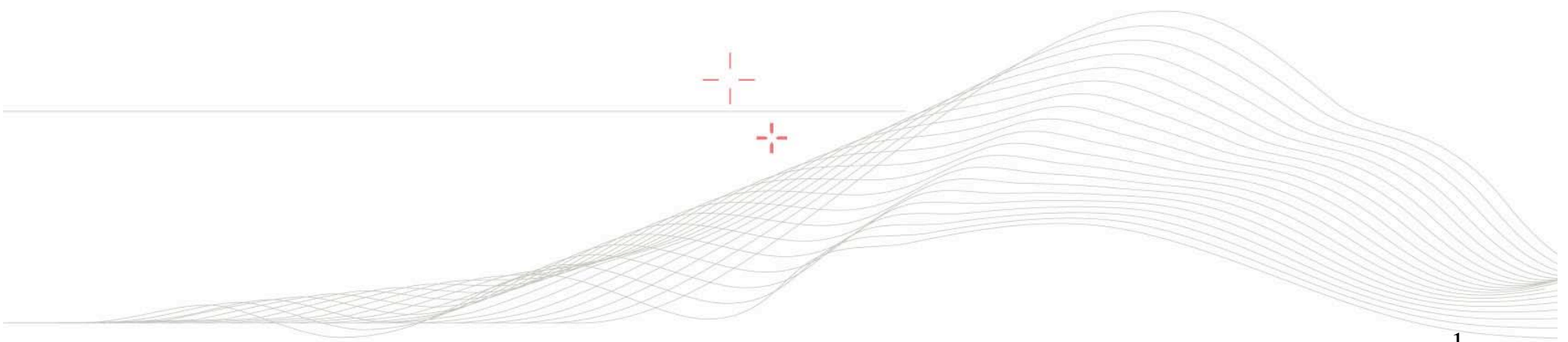




NORSK LUFTAMBULANSE



How to organise and secure quality in prehospital care?

The Norwegian experience

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Medical Director

Norwegian Air Ambulance Group

Scandinavian Update 2007 – Stavanger, Norway

Health care system

- Local Municipalities (~ 439):
 - 262 Primary Health Care Districts
 - Out-Of-Hours GP Service
- Government (5 (4) health care regions):
 - 52 Emergency Hospitals (48 trauma)
 - Specialist Health Care
 - EMS
 - Dispatch centers (medical emergencies, phone 1-1-3)
 - Ground ambulance services, air ambulance services (RW, FW)

Challenges in Norwegian emergency medicine:

- Geography
- Topography
- Climate
- Demography

(Source: NOU 1998: 9
"Akuttutvalget")

Nordland og Østfold To fylker i samme land - men svært forskjellige

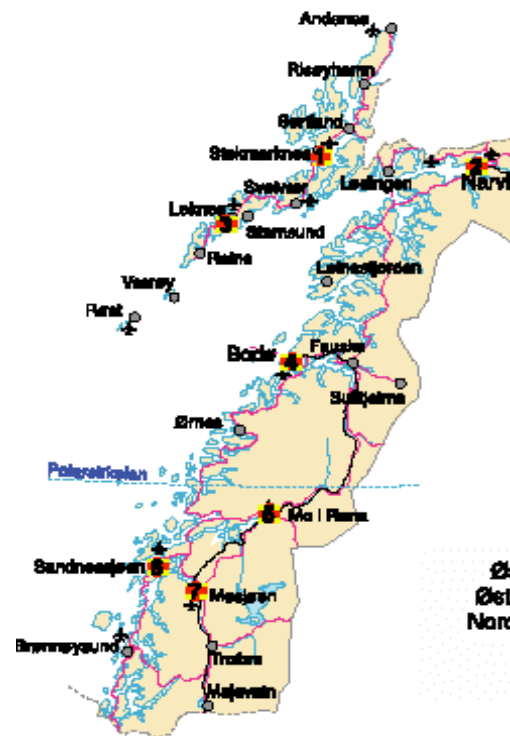
Opptaksområder for akutt beredskap i Nordland

Kart Sykehus	Antall
1 Steinkjer	31 829
2 Narvik	32 829
3 Løkken	29 132
4 NBS	79 844
5 Rana	33 481
6 Sandnessjøen	27 486
7 Vefsn	15 929
Til sammen	238 017

Opptaksområder for akutt beredskap i Østfold

Kart Sykehus	Antall
9 Moss	48 077
8 Indre Østfold	42 477
10 Sentralsykehuset i Østfold	150 597
Til sammen	241 151

Krangelik beredskap dekkes av Sentralsykehuset i Østfold og Moss sykehus. Indremedisin dekkes ved Moss sykehus, Indre Østfold og Sentralsykehuset i Østfold. Følgelig har Moss sykehus et opptaksområde som er større i km² enn i Indremedisin (48 077).



Nordland
- areal 38 327 km²



Østfold
- areal 4 183 km²

Begge fylker har ca 240 000 innbyggere
Østfold utgjør 11 prosent av Nordlands areal
Østfold har 57 mennesker pr kvadratkilometer
Nordland har 6 mennesker pr kvadratkilometer

Public and political debate

- EMS (pre-hospital and hospital) attracts a high public and political interest
- Several public analysis and reports on EMS, hospital structure, air ambulance services, trauma care
- Political concensus: The Norwegian population should have access to the same level and quality of health care services, independent of location
 - = Tremendeous challenge!

NGO:

Norwegian Air Ambulance (NLA)

- A Foundation (Non profit organisation) with an ideal goal:
To support an develop the Emergency Medical Services in Norway
- Approx. 810.000 members (~20% of the Norwegian population)
- Founder of the modern Air Ambulance Services (RW) in Norway
- Engaged in all parts of the Emergency Medical System
 - Research, education, training



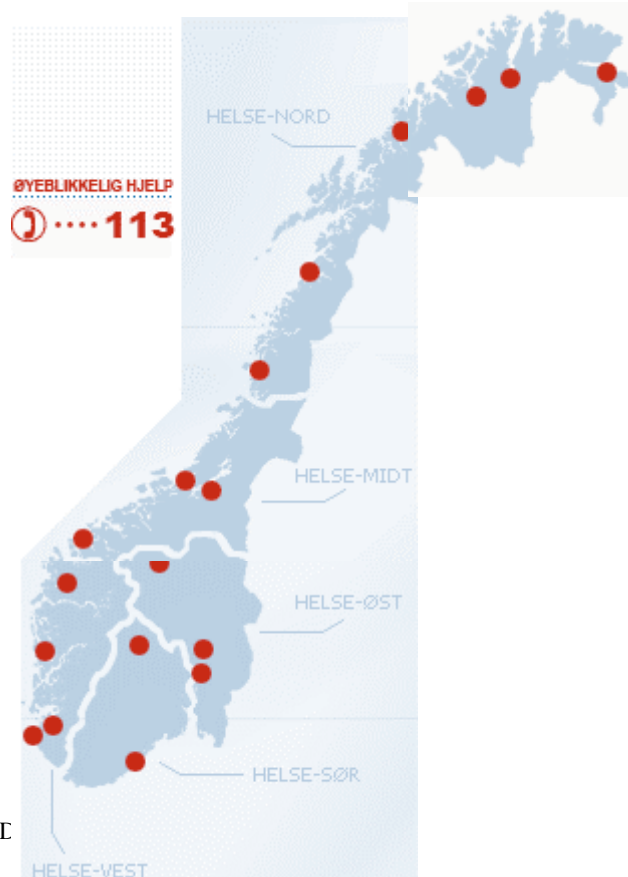
NLA

A long history of a physician manned air ambulance service (RW)

- **Dr. Jens Moe†** established the NLA-foundation in 1978
 - Aim: To improve and develop the Norwegian EMS
 - Model: The Steiger Stiftung (DRF) in Germany and REGA in Switzerland
 - "Enable the Hospital resources to be available to the patient at site"
 - He had an increasing concern about the huge differences in level of care in the pre-hospital area compared to the hospital setting
- First helicopter mission performed in June 1978



National Air Ambulance Service



- National Air Ambulance service from 1988
- Owned by the Norwegian State through 5 Regional Health Authorities
- From June 2008 – fully financed by the Government



Legislation

- **Specialized Health Services Act**
 - **Regional and Local Hospital Authorities**
 - Hospitals
 - Alarm Centres for Medical Emergencies (Phone 1-1-3)
 - Ambulance Dispatching and Co-ordination Centres
 - Ground Ambulance Services
 - Air Ambulance Services (RW and FW)
- **Municipal Health Services Act**
 - **Primary Health Care**
 - GP on call in the community
- **Health and Social Emergency Preparedness ACT**
 - **Disaster preparedness**
- **Health Personell Act**

Organisation

- The Ministry of Health and Care
 - The Directorate for Health and Social Affairs
 - The Norwegian Board of Health Supervision
 - Regional Health Authorities
 - Local Health Authorities
 - Hospitals
 - Specialist Health Care Providers
- Local Municipalities
 - Primary Health Care Services

Regulation on Prehospital Emergency Services (Prehospital forskrift av 18.05.2005)

- Joint Regulation for all Pre-hospital Services (medical dispatch centres, ground and air ambulance, GP on call):
 - Co-operation between The Regional and Local Health Authorities and The Local Municipalities
 - Reporting
 - Education and staffing
 - Local community GP on call – A Norwegian Authorisation as a Medical Doctor
 - Ground ambulance – A minimum of two health care providers, at least one provider shall have authorisation as an EMT
 - Air ambulance RW – "A physician with knowlegde of emergency medicine"
 - Air ambulance FW – Nurse intensivist or nurse anesthetist, Medical Doctor available for ICU transports
- No specific regulation on prehospital response times!
- Lack of specific qualification standards!

Reporting

- National Register on OHCA
 - Data in-complete collected, no national data available
- National Trauma Register
 - In the future?
- Local registers
 - AMIS (Data application for Dispatch centres - AMK)
 - Reports produced in the local service (administrative data)
 - No aggregated data on national level
 - Labas and AirDoc (Data applications for Air Ambulance Services)
 - Local and national data (Mostly administrative data)
 - NACA-score

What could we really need!?

This is not the operating theatre in the trauma center



This is not the Neonatal Unit at the University Clinic



Rescue operations – you don't learn this at Medical school



Education and training

- EMT and Paramedics (Ground ambulance services)/ Rescue-Paramedics (RW and SAR): Health care providers with a curriculum dedicated to prehospital emergency medicine and working in an out-of-hospital environment
 - Challenge: Huge deficit on formally trained personnel (EMT)
- Doctors and nurses; no training in prehospital care in their basic curriculum
 - Challenge: Selection criteria? What kind of training? How to train them? Funding?
- We need to develop a curriculum for all health care providers in EMS (Pre-hospital and In-hospital)
 - Supported and financed by the Health Authorities

Education and training, cont.

- We need on-going simulation training (Local low-threshold simulation, Simulation centers and Mobile simulators) for all categories of EMS personnel
 - Individual skills
 - Critical decision making
 - **Team training**

Training ambulance - a mobile medical simulator



Co-operation

- We need to improve CRM, On-scene inter-agency co-operation and training (fire, police, EMS)
- Improve co-operation between and among the Pre-hospital and the Hospital organisations
 - Should pre-hospital personnel also be working in the ED? And vice versa?

Do we need physicians in the EMS?

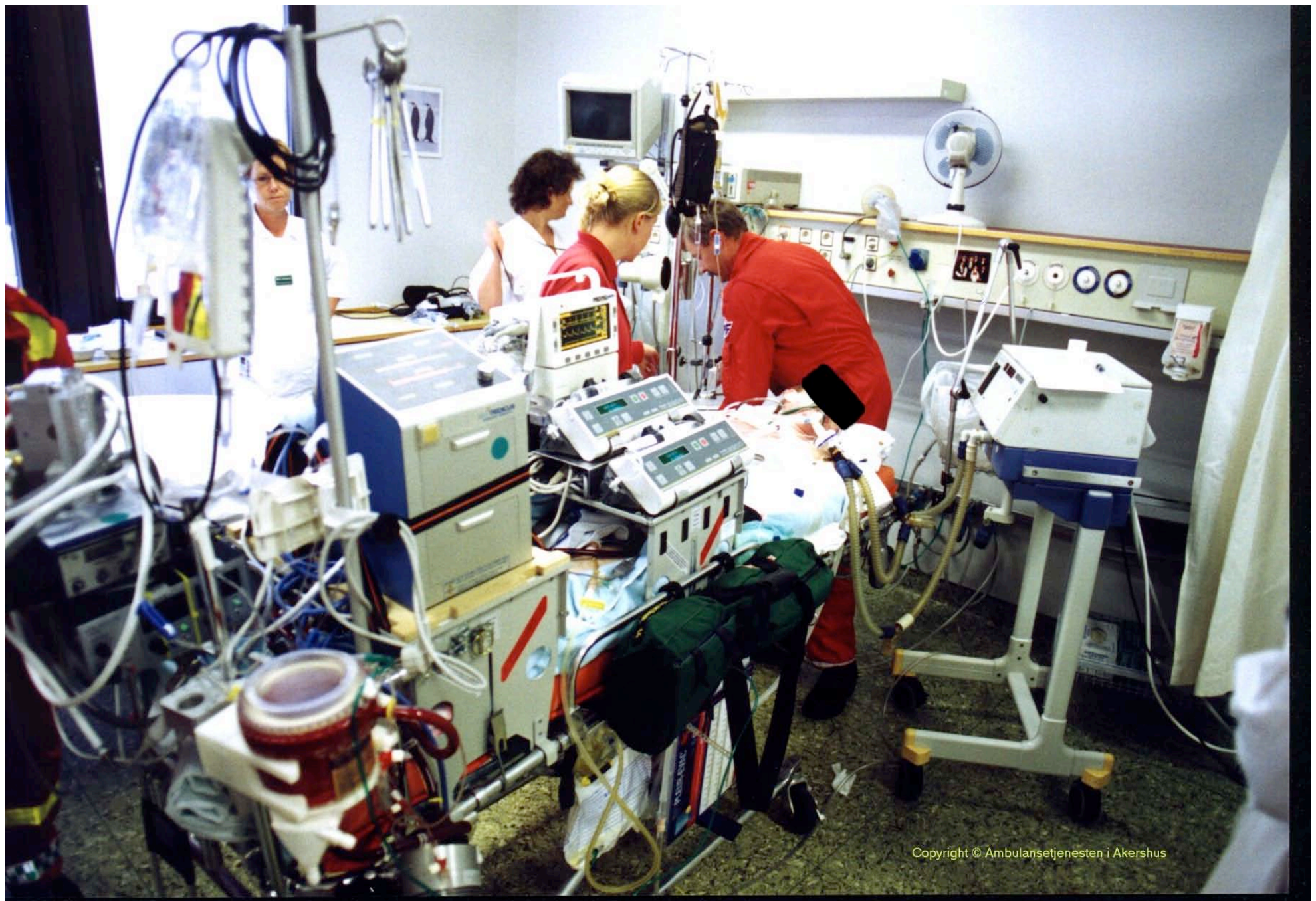


Physicians in pre-hospital EMS - tasks

- Triage
- ALS procedures
- Advanced treatment protocols
- Clinical governance
 - Clinical standards
 - Audit
 - Risk management
- Research

Physicians, cont.

- Do they make a difference?
 - Conflicting evidence
 - Lossius, HM et al. "Prehospital ALS provided by specially trained physicians; is there a benefit in term of life years gained (LYG)"
Acta Anaestheseiol Scand 2002 Aug;46(7):771-8
LYG for every 14th patient. The role of the anaesthesiologist was crucial for health benefits
 - A need to discriminate between urban and remote settings
 - And we must include the GP
- Prehospital EMS training of doctors; all over beneficial for the Health Care System
 - Clinical governance
 - Organisational development
 - EM and disaster preparedness; Hospitals, communities, regional and national level



Reporting

- National (and international) consensus on recording and reporting of operational and clinical data
- A national OHCA register, where all Prehospital EMS are obliged to participate
- A national trauma register
 - Prehospital data
 - Hospital and outcome data
- Access to **combine** prehospital and in-hospital data
 - Pre-hospital providers must have a legal access to outcome data for individual patients and the different groups of diagnoses

Continuous quality improvement

- Clinical governance
- Clinical audits
- Reporting medical accidents and errors
 - **Low threshold** and **Anonymous**, non-punitive reporting system
- Data analysis and **research**
 - Inter-service benchmarking
 - Inter-hospital benchmarking
 - International, multi-site benchmarking

And Research!

Better patient care!

Thumbs Up!



Thank you for your attention!

