, and how learning and development may be enabled.

The focus should therefore be on the development of individual professional practitioners as transformational whole systems leaders in order to reap the benefits of enhanced knowledge and skills. This then promotes enhanced team effectiveness in the workplace in changing context and thereby capitalises on CPD resources and investment.

Study Two: Illing, J., Corbett, S., Kehoe, A., Carter, M., Hesselgreaves, H., Crampton, P., ... & Ikah, D. (2019). *How Does the Education and Training of Health and Social Care Staff Transfer to Practice and Benefit Patients? A Realist Approach*. Newcastle University: Durham University: University of York

Background:

Following publication of the HEE Education Outcomes Framework (EOF) in 2013, this funded report aimed to focus on the question of how the education and training of health and social care staff can transfer to practice and benefit patients.

Method:

This work used a realist approach to provide an evidenced-based model of how educational resources targeted at staff can be facilitated to benefit patients. The work was done in two phases.

Phase One consisted of a realist synthesis of literature reporting both an educational intervention for health or social care staff and patient outcomes. The synthesis of evidence was used to create a programme theory, which maps out the steps that are required to ensure transfer of learning that will benefit patients. Phase Two tested the programme theories developed in phase one. It involved applied case studies, an analysis of an online survey of Health and Care Profession Council registrants and exploration of the use of routinely arising Trust-level data to evaluate to what extent workforce and educational factors were associated with patient outcomes and experience.

Findings:

Four steps were identified to facilitate staff education designed to achieve patient benefit:

- *Step One: Education or training is initiated and is designed to demonstrate patient benefit* – This identifies the important role of the organisation in setting aims, clarifying objectives and planning implementation, committing senior staff to oversee and support the initiation of training, and allocating resources. The outcome of this step is to initiate training designed to benefit patients. Organisational awareness and commitment to commissioning education is key to achieving this outcome.
- *Step Two: The learner is motivated and ready to learn* - This focuses on the individual being motivated and ready to learn from the education/training intervention. Individuals need to be personally motivated to benefit from the education/training and can increase their motivation to learn if they recognise the importance and relevance of the training for their work (often from prior feedback).
- *Step Three: The learner learns successfully and has the commitment and desire to apply the learning* - Trainers should ensure that an assessment of learning needs is made and fed back to learners to help them engage. Teaching and learning are optimal when focused on current and desired performance, and are delivered using engaging and varied teaching methods. Time spent focused on action plans can engender this commitment and support transfer of learning. Successful learning will involve knowing what to change, but also how to make changes to practice and service delivery.
- *Step Four: The learner has the capability and transfers learning into practice* - If learners have a support structure (learner networks, peers, managers, influential change champions), it will help them develop their practice and maintain momentum for change. Staff ownership of the intervention will increase learner desire to persist in the face of difficulty. Training whole teams reduces resistance to change. Sharing knowledge and experience back in practice increases team commitment to change. The new practice will become the regular practice and learning will spread and embed, leading to culture change.

From this, ten messages were identified (related to these four steps) to guide the implementation of education/training to benefit patients

Table 2: Messages to guide learning implementation to benefit patients

Step 1: Need to change

1. The key to this step is the organisational awareness of the need for a change. This can be because of a national policy, awareness of new evidence or, a driver for quality improvement. This step ends with the initiation or commissioning of the needed educational/training intervention.
2. Ensuring that the training is targeted at patients (ideally following patient input) and that a plan is in place to deliver, monitor and evaluate the training are crucial.
3. Another important aspect is the engagement and commitment of personnel who will provide support and ensure the needed resources are available to take the issue forward.

Step 2: Motivate to learn

4. This step involves removing any barriers to enable access to attend the training. Sometimes it may be necessary to make the training mandatory or provide incentives to attend.
5. Staff need to recognise they need the training (this can be enhanced by prior assessment of their knowledge or skills) and recognise it as both important and relevant to their role.

Step 3: Desire to apply

6. This step focuses on the learner knowing what they need to learn. The learner will then engage with the learning (through innovative and varied formats and resources) and have the commitment and desire to apply the learning in practice.
7. The training should end with a period of planning about how to introduce the new knowledge and skills when back in practice.

Step 4: Spread and embed

8. To facilitate transfer of learning, learners need to overcome barriers to ensure the learning is transferred into practice.
9. The organisation needs to demonstrate commitment to the initiative by providing ongoing support and opportunities for networking.
10. To achieve a culture change, where the new practice becomes the regular practice, the learning needs to spread and embed. Ongoing monitoring of the expected change and regular reporting will facilitate this.

Conclusions:

The Four-Step model provides a multi-layered, dynamic illustration of how and why education and training interventions can facilitate patient benefit, extending the focus of education from the learner to include the patient. It transcends structure, process, and policy, and can act as a shared approach to commissioning, managing, evaluating, and reporting staff education in any health and social care system.

The model provides an explanatory framework of how the environment, the learner, and the intervention interact positively and negatively to produce or hinder patient outcomes. Organisations play a major role in creating large-scale change, which ultimately can lead to culture change. Individuals and teams can also play an important role in identifying and implementing good practice that is specific to a patient group. However, more could be achieved by better targeting and collecting evidence of patient benefit, and by teams working more effectively together, to reduce the barriers of learning transfer.