The bomb attack in Oslo and the shootings at Utøya, 2011

KAMEDO report 97

Socialstyrelsen

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The main task of Kamedo is to send expert observers to places in the world affected by large-scale accidents or disasters. The observers are sent to disaster areas at short notice and collect relevant information by contacting key individuals, principally on a colleague-to-colleague basis. The information they obtain may only be used for documentation purposes. There are four main areas which are studied first and foremost: the medical, psychological, organisational and social aspects of disasters.

Results from the studies are published in Kamedo reports that are listed on the National Board of Health and Welfare's website. As of report number 74 the full reports may be downloaded, but for the earlier reports only the summary is available on the website. From report number 34 and onward they have a summary in English and as of report number 55 these are downloadable from the website. From number 89 and onward the whole reports have been translated into English.

The authors are responsible for the contents and conclusions, the National Board of Health and Welfare draws no conclusions in the document. The experts' compilation may, however, be used as a basis for the Board's standpoint.

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Preface

Acts of terror often entail major challenges for healthcare as there may be many serious casualties. Incidents of an antagonistic nature can involve further complications since they may place particular demands for collaboration between the parties responsible for the management of such incidents. In the aftermath of a traumatic event, the high number of survivors and bereaved relatives constitute a serious challenge to society's ability to provide psychosocial support. This report studies both of the incidents that affected Norway on 22 July 2011 and focuses on investigating how the Norwegian healthcare services and psychosocial support services managed the situation. The report also contains a discussion of Norway's management of the incident and how Sweden would have managed a similar incident.

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Abbreviations and definitions

AMIS

Emergency medical information system - IT support tool used, among others, in connection with AMK.

AMK

Emergency medical communications centre – communications centre which receives emergency calls regarding medical conditions, raises alarms and directs ambulances and helicopter-ambulances (equivalent to the healthcare section of the Swedish SOS centres).

AUF

Arbeidernes Ungdomsfylking – the Norwegian Labour Party's youth organisation.

Brannvesenet - The Norwegian Fire Service

The Norwegian equivalent of the Swedish municipal fire and rescue services.

Distriktspsykiatriske sentre (DPS) - District Psychiatric Centre

A centre whose primary task is to provide psychiatric and polyclinical medical assistance, ambulance services and a number of short-term hospital beds within a specific geographical catchment area.

Debriefing

A structured review of a potentially traumatic incident with supervisors and persons involved in the incident. Conducted shortly after the incident with the aim of minimising stress reactions and speeding up the recovery process.

DSB

The Directorate for Civil Protection and Emergency Planning - the central authority involved with emergency preparedness in Norway.

Fagleder helse - Medical Incident Officer

On-scene doctor who prioritises and decides on medical measures (equivalent to *medicinskt ansvarig* in Sweden - Medical Incident Officer).

Fylkesmannen - County Governor

The representative of the State in the Norwegian counties. The County Governor (fylkesmannen) has the task of ensuring that decisions made by the government and Parliament are followed. Furthermore, the County

Governor is the supervisory authority for, among others, healthcare and medical services. The County Governor could be described as the equivalent of the Swedish county administrative board.

Helseforetak (HF) - Hospital Trusts

State-run operations that provide specialist care. Can be described as groups of hospitals and their nearest equivalent in Sweden would be the county councils (cf. regionala helseforetak - regional health trusts).

ISS/NISS

Injury Severity Score (ISS) is an international classification system for describing the degree of severity of multiple injuries. The ISS scale goes from 0 to 75, where a higher value corresponds to more severe injuries. New Injury Severity Score (NISS) is a modified variant of ISS (and also employs a scale of 0 to 75).

Kommunal legevakt - Municipal Medical Services

A type of public emergency or primary healthcare emergency service which the Norwegian municipalities are responsible for providing (cf. Emergency Department, Oslo University Hospital).

Kripos

National unit within the Norwegian police for combating organised crime and other serious crimes (cf. the Swedish Rikskriminalpolisen - The National Bureau of Investigation). Kripos is also responsible for identifying the dead in connection with major accidents and disasters.

Luftambulansetjenesten ANS - Air ambulance service

State-run company with the responsibility for airborne healthcare and medical ambulance resources, both helicopters and aeroplanes. The company is owned by the Norwegian regional health trusts (cf Norsk luftambulanse AS - Norwegian Air Ambulance).

MIMMS

Major Incident Medical Management and Support – course concept for training healthcare and medical staff in the systematic and structured handling of serious incidents.

Norwegian Centre for Violence and Traumatic Stress Studies, NKVTS

A national centre which has the task of developing and disseminating knowledge concerned with violence and traumatic stress. Its aim is to prevent and reduce the medical and social consequences for individuals who have been exposed to potentially traumatic incidents.

Norsk luftambulanse AS (NLA) - Norwegian Air Ambulance Group

The major operator of air ambulance services.

Operativ leder helse - Healthcare Leader
The paramedic/emergency medical technician (EMT) in charge of the medical resources at the site of a major incident in Norway (corresponding to Ambulance Incident Commander/AIC in the U.K.

Oslo skadelegevakt - Emergency Department, Oslo University Hospital
An emergency department which, organisationally, belongs to the University Hospital at Ullevål, but which is geographically located to a building in the centre of Oslo (the same premises as the City of Oslo's primary health care centre for emergencies). This emergency department is responsible for the emergency treatment of less serious injuries and is open 24 hours a day, every day (cf. Municipal Emergency Services).

Paramedic
The highest skill level for the Norwegian ambulance service (also incorporating staff with training corresponding to emergency medical technicians, EMT).

Primærhelsetjenesten - Primary health service
Primary health care is, in Norway, the responsibility of the municipality.

Regionala helseforetak (RHF) - Regional health trusts
Regional organisations owned by the State of Norway, that have the task of running hospitals that provide in-patient healthcare services. Norway is currently divided into four regional health trusts which, in turn, are further divided into "hospital trusts". The RHFs are the closest equivalent to the Swedish sjukvårdsregioner - healthcare regions.

Regional Resource on Violence, Traumatic Stress and Suicide Prevention (RVTS)
Regional centres with the task of promoting health and quality of life in individuals who have been subjected to violence, sexual assault or traumatic events. The centres also have tasks within the areas of refugee health and suicide prevention. RVTS contributes to regional skills improvement through teaching, supervision, consultation and networking.

Triage
The sorting and prioritising of patients requiring medical care.

Summary and experiences

Summary

On Friday 22 July 2011, at 15:25, an explosive charge detonated in the government district of central Oslo. The bomb was extremely powerful – eight people were killed, at least 90 were injured and buildings in the vicinity of the blast suffered extensive damage. Later that same afternoon, a man dressed as a policeman walked onto the island of Utøya, where the Norwegian Labour Party's youth organisation was holding its summer camp. Once on the island, the man started shooting indiscriminately. When he was later arrested by the police, 69 people had been killed and 65 had been injured. The majority were children or teenagers.

The events of 22 July involved major parts of Norwegian society. The large number of injured required great efforts from the medical services and there was a major demand for psychosocial support for the many survivors and their relatives, as well as for the relatives of the deceased. Furthermore, the events triggered enormous interest in the media to which the parties involved were forced to respond.

Healthcare

Norway has well-developed medical crisis and emergency preparedness plans, at the national, regional and hospital level. The plans are based on the principles of responsibility, proximity and similarity.

On 22 July, the regional preparedness of the Helse Sør-Øst RHF was tested by the disaster. Disaster preparedness was activated extremely promptly following the explosion in the government district, even if it was not initially clear what had happened. Despite it being the holiday season, the healthcare services managed to mobilise the personnel required relatively quickly. This was facilitated by the large number that quickly volunteered for duty and by the fact that the incident coincided with the changeover of staff between daytime and evening shifts.

Oslo has a well-developed emergency medical system (EMS) providing prehospital care. Apart from running emergency ambulances staffed by paramedics and EMTs, Oslo EMS also runs an ambulance with a physician as well as a special command and control vehicle. Both of these were in the vicinity of the government district when the bomb detonated and were therefore quickly on the scene. Highly qualified medical management could therefore be rapidly established. The emergency medical dispatch centre in Oslo, which receives medical emergency calls and alarms and directs ambulance transportation, was affected by technical problems concerning several IT-based support systems. Despite this, by using rehearsed back-up procedures, it was possible to quickly mobilise sufficient ambulances so that the most seriously injured could be transported to hospitals without delay.

The incident scene work of Oslo EMS staff was backed up by additional medical staff arriving by car from, among others, the Norwegian Air Ambulance Service's base at Lörenskog, outside of Oslo. Communication via Nødnett (digital system based on Tetra standards) functioned relatively well, but certain communication problems were encountered with the analogue radio network which was used by some of the ambulances sent in as reinforcement by neighbouring municipalities.

The emergency department “Skadelegevakten” located relatively close to the site of the explosion, was not alarmed in accordance with the disaster plan, but staff quickly became aware of the bomb explosion regardless. Many who had finished their daily shift soon returned to work and there was therefore plenty of staff available to receive the injured that were transported to the emergency department, or those who had arrived under their own volition for the treatment of less serious injuries. “Skadelegevakten” admitted many people with less serious injuries, which lightened the load considerably for the University Hospital at Ullevål which could then focus on the more serious injuries.

Bearing in mind the nature of the incident, it was suspected at an early stage that further attacks might occur. This means that there was a high level of preparedness and access to major resources in Oslo when the alarm on the shootings in Utøya was received.

The prehospital efforts carried out in conjunction with the massacre at Utøya were characterised by difficulties presented by the local geography, uncertainty regarding the safety of the personnel and problems with radio communication in the area. However, the excellent access to helicopter ambulances meant that anaesthetists and other personnel familiar with prehospital work could be mobilised rapidly, as could the extra equipment necessary. When the injured began to be evacuated from the island, it was therefore possible to quickly make a qualified assessment of their condition and transfer them further, either by land ambulance to the local hospitals or by helicopter to the University Hospital at Ullevål.

The emergency care provided at the University Hospital at Ullevål was, from the very start, organised in an efficient way. Within 15 minutes, all non-disaster patients had been evacuated from the emergency department, which had also been prepared to receive a large number of casualties. Additional personnel were quickly allocated to the various trauma teams by one of the senior trauma surgeons. Another experienced trauma surgeon conducted triage of the injured in the entrance to the emergency department and then directed them to the various treatment rooms. Every injured person was examined and treated by a trauma team without any delay. Decisions regarding the patients that required emergency operations were made at an early stage. Approximately two and a half hours later, the casualties from Utøya started to arrive at Ullevål. At that time, surgical operations on some of the casualties from the bomb attack were still in progress, but by then it was possible to open more operating theatres so that resource problems could be avoided.

Postoperative care could also be carried out without any shortage of personnel or equipment. Intensive care beds were made available, as the disaster management team of Oslo University Hospital decided to relocate

patients between the various hospitals. In addition to this, it was decided that all other emergency surgery, apart from severe trauma cases, should be conducted at the other hospitals within the Oslo University Hospital Trust until the acute phase of emergency operations and any necessary reoperations had been completed.

Utøya is located within the Vestre Viken health trust's catchment area. The Vestre Viken health trust encompasses the hospitals at Ringerike, Bærum and Drammen, all of which activated their disaster plans shortly after they had found out about the shooting on the island. Ringerike Hospital is the nearest facility and has, considering the size of the hospital, a high level of trauma expertise. The hospital admitted 35 patients, several of whom had life-threatening injuries. The hospitals in Bærum and Drammen admitted a smaller number of casualties. The total capacity in the region was excellent and all casualties were able to receive adequate medical care. Several of those initially treated at Ringerike Hospital were transferred to Ullevål the next day for further care, whilst others with milder injuries were transferred to their local hospitals in other parts of Norway.

Of all those cared for by the hospitals, only one person died. The deceased was already in the emergency department assessed as having injuries that were so severe, that they were unsurvivable. Furthermore, it is considered impossible, purely on the basis of autopsy records, to determine whether any of those who died could have been saved by faster access to advanced medical care, but descriptions of the injuries suggest that the vast majority of those who died did so directly, or very shortly (seconds—minutes), after sustaining their injuries.

Psychosocial support

The Norwegian government's occupational health organisation, the Secretariat of Occupational Health Services (BHT), was given an important role in the support of those afflicted by the bomb attack. The day after the incident, BHT assembled its staff at a hotel near the government district and held information meetings and group assemblies there. They also arranged recurrent information meetings following the incident for the various ministries, together with subsequent informal meetings. All those afflicted who so wished, underwent a health examination, this also applied to those who were not present when the explosion occurred.

Sundvolden Hotel, which is near Utøya, was requisitioned as a support centre at an early stage and Hole Municipality's crisis team assembled there in order to receive the arriving teenagers. The focus at first was to make the victims feel safe and to satisfy basic needs such as contact with their relatives, a shower, warmth, a change of clothes, food and drink. The staff also tried to register the survivors. There were initially major problems involved with trying to organise staff that had spontaneously volunteered to help. The municipality's management and disaster organisation made great efforts to handle the situation, as did many others within the administration and all the external personnel involved. On the Sunday, extra resources were sent in to conduct a debriefing of the response personnel. Furthermore,

support needs were identified for some of the volunteers who had tried to rescue the victims.

Teenagers from across country had been participating in the camp at Utøya and the subsequent psychosocial support work therefore involved many municipalities. For example, twelve teenagers from Karasjok Municipality received crisis support through the municipality's crisis team and primary care providers. Shortly after the incident, the municipality also arranged a "café evening" where all the victims and their relatives came in contact with the District Psychiatric Centre (DPS), with which they have all had subsequent contact. With an estimated ten relatives per victim affected, a total of nearly five per cent of the population of Karasjok Municipality were affected directly or indirectly by the incident. This implies a major burden on municipalities and shows that small municipalities are vulnerable and dependent on regional resources in the event of major incidents.

Following consultation with the County Governor (equivalent to the Swedish county administrative board), Tønsberg Municipality was given the responsibility of coordinating psychosocial support for the victims and their relatives within the eight municipalities of Vestfold county. In total, this involved 19 who were injured and three who had been killed. The various municipal crisis teams supported each other and DPS was involved from an early stage. After a week, group meetings were held for the victims and attempts were then made to separate the relatives of the injured from the relatives of the deceased. Child and adolescent psychiatry staff were also involved in the group meetings. Subsequent group meetings were also conducted where police and Red Cross staff participated.

In Oslo, there are crisis and primary care teams in all 15 districts. After the incident, the crisis teams opened various crisis hot lines and ensured that youth and recreation centres had longer opening hours than usual. Information was also provided via the City of Oslo website. The City established a crisis centre in the council house with staff from, among others, the municipal emergency services. The districts were referred to DPS as needed and to other specialist psychiatric units. Support was also offered to schools and classes.

A support centre for relatives of the casualties was opened at the patient hotel at Ullevål Hospital and, at the National Hospital, a centre was organised for the bereaved while they waited for the deceased to be identified. There was also a special crisis team for the injured who were receiving care in hospital, where there was one team for every patient and their close relatives. Staff from the treatment team had contact with the patients when possible and supplied them with information, in addition to providing practical and emotional support as needed. The objective, as far as contact with relatives was concerned, was to relieve this pressure from staff involved with the treatment of physical injuries, so that they could focus on patient care.

RVTS Øst, which is a regional centre with the task of promoting health and quality of life for individuals who have been exposed to, for example, traumatic events, was given the task of providing support to staff at the University Hospital in the form of group discussions. The centre also conducted information meetings with staff to inform them on supervisory

responsibilities and to administer written material regarding normal reactions in such situations and the coping methods involved. RVTS Øst also supervised the occupational healthcare at the hospital.

The Norwegian Centre for Violence and Traumatic Stress Studies (NKVTS) played an important role, providing expert support and counselling to the Norwegian Directorate of Health. Several of the centre's staff were involved in the Directorate's group of experts.

The Directorate established at an early stage that a great deal of focus would need to be placed on the planning and monitoring of the psychosocial support provided to relatives and the bereaved. New guidelines for this had been drawn up and could be published. Furthermore, representatives from a large number of collaborative organisations were called to a meeting. The Directorate appointed a group of experts from this group, who had the task of proposing ways in which the various psychosocial initiatives could be coordinated. The expert team proposed that all victims and their relatives, in addition to those who suffered losses at Utøya, should be monitored in their respective home towns, and that those affected in the government district attack should be monitored through their local occupational healthcare service. The County Governor was given the task of following up the measures of the municipalities in the different counties. The Norwegian Directorate of Health also invited relatives of the victims of Utøya to three central assemblies, and regional assemblies were planned for the survivors.

Communication and media relations

Following orders from the response leader of the Oslo police, the incident scene in the government district was sealed off to the public and the media. The police held three press conferences at the incident scene and press photographers were allowed to take pictures inside the sealed off area on several occasions. It was deemed important to satisfy the media's requirements for their own pictures, partly in order to reduce the publication of pictures taken by private individuals at the scene. The bodies of the deceased were covered up before the photographers were allowed in. From 18:30 in the evening, all dealings with the media concerning the attack in the government district were conducted from Oslo police station.

After the first reports of the shootings at Utøya were received, the municipal emergency services were activated, as were the local hospitals, primarily Ringerike Hospital. The media had airborne surveillance of the island from an early stage, but few representatives of the media were present when the young people were evacuated from the island and taken via the quay-berth to the collection point at Sundvolden Hotel.

The County Medical Officer for Hole Municipality coordinated communication and media relations at Sundvolden Hotel. The municipality's chairperson became the spokesperson at the hotel and, during the evening of 22 July, he made statements to the crowds of international media gathered outside the hotel with information provided by a Police Inspector and the County Medical Officer inside the hotel. Several young people left the hotel in order to shop at a local store or the adjacent petrol station and they soon fell prey to the many journalists. In several cases, radio and TV interviews

were conducted that later became the subject of much discussion, since many of the young people were still seriously mentally affected by the incidents and could hardly realise the consequences of their involvement with the media. One challenge for support personnel inside the hotel was to try to quell the young people's eagerness to relate their experiences of the events on Facebook, where they could easily be seized upon by journalists.

At Ullevål Hospital, the pressure from the media was immense only an hour after the explosion in the government district. According to the emergency communications plan, the hospital was to open several telephone hot lines in such situations, but the press office could only man one line and was therefore not able to answer all calls from the media. Oslo University Hospital, of which Ullevål is a part, used Twitter to, for example, search for blood donors and announce press conferences. The hospital area was sealed off and a press centre was established therein. Inside, staff took some improvised measures to seal off the area, including setting up a barrier which took the form of red tape on the floor, past which there was no access for journalists. In addition to this, a white sheet was hung over windows to prevent photography of the interior. Three press conferences were held on the first evening. The hospital's acting administrative director and a consultant from the surgical clinic were involved in two of them. Reporters and photographers in the hospital area received updated information via Twitter and by text message. Late in the evening, the Prime Minister arrived at Ullevål and held a press conference there, at his own request. This also involved the consultant from the hospital.

On 23 July, a large number of journalists came to Ringerike Hospital, where they were shown into a provisional press room inside the hospital. This meant that the journalists came into very close contact with both staff and patients. The media was permitted, with the consent of the patients, to interview and photograph the patients in the hospital wards. The hospitals and emergency departments in question found it extremely difficult to prevent the patients from talking to the media. They advised them against doing so, but this was not always successful.

Experiences

Healthcare

Based on the information which has emerged regarding the healthcare and medical services' handling of the incidents, the following conclusions can be drawn:

- It is important to have well-developed disaster plans, and they should be tested through exercises, as is the case in Norway. It is highly likely that such plans will be of crucial importance in a disaster situation, with regards to the provision of the highest possible quality of medical care to those affected.
- Clear standards regarding when the disaster alert is to be activated are important, but in the event of extraordinary events, the threshold should be low – rather one alert too many than an alert that is activated too late, or not at all.

- When a disaster alert has been set off, it is often difficult to rapidly call in personnel via traditional telephone lines. This weakness in the Swedish system has been further accentuated in recent years by the centralisation of telephone switchboards in many county councils and regions which has led to a reduction in the number of telephonists. The ability to send out mass text messages or similar systems for the summoning of staff can be of great assistance.
- The ambulance service in Oslo has access around the clock to a resource that is specially trained for leading the work at incident scenes. This resource creates optimal conditions for effective work at incident scenes, as well as enabling medical vehicles or ambulance helicopters to rapidly transport experienced medical staff who are used to working in prehospital situations.
- On 22 July it was impossible for managerial personnel to lead the major initiatives and, at the same time, document their work. Technical support, so that the documentation problems of decision-makers at different levels can be resolved is, therefore, desirable.
- A coherent air ambulance service consisting of both helicopters and aeroplanes is significant for crisis management ability, both through its actual transportation capacity and through its ability to provide the ambulance services with additional personnel. In Norway, there is a coherent organisation of air ambulance operations, and this is deemed to have played a key role in the handling of the events of 22 July. Sweden lacks an equivalent organisation.
- In emergency situations, it is sometimes difficult to determine which areas are safe for healthcare and medical staff to work in. This problem generally requires further analysis, as does the way in which the medical services should collaborate with other parties that can carry out medical efforts at the incident scene, i.e., the police.
- It is essential that the organisation that normally takes care of serious injuries, such as gunshot wounds and injuries caused by explosions, also tends to these injuries in a disaster situation. It is inappropriate to pass the seriously injured onto other medical facilities which lack the necessary trauma skills or experience. In a mass casualty incident, this would decrease the quality of medical care that should currently be imposed in a country such as Norway or Sweden.
- The more than adequate reception at, for example, Ringerike Hospital, clearly illustrates the importance of nurses and doctors having undergone trauma education (for surgeons, Advanced Trauma Life Support® and Definitive Surgery Trauma Care™) so that the hospital is capable of receiving patients in incidents such as this. Criteria should be established regarding courses required by emergency and surgical staff in a hospital providing trauma care.
- Injuries caused by detonations and gunshots can be extremely serious and require rapid care and emergency surgical procedures. This presupposes fast and adequate triaging, both at the incident scene and upon arrival at the hospital.

- In a disaster situation, it can be extremely effective to have access to various levels of emergency care, both for less and more serious injuries. This is well-illustrated by the division of responsibilities that occurred between “Skadelegevakten” and Ullevål Hospital following the events of 22 July. All relevant emergency care providers should be incorporated into the disaster plans and they should be alarmed in the same way as other units.
- Injuries caused by detonations and gunshots often require repeated operations, sometimes several weeks after the time of injury. Consideration should be paid to this in the disaster management, which was carried out within Oslo University Hospital.

Psychosocial support

Based on the information which has emerged regarding psychosocial support following the events of 22 July, the following conclusions can be drawn:

- The Norwegian social authorities that have been the object of this study appear, on the whole, to have been able to meet the psychosocial needs of those affected during the acute phase and in the period immediately following the incidents.
- Lessons learnt from previous incidents regarding readiness and planning are of great importance as far as the management of psychosocial support in the event of a serious incident is concerned. Through such lessons, especially those learnt as a result of the 2004 tsunami, Norway had improved its readiness in this area. Psychosocial support efforts could generally be implemented locally, regionally and centrally, despite the fact that the incidents were extensive and occurred during the holiday period.
- Interventions in the acute phase involving the victims and support personnel should be updated so that they are in keeping with modern, international recommendations. It is reasonable to scientifically evaluate the interventions, especially if broad, publicly funded interventions are implemented with limited scientific support.
- A national mapping of existing resources is desirable in order to provide, on a preparatory basis, evidence-based treatments to the traumatised and those suffering from loss-induced adjustment disorders.
- Descriptions of the support implemented in the municipalities studied within the scope of this report show that major efforts were made to support the victims, and that the municipalities have learnt important lessons for the future.
- Oslo University Hospital came under a great deal of pressure but could still maintain a high degree of professionalism with regard to the psychosocial support that it could offer to casualties, their close relatives and the bereaved.

Communication and media relations

Based on the information which has emerged regarding communication and media relations linked to healthcare and medical operations, the following conclusions can be drawn:

- Communications preparedness is an extremely important part of general emergency preparedness. An emergency plan should include descriptions of functions, routines for internal and external communication, media relations at the incident scene and hospitals, as well as preparations for the handling of international media attention. Oslo University Hospital Health Trust's emergency communication plan can serve as a role model.
- The media's function as a form of alarm and as a source of information is significant in the event of serious incidents. The citizens themselves also have an important alarm function as text, Twitter and Facebook messages sent via mobile phones are often a fast and effective way of reaching many different kinds of recipients: affected, relatives, friends, the media and even staff at hospitals, the police and other authorities.
- Media attention should be monitored internally during the acute phase and the period immediately after. One member of the emergency communication staff should have the task of intensively following media reporting and relaying important information to the organisation, as happened at Oslo University Hospital. It is important to follow up on how healthcare services are presented in the media and to bring attention to any factual inaccuracies in the reporting.
- For good media exposure, a suitable spokesperson is essential for press conferences and the like. Calmness, objectivity, empathy and clear competence are qualities that are often valued, both by the media and by the general public. Senior emergency management should appoint one or more spokespersons.
- The emergency plan of every hospital should include a stance with regard to patient interviews. This makes it easier for staff to refer to rules, which can provide both them and patients with a certain respite from the media.

Introduction/material and method

The terror attacks that Norway suffered on 22 July 2011 have been described as the worst atrocities the nation has experienced since the Second World War. The bombing in the government district of Oslo and the shootings at Utøya required an extensive, large-scale rescue effort and subjected Norwegian emergency preparedness to an enormous challenge. The enormity of the incidents and the fact that they occurred in one of the countries bordering Sweden, a country which in many ways has a similar societal structure, makes them extremely relevant for study in a Kamedo report, so that the experiences can be related to Swedish emergency preparedness and lessons can be learnt from the Norwegian handling of the incidents.

The preconditions for the work with this Kamedo report differ somewhat from the usual ones, as the National Board of Health and Welfare was requested to provide support to the commission that was established in Norway to evaluate the Norwegian society's handling of the incidents of 22 July, the "22 July Commission". In early autumn, the Commission requested support in this work in the form of a Kamedo report on the incidents. The National Board of Health and Welfare's report would then be used as a basis for the Commission's own evaluation of the way in which the healthcare and medical services handled the incidents of 22 July and the subsequent psychosocial support that they provided. The National Board of Health and Welfare is in favour of supporting the 22 July Commission in its work in this way and, as such, several issues addressed in the report have, to a certain extent, been adapted to the needs of the Commission. Furthermore, the report has also been produced considerably quicker than would otherwise have been the case. Work on the report started in October 2011 and the completed report was delivered to the 22 July Commission in mid April 2012. The report will not be published until after the 22 July Commission has publicised the results of its evaluation in the beginning of August 2012. However, the work process has been largely the same as usual and this report constitutes, like all other Kamedo reports, an independent feedback of experiences.

The authors have primarily gathered material through interviews with relevant people within the healthcare, medical and psychosocial support services, as well as from other parties that have been involved in initiatives related to these operations. Other various types of written material have also been obtained. As a basis for the description of the actions of other parties, which is included in order to give the reader an overall picture of the efforts, only written material has been used. Access to such material, for example, evaluations carried out by various organisations with respect to their own efforts, has been limited, as the report has been written so soon after the occurrence of the incidents.

The absence of more formal evaluations has also meant that information in the report is, to a large extent, based on the personal views of individual interviewees. This can mean that the figures stated in the report may be subject to a certain margin of error. Approximate information has been stated in many parts of the report, but in certain cases it has been justified to attempt to provide a more exact figure, despite varying degrees of uncertainty. It has not been possible to obtain detailed descriptions of patient injuries, for reasons of medical confidentiality.

It is the study of the acute phase of the efforts, immediately after the terror attacks, that is the focus throughout the report.

Risks (threats and vulnerability)

In a national vulnerability and emergency preparedness report for 2011, the Directorate for Civil Protection and Emergency Planning (DSB) states that, historically speaking, there has never been any serious terror threat levelled at Norway. However, during the 2000s, several international incidents have complicated this picture, not least the bomb explosion in a hotel in Copenhagen in the autumn of 2010 and the suicide bombing in Stockholm later the same year. Despite this, from a general point of view, the report assesses the terror threat towards Norway as being low. [1]

In its vulnerability and emergency preparedness report, DSB includes a risk analysis of a major terror attack in Oslo in which groups of terrorists carry out parallel attacks against several targets with both explosives and firearms, something that is considered to be a realistic "worst-case scenario". According to DSB, such a scenario is possible, but relatively unlikely (level two on a five-grade scale where five is the highest and implies a specific, imminent threat). DSB maintains that such an attack would have extremely serious consequences for lives and health and that it could be expected that those involved would be afflicted by certain psychological problems following the incident. Furthermore, they maintain that the scenario mentioned could entail economic consequences equivalent to between NOK 500 million - 5 billion, due to damage to buildings, for example, and that a terror attack of that scale would probably lead to a degree of social unrest. [1, 2]

In conclusion, DSB points out that the risk analysis is highly uncertain with respect to both the probability and consequences of such an incident(s). As far as the scope of the consequences is concerned, a great number of factors affect this, including the target and the time the atrocity is committed [1].

Background

The Norwegian crisis management system

The Norwegian crisis management system is governed, as is the Swedish system, by three main principles: the principles of responsibility, proximity and similarity. The principle of responsibility implies that the party that is normally responsible for a certain operational area is also responsible for it in the event of a crisis; the principle of proximity implies that crises shall be handled at the lowest possible geographic level; and the principle of similarity implies that the crisis organisation shall be as similar as possible to the normal organisation. [3]

In a crisis, the ministry which is most affected by the crisis is designated the "lead ministry". The lead ministry shall, among others, draw up status reports, analyse various alternatives for the management of the crisis and coordinate the information disseminated to the media and the general public. In particularly complex crises, the Government's Crisis Council can also be activated. The role of the Crisis Council is primarily to strategically coordinate the work of the various ministries. Permanent members of the Council are the Secretary Generals of the Ministry of Justice and Public Security, the Ministry of Defence and the Ministry of Health and Care Services, as well as the Secretary General of the Ministry of Foreign Affairs and the Secretary to the Government in the Office of the Prime Minister. Other ministries are included if they are involved in the incident. The Crisis Council and the lead ministry are supported by the Ministry of Justice and Public Security's Government Emergency Support Unit, which, among others, gives advice and provides premises and back-up personnel. [4]

At a national level, there is also the Directorate for Civil Protection and Emergency Planning (DSB), which is the central authority within the area of emergency preparedness. DSB is responsible for the coordination and supervision of public security and civil preparedness. In crisis situations, the Directorate will also assist other authorities and promote collaboration between them. [3]

Furthermore, there is also a national emergency service organisation in Norway that is activated for life-saving efforts in particularly extensive incidents and which also has an overriding operational responsibility for, among others, air and sea rescue. Their efforts are operationally controlled from 28 local coordination centres and are coordinated by two national rescue coordination centres. The police force is responsible for leading operations at local rescue centres and at incident scenes. Apart from the police, there are many other resources within the rescue services, including the Norwegian Fire Service (which is the equivalent of the Swedish municipal fire and rescue service), the Civil Defence, the Ministry of Defence and the healthcare and medical services. There are also a large

number of voluntary organisations which constitute a central component of the national rescue service organisation. [5]

At a regional level, the County Governors, which are the equivalent of the Swedish county administrative boards, have a certain geographic responsibility for emergency preparedness. In the event of large-scale crises, the County Governors can be given a coordinating role for regional crisis management, but this seldom occurs. At a local level, the municipalities themselves have a responsibility for crisis management, in accordance with the principal of proximity. [3]

The Norwegian healthcare and medical system

The responsibility for healthcare in Norway is shared. The municipalities are responsible for primary care (primærhelsetjenesten) whilst in-patient care (specialisthelsetjensten) is provided by "hospital trusts" (HF), which could be described as groups of hospitals; the closest Swedish equivalent would be the county councils.

Norway is currently divided into four "regional heath trusts" (RHF) which are owned by the State of Norway. The closest Swedish equivalent to these would be the healthcare regions. Each regional health trust has the task of running hospitals which give the public access to in-patient health services, but they are also responsible for research, education and the provision of information to patients and relatives.

The four regional health trusts are Helse Sør-Øst (Health South-East) RHF, Helse Vest (Health West) RHF, Helse Midt-Norge (Health Central Norway) RHF and Helse Nord (Health North) RHF. These are all controlled by the Ministry of Health and Care Services. Within each RHF there are a number of hospital trusts which carry out the care. Each HF is obliged to operate an alarm centre (AMK) for the medical emergency number (113). In Norway there is no common emergency number. The different first responders are reached by dialling separate numbers (fire 110, police 112 and ambulance 113).

Emergency medical care and ambulance resources

The health trust is also responsible for emergency medical services outside of the hospital [6]. In the *regulations on the requirements governing emergency services outside hospitals*, the requirement for "medical emergency services" (alarm and dispatch function) is regulated, as well as "municipal emergency services" (a type of emergency primary care – note that this should not be confused with the “Skadelegevakten” in Oslo, referred to under the Hospital section, which was directly involved in the care of casualties on 22 July) and the ambulance operation. The municipality is obliged to operate an emergency contact centre with a permanent telephone number, through which the public can contact authorised personnel around the clock. Several municipalities may collaborate in the maintenance of this service.

The training of the ambulance crew has to meet specific demands: at least one of the crew in the ambulance shall be licensed as an "ambulance

worker", "paramedic" or "authorised nurse with certification in ambulance work", and someone in the crew should have a certificate of competence for driving a vehicle under emergency conditions.

In addition to "standard ambulances", the ambulance organisations also have access to other forms of vehicles in which patients can either lie down or sit. Within the Helse Sør-Øst health trust (South-East) there are vehicles that are the size of coaches (”Helseexpresser”, i.e., "Health expresses"). There are also "supplementary ambulances" which are vehicles that are owned and manned by voluntary organisations such as the Norwegian Red Cross and Norwegian People's Aid. These are often used for less serious cases or where patient secondary transfer to another health facility is involved.

The airborne ambulance service in Norway began in the form of physician-manned ambulance helicopters at the end of the 1970s, organised by the non-profit organisation Norwegian Air Ambulance. In 1988, the State took national responsibility for the operation when the National Insurance Administration started to procure services involving ambulance helicopters and aeroplanes. In 2002, when specialist healthcare was nationalised in Norway, airborne medical services were transferred over to the non-profit organisation Luftambulansetjenesten ANS (Air Ambulance Service ANS), which is owned by the four national healthcare regions. The company is responsible for the procurement of services involving ambulance helicopters and aeroplanes. Luftambulansetjenesten is also a skills centre for airborne medical care and works actively with this development in Norway.

Luftambulansetjenesten has access to the following resources:

- 12 physician-manned ambulance helicopters, located at eleven bases
- 9 ambulance planes with specialist nurses, located at seven bases (physician-manned as needed)
- 6 physician-manned military SAR (”search and rescue”) helicopters.

The ambulance helicopters are of the models EC 135 (x8), AW 139 (x3) and EC 145 (x1). The helicopters are manned with a pilot, a “rescue man” (paramedic) party and an anaesthesiologistdoctor(s). The ambulance plane is of the model Beech 200 and is manned with two pilots, a nurse and, if necessary, a physiciandoctor. There are also two reserve helicopters and two reserve aeroplanes. Luftambulansetjenesten supplies, via its operators, helicopters and aeroplanes, pilots, paramedicsrescue parties and flight technicians. The local hospitals are responsible for the physiciansmedical staff on board and the care provider is responsible for their helipads. Luftambulansetjenesten procures services for ambulance helicopters and planes from commercial operators. At present, Norsk Luftambulanse AS (NLA) and Lufttransport AS are the operators for helicopter services, whilst aeroplanes are operated by Lufttransport AS.

Luftambulansetjenesten can also, through an agreement made with the Ministry of Defence, use the Ministry's SAR helicopters for ambulance missions. These are then manned by personnel from Luftambulansetjenesten or the health trust and have the same medical equipment as the ambulance helicopters. Luftambulansetjenesten can also use military helicopters as

reserves if their own ambulance helicopters have been subject to long-term technical downtime and, in addition, it has an agreement for special transportation involving the use of C-130 Hercules aircraft.

The ambulance helicopters are directed by their respective local AMK. The military SAR helicopters are directed by the two national Joint Rescue Coordination Centres (HRS) in Bodø and Stavanger.

Luftambulansetjenesten also has cars at its disposal, which are normally used for emergencies close to the bases, when ground transport is more practical than air transport.

The organisation of psychosocial support in Norway

Local level

The municipalities in Norway are, as in Sweden, obliged to provide support to their residents. Unlike in Sweden however, this task also includes the provision of primary health services. In crisis situations, the medical, care and social services are coordinated so they can handle the problems at hand, this being done in collaboration with the hospital trusts. As far as psychosocial support is concerned, each municipality should, according to the relevant legislation, have a psychosocial crisis team. The activation of these teams varies, depending on the nature of the incident, the size of the municipality and the access to personnel. The personnel groups that may be included in these crisis teams are: municipal doctors, police personnel, psychiatric nurses, counsellors, school personnel, children's healthcare personnel and representatives of various associations. The crisis team can be activated in the event of, for example, natural disasters, major accidents, fires and multiple casualty situations.

Distriktspsykiatriske sentre (DPS) – District Psychiatric Centre

Since 2006, Norway has developed district psychiatric centres (DPS) that aim to "tend to the special psychiatric needs of the municipality". The catchment area is to be 20,000 - 75,000 residents and, in 2008, there were 75 DPSs. The primary task of the DPSs is to provide psychiatric and polyclinical medical assistance, mobile psychiatric teams and a number of short-term hospital beds within its catchment area. It has not been possible, within the scope of this report, to clarify which resources the various DPSs have, with respect to their treatment of trauma and loss-induced psychological disorders.

Fylkesmannen – County Governor

In Norway there are 19 counties. *The County Governor* is the State's representative in the counties and is the equivalent of the Swedish county administrative board. The County Governor ensures that decisions made by the government and Parliament are followed. Furthermore, the County Governor is the supervisory authority for, among others, healthcare and medical services.

The County Governors are a link between the national and local administrations. Their task involves organising and coordinating certain municipal initiatives, but also communicating issues back to the national level.

Regional Resource on Violence, Traumatic Stress and Suicide Prevention (RVTS)

The Regional Resource on Violence, Traumatic Stress and Suicide Prevention (RVTS) are regional centres whose main objective is the promotion of health and quality of life in individuals who have been subjected to violence, sexual assault and other traumatic events. The centres also have tasks concerned with refugee health and suicide prevention. RVTS contributes to regional skills improvement through teaching, supervision, consultation and networking. There are five RVTS centres in Norway: North, South, East, West and Central.

The title RVTS may be a little misleading as the centres primarily work to support local organisations, such as those involved with the judicial system, child and adolescent psychiatry or the reception of refugees, through the transfer of knowledge. The most important areas are considered to be relationship problems, complex traumas and dissociation (difficulties in intellectually absorbing what is happening). The role of the RVTS is to assist in the improvement of specialist skills so that the organisations can provide support to the affected individuals in their development of new skills and competences, in order for them to better manage their lives.

Norwegian Centre for Violence and Traumatic Stress Studies, NKVTS

The Norwegian Centre for Violence and Traumatic Stress Studies (NKVTS) is a national centre which has the task of developing and disseminating knowledge regarding violence and traumatic stress. The centre shall assist in the prevention and reduction of medical and social consequences for individuals who have been exposed to violence and traumatic stress. The centres are involved with research, teaching, supervision and the provision of advice in this area. NKVTS is represented in an interdisciplinary fashion and works with the following themes: violence, sexual assault, disasters and refugee matters.

Identification of the deceased

The identification of the deceased and the informing of the relatives are, in Norway, the responsibilities of the police. Since 1975, a specific identification group has been in existence organised by Kripos (a national unit within the Norwegian police which combats organised crime and other serious crime, equivalent to the Swedish National Bureau of Investigation, Rikskriminalpolisen) and this has the specific responsibility of identification work in connection with disasters. The group consists of a director (police), five forensic pathologists, five forensic odontologists (dentists), forensic

geneticists, regional ID leaders from three police districts, an "AM (ante mortem) coordinator" and administrative staff. Forensic technicians are also attached to the group. All or part of the group can be called in, depending on the extent of the incident. The group can also operate overseas, which happened in connection with the 2004 tsunami incident. The members of the group come from all across Norway. Corresponding ID groups can also be found in other Scandinavian countries and there is close international cooperation due to previous overseas collaborations.

Approximately 150 times per year in Norway, specialised police help is required in the identification of the deceased. In the majority of cases this can be handled regionally, but the Police Commissioner in charge can also request assistance from the Kripos group.

The groups work in accordance with a protocol known as DVI (Disaster Victim Identification) which has been developed by Interpol. In short, the protocol is based on the collection of information registered before the death ("ante mortem data", "AM data"), such as information concerning distinguishing marks, finger prints, dental x-rays and DNA data. This is then compared against the results of the examinations of the deceased ("post-mortem results", "PM results"). This comparison process can be conducted manually or by computer. Approximately 500 DVI kits are stored in Kripos premises. These are designed so that the staff can easily follow the correct routines for sampling and documentation at the incident scene.

Hospitals that were directly involved in the care of casualties on 22 July

Helse Sør-Øst was the regional health trust most affected by the incidents of 22 July 2011. This healthcare region is comprised of specialist healthcare units in Østfold, Akershus, Oslo, Hedmark, Oppland, Buskerud, Vestfold, Telemark, Aust-Agder and Vest-Agder.

Figure 1. Hospital trusts involved within the Helse Sør-Øst Regional Health Trust

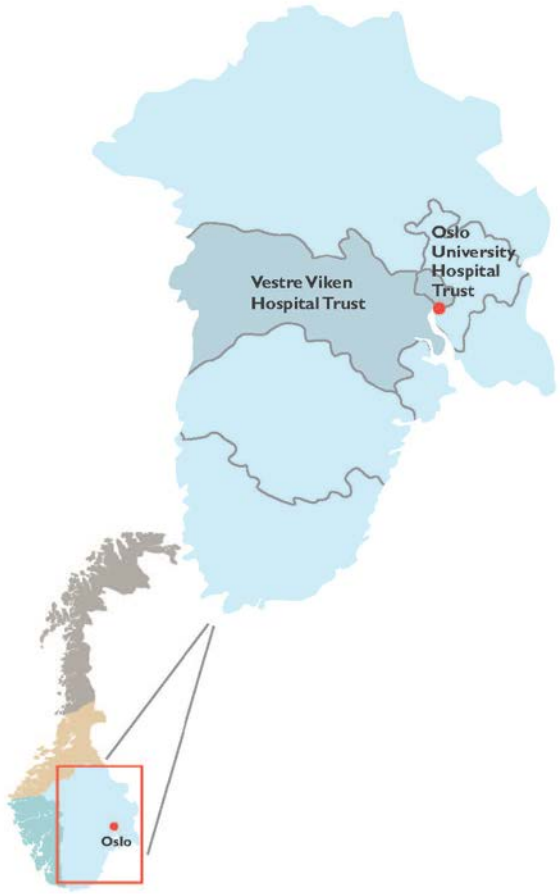


Illustration: Svensk information AB

Oslo University Hospital Trust

Oslo University Hospital Trust is the RHF for Helse Sør-Øst. This comprises Aker Hospital, the National Hospital, the Radium Hospital and Ullevål Hospital. "Skadelegevakten", which is housed in the same building as the municipal emergency health care provider, is also a part of Oslo University Hospital.

Oslo University Hospital has a prehospital centre which consists of four different departments: AMK (the dispatch and coordination centre), the ambulance department, the air ambulance department and the patient transportation department. The centre and AMK Oslo-Akershus are geographically located in an older building within the Ullevål hospital area. AMK has a primary catchment area corresponding to approximately 1.2 million people. Within the area there are 15 ambulance stations, with 29 ambulances that are available around the clock and 16 that are available during daytime hours. In Lörenskog, which lies just outside of Oslo, there are two ambulance helicopters and at Rygge, approximately 50 km south of Oslo, there is a Sea King SAR helicopter.

AMK Oslo-Akershus

AMK Oslo-Akershus receives approximately 250,000 calls per year on the 113 telephone number, of which only three per cent are wrong numbers or prank calls. Every year, the centre dispatches units out on approximately 120,000 missions. The level of manning varies throughout the day and consists of five to ten operators and resource coordinators.

With regard to technical support, there is a digital map (TransMed) and the AMIS system (Emergency medical information system) which can be likened to a digital journal. On the other hand, there is no access to digitalised decision-making support for assistance in directing ambulances. Staff can see their "own" vehicle, but not ambulances that are usually directed by other AMKs. Communication within Oslo's ambulance service is achieved with the help of Nødnett – a digital radio system based on the Tetra standard and is similar to the Rakel system which is used in Sweden. At the time of the incident, however, Oslo was supported by several local AMKs and ambulance organisations that still did not have access to Nødnett . Instead, they were still communicating by analogue radio.

The ambulance services in Oslo

In certain parts of Norway there are additional prehospital resources over and above "normal ambulances" and ambulance helicopters. For example, in Oslo there has been a physician-manned ambulance for over 30 years. This is available Monday-Friday, 08:00-22:00, and is used for jobs where cutting edge expertise is required (i.e., anaesthesiology), but also for the recurrent training and certification of the "ambulance workers" and "paramedics" employed by the organisation. The resource is manned by anaesthesiologists who are employed at Oslo University Hospital. When the ambulance has no physician on board, a doctor can be called in from the helicopter base at Lörenskog.

For the past couple of years, the Oslo ambulance services have had an "Operations Leader" (actually, an "Operativ leder helse", "Head of EMS") who is on call around the clock. The Operations Leader is, primarily, the service's dedicated command and control resource at the scene (the equivalent of Swedish Health Leaders or UK Ambulance Incident Commander) of more large-scale incidents. The position is divided up between seven paramedics who have been trained with a focus on commanding the medical efforts at the incident scene. The function has access to an emergency car/command vehicle, which in normal situations is used as a back-up resource to other ambulances, for example, in the event of cardiac arrest.

In the Oslo region there is also an "Operations Leader Forum" where the ambulance service's Operations Leaders meet their opposite numbers within the police and rescue services, evaluating incidents that have occurred and discussing common problems.

Ullevål University

Ullevål University has, for many years, been the established trauma centre in southern Norway to which the seriously injured are transported,

sometimes by ambulance helicopters and aeroplanes from a great distance. Ullevål Hospital and the surgical clinic's emergency and trauma section is currently one of the leading trauma centres in northern Europe and is responsible for a large part of the most advanced trauma education conducted in the country. According to the regional disaster plan, Ullevål is the Oslo hospital that is to receive all serious casualties in the event of a disaster. No upper limit has been set for how many patients the hospital should be able to receive, and the guiding principle is that less serious injuries are redirected to other hospitals in order to leave space for a new influx of patients with more serious injuries. This implies that some casualties arrive first at Ullevål before being transferred to one of the other hospitals within the Oslo University Hospital Trust, depending on their needs and the type of injuries. Secondary transportation to other hospitals can, as a rule, be carried out shortly after primary life-saving treatment has been conducted.

Oslo Skadelegevakt – Out-of-hospital Emergency Department, Oslo University Hospital

Oslo "Skadelegevakt" is situated at Storgatan 40, relatively near the government building where the bomb explosion occurred. The unit is located in the same building as the municipal emergency primary care centre, but is organised by the Department of Orthopaedic Surgery at Ullevål Hospital. For over 100 years, this facility in the centre of Oslo has been responsible for much of the emergency care of less serious injuries and it is therefore very well-established. It is open around the clock every day of the year and approximately 55,000 injuries were treated there during 2010. Elective surgery is also undertaken here, primarily procedures involving hand surgery. The building houses an x-ray department, a surgical ward, a post-operative unit and it can also admit patients for short-term observation.

Figure 2. Oslo University Hospital Trust

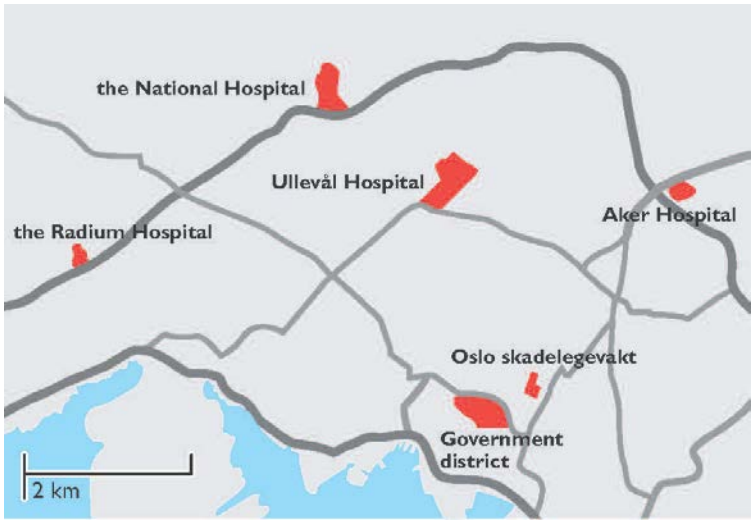


Illustration: Svensk information AB

Vestre Viken Hospital Trust

The other hospitals within the Helse Sør-Øst RHF which initially admitted patients from Utøya were the three hospitals closest to Utøya. These were Ringerike, Drammen and Bærum, all of which are part of the Vestre Viken Hospital Trust. This Hospital Trust also operates the hospital at Kongsberg. Vestre Viken HF has its own AMK, which is located in Drammen. Many of the ambulances in the area are directed from there, whilst Bærum's ambulances are directed from AMK Oslo-Akershus. Within the area there are 17 ambulance stations with 24 ambulances that are available around the clock and an additional 5 units that are available during daytime hours.

Ringerike Hospital

Ringerike Hospital is currently responsible for the emergency care of a population of approximately 75,000, but there are often approximately 20,000 tourists in its catchment area on a daily basis. The hospital's management is located in the hospital at Drammen (see below).

In 2007, a national review was undertaken of trauma care in Norway. This led to a comprehensive training initiative at Ringerike in order for the hospital to live up to the proposed demands. Therefore, the hospital has a level of emergency preparedness which, in relation to its size, consists of a remarkably well-educated nucleus of doctors who have undertaken courses within Advanced Trauma Life Support (ATLS)® and Definitive Surgery Trauma Care (DSTC)™. Furthermore, Ringerike's nurses have been trained in trauma care through the Trauma Nursing Core Course (TNCC). Trauma team training is carried out once a month, in accordance with the Norwegian BEST concept.

The hospital has established its own "emergency web" within its disaster organisation. All patients are registered here so that they can be tracked within the hospital.

Bærum Hospital and Drammen Hospital

Bærum Hospital is located in the community of Sandvika, approximately 15 km west of Oslo and was, at the time of the incidents of 22 July, an emergency and trauma hospital. Drammen Hospital (previously Buskerud Hospital) is located approximately 43 km southwest of Oslo. The hospital has an emergency department, an anaesthesia ward, an intensive care ward and a surgical ward, in addition to medical and orthopaedic wards.

Figure 3. Hospitals in the Vestre Viken Hospital Trust that admitted casualties

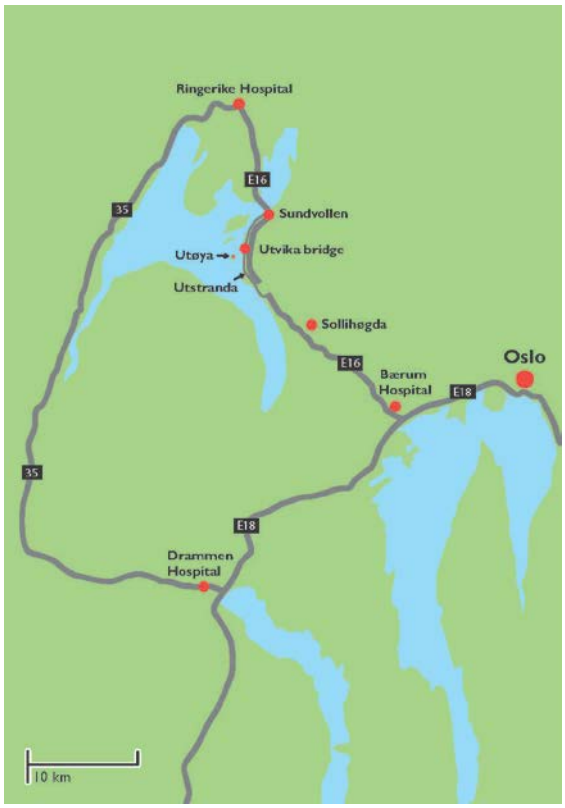


Illustration: Svensk information AB

Preparedness for medical, healthcare and psychosocial support in Norway

National level

In 2007, the Ministry of Health and Care Services published its *Comprehensive national health emergency plan* for the healthcare, medical and social services. According to this plan, the purpose of Norwegian health preparedness is to safeguard the lives and health of the population and to ensure that the necessary health and medical care can be provided to them at times of war and during peacetime crises and disasters.

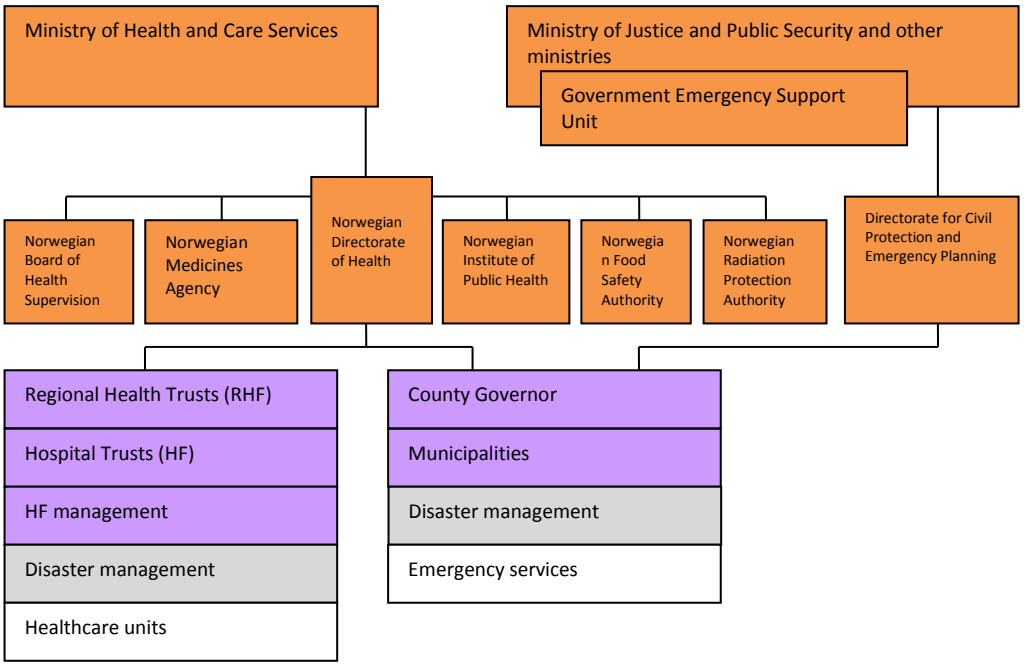
The plan is intended to be a framework for the various operators involved with preparedness. It states that the most important law regulating the country's medical preparedness is the *Act on Health and Social Preparedness (23-06-2000 no. 56).* In addition to this, there are a number of laws on infectious disease control, food safety and radiation protection, and a number of regulations that are relevant to the area. According to this act, the regional health trusts and the municipalities are to draw up emergency plans for healthcare and medical and social services.

In the introduction to the comprehensive emergency plan, it is clearly stated that emergency planning is based on the three fundamental principles

of Norwegian crisis preparedness: the principle of responsibility, the principle of proximity and the principle of similarity. Consequently, regular healthcare, on a national and municipal level, functions as the basis for the healthcare and medical services' normal level of preparedness. If additional resources are required, support is requested from other municipalities and health trusts, or alternatively from a higher level. Such a request is often made through an AMK.

Figure 4 below illustrates the alarm and reporting chains of command within the healthcare and medical services in crisis situations. Ministerial and governmental bodies work at a national strategic level (marked orange in the diagram). Regional health trusts, hospital trusts, county governors and the municipalities work at a regional strategic level (marked purple). Beneath this there is disaster management at a local tactical level (marked grey in the diagram) and healthcare units and on-call doctors at an operational level (no colour).

Figure 4. Alarm and reporting chains of command within the healthcare and medical services in crisis situations



Source: Comprehensive national health emergency plan, established 31/01/2007.

The alerting and activation of disaster response at the local level occurs via the SOS system within AMK, whose systems cover the entire country. With certain incidents, additional local rescue service centres and police will be involved and, in the event of particularly large-scale incidents, assistance may also be provided by the two main joint rescue coordination centres. With large-scale crises, the healthcare and medical services at the local and regional level shall alert the Directorate of Health, which in turn notifies the Ministry of Health and Care Services. If an outbreak of infectious diseases is suspected, the Norwegian Institute of Public Health is alarmed.

Alerts concerning major incidents can also be sent from the national level and be relayed down to the local level. This is done at ministerial level via special alert lists, so that regional health trusts, hospitals, etc., are eventually reached. The national crisis and emergency plan also contains descriptions of collaborations with other countries and international organisations.

If a crisis situation should require the central coordination of efforts within the healthcare and social services sector, the Directorate of Health can be assigned by the Ministry of Health and Care Services to organise this.

Emergency planning within the Helse Sør-Øst RHF

The specific emergency plan for Helse Sør-Øst RHF is an extremely comprehensive document. It describes initially the principles for preparedness which can also be found in the national plan. The Helse Sør-Øst RHF's plan also describes the responsibilities of management, procedures for exercising and coordinating, work with risk and vulnerability analyses and different levels of preparedness.

The following levels of preparedness are described in the plan:

- *Green level:* Establishment of emergency management group at the hospital trust level and at hospitals in situations where there is no need for extra resources or where there is a limited need for such.
- *Yellow level:* An undesired incident has occurred, or there is a major risk that such an incident will occur, and it is probable that standard resources will not be sufficient for the handling of the incident. Key functions of the hospital are reinforced to a limited extent.
- *Red level:* An incident has occurred of such an extensive nature that standard resources are deemed insufficient. The full emergency plan is activated.

In the event of major crises and disasters that affect all or parts of the health trust region, it may be necessary to coordinate and/or rearrange in-patient healthcare services in the region. Helse Sør-Øst RHF has given Oslo University Hospital the regional responsibility to carry out this coordination.

Cooperation with other parties

According to Helse Sør-Øst RHF's emergency plan, it is of critical importance that the healthcare services cooperate closely in times of crisis with, for example, the police and fire service, but also that there is effective collaboration with these parties in terms of preparatory measures. Close cooperation with the police is necessary since they have a coordinating responsibility for management at the incident scene, as well as the responsibility of registering casualties and the deceased, identifying bodies and informing persons outside of the hospitals on deaths that have occurred.

The plan also states that the County Governor shall proactively drive emergency preparedness work forward within the county and provide guidance in his capacity as the coordinating and sector authority. The

County Governor can also play a coordinating role during crises and disasters, although this is seldom utilised. According to the plan, the Armed Forces and Civil Defence can also be called in exceptional situations, not least as a personnel and materiel resource.

Levels of disaster management

The levels for disaster management – operational management, tactical management and strategic management – that are described in the emergency plan for Helse Sør-Øst are divided in the same way as in the national emergency plan for healthcare services. Table 1 below describes the implications of the various levels.

Table 1. Levels of disaster management within Helse Sør-Øst RHF

Operational management	Operational management occurs at the incident scene and/or is connected to tasks that directly concern the disaster work. Operational management can be exercised both at the incident scene and in the hospital's emergency ward.
Tactical management	Tactical management focuses on the handling of the incident within one hospital and in assisting operational management by prioritising efforts based on available resources. The efforts are planned so that the combined disaster efforts are as effective as possible. Tactical management also plans the efforts on a more long-term basis.
Strategic management	Strategic management is the highest management level and leads the efforts so that the long-term effects of the disaster are as negligible as possible Furthermore, it must be ensured at this level that the hospital's basic resources are sufficient for it to carry out the disaster work.

Source: Emergency planning within the Helse Sør-Øst RHF

The disaster management within Helse Sør-Øst RHF is similar to that which is led by the regional health trust in a normal situation. Depending on the situation, various key personnel are called in to the management team and, if required, this team can set themselves up in a "disaster management room".

Oslo University Hospital Trust

The disaster management of a specific hospital trust within Helse Sør-Øst RHF is called in when a disaster occurs, or following the decision of the Managing Director or their substitute. Subsequent to this, the hospital trust's specific disaster plan is followed as far as responsibilities and specific tasks are concerned.

The emergency preparedness plan for Oslo University Hospital Trust is extremely comprehensive and is based on the principle that those units that normally have responsibility for healthcare also have responsibility in the event of extraordinary situations, major accidents or disasters. The plan is structured into several levels, where level 1 comprises that which applies to the whole university hospital, among others, the division of responsibility, degrees of preparedness, dispatching, disaster management, reporting, information and communication. Level 2 comprises those emergency preparedness plans that have been developed within specific clinics, i.e. the

emergency clinic, the x-ray clinic, the blood transfusion centre and the neurosurgical clinic. Levels 3, 4 and 5 are the emergency preparedness plans that apply for the clinics' various wards, sub-wards, etc. Each plan shall describe tasks and responsibilities for each employee involved.

At the hospital level, the following levels of emergency preparedness can be found within the Oslo University Hospital Trust:

- *Green level:* The situation implies the arrival of several patients requiring attention from one or more medical teams (but fewer than with yellow level). Tactical management and functions that may become involved in the incident are alerted.
- *Yellow level:* The hospital receives an alarm informing it that more than six patients requiring attention from one or more teams are expected to arrive at the hospital's emergency department. Sub-plans are activated so that a large number of patients can be admitted, resources are mobilised in the emergency department and the emergency department is forewarned.
- *Red level:* More than 50 patients arrive at the hospital due to a particularly serious incident. Regular resources will not be sufficient and the entire disaster plan is therefore activated.

As mentioned above, Oslo University Hospital Trust has a coordinating responsibility within Helse Sør-Øst RHF in the event of major crises. This includes the following:

- ensuring that the region's combined in-patient healthcare is coordinated and optimally utilised
- acting as the regional AMK (R-AMK) and establishing routines for alerting relevant units within and outside of the region
- requesting national support as needed
- keeping Helse Sør-Øst informed of the reallocation of resources that can affect the total capacity of the region and the economic consequences resulting from the coordination initiatives.

Apart from this regional coordination responsibility at times of crisis, Oslo University Hospital Trust also has regional or national tasks. The hospital shall

- provide emergency response teams in the event of crises and disasters (equivalent to medical teams in Sweden)
- handle high-risk contagious diseases and the outbreak of epidemics
- handle chemical, biological and nuclear incidents.

The emergency preparedness plan for Oslo University Hospital Trust also includes instructions concerning medical teams in the event of national and international disasters, information responsibilities, psychosocial services, the information responsibilities of the police, the care of relatives and the trust's own staff and all the necessary contact information required when the

Hospital Trust or the Regional Health Trust are alerted. Furthermore, there are specific action plans for the majority of possible crisis and disaster incidents that may need to be handled within Helse Sør-Øst.

Vestre Viken Hospital Trust

Vestre Viken HF's emergency preparedness plan has a common framework for its hospitals which encompasses emergency planning, emergency plans and disaster and crisis management. Within this framework, each individual hospital has its own specific disaster organisation, depending on its capacity. Within the overall hospital trust, there is also disaster management at all levels. This means that, as within the Oslo University Hospital Trust, there is operational, tactical and strategic management. The operational management is directly connected to the care of patients and the tactical management focuses on the handling of the disaster situation within the entire hospital on different levels and the planning of long-term care. The strategic management is the highest level of management and has the responsibility of organising, supporting and planning the handling of the disaster as a whole, within and between all of the hospitals involved.

Local emergency planning in Hole Municipality

The emergency plan in Hole Municipality is based on risk and vulnerability analyses that were conducted in 1997, 1998 and 2002, along with a revision made in 2009. In the event of major accidents, the rescue efforts are led by the Police Commissioner in the local rescue centre, which is also made up of representatives from the rescue and medical services. The plan states that the community's efforts are often initiated via AMK, which in turn alarms the police, the rescue service and the medical services as needed. In the event of major accidents, the municipality's crisis management is also involved. Healthcare is represented in the acute phase by on-call doctors (*vakthavande lege*) or County Medical Officers (*kommunlege*) and the municipality's crisis team provides psychosocial support.

Communication plans and media prepardeness

Norwegian crisis communication is complex, due to the fact that there are many different parties and responsible authorities that work at different levels and which overlap with each other both geographically and operationally. In some cases there are comprehensive crisis communication plans and, in other cases, communication and media relations warrant just a couple of lines in the emergency preparedness plan. The work with communication and media relations is also characterised by whether an entire communications unit is available (as is the case at Ullevål Hospital), whether it is a public relations officer in another town who is responsible (as is the case at Ringerike Hospital) or whether the municipality's information unit is operationally responsible (which is the case in the City of Oslo for Oslo's general emergency ward and in Hole Municipality for Ringerike's general emergency ward). Sometimes the organisation is less clear where several parties cooperate within the same temporary constellations.

During the acute phase of a crisis, it is important that the healthcare and medical services and the media display a mutual understanding of each other's roles. For example, it is good if medical and response personnel are aware of the press ethics guidelines that apply to the media. The Norwegian Press Association has relatively clear guidelines for how the media shall treat people in disaster situations and other traumatic incidents. The following are examples from the guidelines:

> *"Always consider how reports on accidents and crime may affect the victims and next-of-kin. Do not identify victims or missing persons unless next-of-kin have been informed. Show consideration towards people in grief or at times of shock"*

The regulations are concluded with the following appeal:

> *"Words and pictures are powerful weapons, do not misuse them!" [7]*

Communications responsibilities at hospitals (Ullevål and Ringerike)

Oslo University Hospital Trust, which incorporates Ullevål Hospital, has an emergency communications plan of more than 60 pages that is continually updated. It is stored digitally and is printed out for all staff when required. The plan was revised three days before the attacks of 22 July 2011 and includes organisational descriptions, check lists, a description of the communication staff's emergency room and much more. The plan contains a list of "standard statements that provide breathing-space" as well as a wealth of advice concerning contact with the media. The check lists concern various different aspects of communication, the characteristics of the crisis and communications advice for use before, during and after a crisis. There are also check lists for other types of crisis incidents. Furthermore, there is internal and external contact information, including an overview of the various parties that foreseeably could be affected by the crisis incidents. The plan also contains a matrix that assigns tasks. This describes 20 different functions over a wide spectrum of responsibility areas, everything from activation of the press centre, to supplying the staff with food and drink. One of the functions has the task of following media reporting, while another logs all of the information. Two people devote themselves entirely to the production and publication of news, both internally and externally.

In the event of major disasters, Oslo University Hospital and Ullevål Hospital have responsibility for the communications of the regional health trust's eleven hospitals. This means that all other hospitals involved are to report their status to the University Hospital, which coordinates the communications work.

Communications responsibilities at the incident scene

In the event of extraordinary incidents, the Oslo police (of interest here due to its role as incident scene manager) organises itself in accordance with a specific emergency preparedness model. Within the Police Commissioner's unit, a number of "P functions" are created, where P5 is the information function that looks after both internal and external communication, as well

as press information and media relations. The communication procedures mean that no one may make a statement to the media (either to an individual reporter or via a public press statement) without it first having been discussed by the P5 and the response leader. All P-unit functions are physically located at the Oslo police station and are superior to the entire regular police organisation. The police have a dedicated web platform containing all communication plans and function descriptions. There are also templates for press statements to be used in various types of situations and incidents, in both Norwegian and English.

On 1 July 2011, a communication plan for the Norwegian Police Service was published and, in the preface to this, the National Police Commissioner wrote that "the police shall have a positive, open dialogue with the media as well as those working in electronic channels of communication and other arenas that actively involve the general public". As far as crisis communication is concerned, it has been established that a holistic view of communication is particularly important at times of crisis. This applies internally within the police and also in relation to other authorities involved in crisis management. The public shall not need to relate to too many different authorities.

Communications responsibilities at the municipal level

The municipal emergency services answer to the emergency preparedness and emergency communication plans of their respective municipality. There are special circumstances involved here, as these operations do not always have entire communications departments that can be activated, but sometimes only a single public relations officer who may be located in a different town. Furthermore, Ringerike's emergency services are inter-municipal and cover five municipalities.

The situation prior to the incident

Oslo

In Norway, as in Sweden, July is a holiday month. Normally, around 3,500 people work in the buildings in the government district belonging to the Offices of the Norwegian Government. However, on 22 July 2011, only about 600 people were at work and, at 15:20, approximately 300 people were still in the buildings.

Utøya

On 20–24 July 2011, Arbeidernes Ungdomsfylking (AUF), which is the Norwegian Labour Party's youth organisation, held its annual summer camp at Utøya. Utøya is a small island (10.6 hectares) that lies approximately 600 metres from land in the Tyrifjorden lake in Hole Municipality, 40 km northwest of Oslo. On the island, which is owned by AUF, there is a study centre. On the afternoon of 22 July there were 564 people on the island. [8, 9, 10]

Course of events

On Friday 22 July, at 15:25, an explosive charge was detonated in the government district in central Oslo, where the majority of the Norwegian Government's ministerial offices are located. The bomb, which was housed in a vehicle parked on Grubbegata, was extremely powerful and caused major damage to the neighbouring buildings. Eight people were killed and at least 90 were injured.

Figure 5. The government district after the explosion

Photo: Berit Roald, Scanpix

Later that same afternoon, a man claiming to be a policeman boarded the ferry that connects the mainland to Utøya, where the AUF was holding its summer camp. Once on the island, the man began shooting indiscriminately. At around 18:30, the man was arrested by Norwegian police. At that time, a total of 69 people had been killed and 65 people injured. The majority were children or teenagers. [11, 12]

The perpetrator at Utøya, Anders Behring Breivik, admitted that he was also responsible for the bombing in Oslo. Behring Breivik, a 32 year-old and previously unconvicted Norwegian citizen has, during the subsequent trail, stated that political reasons drove him to commit the acts. [13, 14]

Injuries and disruptions

Injuries

Summary of physical injuries

In total, 77 people were killed on 22 July 2011, eight as a result of the bomb explosion in the government district and 69 in the shootings at Utøya.

At least 90 people are estimated to have been injured in the bomb attack, according to information provided by the receiving healthcare units. It is possible that more were injured but that they did not request care or have not been registered for some other reason.

Based on information provided by the various hospitals involved, it is estimated that 65 people were injured at Utøya. 33 of these had gunshot wounds, many of which were superficial soft tissue and bone injuries that were not directly life-threatening. The others had sustained various types of injuries in connection with their escape, or were suffering from hypothermia as a result of lying or swimming in the cold water. It is probable that there is an unknown number that suffered milder injuries, i.e., those who were looked after at Sundvolden Hotel near Utøya and who never required medical care. Others may have approached their respective local hospitals for problems that did not arise until later.

Explosion and gunshot injuries

An exploding bomb causes injuries in different ways. The effects depend on the quantity, type and containment of the explosive substance in question, as well as where the detonation occurs. In these contexts, injuries are usually referred to as primary, secondary, tertiary or quaternary.

Primary injuries are caused by the direct shock wave generated by the detonation. This primarily causes injury to the respiratory organs. Extensive bleeding in the lung tissue can constitute an immediate threat to life.

The secondary injuries are caused by flying splinter fragments and these are the most common types of injuries found in people who need care following bomb explosions. The fragments can come from the coating of the bomb itself or from glass in windows that are smashed by the shock wave. The fragments can be hurled long distances – up to 2 km from the centre of the detonation. Theses fragments can have various forms and can enter the body with varying speed and force. The injuries can therefore be extremely varied. As far as falling glass is concerned, the effect depends largely on which organ is injured.

Tertiary injuries occur through the shock wave hurling the victim against surrounding objects, a form of "blunt trauma". This also includes the effects of a possible building collapse, which can of course cause varying degrees of crush injuries to those affected. Quaternary injuries are also mentioned

sometimes and these refer to burn injuries and the effects of inhaling the toxic gases created by the explosion.

In Oslo, most of the casualties had injuries caused by splinter fragments of broken glass, or other building material that had fallen down from the damaged buildings. The majority of these injuries could be cared for by the Oslo outpatient emergency centres (“Skadelegevakten”/”Legevakten”). The more seriously injured, most of whom had tertiary injuries, were transported to Ullevål Hospital. An examination of the case for the prosecution prior to the legal proceedings against the perpetrator shows that two survivors of the bomb explosion are thought to have suffered primary shock wave injuries to their lungs. [10]

At Utøya, the perpetrator used a semi-automatic rifle and a pistol. A projectile, i.e., a bullet, contains a certain amount of energy that is dependent on the projectile's mass and velocity. A rifle generally provides a higher projectile velocity than a pistol, since the bullet accelerates for longer period owing to the longer barrel. The injuries that occur when a bullet hits a body are dependent both on the organ that is hit and the type of bullet used. If all of the projectile's kinetic energy is to be utilised, then the energy must be absorbed by the tissue. Various techniques can be employed to achieve this. One way is to use bullets constructed so that they fragment upon impact. In military contexts, use of such ammunition ("dum-dum bullets") is prohibited by the Geneva Convention, although their use is permitted in connection with hunting. At Utøya, the perpetrator used this type of fragmenting ammunition.

The need for psychosocial support

Around 3,500 people work within the government district, of whom approximately 300 were present at the time of the bomb explosion. Six of these people were killed, as were two passers-by. It has been estimated that, for each fatality, there are on average ten relatives affected by the loss; in other words, these deaths affected approximately 80 people.

At Utøya, 69 people were killed and 496 survived. For those who were killed, there are 700 bereaved relatives. For the survivors, it is estimated that there are several thousand close relatives who may have been affected to varying degrees and who may require psychosocial support.

It is not enough just to provide this for the victims and their relatives. There is also a large number of voluntary helpers who could require the same degree of support, as well as response personnel (police, medical staff, crisis support personnel and others).

Damage to buildings

The bomb that was detonated in the government district caused extensive damage to several buildings. The worst affected buildings were Høyblokka, R4, S-blokka and Y-blokka. On 22 July 2011, these buildings housed the Prime Minister's office, the Ministry of Justice and Public Security, the Ministry of Trade and Industry, the Ministry of Petroleum and Energy, the

Ministry of Education and Research, the Ministry of Health and Care Services and the Ministry of Labour. [15, 16]

The bomb caused both internal and external damage to these buildings. Externally, the explosion caused serious damage to the façades with large amounts of falling building material. Internally, electrical fittings and ceilings collapsed, some walls were destroyed and the shock wave propelled furniture and other fittings about. Other buildings in the neighbourhood were also damaged and windows were smashed a far distance from the bomb site. [17]

Disturbances

Security assessments

The examination of the demolished buildings in Oslo, which was carried out following the bomb attack in the search for casualties, entailed an obvious risk of further injuries to rescue personnel. It was therefore necessary to have extra ambulance resources in reserve in Oslo.

The operations at Utøya meant that the rescue personnel encountered a situation that presented an obvious threat to their lives, and this meant that they could not reach the casualties straight away. Even after the perpetrator had been arrested it was still unclear if others had been involved in the act. The number of dead and injured led to strong suspicions that other perpetrators could still be at large in the area and that they might have been hiding among the evacuated teenagers. For this reason, the teenagers were treated as potential perpetrators until the police were able to carry out a thorough search for weapons. Bearing in mind that the perpetrator had been dressed as a policeman, it is easy to see how the survivors could have perceived this as yet another threatening situation.

Even on a national level, it was difficult to make a security assessment of the situation in Norway directly after the incident. Within just a few hours, Norway saw parts of the government district destroyed and witnessed the mass murder of teenagers. Were further attacks against Norway to be expected? Where and when would the next attack take place and what resources would be needed in reserve to handle this threat?

The Offices of the Norwegian Government

The explosion in Grubbegata led to the evacuation of all the ministries in the government district, including the Ministry of Health and Care Services. Ministerial staff had to leave their work places and wait at home until the work places that were less seriously damaged were put back in order, or until new premises were acquired to replace offices that had been completely destroyed. The latter took almost a week. Access to computer systems was limited for a period and employees had to rely on other ways of working, i.e., by using their mobile instead of e-mail. Several ministries moved into premises that belonged to subordinate authorities, including the Ministry of Health and Care Services, which moved in with the Directorate of Health. At the time of writing, several ministries are still housed in alternative premises.

The Fire Service

The main fire station of the Oslo Fire Service is adjacent to the government district and thus incurred major damage from the explosion. The doors to the station were destroyed, among other things, and staff were forced to remove these before they could dispatch the fire and rescue vehicles. [18]

Traffic situation

On 22 July, the E16 past Utøya was closed, due to a tunnel renovation. All traffic was diverted via the old local road, directly adjacent to the landing berth for the boats that transport visitors to and from Utøya. When the shooting started, this road was closed off. Ambulances were gradually able to drive past the barriers but parked rescue vehicles and long car queues made the road difficult to use. This meant that the alternative motor route from Ringerike to Drammen, Bærum and Oslo became considerably longer than usual.

Actions

Activation of disaster readiness and management, and work at the incident scene

Oslo University Hospital Trust

Activation of disaster readiness

At 15:25, the explosion in the government district occurred. Within one minute, the telephones started to ring at AMK Oslo-Akershus. A total of over 80 calls were logged, about half of which the staff managed to answer. At first, the operators did not understand what had happened - those that called talked about "an attack", "glass falling from above" and "a work place accident". It was also unclear exactly where the incident had occurred, since the calls were received from different locations. The operators were therefore unsure if one or more separate incidents had occurred.

The explosion was also heard by the crew of an Oslo ambulance who happened to be in the vicinity. They immediately headed towards where the noise had come from so they could investigate what had happened and they also alarmed the Operations Leader by radio. There was also a physician-manned ambulance in the vicinity whose crew heard the radio communication and also headed towards the scene of the explosion. When the Operations Leader arrived at the scene, he was able to verify to AMK that the incident involved an explosion and at 15:33 he therefore requested that the major incident alert should be activated.

Within three minutes, AMK had alerted and dispatched ten ambulances, a physician-manned ambulance, a motorcycle ambulance and a Healthcare Leader. During the course of events, AMK Oslo-Akershus dispatched a further 28 of its "own" units to the scene along with 29 units from neighbouring ambulance districts and voluntary ambulances. The operators also alerted the hospitals in Oslo. It was not until around 16:00 that AMK received personnel back-up and was able to establish the regional AMK function (R-AMK) as prescribed in the regulations.

Management and work at the incident scene

Both the Operations Leader and the physician-manned Oslo ambulance were at the scene within five minutes. During the short drive to the scene they were not able to decide on or provide any information regarding a rendezvous point (geographic location to which rescue units are directed whilst awaiting instructions) or control position. When they arrived at the scene they saw the police command vehicle and made contact with the police officers. At 15:35, medical command and control was formally established at the incident scene.

The devastation was extensive and covered a large area, which is why at first it was impossible to ascertain the number of casualties. However, the

assumption was that there were a large number of dead or seriously injured persons and this was reported to AMK. An initial assembly point ("casualty clearing station") was also quickly selected for the injured, at a point near to the joint command post for the police, fire service and medical services which had been established at Høyesteretts Plass (see Figure 6). The assembly point was initially manned by the paramedic from the physician-manned ambulance and his driver. The doctor continued into the incident scene and encountered a number of walking wounded who were directed to the assembly point. After having surveyed the area, a decision was made to establish a second assembly point at Youngstorget/Möllergata.

Figure 6. The government district with assembly points

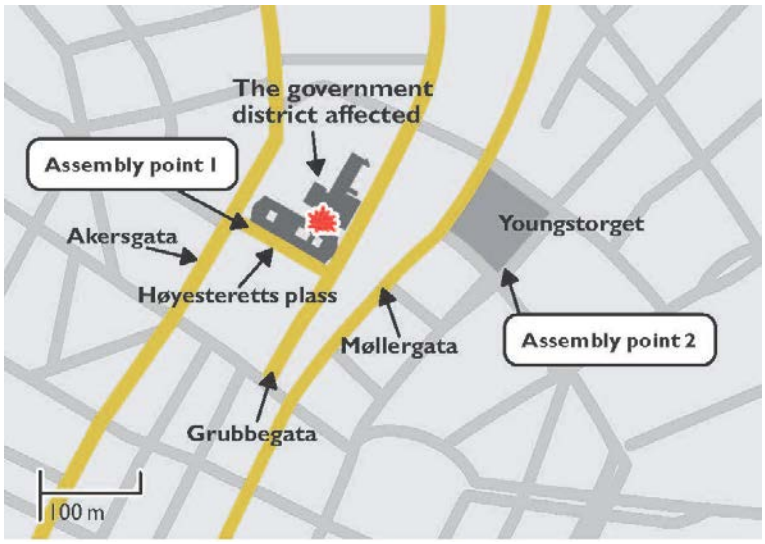


Illustration: Svensk information AB

On AMK, the IT system used for the electronic dispatch of ambulances via GPRS (digital mobile telephony) and the system used for showing the positions and status of vehicles on digital maps (available, busy, etc.) now became overloaded. As a result, the operators could not see the ambulances on the map and they were forced to handle all dispatches via radio. This was however possible since the operators carry out exercises twice a year in which this kind of system malfunction is simulated. The system was down until 12:00 the day after the incident.

The criteria for the assembly points were that they should be easy for approaching ambulances to see, be located near the incident scene and have room for the ambulances to be able to make U-turns, so that the vehicles would not block each other's approach and exit routes. The principles applied at the incident scene were those that are taught in MIMMS (Major Incident Medical Management and Support) – a course concept for the training of healthcare and medical staff in the systematic and structured handling of serious incidents. Rendezvous-points were also defined during this phase.

Access to resources was good: within ten minutes, ten ambulances and an ambulance motorcycle were on the scene, in addition to the Operations Leader and the physician-manned ambulance. Within 20 minutes, there were 42 units at the scene and within 60 minutes, there were 72 units. Additional doctors arrived from the air ambulance service and from Ullevål. The availability of staff was good since the incident occurred as shifts were changing over, both at the hospital and within the ambulance organisations. Off-duty staff who had heard the news via the media also spontaneously volunteered their services.

This access to resources meant that the seriously injured could be transported as soon as they were found with no real waiting time at the assembly points. Of the total of 43 casualties encountered, 10 were sent to Ullevål and 33 to “Skadelegevakten”. Another 47 people were able to make their own way to this facility for treatment. The distribution of patients between these various emergency facilities was made according to the same criteria used "everyday" and the staff did not therefore need to use any special triage algorithm. An articulated bus that had been passing by was requisitioned at an early stage for use as an assembly point for the transportation of people with less severe injuries. The bus was used to transport 18 of the 33 people who were sent on to “Skadelegevakten”.

Right from the start management made decisions relating to security. They assessed that there was a risk for further explosions at other locations in Oslo and communicated this to AMK. It was therefore decided to keep the physician-manned ambulance on duty throughout the night and also to reinforce preparedness with ambulance resources from voluntary organisations. Those in charge considered the possibility of a secondary explosion at the existing incident scene, but realised that this was a risk that they could do nothing about, other than to evacuate the injured as quickly as possible.

Another anaesthetist from the ambulance helicopter base arrived at the scene by car. The two doctors at the scene subsequently led the work at their respective assembly points, whilst the Operations Leader led the response from a command post which was established jointly with the police and the fire service.

All critical casualties were evacuated from the incident scene within 40 minutes, whilst it took longer to evacuate those who were not assessed as having life-threatening injuries. It was now clear that the number of dead and seriously injured was less than had been first expected.

Police and local security personnel had a good understanding of where the casualties were located inside the buildings, and the rescue services went through the premises to search for additional casualties. Personnel were accompanies by a doctor and a member of the rescue services who could help with the triaging of the injured. The cooperation between the police, fire and ambulance services is reported as having functioned smoothly.

In terms of communications technology, Nødnett functioned perfectly. However, analogue radio reception was not good, this was the means of communication for some of the vehicles that arrived from neighbouring ambulance districts.

As further attacks in Oslo were feared, the ambulance services started to withdraw resources from the incident scene as early as 17:00. When the alarm from Utøya was received, it was therefore possible to dispatch 24 ambulances straight away, along with two Helseexpress buses, an ambulance motorcycle and a helicopter. Four ambulances stayed behind when the buildings were later checked, in order to take care of any possible casualties.

Vestre Viken Hospital Trust

AMK Vestre Viken

The response at Utøya was coordinated by AMK Vestre Viken. When the first calls were received from Utøya at 17:24, preparedness had already become heightened to a certain degree in the form of extra personnel, as a result of the bomb attack in Oslo.

The calls concerned a shooting that was in progress on Utøya with a number of fatalities reported. The operators could not determine whether it was one or more perpetrators involved in the shooting. They immediately sent all available resources towards the incident scene and started to mobilise extra resources, including the manning of reserve ambulances. At the same time, efforts were also being made to maintain ambulance readiness for other incidents that might occur within Vestre Viken Hospital Trust. Calls started to pour into AMK, and the operators prioritised the answering of as many calls as possible by keeping conversations short.

Cooperation with the police at management level was made difficult due to the police response being led from Nordre Buskerud, whilst Drammen is situated in Søndre Buskerud within another police district. AMK's own police district helped in establishing contact with management in the other police district.

Geographic and operational conditions for the rescue efforts

On the eastern side of Utøya there is a small jetty. Transportation between here and the Utvika bridge on the mainland is provided by the M/S Thorbjörn, a small ferry in the form of a landing craft. The distance, as previously mentioned, is approximately 600 metres. There is no confirmed information regarding the water temperature in Tyrifjorden on 22 July, but it is estimated to have been in the region of 14 °C.

Figure 7. Utøya

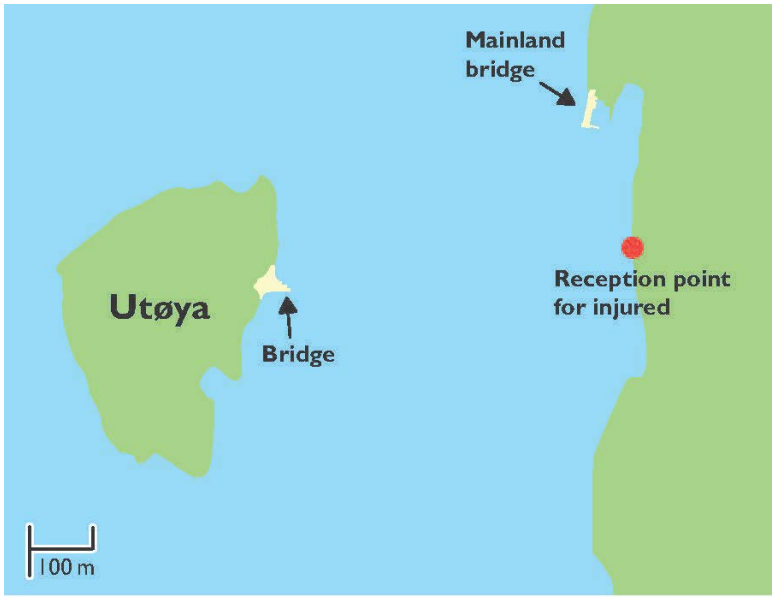


Illustration: Svensk information AB

The journey by car from Oslo to Utøya involves driving south-west on the E18 and then, when level with Sandvika where Bærum Hospital is located, turning off to the north-west on the E16. The E16 passes through a number of tunnels and, directly south of the longest tunnel (the Nes tunnel), it turns onto the old road (Utstranda) which passes the Utvika bridge. The road leads on to Sundvollen where it reconnects with the E16, which then continues north towards Hönefoss where Ringerike Hospital is situated.

If, instead, you continue on the E18 and travel south-west past Sandvika, you gradually arrive at Drammen, where Drammen Hospital and Vestre Viken AMK are located. Even further to the south-west is Kongsberg Hospital.

On 22 July 2011, the E16 through the Nes tunnel was closed due to roadworks. All traffic was diverted via Utstranda, which is a relatively narrow and winding road that follows Tyrifjorden's eastern shore. Scattered houses and a large camp site (Utvika Camping) can be found along the lake's shore. The road down to the Utvika bridge is a narrow hill close to the lake's edge that ends in a small parking area. The hill is steep and cars cannot pass due to it being so narrow. Furthermore, the road from Utstranda turns so sharply that it is not possible to turn directly onto it if you are approaching from the north.

Management and work at the incident scene

The first ambulance received an alarm from AMK Vestre Viken between 17:24 and 17:27 (varying information has been provided regarding this detail) and at 17:33, it had arrived at the bridge to Storøya.

The ambulance crew could hear shots being fired at Utøya and therefore chose to temporarily draw back to Sundvollen, a little further north. More

ambulances subsequently arrived at this location. At this point, traffic proceeded as normal at Utstranda past the Utvika bridge, but ambulance personnel later closed off the southbound lane of the E16 at Sundvollen. Ambulances were able to drive past the barrier, but the accumulation of rescue vehicles on the narrow road made it difficult to use the road for secondary transportation from Ringerike Hospital to other hospitals in the Vestre Viken Hospital Trust or to Oslo. It was possible to reach the other hospitals via alternative routes, but then the journey time would be in excess of an hour.

The disaster alert was officially made at Vestre Viken Hospital Trust at 17:45. At approximately 17:55, ambulance personnel received the go-ahead from the police to proceed to the Utvika bridge. However, the location was immediately evacuated (at approximately 18:05) when a police officer saw water splashes from bullets and warned that shooting was in progress. While this was happening, resources had increased due to the arrival of ambulances and ambulance helicopters equipped with further personnel and equipment which they would not usually carry (including light-weight stretchers of the LESS model). The resources were assembled at two forward control points; those from the north assembled in Sundvollen and those from the south assembled at Sollihøgda, south of the Utvika bridge.

Figure 8. Rescue efforts at Utøya

Photo: Mårten Edvardsen, Scanpix

In Sundvollen, the hotel was put into operation as a collection point for those with less serious injuries or no injuries. The collection point was manned by staff from the municipal health services in Hole Municipality, including the County Medical Officer who gradually received reinforcements from a surgical team from Ringerike Hospital.

Several of those who had participated in the camp at Utøya had tried to escape the massacre by swimming across Tyrifjorden. Civilians, including some from the camp site, had gone out in small boats, risking their own lives to help those who were swimming across the lake. The teenagers who were helped out of the water were transferred to various locations along Tyrifjorden's eastern shore, where the efforts to bring them ashore began at approximately 18:05. At first they were cared for by civilians from the houses in the area. It was not until 18:50 that the police declared the bridge at Utvika to be safe, followed by the evacuation of casualties from the island. A primary collection point was established immediately adjacent to the Utvika bridge. The casualties were assessed primarily by anaesthetists who had arrived from the forward control point at Sollihøgda.

Six teams started to work quickly with the 25 evacuees who, within 10-15 minutes, were transferred to the bridge at Utvika. Ten of these were suffering from serious gunshot wounds. Medical staff only performed the measures that were considered absolutely necessary and prioritised their rapid dispatch to the hospital. Two patients were intubated at the scene. The casualties that the anaesthetists had assessed as being unstable, or who were expected to become unstable, were selected for helicopter transportation, whilst those assessed as stable were to be transported in land ambulances. All those suffering from gunshot wounds were to be sent to Ullevål and the others were to be distributed to the hospitals within the Vestre Viken Hospital Trust. The walking wounded were cared for by doctors from the municipal emergency services assisted by ambulance personnel and transported by bus to Sundvollen.

The ambulance personnel realised very quickly that the location at the bridge at Utvika was not a suitable casualty clearing stationt. The road down to the bridge was steep and narrow, which meant that the ambulances had to reverse down to the landing site one at a time. Some patients had to be carried up the hill to be loaded into the ambulances that were waiting there. The Healthcare Leader at the bridge at Utvika had therefore at approximately 19:05 established contact with another paramedic and requested that an additional casualty clearing station to be set up at the bridge to Storøya (Elstangen) and for him to assume the role of Operations Leader there. Some transports from the bridge at Utvika went directly to hospitals, but the majority of high-priority patients were sent by ambulance to the helipad adjacent to the second casualty clearing station. Staff made great use of the LESS stretchers at the scene, approximately 50 of which had been brought to the scene by ambulances, fire engines and helicopters from Oslo. Some of the stretchers were brought by NLA personnel from a storage unit at the Lörenskog base, which was intended for equipment to be used in overseas operations.

A short time after efforts at the bridge at Utvika had been underway, fire service personnel noticed a car parked in the parking area and suspected that

this might contain an unexploded bomb. Therefore, at approximately 19:30, a decision was made to immediately evacuate Utvika bridge. All casualties were evacuated as quickly as possible to the new site by the ambulances that were parked up on the road.

The civilians who had transported casualties ashore wanted medical staff to accompany them out to the island. Two of the senior doctors from NLA had a discussion about what should be done and attempted to get a go-ahead from the police. Eventually, one of the doctors from NLA boarded a boat with three ambulance personnel and made their way around the island to see if they could rescue the injured who were still in the water. A second boat containing four doctors, a nurse and three ambulance personnel followed them out approximately ten minutes later. Telephone contact was eventually made with the police response team's leader at Utøya, who gave the all-clear to go ashore at approximately 19:40. The medical staff, escorted by police officers, continued on to an office building situated on the island.

Medical staff discovered casualties who had received tourniquets for injuries to extremities from the police response team's medics. This came as something of a surprise, as it was not known which principles had been adopted by the response team's medics, or what equipment the police had access to. Many of the casualties with tourniquets applied were suffering from severe ischaemic pain and there were no notes on when the tourniquets had been applied. It was therefore necessary to decide whether these devices should be removed or whether the injured should be given strong analgesics (pain medication). Many tourniquets were removed. Apart from the insertion of intravenous cannulas, no advanced medical procedures were undertaken on the island.

At the casualty clearing station at Elstangen, a field was used as a helipad. The casualty clearing station on the beach was organised at around 19:30, with seven teams led by anaesthetist working in several "production lines". The objective was to, as efficiently as possible, transfer the injured to hospitals so that they would not have to wait. Patients from the first casualty clearing station at the Utvika bridge were unloaded from the ambulances and loaded into the ambulance helicopter. As more casualties were brought ashore from the island, they were sorted for further transportation by either helicopter, ambulance or bus. Assistance was also provided by the fire service, who helped all the walking wounded to the buses, where doctors from the municipal emergency services re-triaged and monitored the patients. The escorting conducted by the fire service was primarily a security measure, as there were still suspicions that further perpetrators were at large. It was thought that one or more assailants might try to "conceal" themselves among the victims and, at this juncture, the police were quite convinced that there were another two to four gunmen at large. The Operations Leader also received communication to this effect. The whole operation was safeguarded by two police officers from the police response team.

Radio communication did not function adequately for various different reasons, partly due to technical problems with the old analogue radio network. Furthermore, the noise from the helicopters made it extremely difficult to hear what was being said. Alternative forms of communication

were therefore employed, such as runners between the Operations Leader and the person acting as "parking officer" at the ambulance point on both sides of the approach road. The Medical Incident Officer function (the person who prioritises and decides on medical interventions at the incident scene) should, according to the plan, have been taken by the County Medical Officer. However, that individual was at the Sundvolden Hotel, meaning that there was a short period of confusion as to the locations of the collection points. At approximately 18:45, one of the doctors from NLA assumed the role of Medical Incident Officer at the casualty clearing station, following a request from the Healthcare Leader.

At this time, nobody knew exactly what had happened at Utøya or what the total number of casualties was likely to be. Information had been provided earlier that there could be as many as 750 participants at the camp in Utøya. The directions still being adopted were that patients who would normally be transported to the trauma centre at Ullevål should also be sent there now, and this applied until the hospital communicated that their capacity had been exceeded. In order to monitor the situation, the Medical Incident Officer and one of the team leaders at Ullevål kept in contact via mobile phone. At this point, Ringerike had reached full capacity and for this reason it was decided that the injured that were not to be sent to Ullevål should be sent to the hospital at Bærum instead.

At the scene, a significant number of helicopters and other vehicles were assembled. In total, six of NLA's helicopters were on site from the bases at Lörenskog, Stavanger, Arendal, Ål and Dombås, as well as two Sea-King SAR helicopters from Rygge and Örland. The NLA's light helicopters were used for the transportation of patients and 13 casualties were taken to Ullevål. The Sea-King helicopters were kept in reserve, in case the number of injured became so great that Ringerike/Oslo could not handle the situation. The idea was that this larger type of helicopter would transport patients not requiring intensive care to hospitals further away. They had an estimated capacity of ten patients per flight. In such a "worst-case scenario", there were also plans to open Eggemoen Airport, north of Hönefoss, and use four air ambulances to distribute the patients among Norway's more remote hospitals. Two of NLA's air ambulances based at Gardemoen were put on alert by NLA's flight coordination centre, in case this solution was to be put into effect.

The Sea-King helicopters were now used instead to search for more people in the water around the island and the medical crew were working at the casualty clearing station. Later on, three of the Armed Forces' Bell 412 helicopters arrived at the scene. These were used tactically by the police, but were not used for patient transportation. The number of flights in this small area was a problem in itself, a problem that was further exacerbated by the rain and occasional fog. At the peak of traffic, 30 flights an hour were being made.

In total, ten anaesthetists were working at the scene (six from NLA and four from the Vestre Viken hospitals), together with the assistance of paramedics and nurses.

Work at the casualty clearing station was finished, for the most part, by 21:20. During the night, the helicopters from Lörenskog carried out some

secondary transportations from Ringerike to Ullevål, whilst the other helicopters returned to their bases (all are capable of flying at night). One Sea-King was retained on the scene. At around 23:00, the number of other personnel at the scene started to thin out, at the same time as other staff arrived to relieve those who had been there from the start. Prior to this, the staff had been provided with food and drink. Work was suspended completely at around 02:30, but an ambulance was kept in readiness in the area for several days. A technical debriefing of the groups involved in the work was conducted during the night, whilst an organised debriefing for Vestre Viken's staff was held two days later. NLA organised its own debriefing. To facilitate the treatment process for staff working within the Vestre Viken Hospital Trust, hospital management hired ambulance resources from other areas following the incident.

The security level at Utøya was unclear throughout the whole evening. The perpetrator had been arrested (just after 18:30), but the police suspected that there could be other gunmen who were yet to be found. Around 23:00, the police were convinced that all survivors had been evacuated from the island but, for the sake of security, one final search was organised, beginning shortly after 24:00. Five medical teams then thoroughly searched the island, escorted by armed police, in order to ensure that the bodies lying there showed no signs of life (official declaration of death). The task was made more difficult since the security level meant that lights could not be used. After the search, the total was revealed to be 72 dead, despite the fact that the actual number was 69. The error was due to a number of bodies being counted twice, as the search was divided up between five teams who were operating simultaneously in the dark. The majority of personnel left the island at 01:30, but two paramedics remained on standby on the island.

The experiences of those involved

The management personnel who were involved at the scene considered the work to have functioned well, given the situation: no critically injured needed to wait for transportation and no one died while being transported. The positive results were, in their opinion, due to the majority of personnel knowing each other from before and the fact that everyone worked in a strictly disciplined manner. The buses (Helseexpressen and coaches) solved the problem of transporting the large number of people with minor or no injuries to the hotel in Sundvollen.

Communication at the scene was, however, a major problem. Ambulances that were not familiar with the area had additional problems due to the temporary absence of digital map support. However, the inter-organisational cooperation between the police, fire service and medical services at the incident scene proceeded very smoothly.

Some of the seriously injured were transferred to Ringerike Hospital, which was contrary to the strategic decision to transport the seriously injured to Ullevål. It has not been possible to ascertain the exact reason for this. It is probable that the hasty evacuation of the first casualty clearing station at the bridge at Utvika, in combination with the uncertainty

regarding the location of the other casualty clearing station (Sundvollen or Elstangen) and the lack of local knowledge and a functioning digital map, contributed to this deviation from the plan. In practise, however, this deviation did not have any negative consequences for the injured parties.

During the spring of 2011, NLA started to be able to alert its personnel via text message, which means that a large number of extra personnel could be called in relatively quickly. It was therefore possible for NLA to have a large number of teams at the scene who could carry out medical care without the transportation capacity of the helicopters being reduced. The helicopter crews who transferred the injured to Ullevål also encountered a fantastic level of service at the helipad. When they returned to the helicopters after having handed over the patients to the Emergency Department, they found that the helicopters had been cleaned, drug supplies and other medical material had been replenished and that cold drinks had been provided.

It is impossible to lead a complex operation and simultaneously log the measures taken and, for this reason, the response leaders needed a designated log keeper. Another reflection is that a good knowledge of the healthcare system itself is required in order to work in it, i.e., capacity and specialities at various hospitals.

No formal triage algorithms were used, other than that the walking wounded were directed to the buses. However, some of these could be seen to have gunshot wounds and were therefore re-triaged to an ambulance.

One of the pilots from NLA coordinated flight movements at the scene, but it is believed that it would have functioned better with an Air Traffic Coordinator, ATC. Helicopters are currently dispatched by the AMK within whose area the base is located but, with a major incident, coordination becomes a problem. It needs to be investigated whether the coordination would work better if all helicopters within a regional health trust were dispatched from a joint centre.

The role of the municipality should also be discussed. Municipal resources are important for the care of less serious injuries and the uninjured, but the County Medical Officer should not be working as the Medical Incident Officer at the scene itself. This task would be better carried out by those who are used to operating under such conditions, i.e., the doctors of the air ambulance service.

Representatives of prehospital care have also requested a decision regarding the introduction of national principles for incident scene strategy, primarily with reference to triage, tactics and management principles. Collaboration between the medical services and the police special response teams is required.

In conjunction with incidents where there is a clear threat, i.e., shootings, the procedure in Norway is that the police shall declare the area "safe" before medical personnel may enter it. It has been suggested that the grounds for these decisions and the person who shall make them should be examined.

Forewarning and the decision to put hospitals at disaster readiness

As early as 17:45 on 22 July, the hospitals at Bærum, Drammen and Ringerike were placed at their highest level of disaster readiness. The hospital at Kongsberg however received information regarding the situation but was not placed at the same level of readiness. Due to security concerns, all of the hospitals were cordoned off with the help of the hospitals' own security staff. In addition to this, Drammen Hospital set up seven surgical teams, Ringerike Hospital four teams and Bærum Hospital three teams. All three hospitals called in extra staff.

Care at the hospitals

Management issues within the Oslo University Hospital Trust

At 15:32, the Managing Director of Oslo University Hospital received communication regarding the bomb explosion. He then summoned the emergency management team to the hospital while, at the same time, acquiring more information regarding the incident. The disaster alarm was sounded at 15:33. Prior to this, AMK had also alerted Ullevål's Emergency Ward Coordinator, who decided immediately on a yellow level state of preparedness, which was promptly upgraded to red. This was all in accordance with the emergency plan. A senior surgeon was alerted, as was the trauma team.

Oslo University Hospital's disaster management team was called in at an early stage. The management team consisted of the Managing Director, the Senior Consultant, the Communications Director, various clinic heads, the emergency preparedness consultant, the head of the prehospital centre and the necessary administrative personnel from the hospital's management. Since the incident occurred during the holiday period, several regular members of the disaster management team were replaced by their deputies, and as the incident occurred on a Friday afternoon, it was a while before all arrived. The team was operative during the afternoon and evening and held several meetings in order to evaluate the situation. Oslo University Hospital's prehospital centre became the best source of information and it was from there that the management received correct information regarding the number of casualties, the situation at the incident scenes and at the hospitals.

The telephone exchange at the National Hospital was alerted of the bomb explosion at 15:48 and was then requested to start calling in extra personnel. Upgrading to a red level state of preparedness occurred at 16:08. It took time to call in extra personnel since many were on holiday and were not immediately contactable. Furthermore, the notification of the various departments and other people by telephone did not work well. It was time consuming. What is more, some departments had no instructions regarding how many they should call in. Some solved this by moving staff from other units that were not expected to be admitting patients.

In the days that followed, the disaster management team was able to ensure that the operational units had all the necessary resources, not least through their redistribution of the patient flow between the various

hospitals. The management team also ensured that those who were working directly with patients and relatives received the support they needed and that contacts were established with other hospitals within Helse Sør-Øst and with the Ministry of Health and Care Services. In addition to this, the management team was also responsible for the communication of information to both national and international media.

Care of patients within Oslo University Hospital Trust

Ullevål Hospital

Casualty admissions at the emergency ward

Very soon after the bomb explosion in the government district, the alert was received by the Emergency Department Coordinator at Ullevål Hospital. The coordinator at first declared a yellow level state of preparedness, which was promptly upgraded to red. Subsequently, additional staff were called in, in accordance with the disaster plan. The emergency department at Ullevål was full with patients when the alarm was sounded but it was still possible to evacuate the ward within about 15 minutes.

In the emergency department itself, the access to staff during the initial phase was not sufficient, which also meant that some medical equipment and medication were not available. This problem was solved, however, within about 30 minutes. The gathering of the trauma teams worked well and, during the first twenty-four hours, a total of 20 trauma teams were mobilised. The on-call staff at the orthopaedic ward had the responsibility of putting these teams together, and these were assembled in the emergency ward's waiting rooms. The trauma teams consist of a nurse and a doctor (surgeon, orthopaedist or anaesthetist) with a specially designated team leader.

Triage was conducted at the entrance to the emergency department by an experienced trauma surgeon. The first two patients arrived at 15:51, 26 minutes after the bomb explosion. At 16:00, two more casualties arrived and within approximately two hours of the bomb explosion, ten casualties had received care. These were all cared for under appropriate medical conditions in the trauma rooms by the various trauma teams. The patients received "disaster journals" and all journal entries were made on paper.

Figure 9. Trauma room at Ullevål Hospital

Photo: Louis Riddez

After the arrival of the last casualties of the bomb explosion, it took over 2.5 hours before the first casualties from Utøya arrived at the emergency ward. The team had then finished working with the ten patients who were injured in the bomb explosion, whom had been transferred to the operating theatre or to postoperative, x-ray, intensive care or surgical care wards. At this point, the elevators between the emergency ward and the other wards stopped working, as damaged door latches (beams of light) prevented the doors from closing. They had probably become damaged as a result of blows to the elevator doors during the previous emergencies. With the help of elevator repairmen who were rapidly called in, the malfunction was fixed before the casualties from Utøya arrived at the emergency ward.

At 19:57, the first gunshot victim from Utøya arrived at the emergency department and, within an hour, a further eight patients with gunshot wounds arrived from the same location. During the second hour, three more casualties arrived and two casualties from Ringerike Hospital were also later transferred (at 23:08 and 23:22 respectively). One further patient also arrived at 01:07 the next day. All of the casualties who arrived during the first evening and night were provided with the medical resources required.

Up until the next morning, the emergency department admitted 24 casualties, 11 of whom required emergency x-ray examinations in the form of a CAT scan. The examinations could therefore be conducted as needed.. The staff checked, among other things, to see if the ammunition which caused the injuries was radioactive.

The Surgical Department

Two operations were in progress in Ullevål's surgical department when the disaster alert was activated. These were able to be completed in usual fashion. It soon became possible to open up additional operating theatres sufficient to cover requirements. The management assembled twelve surgical teams, which meant that no patients needed to wait for surgery.

Out of the first ten casualties of the bomb explosion, seven required surgery. These operations were able to be conducted without interruptions, but four of the operations were still in progress when the casualties from Utøya started to arrive. Therefore, four additional operating theatres were opened and, at times, as many as six operations were in progress simultaneously.

Later that night, a total of 15 casualties were operated on, in addition to a "regular" patient who required emergency surgical treatment.

Table 2. Surgical operations at Ullevål Hospital on the first evening and night

Type of operation	Number
Head and neck	
Craniotomy	3
Intracranial pressure monitoring	3
Wound debridement	2
Face/jaw	
Wound debridement	4
Thorax	
Thorax drainage	7
Thoractomy	1
Wound debridement	3
Abdomen	
Laparotomies (of which four were non-therapeutic)	8
Wound debridement	5
Upper extremities	
Wound debridement	7
Vessel reconstruction	1
Lower extremities	
Wound debridement	7
External fixation of fractures	2

Source: C. Gaarder, P-A Naess.

There were sufficient anaesthetists and other surgical personnel to cope with the resuscitation needs (primarily the various measures required to stabilise the patients), including blood transfusions. In total, 13 of the 25 patients received blood products in the form of 53 erythrocyte concentrates (red blood cells), 39 Octoplas® (a specially prepared, fresh-frozen plasma) and 14 thrombocyte concentrates (platelets).

During the following days, 23 and 24 July, a further six casualties were transferred to Ullevål after receiving their initial treatment or operation at another hospital. All of them required a new and relatively prompt operation after their arrival at Ullevål. These were planned follow-up operations to the

life-threatening injuries that had been temporarily treated the day before. In addition to these operations, many of those operated on during the first day also needed follow-up operations in order to re-debride wounds, remedy fractures, reapply abdominal bandaging in open abdominal surgery or to perform closure of the open abdomen. This is the normal surgical strategy for the treatment of penetrative injuries caused by a bomb explosion or a firearm. Table 3 below illustrates the number of operations compared with the number of injured.

Table 3. Number of operations at Ullevål Hospital

	Injuries from explosions (9)	**Gunshot wounds (21)**	**Total (30)**
Women vs. men	W 4, M 5	W 14, M 7	W 18, M 12
Average age (range)	37 (19–67)	18 (14-23)	24 (14–67)
ISS* mean	26	21	23
Number with an ISS higher than 15	5	14	19
Mean NISS*	28	30	30
Total number of days in hospital (mean)	142 (15.8)	342 (16.3)	484 (16.1)
Total number of days in intensive care (mean)	93 (10.3)	181 (8.6)	281 (9.4)
Total number of days in a respirator (mean)	53 (5.9)	75 (3.6)	128 (4.3)
Total number of operations (mean)	33 (3.7)	92 (4.4)	125¤ (4.2)
Mortality	0	1	1

Source: C. Gaarder, P-A Naess.

*ISS (Injury Severity Score) and NISS (New Injury Severity Score) are international classification systems for describing the degree of severity of multiple injuries (see appendix 1).

¤ A total of 131 operations were performed, but one patient did not submit their written consent to be included in the report and therefore the data is published according to the above.

In the first month following the disaster, the hospital performed 131 operations. Certain patients required further operations, in one case, 13 additional operations. There was never a shortage of either operating theatres or personnel.

The Postoperative (Recovery) Ward

When the disaster alert was activated at the hospital at 15:33, the postoperative ward implemented its part of the disaster plan by making ten beds available for patients, either for preparations for surgery (preoperative care) or for monitoring or supervision after surgery (postoperative care). Furthermore, in the thorax surgery postoperative ward, it was possible to make a further four beds available, so that there was a total of fourteen respirator locations. During the first night, twelve patients received care in the postoperative ward.

Intensive care capacity

The intensive care units made space available for the incoming patients in the same way as the other wards. Ten patients received care there on the first night, several of whom required respiratory assistance. The emergency medical department also provided advanced surgical aftercare. At least twelve beds were made available for respiratory care and dialysis treatment could also be offered. There was never any shortage of intensive care capacity.

Other departments

Many of the injured required long periods of hospital care, which is illustrated in table 3. Despite this, there was never any shortage of beds, which is probably a result of the redirection of all emergent surgical cases, apart from serious trauma, to the other hospitals within the Oslo University Hospital Trust, which occurred in the weeks following the incident. On 11 October, the last of the casualties was transferred from Ullevål Hospital to another hospital in Norway, where the patient received care up until mid-December 2011. [19]

The National Hospital and Aker Hospital

The National Hospital, which is one of the largest hospitals within the Oslo University Hospital Trust, primarily provided support to Ullevål. On 22 July, it only admitted one patient. This patient had facial injuries and was transferred to Ullevål Hospital the same night. No casualties were admitted or operated on, but the offer was made to transfer intensive care patients, so that beds could be made available at Ullevål. However, in accordance with the emergency plan, operational resources were available for use as and when necessary. The National Hospital also set up a centre for the relatives of the injured or the dead (for further details, see the section 'Psychosocial support, with focus on the first month').

On 22 July, Aker Hospital admitted two casualties from the bomb explosion who had initially been treated at “Skadelegevakten”. Both patients could be discharged the same evening.

The emergency care provided at Skadelegevakten

At “Skadelegevakten”, it was the security guards that informed the on-call doctors and nurses that casualties were on the way to them. The security guards had, just before 15:30, heard that a glass ceiling had collapsed at Akers gata, resulting in a large number of cuts and other injuries. The medical staff received no alert or information from their own hospital or from the City of Oslo.

The incident occurred immediately after a shift changeover, but nearly all of those who had left their workplace returned when they heard the news about the bomb explosion in the government building. At 16:00, 30 nurses, 17 doctors, three radiologists and four secretaries were in place and ready to receive the casualties. It was not necessary to call in any extra staff. Waiting

rooms and treatment rooms were quickly vacated by patients with less serious injuries, without any specific disaster plan needing to be activated.

The first casualties arrived shortly after 15:30 and continued to arrive up until 17:30. During these two hours, a total of 64 patients were treated. They were admitted and treated, three to a room, by teams consisting of a doctor and a nurse. After approximately one hour, staff became short of sterile instruments due to all the suturing of wounds caused by splinters of glass from the bomb explosion. However, the treatment of the majority of patients was completed within approximately 2.5 hours. Another seven patients arrived before midnight, two of whom came from Utøya.

On 23–25 July, "Skadelegevakten" admitted a further eleven patients, three of whom had been injured at Utøya. During 22–25 July, a total of 85 patients were treated (five of them from Utøya). Two casualties were kept for observation for a couple of hours. Only two of these 85 patients needed to be transferred to other institutions, and they were discharged later the same day. This is a testimony to how well the triaging of patients worked at the incident scene.

Some patients suffered acute stress reactions which the staff wanted to monitor. This was organised through effective collaboration with the municipal emergency services, to whom the patients could approach for repeat treatment.

Distribution of the injured to the hospitals within the Vestre Viken Hospital Trust

Ringerike Hospital

Ringerike Hospital is located 16 km from Utøya and is therefore the hospital closest to the island. The hospital has its own helipad, which facilitated rapid transportation on 22 July.

During the evening of 22 July, a total of 35 patients from Utøya arrived at the hospital, which was well prepared and had been put on disaster readiness as early as 17:45. The hospital's Emergency department had called in extra personnel and several others volunteered for duties when the incident was publicised by the media. Therefore, on being received by the Emergency Department, every casualty was met by a complete treatment team consisting of doctors and nurses. All work functions used pre-prepared action plans, written out on "action cards", so that no details were missed.

The patients were registered with reserve numbers (temporary ID numbers) on the hospital's own emergency web platform. This web platform became a valuable tool, as it ensured that the number of patients who had been admitted was known, and that it was also possible to keep track of them, wherever they were in the hospital. Each ward also had its own coordinator. Every patient was given a casualty or treatment card, in order to reduce the risk of examinations and treatments being neglected or conducted incorrectly.

The first wave of five patients arrived at the hospital at 19:20. They seemed to be uninjured, but suffering from slight hypothermia and could be cared for by the various specialists in internal medicine. They were later able to leave the hospital and travel to Sundvolden Hotel, where an

assembly point had been established for relatives and those with no physical injuries (UK “Survivor reception centre”). At 19:40, teenagers with more serious injuries arrived and these were triaged at the entrance to the emergency department by an experienced surgeon. Each patient requiring special surgical care was looked after by someone with the relevant specialist knowledge. A total of three patients requiring thorax drainage arrived at the emergency ward, but only one of these needed immediate surgery and that was for an abdominal gunshot wound. The latter underwent an emergency operation due to bleeding and intestinal contamination), and was transported the next morning to Ullevål's trauma unit for continuous care. During that evening, night and the next day, seven of the casualties were transported to Ullevål. Other casualties could be sent to their own local hospitals the next day.

All patients were classified with the help of ISS (see appendix 1), which showed the following pattern of injuries:

- ISS 0–3: 20 (uninjured, superficial gunshot wounds and cuts and grazes)
- ISS 4–9: 6
- ISS 10–15: 3
- ISS 16–25: 3
- ISS > 26: 3 (the highest ISS value was 41)

A total of 14 patients had gunshot wounds, several of whom had low ISS scores due to the injuries being located in their arms or legs, or of a more superficial nature. However, all of them required operations later that night, ("debridement" – measures where dead tissue and foreign bodies are removed from a wound). The hospital also set up a special room for relatives.

Bærum Hospital and Drammen Hospital

Bærum hospital admitted a total of eight patients who came directly from Utøya. All were aged 15–22 years old and four had gunshot wounds: one had been shot several times, one had a pelvic injury and one was suffering from asthmatic problems. The majority of the gunshot wounds were to the extremities and no live-saving surgery was immediately required. One of the casualties was suffering from hypothermia. In addition to these patients, the hospital also admitted two other patients from Ullevål, in order to make it easier for them (Ullevål) to receive those with more serious injuries.

Drammen Hospital, despite its ability to mobilise complete surgical teams, only admitted two casualties. One received surgery for gunshot wounds with the treatment subsequently completed at Drammen. The other could be sent home for on-going outpatient care. Drammen Hospital also set up a special room for the care of relatives.

All patients admitted to hospitals in the Vestre Viken Hospital Trust had been discharged by 26 July 2011.

The hospitals' own evaluations

Ullevål University Hospital

The following is a short summary of Ullevål University Hospital's own experiences of the emergency care provided on the first days following the attacks of 22 July:

- The emergency care of all casualties from the bomb explosion in Oslo and the shootings at Utøya functioned well. There was no waiting time for emergency operations or other important medical interventions.
- There was, at hand the whole time, sufficient staff and medical equipment, including intensive care beds, due to the fact that the disaster management quickly made the decision to redistribute patients and resources between the hospitals that are a part of the Oslo University Hospital Trust, including Aker Hospital.
- Trauma skills were very important for the efficient flow to and from surgery. Initially there was a shortage of such skills, i.e., in the postoperative department where the casualties were sent shortly after their arrival at the emergency ward, in order to be prepared for surgery or to await further examination. A surgeon with these skills was able to be placed there along with an anaesthetist, to help handle the flow of casualties.
- A campaign was launched whereby the public were requested to donate blood. As a result of this, a great number of people who had never previously given blood volunteered to do so. This caused problems. Registered blood donors should have been requested instead (for further details, see the Communication and Media Relations section).
- The new emergency plan worked well, despite the fact that it had only recently been adopted. This can be explained, at least partially, by the fact that the new plan was similar to the old one and that the majority of staff were familiar with it, from a practical point of view. The experiences from 22 July have, following the incident, only resulted in minor changes.
- The pressure from the media was relatively intense and the medical information regarding the injured was somewhat difficult to communicate to the information department, which was also heavily burdened.
- The staff who were involved with the incident were well taken care of, in terms of psychological support. The hospital's disaster management is also considered to have provided adequate support.
- There were shortcomings in the information provided by the disaster management to the departments concerned within the Oslo University Hospital Trust. Many individuals in the other departments of the hospitals thought that they did not receive sufficient information.

The most important areas for improvement that have been identified are as follows:

- Physicians performing triage at the emergency departments should be doctors with specific trauma skills.
- Better communication is needed between the surgical and x-ray department team leaders, in order to facilitate the casualty flow.
- The conversion from the identification numbers that the patients initially received (according to the disaster plan) to the normal identification system must work more efficiently.

Skadelegevakten

The staff at "Skadelegevakten" have made the following comments regarding the efforts of 22 July and the days that followed:

- There was little or no information from other healthcare units regarding what could be expected.
- Volunteers streamed in to their workplaces without anyone having called them in.
- Somebody needed to take the administrative responsibility for correctly registering the patients and completing medical records.
- There were insufficient supplies of surgical instruments.
- It was a positive aspect that the usual procedures for admission and treatment could be followed.
- More time was needed for the monitoring of patients and personnel.

Ringerike Hospital

Ringerike admitted the most casualties from Utøya. Below is a summary of the hospital's evaluation:

- The situation was handled well thanks to the high availability of staff, both those who were called in and those who volunteered for duty. Many of them worked above and beyond the call of duty and there was a team spirit that is rarely seen. This applied to all involved at the hospital.
- The internal web system for registering patients worked perfectly.
- The trauma training and education systematically undertaken proved very useful.
- The collaboration between the medical services, rescue services and the police worked very smoothly.
- Two days after the incident, a debriefing was conducted and the work that was carried out improved the team spirit in the hospital. The staff who felt least satisfied were those who were not able to participate in the work efforts.
- Improved methods of calling in personnel are required, i.e., via an emergency text message that automatically goes out to all concerned.
- The hospital requires more incoming telephone lines in order to be able to meet the contact need of relatives.

- The work would have been facilitated by having TV screens at the various units where the staff could follow the regular news and keep updated on the situation.
- Gunshot wounds require specific knowledge of, for example, ballistics and wound care, in order to be correctly treated.

Bærum Hospital and Drammen Hospital

At Bærum Hospital, the opinion is that the admission aspect worked well due to the hospital's disaster plan being activated. The hospital also had the possibility of admitting considerably more patients than the seven that arrived.

Drammen Hospital only admitted one patient and the authors of this report do not feel that a closer evaluation of their work is necessary. Interviews with staff from the other hospitals suggest, however, that those at Drammen experienced a certain amount of frustration about not being able to contribute more to the efforts of 22 July.

Psychosocial support, with focus on the first month

Hole Municipality

The risk and vulnerability analyses for Hole Municipality are based primarily on fires and major accidents on the E16 motorway which runs through the municipality. The incident in question did not primarily affect the residents of Hole Municipality, but quickly became an issue of national importance instead. This was due in part to its connection with the bombing in the government district, the number of dead at Utøya and also due to the fact that the victims came from different parts of Norway.

Since the incident occurred in the middle of the holiday season, many key members of the municipality's management were away; substitutes were deputising for many positions and manning within the municipality was at a minimum.

On 22 July, the crisis team at Ringerike was alarmed at 17:30 and the medical services at 17:34. The municipal emergency services received the alarm at 17:43 and the County Medical Officer for Hole Municipality at 17:48. The latter drove to Utøya where ambulances were already on the scene, so he therefore continued on to Sundvolden Hotel. The hotel had been requisitioned as a support base and assembly point at 18:05. The leader of the Hole Municipality crisis team was alarmed at 18:00 and arrived at the Sundvolden Hotel at 18:30. The municipality's crisis management, the "Emergency Council", had also assembled at Sundvolden. The chairperson of the municipality, whose role corresponds to both that of municipal commissioner and chair of the local government authority in Sweden, was on holiday and was not present until the following day. He subsequently took control over the crisis management. The first teenagers arrived at Sundvolden at 18:32.

Sundvolden Hotel

The first to arrive from Utøya were wet, frozen and very frightened. More casualties arrived afterwards, along with many relatives who had made their way to the hotel. In the end, there were 700–1,000 people there and the situation was initially very difficult for those in charge. Many people got in contact to offer assistance. As well as leading the crisis efforts, the municipal management also devoted a considerable amount of time to providing information to media representatives from around the world. The operations at Sundvolden Hotel continued for about four days, up until the Tuesday morning.

Volunteer helpers

Following the events, it was clear that there were also a large number of people who had voluntarily helped those affected by the incident, both local residents and people who were staying at the camp site on the mainland near Utøya. Some of the volunteers had picked up teenagers by boat, in some cases at risk to their own lives. The police wanted to interview these volunteers and, in connection with this, the municipality was able to start registering these individuals so that they could subsequently receive support. The municipality later carried out assemblies with approximately 100 of these volunteers. They have undergone a debriefing, the police have informed them about the incident and they have been informed about common stress reactions and strategies for coping with these ("psychoeducation") as well as the media's working methods.

Response personnel

When extreme incidents occur, people often show compassion and are prepared to get involved and help out. In literature, this has been described as the *honeymoon phase* and this is something that was also apparent in Hole Municipality. Nearly 250 people got in contact to offer assistance. The municipality's management made great efforts to handle the situation, as did the whole disaster organisation and many other's within the municipality's administration, in addition to all the external response personnel. The management had a great responsibility for the response personnel, both during and after the incident and, on the Sunday, extra resources were allocated to conduct a debriefing of the response personnel. Some problems arose in ensuring that all personnel were registered and that they could also be monitored over time.

The experiences of those involved

Within Hole Municipality, the incident has been divided up into an acute phase, a follow-up phase and a supplementary phase.

The acute phase

In a chaotic situation where resources are initially limited, people tend to trust in previous plans, focus on what has actually happened and then try to survey the situation and take appropriate measures. At Sundvolden Hotel,

Hole Municipality primarily worked to make the victims feel safe and to satisfy basic needs such as contact with their relatives, a shower, warmth, a change of clothes and food and drink. The staff also tried to register the survivors. A major problem at first was the organisation of the volunteers, as it was difficult to organise meetings with them and to provide and receive information. The crisis management knew most of the support staff who came from adjacent municipalities but many others also came to offer assistance. This initially caused some security concerns and there were fears that more terrorists might come into the Sundvolden Hotel. These concerns diminished later after the police secured the area.

Another major problem was the work in documenting and registering the victims and relatives. This was troublesome since only pen and paper were initially available for this. The result was a huge quantity of unsorted bits of paper with names on them. It was not until lunchtime on Saturday that there was access to computers and, thus, digital registration was conducted. It also took a long time to make it possible for relatives to phone and get in contact with the survivors. The staff who work in a communications centre of this nature must, in a situation like this, be familiar with difficult conversations and be able to cope with listening to the despairing people who were not available to get in touch with their relatives out on the island. Efforts were also made to persuade the victims, for their own sake, to limit their contact with the media. Many chose however to give interviews, despite the fact that they were still trying to come to terms with their own reactions.

The follow-up phase and the supplementary phase

One important task following the acute phase was the provision of information on survivors to their respective home municipalities for follow-ups and the handling of the confidentiality problems that this entailed. Another important task was the provision of support to the volunteers. The municipality plans to continually monitor their rehabilitation. As part of the supplementary work, the municipality must also pay attention to the response personnel. This has taken time and it will be even longer before the municipality can return to its normal everyday operations.

Positive experiences

There are many positive experiences as a result of the incident, i.e., the level of involvement from municipal staff and external support personnel, as well as the smooth cooperation between the neighbouring municipalities and the police. The opportunity to use Sundvolden Hotel as an assembly point is also described as significant, as the crisis management could therefore focus on the victims instead of being overburdened with logistics issues.

Those involved draw the following conclusions:

- Hole Municipality managed to cope with this very unlikely situation.
- The municipalities in the region collaborated well.
- The emergency plan should be developed, especially regarding the compilation of a telephone list of all who may need to be involved.

- The major resources of the hotel were a key factor in the success of the operation.

Other municipalities

Karasjok Municipality

Karasjok Municipality is located in the extreme north of Norway, near the border with Finland. The Russian city of Murmansk is only 300 km to the east, as the crow flies. In 2011, the municipality had 2,768 residents. The municipality turns to the Helse Finnmark Hospital Trust for its healthcare needs and to DPS with regard to psychiatric patients. Twelve people from Karasjok Municipality were at Utøya and, when the incident occurred, the municipality was informed of the names of these twelve by their relatives. The list was handed over to the police and contact people were appointed in collaboration with the relatives. All twelve have received crisis support through the municipality's crisis team and primary care doctors. Immediately following the incident, the municipality also organised a café evening where all the victims and their relatives got to meet representatives from DPS. All have contact or have had contact with DPS since then.

The experiences of those involved

As the incident happened in the holiday period, it was difficult to get hold of people in the municipality. However, Karasjok is a small municipality where most people know each other and many people suspended their holidays to help out. Within the municipality, it is generally felt that the cooperation between the police, DPS and the County Governor has worked very well. Twelve individuals were affected, with an estimated ten relatives each, which means that nearly 5 per cent of the municipality's population were affected by the incident at Utøya. This implies a significant encumbrance and shows that small municipalities are vulnerable and dependent on regional resources in the event of major incidents.

Tønsberg Municipality

Vestfold County consists of 14 municipalities, including Tønsberg. All in all, 19 people residing in eight of these municipalities were injured at Utøya and three were killed. Following consultation with the County Medical Officer (the County Governor's medical adviser and administrator for healthcare and medical issues), Tønsberg Municipality was given the responsibility of coordinating psychosocial support for the victims and their relatives within these 8 municipalities.

The experiences of those involved

The various municipal crisis teams supported each other and DPS was involved from an early stage. A crisis centre was established in the assembly hall used by the Red Cross and the AUF. After a week, group meetings were held for the victims and attempts were then made to have separate meetings for the injured and the relatives of the dead teenagers. Various support

groups were organised in cooperation with the AUF. Child and adolescent psychiatry staff were also involved in the group meetings. Subsequent group meetings were also conducted where police and Red Cross staff participated. It was initially difficult to register all those who needed support and this made proactive monitoring more difficult.

Based on follow-ups in the form of questionnaires to the victims, those responsible for support within the municipality have noted that several individuals are not happy in this respect. According to the responses, these individuals think that someone should have been in touch with them and they do not feel that they have a working relationship with the appointed support person. The initial focus was on supporting close relatives, whereas friends of the young people who were affected felt that they had been somewhat excluded. For these reasons, the municipality has made efforts to replace the appointed support persons and to become more proactive in its contact with the friends of the victims. Some of those undergoing treatment have also wished to change their handler.

City of Oslo

Of the eight individuals who died in the bomb explosion in the government district, six were Oslo residents, as were seven of those killed at Utøya. Oslo is administratively divided into 15 districts, with a District Director in each. In all districts, there is primary care and crisis teams with psychiatrists, nurses specialised in psychiatry and staff who work with the youth. The latter have been particularly important in the follow-up work.

After the incident, the crisis team opened crisis telephone lines and youth and recreation centres had longer opening hours. The City of Oslo posted information on the support available on its website. In Oslo, there is also a municipal emergency service which is equivalent to a type of public emergency service. The people who were cared for by the emergency services after the bomb explosion were all contacted the following day and the City established a crisis centre in the Civic Centre where staff from the municipal emergency services participated. As of 17 August, staff at the municipal emergency services have had conversations with 350 people. Where necessary, the districts were also able to refer people to DPS and other psychiatry specialists. Student healthcare organisations also became involved.

The Department of Cultural Affairs and Education reports that information and advice has been sent out to schools and day nurseries informing them of measures in connection with the start of the school year. The information and advice concerned how the schools and day nurseries should handle the incident in relation to the children, as well as how the parents should be informed. Designated personal support is also offered to schools where needed.

The experiences of those involved

The City of Oslo placed great importance on not declaring initial reactions to the incident as signs of ill health, but rather that the reactions should be considered normal. In other words, the municipal emergency services are

considered to have a good level of competence as far as psychosocial follow-up work is concerned.

The Directorate of Health has issued a directive with guidelines regarding the support to be administered to the victims of serious incidents. It takes the form of a "guide" (for further details, see under the Norwegian Directorate of Health section below) which is considered to have been of great help. The system with fixed contact persons also seems to have worked well and new contacts have been made with victims who did not initially think that they needed support. In certain districts, staff were overloaded at first, as it was the middle of the holiday season and some of the staff thought it was hard work to provide assistance both to the survivors and the relatives of the deceased. It is likely that a large number of municipal employees have had contact with the primary healthcare services, but information regarding this is lacking. Nor is there any information regarding those who were later referred to DPS and other areas of specialist psychiatric care.

Those involved draw the following conclusions:

- The proactive monitoring of victims and their close relatives worked well. However, at first it was difficult for staff at some locations to register all of those affected. As well as providing support to close relatives, staff also needed to be proactive in the way they treated other risk groups, i.e., friends of the victims, older people suffering from dementia and people with mental disorders.
- It is important to have fixed contact persons.
- Some of the staff need better training in order to be able to support the victims and it must be possible to swap support persons when they are ineffective.
- Support should be provided at the right level and specialist medical care should be utilised when there are real needs.
- The collaboration between politicians, municipal management and other officials worked well.
- The collaboration between different municipalities was also effective. However, preparedness needs to be improved so that up-to-date contact information on key employees within the municipalities and the county is readily available. This information should even be valid with regard to weekends and holiday periods.

The government district

The bomb explosion in the government district claimed eight lives, but could have had completely different consequences if it had occurred at a different time. Those who are most gravely affected as a result of serious incidents are the relatives of the dead, those who suffer physical injuries and others that were exposed to the incident. Furthermore, in regard to this particular incident, people who were not at the scene are also affected due to the fact that their colleagues have died or have been injured and that their work places have, to varying degrees, been destroyed.

Support and monitoring

The directive issued by the Directorate of Health states that the employer shall take responsibility for the support and monitoring of staff in the government district, meaning that the occupational health service was given an important role in this context. The occupational health service (Secretariat of Occupational Health Services, BHT) is, from an organisational point of view, a unit within the Department for Central Government Buildings, Security and Administrative Services, which is responsible for agency management of the Government Administration Services (DSS) and which answers to the Ministry of Government Administration, Reform and Church Affairs (FAD). The BHT team consists of a consultant physician, two psychologists, two physiotherapists, a nurse and a medical secretary.

The acute phase

Just one hour after the explosion, one of the BHT psychologists was at the scene and plans were drawn up to assemble the staff at a nearby hotel the next day. Information meetings were held there and the BHT staff divided up the ministries and conducted group meetings so that the staff had the chance to support each other. The purpose of the meetings was partly to assemble the staff in one place, and partly to inform them about dealing with crisis reactions. According to BHT, the conversations were of a supportive nature, rather than simply debriefing. Following the explosion, the staff were told to wait at home until their work places had been put back in order or until new premises had been arranged. This process took almost a week. BHT arranged recurrent information meetings for the various ministries, with subsequent informal meetings. In addition to this, the police interviewed those who had been at the scene. A commemoration was later organised for the deceased, and their relatives were shown the places where they died.

Supplementary work

Even if the division of responsibilities was initially unclear, it was soon apparent that BHT would be responsible for the support and monitoring, both medically and psychosocially, for the ministerial personnel. It was proposed that this monitoring would be conducted after four weeks, 4–6 months and 12–18 months. After two weeks, BHT communicated that those who were at the scene at the time of the explosion should undergo a medical examination, in order to check their physical and psychological health and also to find out how they were getting on at work. A medical examination was later organised for those who had not been present at the scene at the time of the explosion but who wished to be examined. To manage this, BHT contacted occupational medicine personnel outside of its own organisation. The medical examination comprised a screening for post-traumatic health effects using the "Post-traumatic symptom scale" (PTSS) and the "Post-traumatic stress disorder check list – civilian version" (PCL-C). By the middle of November 2011, around 500 people had undergone this examination.

Furthermore, BHT has also introduced a well-received training in leadership and stress management for ministerial department heads. As part of its ongoing work, BHT has continued to monitor the relatives of the deceased, those injured and others who were at the scene, in addition to developing a peer support operation.

The experiences of those involved

One of the ministries has conducted an evaluation that shows that staff were, on the whole, happy with the information work within the ministry and with the presence of the Secretary Generals (equivalent of the State Secretaries in Sweden), but that the government's website could have been further updated. Some were, however, critical that the escape routes from the buildings were badly marked, that certain doors out of the building were locked for security reasons and that fire prevention procedures were not adequate. Above all, the staff considered that they had not had sufficient fire prevention training and many were concerned about security at the ministry following the incident. BHT was praised for its quick reaction, but several thought that it took time before BHT provided information on follow-up work and support and they felt that this may have been due to a lack of resources. The evaluation also showed that ministerial personnel took the monitoring coordination of their staff very seriously.

The staff at BHT have had to work extensively to get hold of, and engage, external individuals involved in occupational medicine who could help with medical examinations, support and monitoring. It is thought that this work would have been easier with better planning and a simpler decision procedure.

Those involved draw the following conclusions:

- In the government district, improved readiness is required for the handling of serious incidents.
- The most important part of the acute phase was the creation of a secure meeting place at which the staff could assemble.
- Certain individuals grow in stature in this type of incident and take an active interest in their co-workers.

Oslo University Hospital

Relatives Centre

In Norway, it is the police who have the overall responsibility for contact with relatives in connection with serious incidents. The police emergency plan states that, in the event of incidents occurring in Oslo, a centre is to be set up for the relatives of the missing and injured at the Plaza Hotel. In this instance, a relative’s centre was set up at the Sundvolden Hotel in Hole Municipality, and it was there that both relatives of victims of the Oslo bombing and of the Utøya shootings assembled.

Ullevål

Oslo University Hospital is responsible for supporting in-patients and their close relations, and this is organised by the (*Mental Health and Addiction Clinic*), which is also responsible for the organisation of a psychosocial crisis team. At 16:45 on 22 July, the relatives centre at the patient hotel in Ullevål Hospital was opened for close relatives of the victims.

During the evening, the relatives centre at Ullevål received approximately 200 relatives and about 600 phone calls. The centre closed at 01:30 at night, due to a reduced level of demand, and opened again the following morning. On 23 July, approximately 200 close relatives were once more in telephone contact with the centre.

The National Hospital

At the National Hospital, a centre was set up for bereaved relatives who were waiting for the dead to be identified. Those who wished to, could stay overnight at the hospital's patient hotel, Gaustad, which was situated nearby. The responsibility for the relatives centre was given to the priest service (equivalent to the Swedish sjukhuskyrkan - Hospital Church) at the National Hospital, which is supported by Oslo Hospital Service. When the dead had been identified, their relatives were transported from Sundvolden Hotel to Gaustad patient hotel at the National Hospital.

Support to the injured

In total, just over 30 patients received care at Ullevål following the incidents. Of these, more than half were seriously injured and approximately a third were under the age of 18. Many of the patients were not identified upon their arrival. From Monday 25 July, there was an organised crisis team in place for the injured which consisted of psychiatrists, psychologists, counsellors and nurses from both adult psychiatry and child and adolescent psychiatry. In addition to the 14 regular personnel in the crisis team, a further 29 were also involved. The total of 43 persons was divided up into three shifts, with the main working hours of 08:00–18:00, so that the relatives could have calm at the end of the day. The shifts were then divided up into one team for each patient and their relatives, with a compilation of various medical professionals suited to the family's needs. Every day, the crisis team organised two to three short information meetings with staff in order to discuss information, coordination and the distribution of work. A number of information meetings were also held later for the patients and their relatives, where the police also provided information regarding the progress of their investigations. The Prime Minister also made a visit to Ullevål on 28 July to meet the injured and their relations.

The support model was based on the staff from the treatment team having contact with the patients when it was possible, taking into account anaesthetics and operations, and information and practical and emotional support being provided as and when required. The treatment team also had the goal of relieving the somatic personnel, so that they could focus on the care of the patient, rather than on the relatives.

Child and adolescent psychiatry was given the responsibility for providing support to the young casualties and, among others, the Section for Psychosomatic/CL-Child psychiatry (C = Consultation; L = Liaison) provided support to the eleven patients who were under the age of 18. After four weeks, all the patients had been transferred to rehabilitation, to a regional or local hospital or to their home, and they had also been in contact with their local child and adolescent psychiatrist.

The support model was primarily aimed at providing a feeling of safety and security and subsequent stabilisation. In order for the young people to feel safe and secure, someone was with them during their every waking hour. In these "windows" of wakefulness, the patients were assured that he or she was safe in the hospital and that the perpetrator had been arrested. The staff wanted to create a "therapeutic alliance" and all conversations with close relations were held in the patient's room, regardless of whether or not they were awake. The idea was to stabilise the victims and "subdue the activity in their central nervous system, which had been hyperactivated by the incident". This was achieved through communicating safety and a feeling of control and security. Any impact on their senses was dampened and any noises were explained; relaxation techniques and breathing exercises were taught, as were diversionary techniques, and positive ideas were stimulated. Furthermore, the staff helped to create a coherent narrative where the focus was on mastery (learning to handle your problems yourself).

Support to the staff

The personnel at the hospital were themselves exposed to the incident in various ways: through the massive influx of explosion and gunshot injuries, the large number of young casualties, the massive media coverage and the reason for the injuries. What is more, the personnel were forced to be there for the patients and found it difficult to put their work to one side. Many also experienced a feeling of helplessness. Personnel were therefore assembled in homogeneous groups of 6–8 persons for a structured review of the situation. This was known as debriefing. Participation was voluntary and the focus was primarily on what people had done, rather than on emotional material. The focus was on supporting the personnel and validation. A total of 152 individuals participated in 22 groups.

The experiences of those involved

By reviewing the evaluations, reports and interviews available, it appears that the psychosocial support provided to the victims and their relatives, as well as to the staff at Oslo University Hospital, was generally perceived as positive. There are, however, a few issues that can be discussed:

- The initial alarming of the psychosocial crisis team did not work satisfactorily. This was primarily due to the fact that joint emergency plans had not been established following the merger into one university hospital in 2010.

- It would have been better to have the relatives centre open on the first night, as many wanted to contact the centre at that time. This was evident through the large number of phone calls received the following day.
- The collaboration with the police to set up a relatives centre did not work well at first, but this improved as time went on.
- It should be noted how the personnel are affected by caring for a great number of young people with serious injuries, many of whom required amputations.
- It was noted that the young people became negatively affected by the "blogging" of their experiences on the internet, i.e., on Facebook, but it was difficult to prevent them from doing this.
- In difficult situations like this one, a relatives centre also has to handle other problems, i.e. parking spaces for the relatives who stayed overnight at the patient hotel.

Those involved draw the following conclusions:

- The serious incidents were a major challenge for the hospital, but the individual cases themselves were not extreme for the personnel, neither in terms of somatic nor psychiatric care.
- The management of the psychosocial support and the collaboration with other care units worked well.
- The emergency plans need to be developed in certain areas so that they are in keeping with the current organisational procedures.
- The department heads need to be present, hold daily meetings and make sure that the support provided to personnel is effective.
- It is important that the patient and their relatives have contact with the same personnel.
- The efforts must be made at the right time, but this is not always easy. For example, when should a patient who has just woken up from an anaesthetic be told that their brother, sister or friends are dead?
- Staff who provide psychosocial support must be available to the patients around the clock following this type of incident.
- It is important to strive for continuity in psychosocial support, even for those patients who are transferred for care to another location.

Oslo police district

Oslo police district consists of six departments: Uniformed Police, Criminal Division, Human Resources, Administration Department, Strategic Unit and Communications Division. Approximately 2,500 are employed within the district, of whom 1,600 are police officers. Approximately 300 of these officers were involved in the work following the 22 July incidents. In conjunction with the incidents, Oslo police district adopted a support staff organisation where support staff work was conducted and directives for work were given in accordance with structured plans.

Support to the staff

Every department head in the line organisation is trained in how to look after their staff. They follow the instructions of "action cards" designed for this purpose. The police district has also compiled the document *Action plan for the safeguarding of personnel after 22 July 2011*. This states who should do what and when, the main points being as follows:

- The Unit Heads should assemble their units and debrief them at the end of their period of duty. At these meetings the group reviewed the incident in question for the welfare of the staff. Such meetings are sometimes referred to as "debriefing" or "defusing".
- The occupational health services should, as promptly as possible, send out information sheets explaining the normal reactions that occur and how they can be dealt with. Several such information sheets were sent out to Department Heads and staff.
- Department Heads or Health and Safety representatives should report any requirements for further support to the occupational health services.
- The occupational health services should support those Department Heads that need assistance.
- A meeting should be organised for the people involved within three days. In the case in question, the meeting was held on Sunday 24 July.
- The Unit Heads should assemble their units and hold new group meetings within three days.
- A further assembly of the personnel involved should be held a week after the incident, which occurred on 2 August.
- Two more meetings were planned during the autumn, including one on 30 November where the Police Commissioner assembled all personnel in order to "further build on the feeling of solidarity and team spirit, and to create new energy in our everyday lives".

The role of the occupational health services

The occupational health service (The Secretariat of Occupational Health Services, BHT) has an important role regarding the follow-up work with police staff. As early as the meeting of Sunday 24 July, BHT conducted a screening and staff were informed about normal reactions following incidents such as this. BHT handed out written information with the same content and gave advice to the Department Heads. A new screening of personnel was conducted three weeks after the incident and BHT has sent out a schedule for the monitoring of personnel. Subsequently, information was released stating that asbestos may have been spread within the government district following the explosion, which led to BHT sending out an additional information sheet with a directive that personnel who may have been exposed were to be checked. A psychologist at BHT has provided support to personnel and a priest has held meetings with four "reflection groups" comprised of 10-15 people.

The experiences of those involved

Personnel have been exposed to stress through their contact with the relatives of victims and they have felt frustrated by some of the criticism directed at the police. There was also additional stress connected with difficult identification work. Despite this, the staff feel that there are positive aspects to come out of this difficult situation. Many people made great efforts and there was a positive sense of solidarity. Few people went on sick leave as a result of the incidents.

Those involved draw the following conclusions:

- There should be more focus on developing peer support and staff care groups.
- There should be increased focus on the individual monitoring of the staff affected.
- An investigation should be conducted regarding what the staff feel has been missing from the support system.

The County Governors

The experiences of those involved

Interviews conducted in conjunction with this report show that the County Governors have carried out their tasks through appointed personnel, often county medical functions (County Medical Officers), initially having daily contact with municipal representatives, often via telephone and e-mail. In certain situations meetings were also involved. In one county, the largest municipality assembled its crisis team as early as 22 July and invited other smaller municipalities to collaborate in the care of the victims. A bus was also sent to Hole Municipality in order to transport home victims from the county. On board, there were crisis teams and staff from the Regional Resource on Violence, Traumatic Stress and Suicide Prevention (RVTS). At Sundvolden Hotel, they were able to make direct contact with victims from the county's various municipalities. The County Medical Officers also collaborated with other county organisations who had contact with the police in order to find out which patients registered at Sundvolden were from their own county.

Some problems were noted by the County Governor's staff. Some municipalities had not appointed contact persons for the victims. Several individual victims had also moved from the municipality in which they were registered, or had started to study in another town, and their details had not been forwarded to the new municipality.

Regional Resource on Violence, Traumatic Stress and Suicide Prevention (RVTS)

The experiences of those involved

In conjunction with the incidents, RVTS Øst (RVTS East) was given the task of supporting staff at the university hospital with group discussions and by conducting information meetings with medical personnel. Furthermore,

they provided information regarding, among others, leadership responsibilities and written material regarding normal reactions that occur in these situations and how they are dealt with, as well as giving instruction to the occupational health services at the hospital. It is considered that the University Hospital did a good job in supporting victims and their relatives. On the other hand, it is thought that it would have been beneficial if RVTS had also been part of the Health Directorate's expert group (see the section on the Health Directorate below) so that they could have provided advice regarding suitable support.

Norwegian Centre for Violence and Traumatic Stress Studies (NKVTS)

Role and tasks

Staff from NKVTS were actively involved in the production of the Health Directorate's guide (see below). They recommended that the victims from Utøya should be monitored in their respective municipalities and that the responsibility for the monitoring of those injured in the attack on the government district lay with their employer. NKVTS also produced scientific data for the previously described scheme for mapping the victims, and the centre has provided counselling, consultation and been involved with training initiatives for various ministries in the government district.

NKVTS has also helped to organise training for municipal employees, such as psychological first aid and skills for psychological recovery, SPR. The centre is also conducting a study of 2,500 people to see how the incident has affected Norwegian society and to compare these responses with those of the victims. Further studies of the response personnel are also planned.

The experiences of those involved

The staff at NKVTS consider that their capabilities as an expert body for counselling, consultation, teaching and research have been well availed of since the incident, even if certain individuals have been somewhat overloaded. This also applies to many other support functions within society.

The conclusions of those involved

The management of NKVTS wishes that evidence-based support and treatment models were more widespread amongst society's support functions.

The Norwegian Directorate of Health

The Directorate of Health, which is the central authority within healthcare and medical services in Norway, was given full responsibility for the coordination of emergency preparedness within this sector. The Directorate switched to a crisis support staff organisation at 16:15 on 22 July and began to analyse the situation. It soon became clear that a great deal of focus

needed to be placed on the planning of psychosocial support for the bereaved and their relatives, and that this support needed to be followed up.

Other serious incidents, particularly the tsunami in Southeast Asia in 2004, had provided a number of valuable experiences concerning psychosocial support. Following the tsunami, the Directorate decided that all monitoring should be conducted via primary care in Norway, which was not so well received as a relatively large number were not satisfied with this kind of support. New guidelines for the support of the victims of serious incidents were therefore being developed. The guidelines were summarised in the *Guidelines for psychosocial interventions in emergencies, accidents and disasters* (the guide can be downloaded or ordered from the Directorate of Health's website). This states that support to any victims shall be provided by the municipality's crisis team, which the Directorate later indicated in the directive to the County Governors, see above.

Collaborative organisations and expert groups

In order to create a broad base and consensus regarding the content of the psychosocial monitoring, the Directorate of Health arranged an early meeting with a large number of collaborative organisations. Around 40 organisations were invited that represented government institutions, i.e., The County Governors' Office, NKVTS, Helse Sør-Øst RHF and the National Police Directorate. Furthermore, professional associations were invited such as the Norwegian Psychiatric Association and the Norwegian Psychological Association, non-profit organisations such as the Red Cross and the Norwegian Humanist Association, religious communities such as The Church of Norway and the Islamic Council of Norway, in addition to other organisations and the private company, the Centre for Crisis Psychology.

The purpose of assembling all of the collaborative organisations was that they would support the monitoring in the municipalities and contribute to the collaboration between voluntary organisations, public authorities, professional organisations and other organisations. From these organisations, an expert group consisting of approximately 25 people was selected. 12 of these people were then selected to form a working committee. This committee included people from the Norwegian Labour Party, NKVTS, the Norwegian Centre for Minority Health Research (NAKMI) and the Centre for Crisis Psychology. The goal of the expert group was to

- coordinate the national responsibility for psychosocial initiatives in the short and long-term,
- to coordinate the activities in the public sector and in the voluntary sector,
- to send an unequivocal message to the population
- and to coordinate the delegated responsibilities of the Directorate of Health for the monitoring of the disaster on a national level.

Two support and monitoring models

The expert group proposed that the psychosocial support and monitoring should be based on two models. The first of these applied to all victims and their relatives and those who had suffered losses from Utøya, and this was to be followed up in their respective home municipalities. The main idea was that the support to the victims should be local and accessible, in accordance with the principles of responsibility, proximity and similarity. The second model applied to the victims from the government district who were affected due to the nature of their employment. It was therefore deemed reasonable and natural that the employer should be responsible for support and monitoring via the local occupational health service, the Secretariat of Occupational Health Services (BHT). The expert group considered that the employer would have a better overview and be better able to ensure that their staff received monitoring that was suitable to their individual needs. Furthermore, local health and safety issues came into focus.

NKVTS was assigned to produce a supplement to the aforementioned guidelines *(Supplement to guidelines*) for monitoring work in the municipalities. In these guidelines, NKVST stresses that the monitoring should be active and that the municipalities should use a mapping tool for monitoring the victims at five–six weeks, three months and twelve months intervals following the incident (the mapping tool can be found in appendix 2). A similar supplement with advice on monitoring was also produced for employees in the government district.

Directives to the County Governors

The Directorate of Health has, in a number of letters of engagement, given the County Governor the directive of monitoring the measures taken by the municipalities in conjunction with this type of crisis. In the first letter of engagement, dated 23 July, the County Governors were requested to ensure that all municipalities had crisis teams available, that local residents received information regarding this and that the municipalities were aware of the guidelines. Furthermore, the County Governors were to obtain the contact numbers of the victims from all of the municipalities and send them to the Directorate of Health, in addition to sending a report, every day before 07:30, regarding the number of individuals applying for support in the municipalities. On 26 July, the Directorate communicated that the daily reports were no longer necessary and that, in the future, reports should only be sent on matters that were of significance to the authorities on a national level. In the letter, the Directorate of Health points out that public information could be found on the Directorate's website and the websites of other institutions.

These websites contained information regarding, among others, common reactions and coping strategies, as well as telephone numbers to the municipalities' support organisations. Another example of information is a chronicle that was published on 3 August on the Directorate of Health's website, with the title *Du är trygg nå - You are safe now*. It contained,

among other items, five pieces of advice concerning how one should talk to children about the incidents.

The County Governors received new letters on 28 July and 4 August with the following directives:

- The municipalities should actively contact the victims, the names of whom were to be found in a list attached.
- All victims should be allocated a fixed contact person within the municipality.
- The threshold should be low for those victims who wish to have contact with a primary care doctor.

On 15 and 20 September, the County Governors received new letters and were requested to help examine how the municipalities were monitoring the victims. In order to gain an overview, a questionnaire was compiled that all the municipalities were to complete (see appendix 3).

Guidelines for psychosocial interventions in emergencies, accidents and disasters

The document *Guidelines for psychosocial interventions in emergencies, accidents and disasters* was prepared and published by the Directorate of Health in August 2011. The aim of the document is to establish good practise with regards to psychosocial support in emergencies, accidents and disasters, and it addresses both administrative issues and the design of the support offered to the victims. As far as administrative issues are concerned, the document describes the fundamental organisation of psychosocial support in Norway and the areas of responsibility of the various different parties. Regarding the design of the support, various issues are discusses, including central principles for crisis management and groups with specific needs. In accordance with the guidelines, any support to victims shall be provided by the municipalities' crisis teams.

Major meetings of victims

Around 20 August, the Directorate of Health organised several different events for survivors and their relatives. This included a return to Utøya, which was organised for approximately 750 survivors and their relatives and, the following day, a commemorative ceremony was conducted to honour the victims.

The Directorate of Health also invited relatives of the victims of Utøya to three central meetings, and regional meetings were planned for the survivors. The first meeting was held on 11–13 November 2011, the second in March 2012 and the third meeting will take place in connection with the commemorative ceremony to be held one year after the atrocity. The Directorate also plans to conduct regional meetings for the survivors via the Regional Resource on Violence, Traumatic Stress and Suicide Prevention (RVTS).

The Directorate explains that the background to these meetings is that many express a wish to meet other victims and that similar meetings in other

contexts have produced positive experiences. A private company has the main responsibility for the meetings: the Center for Crisis Psychology. According to the company, it is reasonable to provide the victims with collective support and, furthermore, they believe that this can be seen as validating the exceptional nature of the incident. The company wants the victims to experience an exceptional level of support, even if it is not possible to document any specific medical effects resulting from such meetings. They further state that it can be difficult for the victims to talk about what they have been through with their loved ones and that, for this reason, they adopt a user perspective. The goal of these central meetings for the bereaved is to arrange discussion groups, go through the incident and provide information on grief reactions and coping strategies, known as psychoeducation. The goal of the regional meetings for the survivors is to give them the opportunity to meet other victims, go through the incident, discuss and normalise their thoughts and reactions as well as undergo psychoeducation.

The experiences of those involved

Staff at the Directorate of Health felt that they had a personal responsibility to coordinate the support initiatives following the incidents of 22 July. The Directorate based its initiatives on advice from the 40 or so collaborative organisations, and its staff felt strongly engaged. The Directorate wanted to communicate a coordinated message and emphasise that grief is not an illness. Furthermore, there was a desire to explain that the victims should be prioritised as far as support was concerned, even if they were not to be placed ahead of groups with even greater needs.

The Directorate of Health also wanted the municipalities to use the mapping tool mentioned above to evaluate the condition of the victims. The major challenge was to communicate, via the County Governors, standard messages to all of Norway's 430 municipalities and to achieve the goal that all victims should have local access to the support they required. Various reports showed that it was not exactly unsuccessful, but that after five–six weeks, the support still did not work at an optimum level in 30 or so municipalities. This improved in due course and subsequently there were only 7–8 municipalities that required another type of support in order to complete their assignments. The Directorate's positive experiences included the successful collaboration of various knowledge environments, that experiences from former incidents contributed to increased skills at various levels and that a better level of cooperation between the regional health trusts and the municipalities was achieved.

Those involved draw the following conclusions:

- Major disasters require broad forums of collaboration.
- In crisis situations it can be difficult for central organisations to try to guide municipalities which have a high degree of independence, as is the case in Scandinavia.

- The Directorate of Health believes it succeeded in the difficult task of communicating a coordinated message to the population.
- It is important to find models for registration of the victims without coming into conflict with, for example, legislation regarding confidentiality.
- Attempts must be made on broader fronts to acquire knowledge of evidence-based methods for support and treatment, and also to ensure that resources exist for such methods.

Identification of the deceased

The head of the Kripos ID group was on the way home from work when he heard about the bomb explosion from listening on the news broadcast on the radio. He returned to his work place and started calling in the ID group members. It was unknown at this time how many fatalities were involved. During the evening, the group had a meeting at the Kripos premises while forensic technicians from Kripos and the Oslo police district started the crime scene investigation. After the search for bodies at the bomb site was concluded, the bodies were transported in funeral service vehicles, that night and the next morning, from the centre of Oslo to the Department of Forensic Medicine at Ullevål. The same procedure was carried out at Utøya. The last body was transported off the island on the Sunday evening.

The mortuary connected to the Department of Forensic Medicine could only hold 30 bodies and it was soon realised that more mortuary space would be required. A decision was made as early as Friday evening to hire additional cold storage and these containers were delivered on Saturday morning with the appropriate mortuary interiors.

Sundvolden Hotel, as previously mentioned, became the initial assembly point (“survivor reception centre”) for the relatives. Three forensic technicians were dispatched there to obtain descriptions of those missing and to collect material for DNA analyses. The material was then transported to the ID group's premises. Through contact with the relatives, the technicians also found out who the victims' dentists were and, in this way, they gained access to their dental x-rays. Every police district in Norway was involved in the collection of AM data.

The forensic examination of bodies began on the Saturday. This work was conducted on Saturday, in two parallel lines. This was increased to three lines on Sunday, four on Monday and then five lines on Tuesday–Wednesday. Extra admin personnel who had been called in, continually entered information into a database. Each evening at around 20:00, the ID group assembled for a meeting where they reviewed the day's work and matched the AM data against the PM findings. When the identities had been established, the information was e-mailed to the Oslo police district, who was responsible for informing the next of kin. The task involved informing more than 300 relatives and this task was divided between two AM coordinators from Kripos and seven or eight police officers from the local police district.

The first identifications were completed on Sunday and the last on the following Thursday. There were fears that more people may have drowned than the two bodies that had already been found, but these fears were dispelled during the Saturday when a computer was found containing a list of all the participants at the camp. The ID group encountered a number of practical problems concerning asylum-seekers, as it was difficult to obtain the relevant AM data for them.

From a psychological point of view, the group thought that the ID work in itself was not particularly onerous ("It's what we do every day, just on a larger scale", one of those involved was heard to say). On the other hand, they were not prepared to be so involved in the handling of the relatives but, despite the fact that it was stressful, the ID group still consider that it is they who should have the primary responsibility for the initial contact. Many relatives needed to understand the practicalities of the identification process, and these questions could only be answered by the ID group members. The relatives had the opportunity to see the autopsy reports, but it is unclear how many of them utilised this opportunity.

Communication and media relations

The government district incident scene

As with all crisis incidents, the Oslo media demonstrated their ability to arrive promptly at the scene in large numbers, despite threat scenarios which entailed the evacuation of several media buildings. For example, Verdens Gang, which is situated directly opposite the government building, was evacuated along with Aftenposten. The Norwegian Union of Journalists conducted an investigation that shows that 700 Norwegian journalists worked on reports of the incidents of 22 July. Out of these, 500 have responded to questionnaires, and the majority of them covered the Oslo area [20].

Oslo police had an experienced response leader inside the affected area around the government district who held an improvised press conference at the scene, as early as 16:30. The response leader relayed brief information regarding what the police knew about the incident at that time. According to emergency preparedness procedure, it is the police response leader who is to make statements at the incident scene whenever possible and when there is information available.

Media relations

Many private individuals took pictures and filmed the incident scene. Seriously injured people and body parts were photographed. On several occasions, press photographers were allowed access into the restricted areas. The response leader's aim was to satisfy the needs of the media for their own pictures and to balance out the private photographs taken with images captured by professional photographers. The bodies of the deceased were covered up before the photographers were allowed to approach the area.

The police set up two levels of barriers, an outer limit that the public were not allowed to pass and an inner limit up to which press photographers were

allowed on several occasions. The response leader experienced no disturbances caused as a result of the presence of the media at the incident scene and, according to the communications unit, several members of the media were grateful that the police satisfied the photographers' needs for their own pictures.

Prior to the release of all press information at the incident scene, the response leader consulted with the police information unit P5. An initial "press brief" was held, as mentioned, at 16:30, after which two "photo briefs" followed, at 17:30 and 18:30. The latter was primarily intended for the TV news. Later during the evening and over the coming days, the media were, under agreement, allowed temporary access to the incident scene to film and take photographs. From 18:30, all media relations and press information were handled from the police station.

The Utøya/Utvika incident scene

The first reports on the shootings at Utøya were received at the emergency services centre just before 17:30 on 22 July. Prior to this, the head of the Casualty Department at Ringerike Hospital received information regarding the incident from his daughter, who had seen a news clip on TV. In this case it was therefore the media that "alarmed" the hospital management.

Ringerike's Casualty Department is located at Ringerike Hospital in Hønefoss and covers, aside from Ringerike itself, Hole Municipality, Krødsherad Municipality, Modum Municipality and Sigdal Municipality (it is therefore an ”intermunicipal” Casualty Department). The head of the municipal doctors in the district contacted the County Medical Officer in Hole Municipality, which is part of the district but which does not have its own Casualty Department. Straight after the telephone call, the County Medical Officer made for the quay-berth at Utvika, in order to assess the situation. The Head of the Casualty Department was in Hønefoss and arrived at Utvika somewhat later than the colleague.

Media coverage of Utøya

A helicopter and crew from NRK (Norway's public service radio and television) flew over Utøya as medical efforts commenced. Film sequences and stills from this flight spread quickly through the media. The Air Ambulance Service soon identified the NRK helicopter as a civil helicopter, but it took a while before they realised that it was a press helicopter. The Air Ambulance Service's evaluation report states that the press helicopter caused a disturbance and constituted a potential risk. [21]

It also happened that journalists telephoned some of the young people out on Utøya whilst the shootings were in progress. In one case, a girl was interviewed who was later shot and killed and, early in 2012, Norwegian and Swedish press wrote that the girl's family had reported NRK to the Norwegian Press Complaints Commission (PFU) for contravening good journalist practise [22, 23]. There was otherwise no media present or in contact with the victims out on Utøya. The efforts of the ambulance services on the island were carried out without the presence of reporters or photographers.

Media coverage of Utvika

The road to the Utvika bridge, where the ambulances received the survivors, was so narrow that it was practically impossible for journalists travelling by car to enter the area. For this and other reasons, there was no media presence at the incident scene, even though this is common with this type of incident. Neither were there any ethical press problems, such as obtrusive photography or interviews with survivors. Only a few media representatives were at the scene whilst emergency operations were in progress, one of whom was a freelance photographer at Utvika Camping. Reporters and photographers worked instead in the surrounding public areas adjacent to the quay area and Utvika Camping. Since these were not incident scenes, these areas could not be cordoned off, which made it difficult for medical personnel to deal with the media.

There was dialogue between medical personnel and journalists regarding how they could approach the victims and eye witnesses, and doctors at the scene reported a few journalistic infringements. On the whole, care personnel considered that the media behaved very well in the area: ”They were neither ill-mannered nor obstinate”. One care worker later saw themselves on TV but considers this to be completely natural, given the situation.

Ringerike medical services and Hole Municipality at Sundvolden Hotel

After receiving information from the police, the County Medical Officer, as was mentioned previously, requisitioned Sundvolden Hotel as a relatives centre and assembly point for the victims.

Communications organisation at Sundvolden

Utøya and Utvika are part of the Nordre Buskerud police district. At the time, the district had no function responsible for communications within its organisation and, therefore, Oslo police district had formal responsibility for information and communication. The communications unit in Oslo requested back-up, but noticed that there was uncertainty within the police authority as to whether the communications responsibility applied just to the bomb attack, or whether it would also involve the parallel incidents at Utøya. In Nordre Buskerud's neighbouring district, Søndre Buskerud, there was an Information Officer, but this person was on holiday.

The formal decision process involved with the requisition of an assembly location is that the police assess and dispatch the need and the municipality's politicians make the decision. In this case, the information and decision process was completely different. The County Medical Officer did not want to waste time waiting for a formal decision and instead decided to take account of the chaos himself and make a decision. This led to Sundvolden quickly becoming established as the assembly location and to the municipality's chairperson acting as spokesperson to the media.

On one occasion, the police issued a statement estimating the number of dead, but this figure was later reduced. With the benefit of hindsight, it was

too early to release information and this shows how important it is to wait for accurate, substantiated information before making a statement.

Media relations at Sundvolden Hotel

Hole Municipality has only 6,000 residents but, despite this, it has a well-developed emergency preparedness organisation that conducts exercises in communications and media relations. At Sundvolden Hotel however, there was no designated person in charge of communications and, in practise, Hole Municipality's chairperson became the spokesperson who, at regular intervals, went out to meet the massive media gathering and communicate up-to-date information. The County Medical Officer and a police officer led the work inside the hotel, with the head of the Ringerike district emergency services at their right hand. The municipality chairperson continually received information from the County Medical Officer regarding what the press could be told, and then decided himself what he wanted to say within the framework of the agreed message. The chairperson was familiar with dealing with the media, which made the work easier.

The media's own "press centre"

Crisis management never set up an official press centre, but photographers and reporters gathered spontaneously at the adjacent petrol station. There they could charge their laptops and mobile phones and get refreshments. The journalists report that there was a rare feeling of solidarity and friendly helpfulness, even internationally. There is a wall around the hotel's garden which functioned as a barrier and assembly point for the enormous, multinational media presence. The barrier was respected, even if some took photographs of the buildings and gardens. As one source says: ”The journalists carried on with their own lives on the other side of the barrier”.

Interviews with those suffering from shock

Sundvolden Hotel became something of a fortress, where victims and relatives were left in peace. However, there was a small convenience store nearby which had a certain attraction and, when teenager went there to buy things, journalists moved in quickly to interview and photograph them. A number of radio and TV interviews conducted have been questioned, as the teenagers were, at that time, still very much in a state of shock following the incident. Their statements were incoherent and they probably found it hard to realise the consequences of their involvement with the media.

The use of social media by the teenagers

Crisis management inside the hotel tried to control the content of communications to the press but, at the same time, many of the teenagers started to relay their accounts of events on Facebook and Twitter. Eventually, rules were attached to use of the computer in the hotel's reception: it was okay to read web pages but it was forbidden to write anything on Facebook. Information that journalists had found on the

teenagers' Facebook pages was addressed by the chairperson of the municipality in conversations with the journalists outside of the hotel.

Oslo University Hospital/Ullevål

The staff at the communications unit at Oslo University Hospital/Ullevål had already left for the day when the powerful explosion was heard all over the city. The amount of ambulance sirens led one employee on bicycle to turn around and head straight back to the hospital. He sent text messages to several people at the communications unit, including the person who was on press duty that day. The message read "I am on my way to Ullevål". This was treated as a signal.

The person who was on press duty rang up colleagues and then climbed into a taxi. During the taxi journey, the person received information from their 15 year-old son, who was at home reading media reports on the Internet. Following the conversation with their son, the formal preparedness message was issued and, within half an hour, four or five people were present at the communications unit. Two other employees arrived a couple of hours later. The majority had been on holiday. Four hours later, the leader of the crisis communications unit arrived, direct from a holiday flight.

Work structured according to function cards

The work began with the staff producing "action cards" – function cards for communications work in disaster situations. There is also a check list for the first four people arriving at the workplace. The cards were divided up between those present and the work was set in progress. Later on, the Acting Communications Director joined the team. One person was responsible for following the media reports and they then noted that the TV news NRK Dagsrevyen had given out the wrong number to the relatives centre. The communications unit quickly rang NRK and had the number changed. The number that had originally been given out was Ullevål's phone number for identifiable patients.

Unexpected onset of media

It took an hour before pressure from the media started to manifest itself. The Norwegian media soon made contact, as did foreign media such as the BBC, CNN and Al Jazeera. Only one telephone line was kept open. This was not in keeping with the emergency communications plan but, due to stress and understaffing, no more lines were opened. One consequence of this was that the staff were not able to answer all of the media's calls.

It was a challenge to assist in all of the requests by the media for interviews, but spokespersons were appointed by the crisis management. The media also wanted interviews with patients but, due to the serious nature of their injuries, this was not possible on the first day.

The communications staff perceived a great deal of understanding on behalf of the Norwegian media, who were familiar with the hospital's rules and ways of working from previous occasions. It was a little more difficult

with overseas media, who did not have the same understanding nor tacit agreements.

Press conferences and contact with journalists at Ullevål

On the evening of 22 July, three press conferences were held, two of which were conducted by the hospital's Administrative Director and one by the trauma surgeon who triaged all the admitted casualties. The press conferences were held in Norwegian, with the opportunity for subsequent questions and answers in English, as well as private interviews. The communications staff produced fact sheets in English which comprised, among others, a presentation of the hospital. In accordance with the emergency communications plan, the press conferences were held in the nurses' training building, which is a separate building within Ullevål's hospital area. This worked during the press conferences but, at other times, the journalists did not want to sit there. They wanted to be as close to the centre of the incident as they could, which meant that they hung around the entrance to the Emergency Department or inside the hospital's foyer, which houses a café.

One member of the communications staff was allocated purely to maintain contact with reporters and photographers inside the hospital area. He collected their mobile numbers and could then provide them all with updates and call them to press conferences via text message. Another person was responsible for media relations and information at the entrance to the Emergency Department. This is described as the most emotionally stressful of the communications staff functions. The staff noted that there were 40 international and 14 Norwegian media editors who contacted the hospital on 22 July and the days after.

At 23:30, the Prime Minister arrived at Ullevål. At his request, a press conference was arranged at short notice in the entrance hall. Journalists with press ID were allowed in. Media reports from the press conference contained references to a high degree of competence and patients who were being well cared for.

RSS, Twitter and text messages

Oslo University Hospital/Ullevål does not send press statements via e-mail but posts them instead on its website, where it is possible to subscribe to them via RSS feed (a method of subscribing to contributions and comments from websites). Twitter and text messages are sent to this feed when there is something new to read on the website.

When the casualties started to arrive, it soon became evident that the hospital needed a certain blood type. The following announcement was then made via Twitter: "Oslo University Hospital needs blood donors with blood type O - (O negative). Ring the blood bank now - telephone 2211 8900 or 2211 8865". A very high number of the volunteers were however not registered blood donors, and this "misinformation" then came to light. A new Twitter message was sent out: "The blood bank at Oslo University Hospital specifies that ONLY THE HOSPITAL'S REGISTERED BLOOD DONORS with blood type O - (O negative) should ring them now!". The

omitted addition of "only registered blood donors" in the first message led to a large number of unregistered donors appearing.

Cordons set up

It was the evening of the 22nd before the hospital clearly cordoned off the hospital area and the ambulance entrance. The hospital's own security staff, with assistance from the police and private security companies, then controlled entrance and exits. Photographers in particular tried to get as close as possible, wherein they took pictures when patients were brought in on stretchers or beds via a glass walkway between the hospital buildings. Efficient care personnel did not like the involuntary exposure of the patients and quickly hung up sheets in front of the windows.

Patient interviews and involvement in the media

A psychiatrist at Ullevål Hospital took the initiative of creating a physical boundary for the reporters and photographers present. A line was marked on the floor with red tape - the media were not to go past this. The hospital had reasonably harsh restrictions for photography, but little by little, interviews took place in specific corridors. Medical staff always set boundaries, even if this did not always help. Some children went to the hospital shop on their crutches, only to find their picture in the papers the next day.

The medical staff responsible at Ullevål experienced the same problems as the management at Sundvolden Hotel: The major challenge as far as communication and the media was concerned was trying to suppress the eagerness of the teenagers to put their accounts of the incident on Facebook.

From the morning of 23 July, media requests for patient interviews started to become more frequent. Initially, the medical staff were very restrictive, but the next day, several of them succumbed to the pressure from both patients and relatives and permitted interviews. Medical management made the assessment that staff could decline interviews with underage patients, but for patients of age, they had to be content with advising them and letting them make their own decision. In some cases, the patients said no to being filmed or interviewed but allowed still photography. Several conflicts arose when parents wanted to allow an interview with their child which hospital staff then advised against. Many teenagers felt driven to participate, probably because they were politically active, extrovert and familiar with the media.

City of Oslo

The consultant at the municipal emergency services in Oslo heard the explosion in the centre at 15:35 and interpreted the situation as a disaster. No formal alarm was received, but at 15:37, the first patients arrived.

Media relations

The director of Oslo's municipal emergency services received a phone call from the Directorate of Health at around 15:45, and immediately before this,

a journalist from the Dagbladet newspaper had rung. The director started to organise work via mobile phone during a two hour car journey from his holiday location. When he arrived at the Emergency Department he managed, with the help of other employees, to "abruptly" eject all the media representatives from the place and he referred them instead to the Oslo police, with the justification that the incident was being addressed as a national disaster. This happened in accordance with the current emergency plan, which is said to have been followed to the letter and which is thought to have worked well. It is stated that the journalists had great respect for this and understood that the medical staff needed peace and quiet so that they could care for the approximately 100 people suffering from shock and the approximately 75 with physical injuries.

Communications organisation

The City's head of information was at the scene and established specific emergency pages on internal and external websites, otherwise there were no staff at the communications unit. The first arrived after half an hour and three more within about two hours.

The journalists who subscribed to RSS messages from the City of Oslo were continually updated and the others were able to find updated information on the City's website. At 20:30, the city set up an information telephone line for the districts.

The City of Oslo has, in disaster situations, an emergency worked placed in the Oslo police's local emergency centre, which promotes the exchange of information between the organisations. Staff from the local authorities know each other well and regular carry out exercises together, something which also facilitated the work and the flow of information between the police authority and the City in connection with the incidents of 22 July.

On the other hand, the medical staff at Oslo's municipal emergency services experienced shortcomings in relation to their communications with the police. They had expected that the security of the staff and patients would have been addressed and that they would be contacted by the Oslo police. There was a rumour of a bomb threat levelled at Ullevål Hospital which could potentially even affect the emergency ward, but "we don't pay any attention to threats", as one of the emergency ward employees said.

Crisis telephones and follow-up measures

During the following days, the City received the important task of communicating telephone numbers and addresses to support centres and the like. The problem was that the districts' emergency telephones, which were intended for residents, were being rung by journalists. On the two first days, the City's switchboard was also kept open until midnight.

Oslo's municipal emergency services took a special communicative measure aimed at their patients, a while after the attack. The medical staff in charge rang up all those who had come in for treatment following the bomb explosion and inquired about their current condition and any needs they might have for ongoing care and support. One of the aims behind this was to

show care and consideration and the measure appears to have been well-appreciated.

In other respects, the City of Oslo has developed a good media strategy over years, and this is thought to have been of great benefit to the crisis management at the municipal emergency services and for the City in general.

Ringerike Hospital

Communications organisation

The management of Ringerike Hospital is geographically situated at the Hospital in Drammen. There is normally an information officer there; however, on 22 July, they were on holiday. Practically speaking then, Ringerike Hospital had nobody responsible for communications during the acute phase. The head of the surgical clinic was having dinner at his holiday cottage when he saw a TV report about the bomb in Oslo; this was followed by a couple of hours of informal communication regarding the incident. During his journey to the hospital, the doctor received, among others, updates via mobile phone from his father-in-law, who was following the TV reports. Once in Hønefoss, where Ringerike Hospital is located, the head of the clinic also managed to synchronise communication and media relations. During the first evening and night however, few journalists or relatives came to the hospital.

Internal communication at Ringerike Hospital was primarily handled verbally and, to a certain degree, through the special emergency web platform which comes into effect after the alarm has sounded. The web platform is maintained by the person who was operating as Hospital Director with the crisis staff at Ringerike. The intranet was also up and running later on, serviced by a public relations officer from Vestre Viken.

Unexpected "invasion"

Ullevål's Twitter request for blood donors, where there was no mention that it was only registered blood donors who were being sought, also resulted in Ringerike being almost invaded by people who wanted to donate blood on the first day. The hospital however had no possibility to accept this goodwill at that time and besides, they did not need any more blood.

Press centre in the hospital's premises

The journalists present were allocated a room at the hospital, a small press centre with good working conditions and close proximity to spokespeople. Some however tried to get access to their own room at the hospital and one journalist is supposed to have claimed that he had been promised to sit in a consulting room, but this access was denied. Otherwise, the assembled press is thought to have "taken no to mean no" and behaved with understanding.

The media was permitted, with the consent of the patients, to interview and photograph the patients in the hospital wards. All of the hospital's care rooms are single rooms. Certain patients said no to everything, some

consented to meeting the crown prince and princess when they visited, but said no to meeting the press.

The actions of other parties

Police

Shortly after the explosion in the government district, the police in Oslo received the alarm about the incident and their first patrol was soon on the scene. Information was obtained from the government district's security centre and from witnesses and it soon became clear that a terrorist attack was in progress. The police's bomb disposal and response units were called in and all police patrols in Oslo were directed to the incident scene. [24]

The first police at the scene prioritised the giving of first aid and assembled the evacuees at Youngtorget, which is near the government district. Some police cars were used to transport the injured to hospital. A certain number of persons were evacuated from the buildings, both injured and uninjured, and the bomb disposal unit searched the area for further bombs. The threat of more bombs in the area was a complicating factor and, for a while, the police chose to evacuate, among others, ambulance and fire personnel from the scene. A large area surrounding the government district was cordoned off. [24]

At about 17:30, the police in Nordre Buskerud received the alarm about the shootings at Utøya. It soon became evident that this alarm had to be prioritised and the district's own emergency response unit was called in, at the same time as a request for back-up was sent to the Oslo police district. The alarm, however, gave no clear information and the situation on the island was unknown for a long time – it was believed for a while that there was more than one armed perpetrator involved and that there were explosives on the island. [12, 25]

When the first police patrol arrived at the bridge on the mainland from where the ferry to Utøya departs, there was no boat in sight and the patrol was forced to wait for other transportation. They could hear shots coming from the island and later encountered a rowing boat with people fleeing from Utøya. [25]

Several other patrols from different stations were dispatched, both by boat and car. Just after 18:00, the police response team from Oslo and more personnel from Nordre Buskerud arrived at the mainland north of Utøya, at an agreed assembly point. Personnel from both response teams and Nordre Buskerud set off for Utøya in a police boat, but they soon discovered that the boat did not function satisfactorily and instead they took over two civilian boats that had been requisitioned. At approximately 18:30, the personnel went ashore at Utøya and soon after, they were able to arrest the perpetrator, Anders Behring Breivik. [12, 25]

The fire service and the armed forces

Brannvesenet (Fire Service), a Norwegian authority equivalent to the Swedish municipal emergency service, was involved in the incidents of 22 July in several ways, both in Oslo and at Utøya. The fire service in Oslo had

the main responsibility for the fire and rescue efforts in the government district and they received help from the fire services of four other districts. The work in the government district included extinguishing fires, searches in buildings, first aid, securing the incident scene and the transportation of casualties to hospital. [26, 18]

The fire service in Ringerike had the main responsibility for the efforts at Utøya, but received support from seven other districts. Their work included assisting with medical care and helping to get the injured onto stretchers and into ambulances. Fire service personnel helped receive the evacuees when they arrived on the mainland from the island. The fire service also helped to carry the deceased ashore and provided divers who searched for dead in the waters around Utøya. [26, 27]

The Norwegian civil defence is a back-up resource for rescue work in disaster situations, and it was also involved on 22 July. In Oslo, a large number of people were involved in the rescue efforts, including with the securing of the area around the government district. Furthermore, civil defence assisted with organising the reception of the casualties at Sundvolden Hotel and helped with guard duties and the police's care of the deceased. [5, 28]

The Norwegian armed forces were also involved in the efforts, through the air force's 330 squadron which is responsible for the helicopter resources incorporated in the Norwegian national rescue service organisation. The rescue helicopters are, as has been mentioned, of the Sea-King model and can transport up to seven patients on stretchers or up to three intensive care patients. There is always an anaesthetist on board the helicopters.

These helicopter resources were utilised in various ways on 22 July. A rescue helicopter is located at the air base in Rygge, approximately 70 km from Oslo, and this received the alarm following the bomb in the government district. The helicopter was flown to Oslo to be ready, should casualties need to be transported to other hospitals throughout the country for the care of, for example, burn injuries. The rescue helicopter from Rygge was later moved to the reception point at Utøya, along with another from an air base northwest of Trondheim. Once there they assisted in the reception of the injured and the dead from the island.

The armed forces also placed other helicopter resources at readiness and also contributed in other ways to the efforts resulting from the bomb attack in Oslo and the shootings at Utøya. For example, they assisted the police with bomb disposal expertise and helped with guard duties and the securing of the central Oslo area. [29]

The Norwegian Government and Directorate of Health

The Government's Crisis Council was called in during the afternoon of 22 July and held two meetings that evening. The Prime Minister and the cabinet ministers involved received information of developments continuously. The Ministry of Justice and Public Security was appointed as the lead ministry and was supported in its work by the Government Emergency Support Unit. [30]

At the Ministry of Health and Care Services, a crisis management staff was established and the Directorate of Health was given the task of coordinating healthcare and medical efforts and instructed to report back on these. The Directorate noted that Helse Sør-Øst RHF was involved with the incident and ascertained that they should be able to deal with the emergency situation. However, it soon became clear that a great deal of focus would need to be placed on the planning of psychosocial support for the bereaved and their relatives, and the monitoring of this support.

Volunteers

A large number of volunteers, both private individuals and from voluntary organisations, participated in the efforts resulting from the attacks on 22 July. The Norwegian Red Cross was involved at a very early stage and assisted in Oslo with through providing personnel with medical skills and ambulance resources. Later in the day, the organisation assisted with boat transportation from Utøya, with ambulance resources and with psychosocial support to the victims and relatives. Psychosocial support had also been offered after the acute phase, including at Sundvolden Hotel [32]. The Red Cross also provided information for children and adults who had been directly or indirectly affected in order to explain the mental reactions that can occur after a traumatic event and to give advice on ways of relieving these reactions [33]. The organisation experienced a great influx of volunteers who wanted to help in the work in some way as well as support from industry, i.e., deliveries of food from chains of food stores [34, 35, 36, 37].

The voluntary organisation Norwegian People's Aid was also involved in the efforts following the attacks. Staff from the organisation were already at Utøya when the attack took place, since they were assisting AUF with medical resources during the summer camp. This meant that they could commence their live-saving efforts straight away. The personnel who arrived later then helped to care for the injured who came ashore and to organise transportation to hospitals. Norwegian People's Aid was also involved with the efforts following the bomb attack in Oslo. [38, 39]

Restoration and recovery

Material damage

The bomb attack in the government district caused substantial interior and exterior damage to several buildings in the area. This has required comprehensive clearance work which has involved the removal of loose material and the securing of objects which were at risk of falling down, as well as taking care of documents and computers in the buildings. It is estimated that the clearance work will continue until autumn 2012. [15]

As far as renovation needs are concerned, a review of the buildings and an assessment of how renovation needs are to be addressed are on-going, as this Kamedo report is being written. It is still unclear whether some of the buildings can actually be repaired, or if they have to be demolished. Several ministries have been relocated to alternative premises, and they will be there for some time to come. [15, 40]

Physical and mental injuries

For specific reasons, this Kamedo report is being written soon after the incidents in Oslo and at Utøya. Therefore it is not possible to draw any conclusions with regards to the permanent physical disabilities of the casualties or the long-term mental effects that the incidents will have on the victims and their relatives.

Discussion

Healthcare and medical services

Alarm and dispatch

The prehospital centre at Oslo University Hospital with its various departments is at the cutting edge of prehospital activities. The centre's level of ambition has for a long time exceeded what is required within Norwegian laws and statutes. Physician-manned ambulances are one example of this, the introduction of "Healthcare Leaders" is another.

On 22 July, AMK Oslo-Akershus had a problem with one of its technical systems (AMIS), probably due to overloading. The system is old and was originally designed for internal use at Ullevål. However, use of the system has spread to other AMKs in Norway and has become national, without a specification of requirements ever having been defined for the system. As a result of the malfunction, no incident log was created and communication had to be made via radio. However, thanks to recurrent training and exercises, the operators were still able to handle the situation well, but the lack of logs has of course made the subsequent evaluation more difficult. Staff has requested modernisation of the system, incorporating built-in support for a decision-making function.

Not all AMKs have access to Nødnett (Tetra) and it can therefore be difficult to coordinate efforts with ambulances that are normally dispatched from different AMKs, some of which currently use analogue radio. With the incidents in question, AMK Oslo-Akershus also had problems getting in contact with both AMK Vestre Viken and the police control centre. Likewise, there was no one at AMK Oslo-Akershus aware of the traffic difficulties at Utøya. However, both the fire service and the police were aware of this, since they had access to images from traffic surveillance cameras.

Initially, AMK Oslo-Akershus had problems calling in personnel. The current procedure involves staff, who is already hard-pressed, calling in other personnel, in accordance with an alert list. An automated system for all units which can quickly call in more personnel would be desirable. In this case, staff lost track of the personnel who had already been contacted and those who were on their way in.

The physical safety of AMK Oslo-Akershus could be questioned. The centre is housed in an old building within Ullevål's hospital area, with no staff room. The perimeter around the centre is not secured at the level that one would expect for an operation that is so important to the community. What is more, residents of an adjacent property can see directly into the control centre itself. Compared with Sweden, there is no automatic function for forwarding calls onto another centre, should the system become overloaded.

AMKs in Norway are operated by the hospital trusts. There are interested parties who want to drive development forward through regional and national seminars; these include KoKom (National Centre on Emergency Communication in Health) and NAKOS (National Competence Centre for Prehospital Emergency Medicine) However, these centres have no mandate to decide on the introduction of, for example, a national IT-based decision-making support tool. Norway's population of approximately five million is served by 19 AMKs, whilst Sweden, whose population is nearly double that of Norway, has 18 SOS centres. In London, there is one centre that serves over 12 million people. The issue of what is generally the optimum size for such a centre has never been investigated, but it is probably the case that the really small centres find it more difficult to handle major incidents.

Organisation at the incident scene

In Oslo, the medical services very quickly established effective management at the incident scene, partly thanks to the fact that the Ambulance Service in Oslo had invested in the provision of a healthcare leader on external duty, and partly through having access to a physician-manned ambulance. Both of these units now happened by chance to be just a few minutes' drive from the incident scene, where they met up. Otherwise, the principle in Norway, as it is in Sweden, is that the crew from the first arriving ambulance take the command and control function.

Work at the incident scene is conducted in a structured manner, according to the principles in MIMMS. These procedures were to be first introduced formally into the Oslo ambulance services in week two of 2012. However, many of the paramedics who arrived at the scene had been trained at Lillehammer, where the MIMMS principles are applied in their training.

Management is principally organised roughly the same in Norway as in Sweden with a "Healthcare Leader" who is equivalent to a Swedish "sjukvårdsledare" , and a Medical Incident Officer. During July 22nd this position was taken by an anaesthetist used to work in the prehospitalt setting. In Sweden this position ("medicinskt ansvarig") would usually be staffed by a nurse coming from the ambulance service. The ambulance services in Oslo have, through training and other investments, created the conditions for effective leadership, but it was a happy coincidence that they were able to be at the scene within a few minute of the incident occurring.

The Oslo casualties were distributed between different emergency health care providers and hospitals. "Skadelegevakten" received those with less serious injuries, which meant that Ullevål could concentrate all of its resources on the more critically injured. The distribution was so exact that only two patients were transferred from "Skadelegevakten" to other hospitals in the Oslo region. Furthermore, these were able to leave hospital the same day. This good result can probably be put down to the excellent triage by medical staff at the incident scene, but also to the fact that Oslo residents are used to going to "Skadelegevakten" for care and that they are fully confident in the medical care provided by this facility.

Emergency preparedness plans within the healthcare and medical services

In their work with this report, the authors have reviewed the Norwegian national and regional emergency preparedness plans and those at hospital trust and individual hospital level. These plans are very comprehensive. All have the same structure, as far as degrees of preparedness and levels of management are concerned but, for natural reasons, there are certain differences in levels of responsibility and work tasks. They have major similarities with Swedish preparedness on various different levels, but there are also differences which are largely connected with geography, transportation conditions and hospital structures.

Even before the incidents of 22 July 2011, Oslo University Hospital had a special responsibility in multiple casualty situations. In accordance with the regional emergency preparedness plans for Helse Sør-Øst, the Trauma Centre at Ullevål Hospital should receive the most serious casualties. Those with less serious injuries should instead be taken directly to other healthcare units. This was also practised in 2006, in a major disaster exercise, when a terror attack with multiple injuries was simulated.

This plan ties in well with experiences from the terror attack in Madrid in 2004 (Kamedo report 90), other bomb attacks elsewhere around the world (Kamedo reports 72, 87 and 89) and from other explosion accidents. In most cases the majority have slight injuries whilst the most seriously injured instead require very advanced specialist medical care. Israel has experience from various terror attacks and 30-day mortality has been reduced there due to the most seriously injured being sent to trauma hospitals with high competence at all levels [41].

The terror attacks of 22 July took place on a Friday afternoon at a time of the year when a large part of the population take their summer holiday, both in Norway and Sweden. This meant that the emergency plans were put to an extra test, but they were correctly executed and it was possible to call in personnel, even if it was initially difficult to reach all of them by telephone. Calling personnel in via traditional telephone lists is time-consuming and in Norway work is now being directed at more effective methods, for example, sending bulk SMSs or the like.

Many of the people in management positions were represented by their deputies, and this worked well. As soon as the incidents became known to the general public, a large number of volunteers came to the units involved and there was never therefore any shortage of personnel. This is a common occurrence that often compensates for shortcomings in the alarm procedures.

The emergency preparedness plans are thought to have functioned satisfactorily within all the areas involved, according to the evaluations of the responsible organisations themselves. There was never any lack of resources and all of the casualties received medical care of high quality.. There were however certain differences in working methods. At Ullevål Hospital, paper records were used, whilst at Ringerike Hospital, a web-based patient registration system was successfully employed. Such a system may also be of interest to other hospitals, but it requires more technical

expertise and is probably less robust than pen and paper. Evaluations after the incidents have only implied changes at detail level to the emergency preparedness plans.

The experiences show that trauma centres should be the first receiving units in a disaster situation, and that other hospitals or medical units should receive the less seriously injured. With knowledge of how current trauma care has developed, it is known to be beneficial for the seriously injured to be centralised to a trauma centre. If these centres are capable of receiving a large number of serious casualties simultaneously, it is reasonable to suggest that trauma centres should be the first receiving units in a disaster situation. The distribution of the less seriously injured to other Oslo emergency facilities crucially allowed Ullevål Hospital to concentrate its resources on the more severe casualties on 22 July 2011.

Oslo University Hospital's emergency preparedness plan is also a fine example in terms of its descriptions of how the specific medical units are to work to support each other, i.e., through the transfer of intensive care patients, the setting up of a relatives centre and other support functions. Swedish university hospitals could also be responsible for the establishment of similar collaborations in disaster situations. It is also conceivable that the responsibility for such collaborations could be placed with the units for disaster preparedness that exist within each county council.

Reception of casualties

The reception of casualties by hospitals is governed to a large extent by the triage that is conducted out at the incident scene. Previous incidents also demonstrate that this triage can be of vital, life-saving importance, particularly with bomb attacks [42]. This sorting of casualties was, to some extent, based on geographical factors and the roads that were currently passable, but consideration was also given to the specific competence available at each hospital to provide the necessary care for explosion and gunshot wounds. These injuries are, above all, of a penetrative nature and often require immediate surgery, but also repeated operations which demand specialist knowledge within the subject area. After a bomb attack, approximately 21-24 per cent of the casualties require intensive care and about the same percentage require hospital care for at least a week [43].

Ullevål Hospital is one of the leading trauma centres in Scandinavia and has a long tradition of receiving the seriously injured from large parts of Norway. The consultant surgeons in charge of the trauma unit have, over the course of several years, built up an advanced level of trauma care which is available around the clock, every day of the year. These same physicians have also taught this subject at different locations in Norway and in other parts of the world. Many of the doctors at Ringerike Hospital had received such training and had acquired special trauma knowledge through ATLS® (Advanced Trauma Life Support Course) for the emergency treatment of the acutely injured and DSTC™ (Definitive Surgery Trauma Care) for the continued care of the seriously injured including surgical decision making. The nurses had also undergone the trauma course TNCC (Trauma Nurse Care Course). The hospital was therefore suitable as the receiving hospital

for the casualties from Utøya, and not just because it was the hospital closest to the island. In addition to this, the staff at Ringerike regularly performed team-training exercises in trauma care, since they normally admit only sporadic trauma cases.

The Emergency Department at Ullevål Hospital is assessed to have functioned very well. One of the country's most experienced trauma surgeons took charge of triaging in the entrance to the Emergency Department, which may have contributed to the work flowing without problems. Where penetrative wounds are concerned, it is important that the triaging is conducted by an experienced surgeon, since an initial clinical examination is often enough to determine whether emergency surgery is required. Decisions regarding surgery are always more difficult for non-surgeons to make as they have to ask the advice of an experienced surgeon anyway.

The patient flow at the Emergency Department was facilitated by the ability to mobilise one trauma team to each casualty and that staff were not distracted by having to take care of less seriously injured.. The time interval between the arrival of the casualties from Oslo and Utøya respectively meant that there was sufficient time to take care of all of them. If the casualties from both incidents had arrived at the same time, then the situation would of course have been more difficult to handle. The work that was carried out at “Skadelegevakten” was, furthermore, very significant as staff there, in a very short time, treated as many as 80 less serious casualties from the bomb explosion. The two persons who were transferred to hospital were discharged the same day, which is seen as a sign that the triage was conducted with a high degree of precision.

Injuries from the bomb explosion that were treated at “Skadelegevakten” were mostly cuts from glass splinters, and could be treated in the traditional manner through cleaning of the wound and suturing, if necessary.

The surgical department at Ullevål Hospital was able at an early stage to arrange sufficient wards and surgical teams, despite the two operations that were on-going when the alert was received. It probably helped that the two incidents occurred on a Friday afternoon in the holiday period. Of the ten casualties that arrived from the bomb explosion, seven were operated on and three operations were able to be completed before the gunshot victims from Utøya were admitted. At any one time, a maximum of six operations could be in progress at the same time. When the casualties from Utøya had arrived, it had already been possible to mobilise all the necessary competence, at all levels, including the drugs and blood products that were required. There was a certain amount of waiting between the two attacks which, without detracting from the great efforts of the staff, may have made the work somewhat easier.

At Ullevål it was unclear the whole time whether more patients would arrive from the government district, or if additional bomb explosions were likely to occur. The casualties who were admitted had injuries typical of penetrative and blunt trauma, sometimes in combination. This has also been described in other similar incidents [43, 44].

Amongst the more advanced procedures which were carried out during the first evening and night were a craniotomy, a thoractomy, debridement of

a facial injury, a vascular reconstruction and seven laparotomies. Of the last mentioned operations, four were non-therapeutic, which means that, after the abdomen had been opened, it was noted that the procedure was not actually necessary. This is unusual in normal situations, but in a disaster situation there are more casualties to monitor and it was unclear whether further casualties might also arrive. As such, it was an acceptable measure which enabled the case to be finalised sooner, instead of the more careful and time-consuming monitoring of the abdominal injury which otherwise would have been required.

Up until the Saturday morning, Ullevål admitted 24 casualties. Only eleven of them required emergency x-ray examinations in the form of CAT scans. This is probably a result of the triage performed by experienced surgeons, but also that bomb and gunshot wounds in particular do not always require x-rays in order for a decision to be made about whether an operation or another measure is required. The first few hours after an incident, it is also important that x-ray examinations are only performed if the examination is crucial in the decision-making process on the person requires life-saving surgery or not. Two patients with lung injuries caused by the shock wave of the bomb in the government district required treatment at Ullevål Hospital. Injuries of this type, "blast injuries", are often fatal, but these patients survived. [10]

During the days and weeks following the incident, the hospital continued to work with follow-up surgery that required considerable resources. A high level of trauma competence also needed to be maintained for these tasks. Daily multidisciplinary meetings were therefore held during the first weeks so that decisions could be made regarding the on-going care of the majority of the casualties. Continuity was a problem since it was the holiday period and several physicians were not available all the time. The tactical and strategic disaster management made a wise decision when they moved all emergency surgery, apart from new trauma cases, to the other hospitals within the Oslo University Hospital Trust. Follow-up surgery in the form of abdominal reconstructions, abdominal closures, and wound treatments could then be conducted in a medically optimal manner. These follow-up operations are often considered less "glamorous" than the initial life-saving procedures but they require scrupulous technique and monitoring. It is therefore important that specific trauma competence is available, also at this stage. To a certain extent, it was more difficult to mobilise staff during the weeks following July 22nd. The situation was helped by the most experienced trauma surgeons staying on duty and working long shifts every day during the coming weeks. The "voluntary efforts" undertaken during such incidents are invaluable, but are difficult to incorporate in the emergency preparedness plans. The majority of voluntary efforts are however made at the early stage when society and the media have most focus on the actual incident. Staff may even volunteer to work in areas where they do not normally work, i.e., at the receiving Emergency Department, and can thus instead become a burden to the regular staff.

A large number of ventilator beds were made available, in accordance with the disaster plan. This is often difficult as patients already in respirators cannot be easily be relocated. In Oslo it was possible to use the entire

resources of the University Hospital Trust, and the time when the incident occurred also facilitated matters since elective surgery is often conducted to a lesser degree during the holiday period and prior to a weekend.

Ringerike Hospital was the hospital outside of Oslo which received the most casualties from the shootings at Utøya. In accordance with the emergency plan, four surgical teams had been mobilised and as many as 35 casualties were able to be admitted the same evening. However, only one patient required an emergency operation. "Damage control" surgery was conducted, which means that temporary measures were undertaken to stop bleeding and that leakage of the intestinal contents. By this tactic the patient could be stabilised from a physiological point of view. The next day, the patient was transferred to Ullevål for more definitive reconstructions. Many of those who came to Ringerike only had minor injuries to their extremities that required wound or fracture treatment. Seven of those who underwent surgery were transferred to the trauma centre at Ullevål Hospital during the next 24 hours. In order to reduce the work load for Ullevål, it was very important that the staff at Ringerike conducted this form of primary stabilisation of the seriously injured in addition to simpler surgical procedures. In the context of a major disaster, a trauma centre can therefore require designated sister hospitals that carry out the same function as Ringerike did on 22 July 2011. These hospitals must however fulfil certain training demands for trauma care, as was the case at Ringerike.

In the prosecution of Anders Behring Breivik, the injuries of all the deceased were described. As far as those who died in connection with Utøya are concerned, it has been established that the vast majority suffered gunshot wounds, often multiple wounds, to the head and body. It is in principal impossible, purely on the basis of autopsy records, to determine whether any of those who died could have been saved by faster access to medical care. However, the descriptions of the injuries suggest that the vast majority of those who died did so directly, or very shortly (seconds - minutes), after sustaining the injuries. What can be noted is that no casualties died during transportation and that only one patient died after arrival at hospital. As far as the authors of this report understand, this death could not have been prevented, due to the extent of the injuries.

Overall, the casualties received a very good level of care at Ullevål Hospital, Ringerike Hospital, Bærum Hospital, at “Skadelegevakten” and at the other hospitals that received casualties. The contacts and chain of care between the hospitals were well-developed and can function as a fine example to the Swedish healthcare services.

International aid

Norway had substantial resources of its own to cope with the incidents of 22 July. However, in the acute stage, a certain amount of Swedish support was received through ambulances provided by NU Hospital Group (Västra Götaland region) which crossed the border to compensate for the relative shortage of ambulances that occurred in Østfold, when these vehicles were dispatched to Oslo. The Scandinavian countries also offered assistance in

the identification of the deceased, but Norway had sufficient resources to be able to handle this without outside assistance.

Psychosocial support

The atrocities - over and above the ordinary

Part of the purpose behind a terrorist attack may be to inflict serious, unexpected casualties in order to create fear and to achieve political goals. The atrocities in question may also have had this objective. The reaction was one of surprise and horror, at the same time as the nation and society had to rapidly handle the situation and support the victims.

Experiences from serious incidents demonstrated that many people behave altruistically and show great compassion. The reactions from society and the general public are often characterised by a great desire to help and support the victims, something that is known as the "honeymoon phase". Some individuals can instead display negative stress reactions and some feel a need to find scapegoats. It is not until the later stages that a more well-grounded assessment of society's efforts can be carried out and responsibility demanded.

Both the Swedish and the Norwegian overall emergency plans are based on the principles of responsibility, proximity and similarity, as far as society's preparedness for serious incidents is concerned. The atrocities of 22 July were over and above the ordinary, but the initial psychosocial support in the societal efforts that have been studied still seems to have followed these principles. The municipalities had responsibility for providing support to the victims from Utøya and their relatives, and the employer had the responsibility for providing support to those who were working in the government district.

The municipalities and other organisations that have been studied have taken a great deal of trouble and devoted much energy to supporting the victims and their relatives, and they have shown that society is there for them. The combined experiences at different levels can probably help to improve crisis preparedness in both Norway and Sweden.

Experiences and challenges

Hole Municipality

The probability that a municipality in Sweden or Norway should be affected in the way that Hole Municipality, with just over 6,000 residents, was, is of course, small. However, Hole Municipality was affected by this extraordinary incident, an incident that changed the lives of the many victims and, furthermore, led to a great number of others carrying secondary burdens. For example, some individual volunteers risked their own lives in attempts to rescue the victims. The incident at Utøya did not affect the municipality's primary residents but quickly became a national incident; despite this however, both the municipality and the region were put under a great deal of strain. For a number of days, the situation weighed heavy on those in leadership positions in Hole Municipality and the whole municipal

administration, as it did for the police, the healthcare and medical services, the emergency services and for local and voluntary crisis support personnel. Even after the incident, the municipal health services and crisis team continued to identify people who needed support.

As Sundvolden Hotel, nearly 1,000 people assembled. It is difficult to imagine how it is possible to lead a support initiative that involves so many people. Initially, there were no computers with which to register the survivors and it was difficult to lead the work of the crisis support personnel and to get an overview of those who needed support and what type of support they needed. Furthermore, the pressure from the mass media was intense and there were insecurities about safety and the possible risk of further atrocities.

The support efforts in the acute phase primarily deal with the showing of compassion, moving the victims to safety and creating some feeling of safety, ensuring the provision of basic needs such as warmth, rest, food and drink, helping with practical things, ensuring that the victims make contact with their relatives and providing support as it is required. Despite major difficulties, it seems that the municipality still managed to satisfy the most fundamental needs of the victims and their relatives, at the same time as they were registered and transported onward for continuing support in their home municipalities. However, the normal daily work of the municipality probably had to stay on the back burner for quite a while. In general, most feel that the reception at Sundvolden worked well, which is largely due to the hotel's considerable resources, a dedicated effort from the municipality and volunteers, good cooperation with the police and good support from other municipalities in the region. The municipality also made great efforts to identify all the volunteers and to ensure that their support needs were also met.

Within the supplementary work, external resources helped to "debrief" the majority of the personnel involved in the efforts. This is discussed below. The content of the support provided to the victims and the efforts directed at support personnel will also be discussed.

Other municipalities

It has not been possible in this study to fully examine the efforts of the individual municipalities or to compare the support offered in various municipalities. Information from several municipalities does however show that they have devoted considerable energy to the provision of good support for the victims, both during the acute phase and later on. The form that the support takes in practise depends to a large extent on local conditions and the experiences of the victims. In one municipality, all of the camp participants returned; in another municipality, some had been killed. The descriptions of support do not always refer to modern principles and concepts for crisis support in an acute phase, but the objective was, evidently, to treat the victims humanely, to inform them about the incident, organise support groups, monitor the victims and interconnect them with district psychiatric centres (DPS). Several valuable lessons have been learnt regarding emergency planning, proactive monitoring and the support needs

of risk groups other than those directly affected. The composite picture is that the municipalities have, on the whole, tried to organise support which is adapted to their residents. However, it has not been possible to completely explain how certain victims were transferred from the crisis teams of the municipalities to DPS or other specialist psychiatric units.

It is important to utilise all experiences and to supplement them with ongoing training in modern support concepts like psychological first aid, proactive monitoring, as well as looking at the skills for psychological recovery, followed by assessment and treatment. In this way, the municipalities will be even better equipped to meet the challenges of the future.

Since 1 January 2102, there are 429 municipalities in Norway of varying size, and some believe that individual municipalities would not actually be capable of managing an incident such as the one that occurred in July 2011. The example from Tønsberg shows how municipalities have successfully collaborated and this collaboration could possibly be formalised on a regional basis. This may be something that should be highlighted and investigated in both Sweden and Norway.

The government district

It is unclear whether the incident that occurred was included as a possible scenario in the risk and vulnerability analyses incorporated in the ministerial disaster plans. In any case, it is reasonable that an employer should handle work-related incidents, even those of this nature. If employers take such responsibility for better preparedness and develop an organisation for this, including, among others, an occupational health service with reasonable resources, then this leads, over time, to an accumulation of knowledge, for both staff and employers.

The current occupational health service (BHT) in the government district is a small unit consisting of seven people and its status in the organisation is low. Naturally, it was difficult, at short notice and in the middle of the holiday period, for the unit's manager and its limited personnel to get hold of extra resources and to coordinate an operation where the demands and expectations initially grew every day. After a number of initial uncertainties, it seems however that BHT have organised good monitoring of the victims, both in terms of physical and mental aspects. A major investment was made, with support from NKVTS, to train leadership in stressful situations, and this seems to have worked very well. In one ministry, there was considerable criticism of safety, fire prevention and escape preparedness. More energy will therefore be devoted to improve this ministry's plans, inform the staff and have more frequent exercises.

In general, the monitoring seems to have worked well, largely thanks to the insight of the employer, the commendable efforts of individuals, the patience of staff in the government district and, not least, the engagement of BHT personnel.

Oslo University Hospital

Initially, Oslo University Hospital had problems in alarming the psychosocial support organisations, something that is probably connected with the merger of the various hospitals in 2010. However, the level of preparedness does not seem to have been seriously affected, thanks to various jobholders taking their own initiative and the staff being willing to participate in these initiatives. At first there were some problems collaborating with other parties, for example, the police, but this does not seem to have affected the support provided to the victims. After the attacks of 22 July, Oslo University Hospital has learnt not to wind down support operations until the situation has been calmer for at least 24 hours.

To divide up the relatives centre so that the bereaved were directed to the National Hospital, whilst casualties and their relatives came to Ullevål appears far-sighted. Staff at the National Hospital's relatives centre noticed that some of the bereaved found it extra difficult because the identification of the deceased took some time. Oslo University Hospital has conducted an evaluation of the psychosocial support to casualties, their relatives, the bereaved and their own personnel, and has come to the conclusion that it worked well. The experiences should however lead to improvements to the emergency plans prior to a future mass influx of patients.

Oslo University Hospital's own evaluation agrees well with the assessment that the authors of this report make. The descriptions of the content of the support provided to the victims are particularly impressive and this is discussed further below.

Oslo police district

The police are a professional group that are exposed in many ways. Apart from the risk of being exposed to violence, the police always have a role to play where the cause of death is a violent act of some kind, i.e., murder, suicide and terrorist attacks. As far as the incidents in question are concerned, the police received some criticism. This became a burden for individual police officers and led to frustration within the organisation. A response organisation like the police must therefore have a system that provides support for its employees. Within the Oslo police district, there has been a great deal of focus of management of all levels taking the responsibility for providing support when their units have been exposed to various stressful situations. Managers have, among others, undergone training and been given "action cards" that describe the measures that should be taken in the acute phase of various different incidents. The police's occupational health organisation, BHT, was also given an important role, in conjunction with the incidents of 22 July. What is more, the Health and Safety representatives were involved, which shows that psychosocial measures are accepted as a Health and Safety issue. There are also plans to develop the peer support operation and to introduce staff care groups. As part of the initial measures, managers are to implement "debriefings" or "defusings". This is developed later in the report.

The support measures in the Oslo police district since 22 July present an image of an organisation where staff support each other and where the

management is also thought to have created a plan for the kind of support that it shall provide in the future.

The Norwegian Directorate of Health

It seems completely reasonable that the Directorate of Health was given the task of coordinating the healthcare and psychosocial support initiatives in connection with the incidents. The Directorate of Health decided that the municipalities should have the responsibility for providing support for the victims and relatives from Utøya, and that the employer should take responsibility for supporting those working in the government district. The Directorate assigned the County Governors to ensure that the municipalities were proactive and made contact with the victims and appointed contact persons for them. Through questionnaires, the County Governors would find out further details of how the support was working in practise in the municipalities.

The Directorate wanted to create a broad base and consensus regarding the content of the psychosocial monitoring of the victims and therefore arranged a meeting with a large number of collaborative organisations. This is an initiative that can probably be included in future emergency plans. The composite picture is that the Directorate of Health's management and staff worked with engagement and carried out a difficult task in an excellent manner.

The content of Guidelines for psychosocial interventions in emergencies, accidents and disasters

The Directorate of Health has published a document entitled *Guidelines for psychosocial interventions in emergencies, accidents and disasters*, which describes well the responsibilities of the municipalities and the function of the crisis team. The content of the document is primarily in line with current thinking with regard to psychosocial support and contains references to, among others, TENTS and the NICE report (see appendix 4). Future revisions will probably be supplemented with references to other important international recommendations, i.e., *Psychological First Aid, Proactive Monitoring* and *Skills for Psychological Recovery*.

How the initiatives relate to the best knowledge available and international recommendations

Summary of current thinking

Today there are relatively reliable and well-grounded recommendations for how a society can organise and implement support in the acute phase following a serious incident. Such recommendations focus on non-formalised components that are universal and generally usable. Recommended initiatives often include the following components: Support through psychological first aid, and skills for psychological recovery; monitoring (proactive) and subsequent assessment (screening) and possible treatment (trauma-focused). The treatment for post-traumatic stress disorder (PTSD) should be evidence-based in the form of trauma-focused cognitive

behavioural therapy (TF-CBT) or "Eye Movement Desensitization and Reprocessing" treatment (EMDR). Those who over time develop loss-related adjustment disorders can be offered cognitive behavioural therapy (CBT) with exposure therapy (for further details, see appendix 4).

Principles of the initiatives

The most common reactions after serious incidents are normal, and the majority recover. The advice is therefore not to interrupt the process during the acute phase, but to find those who need the support of society through monitoring. When such support initiatives are implemented on a broad scale, with public funds, they should be empirically grounded, be evidence-based, or there should be international consensus that they have a positive effect. Interventions can certainly be effective, despite not being evidence-based, but such initiatives should be evaluated. The evaluations should be thorough and contain more than just feedback from the participants. If the initiatives are intended for wide usage, a methodical scientific evaluation is particularly important.

To provide support to victims in the acute phase, well-grounded principles should be followed, starting with the provision of basic needs for safety, comfort, food and drink. After this, interventions can involve calming those with pronounced reactions, providing information about the incident, strengthening the feeling of self-confidence and confidence in the ability of the society, strengthening the sense of belonging through social support, strengthening the feeling of long-term hope, focusing on providing support based on needs and providing information regarding normal reactions and how the victims can help themselves. The objective is that the victims shall become better at handling their own problems. After this, the individuals should be monitored proactively, in order to support their skills for psychological recovery and to catch those who still display symptoms. The latter can then be treated using evidence-based methods.

All in all, it involves obtaining a balance in the initiatives in the acute phase between being relatively active and relatively passive. Some need more support, in accordance with the proactive monitoring and treatment model. Others manage relatively well and then it is possible to focus with restraint on strengthening the self-confidence of individual victims, groups and families and their own ability to deal with problems.

Support to response personnel

On an international basis, overly formalised support models of the "one model fits all" type are not recommended in the acute phase, either to primary victims or to secondary affected response personnel. After the incidents of 22 July there are several reports on "debriefings" or "defusings" with, primarily, response and support personnel in municipalities, at hospitals and within the police. In Hole Municipality, some external personnel were drafted in to conduct these meetings. Those responsible give different descriptions of these debriefing sessions. Some describe formalised review of the participant's thoughts and feelings, despite this no longer being a recommended procedural measure in the acute phase. Other sessions

follow instead the ”After action review” model, where the focus is on creating a narrative of the incident and learning lessons from it, which is probably of value. Others describe how the sessions are held by a unit manager or equivalent and that the focus, quite in the spirit of the time, is on social support within the group. This is the preferred way, for example, of dealing with various degrees of frustration and getting a picture of the needs of the group members.

In the future, the response organisation should implement more modern training for its personnel and managers, and choose training that, to a much greater extent, complies with international recommendations. Support initiatives for response personnel should, to a large extent, be based on evidence-based methods such as social support and evidence-informed initiatives like psychological first aid and skills for psychological recovery, and also on consensus-based initiatives such as ”peer support”.

Psychological first aid

The psychological first aid concept has spread widely in international psychotraumatological contexts, but only a few of those interviewed say that the interventions in the acute phase are based specifically on psychological first aid. This can be due to the Norwegian translation of the concept first appearing in August 2011, i.e., straight after the incidents of 22 July. The Norwegian version is known as *Psykologisk første hjelp* (PFH) and comprises a flexible and adapted way of treating victims after serious incidents. It then follows the modern principles for victim support that are described in appendix 4. All interventions that are part of PFH have been previously described in literature and the concept can therefore be described as evidence-informed.

Consequently, few of the employees interviewed refer to PFH, but the descriptions show that they have actually used interventions that are described in PFH. This can be seen as a sign that the content of PFH is universal and an example of good psychosocial support. One example of this is the description of how support was provided to teenagers under the age of 18 who were cared for at Ullevål Hospital: The focus was on safety and security, calm and stability, specific needs and social support from those closest to them, which is completely in line with PFH. The work with the patients, both the adults and the teenagers, can accordingly represent a good model for how to treat victims who are seriously affected, both in and outside of a hospital setting.

Major meetings

The meetings that were conducted, including those at Utøya and the major commemorative ceremony, were held one month after the incidents. It is reasonable to wait at least a month with this type of meeting, as many of those involved still find themselves in a recovery phase three or four weeks after a serious incident. Studies of those affected by the tsunami in south east Asia in 2004 have shown that positive effects resulted from when close relations of the victims visited the locations where their relatives died.

However, the visits to the areas affected by the tsunami were made much longer after the incident.

In the middle of November, the first of several major national and regional meetings was held for the bereaved and other victims. These initiatives have received some criticism in Norway. One reason for this may be that there is only limited evidence for the effect of such meetings. Some critics also believe that the victims can become dependent on experts. Since evidence is limited, it might have been reasonable, in addition to the simple feedback from participants, to also connect the meetings with scientific research and evaluations, in order to investigate possible positive or negative effects.

Treatment

Despite DPS being expanded in Norway, in 2008, a critical report published by the Office of the Auditor General in Norway suggested that the resources for evidence-based treatments for various diagnosis groups were insufficient. A questionnaire survey conducted in 2011 has shown that the situation is the same in Sweden, as far as the treatment of traumatised patients is concerned. The acquisition, on a broader front, of knowledge regarding evidence-based treatment methods is one of the conclusions drawn by the Directorate of Health, with regards to the efforts carried out in connection with the incidents of 22 July 2011.

Communication and media relations

Information, communication and media relations are central activities during crisis situations. Evaluations after serious incidents often indicate certain deficiencies within these areas, at the same time as they emphasise the importance of both good communication and media relations. The readiness to meet the needs of the media for information is part of this communications preparedness, including providing journalists, photographers and others suitable working conditions. A WHO report concerning the tsunami catastrophe [45] asserts that the media's speed is often unrivalled, and that the journalists play an important role in the provision of information during both the acute phase and recovery phase. According to the authors, professional actors in the media and communications area play a crucial role. Particularly emphasised is the local media's – especially the radio – importance for mediating information to those directly and indirectly affected. The WHO authors also consider that the media's critical reporting often contributes to shedding light on weaknesses relating to organisation and preparedness, and speed up the improvement work.

Previous Kamedo reports have highlighted these areas to varying degrees – a few of them describe experiences of the media at the scene and other contain summaries of media reporting after a certain incident. The purpose of the section of this report relating to communication and media relations is to reproduce experiences and lessons from the medical care perspective. The descriptions also partly describes the police authority (in the capacity of

being responsible for communication and media relations at the incident scene) and the municipalities involved (as municipal leaders for the municipal emergency services). The purpose of this Kamedo report does not extend to the content of the media reports or the personal experiences of the media.

Organisation of crisis communication

The majority of those who awaited in communication and crisis preparedness in Oslo on 22 July 2011 were first alerted via media and then later through the authority's regular alarm system. An SMS from a relative or a subscribed newsflash on the mobile phone was for many the first signal that they should ready themselves. This clearly demonstrates that the role of media cannot be underestimated in the alarm phase. There are always differing opinions regarding the form and content of the reports, but the speed from incident to alarm is often unsurpassed. A small number of people heard a bang or ambulance sirens and went to work out of pure instinct, or might have already been working when the emergency alarm arrived.

Personnel at different levels must continue to follow the media reporting during the acute phase of the incident, with emergency care and communication at the scene. "Next time I shall immediately assign one person who only monitors the media reporting," says one of the doctors interviewed at the relatives centre in Sundvolden Hotel. The communications staff at Ullevål Hospital did precisely that: The staff has a function card for crisis preparedness that states that a media centre shall be established where radio and TV reports shall be monitored closely.

Oslo Municipality has learnt a number of lessons from the incident, among them that a special telephone emergency number should be established for media so that they do not block emergency lines that are intended for the citizens. Personnel at Oslo University Hospital emphasise the conflict between the strict confidentiality of the medical profession and the police's more open stance. There were moments when the medical carers considered that the police supplied little too much information about the victims.

Media preparedness at incident scenes and hospitals

When disasters occur during "inconvenient working hours", which they often tend to do, all of the actors involved are put to an even harder test. The regular working day may be over, key persons are on holiday, substitutes are not familiar with procedures and the initial period from alarm to work effort is longer than usual. This was also the case on 22 July. In Oslo Municipality, two hours passed before the communications staff had been gathered, and Oslo Police had gathered only four people after the first hour. Ullevål Hospital was the quickest to respond. After half an hour, an emergency communications staff of four members had been formed, with more being added later.

The same facts applied to workers of the media. A survey conducted of the Norwegian Union of Journalists showed that many of the journalists who reported on 22 July were young and inexperienced summer substitute workers [46]. Close to half were substitutes or freelancers, and more than half had less than five years employment experience. A small number of managers were at the scene and the majority of regular workers were on holiday. The study emphasised that many felt unprepared and had no procedures or instructions. This is of interest for the understanding of which media workers were at the scene, and thereby who the medical carers, police and information officers were working with during the disaster's acute phase.

One of the challenges with communication faced by many authority actors – especially when the victims are children and youths – relates to the information flow via social media and mobile communication. This must be considered in parallel with the work of disseminating correct and factual information, both directly to citizens (for example, via websites) and through the media. Great source criticism and ethical problems emerged here, as well as a communication problem.

When a local incident quickly becomes a national emergency, it might also be suitable that a national communication organisation comes into effect. One viewpoint that became evident regarding the communications work at Sundvolden Hotel is that on such occasions the Directorate of Health should send someone responsible for communications and media to the scene. The medical care staff at Sundvolden were uncertain about who was responsible for communications and what should be explained, and by whom. A function that can address these issues quickly and strategically would have been valuable.

Representatives of Ringerike Hospital stated after the event that it is extremely important to have specially appointed personnel who manage communications and media matters, even at smaller hospitals. In addition, the police were not able to be contacted in this case, and the hospitals were kept altogether too poorly updated about the course of events. Hospital staff kept themselves informed primarily via the internet, radio and TV, which once again emphasises the need of a media centre to satisfy the internal need for communication. According to a central source at the hospital, a contingency preparedness can be useful because "the press is only interested in scandals and royalty". The fact that a small provincial hospital treated 35 seriously injured people did not, however, receive a great deal of attention by the media.

Management during crisis

Those in charge at Ringerike expressed that the disaster strengthened team spirit at the same time as it was so tragic. For the personnel, the situation proved that a hospital needs a manager at the scene. This is also very important for the communications situation, or as one source said: "A doctor cannot be remotely controlled – you have to live with those that you shall control".

Allegedly, the communications work was characterised by the expression, "Nobody assumes leadership if the senior doctors do not". This means that the workers with extensive experience often become natural leaders in difficult situations when the regular work managers are not present. A previous Senior Consultant was called in and given the task of managing the press. The disaster plan functioned without problem with the specific exception of contact with the press, where preparedness was worse. The hospital considered that the situation was managed well regardless, and with great flexibility, especially considering that a hundred or more journalists – reporters and photographers – from different countries were gathered at the scene.

Both according to the plan and flexible

An organisational and strategic communications problem that became evident is the somewhat complex Norwegian medical care organisation. At a large hospital such as Ullevål, the majority of things could be performed in accordance with the crisis communications plan. At Ringerike, the emergency plan was followed in detail, but communications and media management seems to have been somewhat more improvised, even though the results were good. Vestre Viken HF was formally responsible for communications, but the hospital received no help from this function during the first twenty-four hours.

The municipal emergency services and centre at Sundvolden Hotel complied formally with the respective municipalities' crisis communications plans. This was generally applied in Oslo, but the work at Sundvolden was organised essentially without any communications support and neither the police nor municipality contributed any communications resources. Despite this, and the fact that there was no written guidance regarding the communications work, everything functioned very well. Sometimes common sense, attentiveness, flexibility and some imagination go a long way.

Media exposure of survivors and patients

Good media preparedness entails not simply "managing" the media, but also giving their representatives suitable working conditions in the form of premises to work in as well as access to electricity and the flow of information. However, this type of press centre must be chosen carefully. At Ullevål Hospital, a premises located in a building that is separate from the Emergency Department and the care wards, which protected the patients from media exposure. At Ringerike Hospital, the journalists were given a room connected to the care wards, which might have placed them too close to the patients. Several patients at Ringerike were also given exposure through early interviews and images, and the question may be asked whether the care personnel protected their patients to a sufficient extent. When a doctor states that "the youth use media to debrief themselves", the protection must probably be considered to have been poor.

The personnel at both Ullevål and Ringerike claimed that they attempted to dissuade young patients from speaking to the media on several occasions

during the first twenty-four hours, but that many young people took the initiative themselves. Patients of legal age were allowed to decide for themselves, but sometimes the parents also instigated the media contact. The medical carers cannot be accused of insufficient protection or ethics in such a situation. Personnel at Ullevål implemented two interesting and creative measures that were not mentioned in any crisis plans: Red tape on the hospital floor marked a boundary for journalists, and white sheets were hung in windows to provide protection of privacy.

The circumstances were different at the Sundvolden Hotel, and no press centre was established despite the enormous media gathering. The information from crisis management to the media, however, was systematic and functioned well with the municipality director as spokesperson. In contrast, the small number of young people who came out from the hotel and met the media became 'fair game' at an altogether too early stage. They were still extremely vulnerable so close to the incident, which the media may have been perceived to exploit in an unethical manner. At the same time, the world seemed to hold its breath in wait for the first eye witness accounts, and the pressure on the media was intense. Journalists mentioned this later: "he looked relaxed and together, but really we knew otherwise" and "it was fantastic radio, but it might not have been entirely right" [47].

The media reporting was also quickly characterised by the ability of some of the young people to meet evil with love, for example, the young woman who said that "if one man can show so much hate, think about how much love we can show together". The statement was inscribed on a monument nearby Utvika. The media contributed to spreading this and similar positive, self-reinforcing images, and many volunteers think that this facilitated both the individual and collective crisis management after the incident.

Social media

The majority of those interviewed think that their respective organisations must become better at using social media quickly and systematically when crisis incidents occur. Experiences from 22 July demonstrate both the public's wide usage of social media in crisis situations and also the speed and impact that they have when an authority is the sender. The media use social media as sources to a large extent, but authorities do this to a lesser degree. Ullevål Hospital has come furthest in this regard, through having used Twitter and to some extent Facebook, to search for blood donors, among other things. After the 22 July incidents, the Oslo Police has established a Twitter account in order to provide continual information about incidents and accidents.

Internal communication

Internal and external communication shall be managed in parallel and synchronisation, which can probably be considered as common sense in the majority of communications operations. Within communications theory it goes without saying, and the same applies to the current use of modern digital channels [48]. Personnel should not need to rely on media in order to

obtain information about incidents that concern their work efforts or workplace. This information should come from within the organisation. But, it is often not the case in reality, for several reasons. In a crisis situation it is necessary to prioritise and the external is always discarded first on these occasions. Internal communication is primarily verbal, through quick progress meetings, for example. There are, in addition, many working at hospitals who do not have access to computer-assisted communication. SMS may work, or internal TV screens, but these methods are seldom particularly developed. If incidents occur outside of regular working hours and with low staff levels at the workplace, internal communication is perhaps even more lowly prioritised. On 22 July, many of those who worked with rescue efforts, care and communications received their first-hand information from the media.

Swedish conditions

Healthcare and medical services

Alarm phase

AMK Oslo-Akershus coordinated the medical response to the explosion in central Oslo. Technical problems arose early, but the alarm and dispatch systems were made to work successfully anyway. This can be ascribed in large part to the exercises that had been regularly performed for this scenario.

The technical support system at AMK has never been tested against any national standard, nor has such a standard been defined. This should be addressed. In Norway, there is no automatic forwarding of emergency calls, should the local AMK be overloaded or go down.. Sweden can be considered to be ahead with regard to these aspects of the Norwegian system. Furthermore, both Sweden and Norway are in the process of changing from analogue to digital radio systems. The digital network that is now being used in Norway ("Nødnett") worked faultlessly during the efforts of 22 July.

The discussion leads to the question of how many AMKs are optimal for Norway, and the corresponding question regarding the number of dispatch centres in Sweden. The advocates of small centres usually emphasise the importance of local (geographical) knowledge, while those in favour of larger centres stress the possibility of being able to rapidly handle a larger incident.

Prehospital efforts

It is not easy to train all ambulance personnel to be specialists in major incident management. This type of training is being conducted in Sweden in the form of MIMMS courses, as well as the PS concept developed by the National Board of Health and Welfare. In general, these two training courses apply the same principles, and there are no contradicting differences between them. The difficulty lies in maintaining the expertise, since it is unusual for ambulance crews to be exposed to major incidents. One solution for Sweden, at least for the larger ambulance organisations, might be to

introduce the equivalent of Oslo's "operative leader", i.e., a special command and control resource for prehospital management efforts

Compared with Sweden, Norway has a long tradition of active participation by physicians in the provision of prehospital care. This also applies to Israel, for example, where this it is considered essential for improving survival chances for gunshot and explosion casualties [41]. In Norway, Denmark and Finland ambulances or emergency vehicles staffed with physicians have been used for many years. The added value of this type of service has been questioned in Sweden. A service of this type was terminated in Region Skåne, for example. At present, only Stockholm and Göteborg operate (during office hours) a fast response car and an ambulance staffed with doctors respectively. These can offer specific in the form of an experienced anaesthesiologist in the few cases where this is necessary. As in Oslo, these are also used for training and "certifying" the ambulance nurses who are already employed. The necessity of access to prehospital doctor competence in Sweden should be investigated in general.

In contrast to Sweden, Norway has built up a national ambulance helicopter system, and was therefore able to quickly mobilise both doctors and paramedics with prehospital experience. The personnel were sent out both in vehicles and as additional crew members in the helicopters. This additional staff formed medical incident teams at the scene. Thus the transport capacity of the helicopters was not reduced regarding transfer of patients to hospitals.

In Sweden there are only seven ambulance helicopters throughout the entire country. Not all of them use doctors routinely in their operations. Neither the Swedish Armed Forces', nor the Swedish Maritime Administration's SAR helicopters have the capability to perform medical evacuations. Consequently, it can be ascertained that Sweden would not have been able to mobilise the same number of ambulance helicopters or an equal number of experienced prehospital doctors in a support effort during a similar incident. This is the result of having no unified system with regard to ambulance helicopter operations.

Medical care facilities

After the incidents of 22 July in Norway, the patients were distributed to different care facilities in the best possible manner. "Skadelegevakten" took care of the majority of the less severe injuries, partly because they were sent there and partly because they spontaneously arrived there of their own accord. This meant that the trauma centre at Ullevål hospital could concentrate all its resources on those who required specialist care. A function equivalent to that of "Skadelegevakten" is lacking in Sweden, and the majority of those less seriously injured would therefore have arrived at the closest emergency hospital. Personnel would have had to be set aside for the sorting and managing of such patients, which reduces the capacity available for patients with more serious injuries. With regard to some of the larger cities' emergency preparedness plans in Sweden, lessons can be learned from the emergency plans in Oslo, how the distribution of injured people in a multiple casualty situation ideally should work.

After the decision had been made by the hospital management, Ullevål Hospital increased its capacity by transferring a number of its intensive care patients to other hospitals and by actively directing others seeking emergency care to other hospitals in Oslo. The hospital was also able to mobilise a high capacity with regard to treating seriously injured patients despite the incident occurring in the middle of the holiday period. It did take time, however, to alert personnel from alarm lists, and a more modern automated system is required (for example based on text messaging). Sweden also lacks such a system, and there are reasons to implement dialogue on the need in this area as well.

Oslo University Hospital's emergency preparedness plan is a prime example that demonstrates how different medical units should work to support each other, i.e., with regard to the transferring of intensive care patients, the setting up of relatives centres and other support functions. The Swedish university hospitals should be able to take responsibility for the establishment of similar collaboration (depending on the type of disaster), or as an alternative the regional units for disaster preparedness within each county council could assume this responsibility.

In relation to its size, Ringerike received a large influx of patients. The most seriously injured received primary care before they were transferred by air, primarily to Ullevål Hospital. The quality of the care received at Ringerike can largely be attributed to the training initiatives that the hospital has conducted with regard to trauma care. This work is multidisciplinary, but requires specific expertise by those individuals who devote themselves to it. This type of expertise cannot be acquired simply through working at an emergency ward where gunshot and detonation injuries are extremely uncommon. Trauma care requires specialist courses (for example, ATLS® and DSTC®), as well as regular exposure to seriously injured patients. Requirements should also be imposed in Sweden for the competence levels of hospitals that are expected to receive patients during incidents similar to this one.

In general, the expectations for trauma care are high – supposedly every casualty should receive the highest quality of care. Responsibilies for the provision of medical care to trauma victims are often divided between several clinics and areas, and this makes it difficult to distribute the costs of building up a modern trauma system. A national survey of trauma care was conducted in Norway in 2007, which also resulted in a number of recommendations for the hospital trusts. In Sweden, the quality of trauma care was debated in connection with the murder of former foreign minister Anna Lindh, but no broader survey was ever conducted.

Psychosocial support

Modern crisis support in the acute phase

Judging from the descriptions of the acute support of the victims, both at Sundvolden Hotel and after their homecoming to respective municipalities, the Norwegian community seems primarily to have offered what can be described as modern psychosocial support. The support consequently appears to have included empathic treatment and identification of needs, as

well as a focus on social support and an assessment of the need for further treatment in the future. Clearer descriptions of the sources of support would have been desirable, however, and more reference to recommendations and guidelines for the support to be provided. The same applies to the support for the response personnel. Many call the concept "debriefing", but obviously mean quite differing things by this concept. In this context, it means both the type of interventions that are no longer recommended as they are potentially too intrusive, as well as gathering of personnel for an entirely different reason. Examples of the latter are described in support of the personnel at Ullevål Hospital, where focus was placed more on what had been done and on providing social support in groups.

It is probable that these are the conditions that would also be found in Sweden. More training initiatives are therefore urgently required in Swedish county councils and municipalities with regard to modern psychosocial support in the acute phase. Such training should be based on what can be considered to constitute the current state of knowledge (see appendix 4). Swedish employers who provide support to personnel in the acute phase should focus on more modern support initiatives, which are built around psychological first aid, emphasising evaluating the initiatives and providing social and peer support. If interventions are planned using unclear evidence, the work in Sweden should also be connected to evaluating and researching.

Models for support for the injured at the hospital

At Ullevål, a crisis team was organised to meet the need of the injured for psychosocial measures, with a forward-thinking, modern and modified working method. The crisis team was split into a team for each patient and their relatives. Staff from the team had contact with the patients when this was possible between anaesthetising and operations, and supplied them with information, in addition to providing practical and emotional support when necessary. The objective, with regard to relatives, was to relieve this pressure from somatic personnel involved with the treatment of physical injuries, so that they could focus on patient care. The principles of the psychological first aid concept were primarily followed, and this may also provide a model suitable for Swedish conditions.

Even small municipalities can be affected

The incident brought about a major burden on a number of the small municipalities that were affected, and demonstrates that small municipalities are vulnerable and dependent on regional resources in the event of major incidents. One question for Swedish emergency preparedness is whether municipalities, regions or county administrative boards shall prepare inter-municipal support initiatives to an even larger extent. There might be reasons for the creation of regional emergency preparedness organisations with personnel from several municipalities.

Expansion of the role of occupational health services

The occupational health organisation BHT was given an important role in supporting those affected, both in the department and in the response organisations such as the police. In the acute phase, BHT arranged meetings to provide information and support, and later they conducted specific medical examinations relating to both the personnel's mental state and as a result of asbestos warnings. Departmental managers showed themselves to be in need of training in leadership and stress management, which was conducted and appreciated. This should constitute an element in all organisations on the basis of the risk and vulnerability analyses demonstrated.

It also seems reasonable that Swedish employers are responsible for supporting and monitoring their personnel when they are affected by incidents such as the one in question, which may require increased preparedness on the part of occupational health organisations in certain cases.

Local preparedness – logistics

Hole municipality was able to requisition a large hotel nearby, which contributed greatly to the municipality being able to manage the difficulties as well as was possible. At the hotel, support personnel could focus on supporting the victims and their relatives despite there being so many of them. The patient hotel at Ullevål and the National Hospital could be used in the same way for relatives of the injured and dead. Swedish municipalities should make an inventory of local resources in the form of hotels and study centres that can be used as support centres in connection with serious incidents. As an emergency preparation measure, the municipalities should enter agreements with suitable institutions and perform exercises. County councils and regions should also incorporate prospective patient hotels into the emergency preparedness, and perform exercises with them.

Secondary victims

In Hole municipality and in the government district there were many volunteers who made efforts to take care of victims, and some of them did this whilst endangering their own lives. In and around the scenes of the incidents, not least in the areas around the government district, were private individuals, such as staff in shops and others, who were also affected. In the heat of the moment it is easy to forget the secondary victims who are not the immediate focus of support initiatives, which has happened in Sweden before. After serious incidents, the municipality should be liberal with regard to visiting and, if possible, identifying potential secondary victims among volunteers, employees at shops and institutions as well as nearby residents who may have been affected in different ways.

Central emergency preparedness – control and expert groups

In Norway, the Directorate of Health was able to provide the municipalities with directives concerning the monitoring of victims via letters to the County Governors. The Directorate of Health gathered representatives from about 40 organisations and selected a number of individuals for a consultative expert group. Within the area of disaster psychiatry there was, for example, central level access to the Norwegian Centre for Violence and Traumatic Stress Studies (NKVTS), which offers consultation, advice and training initiatives.

In the event of a national disaster, a certain degree of national control of health and medical care would also be good in Sweden, as well as in the social support area in order to fully utilise society's collective resources.

Media and communication issues

The media has both an alerting function and an information function in the event of crises and disasters, which has become evident from a number of Swedish studies of mass casualty situations [49, 50, 51]. Journalists and volunteers have often arrived at the incident scene simultaneously, which was also the case for the incidents in Norway on 22 July. Furthermore, both traditional and social media can serve important functions in an early phase, particularly when the victims are young people.

The Norwegian medical profession's preparedness and management of information, communication and media pressure in connection with the incidents of 22 July hardly differ from how equivalent situations would be managed in Sweden. A Swedish incident with a number of similarities was the 1998 fire in Backaplan in Göteborg, when 63 young people died during a private party. The victims were young, the course of events was uncontrollable, and the rescue actions extremely difficult. The incident occurred in a city and led to a large international media presence as well as a great amount of pressure on the health and medical care profession in the region. But there are also crucial differences between this incident and the incidents in Norway. The young people on Utøya came from all over the country and a national crisis preparedness was thereby activated, as well as a national collective sorrowing process and a national crisis communication. Social media was not introduced to a large extent in the aftermath of the 1998 Göteborg fire. Mobile telephones became an extremely important communication path – even within the hospital – but Facebook and Twitter had not yet made their entrance. It is also a relatively new phenomenon that victims and patients "expose themselves to the media" without any involvement of the traditional press.

Journalists as eyewitnesses

Journalists arrived at the scene early in order to report from Backaplan in Göteborg in 1998. The following research studies and evaluations show that they, in the capacity of professional eyewitnesses, behaved well on the whole – respectfully and ethically, as far as possible. The same has been said about the journalists in Norway, both at the scene of the incident and in

connection to the hospitals. The predominant impression was good, even though there are always exceptions. There are studies that show that media reporting is conducted in a more sensitive manner if the journalists themselves witness the incident, compared with if they are not present at the scene [49]. This may be because these journalists become indirectly affected by the incident. It is likely that the profession has also learnt a great deal over time, and coupled with this increased knowledge is the hope that ethical violations committed by the press during previous Scandinavian disasters can be avoided.

Norwegian press ethics are somewhat more defined that the Swedish, with regard to the attitude towards vulnerable people: "Show consideration towards people in grief or at times of shock." is a formulation that lacks a Swedish equivalent. However, the Swedish rules of professional conduct, in similarity to the Norwegian, make consideration of both the victims and their relatives: "Always show victims of crime and accidents and their relatives the greatest possible respect", but it is difficult to determine what constitutes the greatest possible respect. There is also one other fundamental Swedish press ethics rule: "Consider publicity that can infringe on the sanctity of the private life extremely carefully."

Areas for improvement

From a communications perspective, it is likely that both the Norwegian and Swedish medical care profession can become better at utilising the speed of the media in the crisis management work. The care profession shall not simply "manage the media" in the sense of satisfying their requirements, providing them with information or keeping them away from incident scenes, but shall include an active utilisation of and interplay with the media in a good emergency preparedness plan. This may relate to "accepting" the media's speed and utilising their alarm function, actively using both traditional and social media as information channels and, not least, crisis staff following the media reporting themselves in order to stay updated. It should be taken for granted that a media room is incorporated into every crisis communications staff. As at Oslo University Hospital, a function in the crisis communications staff should be assigned to follow the media reporting intensively and report internally on the important parts within the organisation. This also relates to how the medical care profession is portrayed in the media. Furthermore, the health and medical care profession may notice any incorrect facts and act quickly to have them corrected in the relevant media.

In Norway, Oslo University Hospital used Twitter as a channel for both the press and the citizens. It is likely that in many cases the Swedish medical care profession's communications plans need to be updated in order to meet the needs of a more modern media situation. One issue to be examined is the potential need to include procedures for Twitter, Facebook and text messaging in the emergency preparedness plans. In addition, it is of great value to produce rules for how to relate to patient interviews on the hospital's premises (care rooms), as well as for situations when patients take the initiative themselves to make contact with the media. It is also worth

examining whether the hospital has a realistic emergency preparedness for an international media presence, and whether procedures exist for the establishment of a press centre that is located some distance away from urban areas.

References

1. Directorate for Civil Protection and Emergency Planning (DSB). National Vulnerability and Preparedness Report (NSBR) 2011; 2011
2. Directorate for Civil Protection and Emergency Planning (DSB). Nasjonalt risikobilde - prosess og metode; 2010.
3. Ivarsson A, Nilsson T. Att styra det oförutsedda – krisberedskapen som politikområde i internationellt ljus. Swedish Civil Contingencies Agency (MSB); 2011.
4. Directorate for Civil Protection and Emergency Planning (DSB). Departementenes systematiske samfunnssikkerhets- og beredskaps-arbeid; 2007.
5. Ministry of Justice and Public Security. Norwegian Rescue Services; 2003.
6. FOR 2005-03-18 no. 252: Forskrift om krav til akuttmedisinske tjenester utenfor sykehus.
7. Norwegian Union of Journalists. Codes of Ethics of the Norwegian Press.
   (printed press, radio, television and internet publications). Downloaded 12-10-2012 from http://presse.no/Etisk-regelverk/Vaer-Varsom-plakaten.
   English version:
   http://www.nj.no/Code+of+Ethics+of+the+Norwegian+Press.b7C_wZHU0V.ips (downloaded 18-11-2012)
8. Nationalencyklopedin. Utøya [entered word]. Downloaded 05-12-2011 from http://www.ne.se/ut%C3%B6ya.
9. Arbeidernes Ungdomsfylking (AUF). Utøya time for time. Downloaded 05-12-2011 from http://auf.no/-/bulletin/show/671335_utoeya-time-for-time.
10. Regional Public Prosecution Office in Oslo. Indictment decision Anders Behring Breivik; 2012.
11. Swedish television. Behring Breivik utgav sig för att vara bombexpert. Downloaded 07-12-2011 from http://svt.se/2.22584/1.2488315/behring_breivik_utgav_sig_for_att_vara_bombexpert.
12. The Norwegian Police Service. Slikk rykket politiet ut. Downloaded 22-12-2011 from https://www.politi.no/aktuelt/nyhetsarkiv/2011_07/Nyhet_10256.xhtml.
13. Nationalencyklpedin. Anders Behring Breivik [word entered]. Downloaded 06-12-2011 from http://www.ne.se/anders-behring-breivik.
14. Dagens Nyheter. Anders Behring Breivik erkänner. Downloaded 06-12-2011 from http://www.dn.se/nyheter/varlden/anders-behring-breivik-erkanner.

15. Statsbygg. Arbeidet i regjeringskvartalet etter 22/7. Downloaded 19-12-2011 from http://statsbygg.no/FilSystem/files/aktuelt/tema/RegjKvartalet/Faktaark-Presse_Regjeringskv.pdf.
16. Statsbygg. Fakta om regjeringskvartalet. Downloaded 19-12-2011 from http://statsbygg.no/Aktuelt/Tema/Fakta-om-Regjeringskvartalet-.
17. Statsbygg. Bilder Regjeringskvartalet. Downloaded 19-12-2011 from http://www.statsbygg.no/Aktuelt/Tema/Bilder-Regjeringskvartalet.
18. Directorate for Civil Protection and Emergency Planning Storberget takket Oslo brann- og redningsetat. Downloaded 13-12-2011 from http://dsb.infostorm.no/no/Ansvarsomrader/Regional-og-kommunal-beredskap/Aktuelt-Regional-og-kommunal-beredskap/Besok-pa-Oslo-hovedbrannstasjon.
19. Svenska dagbladet. Vägen tillbaka från Utöya. Downloaded 09-03-2012 from http://www.svd.se/nyheter/utrikes/vagen-tillbaka-fran-utoya_6788559.svd.
20. Idås T (Norwegian journalist team). Journalistene som dekket terror (presentation data); 2011.
21. Luftambulansetjenesten. Evalueringsrapport fra Luftambulansetjenesten etter hendelsene i Regjeringskvartalet og på Utøya den 22. July 2011; 2012.
22. Medievärlden. NRK anmält för intervju med offer för Utøyamassakern. Downloaded 24-01-2012 from http://www.medievarlden.se/nyheter/2012/01/nrk-anmalt-for-intervju-med-offer-for-utoyamassakern
23. VG NETT. NRK Director: - Angrer på samtalen i ettertid. Downloaded 24-01-2012 from http://www.vg.no/nyheter/innenriks/22-juli/artikkel.php?artid=10076492
24. The Norwegian Police Service. Evaluation 22.7.2011 – Oslo politidistriktet; 2012.
25. The Norwegian Police Service. The Norwegian Police Service's press econference, Thursday 18 August 2011. Downloaded 10-01-2012 from https://www.politi.no/vedlegg/lokale_vedlegg/ostfold/Vedlegg_1409.pdf
26. Directorate for Civil Protection and Emergency Planning Brannvesenets innsats i forbindelse med terrorangrepene. Downloaded 13-12-2011 from http://dsb.infostorm.no/no/Ansvarsomrader/Regional-og-kommunal-beredskap/Aktuelt-Regional-og-kommunal-beredskap/Besok-pa-Oslo-hovedbrannstasjon.
27. Tjugofyra7. Massiv insats efter Utøya-massakern. Downloaded 13-12-2011 from http://www.tjugofyra7.se/msb/Avdelningar/Nyhet/Massiv-insats-efter-Utoya-massakern.
28. Directorate for Civil Protection and Emergency Planning Sivilforsvarets innsats i forbindelse med terrorangrepene. Downloaded 13-12-2011 from http://dsb.infostorm.no/no/Ansvarsomrader/Nasjonal-beredskap/Aktuelt-Nasjonal-beredskap/Sivilforsvarets-innsats-i-forbindelse-med-terrorangrepene.

29. Ministry of Defence Takk for innsatsen etter tragediene på Utøya og i Oslo. Downloaded 15-12-2011 from http://www.regjeringen.no/nb/dep/fd/aktuelt/nyheter/2011/takker-for-innsatsen-etter-tragediene-pa.html?id=651845.
30. Ministry of Justice and Public Security. Proposition 1 S (2011-2012). Downloaded 08-12-2011 from http://www.regjeringen.no/nb/dep/jd/dok/regpubl/prop/2011-2012/prop-1-s-20112012/1/11.html?id=657398.
31. Ministry of Health and Care Services Tragediene i Oslo og på Utøya. Downloaded 08-12-2011 from http://www.regjeringen.no/nb/dep/hod/aktuelt/nyheter/2011/tragediene-i-olo-og-pa-utoya.html?id=651776.
32. Red Cross Tragedien på Utøya og innsatsen fra Buskerud Røde Kors. Downloaded 20-12-2011 from http://www.rodekors.no/distriktsider/buskerud_rode_kors/Aktuelt_og_nyheter/tragedien-pa-utoya/.
33. Red Cross Råd om reaksjoner i katastrofen. Downloaded 20-12-2011 from http://www.rodekors.no/nyheter/nyhetsarkiv/2011/juli/rad-og-reakjoner-i-katastrofen/.
34. Red Cross Mange vil hjelpe. Downloaded 20-12-2011 from http://www.rodekors.no/distriktsider/akershus/aktuelt_og_nyheter/mange-vil-hjelpe/.
35. Red Cross Næringslivet stiller opp. Downloaded 20-12-2011 from http://www.rodekors.no/distriktsider/buskerud_rode_kors/aktuelt_og_nyheter/naringslivet-stiller-opp/.
36. Red Cross Røde Kors bistår ved Utøya og etter eksplosjonen i Oslo. Downloaded 20-12-2011 from http://www.rodekors.no/nyheter/nyhetsarkiv/2011/juli/rode-kors-gir-stotte-etter-eksplosjon-og-skyting/.
37. Red Cross Tragedien i Oslo og på Utøya- dette gjør Røde Kors i Akershus. Downloaded 20-12-2011 from http://www.rodekors.no/distriktsider/akershus/nyhetsarkiv/2011/juli/tragedien-i-oslo-og-pa-utoya--dette-gjor-vi-na/.
38. Norwegian People's Aid Press release: Norsk Folkehjelp deltok i redningsarbeidet på Utøya. Downloaded 20-12-2011 from http://www.folkehjelp.no/no/presse/pressemeldinger/?module=Articles&action=Article.publicShow&ID=17834.
39. Norwegian People's Aid Press release: Norsk Folkehjelp bistår politiet i opprydding på Utøya. Downloaded 20-12-2011 from http://www.folkehjelp.no/no/nyheter/2011/?module=Articles&action=Article.publicShow&ID=17858.
40. Dagens Nyheter. Osäkert om skadade regeringskvarter. Downloaded 19-12-2011 from http://www.dn.se/nyheter/varlden/osakert-om-skadade-regeringskvarter.
41. Rivkind A, Blom R, Gershenstein I, Stein Y, Coleman S, Richter E. Trauma Care and Case Fatality during a Period of Frequent, Violent

Terror Attacks and Thereafter. Accepted for publication. World J Surgery 2012.

42. Frykberg E, Tepas JJ 3rd. Terrorist Bombings. Lessons learned from Belfast to Beirut. Annals of Surgery 1988;208, 569-576.
43. Peleg K et al. Gunshot and Explosion Injuries, Characteristics, Outcomes, and Implications for Care of Terror-Related Injuries in Israel. Annals of Surgery 2004;239, 311-318.
44. Turégano-Fuentes F, Caba-Doussoux P, Jover-Navalón JM, Martín-Pérez E, Fernández-Luengas D, Díez-Valladares L et al. Injury patterns from major urban terrorist bombings in trains: the Madrid Experience. World Journal of Surgery 2008;32(6):1168-1175.
45. WHO special report: Health Aspects of the Tsunami Disaster in Asia. Prehospital and Disaster Medicine 2005; 20(6); 375.
46. Journalisten.se. Sommarvikarier bevakade terrordådet i Norge. Downloaded 02-11-2011 from http://www.journalisten.se/nyheter/sommarvikarier-bevakade-terrordadet-i-norge
47. Lectures on Radiodagen Stockholm; 19-09-2011.
48. Coombs T, Hollady S. The Handbook of Crisis Communication. Chicester: Wiley-Blackwell; 2011.
49. Englund L. Katastrofens öga: En studie av journalisters arbete på olycksplats. Doktorsavhandling, Göteborgs universitet, 2008 [In English: The Eye of the Disaster - A Study of Journalists' Work at Accident Scenes and Disaster Sites. (English Summary, p. 277 – 287). Doctoral Theses, Dep.of journalism and mass communication, Gothenburg University]. Also available from Englunds Förlag, 2008.
50. Brandkatastrofen i Göteborg natten 29-30 oktober 1998. National Board of Health and Welfare; 2001. Kamedo Report 75
51. Brandkatastrofen i Göteborg. Drabbade. Medier. Myndigheter (SOU 1999:68).

Other quoted sources

- Berkowitz S, Bryant R, Brymer M, Hamblen J, Jacobs A, Layne C et al. The National Center for PTSD & the National Child Traumatic Stress Network, Skills for Psychological Recovery: Field Operations Guide, 2010.
- Best. Downloaded 09-03-2012 from www.bestnet.no.
- Bomb attack in Finnish shopping centre in 2002 National Board of Health and Welfare; 2005. Kamedo Report 87
- Brymer M, Jacobs A, Layne C, Pynoos R, Ruzek J, Steinberg A et al. Psychological First Aid: Field Operations Guide, 2nd Edition. National Child Traumatic Stress Network and National Centre for PTSD; 2006.
- Bombattentaten i Jerusalem, Ashkelon och Tel Aviv 1996. National Board of Health and Welfare; 1998. Kamedo Report 72
- Brandkatastrofen i Göteborg natten 29-30 October 1998. National Board of Health and Welfare; 2001. Kamedo Report 75
- Foa EB, Keane TM, Friedman MJ, Cohen JA. Effective treatments for PTSD: Practice guidelines from International Society for Traumatic Stress Studies. New York: The Guilford Press; 2009.
- Friedman MJ, Keane TM, Resick P. Handbook of PTSD: Science and Practice. New York, London: The Guilford Press; 2007.
- Hansen E (Oslo Municipality). 22-07-2011 (presentation data); 2011.
- Ministry of Health and Care Services Overordnet nasjonal helse-og social beredskapsplan. Downloaded 11-04-2012 from www.regjeringen.no/upload/HOD/Vedlegg/Planer/HelsesosialberedskapsplanNY.pdf.
- Helse Sør-Øst. Regional beredskapsplan. Downloaded 11-04-2012 from http://www.helsesorost.no.
- Lahnstein, T (Directorate of Health). Erfaringer med psykososial oppfølging etter terroranslagene mot Regjeringskvartalet og Utøya 22.07.2011 (presentation data); 2011.
- Larsson LÅ, Nohrstedt SA, ed. Göteborgsbranden 1998: En studie av kommunikation, rykten och förtroende. Stockholm: Styrelsen för Psykologiskt Försvar (SPF); 2000.
- Madsen P (Norwegian Air Ambulance Group). Föreläsning i anslutning till POSOM- och krisberedskapskonferensen. Karlstad; 10-02-2011.
- Melhus K (Oslo Municipality Emergency Services). Hva skjedde? (presentation data); 2011.
- Møller K (Ringerike intermunicipal emergency services). Stor katastrofe – Liten legevakt (presentation data); 2011.
- Olso University Hospital. Kommunikasjonsberedskap 2011 (rev. 19-07-2011); 2011.

- Oslo University Hospital Rapport om håndteringen av terrorhendelsene i Oslo og Utøya 22. juli 2011; 2011.
- The Norwegian Police Service. Kommunikasjonspolitikk for politi- og lensmannsetaten; 2011.
- Sandvik E. (Oslo Municipality Emergency Services). Stor katastrofe – Liten legevakt (presentation data); 2011.
- Sollid SJM, Rimstad R, Rehn M, Nakstad AR, Tomlinson AE, Strand T, Heimdal HJ et al. Oslo government district bombing and Utøya island shooting July 22, 2011: The immediate prehospital emergency medical service response. Scand J Trauma Resusc Emerg Med 2012;20:1-12.
- National Board of Health and Welfare Report 1999:4: Katastrofmedicinska studier under 35 år. National Board of Health and Welfare; 1999. Kamedo Report 73
- Stoddard FJ, Pandya A, Katz CL. Disaster Psychiatry: Readiness, Evaluation and Treatment. Washington DC, London: American Psychiatric Publishing Inc; 2011.
- Swedish Union of Journalists Spelregler för press, radio och TV. Downloaded 12-10-2011 from www.sjf.se. (Also available in printed edition via Tidningsutgivarna (TU) at www.tu.se, as well as via Pressombudsmannen (PO) at http://www.po.se/regler.)
- Terorattacken på Bali 2002. National Board of Health and Welfare; 2006. Kamedo Report 89
- Terrorattackerna i Madrid i Spanien 2004. National Board of Health and Welfare; 2006. Kamedo Report 90
- The European Network for Traumatic Stress (TENTS). Downloaded 09-03-2012 from www.tentsproject.eu.
- The management of post-traumatic stress disorder in adults in primary, secondary and community care. Clinical guideline 26. London: National Institute of Clinical Excellence (NICE); 2005.

Appendix 1: AIS, ISS and NISS

The Abbreviated Injury Scale (AIS) is an anatomical scoring system for how serious the damage to a part of the body is. Table 1 below illustrates how the scoring system appears in English literature.

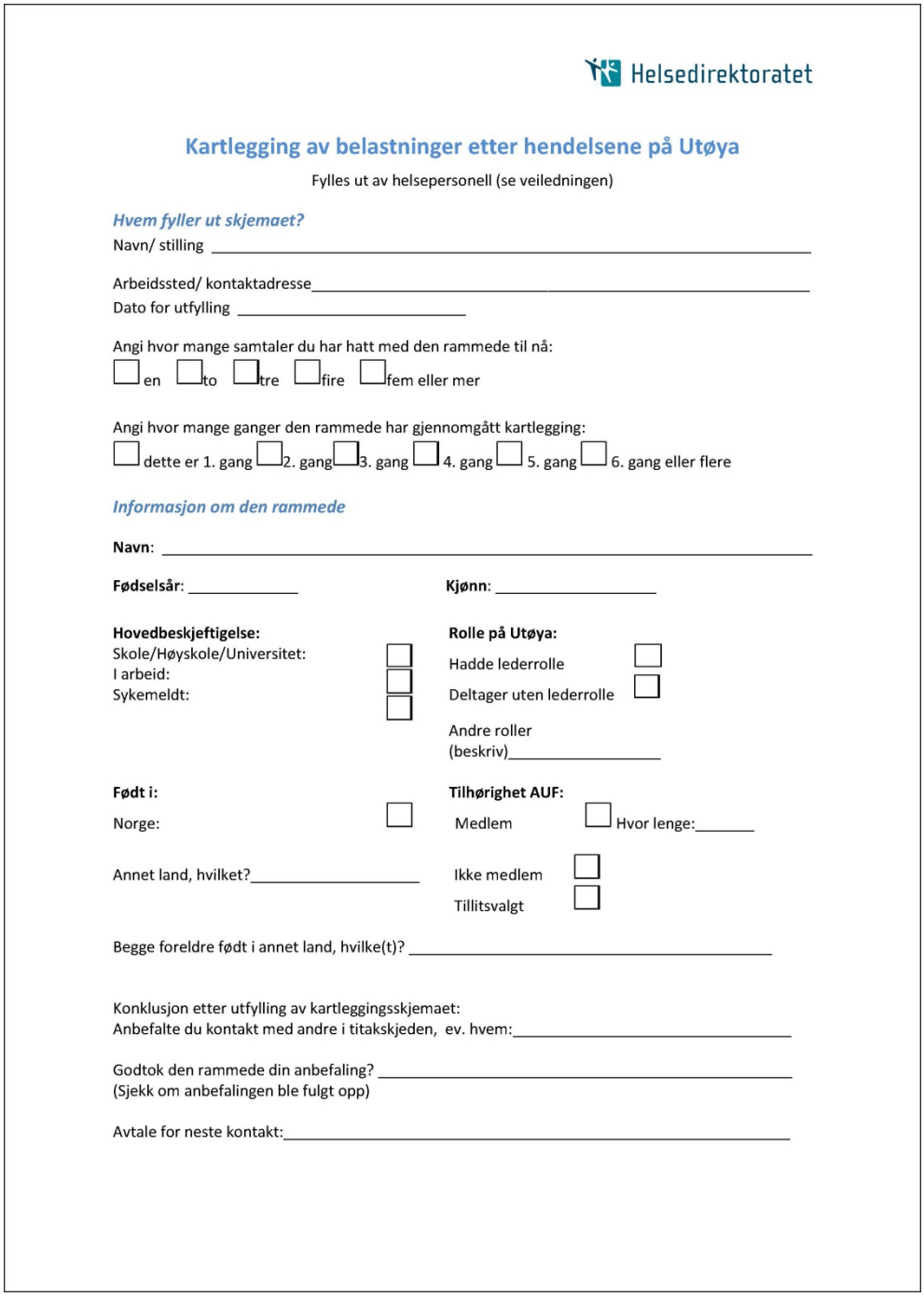
Table 1. Abbreviated Injury Scale (AIS)

Injury	AIS Score
1	Minor
2	Moderate
3	Serious
4	Severe
5	Critical
6	Unsurvivable

The Injury Severity Score (ISS) is an established medical grading of how serious the overall injuries are after a trauma. The ISS score is highly correlated with mortality, morbidity and length of stay in hospital after an accident. The ISS score is based on AIS regarding injuries in six body regions (head and neck, face, chest, abdomen, extremity (including pelvis) and external). The ISS scale ranges from 0 - 75, with a higher number denoting more serious injuries. If a body part is given an AIS score of 6 (unsurvivable), the ISS score automatically becomes 75. Otherwise, the highest AIS score are taken from three different body regions. Each score is squared and the three products are added together to give the ISS score. For example, a brain contusion with an AIS score of 3 (becomes 9 when squared), a complex spleen injury AIS 5 (25) and a fractured femur AIS 3 (9). These will produce an ISS score of 43 (9 + 25 + 9).

The New Injury Severity Score (NISS) has been created to remedy a major weakness of ISS, which was that in cases of multiple injuries in the same body region, only the highest AIS score from each region is used to produce the ISS score. NISS is therefore calculated using the three highest AIS scores regardless of body region (they can all be contained in the same region). Each AIS value is squared in the same way as with ISS, and the three scores are added together. The range is 0-75 with a higher score denoting a more serious injury.

Appendix 2: Grading tools for monitoring the injured



Helsedirektoratet

Kartlegging av belastninger etter hendelsene på Utøya

Fylles ut av helsepersonell (se veiledningen)

Hvem fyller ut skjemaet?

Navn/ stilling _____

Arbeidssted/ kontaktadresse_____

Dato for utfylling _____

Angi hvor mange samtaler du har hatt med den rammede til nå:

☐ en ☐ to ☐ tre ☐ fire ☐ fem eller mer

Angi hvor mange ganger den rammede har gjennomgått kartlegging:

☐ dette er 1. gang ☐ 2. gang ☐ 3. gang ☐ 4. gang ☐ 5. gang ☐ 6. gang eller flere

Informasjon om den rammede

Navn: _____

Fødselsår: _____ **Kjønn**: _____

Hovedbeskjeftigelse:
Skole/Høyskole/Universitet: ☐
I arbeid: ☐
Sykemeldt: ☐

Rolle på Utøya:
Hadde lederrolle ☐
Deltager uten lederrolle ☐
Andre roller (beskriv)_____

Født i:
Norge: ☐

Tilhørighet AUF:
Medlem ☐ Hvor lenge:_____
Ikke medlem ☐
Tillitsvalgt ☐

Annet land, hvilket?_____

Begge foreldre født i annet land, hvilke(t)? _____

Konklusjon etter utfylling av kartleggingsskjemaet:
Anbefalte du kontakt med andre i titakskjeden, ev. hvem:_____

Godtok den rammede din anbefaling? _____
(Sjekk om anbefalingen ble fulgt opp)

Avtale for neste kontakt:_____

Helsedirektoratet

Fylles ut av den rammede:

Etter slike dramatiske opplevelser som du har hatt, har vi erfaring med at mange kan oppleve reaksjoner i ettertid. Nedenfor følger noen spørsmål om hvordan dette har virket inn på deg. Vi ber deg svare på disse spørsmålene så godt du kan. Først kommer noen spørsmål om det du opplevde, deretter noen spørsmål som handler om støtte i hverdagen. Til slutt stilles noen spørsmål om hvordan du har det nå. Det er frivillig å svare, eller hoppe over spørsmål. Kartleggingen vil gi grunnlag for å kunne gi deg best mulig oppfølging. Det er ingen riktige eller gale svar, bare svar på spørsmålene så godt du kan. Si fra om det er noe du lurer på underveis.

Har du opplevd noe av dette? Hvis ja, sett kryss.

- ☐ Vitne til, hørte eller så at noen ble drept/skadet
- ☐ Redd for å drukne eller bli drept
- ☐ Skadet og hadde behov for medisinsk oppfølging
- ☐ Innlagt på sykehus mer enn ett døgn
- ☐ Synlige arr eller andre varige skader
- ☐ Nær venn/ familiemedlem drept
- ☐ Nær venn/ familiemedlem skadet
- ☐ Sen gjenforening med familie (mer enn 10 timer fra evakuering til gjenforening med én i familien/kjæreste)

Støtte

Under er det noen spørsmål som handler om hvor mye støtte du opplever at du har for tiden.

Bruk vurderingsskalaene fra 1-7. **Ett kryss for hver linje**

	Aldri						Alltid
	1	2	3	4	5	6	7
Har du en venn eller en i familien du kan betro deg til når du trenger det?	☐	☐	☐	☐	☐	☐	☐
Greier du å snakke om dine tanker og følelser?	☐	☐	☐	☐	☐	☐	☐
Har du et nettverk hvor du føler deg akseptert og hvor du kan få hjelp og støtte?	☐	☐	☐	☐	☐	☐	☐
Er det noen som kan gi deg praktisk hjelp?	☐	☐	☐	☐	☐	☐	☐
Har du følt deg sviktet av folk som du regnet med ville støtte deg?	☐	☐	☐	☐	☐	☐	☐

Helsedirektoratet

Reaksjoner

Nå kommer noen spørsmål om følelser og tanker du kan ha hatt etter det som skjedde og hvor mye plager du har i forhold til dette. Svar det som best beskriver hvor ofte problemet har plaget deg de ***siste to ukene***. Hvis du ikke kan eller vil svare, gå til neste spørsmål.

0	1	2	3	4
Ikke i det hele tatt	Litt (én gang)	En del (1-2 ganger i uken)	Ganske mye (2-3 ganger i uken)	Veldig mye (nesten hver dag)

Blir du veldig ute av deg, redd eller trist når noe minner deg om det som skjedde?	0	1	2	3	4
Har du drømmer om det som skjedde eller har du mareritt om andre ting?	0	1	2	3	4
Får du skremmende tanker, ser for deg bilder eller hører lyder fra det som skjedde, selv om du ikke vil det?	0	1	2	3	4
Forsøker du å ikke snakke om det, tenke på det eller ha følelser rundt det som skjedde?	0	1	2	3	4
Forsøker du å holde deg unna folk, steder eller ting som minner deg om det som skjedde?	0	1	2	3	4
Har du problemer med å få sove eller våkner du ofte om natten?	0	1	2	3	4
Blir du lett urolig eller skvetter lett, for eksempel når du hører høye lyder eller når noe overrasker deg?	0	1	2	3	4
Har du problemer med å konsentrere deg eller være oppmerksom?	0	1	2	3	4
Føler du deg sur, sint eller rasende?	0	1	2	3	4
Føler du deg trist, nedfor eller deprimert?	0	1	2	3	4
Har du mer kroppslige plager enn ellers (for eksempel hodepine eller vondt i magen)?	0	1	2	3	4
Hvis du går på skolen eller arbeider: Synes du det er vanskelig å få gjort det du skal?	0	1	2	3	4
Er du bekymret for at andre forferdelige ting skal skje med deg selv eller med din familie eller venner?	0	1	2	3	4
Er det vanskeligere å komme overens med og/eller være sammen med familie/ venner?	0	1	2	3	4

Helsedirektoratet

Er du mye mindre interessert i, eller får ikke gjort, de tingene du pleide å gjøre?	0	1	2	3	4
Har du plagsomme tanker om måten mennesker døde på?	0	1	2	3	4
Forsøker du å holde deg unna folk, steder eller ting som minner deg om de som døde?	0	1	2	3	4
Tar du større risiko nå enn tidligere? (For eksempel økt bruk av rusmidler eller at du gjør ting du tidligere ikke ville gjort)	0	1	2	3	4
Føler du deg nervøs, engstelig eller bekymrer du deg mye for ting?	0	1	2	3	4
Tenker du at noe av det som skjedde var din feil, eller har du følelser av skyld fordi du overlevde?	0	1	2	3	4

Appendix 3: Questionnaire relating to monitoring for the municipalities

HEALTH-RELATED AND PSYCHOSOCIAL MONITORING OF THE VICTIMS AFTER 22/07/11: QUESTIONNAIRE FOR THE MUNICIPALITIES

MUNICIPALITY:……

	QUESTION	**COMMENT/ANSWER**
1.	How many of the victims have been offered help from the Municipality after 22/07?	
2.	Do all of the victims in the Municipality have contact people?	
3.	How many of the victims been offered help from contact people, but declined it?	
4.	Since autumn, many victims are students in other municipalities other than the home municipality, or have moved away from the home municipality or other reasons. How many of the victims have moved from their home municipality to another municipality? (state new municipality)	

5.	In connection with the move: Has the municipality ensured sufficient overlap on all occasions so that monitoring is also provided in the new municipality?	
6.	Has the Municipality offered customised monitoring for any victims with immigrant backgrounds?	
7.	Surveying schedule: How many are finished with the first survey (after 5-6 weeks)?	
8.	Surveying schedule: How many of the victims have not used the survey schedule/completed the survey?	
9.	If the surveying schedule was not used, what was the reason for this?	
10	How many of the victims in the Municipality were followed-up by a specialist health service?	
11	Have you detected any deficiencies in the follow up by the municipality or specialist health service?	

12	If the answer to question 11 was yes: What were the reasons for this and how has the municipality dealt with this problem?	
13	Has information and contact numbers for victims been readily available on the municipality's website?	
14	Is the municipality's contact number on www.helsenorge.no correct?	
15	How does the municipality rate its own capacity with regard to the follow up of the victims?	
16	How does the municipality rate its own competence?	
17	How does the municipality rate its own resources for the continued follow up of victims in the future?	
18	What constitutes the basis of the follow up work?	

19	Do you have any other comments or feedback for the Directorate of Health with regard to the follow up work?	

Appendix 4: Best practice within the area of psychosocial support

The development of expertise about early psychosocial support initiatives

The fundamental ideas for the modern view of early initiatives for supporting people after potentially traumatic incidents was already being described in the 1960s, when the classic concept of "primary prevention" was introduced. It was asserted that people can avoid a negative outcome after stressful incidents if the community provides different forms of support to the victims. There are descriptions of the positive effects of support interventions in connection with grieving after the death of a close relative. Other studies after accidents also demonstrated the positive effects of professional support. At the same time, there are other controlled studies from that time, for example, concerning families that had suddenly lost a family member that could not demonstrate any differences of this type between those who had received treatment and those who had not. The road leading to the modern viewpoint has consequently been somewhat rocky.

The diagnosis post-traumatic stress disorder (PTSD) was introduced over time, and during the 1980s and 1990s, great attention was given to attempting to prevent people from developing mental disorders after serious incidents. The Critical Incident Stress Debriefing (CISD) was introduced in the beginning of the 1980s, as support for personnel within the emergency rescue services who were exposed to traumatic incidents. This form of intervention has also been termed *psychological debriefing*, and was widely accepted in the Western world. It was not possible, however, to reduce the risk for post-traumatic disorders by "processing" the experiences, and the method became increasingly questioned. Consequently, these types of interventions are no longer recommended internationally as routine measures in the acute phase.

Some researchers also urge caution with regard to interventions in the acute phase, and new knowledge shows that we should not be excessively intrusive with interventions for victims directly after a potentially traumatic incident. This new knowledge demonstrates, for example, that the reactions of the victims, especially hyperarousal, are extremely significant for the risk of development PTSD, as well as that a connection exists between PTSD and hyperactivity in areas of the central nervous system that are engaged with the storage of traumatic memories. In recent years, studies have also led to better supporting information about what constitutes evidence-based treatment methods in cases of PTSD.

International recommendations

Previously, a consensus has not been reached regarding how support initiatives for victims in the acute phase should be designed. The knowledge has been developed in recent years, however, and international recommendations now exist that can provide useful guidance. If interventions are planned for people in the acute phase, or later, it should be ensured that the initiatives are based on empirical grounds and are evidence-based, or are consensually considered to have positive effects.

Interventions can certainly be effective even if they are not evidence-based, but initiatives should then be thoroughly evaluated. An evaluation that only consists of simple feedback from participants after broad-based initiatives risk being unreliable. There does not necessarily need to be a direct connection between a positive result in this type of evaluation and actual positive health effects for all participants. This was learnt when the effects of psychological debriefing began being examined more closely. It is therefore wise to perform careful scientific evaluations of initiatives that are thought to be good, but where the current state of knowledge is unclear.

As a result, interventions should be primarily based on "best practice". Internationally, this type of knowledge is compiled in different literature and consensus reports. A few of the most important are described below.

Post-traumatic sequelae

A large proportion of the population (50-70 per cent) will be exposed to a potentially traumatic incident during their lives. Of these people, only approximately 10 per cent (5-30 per cent) risk being affected by more serious post-traumatic stress reactions such as depression, PTSD, anxiety disorder or substance abuse. However, if only specific groups are studied, for example, people who have lost a close relative in traumatic circumstances, close to 50 or 60 per cent may experience long-term problems. During their lifetimes, 5-10 per cent of the western population will be affected by PTSD, and its incidence is twice as common in women as in men. At any given moment in a population, 1-3 per cent of people are suffering from it, which corresponds to between 90,000 and 270,000 people in Sweden, and between 48,000 and 144,000 people in Norway. For society, this also involves relatively large costs in the form of suffering and absence from work.

The determining factors as to whether an individual will suffer from chronic problems is the relationship between the nature of the incident and how serious it was, as well as the individual's vulnerability or resilience. Different types of incidents may affect victims to differing degrees, and previous studies have shown that more people are affected by post-traumatic reactions after incidents that are created by other people ("man-made disasters"), for example, rape and terrorist actions, compared with accidents and natural disasters. However, this has been questioned by other researchers who consider that many studies about terrorist actions only apply to primary victims, while studies of natural disasters often encompass people who have been exposed to different degrees. The risk for post-

traumatic problems also increases with the degree of seriousness of the incident, especially if the victim was uncertain whether they would live or die. Certain individual factors are linked to an increased risk for post-traumatic problems, and they are divided into those factors that existed before the incident, those that appeared during the incident, and those that have an effect after a serious incident. Factors before the incident include vulnerability resulting from previous exposure, a current stressful life, lower socioeconomic status, introverted personality traits, nervousness, passiveness and lack of independence, having less achievements and education, being female and being a child. In addition, the risk increases if, during the incident, the victim has the subjective experience that their life is in danger, and demonstrates pronounced reactions or deficient social support after the incident. Furthermore, the form of society's support after an incident affects the outcome, hopefully in a positive direction.

With regard to grieving after losses, the majority of people (50-60 per cent) generally make a very good recovery. Approximately 10-20 per cent demonstrate traditional symptoms of grieving, but also recover over time. A smaller group, 10-15 per cent, may develop complicated grieving reactions that are termed Persistent Complex Bereavement-Related Disorder, in accordance with proposals for the updated diagnosis system DSM-5.

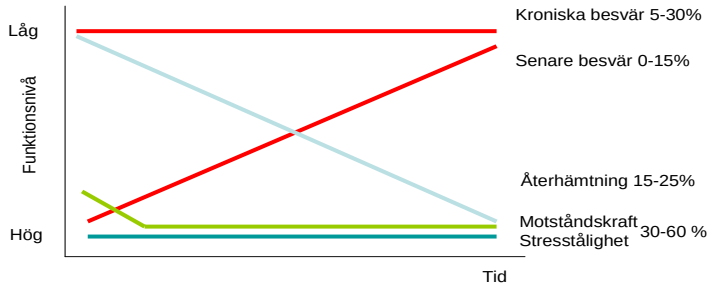
Stress resistance and resilience

Some people are affected by chronic problems after serious incidents, but a large proportion demonstrates resistance to stress and resilience instead, which may not have previously received sufficient attention. By "stress resistance", it is meant that the person is able to maintain mental balance during and after an incident. The term "resilience" essentially applies to the ability of something to regain its original form after being affected by another factor. Resilient individuals are able to quickly regain their balance after losing it temporarily in connection with an incident occurring. That which distinguishes resilience in people is deemed to be factors related to personality that are connected to their heritage and upbringing, in combination with other environmental factors such as social support from the surroundings and good leadership.

Processes over time

Many people recover from serious incidents, with or without assistance. A smaller number can become worse with time, which requires them to be monitored. A certain number develop chronic problems of the PTSD type, ADRB, depressive behaviour, different forms of anxiety disorders or substance abuse. Consequently, it need not be assumed that everybody is affected, which means that society can focus the support initiatives on those who need it most over time. This means, however, that contact and monitoring should be maintained with those people who do not seem to have any pronounced acute needs (see Principles for initiatives during acute phase, below). Figure 1 shows a compilation of these processes.

Figure 1. Processes over time



Source: Bonanno 2004 and Norris et al. 2009.

Focus on social support

Distinguishable in a modern view of crisis support is consequently a departure from the primary focus being on "emotional processing" of the incident in the acute phase, as a result of the risk of being too intrusive. The initiative instead aims to create safety and security for the individual, as well as focusing on the individual's specific needs. It is natural for the majority of people to receive support from their relatives after serious incidents, and previous studies have showed this leads to lower grades of psychiatric illness.

It is sometimes the case, however, that the private social network is insufficient. Even in those cases where a social network exists, there may still be a need for additional support – one contributing factor may be that relatives may also be traumatised in some cases. Support from society can be particularly significant in these cases. The social support is described as having a buffering effect, since it facilitates people being able to re-evaluate the incident that they have been a part of. The perception of being surrounded by others who care about them, who are contributing, and who are close at hand when needed is also beneficial.

Principles for initiatives during the acute phase

Practice guidelines from ISTSS

International Society for Traumatic Stress Studies (ISTSS) is a worldwide association of researchers in the area of psychotraumatology. Each year, new research results and knowledge are presented at conferences in North America, and ISTSS have also published updated recommendations in the area, which correspond to evidence-based knowledge and best practice. The most recent edition from 2009 has been published by the Guilford Press and was written by Foa, Kean, Friedman and Cohen. According to these recommendations, the most common reactions after serious incidents are completely normal and lead to recovery, and the advice is to be careful during the acute phase so that you do not disrupt this process. The following recommendations are made about the acute phase.

- The victims should be handled in an empathic manner with practical and down-to-earth support. They should be given information about possible

reactions and how they can help themselves (coping strategies) as well as how they can best receive support from those around them, both relatives and the community, and how they can receive further support if necessary.

- Individuals cope with stress in different ways, and formal interventions should be avoided for everybody who has been exposed to a serious incident. All interventions should therefore be based on a careful and relevant inventorying of needs.
- It should be an objective that prospective interventions shall make consideration of cultural factors, be adapted to the victim's development and be related to local problem formulation.
- The goal might not always be to reduce the reactions or to affect a speedy recovery. There are ethical, political, cultural and economic factors that can contribute to different goals with regard to the level of function and identity. Support persons must be sensitive about the specific motives of every individual victim.
- It should be evaluated whether the initiatives performed are effective in achieving the identified goals.

Handbook of PTSD

The *Handbook of PTSD* is a book that also provides literature-based recommendations. The authors are Friedman, Keane and Resick, and the book was published by the Guilford Press in 2007. It is also written in this book that the state of knowledge was previously limited with regard to interventions in the acute phase, and that care should therefore be taken with interventions that shall apply to everybody. The fundamental concept for supporting victims in the acute phase is therefore concerned firstly with ensuring the basic needs, followed by the "screen and treat model" which contains the components of support, proactive monitoring, assessment and treatment. According to this model, the immediate interventions in the acute phase should be based on informing the victim about the incident, providing support, informing about normal reactions and following up the individuals in order to identify those with remaining symptoms. The latter can then be treated using evidence-based methods. In order to achieve this, the authors recommend the principles mentioned below with regard to early support initiatives in the acute phase:

- The interventions should be proactive and in harmony with other societal initiatives.
- The interventions should be protective and limiting of unsuitable interventions from professionals, focus on those who have specific needs and strengthen the victim's capacity to handle their problems. Do not simply focus on the post-traumatic mental consequences, but also on other problems such as a reduced level of function, both in relationships and at work.
- The interventions should be pragmatic, i.e., proceed on the basis that individuals and groups can help themselves.

- Prospective interventions should also be driven by principles. The authors refer to the five important principles that have been emphasised with regard to the design of the support for victims after serious incidents. They believe that scientific support exists for these five principles and that they should guide the way when support initiatives are designed. The principles are concerned with
  - promoting the feeling of safety
  - promoting the feeling of self-confidence and faith in society's ability to manage the difficulties
  - promoting social connectedness
  - calming down those with pronounced reactions
  - promoting the feeling of hope

Other concepts have been developed in order to develop and implement these initiatives: psychological first aid (PFA) and skills for psychological recovery. They are described comprehensively below.

The NICE report

In 1995, the British National Institute for Clinical Excellence (NICE), the equivalent to the Swedish Council on Health Technology Assessment (SBU), presented a scientific examination of the area of post-traumatic stress disorders which has had a great impact internationally. The recommendations in this report can be summarised in the following way:

- The victims should be given the possibility of empathic support, which may be practical, emotional and social.
- Information about common reactions is positive, and advice for coping with them should be given verbally and in writing.
- For individuals who have displayed mild reactions within four weeks of the incident, "watchful waiting" is a good model. The emphasis here is on *watchful*, which means that these individuals shall also be proactively monitored.
- Psychological debriefing should be abstained from with private individuals.
- After approximately one month, screening might be appropriate, and the assessment of high risk individuals with a simple instrument.
- Those individuals that demonstrate pronounced symptoms during the monitoring shall have access to TF-CBT within a month. See more about the treatment below.
- If the initial reactions after a serious incident subside, it is likely that they will disappear of their own accord. However, the victims shall be monitored and the need for treatment assessed if the reactions remain at the same level, if they increase or if they are particularly difficult.

TENTS

A great variety of interventions after serious incidents have been used in Europe, many of which previously had an insufficiently scientific basis. The

EU project TENTS (The European Network for Traumatic Stress) was created for that reason, and a European consensus report has been compiled within the area. It can be found at www.tentsproject.eu. The report contains the following recommendations with regard to society's initiatives after traumatic incidents.

- First week:
  - Provide practical support with empathy.
  - Neither encourage nor prevent people from telling their story.
  - Visit a website for information and support.
- First month:
  - Victims experiencing difficulties should be assessed with regard to the need for initiatives.
  - Those with acute stress disorder (ASD) should be offered trauma-focused cognitive behavioural therapy (TF-CBT).
- Months one to three:
  - Those with PTSD should have access to TF-CBT or Eye Movement Desensitization and Reprocessing (EMDR).
  - Individuals with pronounced symptoms should be proactively contacted.
- After three months:
  - Those who continue to experience difficulties should be given a professional assessment.
  - Those with long-term problems should be offered rehabilitation.

Different needs in different phases

The effects of a serious incident lead to the victim having different needs over time. As described above, the needs in the acute phase relate primarily to safety and security, as well as practical, emotional and social support. In an interim phase, the needs depends more on how the victim is adjusting to the consequences of the incident. In this phase, society needs to coordinate initiatives from different societal functions such as health and medical care, the social insurance agency, social services and school, as well as other actors such as volunteer organisations and religious groups. It is essential that schools, day nurseries and youth recreation centres recommence their operations as soon as possible. In the interim phase, relatives associations and self-help groups have often commenced their operations, and it is possible to identify those who need treatment for their problems. The long-term phase is concerned with treating and rehabilitation those with bodily and mental sequelae.

Psychological first aid

The National Child Traumatic Stress Network and National Centre for PTSD in the USA developed a compilation of evidence-based knowledge within the area of acute crisis support. The name of the compilation is *Psychological First Aid, Field Operations Guide*, and a second version has

been translated into Swedish (*Psykologisk första hjälp, PFH)* and into Norwegian with the title *Psychological første hjelp (PFH).* The Swedish version is available at www.katastrofpsykiatri.uu.se and the Norwegian at http://www.nkvts.no/biblioteket/Publikasjoner/Psykologisk-forstehjelp-norsk.pdf.

PFH is designed to reduce the immediate effects of traumatic incidents as well as to support adaptive functions in the short and long term. PFH follows the previously stated principles for support in the acute phase, and encompasses the following goals:

- Contact and engagement: Establish human contact in a non-intrusive and sympathetic manner.
- Safety and security: Satisfy basic needs. Reinforce the feeling of safety and security both physically and emotionally.
- Stabilisation: Calm down victims who are emotionally overwhelmed and panic-stricken.
- Needs inventorying: Contribute to the victims being able to verbalise their immediate needs.
- Practical support: Provide support so that the victims can satisfy their own needs.
- Social support: Contribute to the victims coming in contact with their relatives and other help agencies.
- Information and coping: Convey information that can support the victims in coping with the psychological effects of the incident.
- Contact with other support agencies: Facilitate continuous contact with society's other support agencies.

It is possible to take a six hour course in psychological first aid in English with the National Child Traumatic Stress Network.
http://learn.nctsn.org/login/signup.php.

Skills for psychological recovery

In addition to PFH, the National Child Traumatic Stress Network and National Centre for PTSD in the USA have also produced an evidence-based model for continued support over time, in "Skills for psychological recovery" (SPR). This concept contains elements that can support recovery when the immediate needs in the acute phase have been satisfied. Skills for psychological recovery can be viewed as a model for secondary prevention. In other words, it is an intermediate intervention with the aim of reducing the problems, identifying coping abilities and improving the functional level, as well as potentially reducing the need for later treatment. The SPR concept contains the following elements.

- Increase the ability to solve problems. It is a method for defining a problem and goals, "brainstorming" about a number of methods for solving the problem, evaluating these methods and then testing those that seem the most appropriate.

- Encourage positive activities. It concerns a method of improving the state of mind and level of function by identifying and taking part in positive and pleasant activities.
- Manage reactions. This element relates to the ability to cope and reduce concerning bodily and emotional reactions in certain difficult situations.
- Manage thoughts. The victim must learn different ways to identify worrying thoughts and counteract them with other ways of thinking.
- Re-establish health-promoting social contacts. This element provides paths for re-establishing important relationships and societal support.

Support to groups

The literature describes different types of group interventions that can be categorised according to the number of sessions. Some of them only occur on one occasion, such as psychological debriefing. As mentioned earlier, this type of intervention is not recommended for victims in the acute phase, mainly because there have been no controlled studies that have showed unambiguous positive effects, and as the intervention does not reduce the risk for PTSD. Furthermore, the intervention can lead to damage if it is carried out with certain individuals. Alternative models for response personnel are described in the next section.

The most studied form of group treatment for PTSD with more than one session is trauma-focused cognitive behavioural therapy (TF-CBT), which has proven to be better than control groups on waiting lists. With regard to other forms of group therapy, there has not been sufficient evidence that they reduce PTSD symptoms.

Post-traumatic interventions for couples and families may be intended to reduce PTSD symptoms or have other goals such as improving the family function, but regardless of the aim, only a limited amount of data exists regarding their effectiveness. More research is required in this area.

Grief support groups for the bereaved are relatively common, but there is no reliable published data concerning their effectiveness. On the other hand, certain positive effects have been demonstrated relating to group therapy, family therapy and internet-based therapy forms, all containing features of cognitive behavioural therapy. The effects are particularly clear if the treatment is performed with those demonstrating more pronounced symptoms.

Support to response personnel

As yet, there is no unequivocal evidence of consensus-based guidelines for how the support for response personnel should be formulated. However, it has been shown that there can be several different purposes for meeting response personnel after a serious incident. One purpose might be to evaluate the initiative itself. This has been described in different contexts, for example, with regard to the term "after action review" (AAR). The personnel have the opportunity to discuss what worked well and what may have been frustrating, and can be improved for next time. The discussion

may facilitate managing and coping with an incident as well as assisting the participants in creating a statement about it (more information about AAR is available at: http://pdf.usaid.gov/pdf_docs/pnadf360.pdf).

Other purposes for group meetings after an initiative can be to provide managers with the opportunity to assess continuing individual needs as well as psychoeducation. It is likely, however, that of most importance is to give group members the opportunity to provide social support to one another. Other possible positive effects are that the participants can calm each other down and receive support from an empathic leader and receive assistance to find positive, general coping strategies and to overcome feelings of guilt and shame amongst those who think that they failed during the initiative. The development of different versions of the evidence-based concept psychological first aid that are adapted to operations is progressing. This type of compilation already exists for military units: *Combat and Operational Stress First Aid (COSFA)*, and there will soon be a similar concept for emergency rescue services personnel as well. Increasing focus has also been aimed at developing peer support in response organisations, as well as educating personnel in stress management. The education of leaders in response organisations is also important so that they can support their personnel and identify those who need individual support and potentially a professional assessment. Occupational health organisations in response organisations must work closely with the personnel in order to be able to do a suitable screening of exposed personnel assess the need for treatment and support the managers and peer supporters. A number of these components can also be relevant for workplaces that do not constitute response organisations, but have been affected by serious incidents, for example, as support to bank personnel after a bank robbery.

Treatment

Treatment of PTSD

The treatment of PTSD needs to be adapted individually according to every patient's circumstances and needs. A careful diagnosis should precede the decision regarding the form of treatment. Psychoeducational interventions and stabilisation might be required before it is possible to begin trauma processing.

Psychological treatment

The psychological treatment methods that have shown to be most effective are trauma focused. In recent years, controlled studies of trauma-focused cognitive behavioural therapy (TF-CBT) and eye movement desensitization and reprocessing (EMDR) showed that there is scientific support for the effectiveness of these specific treatment methods for PTSD. In comparison, these methods have demonstrated equivalent effects. With regard to complex traumatisation, an integration of treatment methods is recommended, with the emphasis on practising stabilisation techniques before a regular trauma processing becomes an accepted practice.

Pharmacological treatment

Treatment with pharmaceuticals should not be viewed as the first choice for the treatment of PTSD, but pharmacological treatment can supplement an individually adapted psychological treatment method. Pharmacological treatment may be considered for clients who do not want to enter trauma-focused psychological treatment, when psychological treatment cannot be conducted for different reasons, when psychological treatment has not produced results, in the treatment of comorbidity with depression or anxiety disorders, as well as acute alleviation of sleeping difficulties.

Treatment of grief and persistent complex bereavement-related disorder adjustment disorders related to bereavement

Recent publications suggest that psychotherapy should be abstained from for those who demonstrate mild to moderate grieving reactions, since there is a risk that their recovery might be interfered with. On the other hand, some people may need different forms of support measures. Recent studies indicate that prospective psychotherapeutic treatment should be aimed at those having a high grade of symptoms, for example, those demonstrating signs of persistent complex bereavement-related disorder. It has recently been shown that cognitive behavioural therapy (CBT) with elements of exposure can produce good results amongst the latter group, and anti-depressive medication can contribute to this type of therapy being tolerated better. The state of knowledge if relatively new with regard to treatment of complicated grieving reactions, and it may be considered preliminary at this stage.