

Comprehensive pre-hospital IT platform

amPHI™

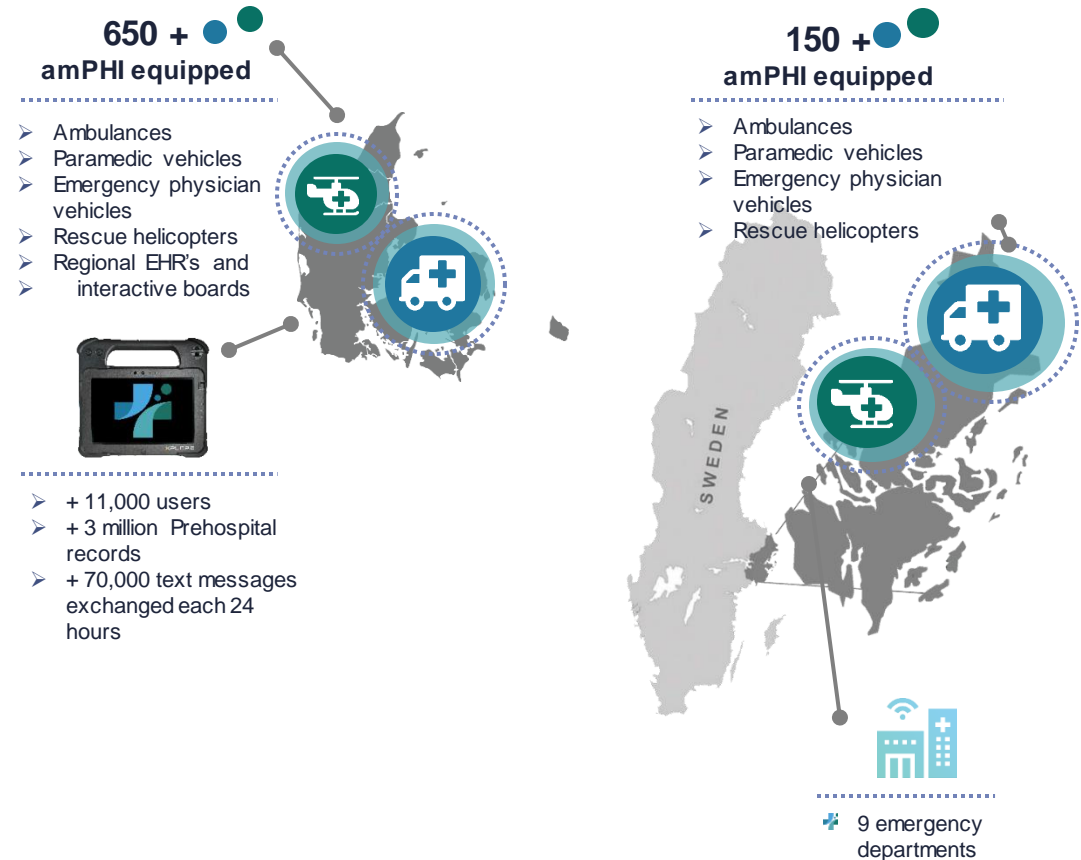
Overview



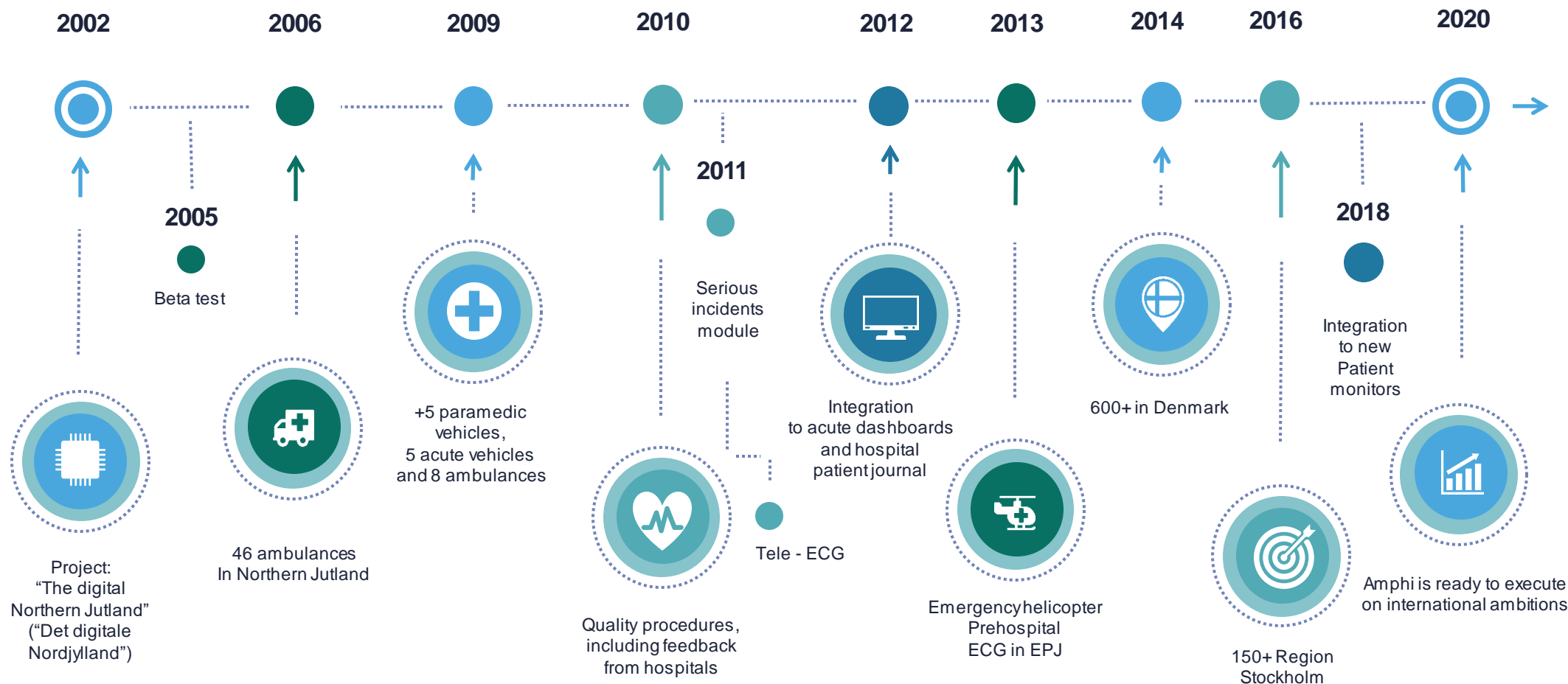
Amphi Systems is a leading provider of prehospital software solutions to the Nordic public healthcare sector



- Amphi Systems (Amphi) is a leading Nordic provider of prehospital software solutions to the healthcare sector
- The Company has developed a best-of-breed innovative electronic prehospital care record (ePCR) solution allowing for efficient recording and data sharing
- Improved prehospital care, better preparation at receiving hospitals, more coherent patient processes and increased data quality and patient security
- The solution is operated on a tablet device in the emergency units and from a web-based solution at the dispatch centres and hospitals
- The solution has been in operation in Denmark since 2006 (nationwide from 2014) and in Region Stockholm in Sweden since 2014
- As such, the software has proven highly capable of handling the complexity of information sharing across +800 emergency units, dispatch centres, emergency departments and hospitals
- The architecture of the software is built for the cloud and is expected to transition operationally to the cloud as the public clients gradually transition



The amPHI solution has been developed and improved continuously since 2002

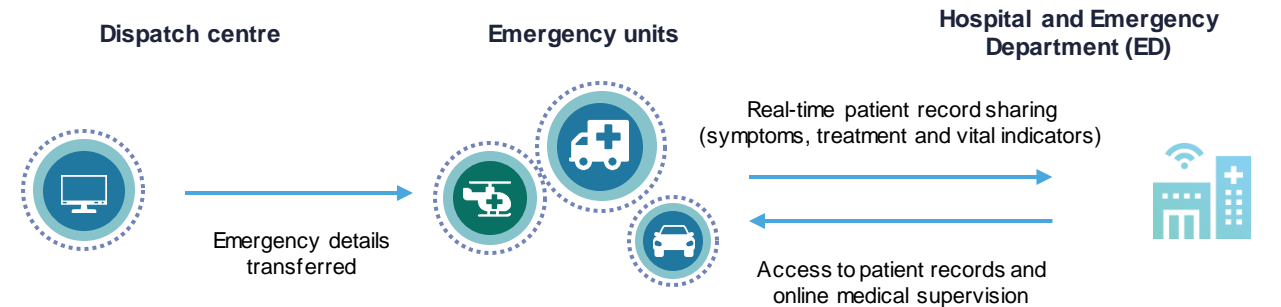


amPHI is an electronic care record solution ensuring an unbroken information flow from the scene of the incident to the hospital

Complete solution for prehospital communication and data sharing

- A solution for efficient and secure information sharing across the prehospital care flow
 - The solution connects all relevant functions during the prehospital chain of treatment through an electronic record system
 - Emergency units on the spot, hospitals and dispatch centre are allowed to share real-time patient data and information
 - The data shared includes symptoms, treatment provided by the emergency professionals and vital indicators
 - Providing the right data at the right time consistently. Thereby ensuring
- ✓ Improved prehospital care
 - ✓ Better preparation at the emergency department and specialist departments
 - ✓ More coherent patient processes
 - ✓ Increased data quality, and
 - ✓ Improved patient security

The amPHI Mobile Prehospital Health Record solution



- The dispatch centre receives the emergency call
- The prehospital record is initiated with information from the call
- The information is directly transferred to the relevant emergency units

- The emergency units receive details from the dispatch centre before reaching the scene of accident
- At the site, information such as symptoms, treatment and vital indicators are registered
- All information is transferred real-time, allowing for preparation at the emergency department

- Real-time access to all prehospital recordings
- Overview of active incidents and units
- Planning and booking of treatment and clinical experts
- Able to provide supervision, former patient records and feedback



The solution is built around two interfaces with functionality ordered in modules and integration to a range of data sources

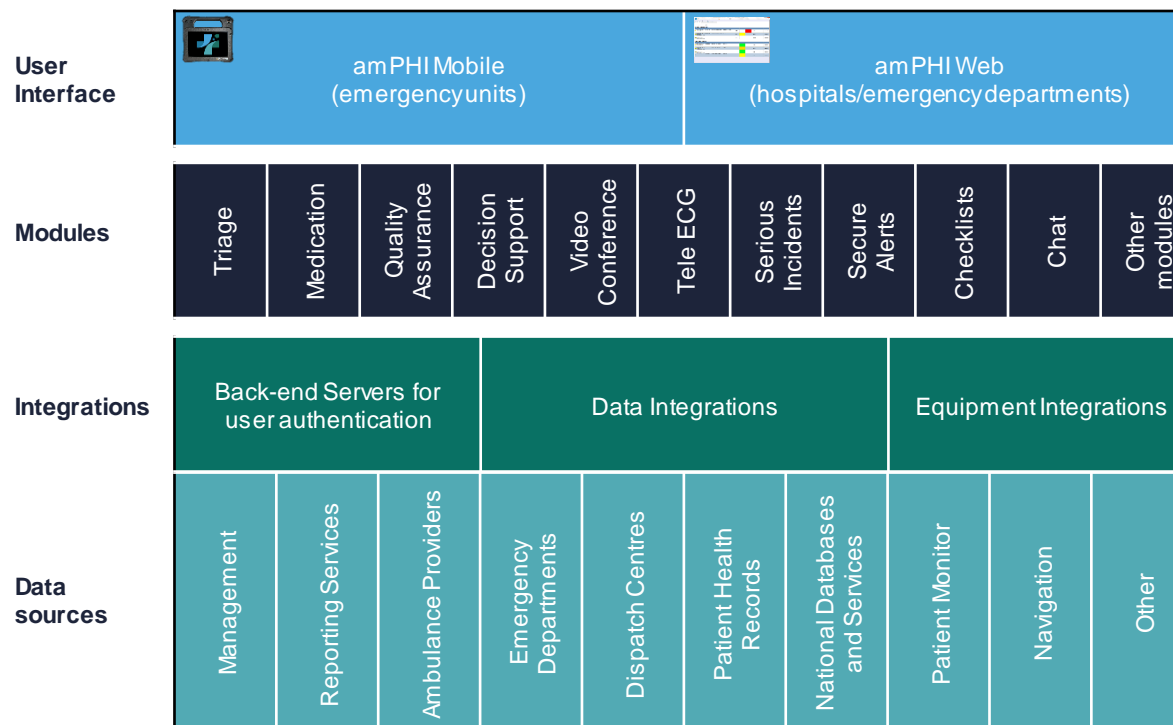
The components of the amPHI solution

- The solution is operated on two user interfaces; amPHI Mobile installed at tablets in the emergency units and amPHI Web, a browser-based solution used at hospitals and emergency departments
- The functionality, which is accessible through the user interfaces, is built around a range of modules
- Integrations allow for efficient information gathering and sharing between the emergency departments, dispatch centres and patient health records and the emergency units

Short introduction to key modules

- The Triage and Medication modules are described on page 13 and are part of the core functionality
- Quality Assurance gives an overview of most relevant data and has warnings for wrong dosage of medicine
- Decision Support assists the paramedics with handling the patient in the most optimal way
- The Video Conference module allows for sharing video at the site of incident with specialists at the hospitals
- Tele ECG module handles online sharing of ECG recorded data at the emergency unit with the cardiologist at the hospital
- The Serious Incidents module is developed for handling incidents with several persons involved, and where communication is more complex

Overview of amPHI Mobile Prehospital Health Record software



Emergency units are equipped with a mobile tablet device for receiving and recording all relevant patient data

Easy to use and mobile setup in emergency units

- In the emergency units, the amPHI software is operated on a tablet device
- The transportable solution allows the emergency professionals to carry the device along
- Thereby, allowing for information registration at the time of observation, minimising information loss

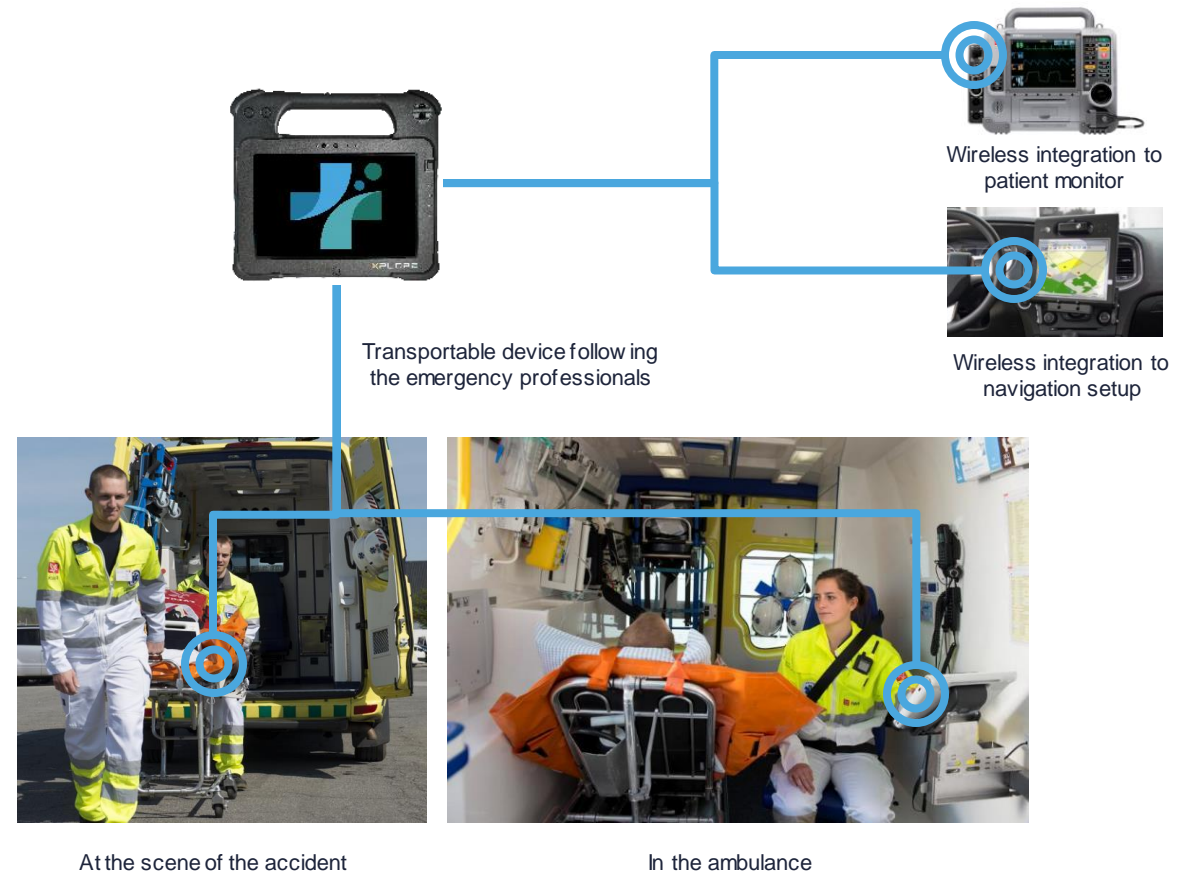
Key integrations

- The software communicates wirelessly with the patient monitor using bluetooth
- Thereby, making ECG, blood pressure, oxygen saturation and defibrillator use recordings available in both the ambulance and at the hospital
- Scanning of ID such as the health insurance certificate
- A camera allows for documenting the scene of the accident and for providing the ED with video footage
- Wireless integration to the navigation system for recording of time and place stamps

Hardware is provided by third-party suppliers

- The software is able to operate on hardware from third-party suppliers
- Currently, the Xplore tablet developed by Zebra is the most widely used

The solution is operated using a mobile tablet device



Selected modules used by the emergency professionals during prehospital care

amPHI Triage

Triage is a system for patient prioritisation based on a set of parameters and severity of the condition

- The system is set up for easy registration of key parameters for Triage
- Vital signs are filled in automatically from the latest measurements

Triage		Symptom- og kontaktsager			
Vital data					
	Red	Orange	Gul	Grøn	
A	Obstruerede luftveje	Påvirkede luftveje	Påvirkede luftveje kun ved aktivitet	Frie luftveje	
	SpO ₂ < 85 % uden O ₂	SpO ₂ 85-92 % uden O ₂	SpO ₂ 93-94 % uden O ₂	SpO ₂ ≥ 95 % uden O ₂	
B	SpO ₂ < 90 % med O ₂	SpO ₂ 90-96 % med O ₂	SpO ₂ ≥ 97 % med O ₂		
	RF > 35 eller < 8	RF > 30 eller < 10	RF > 25 eller < 12	RF 12 - 25	
C	Puls > 140 eller < 40	Puls > 120 eller < 45	Puls > 110 eller < 50	Puls 50 - 110	
	Kapillærrespons > 4 sek	Kapillærrespons 4 sek.	Kapillærrespons 3 sek.	Kapillærrespons ≤ 2 sek.	
D	Ukontaktbar	Ændret bevidsthedsniveau eller cerebralt irriteret	Vägen/kan vækkes men pylret	Vägen/kan vækkes og relevant	
	GCS ≤ 8	GCS 9 - 13	GCS 14	GCS 15	
E	Tp < 35 °C	Tp > 41 °C			
Godkend triage		Anden Tid		Annuller	

High contrast design to ensure maximum usability during all light conditions

amPHI Medication

Registration of medication given during prehospital treatment

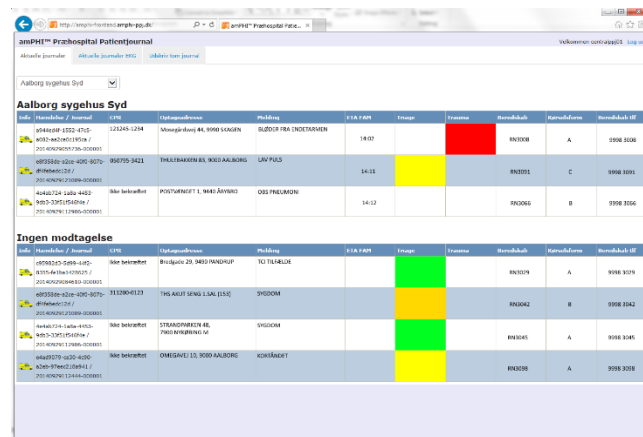
- Short guidelines for the selected medication
- Standard doses
- Dose warning built in based on age and weight

Adrenalin	
INDIKATIONER - Hjærtslopp - Anafylaktisk reaktion - Astma - Pseudokrupp, epiglottit	Administrationssätt I.v. I.m. Inhalation i.o.
DOSENING Se behandlingsriktlinje	Styrka 0,1 mg/ml 1,0 mg/ml Annan (Spädning)
KONTRAINDIKATIONER - Inga	Dos 0,3 ml 0,5 ml 1 ml 2 ml 5 ml 10 ml Annan dos
ADMINISTRATIONSSÄTT I första hand i.v. Vid anafylaxi kan dosen ges i.m. Vid astma, pseudokrupp, epiglottit även inhalation.	Totaldos Totaldos: 20 mg Totaldos är större än tillåtet för denna patient
BIVERKNINGAR - Huvudvärk, yrsel, oro - Takykardi, palpitationer, tremor - Blodtrycksstegring - Blekhet, kallsveit - Illamående, kräkning	OK Annan tid Avbryt

Selected modules used by the emergency professionals during prehospital care

Overview of incoming patients

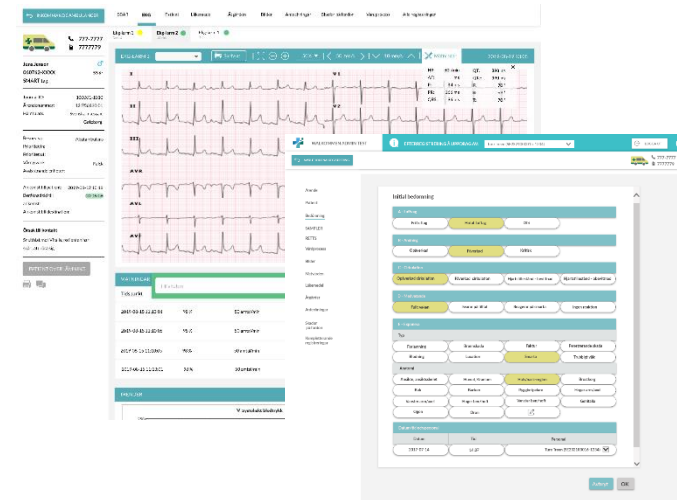
- ✓ Overview of all active emergency units
- ✓ Pre-booking of treatment and clinical specialists
- ✓ Direct overview of vital parameters for the incoming person/patients on dashboards
- ✓ Alarms from emergency units and online chat functionality



Id	Navn	Adresse	Telefon	Alarms	Behandling	Spesialist	Spesialist	Spesialist
10000000000000000000	10000000000000000000	10000000000000000000	10000000000000000000	10000000000000000000	10000000000000000000	10000000000000000000	10000000000000000000	10000000000000000000
10000000000000000000	10000000000000000000	10000000000000000000	10000000000000000000	10000000000000000000	10000000000000000000	10000000000000000000	10000000000000000000	10000000000000000000
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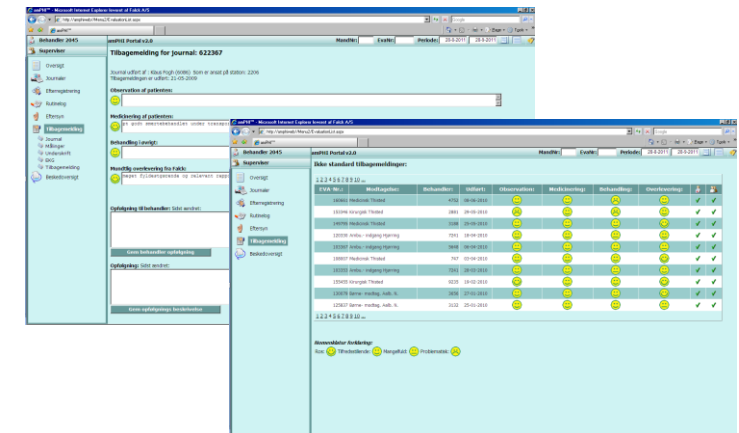
Access to prehospital journals

- ✓ Online real-time access to the ePCR from the emergency units
- ✓ Transfer of patient data from the prehospital journal to the hospital journal solution



Feedback to emergency professionals

- ✓ Feedback to the emergency professionals from the hospital
- ✓ Feedback is accessible by the emergency professionals, supervisor and other relevant personnel
- ✓ Supervisor is able to follow up on critical feedback
- ✓ Quality assurance of journals



The screenshot shows a feedback form for a specific patient. It includes a table with columns for 'Feedback', 'Date', 'Status', and 'Comments'. The table contains several rows of feedback data, including dates and status indicators.

The amPHI Serious Incidents module is specially developed to handle incidents with many emergency units involved

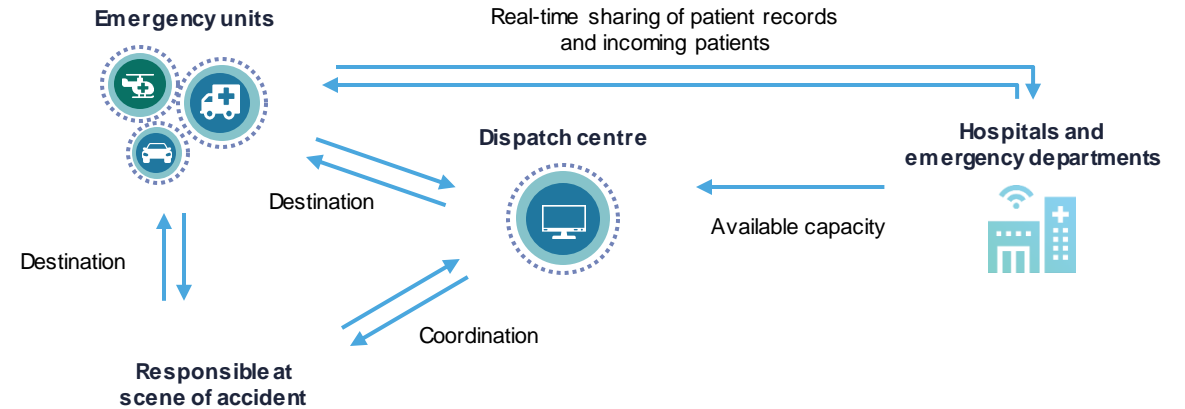
The Serious Incident module is tailored for handling the complexity of large incidents

- A serious incident is usually not identified instantly and arises through a chain of escalations from first unit on site makes initial patient count and triage
- The module supports coordination across all units, where prioritisation and especially capacity constraints need to be taken into account
- Naturally, the solution seamlessly integrates into the prehospital patient journal

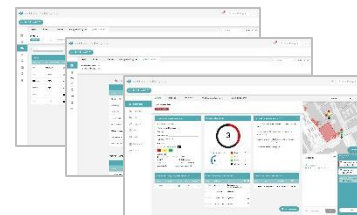
The solution was utilised during the train accident at the “Great Belt Bridge” (Storebæltsbroen)

- The solution was used during the tragic accident at the “Great Belt Bridge” in 2019
- Due to the severity and number of passengers involved, Region South and Region Zealand had to cooperate on the emergency
- Data on the condition of all patients and treatment needs were registered in the ePCR and shared with hospitals on both Funen and Zealand
- By using the information and overview, the responsible doctor could assess which patients to transport and treat first
- Also, the emergency departments across hospitals could prepare in due time for incoming patients
- The easy sharing of information across regions enabled seamless cooperation, and the logistical overview provided was deemed to be very satisfactory

Information flow during serious incidents



- Sharing the right information with the people



Dashboards with most relevant information



Serious Incidents module built into the software for emergency units

- Sharing the right information brings down radio communication
- Less radio communication reduces “noise” and increases attention to important information

Source: Fakta Præhospital Patientjournal (Danske Regioner 2019) and Management information

Amphi delivers support and maintenance of the software solutions to the customers



Support

- Amphi delivers 24/7 technical support to amPHI customers
- Amphi is second or third level of support, where the customers themselves cover the first level
- The support staff have extensive experience in working with complex IT installations and for Amphi for a long period
- Typical issues are login problems, errors related to server services and performance issues
- A performance monitoring is in place that will send alarms via Email and SMS to the support team

Maintenance

- Maintenance is included in the Support and Maintenance services agreements provided in Denmark and Sweden
- The main purpose is to modify and update software application after delivery, to correct faults and to improve performance
- It includes optimisation, error correction, deletion of discarded features and enhancement of existing features as technology keeps changing

Other software solutions to the healthcare market

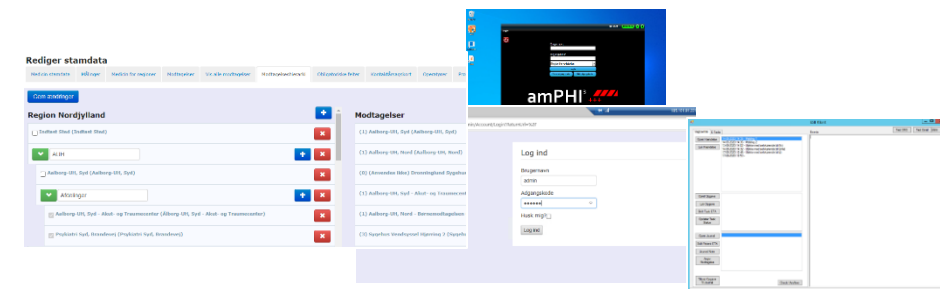
amPHI ECGtalk

- The solution efficiently enables data transfer from the ECG instruments to a server and integrates to the health care record system
- ECG recordings are stored in international standard formats, allowing for later analysis of historic data no matter the specific system format
- In addition, a range of modules have been developed to accommodate different functionality
- A core module is the ECG Viewer, a web based viewer for exhibiting and analysing the ECG data
- Other functions includes SMS alerts, comparison of ECG data and exporting



amPHI Academy

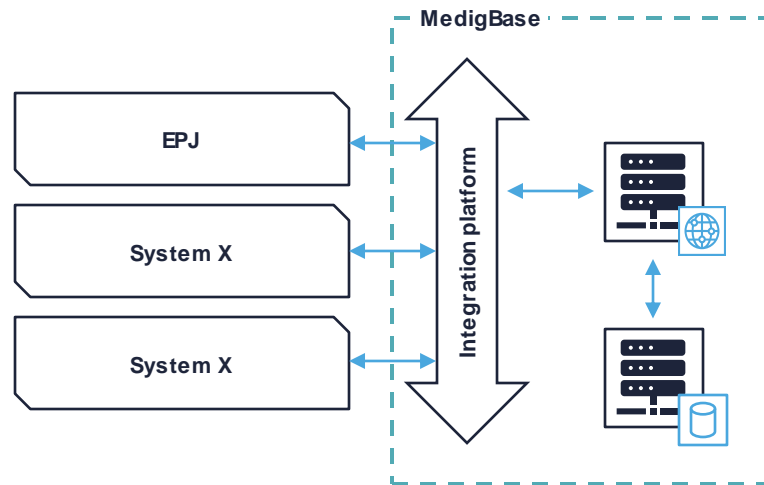
- Amphi has developed a learning concept to be used for introduction and training of customers
- The product amPHI VT (Virtual Training) is the first module under the amPHI Academy umbrella
- The solution is a complete virtual setup mirroring the Danish amPHI Mobile Prehospital Health Record solution
- On top, the solution includes a control centre from where incidents, tasks and health records can be created for training purposes
- The training solution allows for testing and training on an identical solution without compromising the daily operations
- Training on amPHI VT can run on iPads, tablets and computers



Other software solutions to the healthcare market

amPHI MedigBase

- amPHI MedigBase is a solution for safe and efficient storage of binary files (pictures, video, ECG, etc.)
- The solution is compliant with all requirements for data protection and access control
- The integration platform is built as a generic solution allowing for integration of other healthcare systems and utilises a unique key for identifying and ensuring that only authorised systems are allowed access



Application using MedigBase as engine

- Amphi is developing a tailored solution utilising the amPHI MedigBase for capturing, storing and sharing diagnostic pictures
- The solution includes functionality for patient identification and collection of consent
- There are strong data access requirements including user monitoring and logging
- Further, it requires integration to other systems such as the health care recording systems
- Pictures will be exhibited using a generic viewer or a amPHI developed 'plug-in'
- The solution is operated from a tablet device or potentially mobile devices
- The solution is targeted at a specialised department with extensive needs for storage of a large amount of pictures
- Amphi anticipates a SaaS-based revenue model
- Management sees strong commercial perspectives in the solution comparable to the amPHI prehospital care record solution
- Further, a great potential for further additions to the solution, including advanced functionality such as image processing and decision support, is expected

The right information in the hands of the right persons at the right time is crucial when acute care is needed

