**Development, spread and impact of Primary Care and Musculoskeletal Communities of Practice to assist rapid translation of evidence into practice**

There are no conflicts of interests to declare

**Key words** Community of Practice, Evidence Based Practice Musculoskeletal

**Background**

Embedding research into practice is challenging. Barriers include: lack of time and understanding and poor support in clinical practice. A Community of Practice (CoP) model has been used to address these issues. Three ‘Evidence into Practice’ groups’ used a CoP model to assist the rapid translation of evidence into practice.

**Method**

A CoP model is used to engage clinicians, researchers, managers, patients and librarians in the process of acquiring research knowledge and translating it into practice. The CoP principles of Domain, Community and Practice are used to describe three ‘Evidence into Practice Groups’ who cater for different elements of the care and academic sector. Primary and Secondary Care professionals such as General Practitioners, Practice Nurses, Allied Health Professionals, Rheumatologists, Researchers and Librarians are included .

**Results**

The CoP model enabled three ‘Evidence into Practice Groups over time to: engage over 180 clinical and academic staff; answer 130 clinical questions; improve clinical care, gain funding for two randomised controlled trials (enrolled over n=7,000 participants) and identify areas for further research, quality improvement, audit and training.

**Conclusion**

The CoP model encourages the rapid translation of evidence by engaging staff to identify areas of clinical concern in their context, thereby stimulating their interest and involvement. This creates a meaningful link between research and practice. Clinical leadership and the CoP model ensure that practice change is quick and efficient. This model can be replicated at scale. Consideration needs to be given to the key ingredients to achieve impact.

**Manuscript Highlights**

**What is known about the topic? (3 bullet points)**

1. Transforming research into practice is a complex process
2. The NHS requires best evidence to be used in clinical care
3. Lack of time and skills are barriers to translating evidence into practice

 **What does this paper add? (3 bullet points)**

1. We demonstrate a CoP model can produce significant changes in both clinical practice and research arenas
2. The underlying principles of the CoP and how these are applied to evidence translation
3. This model is co-produced with stakeholders and sustainable over time

**Introduction**

Applying research findings to clinical decisions is not a simple process and is often difficult to achieve (Lizarondo et al 2011). Although it is widely accepted that evidence-based practice is an important pre-requisite for health professionals to deliver quality patient outcomes (Nursing and Midwifery Council 2015 and Chartered Society of Physiotherapy 2019), there is a discrepancy between the volume of research evidence that exists and the use of this evidence within clinical health care practice (Wenke et al 2018). This is known as the research-practice gap.

Research, both in the UK and internationally, suggests that difficulties for translating published research into practice are threefold: evidence is often contested; it does not fit locally and is not put into action (Lizarondo et al 2011). Most research needs to be actively mobilised to ensure its usage by clinicians, commissioners and planners of public health services (Van de Graaf et al 2018). This is known as Knowledge Mobilisation (KM), and the concept recognises the importance of the relationships between researchers and clinicians in bridging the research- practice gap (Kislov at al 2014, Cooper and Levin 2010). Practitioners are supported to build on the knowledge they have and to create new knowledge through mutual interactions (Wullf 2017).

Current evidence suggests that there are key elements related to the successful implementation and uptake of evidence in clinical practice: the practical component and the knowledge component (Lizarondo et al 2011). Barriers to embedding evidence include lack of time to put best evidence into practice, false beliefs about evidence-based practice, insufficient support in the clinical setting and limited critical appraisal skills (Lizarondo et al 2011 and Hecht et al 2016).

Over 15 years ago, a proposed model to address these issues was described (Stevenson et al 2007). The aim of the ‘Evidence into Practice’ group was to reduce variation in practice by embedding the best evidence into clinical care, to increase awareness of research, to increase appraisal skills and to create a shared understanding of the clinical and research world. In light of recent theories, this model could now be described as a Community of Practice, which utilises the principles of Knowledge Mobilisation to translate the research knowledge into every day practice (Cooper and Levin 2010).

The term Community of Practice (CoP) is a relatively new term, but the concept has long been established (Lave and Wenger 1991). The model was first described by Wenger between 1991 and 2002 and was originally proposed as a template that explored the learning of practitioners in a social environment between a novice and an expert (Li et al 2009). They are also described as a collection of relationships and ongoing exchanges with a group of people who have a common interest (Model Systems Knowledge Translation Center, 2012). CoPs are formed by people who have a shared goal and a desire do things better as they interact on a regular basis (Lave and Wenger 1991). Others argue it is similar to a well run network (Norman et al 2006) or multidisciplinary team (Gabbay et al 2003) The benefits of such a group is that practitioners can discuss the meaning of the evidence and how it can be implemented into their own context (Li et al 2009 ). With such benefits, it has been seen as a means of organisations improving their performance in health and other sectors ( Lave and Wenger 1991)

According to Wenger (2011), three key ingredients are required to fulfil the definition a CoP: The Domain, The Community and The Practice. The Domain refers to the shared area of interest and commitment to that interest, for example musculoskeletal care. The ‘Community’ suggests that there will be shared discussion, joint activities and a building of relationships. The’ Practice’ element identifies that resources will be collected e.g. stories, tools and experiences that will assist in addressing reoccurring problems or issues. However inconsistencies in how CoP are operationalised make it difficult to define the key parameters of a CoP ( Li et al 2009 ).We therefore aim to describe the specific characteristics of our three ‘Evidence into Practice’ groups using the CoP parameters originally described by Wenger: The Domain, The Community and the Practice. We will highlight their structure, functions and impacts in order to assist further uptake of this model

**Method**

*The Domain*

Each of three ‘Evidence into Practice’ groups has a clear domain and focus. The Allied Health Professional (AHP) groups (n=6) have a musculoskeletal focus, while the Primary Care and Practice Nurse group concentrate on issues affecting primary care. Each group arranges meetings to suit their attendees, the Primary Care group and Practice Nurse group meet in an evening for 2-3 hours and hold 2-4 meetings per year. The AHP group meet 4 times a year within the working day for between 2-4 hours. All groups use a similar process to seek clinical questions of importance, appraise the best evidence and summarise the finding in a clinical recommendation or ‘Clinical Bottom Line (Stevenson et al 2007). As clinical questions are derived from a specific patient situation or problem they have direct relevance to all attending. The inclusive approach allows for a range of professional priorities and opinions to be heard when interpreting the evidence to create a meaningful ‘Clinical Bottom Line’.

All three groups have all benefited from, and owe their sustainability to, consistent clinical leadership. Group leaders have expertise in the domain, direct involvement in patient care, high level interpersonal and motivational skills, commitment to high quality practice and empowerment of others (Stanley 2012). They are well networked and have a good understanding of research methods and evidence based practice approaches as well as sound clinical understanding and experience in their respective fields. All group leaders engage and empower all members, so that there is a vertical flow of power from the centre downwards, and even beyond the boundaries of the group (Martin et al 2015).

*The Community*

Each group meets on a regular basis thus allowing the formation of ‘professional relationships’ and understanding between members. They interact and share knowledge, expertise and experiences with each other. These interactions form the basis for sharing and creating new knowledge that can be applied to their practice settings. Creating relationships between clinical and academic partners allows cross-fertilisation of skills and knowledge. The clinical academics to keep up to date with current practice issues whilst practitioners are supported to improve their literature searching, and critical appraisal skills.

*The Practice*

All groups are supported by their leaders to develop a relevant PICO (Population, Intervention, Comparator and Outcome) derived from a relevant clinical problem. Group members then critically appraise the identified papers. The division of tasks within the groups vary from group to group, for example the Primary Care group, starts with pre-appraised evidence in guidelines and works to understand the origin and robustness of the underpinning evidence to establish how best to communicate and/or apply this to patients. In this way, some topics are answered over a series of meetings, with group members taking parts of the work away to work on in small groups, for other topics, a ‘just-in-time’ search is undertaken on the night and papers are appraised in real time. The non-academic members are encouraged to extract relevant details and outcomes and the group, together, develops a ‘Clinical Bottom Line’ (CBL). This is either applied in clinicians’ own practice, if a CBL is implementable, or is taken to an organisational level.

Sharing of outputs from the groups requires time and sustained effort. All groups are committed to sharing the outputs of the groups through a variety of media, considering the audience and language needed to communicate the key messages. The groups share their outputs through a variety of media including a website <https://www.keele.ac.uk/pcsc/research/impactacceleratorunit/evidenceintopracticegroups/>, social media links, newsletters, CCG reports, educational events, clinical updates, national and local presentations, clinical governance structures and internal team meetings.

**Results**

The ‘Evidence into Practice’ groups have run successfully from between 5-20 years, supported by Keele University, Local Healthcare Trusts and Clinical Commissioning Groups. They engage Allied Health Professionals, Rheumatologists, General Practitioners, Managers, Librarians, Researchers, General Practice Nurses and more recently patient representatives. Collectively, they have answered130 clinical questions and have engaged over 170 clinical and academic staff in this process. Please see figure 1 for a case study. Where lack of evidence was identified, two randomised controlled trials were developed and funded as a direct result (Dziedzic et al 2015 and Roddy et al 2020). Practice Nurse members have agreed to take part in a research study following on from a question they raised about the management of gout and a commissioned piece of research has been funded by NHS England to look at the impact of group consultations on the general practice workforce as a result of the work of the group.

To capture as many interested parties as possible and to share evidence based approaches to care, 10 annual training events and educational master classes have been held. To assist others in setting up such groups, a training session to share the processes and format of the requirement of such groups was held. Funding has been received from CCGs and the West Midlands CRN to continue the groups and extend into new geographical areas.

The CoP model underpinned the ‘Evidence into Practice’ groups and has supported continued professional development of clinical and academic staff. It has reduced clinical variation in practice and identified gaps in research that has allowed audit, quality improvement and research to address. The model has been embedded in the Research and Innovation Strategies for two large Trusts and local CCGs have highlighted the Practice Nurse group as an example of best practice in their annual reports. The AHP group has been recognised with a National Award for Best Practice (British Society of Rheumatology 2016) and The Practice Nurse were recognised as a sub-group for the Queens Nursing Institute.

**Discussion**

We describe the development, spread and impacts of three ‘Evidence into Practice’ groups which all use a Communities of Practice model as their foundation. Utilsing this model can assist the rapid translation of evidence into practice. The key components of the Domain, The Community and the Practice are shared whilst recognising leadership is a key factor in the success of the groups.

A CoP model allows learning to take place in social relationships rather than just a simple acquisition of knowledge (Lave and Wenger 1991). The advantage of this model is that likeminded individuals come together on a regular basis to resolve and co-create solutions. The work is undertaken together, solutions are co-created and are context specific. By working together, clinicians, researchers and managers gain greater understanding and knowledge, apply findings to their own context and help to inform next steps. When relevant evidence is identified, clinicians within the group have a wealth of knowledge about the local and organisational context within which the evidence needs to be translated to. This organisation and research knowledge facilitates rapid change in practice. Where no or poor-quality evidence exists, all members in the group are made aware of the gap in the evidence and potential areas for future research, audit or quality improvement work. As questions are derived from a specific patient situation or problem they therefore have direct relevance to clinical staff who may have previously felt that the concepts of research evidence were far removed from day to day clinical practice (Finney et al 2016).

Our working model is supported by Greenhalgh et al (2016) who suggests the best way to address the research-practice gap is by using a co-creation type approach, which is defined as ‘the collaborative generation of knowledge by academics working alongside stakeholders from other sectors (p393). They go onto suggest that human experience is at its core as are the quality of the relationships. Factors such as social interaction among members, knowledge sharing, knowledge creation and identity building (Li et al 2009) are identified as key CoP characteristics that are exhibited by our groups.

The structure of our groups reflect and are determined by its participants and their context e.g. Primary Care. However, the structures of CoPs appear to vary widely ranging from networks to formally structured meetings and can provide support for apprentices to multidisciplinary teams (Li et al 2009). Whilst the structure and processes of our groups are clearly described and captured, there is a lack of studies that examine the cost effectiveness of this approach in healthcare (Li et al 2009).

Li (2009) suggests that there is a lack of clarity in CoP facilitation and how power dynamics are handled. However for our groups leadership has been a key element. Each group has a leader, a ‘champion’ who is able to organise, facilitate and drive the process for group members. For example, the Primary Care group have utilised an academic GP as leader since the groups inception in the late 1990’s and over that period as GPs have retired or moved on the group has been handed-over to a new academic GP. This leadership component has allowed us to ensure members interact with each other, share knowledge and build a sense of belonging (Li 2009).

The CoP presents the research in a way that is accessible and allows clinical staff to understand and adopt the findings in order to influence their practice, if required. By undertaking this process in a facilitated CoP, it also overcame the barrier of lack of support previously identified (Lizarndo et al 2011 and Hecht et al 2016). Clinicians that attend the meetings are embedded in practice and many are clinical leaders in their own right and so have the opportunity and the ability to influence rapid changes in practice. The CoP model embraces the engagement of a wider group of stakeholders, such as the clinicians, patients, librarians and researchers. They all support the sharing and creation of new knowledge and its active mobilisation to improve their own or organisational practice (Wheatley 2007). The groups have seen consistent leadership and this is important to maintain engagement and keep the group focused (Conklin 2013).

The 17 year gap between research and change in practice, that is often quoted (Morris et al, 2011), can be reduced to a matter of weeks given those who are involved in the this process. Likewise, the academics involved in these groups hear first-hand the quality of the evidence that it is available to answer clinical questions. Where gaps in the evidence exist, opportunities for researchers present themselves. A culture of mutual understanding and professional enquiry with the aim of immediate application is created through these groups. Clinicians appreciate and understand the challenges and complexities of undertaking high-quality research and researchers appreciate the challenges faced in day-to-day clinical practice. This builds a culture of mutual respect, appreciation and understanding. Clinicians being exposed to research, and the limitations of current guideline evidence, through this process may see the benefits of a research career and in turn encourage them to think of flexibility in approach to clinical activities in addition to the potential for pursuing their own clinical academic careers.

In summary the development, spread and impact of the Communities of Practice model has been described in relation to how it can assist rapid translation of evidence into practice. The active mobilisation of knowledge from research into clinical practice is achieved by creating a social learning environment, where evidenced can be assessed, understood and applied to clinical context by those who will use it.

 If rolled out nationally, this model has the potential to have a significant impact on the delivery of evidence-based care, thereby improving clinical outcomes, reducing costs and reducing clinical variation. It also assists in the identification of the areas of practice for future research. A network of groups sharing the results of each other's work could help to achieve this ambition.  There is also potential for wider patient representatives and commissioners to be involved in this process so that the questions asked are relevant across a whole healthcare system.