Wednesday, 2 March 2011

(10.00 am)

LADY JUSTICE HALLETT: Mr Hay?

MR HAY: Good morning, my Lady. My Lady, may I invite you to call Dr Fionna Moore?

DR FIONNA PATRICIA MOORE (sworn)

Questions by MR HAY

MR HAY: Good morning. Can I ask you to give your full name to the court, please?

A. I'm Dr Fionna Patricia Moore.

Q. Dr Moore, may I ask you to do your best to keep your voice up? It is a very large courtroom and it's important that everyone hears what you have to say.
Dr Moore, you're the medical director of the London Ambulance Service?

A. Yes, I am.

Q. May I ask you first, what are your professional qualifications?

A. Bachelor of Medicine, Bachelor of Surgery, I'm a Fellow of the Royal College of Surgeons of England, a Fellow of the Royal College of Surgeons of Edinburgh, a Fellow of the College of Emergency Medicine and I hold the Fellowship in Immediate Medical Care of the Royal College of Surgeons in Edinburgh.

Q. When did you become the medical director of the London

Ambulance Service?
A. In 1997.
Q. Broadly, what are your roles and responsibilities?
A. I'm a member of the Executive Trust Board, I have responsibility for clinical governance. At the time of the 7/7 bombings, I was in charge of training. I'm responsible for clinical audit and research. I'm responsible for clinical risk. That's probably enough to be going on with.
Q. We've also heard from Dr Davies that you're involved in the Helicopter Emergency Medical Service?
A. I'm an honorary consultant to HEMS. What that means is that I do shifts, generally on one of the cars so that I can do it in my free -- well, I can do it out of hours because, as Dr Davies implied, the helicopter doesn't fly during the night, but there is now a car that runs through the night. There is an additional shift that is staffed by volunteers on a Friday between 6.00 in the evening and 0100 hours and I take part in that rota, doing a shift approximately once every six weeks.
Q. I'm going to return to HEMS right towards the end, if that's okay.
There are a number of topics I want to deal with.
The first one is triage.
May we have up on the screen, please, [INQ9002-35] ?

Dr Moore, I believe you'll be familiar with this.
This is the London Ambulance Service major incident plan.
A. Yes.
Q. There we can see that the principles of triage are set out, and we can see that:
"The LAS aim at any multiple casualty incident is to produce the largest number of survivors."
We see in the second paragraph that:
"Triage is a dynamic and continuous process."
In the third paragraph it explains how the triage process works, and then goes on in the fourth paragraph to refer to triage sieve and triage sort.
I want to ask you first about the differences between triage sieve and triage sort.
May we have up the next page, please, page 36 [INQ9002-36] ?
If we could focus in on the triage sieve, that explains broadly what triage sieve is, but can you just help us, in your own words, to describe what the process involves?
A. Yes. The triage sieve is a first look and relatively quick assessment of the patient to determine their overall priority. It's not a detailed assessment of the physiological parameters. That is part of the triage sort.

Q. The triage sieve process, what are the signs which the person conducting that would look for? Are they looking for anatomical injuries or are they looking for something else?
A. No, this is an overall look at the patient. So the first thing is: are they walking? Because, if they're walking towards you, they are a priority 3, they're clearly without very severe injuries that would stop them walking. They've got an adequate blood supply to their brain that keeps them moving, and they're clearly able to breathe normally. So that's the overall estimate that allows you to determine whether somebody is a triage category 3.
Then, if they're not walking towards you, then you see whether they're breathing or not. If they are breathing, then you move down to count their respiratory rate, which is the first of the physiological parameters you look at.
So having counted that, if that is very fast or very slow, that might push you across to being a triage priority 1 or needing immediate intervention.
If their breathing rate is between 10 and 29, you move down to assessing the pulse.
At the time of the bombings, we were assessing capillary refill rather than the pulse, but these have

changed subsequently to assessing the pulse.
Q. Can you explain what the difference is between assessing the capillary refill -- I think was the word you used -- and the pulse?
A. Yes, certainly assessing the pulse is just that, it is feeling for a peripheral pulse and counting it. So looking for -- the figures that are given on the chart is faster than 120, which might indicate that the patient was shocked. Capillary refill is when you press on the tissues and, ideally, this should be done on a central part of the body, and you press in for five seconds, and then you release and count the number of seconds before the area that you pressed on returns to the normal colour.
So, for example, if, just using my thumb as an example, I press on my thumb for five seconds, and then take it off, you see that it's white, and then gradually returns to normal.
So a normal capillary refill time is 2 seconds.
A prolonged capillary refill time may indicate shock in the same way that elevated pulse rate might indicate shock.
Doing it centrally tends to get round the fact that somebody's hands might be very cold.
Q. So when you say centrally looking for the pulse rather

than for --
A. No, centrally looking for the capillary refill.
Q. If it's not too medically complicated, can you just explain to us why there was the change from looking at the capillary refill to the pulse?
A. Certainly. One of the advantages of the triage sieve is that it can be taught to non-medical responders, and there is good evidence that police officers and firefighters can be taught to use the triage sieve, so that, in the event that there are not enough medically or clinical responders, you can use additional responders to the scene to undertake a triage sieve. It's probably a bit more difficult to explain how to do a capillary refill time to somebody who's not -- has not got a medical or clinical background, than estimating the pulse rate.
Q. The next stage of the process is triage sort, and if we could just turn over the page [INQ9002-37] , again we can see that is set out in the major incident plan. But again, in your own words, can you just explain to us what that process entails?
A. The triage sort should ideally be done at the casualty clearing station. Like the triage sieve, it's a dynamic process, because patients may improve or deteriorate, but it is looking at a number of physiological

variables. It's looking at what's called the Glasgow Coma Score, which is a record of somebody's level of consciousness or responsiveness. It's looking at the respiratory rate, which is counting the number of times a minute that somebody breathes, and it's looking at the systolic blood pressure, which means that you have to measure their blood pressure.

Q. So that process presumably takes a little bit longer than the triage sieve process?

A. It does.

Q. We know that at the time of the bombings the role of Bronze triage was allocated usually to the second ambulance which arrived at the scene, and that was assigned to one person. You tell us in your statement that that role is now assigned to two people as a minimum.

Can you just explain to us why there's been an increase in the number of people undertaking the role of Bronze triage?

A. Well, it allows two people to assess the casualty and the scene. So one individual is both keeping a tally of the number of patients who have been triaged and also making sure that it remains a safe environment to undertake that assessment, while the other undertakes the assessment process and, in the event of opening the

airway, the patient then breathes, they might put in an airway adjunct. If the patient was bleeding, they might be in a position to put on a dressing, but it's a relatively rapid procedure because the priority is to then move on to the next patient.

Q. That allows some initial treatment to be done by the Bronze triage person who's doing the initial sorting, as it were?

A. Yes, but I would stress that it is a very rapid assessment and application of either opening the airway and maintaining the airway, putting on a dressing or, if the patient was able to put a dressing on themselves, giving the patient the dressing and then move on. So the priority is to move rapidly on so that the triage process isn't delayed.

Q. The treatment which you're referring to is presumably that which can have the most immediate impact?

A. Yes.

Q. So enabling a patient to breathe or stemming blood flow?

A. Yes.

Q. We heard from Dr Davies on Monday -- I believe you were in court when he was giving his evidence -- and one of the things that he said is that he thought that triage should be undertaken by the most senior person available, and he said that experience was the most

important thing.
We know from the incident plan that it's the first -- sorry, the second ambulance which arrives, which the role of Bronze triage is allocated to. The plan itself doesn't make any reference to the most experienced of the paramedics available conducting the triage process. Is that something which you would support and, if not, why not?
A. I would support it, but I suspect that Dr Davies was talking about the triage sort process at the casualty clearing station because, although it would be wonderful to be able to send doctors down with an experienced paramedic to undertake the triage process, it would not be the best use of experienced clinicians at that point in the incident.
But having a senior clinician at the casualty clearing station to assess -- undertake the assessment, I think Dr Davies is right, experienced clinicians can tell very quickly when somebody is really very, very unwell.
Q. I think I'm right that the current plan doesn't refer in the triage sort process to the most experienced clinician or most experienced paramedic available undertaking that role.
A. No, but it does emphasise that that's where doctors may

be sited when it comes to undertaking the triage sort process and initiating treatment.

Q. Do you think it would be advisable potentially -- I'm not asking you to make any policy on the hoof -- but do you think it would be advisable potentially to consider amending the plan slightly just to reflect the fact that the most experienced paramedic or clinician available should try to undertake the role of triage sort?

A. I think that to put that into the plan might make it difficult to enact on the day. I think, in this sort of situation, you have to deploy your resources as best you can given who you have available, and that would be the decision that would be made by the Command and Control team on the scene. So that would be the decision of Silver medic and the Medical Incident Officer.

Q. Would you expect them to know to ensure that the most experienced paramedic or experienced clinician available should undertake the role of triage sort and ensure that happens?

A. I would expect them to deploy their resources as best they could, given the experience of those that they have available.

Q. May I move on to a slightly different area, and that is of the appropriateness of carrying equipment with you when you triage?

We heard, in respect of Aldgate, that the one paramedic who conducted the role of Bronze triage considered it positive that he didn't take any equipment with him because he didn't want to get drawn into treating.

Dr Davies' view is that it's a golden rule that you should never be separated from your equipment or your kit.

I'm not aware of the London Ambulance Service having any policy or guidelines which suggest that someone shouldn't take equipment with them. Is there such a policy or guideline, or is it something which you wouldn't support?

A. I think the training is, or training would suggest that, if you are triaging, you would take two triage packs and any spare triage cards that you can lay your hands on, but you should also take basic equipment with you, and I think that was certainly illustrated well at King's Cross where the scene was a considerable distance from the ambulances.

So the minimum equipment that I would take, if I were going from an ambulance down to the scene, would be a first-response bag and oxygen.

Q. In the new roles where you have two Bronze triage and one of those Bronze triage roles is meant to conduct

some immediate treatment if possible, clearly they need to have their equipment with them?
A. Yes.
Q. Again, without wishing you to want to make any policy on the hoof, do you think it would be advisable to ensure that there is some guidance or training to ensure that paramedics who are undertaking the role of Bronze triage do take equipment with them to the scene?
A. I think it's ideal, but one of the problems is that you -- the -- to ensure that the triage process is undertaken, I think the message that has got through is that you take your triage cards, that's the most important thing, and I think that's what worked well. I think we should perhaps emphasise that they should take basic equipment with them as well, even if that's left just a little bit behind the area that they're then moving through.
Q. At the very least, if they're not able to use that equipment, there may be someone else available who could use that equipment to start treating, if necessary?
A. It could be left, if you like, in a kit dump, because all our equipment is standardised and, therefore, could be used by other members of staff coming through.
Q. We saw the reference to triage being a dynamic and continuous process.

A. Yes.
Q. It seems --
LADY JUSTICE HALLETT: Sorry, just before you move on, Mr Hay, I'm sorry to interrupt. Until the inquest, did you realise that there were paramedics who felt it was better to leave the equipment behind? In other words, was this a matter you had considered before we embarked on this process?
A. Not really, no. I think the triage cards came in in 2005, so although triaging had been around -- it's been around forever, but using these particular packs of cards was something that was still relatively new within the service, and although we encourage staff to use triage cards at any multiple casualty event, it has been a challenge to get staff to do that.
MR HAY: Why is there some reticence amongst the staff to use triage cards?
A. I don't think there is now, but I think they tend to see them as a tool to be used in a major incident rather than in a three-car RTC with nine patients.
Q. Presumably, if you're dealing with a road traffic incident, the familiarity of using the cards in those circumstances aids familiarity when you get to a major incident?
A. Which is what we teach.

Q. I was asking about triage being a dynamic and continuous process. It appeared there are potentially four, if not more, stages of triage which are undergone at any one point: the triage sieve; the triage sort; potentially, the HEMS clinician may then conduct their own triage; and then, when the person is taken to hospital, they will be retriaged again.

How does one balance the process of needing to triage patients with the process to also ensure that they start being treated as early as possible? Is there a danger of the continuous process of retriaging meaning that people aren't going to be treated as quickly as they should be?

A. I think there is always that danger, and in -- triage has to be a dynamic process, both in terms of the sieve and the sort, and we recommend that the sort is undertaken every 15 minutes, at the very least, because patients' conditions do change.

So to do a repeat triage sieve which is quick is not something that I would have any problem with at all, but if you are then the person who is treating that patient, you move on from doing a further assessment to make sure that your assessment of them is the same as the previous assessment, and then you get on and treat them.

Q. Again, returning to Aldgate, it's a matter for my Lady,

but on one view of the evidence there was a process where triage was conducted but there weren't then paramedics following on behind to start treating. So it was all very well making the assessment, but there was therefore no treatment afterwards or as soon as it should have been.

Again, how do you prevent that occurring? What is the best process to ensure the treatment follows up as quickly as possible after the triage?

A. Well, I think the plan to have two people triaging, that's the minimum, but in an ideal environment, we would almost certainly have a Bronze triage officer who would be ensuring that the whole process was undertaken smoothly so that there was somebody coming behind to ensure that treatment was then instigated following the triage process.

Q. To what extent is there a danger in labelling someone as the Bronze triage and, therefore, they think their role isn't to treat because they understand their role is to triage rather than to treat?

A. Yes, the Bronze triage officer is responsible for the triage process, and I think that includes bringing somebody in from behind to undertake the treatment, having established what you have at that particular scene.

Q. Going back to how difficult it is to ensure that people are following up quickly, is that merely just a question of ensuring that the resources arrive at the scene as quickly as they can and are directed to where the casualties are as quickly as they can?
A. Yes.
Q. Is there anything which has come out from the evidence, which has been thought about, which has been able to somehow reduce the risk of there being a gap between the triage process and the treatment process?
A. I think good communication at the scene is clearly of paramount importance. In an enclosed area, that's not so much of a problem. If you've got a scene that's spread out over some distance, it does become more of a challenge because you may not be aware of the resources coming in behind you.
I think that's where good radio communications within the scene can be helpful.
Q. Has Airwave, therefore, helped that process, because it's improved the quality of radio communications?
A. Yes.
MR HAY: My Lady, I was going to move on to triage labels. Can I ask you about the effectiveness of triage labels and triage cards? We know from the major incident plan -- I'm not going to bring it up on the

screen, but triage labelling is mandatory at a major incident and, from what you said earlier, it's also encouraged at smaller incidents, road traffic accidents and the like.

The purpose of the labels, am I right in thinking it's threefold? One is to indicate the level of priority assigned to that person?

A. Yes.

Q. One is to, if possible, record any personal details?

A. Yes.

Q. And the third is to record any drugs which have been administered?

A. Yes, although, because the triage process is a -- certainly the triage sieve is the initial intervention, drugs would not generally be given at that stage. That would be as part of the treatment that comes behind and then the triage sort.

But certainly there is the possibility of recording drugs on the triage card.

Q. That card would stay with the patient. So although once the first stage of triage has been undergone, the second stage, the sort process, that card would still be there and would be updated accordingly?

A. Yes, there is space on the card for a series of observations to be entered.

Q. Dr Davies seemed to express some concern about the utility of the cards. The first thing he said was that he wouldn't look at the cards, I think he used the phrase "eyeball"; he would eyeball the patient and make his own decision as to what priority was necessary to be assigned to them.
His second concern was that there was a danger of, once the label had been attached, that person remained throughout a priority 1 or a priority 2, and the label simply stuck to them. Even though there was a retriaging process, there would be a concern about downgrading or upgrading as appropriate.
Do you share either of those concerns?
A. No, I don't. I mean, I think one of the real advantages of the triage card that we currently use -- and there are a number of triage cards commercially available -- the one that we use does allow you to retriage the patient, and that will reflect either an improvement or possibly a deterioration in their condition, and it's relatively easy to do that. You just have to take the card out --
Q. I think you may have some with you. I don't know whether that would be helpful.
A. I do have some with me.
So they come in a plastic wrapper with an elastic

band to allow you to attach it to the patient.
The card folds out so that the different priority
levels are easily visible, so priority 1 is red,
priority 2 is yellow and priority 3 or walking wounded
is green.
So the idea is that you fold the card so that the
priority is uppermost on the card and that can then be
put into the wallet and attached to the patient.
If I then come behind and look at the patient and
think -- well, if they're priority 1, I would be moving
them -- but if, for example, it was somebody who came to
the casualty clearing centre with a priority 3 label on
them, they had walked to the casualty clearing centre
and they didn't look so well and I was doing a retriage
on them -- sorry, resieving them and I decided that they
were actually a priority 2, then I would refold the card
to reflect that.
So that's why it's a dynamic -- it allows the
dynamic assessment to be visible. Does that make sense?
Q. It makes sense to me.
LADY JUSTICE HALLETT: It makes sense to me.
MR HAY: I'm grateful.
LADY JUSTICE HALLETT: I was just wondering, as you did the
card there, Dr Moore, if you were in an Underground
train and a bomb's just gone off and it's very dark, it

looks quite fiddly, and trying to get it back into the wallet. You've obviously been involved at scenes. You haven't found it --

A. I'm not generally the person who's doing the triage, to be honest.

LADY JUSTICE HALLETT: No, of course not.

A. I think, yes, they are a bit fiddly. At the bombsites the lighting was poor, but there was some emergency lighting. I think that it is sufficiently easy to flick them around and to put -- putting them in the wallet is actually a bit more fiddly just because it's relatively --

LADY JUSTICE HALLETT: That's what I was thinking as I watched you do it.

A. -- it's relatively -- it's not that difficult. I think one of the challenges is making sure that you attach it to the patient and it stays on.

MR HAY: Where are they normally attached to? Round the wrists or ankles?

A. Or around the arm, yes, depending on what you have available that you can securely attach it to. It has to be a limb, clearly.

Q. Presumably -- you mentioned the wallet, although not that fiddly, it's quite fiddly. Presumably, it's compact so as to ensure the card stays in place?

A. Yes, and there's a little flap that sort of goes over the top, so it is less likely to fall out.
Q. I know it's difficult to assess, and we've had various time estimates of how long that process should take per patient. Is there any testing which has been done to work out how quickly this can be done?
A. Not that I'm aware of, although clearly, if somebody is walking wounded, then it's very quick and you just put that on them and on they go.
If you have time, you would collect any details, but if, as at King's Cross, you have a wave of people coming towards you, then you would try to distribute these as quickly as possible and like to make sure that you had identified all the injured individuals.
If you have somebody who you think is either a priority 1 or 2, then because you're having to undertake some measurements, it takes a little longer. It will probably take a couple of minutes at the very least.
If you are instituting any first aid before moving on, it might take longer than that.
Q. In terms of recording the drugs which have been administered, is that something which is done in writing or are there boxes which can be ticked or marked?
A. On the card itself, there is -- under the "Secondary

assessment", so this is when the triage sort and treatment would be undertaken, there is a box down here where you can put on any medications, as you can record any injuries.

So it does give --

LADY JUSTICE HALLETT: But writing it?

A. But writing it, yes. You don't -- certainly, there aren't a vast number of drugs that you would use, but rather than having a tick box, it's better to actually write the drug, because then you would write the drug and the dose, because you don't want to know just that somebody's had morphine; you want to know how much morphine they've had, because that would clearly influence the next dose that's given and the time at which it's given.

MR HAY: I'm going to come on to drugs and the move from tramadol to morphine, but are there effectively standardised dosages which are carried by the paramedics?

A. No, we would expect drugs to be titrated to effect when you're talking about drugs for pain relief. There are certainly some drugs which are given in certain situations which are a standardised dose. Those are generally not ones that we would use in this situation. They're drugs that are given, for example, for cardiac

complaints.
Q. That would act against, therefore, being a tick-box exercise of "I've given morphine", tick?
A. Yes.
Q. We know at Edgware Road that the triage labels weren't used. But that didn't seem to impact at all on the effectiveness of the response which was given, and that again feeds in to some extent of the utility of the labels. That may be for a number of reasons. They were working in a closed, confined space, the paramedics. They were also all from the St John's Wood ambulance station, as far as I recollect.
That factor seemed to be an important one. They were all familiar with working with one another.
To what extent do paramedics go from one ambulance station to another to get experience of working with paramedics from other ambulance stations?
A. Can I just pick up on one thing that you said, first of all? The most important thing about the -- about Edgware Road was that there were sufficient resources at that scene for there to be a one-on-one relationship with each patient. Therefore, undertaking triage was not necessary. Triage is something that you do when the number of casualties exceeds the number of resources that you have. So triage was not required at

Edgware Road.
To come on to your second point, all our staff are allocated to one of our 26 complexes. They may move from one complex to another because they move house, but that's -- they will be based on a particular complex for administrative reasons. They work out of those complexes. They don't actually spend much time on the complex these days because they are so busy that they pick up their ambulance or their car when they arrive at the beginning of their shift and they go out and they may not get back to station unless they have a rest break or until the end of the shift.
So they get a lot of experience of seeing their colleagues from other complexes because they are often deployed outside their area and they meet colleagues from other stations at hospitals.
Q. So in your view, there's sufficient exposure to paramedics from other ambulance stations --
A. Yes.
Q. -- which would encourage good teamwork at any major incident?
A. Yes.
Q. Can I ask you about the expectant category? Can we have up on the screen, please, [INQ9002-38] ?
If we focus in at point 6.6, that explains that the

expectant category is allocated to those who, although alive, appear to have unsurvivable injuries such that it's -- the very difficult decision is made not to treat them.

But that authority to make that decision, according to the plan, rests with the Gold medic or Gold doctor.

A. Yes.

Q. As far as we're aware, on 7/7, none of the Gold medics were actually at the scenes, so that instruction could never actually have been deployed, if necessary.

A. No, that's not the case. Firstly, the expectant category has never been used in this country. This is a triage category which essentially is derived from military experience, going back over a couple of hundred years, and it is -- the initial role of triage was to get people back on the battlefield as quickly as possible. So you would not use your resources to manage those casualties whose condition was so serious that the likelihood of them surviving and returning to being able to get back on the battlefield, and the use of resources to do that, would be unreasonable under those circumstances.

Fortunately, we've never had that situation in this country, and to use the expectant category would be in a very, very large, major incident or a catastrophic

incident when a decision would be made at a very senior level that the expectant category might be appropriate. It's not something that you would do at the scene.

Q. How easy is it for someone remotely to make that decision without being able to assess the patients themselves?

A. It's not so much assessing each individual patient. It is deciding whether, at that particular incident, you will not have sufficient resources to manage the most seriously injured patients, and we have never been in that situation.

Q. In the event that situation does arise -- and obviously we all hope it never does -- again, if someone is remote and they don't have -- problems with communications, the general chaos which can often ensue, they don't have clear instructions as to what the nature of the incident is, what the nature of the injuries are, again, if that person is remote, how are they able to actually make that instruction or that decision.

A. I think the use of the expectant category is almost a philosophical one. It is when you make a decision that you just may not have the resources to treat the most seriously injured casualties. So it is not dealing with individuals at a scene, it is dealing with the whole of the incident and making a decision that the

expectant category might need to be used for those patients where you just don't have the resources to treat them.

Q. Would you ever consider it appropriate for that very difficult decision to be made by the Silver doctor at the scene?

A. I think that would be a discussion that the Silver doctor would have with the Gold doctor.

Q. You've mentioned lessons which have been learnt effectively from the battlefield and, obviously, in recent years, there have been a considerable number of lessons which have been learnt as a result of combat in Iraq and Afghanistan, and I think, as you know, we've heard from Colonel Mahoney, who gave evidence regarding survivability generally.

Can you just help us with what lessons have been learnt across from the military to civilian environment?

A. Right, I think the triage -- the importance of triage has been emphasised from the work that has been undertaken in Iraq and Afghanistan, although, fortunately, the numbers of casualties at most of the scenes, particularly Afghanistan, have allowed them to have a one, or more than one, on one.

There are lessons around the management of catastrophic haemorrhage, so that whereas, in the past,

we have always taught that the sequence of assessment should be A, B, C -- airway, breathing, circulation -- for patients who clearly have catastrophic external haemorrhage, then that requires control because, if you don't do that, you're not going to be worrying about As, Bs and Cs.

Q. Just pausing there, to what extent has that learning -- CABC, rather than ABC -- been something that has been filtered across or filtered down to paramedics who are working on a daily basis that, when they attend a major incident of an explosion, they should be thinking CABC rather than ABC?

A. I think it is something that has become much better known over the last 12 to 18 months, and I think it is now very much on their radar.

Having said that, our staff will perhaps see a very seriously injured patient once a year. So it's not something -- and that's generally as a result of blunt trauma, although, admittedly, in London, we do have a higher incidence of penetrating trauma than elsewhere in the country.

Q. Does part of the major incident training which is received by paramedics now include or incorporate the fact that, if they are attending the scene of an explosion or other ballistic-related injuries, they

should be thinking CABC?
A. It's not part of our major incident training. It's part of our general trauma training. So that is delivered to every paramedic and every student paramedic.
Q. How often do they receive that general trauma training?
A. That is taught on the paramedic course.
Q. So people who are becoming paramedics --
A. Yes.
Q. -- are learning that?
A. Yes.
Q. What about those who are already paramedics and have been for a number of years?
A. Then that is part of the refresher training that they undertake.
Q. How often do they undertake that training?
A. Currently, they have five days of mandatory training every year, and that is now increasingly built into their rosters. So it's unlike, in years gone by, where training was perhaps the easiest thing to defer if you wanted to increase operational support on the road. We now build training into the rosters. So there are five days of mandatory training every year built into the rosters.
In addition, staff can access a number of courses and additional training sessions put on by the LAS and

by other institutions in London.
LADY JUSTICE HALLETT: When you use the expression "paramedic" that includes those who were called emergency medical technicians back in 2005?
A. Many of the EMTs from 2005 have gone on to become paramedics and, therefore, would have undertaken the training. Some have not. We have a significant number of EMTs, some of whom are very experienced. That would be picked up in the mandatory training which they have. All our staff have the -- are supposed to have the five days' training. That is in addition to undertaking both training that staff get when they join the service and the specific paramedic training.
MR HAY: One of the things we understand those at the scene did were to use makeshift tourniquets where appropriate, and I don't want to get drawn into a debate about whether or not tourniquets are a good thing or a bad thing, but I do understand from your statement that combat action tourniquets have now been rolled out across the London Ambulance Service. Is that correct?
A. That is correct.
Q. What is a combat action tourniquet? More props?
A. More props. A combat action tourniquet is a commercially available device which is exactly the same, except it's a different colour from the one that's

used in the military. So we have built on the experience of both the Americans who started using tourniquets back in about 2004/2005 and our own forces who started using them in 2006 thereafter.

We started rolling out tourniquets from about 2008.

The advantage of this particular model is that it can be self-applied, which is why it's been very popular in Afghanistan and Iraq. So injured soldiers can apply it themselves.

If you have a buddy with you, you can apply it in a rather -- or it can be applied in a slightly more secure way and, essentially, it's just a band that goes round the injured extremity with a windlass that you can tighten and then secure.

So it goes round -- I mean, the way it is at the moment is in the more secure way, so that it is double-looped through.

If I can just show you what it comes like, that's what it comes like. So you have somebody who has an extremity injury and they want to apply it themselves.

Using the uninjured upper limb, and their teeth often, you can put it through like that and just secure it, and then tighten the windlass and secure it like that.

Okay?

The problem about that is that this is just held

down with Velcro and can get dislodged during transport. So it is much safer to have it so that it will -- so your buddy puts it through like that and then like that. Okay? So it can be snugged down on the injured limb and secured so it's much less likely to unravel, and then the windlass is tightened and it has to be made really very tight, okay, and one of the complications is that they are jolly painful if they are correctly applied. But it has to be put on tight enough to control the bleeding. It has to be put on correctly so that it's clearly above the area of injury and sufficiently far above that it is secure and secured in place so that the windlass is then tightened and then there has to be some indication on that patient that a tourniquet has been placed.

Q. How does one have that indication? Is that something which can be put on the triage cards or --

A. You can put it on the triage card. Historically, it always used to get written on the patient's forehead, so you put T on the forehead with the time.

There is a new variety which is being rolled out by the military which has a white band on the tourniquet itself where you can write. You could actually just write with a marker on that bit.

Q. But the importance of writing it is notifying the time

the tourniquet went on, rather than the fact they're wearing one? If it's on the band and you can't see it --

A. You need to make sure that it's visible, because if it then gets hidden, you may not be aware that there is a tourniquet in place.

Now, clearly, with the sort of injuries that tourniquets are used on, it is generally in Afghanistan as a result of explosions from improvised devices, and it's obvious which limb is injured or which limbs are injured, but it is important to indicate what time the tourniquet went on.

Q. How many tourniquets are carried by each ambulance?

A. Each of our staff carries a tourniquet.

Q. A single tourniquet?

A. Yes.

Q. Has there been any other equipment which has been introduced as a result of learning from the military?

A. Yes, we have introduced an additional means of gaining intravenous access. Our paramedics have always been able to put cannulas into veins to give fluids and to give drugs for pain relief.

However, that can be very difficult if somebody is shocked, because their veins may not be easy to see or to feel or to identify, and as a result of experience

from both the Americans and our own military and medical forces, we've introduced another device, if I can demonstrate.

We've had a handheld needle for many, many years for use in children, and this is a needle which is basically inserted into the bone, because the evidence shows that if you give fluids or drugs into the cavity of the long bones of the body, they get absorbed into the circulation very, very rapidly, almost as fast as giving it intravenously through a cannula into a big vein.

So that needle there was available to our staff in 2005. It's great for kids. It bends if you try to use it in an adult.

So as a result of the military experience, there are a variety of intra-osseous devices. This is the one which was used in Afghanistan and is currently in use in the London Ambulance Service, and it's called the EZ-IO drill, and it is just that. It's a drill. Much like --

Q. Again, is that something which is carried by each paramedic?

A. Yes.

You're asking me about kit that we carry. It's not just about whizzy bits of kit. I think we have learnt a lot in the management of trauma, both from Afghanistan, Iraq, and from better trauma management,

that fluid resuscitation is much less aggressive than it used to be, so that we go for what's called hypotensive resuscitation, so that you try to make sure that somebody's got enough blood in the system to perfuse their brain so that they continue to talk to you, that they have a radial pulse, basically that you maintain a systolic blood pressure of around 80 to 90 millimetres of mercury.

You don't want to give them too much fluid, because, firstly, that dilutes the circulation and the clotting factors that there are in the blood and, secondly, it may actually disrupt some of the clots that are forming.

Q. Again, are those lessons which are learnt as part of the refresher training and trauma training?

A. Yes, and the initial training.

Q. Can I ask you about dressings? Have there been improvements in the dressings which have been used by the Ambulance Service since 7 July?

A. Yes, although it's currently only our heart and public order teams that carry haemostatic dressings, but we are planning to roll those out within the LAS.

Q. Can you explain what the HART is? We're trying to avoid acronyms where possible?

A. HART is the Hazardous Area Response Team. We have two HART teams, all ambulance services now have

a requirement to have these teams. They are specifically for hazardous areas, but particularly for any incident that might involve chemical, biological, nuclear or radiological hazards.

Q. What are the benefits of haemostatic dressings?

A. "Haemostatic" means "stops bleeding", and they do exactly that. They are dressings which are impregnated with a material which can initiate the clotting cascade and basically stop somebody bleeding, sometimes even from quite large vessels.

Q. You also tell us in your statement that emergency dressing packs have now been positioned around Underground stations and other places in London, I think 112 places.

A. That's correct.

Q. Again, can you just explain what's inside the emergency dressing pack?

A. Could I refer you to some of the material which I think you have on your system?

Q. Absolutely.

A. The emergency dressing packs are not haemostatic dressings in terms of having special materials impregnated into them. They are dressings as you would expect to use in terms of putting a pressure dressing on and applying it.

Q. Those are positioned in key sites. Is that correct?
A. They are positioned at the major Underground -- the major rail terminals and also at a number of Underground terminals, specifically those in Central London.
I'm struggling to find the specific pictures.
Q. Don't worry, perhaps we can come back to that, if necessary.
A. But I think certainly we have large packs which are available at all the railway stations which have a variety of sizes of dressings in big, easily identifiable packs and the area where the packs is has got a large sign with the NHS logo on it saying "Dressing pack here".
Q. Are those audited on a regular basis?
A. They are audited by the railway station and the Underground station, but we also have done a check in the last year to make sure that all those dressing packs are up to date.
Q. You've mentioned morphine and I think there's been a change from the use of tramadol in 2005 to morphine.
A. Yes.
Q. That was because of changes in legislation which allowed paramedics to carry morphine. Is that correct?
A. That's correct. Prior to 2005, ambulance services in this country used a drug known as nalbuphine. That has

the disadvantage of being made by one manufacturer and supplies were not always forthcoming.
So when we had a problem with the supply chain for nalbuphine, we introduced tramadol, which is a synthetic opiate. However, changes in the legislation had already come in and we were developing the introduction of morphine.
That took some time, because, of course, morphine, as a controlled drug, has to be held in very specific sites, in drug safes, and you have to have specific procedures in place to authorise paramedics to withdraw it on a daily basis.
So it takes a bit of time.
Morphine was introduced to the London Ambulance Service in September 2005.
Q. Without wishing to get into the detail, morphine is effectively a stronger painkiller, is it, than tramadol?
A. You can argue. I think it's better, yes. It's got less side effects.
Q. Final topic on equipment. Oxygen cylinders. In your statement, you mention that one of the things which came out of the debrief process was that there was a concern about lack of oxygen at the scenes. That appears to be related to the type of cylinders which were carried.
I think at the time D cylinders were used.

A. Yes.
Q. You tell us in your statement that that effectively provided 17 minutes' worth of oxygen, and also E cylinders, which appear to be quite unwieldy, to use at the scene?
A. Considerably bigger and heavier.
Q. What changes have been made to the cylinders to prevent that happening?
A. We've introduced the so-called CD cylinder, which is a smaller, lightweight cylinder which carries a larger volume of oxygen.
So firstly, it's more portable and, secondly, it has got greater capacity, so it runs for longer.
Q. I think you tell us in your statement that that provides, on average, 31 minutes' worth of oxygen supply?
A. Yes.
Q. As opposed to the previous 17 minutes?
A. Yes, but it is more portable, so you're more likely to get more cylinders to the scene.
Q. Do ambulance carry those cylinders?
A. Yes, each first-response bag, or each ambulance has a first-response bag, each member of crew would have a first-response bag and an oxygen bag which can be taken.

Q. Moving away from equipment, can I ask you about first aid training?
We've heard from many of the survivors at the scenes that they undertook heroic efforts to help those around them who were injured, applying their own tourniquets, makeshift dressings and the like, and it appears that those with first aid knowledge made a significant difference to the prospects of survival of some of those individuals.
It's slightly, perhaps, an unfair question, because it's not dealt with in your statement, but to what extent does the London Ambulance Service encourage first aid training in areas such as schools or youth groups and the like?
A. We have a very active programme. We have a schools and events team that goes round schools delivering a programme which educates children in when to call an ambulance, how to call an ambulance, and basic first aid and cardiopulmonary resuscitation.
We've done a great deal over the past ten years to try and get first aid training and cardiopulmonary resuscitation on to the national curriculum and tried to encourage the Mayor to take that up to try and perhaps have a certificate in first aid and cardiopulmonary resuscitation as a requirement before you undertake your

driving test, in an attempt to ensure that a lot more young adults have a good knowledge of first aid training.

Q. How successful have those attempts been?

A. Those attempts have been singularly unsuccessful. However, we have been very successful in educating a very large number of schoolchildren.

Q. The reason why they're unsuccessful, is that purely about money and administration, or are there other reasons?

A. To me, it seems really difficult to understand why that hasn't been put into the national curriculum. I don't understand why.

Q. Do you know what reasons have been given?

A. I think the national curriculum is pretty full as it is.

LADY JUSTICE HALLETT: What about those of us that were educated before you manage to get this training out? Can you get training out to adults?

A. Yes, we are very happy to educate members of the general public and we have a community resuscitation team that does that. We also have a very active community first responder programme and we've now got 18 sites across London where we have developed programmes where people can respond on behalf of the LAS and we will train them both in basic first aid and in cardiopulmonary

resuscitation.
LADY JUSTICE HALLETT: Because it wasn't just the actual knowledge, what it seemed to me, as I heard from these witnesses, was the fact that they had training made them cope with the immediate trauma and shock in a way -- as it were, the training kicked in, both as in their expertise, but also as in their discipline and how their own bodies managed to cope with what they went through. So it seemed to me it had two very important benefits.
A. I think being in that dreadful, dreadful environment, to be able to do something must be very helpful.
MR HAY: You mentioned the national curriculum is very full already and I don't think anyone would argue with that, but how long does it actually take to do that training?
A. Well, teaching cardiopulmonary resuscitation can be done in half an hour. There are now very nice little kits that you can purchase and issue to groups and they can all train together. They can take those away, they can even train their families at home. That's been shown to be quite effective.
If you're going to bolt first aid training on top of that, I think it would take rather longer. But the basic principles of assessing airway, breathing and circulation don't take very long.
Q. Can I move on to HEMS, final topic?

Dr Davies broadly had three issues about HEMS which I wanted to explore with you.
The first is that HEMS isn't incorporated into major incident planning. They're not part of the London Emergency Service Liaison Plan.
Do you know why that is, and would you support them being involved in that process?
A. I think they're not involved because they are not category 1 responders and they are not a statutory service.
Q. Do you think they should be made a category 1 responder?
A. I think that would be helpful, but equally, I think that we do work closely with HEMS. They have been involved in every major incident that I've been involved in since 1995. We have utilised their resources. We do try and work closely with them.
Q. That would suggest, the fact they've been involved in every major incident since 1995, that they are experts in major incidents as much as any of the other emergency services.
A. I think they're expert in delivering clinical care in a hostile environment and certainly most major incidents provide that. So they're very good at doing the interventions that are required at the scene, but there's another layer of major incident management, and

that's the Control -- the Command and Control part of it.

The more senior doctors on HEMS would be excellent in an MIO role and, indeed, undertook that role at the sites on 7/7, but I think their absolute strength is the assessment and management of seriously injured patients.

Q. But their knowledge of what happens at a scene and what you need to do to ensure that the greatest number of people survive presumably is something which can be very useful for the London Emergency Service Liaison Plan to incorporate into their planning?

A. I think, given the number of senior doctors who are involved with HEMS, that is the case, but the -- I think you have got to remember that HEMS employs registrars for six months, and they rotate on into other positions. Some of those registrars are extremely experienced, but they are birds of passage going through that as part of their training programme. They are expert at delivering care in those environments. They would be less useful in a major incident in the Command and Control role.

It is the consultants at HEMS, of whom there are a number, who would be very useful in terms of the involvement in planning.

Q. We also heard from Dr Davies that there had been efforts

by HEMS -- and I think he mentioned you have contributed to these -- to try to ensure that HEMS can respond to multi-incident sites. He said that those, if they've not fallen on deaf ears, have certainly fallen on hard of hearing ears amongst the Strategic Health Authority and the like.

Again, do you know why that is?

A. I think funding is difficult. We have worked very hard to put together a MERIT. That MERIT is Medical Emergency Response Incident Team, and this is a reflection of the need to have experienced clinicians at major incidents.

Historically, hospitals have always been required to make available, if asked, a mobile medical team. So they would designate doctors and nurses from within the hospital who would be transported to the site of major incident to deal with patients.

Now, clearly, very few of those doctors or nurses would be trained or regularly exercised and, historically, most of those hospitals will have a cupboard somewhere that's got some boots and some helmets and some kit, but it's not always appropriate to the staff they're sending out.

So that's not a useful way of proceeding, but it's in the requirements for hospitals.

More recent guidance from the Department of Health has supported the development of medical emergency response incident teams, utilising doctors and paramedics who are familiar with that sort of environment as being more suitable to undertake that role.
That's what we've been trying to develop in London.
Q. One of the great benefits of HEMS -- and obviously they use the fast response vehicles, as I assume probably the MERIT teams as well -- is obviously the use of the helicopter, but obviously they're limited by the number of teams they have available on any given day. They're limited by where they can deploy to and particularly in multiple incident sites.
Is there still some merit in HEMS having a greater level of resilience and resources available to deal with major incidents, however infrequent they may be?
A. Yes, but I would wrap that up in the MERIT response and not put the responsibility purely on to HEMS.
HEMS have a number of doctors, but there is also a cadre of ex-HEMS doctors in London, many of whom are members of the BASICs organisation, the British Association for Immediate Care, who are doctors who respond on a voluntary basis when tasked by the London Ambulance Service.

So those are doctors who both have HEMS experience and are able to self-deploy -- well, to get themselves to the scene of a major incident, because they have blue light capability.

Q. The final area I wanted to explore with you --

LADY JUSTICE HALLETT: Sorry, are we leaving HEMS?

MR HAY: No, I was going to --

LADY JUSTICE HALLETT: If you are not leaving HEMS --

MR HAY: Slightly leaving HEMS. I was going to move to pre-hospital care as a sub-specialty.

LADY JUSTICE HALLETT: Can we go back, Dr Moore? It may be that you are the person who has been involved, I don't know, but let's think about 2012 and the Olympics. If, God forbid, there were an horrific incident at the Olympics -- obviously a great deal of planning must be going on at the moment and has been going on for years, I suspect, into any response -- would you have been the person who has been responding, as far as the medical response is concerned, to the Olympics Committee?

A. No.

LADY JUSTICE HALLETT: Who's advising the Olympic organising committee?

A. Dr David Zideman, who is a very recently retired consultant anaesthetist, who is a very senior member of

BASICs, was chair of the European Resuscitation Council, and is a BASICs doctor in his own right.

LADY JUSTICE HALLETT: He is an expert in trauma?

A. He is an expert in trauma and resuscitation and he sits with LOCOG, the London organising committee for the Olympics games. So he has a foot in a number of camps. He is also an honorary HEMS consultant.

LADY JUSTICE HALLETT: So he would be able to provide the HEMS expertise?

A. Yes, yes, and I know that he has worked very closely with Dr Davies and Dr Weaver, to ensure that HEMS is built into the plans for 2012.

LADY JUSTICE HALLETT: Dr Davies, rightly or wrongly, seemed to have got the view that they were being considered more as sort of passenger transport facilities than their trauma specialism, but you think he may have misunderstood what's happening?

A. I think that they would be used, in the event of a major incident, to transport teams to a site. I think it's probably important to remember, my Lady, that helicopters only fly during the day and in good weather, and if they haven't got any servicing problems, and there is only one HEMS helicopter. So that, if it's off the road for any reason, then they rely on the cars, which is fine and gives them much

more resilience, and particularly in bad weather and in the hours of darkness, the cars are a very rapid way of getting around London.

LADY JUSTICE HALLETT: As far as the funding is concerned, that you must play a part in, because you're obviously London Ambulance Service with overall responsibility for clinical matters, it sounds as if it's a perpetual struggle to keep what is obviously an excellent organisation going.

Recently, I read something about sponsorship or about funds being made available. What is the present position as far as HEMS is concerned? They were sponsored by Virgin at one stage?

A. Virgin paid for the aircraft.

LADY JUSTICE HALLETT: Right.

A. They are funded by inner north-east London commissioning as well as by the charity itself.

So there are, I think, as Dr Davies said, there are a number of different funding streams.

I think one of the difficulties is that there is limited resilience in the helicopters. If the helicopter is offline, you can't magic up another helicopter, and certainly, during the day, the helicopter is useful because it can get a team very quickly to a site.

It is useful -- I think it's probably important to say that it means getting the team to a site, not to the incident, because, for example, at the Southall rail crash there would have been a real disadvantage of using the helicopter close to the scene, because you would just blow all the evidence away, so you have to land some distance from the scene.
So you are useful at transporting teams, but not so much as in HEMS' current role, which is taking patients from the scene to one of London's major trauma centres.
LADY JUSTICE HALLETT: So the problems are that, essentially, they need another aircraft?
A. They could do with a bit more resilience, yes, I'm sure they'd love another aircraft, yes, but more resilience in the aircraft.
LADY JUSTICE HALLETT: When I went on to the website, I detected a number of sponsors, including, I'm glad to say, a firm of solicitors on behalf of the lawyers present. So what happens about the funding? I mean, how do you get people to provide money to the organisation? Are we dependent on people like you giving up your Friday evenings and your so-called spare time?
A. Yes, but that's -- I don't think that's the major issue. I think that Dr Davies and his team spend quite a lot of

time in ensuring that there is sufficient sponsorship for the aircraft and the cars.
I have to say I don't get involved in the sponsorship of HEMS.
LADY JUSTICE HALLETT: No, I appreciate that. I just thought that -- having heard from Dr Davies, who was obviously very much involved, you seemed to me to be a perfect person to ask a few sort of slightly more outside questions, although --
A. What we do is to ensure that they have sufficient paramedics. So we assist in the provision. Because all the paramedics who comply with HEMS are from London, so they don't recruit from other ambulance services.
So our paramedics get selected to work with HEMS, they are on a nine-month secondment, during which time they get trained and extremely expert, and a number of them remain as emeritus HEMS paramedics, just like I'm an emeritus HEMS registrar, so that we do these additional shifts, and so there is a number of experienced and practised ex-HEMS paramedics who do regular shifts and would be involved in a major incident and, as part of the MERIT response, we have identified a significant number of our existing paramedics who would carry pagers and be available to respond in the event of a major incident, as part of the MERIT

response.
LADY JUSTICE HALLETT: So in a perfect world, with no problems about funds within reason, you would have, as you described it, greater resilience in the aircraft. Paramedics -- I mean, are you in a position to provide what HEMS would consider to be a sufficient number of paramedics?
A. Yes.
LADY JUSTICE HALLETT: And then doctors, that all comes back, presumably, to the perfect world of unlimited funding to be able to pay for doctors?
A. I don't think HEMS has any difficulty in paying for the doctors who work with them regularly. This is more about funding a 24/7 service over and above what currently exists.
So currently HEMS has a 24/7 service which we would use, the London Ambulance Service would use, as the initial response to a major incident to be backed up by a Medical Incident Officer and a MERIT team to supplement the response to the scene.
What Dr Davies was talking about was what that looked like. Clearly, the response that was provided on 7 July benefited enormously from the fact that they had one of their training days going on. We couldn't possibly ask for that number of doctors to be available

all the time.
LADY JUSTICE HALLETT: No, indeed, we're not talking about that perfect a world.
A. But in a perhaps not quite so perfect world, to have at least one team available, because the HEMS team does perhaps 7, 8 jobs a day. They do have a certain amount of downtime, but there are occasions when that team is tied up on a job and there's another potential incident.
LADY JUSTICE HALLETT: So it's essentially a practical -- a reasonable approach would be that they should be able to have two teams on duty --
A. Yes.
LADY JUSTICE HALLETT: -- 24 hours --
A. Perhaps not even 24 hours a day, but certainly two teams, one of which would be 24/7, one of which would perhaps be available between 07.00 and 23.00 hours.
LADY JUSTICE HALLETT: Thank you.
MR HAY: I just want to ask you about pre-hospital care as a sub-specialty.
A. Yes.
Q. Dr Davies was obviously very much in favour of that occurring. But it appears that the GMC has rejected the latest application.
A. That's not quite correct. The GMC has suggested that the individuals who have submitted the application go

back and address some areas that they felt were not completely sorted.

So stage 1 has been passed. We are currently in stage 2, and we have to re-submit by the end of March.

Q. You said "we". That would suggest you are a supporter of pre-hospital care as a sub-specialty?

A. Absolutely.

LADY JUSTICE HALLETT: The nature of the problems that need sorting?

A. It's just about getting the training programme sorted out, that's stage 2, accrediting --

LADY JUSTICE HALLETT: Is that chicken and eggs? I mean, how are you going to be able to get your training programme until you have recognition?

A. I think there is support for the development of the sub-specialty of pre-hospital care. There is support from four colleges -- the two Colleges of Surgeons, Edinburgh and London, currently the facultative pre-hospital care is a faculty of the College of Surgeons of Edinburgh, the College of Emergency Medicine and the Royal College of Anaesthetists. So there is support from all those colleges.

So I think the GMC has accepted that there will be an intercollegiate specialty of pre-hospital care for doctors who will generally come from either anaesthesia

or emergency medicine.
What's happening with the GMC at the moment is designating the training programme for those doctors and the next stage, stage 3, is accrediting centres where they will undertake their training.
LADY JUSTICE HALLETT: How long has this been taking?
A. I think the process really got going sort of 18 months ago.
MR HAY: Again, perhaps an unfair question, but are you optimistic that those problems which have been identified by the GMC will be resolved?
A. I'm sure they will be resolved.
LADY JUSTICE HALLETT: But when?
A. I don't think it will take that long. I think by the end of March we'll have got through stage 2, and designating the centres, I'm not quite sure how long that will take. But there is a significant groundswell of individuals coming through the junior ranks of training now who have demonstrated a real interest in pre-hospital care, and who want to have that as a sub-specialty that they can go on and practise when they attain consultant status.
So I don't have any concerns that it will happen, and it will really support people like me, who have been doing it for years, and the -- will put in place

succession planning for medical direction for ambulance services as well as for the care of individuals in a major incident scenario.

MR HAY: I may be asking you how long a piece of string is, but once stage 2 is hopefully passed, how long will stage 3 take, and then, how long will it then take to have the programme up and running?

A. The programme, as I understand it, has already been written. How long that takes? I'm sorry, I'm not the right person to ask.

Q. Just to go back to emergency dressing packs, I think we have the references you were looking for. Can we have up on the screen [LAS718-2] . I'm grateful to Mr Suter for finding these.

That there in the box sets out what's in the emergency dressing pack. Is that correct?

A. Yes, it is.

Q. Can we have up on the screen the next page [LAS718-3], please? I think if we could try to look at the bottom picture, it's not very clear, unfortunately --

A. It's just folded out to show you how the dressings are.

MR HAY: The next page [LAS718-4], please, perhaps the next picture will be better. Not much better.

Dr Moore, thank you very much. Those are all the questions I have for you, but there may be some others

for you.
A. Thank you.
LADY JUSTICE HALLETT: Mr Saunders?
Questions by MR SAUNDERS
MR SAUNDERS: Dr Moore, I think you were in court when we asked various questions of both Dr Davies and Mr Killens?
A. Yes.
Q. I don't think, from what you've already said to Mr Hay, you take any different point with what Dr Davies has said to her Ladyship?
A. On which specific issues?
Q. Apart from those that you've actually dealt with today, I think everything else -- I mean, you obviously work very closely with him.
A. Yes.
Q. I'm not going to, having touched on it with him about HEMS, Mr Hay has now covered all of those points and you've made it very clear to her Ladyship your view. Can I ask you about one matter that we were dealing with, I don't think you've touched on, which is the issue of rendezvous points?
You will have seen over the last few days we've asked various witnesses questions about difficulties that can arise if it's not obvious where a rendezvous

point is.
Can I just go back to King's Cross as the example, because we know that -- and it's two issues I want to deal with, please. It's the actual rendezvous point itself and, as it were, the delay in triaging taking place underground.
A. Yes.
Q. But in terms of rendezvous and where the first should go to -- and I think we all now understand the process by which the first ambulance on the scene keeps its lights going, it obviously draws, as a magnet, those who are following behind and takes on the principal initial roles. But could more be done, do you think, to have it more obvious where a rendezvous point is?
A. Yes, although that is a qualified "yes".
If you look at transport sites in general in London, the airports do have clearly marked rendezvous points. They are all secure. They are well-marked and all the emergency services know exactly where they are. They are given out on the message, so you proceed to a marked rendezvous point, and you have excellent vision of the whole of the area that you're likely to be covering. It's not that simple in Central London or, indeed, in many areas in London. So although that I think in principle it would be really helpful to have rendezvous

points for the big railway stations or situations where you might anticipate a major incident occurring, to tie people down to a single RVP at a site might potentially put them at risk, and I would just point you to the experience in Madrid with the potential risk to rescuers.

Q. It's the secondary device problem.

A. Yes.

Q. If terrorists know where a rendezvous point is, the secondary device, as happened there, is placed to commit the additional horrors.

But if, in fact, there were -- I mean, the difficulty is, as her Ladyship has seen here, that we have noticed that different of the emergency services are going to different places, and the delay initially when, in fact, if they could all be together much sooner, either to have the initial information gathering -- I simply ask whether, even if it were King's Cross, being a good example, as we all know how big an area it is, there could be one of two or three with the number of entrances it has?

A. I think that would be possible. I think there is another possibility and that is that every location such as King's Cross will have to have its own major incident plan.

If, as part of that plan, they had a role which was an emergency services liaison officer, so that an individual was designated to, if you like, meet and greet the arriving emergency services so that they could indicate what had already turned up on scene, what was known, perhaps what's not known, then the emergency services would be much better briefed and perhaps could make a better-informed decision as to where to site their control vehicles and the joint emergency services control point, or the JESCC, subsequently.

LADY JUSTICE HALLETT: By that answer, are you indicating that they don't, at the moment, have, as far as you are aware, a major incident plan at places like King's Cross?

A. I have to say I don't know. I would have thought they would have.

LADY JUSTICE HALLETT: I see nodding. It looks as if they do have.

A. I mean, I'm sure British Transport Police will -- because they will cover all the main line stations, they will have a major incident plan, but they would be better placed to comment on that than I.

LADY JUSTICE HALLETT: Your point about an emergency services liaison officer, I don't think I've heard about one of those at Underground -- I'm looking at --

Ms Canby?
MS CANBY: My Lady, I think we have heard from Mr Barr in relation to this, that there is an incident officer, the member of London Underground wearing the silver tabard, who is the member of London Underground who should go to the designated RVP point. There is a designated RVP point at each London Underground station identified in the emergency station plan.
That was the case in 2005 and remains the case now.
LADY JUSTICE HALLETT: I remember that. I was shown photographs, wasn't I?
MS CANBY: Yes.
LADY JUSTICE HALLETT: It doesn't sound as if the emergency services are particularly conscious of it.
MS CANBY: That may be something that Mr Dunmore can assist on in terms of discussions going on after this process or, indeed, as part of this process.
Certainly, I am aware that the London Fire Brigade are aware of the rendezvous points, because that, of course, is where the station emergency plans are housed for the London Fire Brigade and I understand that that is something we're going to hear more about today.
LADY JUSTICE HALLETT: Thank you.
MR KEITH: My Lady, Mr Reason will be giving, I anticipate, evidence about a new body or a new person called an

inter-agency liaison officer whose role I think is to assist in the liaison between emergency services, in particular between the London Fire Brigade and other emergency services.

LADY JUSTICE HALLETT: Right, thank you. There we are. It may be called something different, but by the sounds of it, we're looking at a similar creature to the one you suggest, Doctor.

MR SAUNDERS: Can I then deal, please, with that second point about King's Cross?

I'm sure you are well aware, Dr Moore -- and please do not think that this is critical of you or the work, the excellent work, that all the staff did and various of us have thanked, on behalf of the families we represent, the huge efforts that were put in on that day.

But in terms of King's Cross, what seems to have happened is that, when the initial paramedics arrived at about 9.14, there was then a delay before they went underground of about half an hour, and her Ladyship heard the evidence in particular from one of the paramedics, Peter Taylor, who explained that what in fact was happening was that there was a considerable amount of triaging at the surface.

Now, is this right, that that shouldn't have

happened because those people were clearly P3s, because they'd come from the Underground up to the surface? Is that right, that on the triage and what should have happened then, those people shouldn't have been the first to have been triaged?
A. I think it's very easy, with the benefit of hindsight, to say that somebody should have gone down to find out exactly what was happening, but given the reality of the situation, where the greatest -- the greatest number of very seriously injured casualties and fatalities were in the most distant carriage, then I can see the situation in my mind's eye of being approached by a very, very large number of people, some of whom clearly had injuries, and feeling that you -- because there weren't that many people there at the time, you had to deal with them because they had the most immediate need, and you couldn't know that there was a carriage full of very seriously injured people at the other end of the train.
LADY JUSTICE HALLETT: That goes back to the rendezvous point, doesn't it? That goes back to proper liaison between the various agencies, so that, when your paramedics arrive at the scene, they're told, "Ignore the walking wounded, down on the train -- a police officer has come back and said we have the most horrific scene". So that all goes back to making sure that, when

your staff arrive, they know what's going on.
A. Yes, they need better information when they arrive. Realistically, it's not clear to me that Peter Taylor, in particular, had that information at that time. Yes, it became clearer later, but at the time he started doing the triage, I'm not sure he had that.
But, yes, in an ideal situation, it would have been better that somebody went down to undertake a clinical assessment.
MR SAUNDERS: It appears that because people were coming up, the message was coming through quite quickly: we've been on a Tube, there's been a problem, and then explosion came out.
But because they'd started triaging treatment upstairs, the difficulty was, with all that number they were trying to deal with, the delay of getting forward, as it were.
A. Yes.
Q. But that shouldn't have happened, and what's the position now? If one had the horrific situation again, would, in fact, training now be to get forward once the CHALET/METHANE reports had been dealt with?
A. I think the training will indicate that you should try to get as much information as to what exactly is going

on and to try to address that problem.
I think it's difficult to underestimate the difficulty of not being able to treat people as they come past.
Now, clearly, the first crew on scene have a duty to do a recce and find out what's going on, and then report back. But I think we were hampered by not having as much information at an early stage that made that decision happen or that action happen.
Q. Of course, this is something that you and Jason Killens have known because, as you know, this is one of the questions I asked of him yesterday. This was the email that he'd sent to Mr Edmondson and Mr Heselden.
It was clearly, within days, felt by those that he spoke to at City & Hackney the rendezvous point and this link with triage and treatment was something that those who were there felt quite strongly about.
Can I ask you, please, then, about the categories that you've dealt with, and I'm very grateful for you making it clear that expectant in the triage process is something -- we've all been discussing this -- is more where one has a mass situation, such as a Tsunami --
A. Yes.
Q. -- rather than what we had on 7/7.
A. Yes.

Q. Horrific though that was. But can I ask you this: there is reference to consideration -- Dr Holden, I think you are aware of Dr Holden from the BMA?
A. Yes.
Q. He gave evidence to her Ladyship where he suggested that there was a potential that he may have had to declare somebody expectant who unfortunately then passed away. So he was obviously mindful of the expectant category at Tavistock Square.
You, from what you've told her Ladyship this morning, would be surprised by that?
A. I think, yes, I would be surprised, because I would expect Dr Holden to be using the triage sieve and, clearly, the individual that he was dealing with would have been a P1.
Q. That's the very point I was going to come on to, that if, in fact, there is the concern that somebody is so seriously ill you would make them a P1 and, when it came to the prioritisation of removing the P1s first, would that person be at the front of the queue to be taken away?
A. Yes, the P1 patients are those who require the most urgent intervention.
Q. If you had somebody who, as Dr Holden was considering, "Is this person expectant?", would that person be the

first of the P1s or the last of the P1s?
A. I think that would depend on the degree of their injuries. If you have somebody who has such catastrophic injuries that you think that it is highly unlikely they will survive, you might choose to get somebody with less catastrophic injuries removed first. I wouldn't regard that so much as the use of the expectant category, because you're still intending to move that patient. You're just making a judgment as to which of the patients you remove first.
He had some resources, admittedly limited, but he did have some resources, some medical resources, on scene and did have the ability to do some management of airway and circulation in particular, in terms of opening airways and controlling haemorrhage.
Q. I do not want to make a big thing of this expectant, because it could possibly detract from all the good works that were done, but was there, in fact, some evidence, anecdotal evidence, that the expectant category was being considered at various of the scenes? I'm thinking of that very same email from Mr Killens.
A. Can you bring that email up for me, Mr Saunders?
Q. Yes, I can. [LAS513-2]. It's point-number 3.
A. It does say "anecdotal evidence".
Q. That's why I made the very point that I did, that it is

only anecdotal.
A. I think it may link in to what Dr Davies was saying about HEMS doctors being very senior and experienced and deciding that somebody was really very, very unwell and unlikely to survive. That, I think, is different to the expectant category, which is when you are not using resources to actively treat somebody. It is recognising that whatever you do is not going to be effective.
Q. So we shouldn't misread that as being part of the triage process and sieve?
A. I don't believe so.
Q. But simply some may have felt that certain patients -- as we know, certain of the casualties were very dire as a result of the injuries they had?
A. That would be my interpretation.
Q. But we shouldn't, therefore, look at expectant as part of the sieve within this country in the circumstances that her Ladyship has been enquiring into?
A. That is my understanding.
Q. Thank you. Can I then go on, please, to training?
LADY JUSTICE HALLETT: Mr Saunders, as far as expectant is concerned, when I heard the evidence -- I just want to know if I'm right -- it was an issue properly explored, but it is now a nonissue, is it, as far as you're concerned?

MR SAUNDERS: I believe, as a result principally of what Dr Moore is saying, it isn't going to be an issue for your Ladyship because it is in a very different category and, although we have been considering it, I don't think it will now be something that we would press your Ladyship to pass any views upon, save to say that it would not necessarily appear in the circumstances that we've had.

LADY JUSTICE HALLETT: Thank you. Yes, Ms Ormond-Walsh?

MS ORMOND-WALSH: I rise, my Lady, just to say one point, that all of the HEMS doctors say categorically there was no question of that category being used at all on July 7.

LADY JUSTICE HALLETT: So it may be a misuse of --

MS ORMOND-WALSH: It's clearly evidence that is unfounded.

LADY JUSTICE HALLETT: Thank you.

Right. Sorry to interrupt again, Mr Saunders. Training.

MR SAUNDERS: Not at all, my Lady. The labelling. Mr Hay has dealt with the vast majority of the questions I have, but in 2005, did you think, Dr Moore, that all of your EMTs, paramedics -- clinicians, I've generically called them -- were aware of the forms themselves, the labels?

A. Yes.

Q. Can I just ask you to have a look at [LAS372-2]?
So that you understand -- I'm sure you've already seen this -- it is, in fact, the summary or schedule of the debrief forms that were returned, and this is the -- those that were being asked, or those that replied to the debrief process:
"Do you have the LAS major incident action cards?"
54 had and 14 didn't.
"Have you attended [the] major incident training session?"
41 hadn't, but 27 had.
A. Well, that's really interesting, because it is something that is delivered on every EMT training course. So I find it difficult to understand how staff are unable to recall attending something that would have been in their basic training.
Q. Then it goes on whether or not they had the triage cards on the vehicle they were travelling on. I think that's changed since 2005, because triage cards are carried on all the vehicles.
A. Yes.
Q. In fact, you've doubled the number, should there ever be the need for the cards, I think they've gone from 20 to 40 cards now on each of the vehicles.
A. There are two packs of 20 each.

Q. So that will have changed. Then, again:
"Have you been trained (through training order, briefing, et cetera) on the triage [cards themselves]."
23 of the 69 said they hadn't.
A. My understanding is we introduced the triage cards in 2004 and cascaded the training through our team leaders and that everybody was trained.
Now, can we always evidence that everybody has been trained? No, because there will always be people off long-term sick who come back, maternity leave. Ideally, we should have picked all those people up, but -- so, you know, could I be confident that 100 per cent would have been trained? No. Not ever. But I'm disappointed that it was as low as that.
Q. One of the questions you remember I asked Mr Killens is whether you can make compulsory or mandatory the continuing professional development.
Would that achieve -- because of what you write into triage and the training and the labelling, would that not assist that you'd get better numbers? And it may well be -- and one must realise this is going back to 2005, when the system was just coming in --
A. Yes.
Q. -- so allowance must be made for the staggered training that there may well have been.

But if one made it compulsory, wouldn't that assist?
A. Well, mandatory training is, of course, compulsory, it's a question of what we put into the mandatory part of the training and, as you can imagine, with the speed with which medicine is progressing, it is a challenge to fit everything you need into a five-day package.
But from my point of view, a refresher on major incident management is something that we always ought to include.
Q. Can I ask you then, the only matter that I wanted to deal with in terms of the labels is that in your very fair and frank, as I think her Ladyship commented to Mr Killens yesterday, report, you dealt with -- forgive me whilst I find the reference. It's at 14.1.2.2, which is page 82, LAS752 [LAS752-82].
You deal with here -- this is in the section about the triage process -- "timely and appropriate treatment", and at 14.1.2.2, the forms -- now, there are forms as well as labels?
A. Yes.
Q. But the forms were rarely completed on 7/7?
A. That's correct.
Q. But you go on to deal with [LAS759-83]:
"... the vast majority of labels [themselves] were removed as patients arrived at ... hospitals and

discarded."
A. Yes.
Q. Does that literally mean what it says, that the labels, when they got to the hospitals, were useless, because they were not being used by anyone, they were simply --
A. I think when it says they were "discarded", it means they weren't retained in the patient's notes.
What I don't know is whether, when patients arrived at hospital, the receiving medical staff used the information from the triage card.
I would hope that they would, because I feel that that information is vital. Because you can tell from -- if somebody comes to you and they've been labelled P3 and they're now really quite sick, they are deteriorating, and you need to take action.
So the information on those triage cards is of importance and would inform the hospital when the patient arrives, but might not necessarily be all that useful once the patient's been assessed and initial treatment started in the hospital.
Q. Because it appears that one of the other things -- and we know, in relation, for example, to Lee Harris at King's Cross, where Lee was administered doses of Ketamine.
A. Yes.

Q. That presumably is important; that by the time he arrives at hospital, they know which medicine and how much.
A. Yes.
Q. And presumably when --
A. Yes.
Q. -- administered. So that is something that the label should always be retained for?
A. Yes, although, in the particular instance of Lee Harris, he did have a doctor accompanying him who would have given a structured handover in the resuscitation room at the Royal London.
Q. Presumably, your training is you can't ever guarantee that will happen because Lee as it was, with Sam Badham, were two of the last to be extricated, when, of course, most of the treatment or life extinct had already been passed on the remainder who were to be left.
So that's why you think that the labels should be for medical explanation as to medicines and doses?
A. I think they're important in the initial assessment when the patient arrives in hospital.
Q. Can I just ask you, then, please, to, if you would assist us --
LADY JUSTICE HALLETT: Mr Saunders, I don't want to hurry you. I was going to take a break for the transcriber.

Should I take it now?
MR SAUNDERS: I don't think, in fact, there's much more.
LADY JUSTICE HALLETT: There may be other questions, that's all, I suspect.
MR SAUNDERS: If I can deal with just this one point.
LADY JUSTICE HALLETT: Certainly.
MR SAUNDERS: Because it was something that was dealt with by Mr Hay. It's in relation to [INQ9002-36] . We're back to the sieve now. It's up on the screen to your right. As your Ladyship will know, Mr Patterson isn't here, but it's one matter he's asked me to deal with. If I wait until after the break and I forget, he won't forgive me.
LADY JUSTICE HALLETT: You can make a large note to yourself.
MR SAUNDERS: I've made two large notes and I'm still concerned in case I omit it.
You dealt with, with Mr Hay, looking at how you allocate the P3 and then you look at the breathing and the question then about where you go from there, depending on whether the airway has been opened or the respiratory rate.
Now, her Ladyship heard evidence about one of those who were murdered that day, Philip Beer. I don't know whether you're aware of the circumstances. Can I just

remind those -- you are, but others might not be.
Philip Beer was the young man who was initially triaged, was not breathing, but Mr Taylor found that there was a faint pulse.
Mr Taylor then felt that, although the triage system suggested, because he wasn't breathing, he should, in fact, hold that Mr Beer was dead, notwithstanding the faint pulse.
What happened was he brought Mr Kilminster in to ask for a second opinion.
Isn't the difficulty this: that if one follows the triage sieve prescriptively, Mr Taylor should have simply said of Mr Beer, "Notwithstanding a pulse, he's dead".
Now, is that right?
A. Clearly I've thought very long and hard about this particular instance and it's, like so many of the cases, really, really sad. I've thought about looking for a pulse and -- I mean, suppose they had gone on the basis of there being a pulse and then making him a P1. Would that have had any influence on the outcome? And given that Bill Kilminster came and reassessed him very quickly and the pulse had gone, the answer is I don't think it would.
We know from the evidence from teaching medical

students resuscitation that determining the presence of a pulse is actually quite difficult to do. There have been studies done on consultant anaesthetists, who you would have thought were pretty good at determining whether a pulse was palpable or not, and the evidence would suggest that it's not a reliable sign.
Mr Taylor in his evidence initially said he could see a carotid pulse. I don't think I've ever seen a carotid pulse in anybody, even when they're well. It's -- so I'm quite surprised by that finding. But I don't doubt that there was probably a palpable pulse that he felt. But it is an unreliable finding, and that's why we go for breathing and, indeed, in the current resuscitation guidelines, rescuers, medically qualified or not, are not encouraged to look for a pulse. They're encouraged to look for signs of life: is the patient moving, is the patient breathing, is the patient coughing?
So the emphasis on looking for a pulse is now even less emphasised than it was in 2005.
So I do have concerns about the reliability of that observation, but even had they decided that it was reasonable to allocate a P1 category to Mr Beer, then I think, sadly, his deterioration at that point was so rapid that the outcome would have been no different.

Q. May I make it very plain, Dr Moore, having listened both to the way in which it was put by Mr Patterson and the evidence that was given, I don't think there's any suggestion but that nothing more could have been done for Philip Beer.

I think the general question is more, should this part of: no breathing; therefore, one should triage as dead, is that too prescriptive, or should there be allowance made that, if there is something -- and it may be some way down the issues one is looking for -- but if you do find a pulse, one should then, as it were, wait and attach P1 status rather than dead?

A. I would never criticise anybody who thought there was some sign of life and interpret that as being a justification for using the P1 category. However, I think the evidence does suggest that breathing is a more robust form of -- or a more robust sign that somebody justifies that category.

I think the other things to consider are that, you know, if there was very obvious external haemorrhage and you thought there was a possibility they might be alive, you would stick a dressing on and stick a P1 category on them.

MR SAUNDERS: May I return to that very topic after the break? My apologies to the stenographers for keeping

them that bit later.
LADY JUSTICE HALLETT: Thank you.
(11.45 am)
(A short break)
(12.00 noon)
LADY JUSTICE HALLETT: Mr Saunders?
MR SAUNDERS: Dr Moore, we were considering the position with the primary triage sieve, and not only you, but I think others, have been at pains to describe to the inquest how it's a very dynamic process and it's very difficult to get the balance as to what one should be doing as the Bronze triage sieve officer.
Can we have a look at [LAS531-12], please? What's going to come up, Dr Moore, is the action card number 4 that was in use back in 2005, and it goes through what the Bronze triage officer -- that's now known as the primary triage officer, isn't it?
A. Yes.
Q. So what the process should be in terms of what they're looking for. I think, if we look about halfway down the page, it deals with the patient that's unconscious. Now, triage doesn't simply mean you fill out or fold back a label, attach the label and move on to the next. Even in 2005, this was the card that was operational, and if somebody was unconscious, they would be placed

into the recovery position and basic airway management -- and by that, does one simply mean elevating the chin to ensure the airway is clear, having checked there's nothing obviously inside the mouth?
A. It could mean that. It could mean inserting an oropharyngeal airway.
If you go a little bit further up the action card, you will see that one of the actions assigned to --
Q. The next but one down, isn't it?
A. -- yes -- is that you should collect a selection of dressings and oropharyngeal airways. That is an airway that can be used to keep the airway open, although putting the patient in the recovery position often does that just by positioning.
Q. So -- and again, please don't take it that we're being critical of any of those who did a magnificent job on the day.
Those that simply thought all they should be doing is prioritising maybe didn't understand they had the discretion, even on the cards, to give what I'm going to refer to as basic treatment, which is: airway and also -- and it's dealt with here again -- if you see somebody is obviously bleeding and it's a significant amount of blood -- that's why the suggestion is made to carry dressings as well, so that either you can apply it

and tie it or, if the casualty is sufficiently compos mentis, they can do it themselves?
A. Yes.
Q. Or there's another passenger who could assist. So it needs to be, doesn't it, looked in that way, that there are immediate matters that can be dealt with by the triage officer, even if he or she is alone?
A. Yes.
Q. You mentioned to her Ladyship earlier that some of the paramedics and the EMTs actually took equipment down, one in particular mentioned how he hadn't taken it into the carriage he was going to triage, but left it the other side of the door, so that it was obviously close to hand.
One assumes that's exactly what you, if you were giving the training today, would be saying: take as much as you can down, not necessarily take it all the way through the process, but have it so it's at hand in a situation like this.
A. Yes, certainly you don't want to have to go back up to the surface to collect stuff from your ambulance. Whether you leave it on the platform or somewhere where you might want to set up a casualty clearing station, or whether you take it right into the train, presumably, as you go through the train, you might not

know how far you're going to go or how many patients you would be triaging and when you can -- having done all your triaging, when you can then consider going back and treating.

Q. You'll have seen that's exactly what two different paramedics did. One took it to the carriage before that that had been bombed and another left it on the platform for those following on behind.

But this does -- because one of the questions that we have been asking is: but if you've completed the triage and you have no equipment, how do you then move into treatment? This would be the way around it: having the equipment so close to hand that you can then immediately go to treat, having finished triage?

A. Yes, having said that, and having identified the priority levels, there were certainly individuals who could help move patients back, and I know that firefighters and police were moving people back so, indeed, they might already be moving out of your immediate area of operations as it were.

Q. We need to understand, don't we -- this is the 2004 card that was obviously operable in 2005. We also have what the current cards are, and it's [LAS789-14].

So this is what today's card looks like, very similar to what we've just looked at. So there have

been few changes.
But when we look at this as the primary triage officer, Mr Hay was asking you about there are now two Bronze triage. We need to remember, don't we, that it's only one that would be in the King's Cross situation: this primary triage officer in the carriage?
A. That was then. This is now. We would send a team of two.
Q. Can I then ask you just to help us with [LAS789-30]? This is dealing with what's referred to as the secondary triage officer.
A. Yes.
Q. On bullet point number 4, does it not suggest that this triage officer is at the casualty clearing station?
A. Yes, and this is a different role. This is somebody undertaking the triage sort. So --
Q. So there are two on triage sieve?
A. Yes, that is what has changed from then to now.
Q. Thank you. Is there not a possibility that you are using the paramedics for a role which is principally triaging rather than treating?
A. Potentially, yes.
Q. If you have two on primary, you have one on secondary, and there are other roles that Mr Edmondson dealt with when he came to give evidence, such as parking,

clearing, one understanding exactly why you've got to get the ambulances in, get the ambulances out.
A. Yes.
Q. But there can be, can't there, as many as eight or nine principal people who are dealing in a mass incident with roles that has nothing to do with treatment?
A. That is correct, but you do need to have a structure around the way the incident is managed.
Q. But do you need to use a paramedic? Could you not have used a policeman who would understand the clearing and exit of ambulances rather than your highly trained paramedics?
A. I think the emergency services do work closely together, but the -- it is important that it is a member of LAS staff who is responsible for the loading decisions, for example, and for running the casualty clearing station. So the Bronze triage.
I don't think those are roles that can necessarily be taken over by another of the emergency services.
I would agree that the primary triage could, in a very large incident, be undertaken by non-LAS staff or you could use them under the supervision of LAS staff.
Q. This is the London Fire Brigade or --
A. Or the police.
Q. -- the police?

A. Yes, there is very good evidence that the police in particular, and police firearms officers, can undertake primary triage very well.

I think the other thing to say is that this incident was unique in that we are dealing with four separate incidents.

In previous major incidents there has been no shortage of resources on scene. So there wasn't the problem about cohorting eight of your experienced individuals to undertake those roles, which are often undertaken by officers when they come to the scene. So there would be no shortage of having individuals coming to do the treatment. I accept that the events of 7/7 put a particular strain on us in terms of the numbers of staff available to undertake treatment.

Q. Should anybody outside this room not be aware, your training -- and it's covered thoroughly in your report -- now deals with multi-incidents, so your training is for four incidents --

A. Yes.

Q. -- for this very situation, should it ever arise again. So you have obviously started the training to that degree.

Can I ask you about one final matter? It's about drugs. Tramadol has been phased out.

A. It was phased out in late 2005.
Q. Tramadol could be administered by a paramedic?
A. Yes.
Q. Ketamine, which was carried in particular by those doctors and paramedics who attended King's Cross, was used and, for obvious good reason, Dr Bland oversaw paramedic Phil Nation administering to casualties who had been blown out of the train.
Morphine. Who can administer morphine?
A. Paramedics and doctors.
Q. Is there any good reason why morphine can be administered by a paramedic but Ketamine not?
A. Morphine is included in the prescriptions-only medicines list which are available to paramedics to use under their licence. Ketamine is not currently licensed for their use. And that was the case in 2005. Ketamine is a schedule C drug and, although it is used by doctors in pre-hospital care and in hospital, and it's a fantastic drug, because of the concerns about its use, and its abuse, it is not currently available to paramedics. The Home Office is looking at that legislation as we speak.
Q. Because we heard the evidence about how effective the Ketamine was, and bearing in mind we all understand the abuse that can be occasioned with morphine, I just

couldn't understand why Ketamine wasn't one of those that could have been administered and carried by paramedics.
A. Yes, morphine actually is not so much a drug of abuse. It's more heroin, and the other opioids. But Ketamine is very popular. But it is an excellent drug both for pain relief and for anaesthesia, in exactly these sorts of situations. So I strongly support making it available to paramedics, clearly under protocol and in fairly carefully controlled situations.
Q. But those protocols and those situations are already in place in terms of the morphine and the other drugs they are able to administer anyway?
A. In terms of analgesia, morphine, yes. That is our prime -- the drug that we primarily use for analgesia.
Q. While strongly supporting, may I ask you now you to look at it from the other point of view? Is there any reason you can see why it shouldn't?
A. There has been concern about the use of Ketamine in head-injured patients and a lot of the people we go to have head injuries.
Q. Yes.
A. However, much of the evidence suggests that it is safe to use in head-injured patients. There has been concern expressed because Ketamine comes in three different

strengths, two of which are commonly available.
If you get it wrong and you give the high dose, and you think you're giving the low dose, you're going to have a very well-anaesthetised patient, but that is the same with many drugs.
Q. Exactly, that's part of the very problem with knowing what you are administering and then we're back to labels, making sure others know what has actually been administered and at what time?
A. My understanding is that the Home Office are currently relooking at making Ketamine and potentially midazolam which is a benzodiazepine available to -- sorry --
Q. I'm not going to be thanked for asking you these questions from those who sit in front of me.
A. -- used for paramedics. I think Ketamine would be available as -- for pain relief, not for its other uses which are procedural sedation and anaesthesia.
Q. Yes, but the position is you would strongly recommend and support any recommendation?
A. Yes.
LADY JUSTICE HALLETT: So the problem isn't, for example, putting your crews at risk for those who would wish to get hold of the Ketamine?
A. Not from our experience of using morphine, my Lady. Nobody has been threatened and asked to hand over their

morphine. They don't carry enough to make it worthwhile.

MR SAUNDERS: Thank you very much indeed. Thank you, Dr Moore.

LADY JUSTICE HALLETT: Mr Coltart?

Questions by MR COLTART

MR COLTART: Good afternoon, Doctor. I have two discrete matters to ask you about, please.

Could we have on screen LAS217 [LAS217-2], please? Thank you. This is a debrief form completed by a chap called David Selwood who was in your logistics department.

A. Yes.

Q. If we go through to the next page [LAS217-3], please, and enlarge the top half of the page, under "Key decisions made" he talks about booking hotel rooms for staff, with which we needn't trouble ourselves. He prepared what's called "The logistics vehicle for deployment with additional consumables".

Now, do we take it that a logistics vehicle is something which is capable of resupplying and restocking London Ambulance Service vehicles which are on-site dealing with an incident?

A. I think it's more likely that that vehicle was going round the complexes and restocking vehicles as they returned.

Q. I see.
A. I think we would use our emergency supply vehicle or ESV for restocking at the scene.
Q. I'm just going to ask you a bit further about that because we see that the next entry was:
"Request blue light driver to drive logistics vehicle."
If we go down about halfway down the page -- can we just bring the page up a little?
Do you see towards the bottom there:
"No blue light option available. Made getting through the traffic with much needed supplies difficult."
Would that tend to -- not much may turn on this, but may that tend to suggest that this was going directly to the scene rather than to stations?
A. It may have been. I don't know without knowing the timing of when the logistics vehicle was being deployed.
Q. It may not matter greatly, because what I really want to ask you about is this. If we go back to the top of the page, you will see that he made a request for what's called "bomb blast kit to be loaded on to operational vehicle" and he "deployed staff to logistics vehicle preloaded with bomb blast kit, consumable and oxygen".
Can you assist us with what is in the bomb blast

kit, what does that comprise of?
A. I cannot assist you there, I don't know what he was referring to. I'm not aware that we have a specific bomb blast kit.
Q. It sounds quite useful.
A. It sounds the sort of thing we might need once every ten years. Essentially, I'm not clear what that would be, because the items of equipment that you would require for a bomb are essentially similar to those that you would require for managing any incident that involved an explosion.
Q. It obviously meant something to Mr Selwood, and it may be that we can make an enquiry of him through those who represent the London Ambulance Service. But if it is the case that it's a particular kit which is comprised of items, medical items, which it might be thought particularly helpful in dealing with injuries of this nature, that's something which presumably could be of great assistance.
A. I would agree, but the items that, if I were making up a bomb blast kit, would be specifically to do with dressings, with tourniquets, and possibly with equipment to cover holes in the chest. So chest seals.
Now, currently, our paramedics don't have those available, so I can't imagine how we would have magicked

them up on 7 July.
Q. I suspect it's not fair to ask you any further questions about it. If we've got additional queries, we'll direct them perhaps through Mr --
LADY JUSTICE HALLETT: So they don't have available the chest seals; they do have available the dressings and the tourniquets?
A. They didn't have tourniquets, at that stage.
LADY JUSTICE HALLETT: No. They do now?
A. Yes, and --
LADY JUSTICE HALLETT: So it is the chest seals we're talking about?
A. We are introducing chest seals for our HART team, Hazardous Area Response Team.
MR COLTART: The second topic, which is in a similar vein. Could we have up [LAS48-19], please?
If we enlarge the top half of that page, this is the final page of the report prepared by Dr Ken Hines, the Gold medic on the day or the Gold doctor on the day. We looked at his report for a different purpose through Mr Killens, but he deals here with some medical issues at the end:
"Ear drum problems.
"The large number of walking wounded should probably have been checked to ensure ear drums were intact."

He refers to the preponderance of this at previous bomb incidents, but under "Recommendations", he says this:

"Immediate care doctors include an otoscope and ear pieces in their kit so that minor casualties who are not being transferred to hospital can have their ear drums checked if they are victims of an explosion. Paramedic practitioners could ... be taught this skill. The findings of ear drum damage can be a pointer to more serious lung or organ damage."

This might be important, might it not? Because, as we've heard from Colonel Mahoney, who was our bomb blast expert, one of the most pernicious aspects of blast lung damage is that it's not always the patients who have the most serious external injuries who have suffered from that very serious internal damage.

Now, is this, or do you agree it would be, a useful way of checking on those patients who may have suffered from that non-visible form of damage?

A. My understanding of perforation of the ear drum is that it may accompany blast lung, does not always do so, and that you may have perforated ear drums completely separate from any injury to the chest. So it's not a particularly good marker.

In terms of whether we have otoscopes available, at

that stage, we had emergency care practitioners who did carry otoscopes and were trained to use them, because they were often seeing patients with lower acuity problems; for example, ear infections.

We do not routinely train our paramedics to inspect the ear drum. It's a skill that takes a little bit of time, quite a bit of practice, and specialised equipment.

I would suggest that patients who potentially had blast lung would have other signs and symptoms over and above a perforated ear drum.

Q. Is it something that's worth considering further, though? I mean, it was quite a specific recommendation from Dr Hines that paramedic practitioners could be taught this particular skill. Is it something that merits further thought at the London Ambulance Service as to whether it might be a good idea?

A. I would suggest that anybody who has got a perforated ear drum should be screened and they should be assessed to see if there is any evidence of lung or abdominal injury, so they need a full clinical evaluation.

But I don't think that just routinely looking in people's ears is necessarily going to bring those patients to light.

LADY JUSTICE HALLETT: That should happen at hospital?

A. If it was an isolated ear injury, it could happen at their general practitioner's surgery. If they have any other signs, then they should be assessed in hospital.
LADY JUSTICE HALLETT: Sorry, in this situation, I think Mr Coltart is meaning. If you had a major incident, what you're saying is that anybody who's got a perforated ear drum, they should be, as it's put, "hospitalised casualties", it's when they're in hospital they should get this full screen?
A. Yes, I'm just trying -- there were a significant number of individuals who suffered from a perforated ear drum on 7 July who had no other injuries. To send them all to hospital for investigation would have put an additional load on those hospitals. I'm not sure that's indicated. Those individuals could be screened in slower time by their general practitioners. However, I would agree that if any of those individuals have any suggestion of more generalised injuries, they require hospital assessment.
MR COLTART: But it's to be done at hospital, it's not to be done as part of the initial -- either at the triage stage or at a pre-hospital stage?
A. You can screen them in -- if they have been -- if they're P3s, then they will be seen in hospital anyway, they may not go through the casualty clearing station.

So those who are seen in the casualty clearing station will inevitably be going to hospital.
I think what we're talking about is the apparently uninjured survivors who turn out to be deaf and have a perforated ear drum who can quite safely be dealt with in primary care. The P3s should be checked in hospital.
MR COLTART: I suspect I've taken that as far as I can, thank you.
LADY JUSTICE HALLETT: I think you have, Mr Coltart. Yes, Ms Gallagher?
Questions by MS GALLAGHER
MS GALLAGHER: Dr Moore, Mr Coltart and Mr Saunders have dealt with the vast majority of the issues on behalf of all the represented bereaved families. I have a specific matter which relates to a particular family that I represent and I've been instructed to raise that directly with you rather than going through Mr Coltart and Mr Saunders.
The family is a family whose daughter died at Tavistock Square and the issues raised there relate to more general issues.
Mr Saunders raised it yesterday with your colleague, Mr Jason Killens, so I think you may know what's coming. It relates to those who were believed to be deceased at the scene at Tavistock Square and being covered

without checks being made as to whether or not life was extinct.

Dr Moore, just before I ask you questions, both for your reference, my Lady, and also for your legal team, the London Ambulance Service legal team, the key references are yesterday: Day 71, Mr Killens at pages 66 to 68 of the transcript, and Day 54, 31 January, when we put these matters to Mr Paul Gibson, the Ambulance Operations Manager, and the reference is page 46, line 25 to page 49, line 8.

So first, Dr Moore, Mr Killens was asked whether, as part of the training or the manual or the protocol, there's any means of ensuring that someone checks whether life is extinct or confirms death before covering what appears to be a body. His answer was in two points. He said firstly:

"I find it highly unlikely, highly unlikely, that a body would be covered without checks taking place in the first instance."

His second point was:

"The only exception to that would be where the injuries were such that they were not compatible with life and, therefore, the body would potentially have been covered without those checks taking place."

Do you agree with both of those points made by

Mr Killens?
A. Yes, I do.
Q. As regards the first one, the highly unlikely issue, it's clearly a matter for her Ladyship, but I'd suggest that the evidence does not suggest that it was highly unlikely in Ms Hyman's case that she was covered without checks having taken place, because, in fact, the individual who appears to have covered her recognised that he couldn't recall checking her in any way, and there's no evidence confirmed by Mr Gibson that anyone from the London Ambulance Service checked her at a later stage.
So the "highly unlikely" phrase used yesterday by Mr Killens simply may not be appropriate. But that's a matter for her Ladyship.
But on the second point about injuries incompatible with life, is this referring to a situation where, for example, you have a headless body, so somebody who has extremely traumatic injuries? He wasn't sure where the source of that reference was, but we think we may have found it. It's [LAS772-154], please. This, Dr Moore, is from the UK Ambulance Service Clinical Practice Guidelines 2006.
A. Yes.
Q. On the left there -- so the headline is "Recognition of

life extinct by ambulance clinicians". On the left at the top, in the second paragraph, it says:

"... it is possible to identify patients in whom there is absolutely no chance of survival, and where resuscitation would be both futile and distressing ... and where time and resources would be wasted undertaking such measures."

A. Yes.

Q. Then a little further down the page, there's a list of seven conditions unequivocally associated with death, where resuscitation should not be attempted?

A. Yes.

Q. As far as you're aware, is that what Mr Killens was referring to yesterday?

A. I believe so.

Q. If we just look at what those details are, we can obviously see "massive cranial and cerebral destruction", so that would be a decapitation-type scenario. The second one "hemicorporectomy", is that a situation where the body below the waist is amputated; is that right?

A. Yes.

Q. Then there's other severe injuries listed there?

A. Yes.

Q. Do you agree with Mr Killens that it's only in these

exceptional circumstances that someone should be covered without checks being made as to whether life is extinct or whether there are signs of life?
A. I believe so. It's not part of our protocol to undertake covering of bodies. Now, clearly, that's a very sensitive issue, because one doesn't want to add additional distress to what must be a dreadful scenario, but I think we take our line here from the police who would regard generally covering a body as potentially interfering with the evidence.
So I'm not aware that, in this case, we undertook a check -- we undertook a -- we undertook covering of the body.
So I don't know how that happened.
In terms of, would I agree with that happening, if somebody was covered with a blanket or a cover of some sort, then what I would expect of our crews is that, if there was an obvious triage tag where the patient had been diagnosed as being dead, I would accept that. Otherwise, I would expect that a check would be undertaken.
Q. That's very helpful, Dr Moore. That comes to the next series of questions I wanted to ask you about, which is post-covering. So if, when the LAS crew arrive on scene and commence triaging, there are individuals who have

already been covered by others and there's no obvious triage tag on them, I was going to ask you what you would then expect to happen. So you'd expect a check to be undertaken?
A. Yes.
Q. And you'd expect that check to be undertaken by Bronze triage?
A. If there was a Bronze -- if there was a nominated Bronze triage officer there, yes.
Q. So not something that should wait until a later stage, like the arrival of Silver medic, for example, it should be taken as part of that initial process?
A. It would probably be undertaken as soon as it is feasible.
Now, I'm aware that the individual that you're -- whose family you're representing was very close to the entrance to BMA House, and the individuals who initially assisted her had to leave because of the potential for a secondary device.
Q. Yes. After the cordoning, that's correct.
A. So there is a time interval there and I think it is unclear as to whether there was any formal check undertaken because there was clearly a degree of confusion and a number of doctors assessing the individuals who were outside BMA House as well as those

who were being treated within the area of BMA House.
Q. That's, of course, right. And, as we understand it, she's covered at the same time as the torso of the bomber, which would fall into the category that you've described earlier from that document we brought up on screen.
Is there anything in the protocol or the manual specifically about this issue, so arrival on scene and bodies already having been covered? We don't understand that there is.
A. No.
Q. Obviously at Tavistock Square it was particularly important because it's a scene at which there were multiple civilians assisting, so not just doctors from BMA House, but also non-medically qualified staff and passers-by until the cordoning.
So do you think it would be sensible for specific guidance to be given in relation to major incidents on ensuring that any bodies already covered at the time of arrival of an LAS crew are checked, say, as soon as reasonably practicable or, to use your phrase, as soon as feasible?
A. Yes, but I think that has got to be seen in the context of the whole environment where clearly there are some people who are alive, very clearly alive, and requiring

triage.
Certainly the major incident policy does require that, where possible, a doctor and a police officer go round and check the scene and confirm that life is extinct. But that is often at a later stage, and there's clearly a tension between individuals where somebody, rightly or wrongly, has undertaken an assessment and decided that that patient is no longer alive as to patients who are quite clearly alive and require urgent intervention.
MS GALLAGHER: Of course. The indication is, in relation to Ms Hyman, that it's not done at a later stage in the day either. Her body is recovered the next day, and that's the next stage we have in the chronology after her being covered.
I don't think there's anything further, I'll just check with my instructing solicitor. Thank you very much, Dr Moore, that was very helpful.
LADY JUSTICE HALLETT: Thank you, Ms Gallagher.
Ms Ormond-Walsh?
Questions by MS ORMOND-WALSH
MS ORMOND-WALSH: Thank you, my Lady. I ask questions, Dr Moore, on behalf of Barts and the London NHS Trust.
I just have a couple for you.
First of all, to make it clear, on Monday, I believe

Dr Davies wasn't intending to criticise any of the triaging that the London Ambulance staff did on July 7. He was speaking about triaging in a general sense, so I just wanted to let you know that, Dr Moore.

A. I understand that.

Q. You have given evidence quite optimistically in relation to the accreditation by the GMC of the pre-hospital medical sub-specialty. I believe possibly -- I don't have Dr Davies with me today, but the tenor of your evidence is more optimistic than Dr Davies'.

Have you had any confirmation from the GMC that that is definitely going to happen?

A. No, but I understand that there is confidence that the resubmission will see stage 2 being completed.

Q. Are you aware of any more information that leads you to be so confident that it will go through?

A. Having had a discussion with the chair of the pre-hospital emergency subcommittee last night.

MS ORMOND-WALSH: I'm grateful. Thank you very much.

LADY JUSTICE HALLETT: The pre-hospital emergency subcommittee. Right.

Mr Watson?

Questions by MR WATSON

MR WATSON: Thank you.

Madam, one comment and one question. Mr Coltart

raised today the phrase "bomb blast kit" and I have no instructions, but we're seeking information as to whether we can clarify that, but that will have to be later.

One question only. The use of resources to triage as opposed to treat, you were asked by Mr Saunders. I presume that -- can you assist my Lady -- the contemplated diversion of resources, even up to 8 or 9 people to triage, if this situation were to happen today, would be something carried out in the context of a major incident deployment; yes?

A. When I was talking about 8 or 9 people, they weren't to triage. They were to undertake the designated roles set out in the --

LADY JUSTICE HALLETT: Including parking and clearance?

A. -- set out in the major incident plan.

MR WATSON: Triage and organisational structure?

A. So Bronze loading, Bronze clearing, Bronze safety.

Q. Yes, and would that kind of deployment be, in your view, feasible and comfortable in the context of a major incident declaration which, as Mr Killens told us, would now have a predetermined response of 20 ambulances and 10 officers and managers?

A. Yes.

Q. As he told us, and as is, I think, set out in your joint

statement in these respects at page 93,
paragraph 16.1.2?
A. Yes.
MR WATSON: Thank you. Thank you, my Lady.
LADY JUSTICE HALLETT: Thank you very much. Dr Moore, that has been extremely helpful to me, thank you very much indeed, and I hope that your confidence is well-placed. It may be I will be hearing submissions as to whether I can assist in any way. But thank you very much for all the work you do. It is obviously extremely important work.
A. Thank you very much, my Lady.
LADY JUSTICE HALLETT: Yes, Mr Keith?
MR KEITH: My Lady, may we now return to the London Fire Brigade and may I invite you to call former Deputy Assistant Commissioner Payton, please.
MR ALAN GEOFFREY PAYTON (affirmed)
Questions by MR KEITH
MR KEITH: Good morning. Could you give the court your full name, please?
A. Yes, Alan Geoffrey Payton.
Q. Mr Payton, you are now retired from the London Fire Brigade. I think you retired in May 2009, but were you formerly the Deputy Assistant Commissioner for mobilising?

A. That's correct.
Q. You were based, we believe, at the Brigade Headquarters?
A. Yes.
Q. You had many, many years experience with the Brigade and you had been in that particular post for seven years?
A. That's correct.
Q. I'd like to start, please, if I may, by asking you to describe for my Lady something about the premises occupied by the Brigade, in particular, the differences between the Brigade Control mobilising centre and the Resource Management Centre, because your statement refers to those two particular places, and we know that one -- the Brigade Control -- is in the Docklands and the other one -- the Resource Management Centre -- is in Stratford. What are the differences?
A. The building that's in Docklands receives the 999 calls from members of the public and from other emergency services and processes the calls to the dispatching of appliances and officers to incidents.
The centre at the -- the Resource Management Centre, which is based at Stratford, is there to -- we've got a second control room which is a fallback control room should anything mean that we've got to evacuate Docklands, and that's in the upstairs of the building. Downstairs, the Resource Management Centre deals

with the management of personnel at fire stations and, also, at major incidents, it acts as a gold room for senior officers to coordinate information from the incident ground and also from the main control room.

Q. I think we've seen in the paperwork some reference to the fact that, formerly, before June 2005, there were a number of different places -- Gold control, the fallback centre and something called satellite Control Centres -- but were they then all brought together into this single premises, the Resource Management Centre, in Stratford?

A. Yes, it basically made better use of resource and meant that, when we had a major incident, that we had more people available in one place and it also -- the available space for us to have a Gold room there was greater than when we was in our old headquarters building which we had to move from.

Q. So that rearrangement of the premises and of the functions was timely in the light of the events of July 2005?

A. It was.

Q. You, yourself, you record, were personally mobilised and at the Brigade Control in the Docklands at 09.10. But you then transferred to the Resource Management Centre at Stratford?

A. Yes.
Q. Why was that?
A. I met with the Deputy Commissioner. I was at Southwark at a training event, and it just happened that the Deputy Commissioner and some of the Assistant Commissioners were in the same building.
After the discussion we had there, it was decided that I would first go to Brigade Control, as I'm responsible for that as well.
I went there and made sure that I'd got senior officers in attendance, which is the principal controller and the assistant principal controller for Control, made sure that there was no major problems at all with the workings on the day, familiarised myself with what had gone on up to date, and then to blue light from there after half an hour, after I was convinced that everything was in place. Blue light then across to Stratford, where I stayed for the remainder of the day to run the Resource Management Centre along with the Assistant Chief Officer.
Q. Forgive me, that's very helpful, but my question was: why did you go to the Resource Management Centre in Stratford?
A. Because that's part of my procedure for an incident of this nature.

Q. Right. Because of its fallback utility or not?
A. No, because the Resource Management Centre would be setting up the Gold control room and, before I'd left Southwark, I'd actually made a phone call and asked them to start getting that ready. It's something which is in a hot standby anyway, but it was basically to start getting officers in, so that, by the time I did get there, that we'd already set the procedures in motion and we wasn't wasting any time.
Q. So in essence, you were mobilised to go there in order to be able to set up the Gold control further, it was already in a standby position, but to progress its setting up lest it were to be needed?
A. It was definitely needed, because the conversation with the Deputy Commissioner before I left Southwark was that -- to start getting the room ready. So that basically is bring in the specialised senior officers to start using the room.
So when I get there, not only do I know the procedures for setting the whole thing in being, but I'm -- I will also form part of that team.
Q. May I just ask you one or two questions, then, about the Resource Management Centre in Stratford, because there's been some reference in the course of the evidence to it? There's been some suggestion in the documents

disclosed by the London Fire Brigade that, at one stage, slightly conflicting messages were given to individual officers depending on whether they phoned in to the Control Centre in Docklands or the Resource Management Centre in Stratford, and there is, I think, an email which refers to, particularly in the context of King's Cross, a difference of approach as to whether or not Fire Brigade vehicles and officers and staff were told to go to Euston or King's Cross.
Were you aware of that at the time, or have you been made aware subsequently of that?
A. I've been made aware of it subsequently.
Q. Do you know why that came about, that for some time -- not, I think, a very long time -- one or other of the two centres was slightly behind the curve in giving the most up-to-date information to Fire Brigade officers as to whether or not the call-out was to Euston Square or, as subsequently it transpired, in fact King's Cross London Underground station?
A. Yes, I am aware of the reasons. It needs to be clear that there's two different parts to that building. The Resource Management Centre was dealing with the information-gathering. The particular part that you're talking about and the officers that were involved with the paging side of it was upstairs in the fallback

control.
London's the only control room in the country which has 24/7 fallback control and there's two officers in there all the time, and they are senior control officers.
What happened on the day was, because of the amount of calls that were coming in and the amount of work that was being generated, those two officers formed part of the team. It's the first and only time that that has happened in the London Fire Brigade since I've been there over 30 years.
And basically, the Control Commander who was based at Docklands had asked them to take calls on the live system to -- for people which were phoning in for information where they were being paged to incidents.
On that particular event that you're talking about, further information had come in to Brigade Control at Docklands which hadn't got back down to the two people which were at Stratford in the fallback control. So there was a delay in that information getting across to them.
Q. Right. Is that delay, or is the possibility of that delay -- does it still exist or has this issue, a possible mismatch between the Brigade Control and the Resource Management Centre, now been addressed?

A. It's been addressed partially because there's video conferencing between the main control room and the fallback control. The problem that you've got is that if -- it's a risk that, if you use the people that are at the fallback control, the information is not going to be as up to date as it is in the main control, because information that comes out is usually shouted across the room sometimes, if it's relevant, to make sure that everybody's aware. To actually get that information to the fallback control can take a few minutes.

Q. You were alive to the problem, or rather you were alive to the problem when you retired from the London Fire Brigade?

A. Yes.

Q. Assistant Commissioner Chidgey in particular gave evidence to my Lady that he'd phoned in in response to a pager.

A. Mm-hmm.

Q. He had, as is normal, called in once he'd received the pager message and he did so at 9.20 and was not, in fact, informed by the person to whom he spoke, I think at the fallback centre, that the pager message referred to an explosion, and he agreed in answer to a question from my Lady that it was not desirable that he hadn't been brought fully up to date with the information then

available to the London Fire Brigade when he'd called in.

May we presume that the systems now in place ensure that the individual operators, whether they are in the Brigade Control or in the Resource Management Centre, are in a position to provide the most up-to-date information to officers when they call in in response to pager messages?

A. They both get the same information there.

MR KEITH: Thank you very much for that.

LADY JUSTICE HALLETT: So why did you say the problem had only been partially addressed? You used the word "partially" earlier.

A. It was because it was to do with the making sure that the information which was in the main control room was as up to date as the information in the fallback, and because you're relying on a videolink and you've got to be actually watching the screen all the time to be able to get that information, I wouldn't be able to say that 100 per cent of the time that they've got the same information, and that's why we try desperately not to use that fallback facility and we try to keep all the operational incident within the main control room, because there is -- you've got a Control Commander there and they -- basically, they do shout across the room

with up-to-date information and there are times where he hasn't got that amount of time to be able to quickly then make a phone call to the other control staff.
LADY JUSTICE HALLETT: So the fallback control room really ought to be an absolute fallback in times of dire emergency --
A. Yes.
LADY JUSTICE HALLETT: -- because there's still a possibility of their not being quite as up to date all the time?
A. Yes, my Lady. It's basically there for -- if we have to evacuate our main control room. And we have done it on a number of occasions, either partially or fully, evacuate to the fallback, which means that we've got continuity of service all the way through, which is why we have two people there all the time.
But for operational purposes, it is not -- it's not desirable to use it. The reason it was brought in on that day was to try to relieve some of the operators to take 999 calls rather than be tied up with trying to send officers out.
LADY JUSTICE HALLETT: So you couldn't have terminals, for example, that showed in the fallback control room the same information that --
A. It does, my Lady. It shows exactly the same

information. It's the same live system. It's the information, though, that you're being given by the Control Commander, because there's -- it's not one Control officer dealing with one incident. Once that incident has started to progress, it could be going to three or four different people. There could be information coming in on the radios, which is relevant to information that's going to be given to the Control officers.

LADY JUSTICE HALLETT: And shouting across the room, as you mentioned earlier?

A. Yes.

MR KEITH: The answer, Mr Payton, then, leading on from my Lady's question is that, in future, the -- and presumably since 2005 -- the Brigade has been more aware of the necessity to ensure that, when officers responding to operational pagers call in, they speak to the operators who actually are in the control room rather than the fallback operators in the fallback centre?

A. As I said earlier, it's the one and only time that we've resorted to that, and I couldn't say that they wouldn't resort to it again. It's a balance between how many calls that you've got coming in to the officers that you've got available. It's not something that we want

to do. It was something which, over the period of that day, lessened the number of detailed issues that the Control officers have to deal with being done in the main control room.

Q. All right. At page 2 of your statement, you set out some of the details of how the Brigade Control in the Docklands worked and, of course, we understand that the Fire Brigade's response to the events of 7 July was operated and commanded through the Brigade Control in the Docklands.

A. Yes.

Q. There are a minimum of 14 Control officers on duty. I think there are, in fact, 16 physical positions in all, 16 seats, and there is the possibility of five more Control officers being put into what's called a continuity room --

A. That's correct.

Q. -- which is a room adjacent to the main control room?

A. Yes.

Q. This is all, of course, in addition to the fallback position at Stratford?

A. Yes.

Q. Of those Control officers, the 14, a certain number of them will be supervisory. Is that correct?

A. Three will be supervisory.

Q. Three of them will be dealing with the radio, the main scheme radio, of which my Lady heard yesterday.
A. Yes.
Q. And we heard there were separate geographical areas on the main scheme radio, separate channels?
A. Correct, yes.
Q. So there are three radio control operators for the three geographical areas, one each?
A. Yes.
Q. Then the remainder deal with calls from members of the public, other emergency services and so on?
A. Yes.
Q. On 7 July, paragraph 14 of your statement, page 5, coincidentally there were, in fact, 16 Control officers on duty, were there not?
A. There were.
Q. That was fortunate?
A. It alters. It depends on the time of year. A certain number are allowed to take leave at any one time. Your minimum is 14, but to have 16 on duty is not uncommon.
Q. There is some suggestion in the documentation that, after 7/7, there had been some debate about reducing the minimum level of supervisors from three to two. I think there was a reference in an email from the Commander of the blue watch, Mr Hughes.

In light of that issue being raised, can we be assured that the number of supervisors and the number of radio operators cannot fall below an irreducible minimum?
A. The number of officers at the back of the room, the part which was referred to by Mr Hughes, it wasn't physically having the third person removed from the room; they were just being given a different role, so they wouldn't have been sitting at the desk rather than -- they would still have been on duty, though. So it was more of a -- that they were available, if required, not sort of being tied to the desk as such.
Q. Right.
A. And as far as the radios are concerned, since I've retired, that has changed and I think that they're looking at -- they'll be reducing that down in numbers because the amount of radio traffic will be reduced.
Q. Why is that?
A. Because of the introduction of a new Motorola radio system.
Q. On the main scheme radio?
A. Yes.
Q. The statement goes on to give some more details, at paragraph 18, of the individual functions carried out by those Control officers present in the room, and I think

you've set out there how many were dealing with emergency control, how many were dealing with pager duties, how many were dealing with the radio and so on?
A. Yes.
Q. So the way in which it worked was that, as mobilisation calls were made, not only appliances, but also Commanders and senior managers received pager messages and they would then all have to call in and say, "What's going on? Where am I needed? Give me the information."
A. Yes.
Q. So specific Control officers were detailed to deal with such --
A. No, not specific. As far as --
Q. A number were detailed to deal with such calls?
A. Yes.
Q. All right. Were certain steps taken to recall other staff such as people, staff, who were already on duty, but elsewhere in the building or other Control staff who were not in fact on duty?
A. Yes, the first state of recall is there's a recall signal which means that any officers who are on duty for the control room itself are recalled, and they're expected to be back in the room within 30 seconds. That was done. And then, following that, a loudspeaker tannoy message was put out to all control staff in the

building, which would have been staff which are trained to use the system but have other duties like training and technical support, they were then recalled back into the room as well, and they took up positions in the continuity room when it was the -- the ward area was opened up so it became one big control room.

Q. The London Fire Brigade response to the draft report prepared by the London Assembly 7 July committee referred to the Principal and Assistant Principal Control officers, the two main Control officers in the room, as having been paged to notify them of the situation and to request their attendance in the room.

A. Yes.

Q. May we take it that they responded to the pagers as quickly as they were able and returned to the control room?

A. Those two officers were at the same training event as myself and blue-lighted straight back to the control room.

Q. Some of the debrief materials refer to concerns that the main scheme radio channel -- we heard a little about this yesterday -- became quite congested. Did you find that having one radio operator on each of those geographical channels was sufficient? Were each of the radio operators able to deal with the volume of radio

transmissions that were being received?
A. At one stage, one of the radio channels did become congested, but it wasn't for any major length of time and, also, you can't have two operators working the same channel at the same time. You can only have one at a time, and that's why the Brigade runs very strict rules about radio protocols.
So if anybody had had a priority message at that time, they can send their priority message over the top of whoever's sending the message and that will be -- that will take priority of call and --
Q. How is that done? It presumably has to be routed through the same radio operator because they're on the channel already?
A. Yes, basically, it can work either way, from the Control officer to an appliance or from an appliance to the Control and, at the time, all the officer had to say was their radio call sign, priority and then the Control officer would put whoever was on the radio at the time, they'd put them on hold and they'd tell the person with the priority to go ahead.
Q. So there was a way of communicating critical information to the persons responsible for managing the response in the control room?
A. There was.

MR KEITH: My Lady, is that a convenient point?

LADY JUSTICE HALLETT: It is, Mr Keith, thank you. 2.05, please.

(1.00 pm)

(The short adjournment)