

# Simulation training in (prehospital) emergency medicine



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# Certifications



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Simulators for Health Care Education

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# What we are planning to do today...



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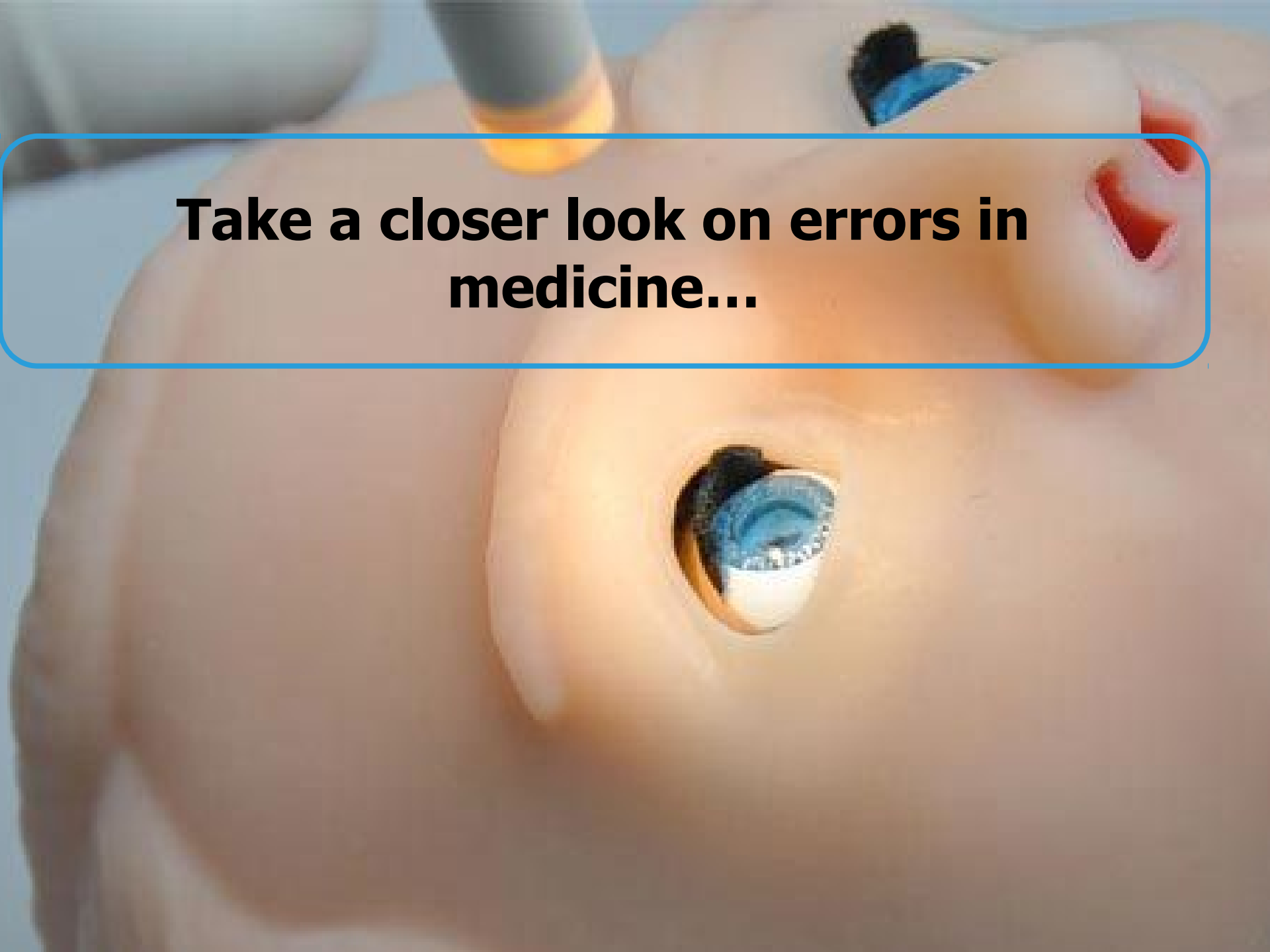
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# Why simulation training could make sense in (prehospital) emergency medicine





**Take a closer look on errors in  
medicine...**



A photograph of a medical training mannequin lying on a gurney in an operating room. The mannequin is wearing a yellow oxygen mask and has various medical sensors attached to its chest and arm. A large blue ventilator is connected to the mannequin's airway. Several medical professionals in green scrubs and blue gloves are standing around the mannequin, appearing to be in the middle of a procedure or training exercise. One person's name tag reads "Anästhesie CA". In the foreground, there are two small vials labeled "NaCl".

# Among the 10 most common causes of deaths

**“to Err is Human”**

Building a Safer Health System , report issued in November 1999 by the U.S.

# Deaths due to errors in medicine

- Up to 80.000 deaths/year in Germany
- Up to 6.000 deaths/year in Austria





**One of the most common:  
One out of 5 medication applications  
result in an error**

(Barker Flynn Pepper; 2002)



**Naloxon OrPha<sup>®</sup>**  
(Naloxonhydrochlorid)

**0,4 mg/ml Injektionslösung**

**10 Ampullen zu 1 ml**  
Zur i.v., i.m. und s.c. Injektion.  
1 ml enthält:  
0,4 mg Naloxonhydrochlorid,  
Natriumchlorid, Wasser für Injekt.  
Bei Raumtemperatur (15 bis 25°C) vor  
Licht geschützt aufbewahren.

Naloxon OrPha<sup>®</sup>  
i.v., i.m., s.c.  
0,4 mg/ml  
10 Ampullen zu 1 ml  
Natriumchlorid  
Wasser für Injektion  
OrPha Swiss



**Nalbuphin OrPha**  
(Nalbuphinhydrochlorid)

**20 mg/2 ml Injektionslösung**  
**Analgetikum**

**10 Ampullen zu 2 ml**  
Zur i.v., i.m. und s.c. Injektion  
2 ml enthalten:  
20 mg Nalbuphini hydrochloridum,  
natrii citras, acidum citricum anhydricum,  
natrii chloridum, Aqua ad inject.  
Bei Raumtemperatur (15–25°C) vor Licht  
geschützt aufbewahren.

Nalbuphin OrPha<sup>®</sup>  
20 mg / 2 ml  
10 Ampullen zu 2 ml  
Natrii citras  
Acidum citricum anhydricum  
Natrii chloridum  
Aqua ad injectio  
OrPha Swiss



# Asking pilots and physicians/nurses questions ...

- Even if i am tired, i am capable of handling emergency situations. Answered with yes...

- Pilots ... 26%
- Physicians..... 70%

- I dont do any mistakes.

- 30% of physicians and nurses on ICUs answered with yes...

**Incidents / Errors are common  
and everywhere – even if we dont see them**

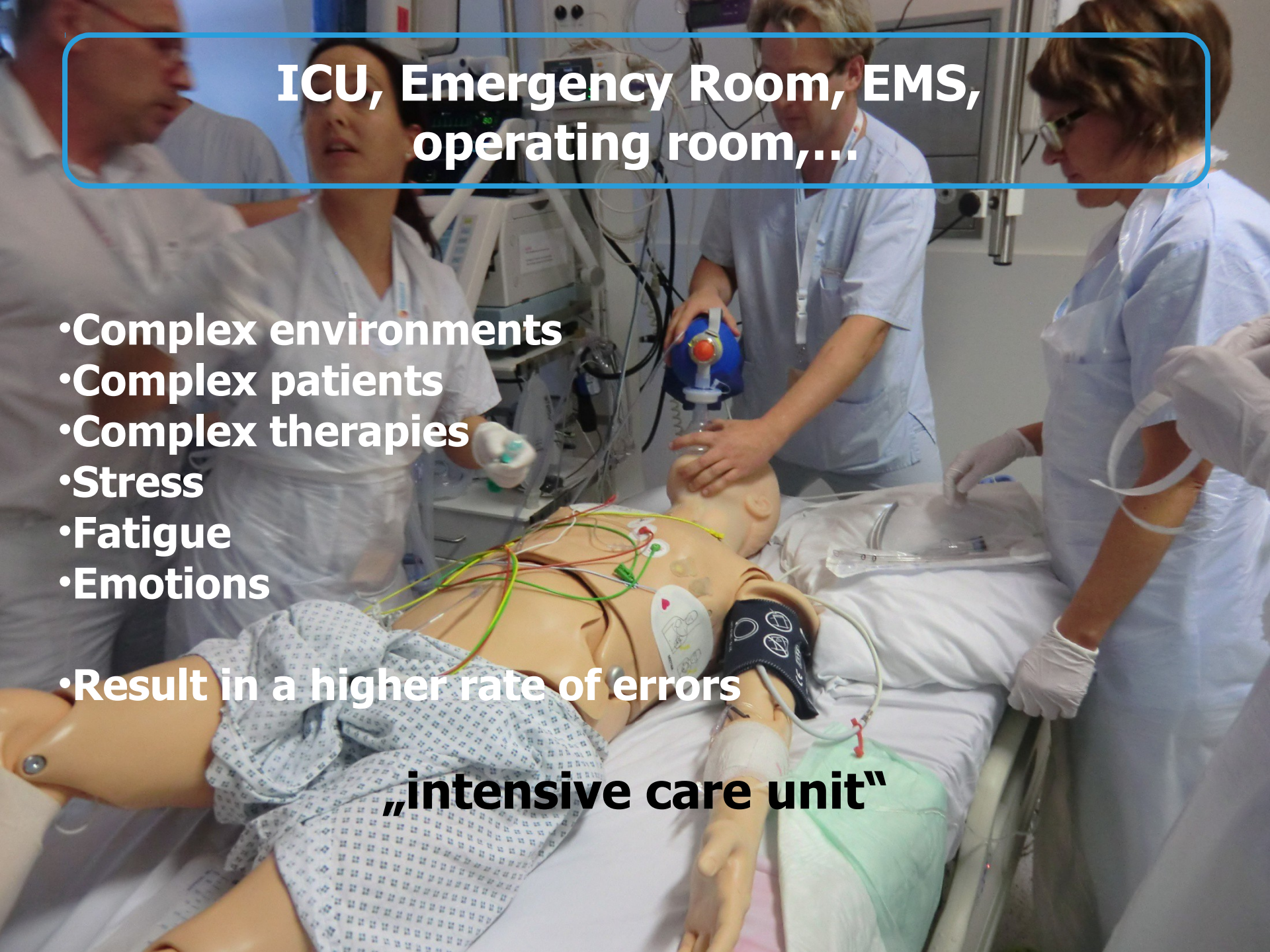


**„If something can go wrong,  
one day, it will“**

Are (prehospital) emergency medicine teams better than the others?

**NO!!!**



A photograph of a clinical setting, likely an ICU or emergency room. A patient is lying on a gurney, surrounded by medical professionals in white scrubs. The patient is connected to various medical devices, including a ventilator and monitoring equipment. The scene is busy and focused, with several people attending to the patient. A blue rounded rectangle is overlaid at the top of the image, containing the text 'ICU, Emergency Room, EMS, operating room,...'.

# ICU, Emergency Room, EMS, operating room,...

- Complex environments
  - Complex patients
  - Complex therapies
  - Stress
  - Fatigue
  - Emotions
- Result in a higher rate of errors

„intensive care unit“



# Why simulating? Why playing with dolls?



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FEAR FACTOR

# Once done right...

- High acceptance rate
- Effective learning method
- Combining with CIRIS
- Process / Risk management



# What makes learning with simulation so efficient?

Features and uses of high-fidelity medical simulations that lead to effective learning”  
a BEME systematic review (Issenberg et al, 2005, Medical Teacher)

## •Receiving feedback

- Repeating keypoints
- Different levels of expertise
- Combining different learning strategies
- On demand and broad clinical conditions
- Keep 90% of what you do hands on
- Safe learning environment
- Individual learning
- Learning goals

# So, how does simulation training work now...



Briefing

Scenario

Debriefing

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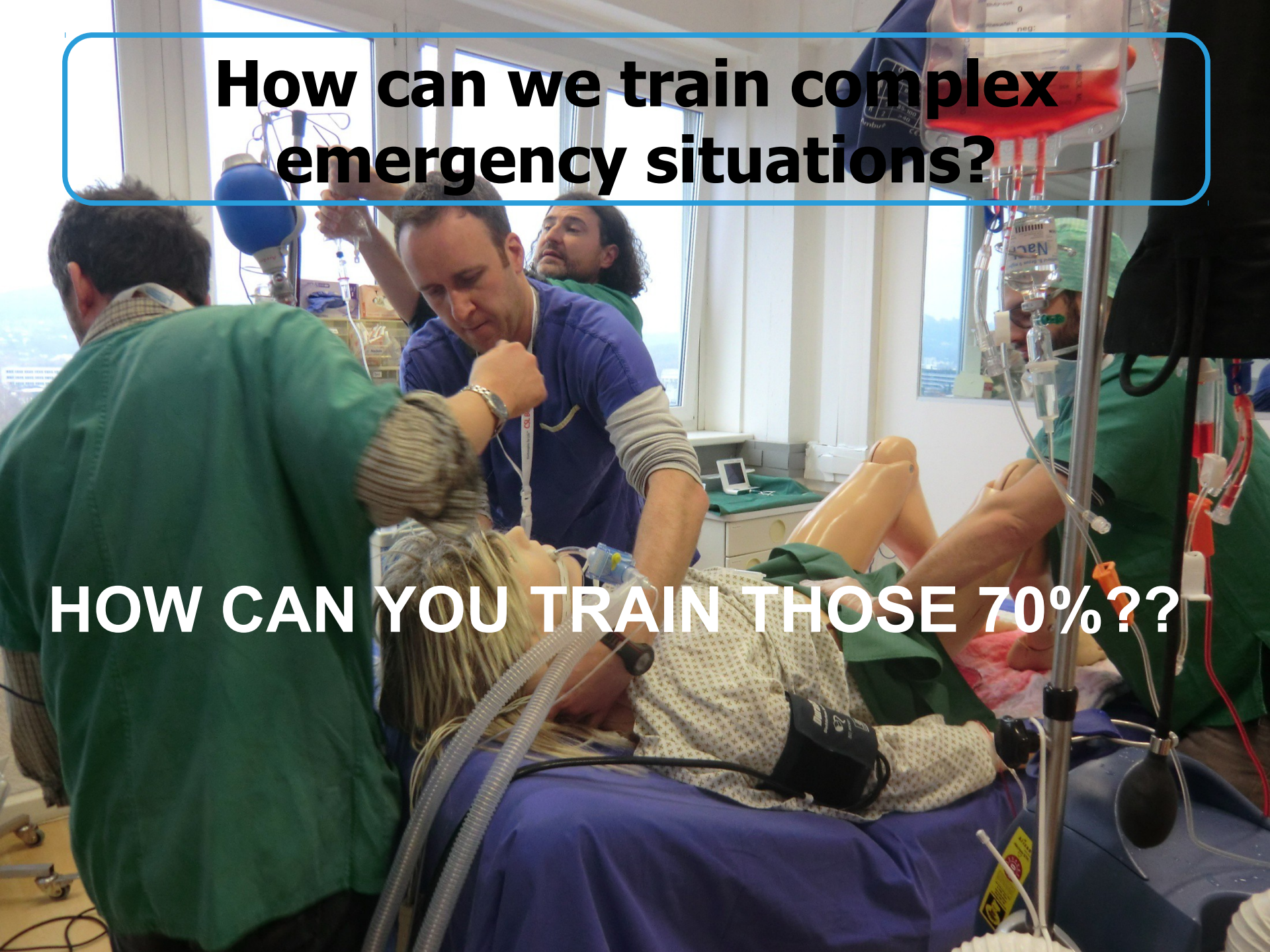
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**How can we train complex emergency situations?**

**HOW CAN YOU TRAIN THOSE 70%??**





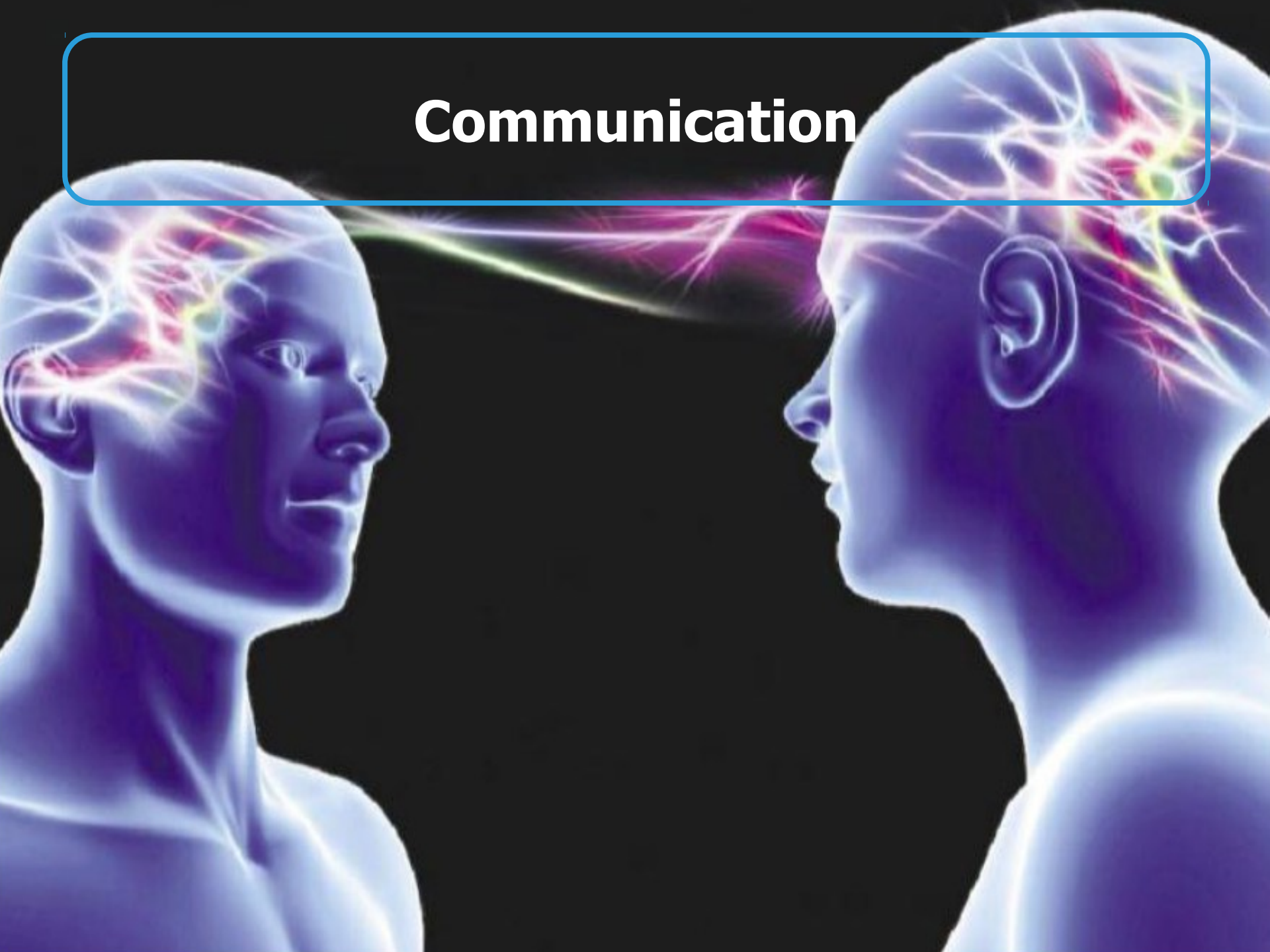
**Tool called :**

**„CRM“**

**Crisis resource management**

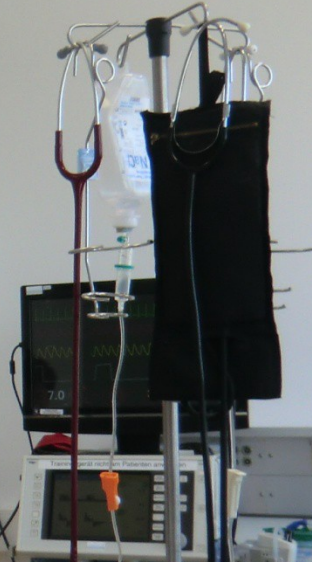
**INVOLVING**

# Communication

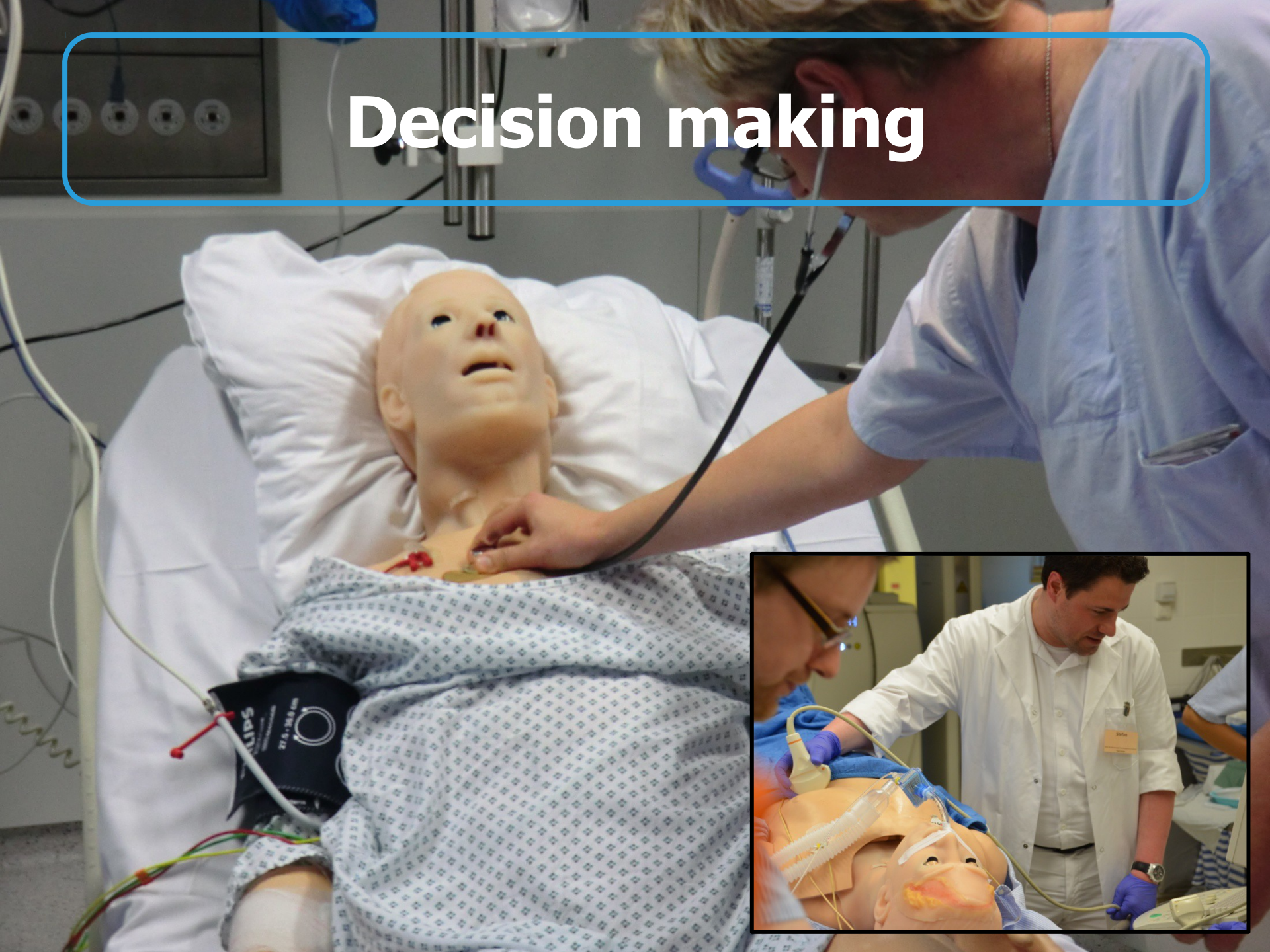




# Teamwork



# Decision making



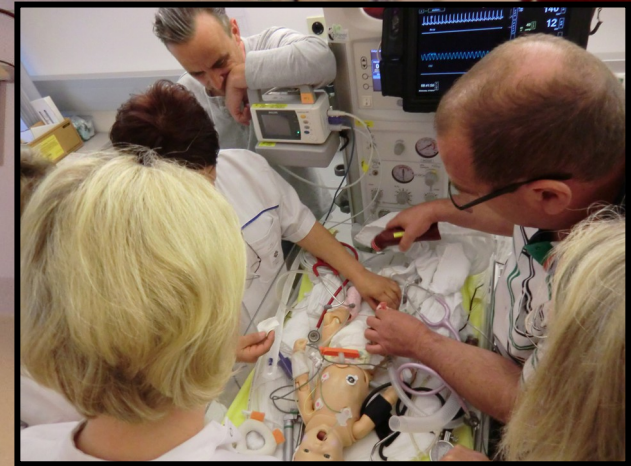
# Distribution of workload



# Situational awareness



# OTHERS LIKE: Know your work-place



**OTHERS LIKE:  
„Have doubts and double check“**



# OTHERS LIKE: Teamleading



A yellow rectangular sign with rounded corners and a black border is mounted on a vertical wooden post. The sign features the text "THE END IS NEAR." in bold, black, sans-serif capital letters. The background is a dramatic sky with dark, swirling clouds and patches of orange and yellow light, suggesting a sunset or sunrise.

**THE END  
IS NEAR.**



# Simulation Training

**SUCCESS**



~~to Err is Human~~

Building a Safer Health System  
report issued in November 1999 by the U.S.

To improve is human

To grow is human

To learn is human  
( Dr. Tony Kern )

**Thanks for your attention!**

**Questions?**

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