



## Incident headline: **Tunnel car crash**

Mr. Jan Robert Boee

I am registering all the trauma incidents/patients at our district in Nordland county concerning the hospital "Nordlanssykehuset avd. somatikk, Bodø. The registering platform is "Nasjonalt traumeregister Norway" (NTR) (The National register



May 15th, 2022. Nordland county. Halfway into the "Steigen tunnel" which is 8 km long) See coordinates below). Volkswagen Multivan 2005-model with 5 tourists that crashed into the back of a slow driving tractor pulling a heavily stone-loaded wagon. 4 passengers in the Volkswagen immediately killed. The driver was heavily wounded. The driver of the tractor not wounded at all. Tunnel in the midst of Steigen and Hamarøy. Not densely populated area, but the only road to get to and from Steigen (approx 2500 inhabitants). Coordinates: 67.927675, 15.759004 The investigation has not yet concluded with what really happened. About 3 cars in the same area at the time have not been of any help to analyze the incident either. The driver of the Volkswagen is still not interviewed by the police, now 11 months after the incident. This was informed in the news in our region recently.

## Incident characteristics

Date of incident 15/05/2022

Time of start 15:55:00

**What was the mechanism/external factor that caused the incident?  
Please tick for all options that apply**

Transport

Dark tunnel/ bad sight? The police have still not come to an conclusion yet.

No

**Please specify the extreme weather that caused the incident \***

Road

**Other types of extreme weather**

Road

**Please specify other mechanism/external factor that caused the incident:**

The collision was in the middle of a 8 km long tunnel. First ambulance came to the scene after 19 minutes.

Air

**Is this incident coupled to another incident?**

**Please specify coupled incident**

The two surviving patients arrived hospital at 18.21 with ambulance helicopter. The crash was at 15.55, so nearly 2 1/2 hours after the incidence due to stabilization of the patients and evacuation out of the tunnel and also scrambling of roto wing.

**What was the location of the incident scene? Please tick for all options that apply. \***

None.

**Please specify other type of location of incident scene or leave blank if unknown:**

1

**What was the EMS' mode of access to treat patients at incident scene?  
Please tick for all options that apply. \***

Fire

**Please describe any delays of importance**

The possibility of fire because gas leak from the vehicles.

The possibility of fire because gas leak from the vehicles.

**Please specify other modes of access**

Fire

Totally wrecked car. Gasoline spillage.

**What was the EMS' mode of evacuating patients from the incident scene? Please tick for all options that apply. \***

**Please specify other if any**

**Please describe any delays of importance**

**Was there damage to infrastructure that affected EMS response? Please tick for all options that apply. \***

**Specify other infrastructure damage**

**Please describe the damage**

**How many sites required separate EMS infrastructure (such as on-scene leadership and casualty clearing stations) in the response phase? \***

**Which hazards existed for rescuers on scene? Please tick for all options that apply. \***

**Please specify other hazards**

**If possible, please specify what the hazard was and how it affected the rescuers on-scene**

**Which hazards existed for patients on scene? Please tick for all options that apply. \***

**Please describe the hazards**

## EMS response data

**Which (if any) of the following actions were implemented by the medical response \***

Initiate any safety related actions  
Request additional resources  
Assume the role of in-scene medical commander  
Begin to make an assessment of

**Were these actions implemented by the first medical responder to arrive on scene? \***

Yes

**Who implemented them and why?**

Incident 15.55  
1st ambulance at scene 16.14, 2nd and 3rd ambulance at scene 16.27, 4rt ambulance at scene 16.39

**Do you have a dedicated on-scene medical commander in your EMS system? \***

Yes

Senior staff at first arriving ambulance.

**What kind of personnel assumed the role of on-scene medical commander in this incident?**

Ambulance uniform includes High visibility vests. Blue strobes on the amb. and helmets are used.

**Give details of which safety actions were initiated (eg. High visibility vests or personal protective equipment for responders)**

Incident 15.55  
1st ambulance at scene 16.14, 2nd and 3rd ambulance at scene 16.27, 4rt ambulance at scene 16.39

**Give details of which tasks were delegated (eg. Ambulance parking officer, Primary triage officer)**

First medical team to arrive on-scene

**If you have the times for these actions and the order they occurred please add them to the previously downloaded 'timeline of events' document. If there were reasons for tasks not performed, please elaborate**

Incident 15.55  
1st ambulance at scene 16.14, 2nd and 3rd ambulance at scene 16.27, 4rt ambulance at scene 16.39. All ambulances are manned with the same standard but there are some differentialities on how experienced they are.

**By whom were additional medical staff who responded to the major incident summoned? \***

Please specify other means

**Please give details of which additional staff (eg. bronze, silver and gold officers, tactical advisors etc) were summoned, at what time they were summoned and at what time they arrived at their designated posts**

## Medical command structure

**Was there a pre-hospital major incident response plan in place? \***

Yes

**Link to response plan in Norwegian. (Copy the link and paste it into your browser)**

<https://bit.ly/3S025h2>

**How did your actual response differ to the plan and what was the consequence of that?**

## Medical communication

**Was satisfactory communication achieved between those who needed to communicate during the incident? \***

Yes

**Who managed communication at the incident? \***

First medical team to arrive on-scene  
EMS coordinating centre

Tunnel

**If relevant, please describe any communication challenges**

**When available, please provide a timeline for central communication issues**

**Which mode/s of communication were used during the major incident response? Please tick for all options that apply. \***

Radio, Tetra  
Mobile phone

**Please specify mode of communication to the public. If social media was used please describe this \***

Press officer at the police.

**Please specify other means of communication \***

**Describe any failure to communication and how it affected the response**

**Which of the communication systems are in use on a daily basis? \***

Radio, Tetra  
Mobile phone



## EMS response data

<b>Please state number of lay persons with no field care education present at the incident scene *</b>	Unknown
<b>Please state number of non-EMS personnel with basic life support (BLS) competency present at the incident scene *</b>	Unknown
<b>Please state number of EMS professionals who were not physicians, but with BLS competency present at the incident scene *</b>	7
<b>Please state number of EMS professionals who were not physicians, but with Advanced Life Support (ALS) competency present at the incident scene *</b>	Unknown
<b>Please state number of on-scene physicians with ALS competency present at the incident scene *</b>	2
<b>Please state number of other type of personnel/persons present at the incident scene *</b>	Unknown
<b>Please specify other type of personnel/persons *</b>	Police, firemen, laymen.

## Transport

<b>Number of EMS vehicles available at the incident scene *</b>	4
<b>Number of EMS helicopters available at the incident scene *</b>	2
<b>Number of EMS boats available at the incident scene *</b>	0
<b>Number of other type of EMS units available at the incident scene *</b>	1
<b>Please specify other type of EMS units *</b>	Doctor
<b>Number of civilian vehicles available at the incident scene *</b>	Unknown
<b>Number of civilian helicopters available at the incident scene *</b>	0
<b>Number of civilian boats available at the incident scene *</b>	0
<b>Number of other type of civilian units available at the incident scene *</b>	Unknown
<b>Please specify other type of civilian units *</b>	Bystanders

## Transport

<b>Number of other emergency services vehicles available at the incident scene *</b>	5
<b>Number of other emergency services helicopters available at the incident scene *</b>	0
<b>Number of other emergency services boats available at the incident scene *</b>	0
<b>Number of other units available at incident scene *</b>	Unknown
<b>Please specify other type of units *</b>	

## Patient surge data

**What kind of equipment was available on-scene enabling EMS to do their job?  
Please tick for all options that apply \***

Equipment to provide care for patients exposed to hazardous materials

**If any equipment was missing please describe**

*Note: If the number is 1-5 please check unknown. Due to patient confidentiality restrictions no data on less than 6 patients can be reported*

**Number of patients with minor injuries \* 1**

**Please provide the data source from which these numbers originate**

**What was the total number of patients seeking care at a hospital \* 2**

## Patient surge data

<b>Number of receiving hospitals *</b>	1
<b>Hospital 1</b>	
<b>Distance from incident scene where pre-hospital medical response was initiated to hospital I by air line in kilometers *</b>	101-200
<b>Type of hospital I *</b>	Local hospital with trauma function
<b>Please specify other type of hospital *</b>	
<b>Date of first patient transported to hospital *</b>	15/05/2022
<b>Time (HH:MM) of first patient transported to hospital</b>	18:21
<b>Date of last patient transported to hospital *</b>	15/05/2022
<b>Time (HH:MM) of last patient transported to hospital</b>	18:21
<b>If you have more details on the patient surge please provide them in the free-text field below</b>	Helicopter landed on hospital landing platform.

## Hospital 2

**Distance from incident scene where pre-hospital medical response was initiated to hospital I by air line in kilometers \***

**Type of hospital I \***

**Please specify other type of hospital \***

**Date of first patient transported to hospital \***

**Time (HH:MM) of first patient transported to hospital**

**Date of last patient transported to hospital \***

**Time (HH:MM) of last patient transported to hospital**

**If you have more details on the patient surge please provide them in the free-text field below**

### Hospital 3

**Distance from incident scene where pre-hospital medical response was initiated to hospital I by air line in kilometers \***

**Type of hospital I \***

**Please specify other type of hospital \***

**Date of first patient transported to hospital \***

**Time (HH:MM) of first patient transported to hospital**

**Date of last patient transported to hospital \***

**Time (HH:MM) of last patient transported to hospital**

**If you have more details on the patient surge please provide them in the free-text field below**

## Hospital 4

**Distance from incident scene where pre-hospital medical response was initiated to hospital I by air line in kilometers \***

**Type of hospital I \***

**Please specify other type of hospital \***

**Date of first patient transported to hospital \***

**Time (HH:MM) of first patient transported to hospital**

**Date of last patient transported to hospital \***

**Time (HH:MM) of last patient transported to hospital**

**If you have more details on the patient surge please provide them in the free-text field below**



## Hospital 5

**Distance from incident scene where pre-hospital medical response was initiated to hospital I by air line in kilometers \***

**Type of hospital V \***

**Please specify other type of hospital \***

**Date of first patient transported to hospital \***

**Time (HH:MM) of first patient transported to hospital**

**Date of last patient transported to hospital \***

**Time (HH:MM) of last patient transported to hospital**

**If you have more details on the patient surge please provide them in the free-text field below**

## Patient surge data (continued)

*Note: If the number is 1-5 please check unknown. Due to patient confidentiality restrictions no data on less than 6 patients can be reported*

**Number of patients with minor injuries \*** 1

**Please provide the data source from which these numbers originate**

**What was the total number of patients seeking care at a hospital \*** 2

## Patient characteristics

*Note: If the number is 1-5 please check unknown. Due to patient confidentiality restrictions no data on less than 6 patients can be reported*

**What was the estimated number of people at risk from the major incident? (e.g. number of passengers on a train / ship) \***

15

**Please explain how the above number of population at risk was reached \***

In total there were 6 persons involved in the accident. Unknown number of passing cars also in danger of getting involved in another accident.

## Patient characteristics

*Note: If the number is 1-5 please check unknown. Due to patient confidentiality restrictions no data on less than 6 patients can be reported*

<b>Number of males injured *</b>	6
<b>Number of females injured *</b>	0
<b>Number of neonates injured *</b>	0
<b>Number of infants (1 month - 2 years) injured *</b>	0
<b>Number of young children (2-6 years) injured *</b>	0
<b>Number of children (6-12 years) injured *</b>	0
<b>Number of adolescent (12-18 years) injured *</b>	0
<b>Number of unidentified/missing victims *</b>	0

## Patient characteristics (continued)

*Note: If the number is 1-5 please check unknown. Due to patient confidentiality restrictions no data on less than 6 patients can be reported*

<b>What was the number of dead on-scene/dead before any medical care was provided? *</b>	Unknown
<b>What was the number of dead before arrival at hospital? *</b>	Unknown
<b>What was the number of deaths of those admitted to the hospital within 30 days of the event? *</b>	0
<b>Is data collection of thirty day mortality of those admitted to hospital considered complete? *</b>	Yes
<b>Was a pre-hospital triage system used? *</b>	Yes
<b>Who performed the pre-hospital on-scene triage? *</b>	Physician
<b>Which triage system was used? *</b>	RETTS is used at the ambulances and hospitals in our region. There is perhaps another system used by Resque helicopter and air ambulance. They were both represented at the scene.
<b>Please specify other person/personnel who performed the pre-hospital on-scene triage *</b>	Ambulance personell

## Triage

*Note: If the number is 1-5 please check unknown. Due to patient confidentiality restrictions no data on less than 6 patients can be reported*

<b>Number of patients in triage category red = immediate upon first assessment on scene *</b>	Unknown
<b>Number of patients in triage category yellow = urgent upon first assessment on scene *</b>	Unknown
<b>Number of patients in triage green = minor/delayed upon first assessment on scene *</b>	Unknown
<b>Number of patients in triage category black = deceased upon first assessment on scene *</b>	Unknown
<b>Number of patients who were triaged in another category than the previous upon first assessment on scene *</b>	Unknown
<b>Please describe the other triage categories *</b>	
<b>Was there any over- or undertriage? *</b>	Yes
<b>If possible please depict the % of over and under triage and how the calculations were undertaken</b>	50 % over triage. This is based on the AIS system and whether the ISS-score on the patients is >15 or not.

## Types of injury

*Note: If the number is 1-5 please check unknown. Due to patient confidentiality restrictions no data on less than 6 patients can be reported*

<b>Number of patients with blunt trauma *</b>	6
<b>Number of patients with penetrating trauma *</b>	Unknown
<b>Number of patients with burns *</b>	0
<b>Number of patients drowned *</b>	0
<b>Number of patients with asphyxiation *</b>	0
<b>Number of patients with hypothermia *</b>	0
<b>Number of patients with intoxication/poisoning *</b>	0
<b>Number of patients with infectious disease *</b>	0
<b>Number of patients with acute psychiatric symptoms requiring medical attention *</b>	0
<b>Number of patients with nuclear or radiological injury *</b>	0
<b>Number of patients with biological injury *</b>	0
<b>Number of patients with chemical injury *</b>	0
<b>Number of patients by other type of injury *</b>	Unknown
<b>Please specify other types of injury sustained *</b>	
<b>Number of patients admitted to critical care area *</b>	Unknown

## Key lessons

**During the pre-hospital emergency medical response to this major incident, were there any particular problems that may be improved in future major incidents? \***

**In what area/s did the problems occur? \***

**Please provide extra data of the problems using the tabs below.**

### **Pre-incident**

**What was the problem encountered? \***

**How did responders attempt to address the problem? \***

The EMS respons

**How would you recommend addressing / avoiding a similar problem at a future major incident? \***

Due to the fact that this is a widespread populated area, it shows that when all 4 ambulances in that district were available, we got there as fast as possible.

### **EMS background**

**What was the problem encountered? \***

**How did responders attempt to address the problem? \***

**How would you recommend addressing / avoiding a similar problem at a future major incident? \***



## **Incident chars**

**What was the problem encountered? \***

**How did responders attempt to address the problem? \***

**How would you recommend addressing / avoiding a similar problem at a future major incident? \***

## **EMS response**

**What was the problem encountered? \***

**How did responders attempt to address the problem? \***

**How would you recommend addressing / avoiding a similar problem at a future major incident? \***

## **Patient chars**

**What was the problem encountered? \***

**How did responders attempt to address the problem? \***

**How would you recommend addressing / avoiding a similar problem at a future major incident? \***

**Please specify other problems**

**During the pre-hospital emergency medical response to this major incident, were there any particular successes that may enhance the response to future major incidents? \***

**In what area/s did the successes occur? \***

**Please provide extra data of the successes using the tabs below.**

### **Pre-incident**

**What element of the response went particularly well? \***

**What recommendations would you make for the response to future major incident responses? \***

### **EMS background**

**What element of the response went particularly well? \***

**What recommendations would you make for the response to future major incident responses? \***

### **Incident chars**

**What element of the response went particularly well? \***

**What recommendations would you make for the response to future major incident responses? \***

## Key lessons

### EMS response

**What element of the response went particularly well? \***

**What recommendations would you make for the response to future major incident responses? \***

### Patient chars

**What element of the response went particularly well? \***

**What recommendations would you make for the response to future major incident responses? \***

### Other

**Please specify other successes that were encountered and may enhance the response to future major incidents \***

<b>Was an EMS coordinating centre (the centre responsible for dispatching and coordinating EMS units to the scene) available in the affected country/ies at the time of the incident? *</b>	Yes
<b>Is there one common dialling number for all Emergency Services (fire, police, EMS) *</b>	No
<b>Can a major incident be declared directly by the person receiving an alert at the EMS coordinating centre? *</b>	Yes
<b>Do you have a separate number for each service, does no number exist? *</b>	Separate number for each service
<b>What is the background of staff in the every-day/normal staffing of EMS services? *</b>	Basis Life Support by EMS professional, non-physician
<b>Please specify the background of other staff in the every-day/normal staffing of EMS services or leave blank if unknown.</b>	Fire brigade Voluntary organizations Police  Røde kors. Mountain resque (Scrambled by the police). Firemen in the district. SAR helicopters. Dog units for search.
<b>What other resources are <u>routinely</u> available to assist the EMS service in a <u>normal setting</u>? Please tick for all options that apply. *</b>	Fire brigade Voluntary organizations Police
<b>Please specify which voluntary organizations are available to assist the EMS service in a <u>normal setting</u> *</b>	Yes
<b>Please specify other resources that are <u>routinely</u> available or leave blank if unknown.</b>	Yes
	1

No

**What other resources can be mobilized in a major incident? Please tick for all options that apply. \***

0

**Please specify which voluntary organizations are available \***

No

**Please specify other resources that can be mobilized or leave blank if unknown**

**Does the country where the major incident took place have a trauma network? \***

**Are there any regional hospital/s with trauma specialty that exists within the EMS catchment system that was affected by the major incident? \***

**Please state the number of regional hospital/s with trauma specialty within the EMS catchment system that was affected by the major incident \***

**Are there any regional hospital/s without trauma specialty that exists within the EMS catchment system that was affected by the major incident? \***

**Please state the number of regional hospitals without trauma specialty within the EMS catchment system that was affected by the major incident \***

**Are there any local hospital/s without trauma specialty that exists within the EMS catchment system that was affected by the major incident? \***

## EMS background (continued)

<b>Please state the number of local hospitals without trauma specialty within the EMS catchment system that was affected by the major incident *</b>	0
<b>Are there any other type of hospital/s that exists within the EMS catchment system that was affected by the major incident? *</b>	No
<b>Please state the number of other type of hospitals within the EMS catchment system that was affected by the major incident</b>	0
<b>Please specify what other type of hospital/s exist within the EMS catchment system that was affected by the major incident. *</b>	
<b>Is there a pre-hospital triage system in use on a <u>daily basis</u> on a <u>national level</u>? *</b>	Yes
<b>Please specify which pre-hospital on-scene triage system/s are in use on a <u>daily basis</u> *</b>	RETTS
<b>Is a pre-hospital triage system in use on a <u>daily basis</u> on <u>regional levels</u>? *</b>	Yes
<b>Please specify which pre-hospital on-scene triage system/s are in use <u>daily</u> on regional levels *</b>	RETTS
<b>Is a pre-hospital triage system in use for <u>major incidents</u> on a <u>national level</u>? *</b>	Yes
<b>Please specify which pre-hospital triage systems are in use for <u>major incidents</u> *</b>	RETTS
<b>Is a pre-hospital triage system in use for <u>major incidents</u> on <u>regional levels</u></b>	Yes, but different triage systems exist in different regions

## EMS background (continued)

<b>Please specify which pre-hospital on-scene triage system/s for <u>major incidents</u> are in use on regional levels: *</b>	RETTS
<b>Does the pre-hospital on-scene triage system for major incidents include direct tagging/labelling of patients? *</b>	Unknown
<b>If possible, please describe type of tagging</b>	
<b>For those employees within the pre-hospital EMS system who are intended to work on-scene: is major incident training mandatory? *</b>	Yes
<b>If possible, please describe type and frequency of training</b>	
<b>Does the region have a major incident plan? *</b>	Yes
<b>How often is the major incident plan tested? *</b>	Once a year.
<b>Is there an in-hospital major incident response plan for each hospital receiving patients? *</b>	Yes
<b>Is there a regional major incident response plan incorporating all emergency services within the area that the the major incident occurred? *</b>	Yes