On-site Medical Teams: UK Experience

Norman Kirby

For many years the UK has gained experience in sending medical teams to overseas disaster areas. Much of this experience, including my own, has been to man-made disasters including war, but expertise is now being rapidly gained in natural disaster relief. There are many questions that can be answered by the lessons that have already been learned

How useful are on-site medical teams?

Local teams are often overwhelmed In addition to hands-on expertise there is a need for leadership and for the outside team to act as a catalyst for teaching and to stimulate coordination.

The medical task is multi-disciplinary. In the early stage of a major disaster one might imagine that the needs will be purely surgical, but in chaotic situations enteritic and respiratory diseases may become rampant extremely quickly. A good epidemiologist in the outside team can ascertain the likely disease-types and make the medical teams aware of these. Likewise a good environmental hygiene specialist will be able to advise on where to site deep trench latrines to reduce the risk of gastroenteritis.

The task of the surgeon is more likely to be dealing with late wounds, burns and fractures. This means delayed primary surgery because one is dealing with wounds over 24 hours old Many patients with large area burns will die but there will be patients who survive with burns up to 35-40% body surface which will need surgical treatment with plastic surgery later Orthopaedic surgeons should use the simplest treatment of fractures using time-honoured traction on Balkan beams and Bohler techniques in order to cope with the large numbers. The opportunity for ORIF will be very limited in the early days after a disaster as theatres will be primitive Good old fashioned general surgeons – or military surgeons – can take this in their stride. But can the new generation?

There is no doubt in my mind that the wide clinical training of UK Accident & Emergency consultants gives them the ability to lead these teams in collaboration with the local specialists

Training

Inexperienced disaster teams straight from modern hospitals with complicated equipment, and without food or sleeping gear, and unaccustomed to living in the field, create disasters of their own – sadly this form of disaster complication occurs only too often.

Those with experience of disaster medical relief work – and we have heard several talking today – must arrange training courses and conferences, including table top and field exercises, to develop integrated teams capable of working in disaster areas The UK countryside can imitate many overseas environments – Salisbury Plain in summer or winter will give a wide variety of bleakness! The area around Thetford, Norfolk, with snow in winter can be as severe as any winter environment anywhere

With experienced teams from SMART, Edinburgh, WADEM and the Military, the UK has that essential nucleus of trainers to call upon, including nurses, medical technicians and paramedics

Other disciplines to work with the medical team

These should include engineers who can deal with problems of building, water, and sanitation. Communication experts for transmitting and receiving messages within the disaster area and the country, and internationally to homebase, ODA, the International Red Cross and perhaps the United Nations. Environmental health experts will be needed to reduce the risk of communicable disease

What is the UK experience?

UK accident and emergency consultants have had considerable practical experience over the past 20 years with floods, man-made disasters involving road, air and water transport, and war. The accident and emergency teams have widely based clinical experience to which the individual experts can be attached.

The civilian teams are acquiring more overseas experience to supplement the military knowledge gained from 30 years of postwar campaigns The contribution of renal teams following the earthquake in Armenia was a good illustration of the ability to graft special teams quickly on to a general duties hospital in the field.

Can skills of UK health professionals be readily applied to disasters in developing countries?

As part of a coordinated international response we can readily deploy our skills We have experts who can apply the basic principles of hygiene, sanitation, water and feeding as well as the purely medical. It would be totally disastrous deploying these skills in a haphazard manner. There must be organisation and coordination and this must have been planned well beforehand Without this organisation the teams would end up working in the wrong place and not using their skills to the best advantage

One of the greatest difficulties will be for all the specialists to adjust to the very different working conditions in a developing country, but also one possibly in total chaos.

What further training is required?

I suggest the following:

- Medical/nursing teams need to learn to work together with equipment that is rugged and able to work off a generator

- Field training individuals and teams in schools, for example, without electricity or heating to simulate likely conditions
- Clinical methods that are suitable for the disaster environment with detailed protocols of all required treatments These protocols need developing.

Role of search and rescue

Great Britain has an established reputation for giving assistance in search and rescue with heat-seeking apparatus and trained dogs This is needed early in the event and must be coordinated with medical support. They should travel with the team leader on his initial reconnaissance as they are needed in the first 24 hours Medical equipment may be needed to treat crush syndrome and its complications

How can health professionals be coordinated with other skills?

The complete national response requires that medical skills are complemented with the practical men who can provide a stable background: water, engineers, signals and the logistic planners we have already mentioned.

Where does an on-site medical team start when it arrives in a mass casualty situation?

The team leader, after briefing by ODA and local officials, should travel quickly to the disaster site Time spent on assessment is never wasted but he must have means of communicating with home base and inform ODA of what is possible and the types of teams required The leader can sort out some of the problems of visas, transport and liaise with the local command structure - military or civilian The team leader must establish where the team is to live and work, preferably before their arrival The second in command prepares the team to travel with its pre-packed equipment.

The team on arrival must be capable of living for a period without further assistance so it should carry its own food, sleeping bags, lavatory paper, etc, in addition to the medical equipment

Medical teams must concentrate on their medical tasks. Refugee organisations, NGOs, International Red Cross/ Crescent, and the local military must be made responsible for housing and feeding refugees with proper control.

A big problem is that the skills and energy of medical teams will be expended on setting up triage and a primary treatment or care centre, and so surgical teams must be able to discharge patients to national organisations for convalescence. The overall commander/team leader must have the authority to deal with local and international leaders to arrange this

What special medical equipment is needed?

The following checklist should be considered.

- Reliable, tough and robust medical equipment that has been field tested
- Simple medical scales
- Simple surgical scales, preferably pre-packed
- Triservice anaesthetic machines
- For earthquakes robust, internationally compatible renal dialysis machines for complications of rhabdomyolysis
- Portable ultrasound was found to be extremely valuable in the diagnosis of acute abdominal trauma in Armenia
- Lists of special equipment with necessary electrical and water requirements
- Mini generators
- Field x-rays

What is the contribution of the military?

The Military can rapidly organise a field force with effective command and control. The Army has field ambulances, field hospitals, hygiene units, the Royal Engineers and Royal Signals, transport vehicles and helicopters. Specialist civilian medical, surgical and orthopaedic teams can integrate with this basic unit.

The Royal Air Force can undertake air supply, transport, communications and provide heavy duty helicopters

The Royal Navy in coastal areas has excellent command HQ and base, logistics, helicopters, skilled manpower support and communications

The Military Medical Services of NATO have the necessary coordination already But do we have a national commitment to joint activities in disasters and the necessary funding?

What are the research needs?

As a start we should initiate.

a A good database and bibliography of all past relief efforts in disasters, preferably on CD-ROM
b Trials of new equipment for its field suitability – perhaps involving a military commitment

Conclusion

I see a role for the International College of Surgeons and The Royal College of Surgeons of England in progressing the successful development of medical teams for supporting local health workers after disasters.

If the United Kingdom is going to do this job we will need a permanent centre with adequate funding – either through ODA and involving the Military

When a major disaster has occurred it is imperative to.

a. Establish coordination of the international rescue organisations, e.g. under the authority of the United Nations There should be a single unchallengeable directorate to control all rescue operations,
b Coordinate national response and secure the requisite expertise;
c Establish local control
  - teams
  - materials
  - movements

We have the knowledge and skills in the UK if only they can be applied