

Chapter 5.2.4

ADVANCED SKILLS TRAINING FOR RURAL DOCTORS

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Introduction

The growth of emergency training courses has fulfilled a need for doctors who are worried about the unexpected.

Difficulties in recruiting and retaining doctors for remote and rural general practice have made employers nervous about expecting exacting standards and up-to-date certification – and urban doctors who wish to make a career in rural practice may feel nervous about being clinically exposed to road accidents, paediatric emergencies or medical collapse. In addition some rural doctors report losing clinical confidence regarding emergency skills and procedures which were familiar to them as young doctors. This may be due to lack of practice, a more realistic awareness of what can go wrong, or a feeling that the drugs and technical issues have changed significantly.

Locum cover and funding are long-standing barriers to postgraduate training for rural doctors, however, and many professional organisations can paradoxically undermine pragmatic clinical self-confidence with guidelines and procedures which are written by specialists working in urban units with big teams and large numbers. They may have little understanding or experience of being a single-handed clinician in a rural leadership role.

Learning principles and approaches

The term 'clinical fire drills' has been suggested (1) to cover the planning, training and organisation of emergency skills courses for rural practice. This is based on the concept of fire drills in buildings where, to prevent loss of life, regular practice, co-ordination, organisation and reflection is undertaken in anticipation of a rare event which everybody hopes will never happen. When an event does happen, everyone must behave calmly, methodically and on autopilot in order to save lives. The same concepts can be applied to rare clinical emergencies in rural practice. Rural doctors require self-confidence and a calm inner demeanor which communicates to those around them that they can cope with anything that is presented to them.

The principle of learning together, and from each other, is important in clinical team learning. For example, a tertiary specialist could present a clinical case or a procedure to a primary generalist team, and the learning could be triangulated with practical scenarios. Thus, the tertiary specialist can understand the issues relevant to the rural generalist and the rural generalists can swap personal experiences in front of the tertiary specialist. This is best illustrated with helicopter retrieval teams who come out to train rural generalists. In these cases, the sessions are moderated and facilitated by a local generalist team leader; roles are demonstrated and practised and mutual professional respect encouraged.

It is important to develop a shared educational language between trainers and trainees. The learning clinicians need insight into their own learning processes during fire drill courses; medical jargon such as 'brain stem knowledge' and 'brain stem response', as a metaphor between anatomy, education and their own reflex response in an emergency, may help doctors understand themselves. An analysis concept such as learning to ride a bike or drive a car can give the learner insight into skill acquisition, skill decay and requirements for re-testing with such complex skills. Considerable resource allocation is needed to train and maintain confidence in clinical safety. With so many complex variables with which to predict skill decay, easy methods of self-diagnosis and reinforcement need to be developed.

Formative educational needs assessment processes and professional appraisal processes may need to recognise that people who frequent attend skills courses may be the 'worried educationally well' who, in analogous patient circumstances, would be attracted to health screening programmes. The Inverse Care Law is just as likely to apply in this educational analogy of needs – namely that those that need the educational intervention most, may be the least likely to attend, just like a health promotion initiative.

The educational term 'fidelity' is used to describe the closeness of the representation to a real clinical situation (2). Thus in immediate care training outside the classroom at the roadside with crash simulation, cues such as noise, smell and team work all aid the retrieval of Airway Breathing Circulation principals.

'Over-learning' refers to training beyond that required for initial proficiency; repetition reinforces learning to increase confidence and decrease stress. Over-learning is the single most important factor with which to mitigate against skill decay.

Skill acquisition and retention

Skill decay is defined as the loss - or 'decay' - of a trained or acquired skill (or knowledge) after periods of non-use.

Skill retention depends upon how the information was encoded and the cues present for retrieval. Task factors, learning factors and time all influence skill acquisition, retention and decay (3). 'Close loop tasks' - such as pre-flight checks and other fixed sequence tasks with a definite beginning and end - decay more slowly than 'open loop tasks' - such as tracking and problem solving in aircraft on human factors analysis review. Physical tasks decay more slowly than mental tasks. Community studies of cardio-pulmonary resuscitation training have shown a significant decline in skill retention over the six months (4). Ergonomic evidence suggests that after 365 days of non-use, skill decay has reduced to the level of competence of 92% of what it was on the original day of practice.

E-learning offers considerable potential to develop subsequent quick tests and picture reminders of key points at six weeks and six months after the practical skills course but lacks an evidence base for efficacy in reduction of skill decay. Re-accreditation of neonatal resuscitation drills has been successfully performed over video links to remote clinicians who have previously attended central skills courses (5). The potential reduction in travel and locum cost to certify re-accreditation for governance targets is considerable.

Illustrative anecdotes

There are many examples of rural doctors coming across road traffic accidents or having to deal with cardiac arrests in their waiting rooms. In such scenarios the doctors will report considerable confidence if they have recently attended a clinical 'fire drill' style course. Course attendees at emergency skills training courses will report a warm educational glow of confidence for three to six months after attending the course. The ergonomic evidence suggests that an opportunity to use the skill in a real situation within three months of attending a course greatly enhanced the learning and subsequent skill acquisition. This effect is borne out by anecdotes but is very difficult to prove objectively.

Broad applicability

Clinical fire drills are required to plan for unexpected clinical emergencies with the potential for loss of life or serious morbidity. These events are relatively rare but cannot be predicted in advance despite health prevention and a chronic disease management. The remote and rural clinical generalist has to maintain skills during long periods of non-use compared to clinical specialists who deal with many cases in an urban setting. Practical emergency skills training should include obstetrics, paediatrics, pre-hospital trauma care and pre-hospital life support.

Major incident planning in large urban settings is centred around train crashes, plane crashes, terrorism or natural disasters. Major incidents are called when the emergency services become overwhelmed. Compound major incidents occur when the normal infrastructure such as roads and telephone systems are also damaged as a result of natural disasters. A motor crash involving a mini bus may be a weekly occurrence to an urban pre-hospital trauma care team and not require a major incident response. However in a remote and rural location a car crash with three or four seriously injured people may quickly overwhelm the local generalist team with numbers and geography. Thus Advanced Clinical Skills Training is an essential part of continued professional development for rural health teams.

Arran Resilience is an award winning island network of emergency services who train on location and network electronically (6). Fire, police, ambulance, lifeboat, mountain rescue, civil authority and health service bring added value to remote island major incident responses by inter-team collaboration, personal relationships and leadership.

What is the evidence?

There is a lack of educational research about emergency skills training for doctors. The setting and frequency of training courses has no evidence base to inform educational needs assessment – and there is no theoretical medical education model on the acquisition and retention of skills that can be applied to enhance course design and delivery for trainers and learners on emergency skills training courses. As such, a pragmatic approach has to be adopted.

Practice pearls

What to do

- Take the training to the learner.
- Learn in multi-professional teams.
- Undertake scenario-based learning.
- Plan high fidelity skills teaching with over-learning and repetition.
- Hold residential courses over a weekend in a hotel.
- Ensure a mixture of national and local teaching faculty.
- Play a long game - with repeat attendance at basic and advanced level courses.
- Explain the learning theory of 'clinical fire drills' on every course.
- Join the local emergency teams together for major incident training.
- Network the local teams with a website and forum.

What not to do

- Don't start with a new requirement to pass an exam at the end of the course.
- Don't allow teachers who are destructive.
- Don't allow point scoring and posturing teachers.

Conclusion

Advanced skills training saves lives and aids recruitment and retention of remote and rural health professionals. Clinical 'fire drills' keep health professionals ready for unexpected emergencies and matter a great deal to rural doctors and patients when the unexpected does actually happen.

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