Can somebody find the defibrillator?
Evidence based support for in-situ training in primary care

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Introduction

Managing an emergency in general practice requires more than just clinical knowledge. It also demands a high level of teamwork, organisation and efficient practice systems. Traditionally, training for emergencies has been offered through classroom based or online Basic Life Support (BLS) courses. In this work, we reviewed the effectiveness of current training and provide a synthesis of the evidence for in-situ simulation based training for community emergencies.

Method

A literature review was conducted by searching PubMed, ProQuest, Ovid and Google Scholar for articles relevant to in-situ simulation for general practice. Results were limited to peer-reviewed articles in English from 2000 to present. Following this search, a recursive strategy was adopted to find additional studies from the cited references of these results. The original keyword string was "in situ simulation". The search was then broadened to include the keywords: (general practi* OR primary care OR family doctor) [in abstract] AND (simulat*) AND (training OR education OR development OR learning.

How confident and competent are general practitioners in managing emergencies in primary care?

Research suggests that this is likely to differ widely depending on location and previous training but, in general, emergencies are not common and many GPs lack confidence (2,3). Despite this, arrests on GP premises had the best overall survival than any other location (4). In Herefordshire, 91% of GPs were 'unable to perform BLS according to current guidelines on initial appraisal' but this improved significantly after training (5). Data from Queensland, Australia, found varying levels of confidence with different types of emergencies, highest for asthma, hypoglycaemia and convulsions and lowest for thyroid crisis and drowning, and the majority of GPs wanted more training in managing emergency (6).

How effective are online, classroom and in-situ based education programmes?

Our search did not identify any direct comparisons between online, classroom and in situ based education programmes. However, participants who experienced the most realistic scenarios with unannounced training found it even more useful than planned, teaching. Given that, in recent years, some UK GPs have moved towards online BLS for their annual mandatory certification, the value of IT based training for managing real life emergencies urgently needs to be explored.

How often should practitioners up-date their knowledge?

Our work has shown that in-situ simulation based training has lasting benefits, with GPs confidence in managing emergencies retained 8 weeks after the workshops, and practical changes made to clinical practice and/or surgery systems (7). Other studies have shown that knowledge decays over 6 months, and in our current work, the Dorset group is evaluating whether clinicians value a second simulation based training in emergencies one year after their first workshop.

What are the common emergencies in primary care that should be included in emergency training programmes?

Our search did not identify any specific studies found on this, just expert opinion.

Data from Dorset ambulance services indicated that, on average, GP surgeries called an ambulance abut once per month but this varied enormously across practices. Unsurprisingly the two most common symptoms were 'breathing problems' and 'chest pain'.

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What else did the literature review demonstrate?

Simulation works. However, there are only a few studies on *in-situ* simulation (rather than classroom based teaching) and a key point from these is that in-situ simulation is particularly helpful for unveiling system problems. In our work, we have repeated found poorly organised resus trolleys, with medication and equipment in different locations. We promote 'grab-and-go' boxes which contain all the protocols, medication and equipment that clinicians need to quickly and efficiently manage an emergency (e.g. anaphylaxis box, meningitis box).

In-situ simulation based training in primary care

The Dorset group have been running in-situ based simulation based training for several years and now offer workshops to every GP practice in their CCG. Dr Forde, Dr Bromilow, Dr Maloney and Mrs Eastwick-Field presented their work to the Resuscitation Council UK, outlining the need for a nationally accredited, standardised emergency training course for GP teams, with a focus on community settings.

The Thames Valley group is now leading on a project aiming to provide this through in-situ simulation. All clinical and non-clinical staff with patient facing roles are included in these sessions, which consist of a blended learning approach:

- Pre-learning from a range of bespoke e-learning modules.
- Four standardised scenarios (2 adult and 2 paediatric) including acute coronary syndrome, sepsis, bronchiolitis and anaphylaxis with one or more scenarios deteriorating to cardiac arrest.
- Development of algorithms, early warning scores and cognitive aids in the form of checklists adapted to the primary care setting, with hands on training during the scenarios.
- Use of standardised Situation Background Assessment Recommendation (SBAR) hand over.
- Debrief and feedback post scenario.

The pilot stage runs until December 2018 and the main project from 2019.

The UK teams have also developed an online network, primarily with colleagues from Australia, who share our vision for in-situ realistic simulation based training. An exciting development of the Australian work is 'guerrilla sim' where doctors learn through unannounced scenarios during their working day, bring the training even closer to reality.

Conclusions

Our experience is that in-situ simulation based training on emergency scenarios leads to improved confidence, competence, communication, and teamwork. It also highlights critical flaws in practice procedures, availability of equipment, ability of staff to use equipment and access to emergency guidelines. However, there is a limited amount of research on simulation based training in primary care, and further work is needed to determine how best to upskill GPs so they are competent and confidence in managing time critical emergencies; and how to do this in a sustainable and cost effective way.

Selected references and acknowledgements

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