Privates on parade

Professor Shmuel Shapira, Deputy Director General of the Hadassah Hospital in Jerusalem and Director of Hebrew University Hadassah School of Public Health, talks to Gwyn Winfield about the work that Israel is doing on mass decontamination.

GW: As I understand it, the Israeli plan for mass decontamination is for it to be done at the hospitals rather than setting up a facility near an incident. Does that mean you have a mobile facility that you roll out especially for the occasion or do you have fixed facilities that you have on stand-by?
Sh S: Decontamination is done at the hospital where it can be done at two stations. Almost every hospital in Israel has fixed decontamination facilities and there are two. One is a small one for Hazmat or toxic industrial chemical (TIC) accidents; it is used on a daily basis without any notice for an accident, or it can be used for a TICs attack. Every hospital has one, and it can deal with 20-30 casualties with no prior notification. Apart from that each hospital has a big facility for chemical warfare which can be set up for 200-300 victims.

GW: I saw a presentation on one hospital in Gothenburg in 2004 that showed the plant watering system in the car park replaced with shower nozzles. Is that symptomatic of all hospitals?
Sh S: That's right. The idea is that you have to have notification. It is aimed at chemical warfare and you have to evacuate the whole parking lot, put the shower heads in and bring some supplementary military teams in to help the hospital staff.

GW: Does a facility that large require staff on each point to scrub the 'patients', or do you allow them to self-decontaminate?
Sh S: We have staff present, even if they are ambulatory. Someone will stand by them and guide them a bit and get the hard-to-reach places. For the non-ambulatory we will have two or three people at the same time who will do the decontamination; they go on a stretcher where the water can run through. Most hospitals have, at the entrance to their campus, a small military unit, and the idea of this is to stop the mildly injured or worried well. They have their own mobile facility and the idea is to stop the hospital being overrun by non-victims.

GW: This is a facility that deals with the worried well and stops them clogging up valuable shower heads and medical staff?
Sh S: It's not just for them; they will also deal with those that are mildly affected and start giving them antidotes – so far we have only had to exercise this in drills. It avoids them going into the hospital and taking up time and resources.

GW: The trouble is that the difference between worried well and the victim who is currently showing myosis levels – which could accumulate into a serious dose – is quite small and takes trained personnel. Obviously you don't want trained personnel hanging around in some car park, but can't choose when to

Israel regularly exercises using large amounts of simulated casualties ©DoD

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Privates on parade

have them on duty. Equally you don't want untrained staff giving injections. How do you manage this?
Sh S: Part of the unit is paramedics – it is not just ordinary military, they have medical professionals. The basic idea for triage for chemical incidents – and I am talking about organo-phosphates – is very simple. There are three groups: the walking, the non-ambulatory who might not need ancillary support and don't need to be dealt with immediately, and then the worst affected lying down who need ancillary support.

GW: What is the level of training for these staff? Presumably the most prepared will be dealing with the serious cases? I am worried about those people whose signs might not be apparent to the untrained eye but who are accumulating a higher dose. Is there immediate disrobing, for example, to cut down on this?
Sh S: Ninety percent of decontamination is undressing the victim, especially if it is an evaporating agent. We decon there and hit them with antidote but don't send them away. We observe them both in the mildly wounded site and at the military unit at the hospital; we educate them to look for the dynamics and we instruct them to expect deterioration. Even the site for mildly wounded is equipped to deal with patients who deteriorate. We don't rush them to the major inflicted site; we have the measures to do airway protection and other capabilities in the mildly affected area.

GW: Since you allow them to self present you would seem to be creating a public order issue as they may well have been brought by friends and relatives who don't want to be split up from the afflicted. Especially since these self referrals may well turn up well before you get official confirmation there has been an attack and the sort of agent involved. At what point, for example, do you go into lockdown?
Sh S: There has been no specific instruction to the public to go to the hospital. Instead, the public has been told to wait for the EMS. From my experience of conventional terror, mildly wounded will arrive by themselves or through the efforts of

'Smart' casualties, doctors and nurses hidden among the casualties can provide different exercises analysis ©DoD

bystanders. This happens at Hadassah, and also at Tokyo in 1995 – the first notice happens at the hospital and our readiness level is far higher than Tokyo's was. This is an estimate, but the first notice won't be that there has been a chemical event, it will be by patients arriving and that is why we keep our emergency physicians ready to do emergency identification and to be aware of this. If it is conventional chemical it is easy to do, but if it is not a conventional agent, or if the wounds mask the chemical signs, then it is more difficult. We are trained to expect it and if people from a conventional attack have some peculiar signs, or telltale symptoms such brachycardia, then you suspect it. This is a big part of the education process and it has taken time to do, but you need to be able then to work straight away on your suspicions. It may take one hour before you get a clear identification on which agent is involved, so the earlier health workers can start this process the better.

GW: Since you will get contaminated patients before you are expecting them, what is your lockdown procedure? Do you have airlocks, evacuate the hospital…?
Sh S: Our process is to keep the hospital clean as much as we can – leave the patients outside and decon them outside then bring the clean inside. I am sure, and we have practised for this, that the first two or three will sneak in, and for this we have two options. One is to take them out, cover them and then decon them, and then bring them back; the other thing is to take them to an isolated compartment in the emergency department and undress them there, and the staff need to don PPE, and then do immediate decon with sponges and water. No matter what you do, in my opinion, the first two or three people will end up in

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the emergency department. It all depends on the EMS; if they suspect them they won't bring them in – they will leave them outside and we will send the decon team, but if they come into the grounds themselves, without EMS, or helped by bystanders, a few of them will enter.

GW: Hadassah is a busy hospital though; it is likely that emergency rooms will be full of mainstream emergency patients, meaning you have nowhere to put the sudden influx of CWA ICU patients. How do you cope? Do you have to evacuate them all?
Sh S: We have a good operational experience of this, as it is similar to our experience of conventional attacks. In the last six years we have had 43 terror related mass-casualty events in Jerusalem, and we are heavily involved in the training of staff to evacuate the emergency rooms very quickly, so some of the minor injuries get sent away. The patients who need hospitalisation we send to the departments; if there is no space there then they will be treated in the corridors. We are able to evacuate the emergency departments in about 20 minutes, with total evacuation in about 30 minutes. This is something that we know; we have contingency plans for increasing the capacity of our ICU, as we can put the spill-over of ICU patients into a recovery/back up ICU. If that is not enough we have the capability to open up admission areas in hospital lobby areas; they have extra plug sockets for this contingency and we have emergency stores of equipment that we can bring out and use there – such as ventilators, antidotes, antibiotics. If we need anything extra after that we can get it from the national store.

GW: One of the problems with the car park decon plan is the contaminated run-off. How do you deal with this? Do you have collection and storage facilities?
Sh S: No. To begin with there was a lot of fuss about this, but we think that the solution to pollution is dilution; there is so much water that we let it drain into the system. It would be too much volume to try and store it all and the concentration would be so low that it could go into the general sewage and nothing bad would happen.

GW: I know that the Israeli Home Front Command has a victim-first mentality, where the safety of the victim is paramount. Does this affect the hospital staff and EMS too? Do you deploy into the hot zone to try and stabilise victims there?
Sh S: No, though I know it is different in some countries. About 14 years ago we decided on our current plan; we used to send staff out of the hospital for conventional cases, but we don't believe that this is the right thing to do. First of all, hospitals need their staff. Secondly, and more importantly, staff are used to working in a hospital; they don't know how to operate out of the hospital and it doesn't work well. They need the hospital environment and they can injure themselves and further degrade the capability. We believe in scoop-and-run; as minimum intervention as necessary outside of the hospital setting and we will provide advanced care in the hospital. In an urban area, for a conventional attack, within about 20-30 minutes we will have cleared the area, of all victims. In a rural setting it would be 40-60 minutes. We don't do much before they get to the hospital; in a chemical incident we would give them the auto injectors, but that would be all – not even advanced airway, but instead maybe minimal airway and some assistance with bagging.

"Staff are used to working in a hospital; they don't know how to operate out of the hospital and it doesn't work well"

GW: Unfortunately Israel does have a lot of experience with conventional attacks, and occasionally large scale ones. How much of a read-across is this for you? Is it all a set template that you follow with some different tweaks for non-conventional incidents?
SH S: We do a lot of work on this through our terrormedicine.org website, where we do the comparisons through the conventional and non-conventional threat. There are big differences between conventional and CBRN, but there are many things in common. Many hospitals are very well prepared for conventional incidents, but it is beyond their capability to deal with non-conventional. The idea is, because there have been so many conventional threats, that we are well practised and can put more emphasis on non-conventional – on small scale (20-30) chemical injuries, but also up to full CWA, where each hospital could expect to have 200-300 serious casualties at any time. With the full-scale exercises we bring in the army, to act as 'simulated' casualties, but another concept that you can see on the web is the smart simulated casualties. These are paramedics and physicians who are spread through the simulated casualties, and they provide you with much better feedback on the level of care, transport or triage, and these are the sort of things you need. We do a chemical warfare drill in Israel – a full-scale drill with 100 victims – every other year, while a small simulation will be done every year.

GW: Many of the problems in Jerusalem are rooted in religion, and this becomes a major stumbling block when it comes to some of the taboos about washing, nudity and cleaning products. What work have you done on the ethics of this? Do you need representatives of every denomination and religion, for example?
Sh S: This is something that we are neglecting and it is an important issue – especially in a religious society like you find in parts of Jerusalem and other parts of Israel and the world. Not enough thought has been put into it and we are only just starting to think about it. Currently everyone showers together; there is no difference between men and women – but there should be. Not just for modesty and religious reasons – everyone needs to be clothed appropriately afterwards. For the large-scale event it is a problem, although for a small event we can manage. If we don't do this there might be a large protest and it will add to the situation.