First aid and reanimation

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Schedule

- Week 1-5;15: Lecture
  - Week 6-10;11-14: Practice

● Lectures: Mondays 01:00 pm., Dep. Of OHC

● Pratical sessions:
  - Week 6-10: Simulation Center
  - Week 11-14
  - Week 10: Practical exam
  - Week 14: Written test
Requirements & tech info

- Practicals are compulsory (2 missed sessions are allowed)
- **IMPORTANT:** every student has to attend the practical sessions with their registered groups! No exceptions!
- Evaluation: practical grade (5 level)

- For an easier distribution of the lecture slides, please create a common email address and share with lecturers.
- Please use the back entrance of lecture halls (where applicable)
Further readings:


Oxyology

- the word is of greek origin;
- it means emergency medicine or critical care;
- created by Aurél Gábor, famous hungarian emergency doctor in 1973;
- spread in Hungary and in France;
- in everyday practice oxyology includes the prehospital part of emergency medicine.
Two fundamental approaches of the prehospital care

„scoop and run”

- Canada, GB, USA
- bring the patient to the hospital in as short time as it is possible and do not waste time on the scene with unnecessary or risky maneuvers.

„stay and play”

- in areas where medicine had been developed under franco-german influence (in Hungary as well)
- emphasises the necessity of stabilization on the scene, allows more interventions and more time spending on the field for the sake of stabilization
Hungarian oxyology traditionally follows the „stay and play” philosophy

- the lack of real Emergency Departments (system of EDs is under construction now)
- longer transportation time because of fewer great centres and not too good quality road-system
- „it’s worth” spending reasonable time on the scene to give the necessary/compulsory treatment to the patient
The necessary/compulsory treatment

- to eliminate danger of life;
- to prevent damage of organs;
- to diminish pain;
- to secure transportability.
The patient is not transportable without treatment if any of the followings exists:

- cardiac arrest (except for hypothermia);
- apnoe;
- airway obstruction;
- uncontrolled external bleeding;
- acute left ventricular failure;
- life-threatening cardiac arrhythmias;
- unmeasurably low or high BP;
- seizure;
- severe compression of the lungs (tension ptx, htx with severe respiratory failure);
- severe pain;
- some types of intoxication (organophosphates, nicotine, death-cup, etc.);
- second stage of labour;
- fracture without fixation.
Transportation trauma

- Physical components:
  - acceleration-deceleration;
  - lifting movement;
  - vibration.

- Psychological components:
  - fear of death;
  - suddenly changed situation of life.

- Transportation trauma can be reduced:
  - stabilization before transport;
  - fixation in the appropriate bodily position under transport;
  - careful transport;
  - airborne transport.
**Time-factor**

- A theoretical multiplier that correlates the absolute time to the actual dynamics of progression of the current disease.

<table>
<thead>
<tr>
<th>Disease</th>
<th>Time factor</th>
</tr>
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<tbody>
<tr>
<td>Complete airway obstruction</td>
<td>very high</td>
</tr>
<tr>
<td>Acute myocardial infarction</td>
<td>high</td>
</tr>
<tr>
<td>Renal colic</td>
<td>low</td>
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Levels of first aid

- recognition
- definitive care
- control under transport
- prehospital emergency care
- ask for help
- first aid
Hungarian National Ambulance Service

- Established in 1948
- Its predecessor started work in 1887
- Well organized, uniform organization
- Uniform professional principles
- Uniform communication system
- Consists of seven regional organizations
- The rescue is directly controlled by regional dispatch centers and their work is coordinated by the national dispatch center
Basic unit
Basic unit

- Staff: emergency medical technician (2 yrs. special training), car driver
- Equipments: bandages, splints, vacuum mattrasse, rigid collar, oxygen cylinder, ventilatory bag, suctioning device, oropharyngeal tubes, means of IV. access, medications for oral use and inhalation
- Automated External Defibrillator
Emergency unit (ALS unit)

- Staff: paramedic (4 yrs. in college), EMT, car driver
- Equipments (above basic unit): equipments for ALS (ECG device, defibrillator, means of intubation facility, broad range of drugs) pulseoxymeter, IV. fluid therapy, gastric lavage, perfusor, baby set, scoop stretcher
MICUs

- **Staff:** emergency physician, EMT, car driver
- **Most important devices and medication for prehospital emergency medical care**
- **Cardioversion, ventilatory machine, endocavitary pacemaker facility, anaesthesia**
Special units
Air rescue
As a first responder

- Keep calm!
- Assess situation.
- Protect the ill or injured from further harm.
- Give first aid.
- Call emergency number, if necessary.
- Inform professional rescuers.
- Stay with the patient until professional help arrives.
Emergency call (104 or 112)

- Location of the emergency
- Nature of complaint
- Number of persons who need help
- Condition of the victim(s)
- What aid is being given to the victim(s)
- Special needs (fire rescue team)
- Number from which the call is being made
Case Report

Performed for a credible voice in the recording. Without a name and address.

- Caller: Hallo. Ladies and Gentlemen ... we have a problem here ...... but I should be very quick, my wife wants to suffocate.
- Q: Does she have an asthma?
- A: Um ... yeah ...
- Q: What is your name?
- A: ... She does not have an asthma.
- Q: Then what?
- Answer: psiester…
- Q: What ..... Hello ...
- Answer: psychiatry, psychiatrist ......
- Q: What is it?
Answer: I can not say otherwise

Q: So is she now drowning? or what would you like to say, because I do not understand. Psychiatrist ... I agree ...

Answer: Yes ... I mean, that, that, that

Q: But what is that?

Answer: A Psychiatrist

Q: Is it your job? Or what?

A: No

Q: Then what?

A: She wants to kill herself

Q: What do you mean, did you raise her from the water?

A: Well, I doused everything she lay in it.

Q: In a bathtub?

A: Yes
Q: Well then drain the water?
A: It was not even plugged in. .... So it certainly stuck in the sponge
Q: Yeah. And now, what do you see on her? Is she breathing?
A: No, it is nothing.
Q: The ambulance unit has been deployed. So, she is not breathing?
A: No

(5 seconds) of silence ..............
Q: Are you at home alone?
A: Yes.
Q: Can you call your neighbor? You should take her out of the bath
A: I've highlighted
Q: So is she out from tub on the floor?
A: No, in the tub, but there is no water in the tub. -
Q: I do not understand ... so the water is not below ..
A: No, there is not
Q: Are you sure she is not breathing?
A: Yes .... I’ve been hitting her face for a half hour .
Q: Yeah, well .... I hope you are able to help her, pull her body down to a horizontal level and elevate her legs. We must start resuscitation ...Can you do it? Are you sure there is no neighbor who can help?
A: I am trying, but nothing, she is not moving .. do not ...
Q: Can you push her chest?
A: I try.
Q: You should pull her chest horizontal for she does not sit, and start
A: Please, if you talk so long, than she will die
Q: Well, but if I tell you what to do, will you do it? .. To pull her to the level of the tub and elevate her legs rest on the tiles somewhere, right? Her head should be horizontal.
A: Good, I will try. No, she is not moving ...
Q: Does she not respond to anything?
A: Nothing ....
Q: Place your face front of her nose and mouth! Be sure that she is not breathing?
A: Yes, well, it is a big sponge ...
Q: Can you send a kid to the neighborhood for you have adult’s help. And then ...
A: She just gone away.
Q: I see. Could you pull her a little below to the tub?
A: Um .... Her legs are below and the head and back .......
Q: Is she still sitting?
• A: Well, she is not sitting, so .. located halfway, semi-sitting
• Q: I am not sure you will able to push it? Her head and chest must be absolutely horizontal because this is the only way to push her chest and blow the air into the mouth or nose.
• A: She died during this time for sure
• Q: But I tell you what you should do, this should have been done Sir, push her body down in the tub so that she is not sitting in the tub, but her feet pointing up to the sky in the back of the pool in the horizontal section. Are you able to do this? While on the way to help .. Only in this way you will be able to push her chest 30times and blow two times in her mouth. Good? You have to lay her horizontally ..
• A: I did it
• Q: Could you push her below?
• A: Yes
Q: So, her legs are on top on the tile?
A: Yes
Q: Then you need to start pushing the chest 30 times. I will count. Hands-free phone?
A: Well, it is not loud enough.
Q: Good, then I will say it louder so you can hear me. Good? Are you ready to start?
A: Good, yes.
Q: Place your palm in the middle of the chest, then push it 30 times, after that, blow into her mouth twice. Good? Ready? Here we go ..?
A: Moments ..
Q: One, two (. Counting to 30 ..) ... Did you close her nose, a little tilt her chin .... Got it?
A: What?
Q: ... and blow into the mouth twice
A: Well, it is no mouth, full with sponge
Q: Take it out from her mouth ... little silence .. succeed?
A: I cannot
Q: Push under her chin a little and extend into. Succeed? …Can you do it?
A: No, nothing
Q: Open her mouth ... see if there is anything there still?
A: The whole head is a sponge
Q: What?
A: The whole head is a sponge
Q: What does it mean that the whole head is a sponge.
A: Well, it is an elephant ..
Q: Look into whether there is something in her mouth, sir
A: It is no mouth ...
Q: She does not have a mouth??

Silence (15 seconds)
Hello .... hello .......... Sir, are you here?
A: Yes
Q: What do you see? Is there something in her mouth?
R: (muttering something)
Q: What is it?
R: (muttering again)
I do not understand what you are saying, hello ....... hello .......
A: I do not hear anything inside, I do not hear anything inside.
Q: So there is nothing in her mouth? (Louder)
A: No
Q: So could you blow twice in her mouth? Shall we continue?
You just keep pushing her chest, right?
Good? 20…Sir, are you pushing…?
A: Moments
Q: What do you do .... hello ........ hello
A: I thought ambulance unit is coming .............
Q. But do not worry about that now, the kid will let them come in ..........
A: She went to sports
Q: Who went to play sports?
A: She went to sports
Q: Who went to play sports?
A: The older girls .... ... I mean, my grandchild, silence ......not long ago

Q: Are you at home alone? Where are you going now, because I hear, that the door is opening ......... hello ....hello……hello…..

(Meanwhile can hear, that ambulance unit arrived.... patient management finish the calling, because nobody answering…..:

The arrived emergency unit found this in the tub…
Thank you for your attention!