Triage and care of young casualties from the Utøya Island in Norway

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No conflicts of interest to declare
THE NORWEGIAN EMS

- National/Regional: Air Ambulance Service
- Regional: Ground Ambulance Service
- Regional/Community: Community based Physician on call

July 22, 2011 - Timeline

- 15:25 Bomb explodes in Oslo government district
- 17:25 (?) Shooting at Utøya Island start
- 18:25 Police special forces arrive at Utøya Island
- 18:33 Terrorist apprehended at Utøya Island
Oslo bombing

98 casualties
8 dead on scene
10 severely injured
80 lightly injured

Utøya shooting

129 GSW
68 dead on scene
21 severe injuries
77 dead
>200 casualties

18 years
14 years
Timeline of events

Table 3 Timeline of the EMS response to the Utøya island shooting (estimated points of time in italics)

<table>
<thead>
<tr>
<th>Event</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reports of shooting at Utøya Island reach Buskerud EMCC</td>
<td>17:24</td>
</tr>
<tr>
<td>First ambulance units dispatched by Buskerud EMCC</td>
<td>17:24</td>
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<tr>
<td>First EMS unit arrives near Utøya Island</td>
<td>17:33</td>
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<tr>
<td>A major incident declared in WE.</td>
<td>17:45</td>
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<tr>
<td>WE hospitals Drammen and Ringerike activate their major incident plan (Asker-Beerum already activated their major incident plan following the Oslo bombing)</td>
<td>17:45</td>
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<tr>
<td>Utøya quay briefly declared secure by local police</td>
<td>17:45</td>
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<tr>
<td>First police arrive on the mainland shores west of Utøya Island</td>
<td>17:45</td>
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<tr>
<td>First HEMS unit arrives at deployment site south of Utøya island</td>
<td>18:10</td>
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<tr>
<td>Last HEMS unit arrives at deployment site south of Utøya island</td>
<td>18:25</td>
</tr>
<tr>
<td>First organised casualty-clearing station established at Utøya quay</td>
<td>18:50</td>
</tr>
<tr>
<td>Second casualty-clearing station established at Storey</td>
<td>19:05</td>
</tr>
<tr>
<td>First paramedic arrives at Utøya island</td>
<td>19:45</td>
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<tr>
<td>First casualty-clearing station closed</td>
<td>19:45</td>
</tr>
<tr>
<td>First patient from Utøya Island arrives at Oslo University Hospital Ulløvei</td>
<td>19:17</td>
</tr>
<tr>
<td>Last patient from Utøya Island arrives at Oslo University Hospital Ulløvei</td>
<td>21:30</td>
</tr>
<tr>
<td>Last HEMS unit leaves secondary casualty-clearing station</td>
<td>22:20</td>
</tr>
<tr>
<td>Second casualty-clearing station closed</td>
<td>22:00</td>
</tr>
</tbody>
</table>

EMCC = Emergency Medical Communication Centre, EMS = Emergency Medical Service, HEMS = Helicopter Emergency Medical Service, WE = Vestre Viken Health Enterprise


Casualty clearing station 1

Photo: Adrian Øhrn Johansen
Level of care provided

Equipment and tools
Safety challenges

Civilian involvement
Utøya Scene

Oslo Casualty Clinic

Oslo Scence

Utøya area local hospitals

Oslo University Hospital

Oslo area local hospitals


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Trauma Centre
31 patients admitted
20 with ISS >15
125 operations/ 4 weeks
Critical mortality 5%

Defusing, debrief and psychological follow up

• Different strategies for EMS personnel and volunteers
• Victims followed up in local communities

Main lessons learned

• Unified triage system needed
• Medical incident command is unclear
• EMS personnel response during on-going violence unclear
• (H)EMS coordination at strategic level absent
• HEMS is a valuable resource
• The redundancy of the EMS system is good
• Trauma Centre redundancy is excellent
What has changed

• National triage system developed
• SOP for EMS response during on-going violence developed
• Description of medical incident command revised
• Regional HEMS coordination established as pilot project

Summary

• Patient care at Utøya delayed due to security issues
• Effective triage executed by experienced and trained physicians
• HEMS is an important resource
• Trauma centre has high capacity and should receive all trauma patients