

# MASS FATALITY

## WHEN BUILDINGS COLLAPSE

### PT2

Following February's feature on planning for major incidents from a mortuary perspective, here we look at the issue in relation to pathology. This month, we hear from three people involved in last year's disaster training exercise – the biggest in 150 years.

All laboratories providing acute services to the NHS have major incident plans. These carefully worked through plans detail the laboratory, team and individual's responsibilities in the event of a major incident. They involve an element of second guessing what, who and when resources will be needed and then attempt to build these into practice, ready for any eventuality. The overall objective is to provide the hospital and laboratories with reassurance that in the event of a major, mass casualty, event every cog in the wheel will work as expected, to deliver the right standard of care at the right time, independent of demand and time of day.

David Wells, Viapath's Operations Director for Reference Services, explains: "Having sat through many desk top exercises, it was a rare opportunity to be able to run through a full major incident, not only with more than one agency, but also 'live' with a fully operational laboratory and hospital. When the Viapath Laboratories at St Thomas' hospital were approached to play their part in this exercise, Viapath's Blood

Transfusion team jumped at the chance."

Jess Child, Resilience Manager at Guy's and St Thomas' NHS Foundation Trust, picks up the story. "Exercise Unified Response (EUR) was a Europe-wide exercise run by the London Fire Brigade in March 2016. It provided the opportunity to test the Trust's Major Incident/Mass Casualty plan with a live simulation."

### The scenario

The exercise was based on a mass casualty incident, caused by a building collapse at London Waterloo train station, resulting in buried Tube trains and requiring casualty extraction by urban search and rescue teams.

This high-profile exercise was attended by all of London's emergency services. The exercise was set in the disused Littlebrook power station in Dartford, which was remodelled as London Waterloo station with 2,000 volunteers participating.

The scenario was based on Queen Elizabeth House on Waterloo Road collapsing onto the Waterloo Tube station ticket office, platform and eight underground train carriages. Over four days of live play, 1,100 casualties were

extracted from the scene and flowed into a notional hospital and disaster victim mortuary.

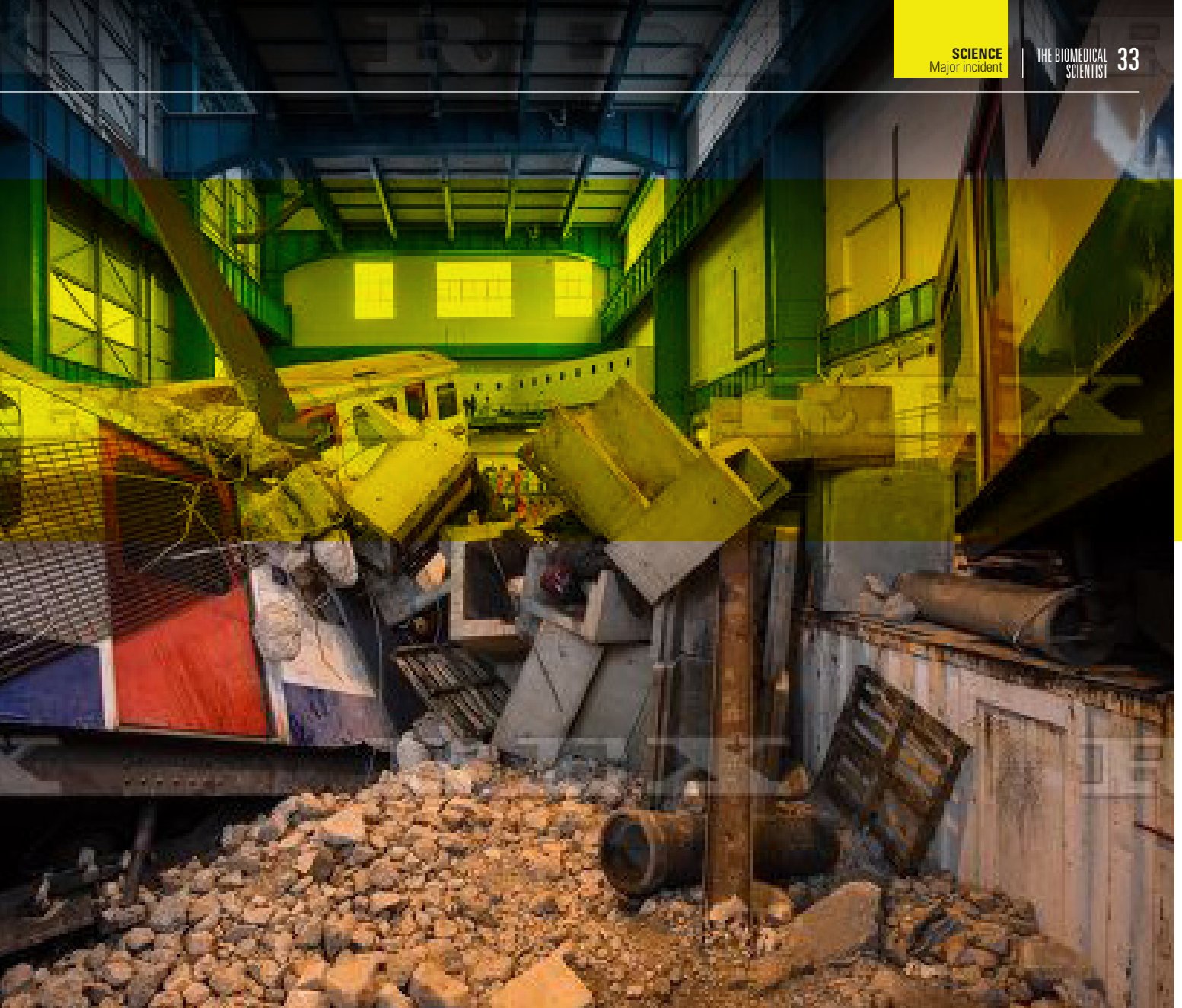
As Jess goes on to explain: "The Resilience Management team at Guy's and St Thomas' developed the hospital response to the exercise scenario over two months. The exercise provided a fantastic opportunity for the trust to practise, in real-time, the procedures for managing a major incident and to extensively test level of preparedness."

As part of the planning, the Resilience Management Team worked with key players, including theatres, critical care, site management and Viapath's pathology laboratories to ensure all aspects of the trauma pathway management were involved and their corresponding action cards tested and validated.

### Realism was key

On 2 March a group of casualties, with agreed injury loading, were played by paramedic students from the Institute of Pre-Hospital Care at London's Air Ambulance/Queen Mary's University London, and flowed into the Emergency





Department (ED). Six core patients were picked for evaluation and other patients were also added to the scenario. These included patients requiring code red blood transfusion, abdominal trauma, pregnancy and attending uninjured 'relatives' who required support.

Realism was key, so the casualties had trauma injuries simulated with prosthetics applied to simulate head and abdominal injuries, pupil dilation and severe haemorrhage. The air of realism was further achieved by working closely with the Trust's Simulation and Interactive Learning Centre. Their role was to facilitate the use of patient monitoring to simulate clinical observations, which required the clinicians to make real time decisions to manage clinical presentation. This

included liaising with other clinical services to manage the changing condition of some of the patients.

Jess' Resilience Management team played a key role in maintaining continuity of ED service during the exercise, with the lead facilitator based at the ambulance doors to maintain exercise timings and pause live play when a real emergency patient required access. The main ED aspects of play took place in the clinical area, depending on the patient's triage score, as the patients all had significant injuries this took place in the resuscitation and majors areas.

It was very important to not disrupt the normal activity of ED, and robust communications were key in this process. All ED patients were informed that a live exercise was taking place and walk-in

patients were given leaflets. The Resilience Management team also worked closely with the trust communications team to ensure information about the exercise was disseminated appropriately, including use of a live Twitter feed.

### **The blood bank**

As part of the planning team, Tim Maggs, Viapath's Blood Transfusion Laboratory Manager at Guy's and St Thomas', explains the laboratory's role. "We were approached about taking part and were really keen to fully test the laboratory's ability to manage the diagnostic and transfusion demands during a major incident. There was no attempt to alter the 'business as usual' level of processing and samples from real patients and these continued appropriately. Continuous

review of the department's ability to cope was undertaken by observers to ensure patient care wasn't compromised.

"In essence, the blood bank's initial response in a major incident involves the deployment of a 'mobile blood bank' containing boxes of universal donor blood to the ED department, which is managed by the nominated Blood Transfusion Coordinator. This allows instant dispensing of universal donor red cells for immediate red cell replacement, and importantly, a mechanism through which all subsequent orders for blood components are placed in the ED. The Transfusion Coordinator liaises with the central blood bank for supply of plasma and platelets and also for re-supply of universal donor blood if required. In the meantime the blood bank was re-deploying teams, reviewing and replenishing stock and clearing any current blood requests to prepare for patients as they flowed through to theatres and intensive care units. There is already an established 'Code Red' process in the trust providing 'whole blood' replacement to the bedside in 10 minutes.

"In order to make the exercise as real as possible, a ghost blood stock was created on the non-live environment of the laboratory informatics system (LIMS) using the current stock holding. Units of red cells, plasma, platelets, and cryoprecipitate were photocopied and the 'paper' units deployed. As requests came in the paper units were issued, boxed and crashed to the requesting locations. During a busy night in the blood bank you could get three code red patients simultaneously over a 12 hour shift. During the exercise we were exposed to six simultaneous code red patients – all before lunch time!"

## The debrief

Tim explains the debrief process. "Although the laboratory responded extremely well, there were useful learning opportunities for the team involved on on



## EXERCISE IN NUMBERS

# 150 YRS

Largest disaster training exercise in 150 years

# 2000

2000 volunteers took part, 1100 casualties  
More than 70 partner agencies

# 4 DAYS

4 days of simulation

the day and relating to wider process, equipment and environment evaluation.

"Once the exercise had been stood down, we gathered our team for a debriefing session. From a blood bank point of view the most challenging aspect of a major incident is clear and concise communication between the clinical teams and the laboratory and establishing a single point of contact. While within the laboratory, keeping track of urgent requests for multiple patients is extremely challenging."

The Resilience Management Team also captured patient experience feedback during the exercise. It is the first time this process has been used in a major incident exercise. Every 'patient' in the exercise was followed through their journey by a clinical facilitator who audited the patient's care and met with them to discuss their experience at the end of the exercise. Feedback was very positive with patient dignity, reassurance and clear explanations of what was happening fed

back as being well managed. It was noted that the ability of the trust to run the exercise live, through the working ED with realistic casualty simulations and with control rooms fully operational, added significantly to the understanding of major incident response, command and control and trauma management.

The process has built confidence among clinical staff that responding across a range of specialisms with multiple casualties can be effectively managed by all teams – imaging, diagnostics, medical specialties and support services, such as security, portering and housekeeping.

David Wells says: "From the laboratory's point of view, this exercise was a visual interpretation of our major incident plan, bringing it to life, showing who we would be liaising with, how often, and when.

"It also demonstrated how our processes would work, what the impact would be upon the routine service, and most importantly, how effective we would be in the event of a mass casualty event.

"Working with our partners we have found it incredibly reassuring to be able to put our plan into action and thoroughly test it, it's the plan that we all hope we will never need to use, but if we do, we know we are ready."

He concludes: "As one of the observers during the event, it was humbling to see the professionalism, dedication and aptitude of the individuals who might one day save your life." **BMS**

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