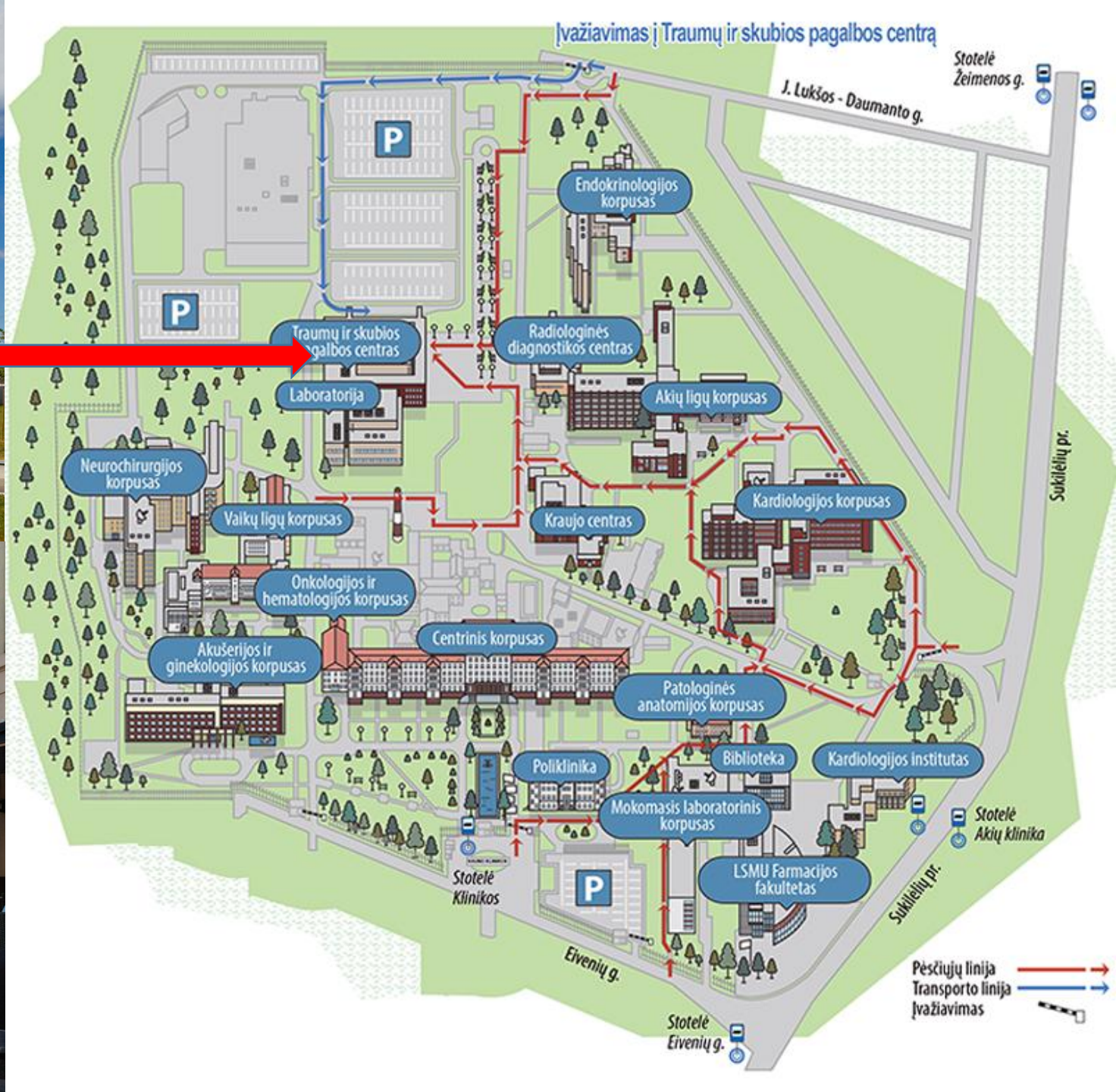
Pre-oxygenation & Oxygenation Skills in the ED

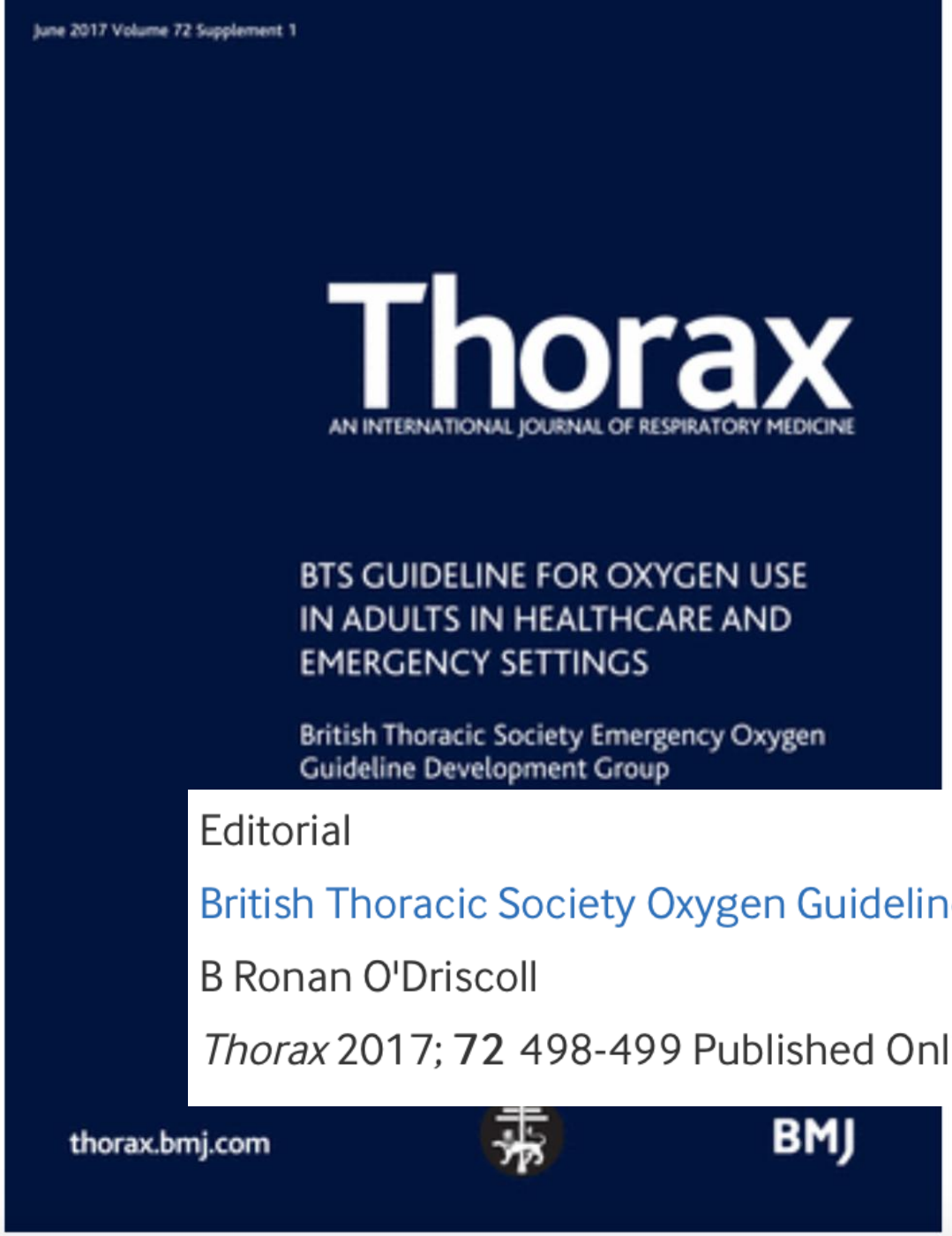
Prof. D. Vaitkaitis

Disclosure

LITHUANIAN UNIVERSITY
OF HEALTH SCIENCES


2015


Įvažiavimas į Traumų ir skubios pagalbos centrą
Stotelė Žeimenos g.
J. Lukšos - Daumanto g.
Endokrinologijos korpusas
Traumų ir skubios pagalbos centras
Radiologinės diagnostikos centras
Laboratorija
Akių ligų korpusas
Neurochirurgijos korpusas
Vaikų ligų korpusas
Kraujo centras
Kardiologijos korpusas
Onkologijos ir hematologijos korpusas
Centrinis korpusas
Akušerijos ir ginekologijos korpusas
Patologinės anatomijos korpusas
Poliklinika
Biblioteka
Kardiologijos institutas
Mokomasis laboratorinis korpusas
Stotelė Akių klinika
Stotelė Klinikos
LSMU Farmacijos fakultetas
Sukilėlių pr.
Eivenių g.
Stotelė Eivenių g.
Pėsčiųjų linija
Transporto linija
Įvažiavimas



Editorial

British Thoracic Society Oxygen Guidelines: another clinical brick in the wall

B Ronan O'Driscoll

Thorax 2017; **72** 498-499 Published Online First: 15 May 2017. doi: 10.1136/thoraxjnl-2017-209951

British Thoracic Society

British Thoracic Society Guideline for oxygen use in healthcare and emergency settings

Key messages for doctors

www.brit-thoracic.org.uk

O'Driscoll BR et al Thorax 2017; 72: Suppl 1 i1-i89

This presentation was last updated on 12/05/2017

Oxygen - there is a problem

Published audits have shown that…

- Doctors and nurses have a poor understanding of how oxygen should be used
- Oxygen is often given without a prescription

(In the 2015 BTS audit, 42% of hospital patients using oxygen had no prescription)

- If there is a prescription, patients do not always receive what is specified on the prescription
- Where there is a prescription with target range, almost one third of patients are outside the range

(9.5% of SpO_2 results below target range and 21.5% above target range in 2015 BTS audit)

O'Driscoll BR et al Thorax 2017; 72: Suppl 1 i1-i89

Summary

1. **Prescribe oxygen to a target saturation for each group of patients**
   - **94 - 98% for most adult patients**
   - **88 - 92% if risk of hypercapnia**

     (or patient-specific target on alert card)

1. **Administer oxygen to achieve target saturation**

2. **Monitor oxygen saturation and keep in target range**

3. **Taper oxygen dose and stop when stable**

4. **Audit your practice**

O'Driscoll BR et al Thorax 2017; 72: Suppl 1 i1-i89

Own the Oxygen!

April 16, 2012 by **Chris Nickson**

By now everyone should have read this paper:

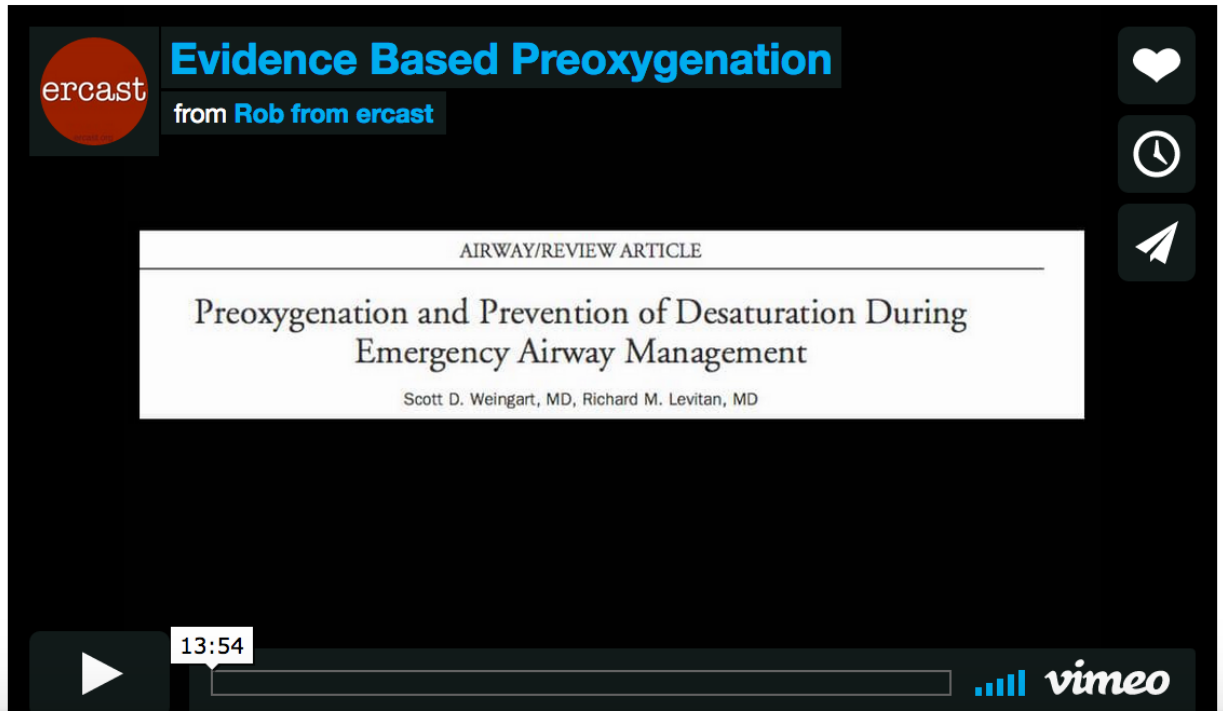
> Weingart SD, Levitan RM. **Preoxygenation and Prevention of Desaturation During Emergency Airway Management.** Ann Emerg Med. 2012 Mar;59(3):165-75.e1. Epub 2011 Nov 3. Review. PubMed PMID: 22050948.

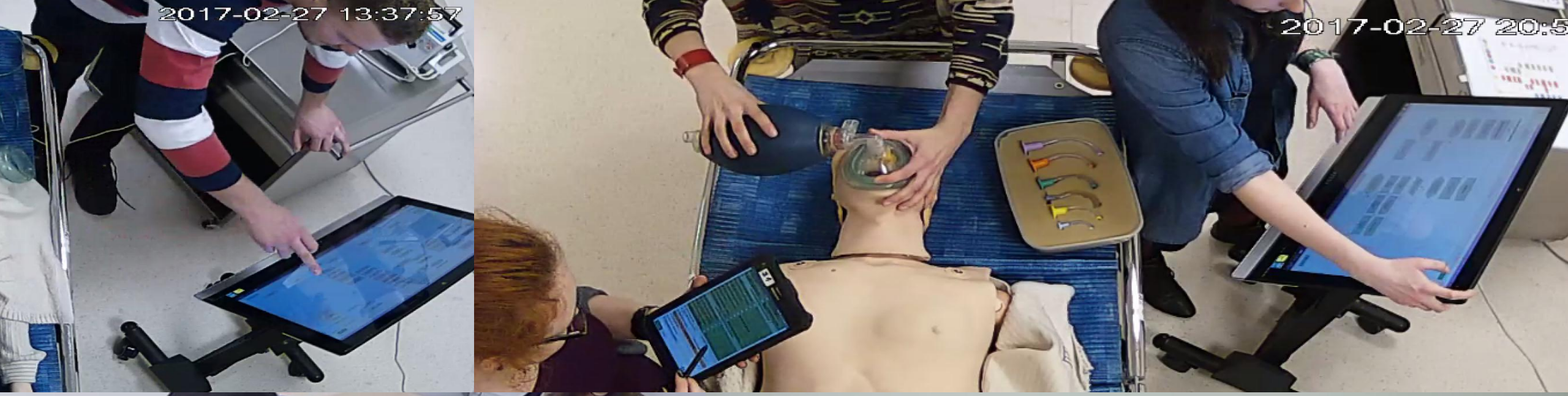
Explain it: Preoxygenation

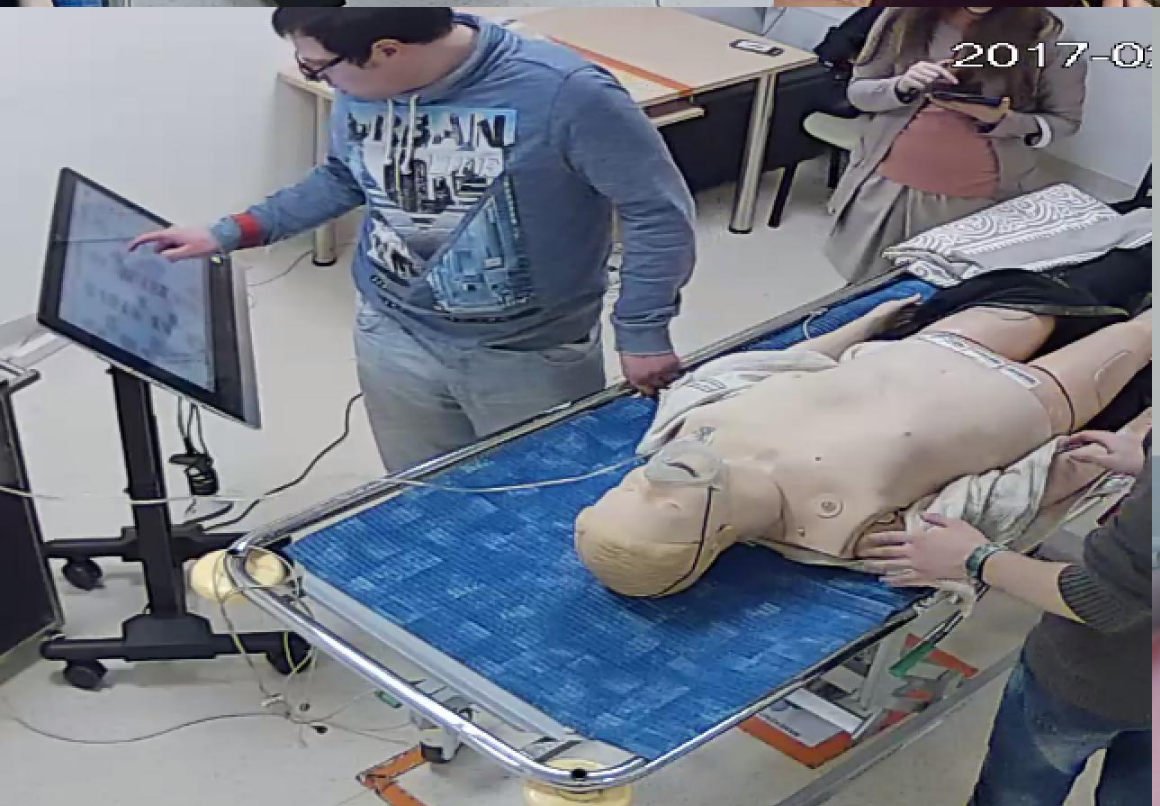
APRIL 14, 2012 BY ROB ORMAN — 6 COMMENTS

Reference:

- Review of the Annals of Emergency Medicine By Weingart and Levitan: Preoxygenation and Prevention of Desaturation during emergency airway management.




2017-02-27 13:37:57
2017-02-27 20:5


2017-0


TRANSPORT STRETCHER

Interactive board 65”

PTZ IP video camera

HLAB giraffe

Video server

Integration and management of video and audio records, e-learning and simulation. Licence for one working place (training class)

Installation, user training and maintenance

IP video camera

Laptop and barcode scanner

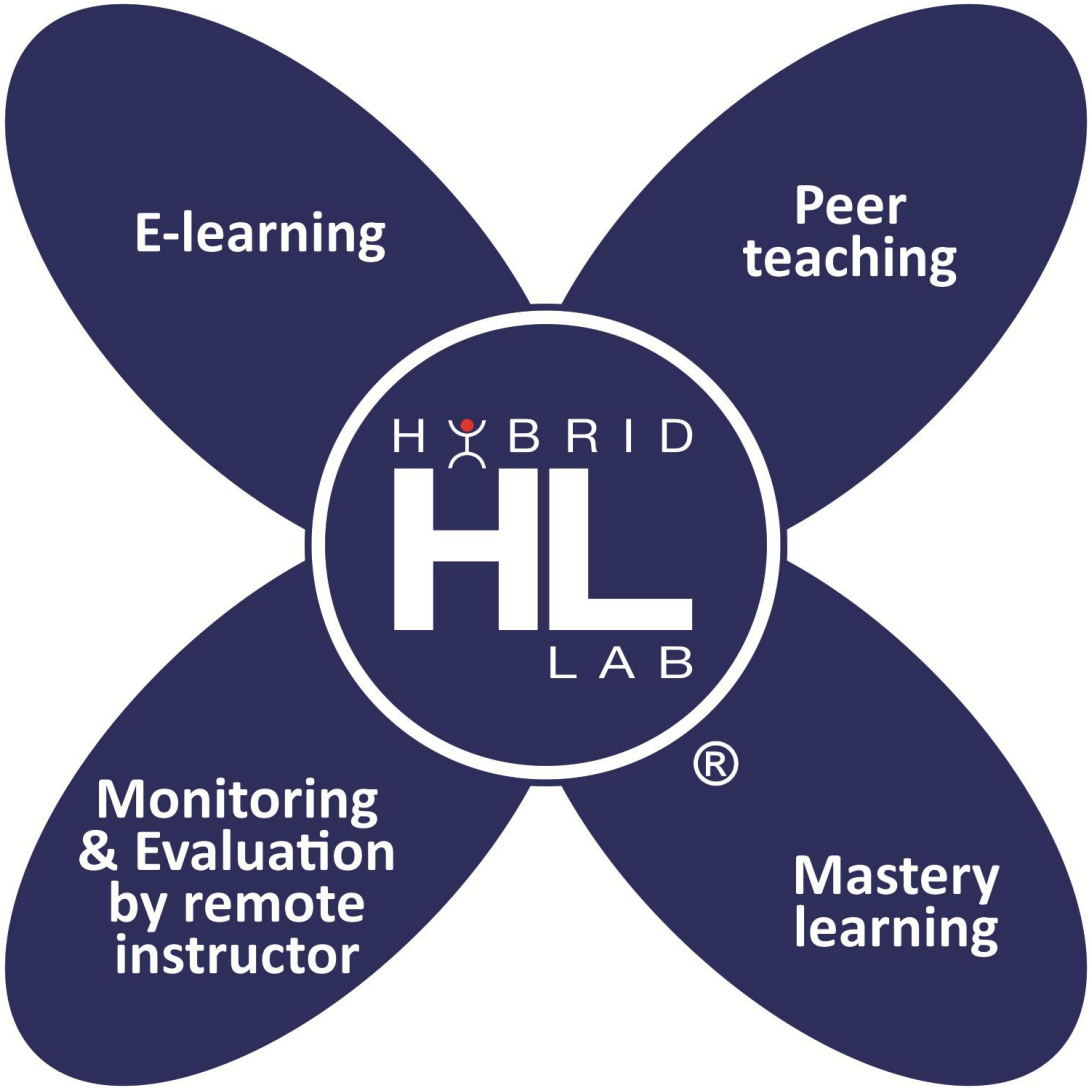
Electronic door lock

Tablet

Programmable entrance keys

HybridLab

24/7 Simulation with Remote Instructor



VLE

24/7 Simulation with Remote Instructor

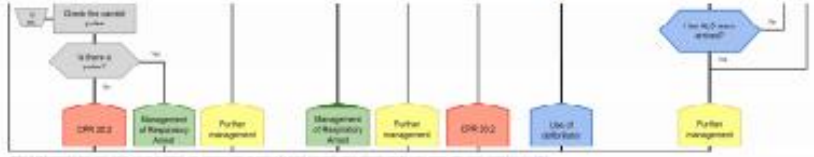
1

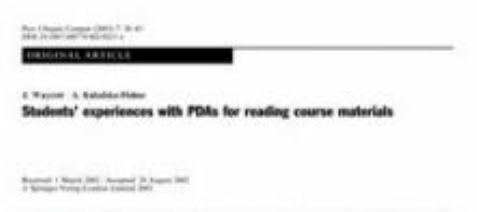
Tests

Course evaluation

Scenarios

Instructional algorithms

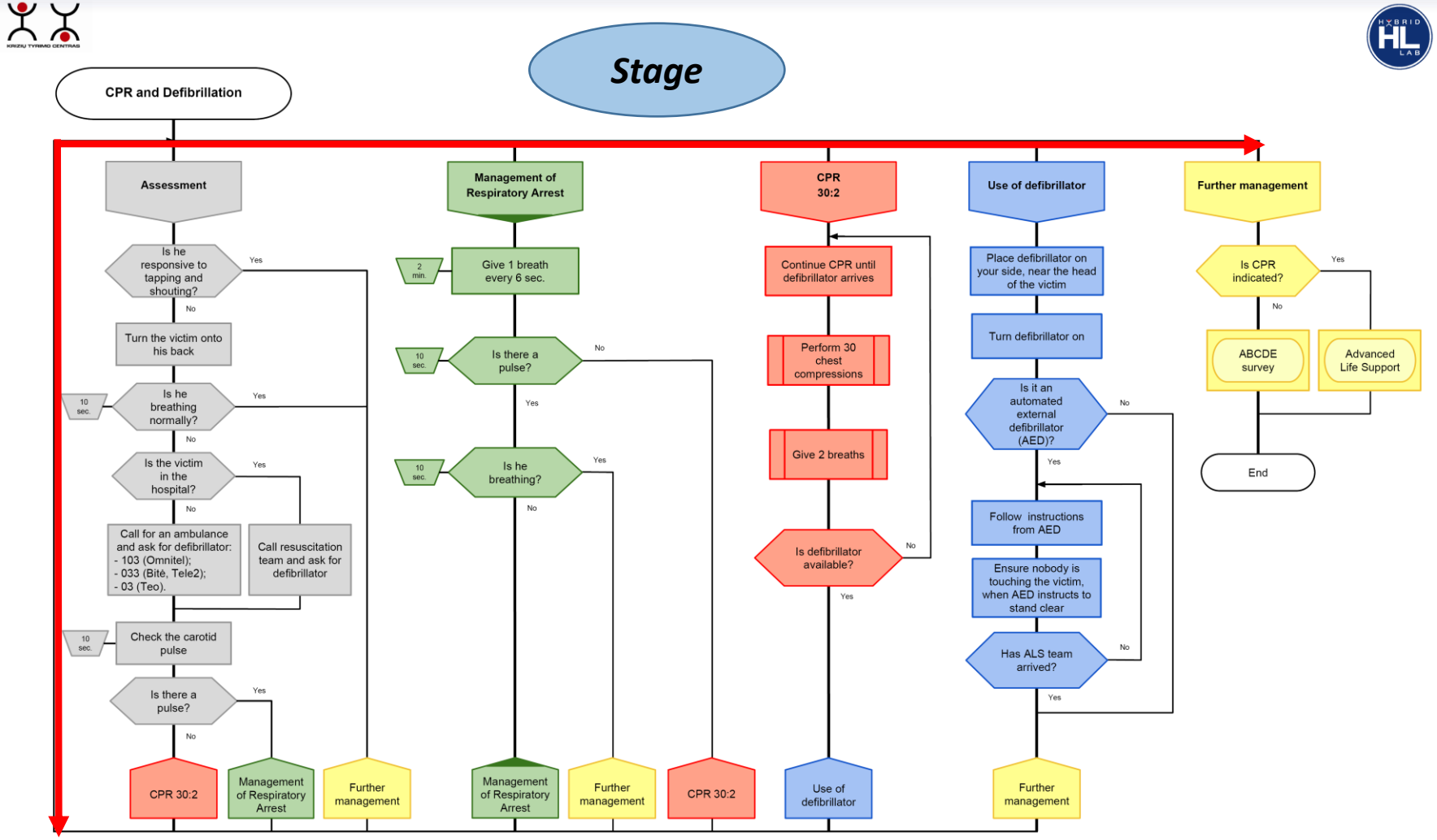




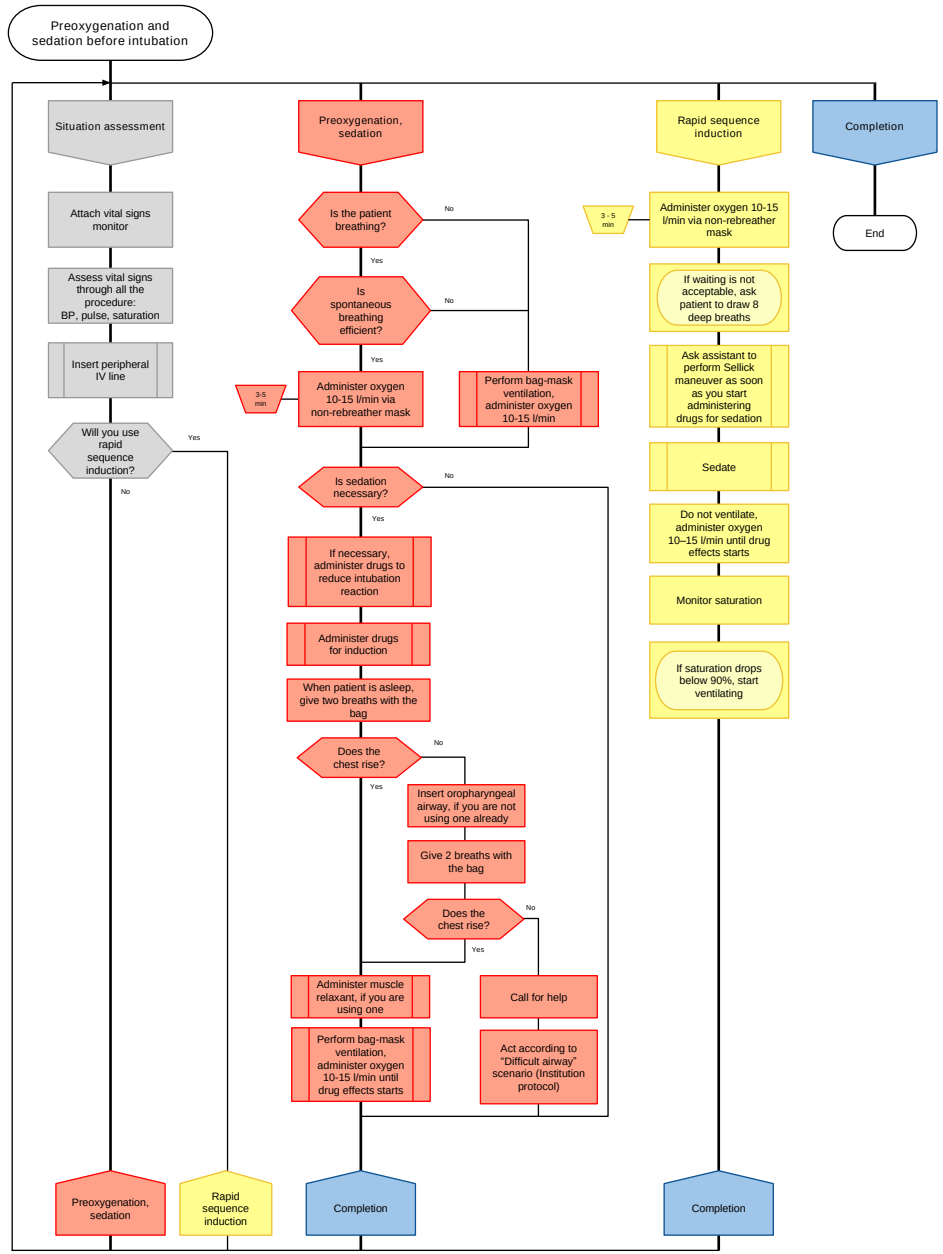
Course material

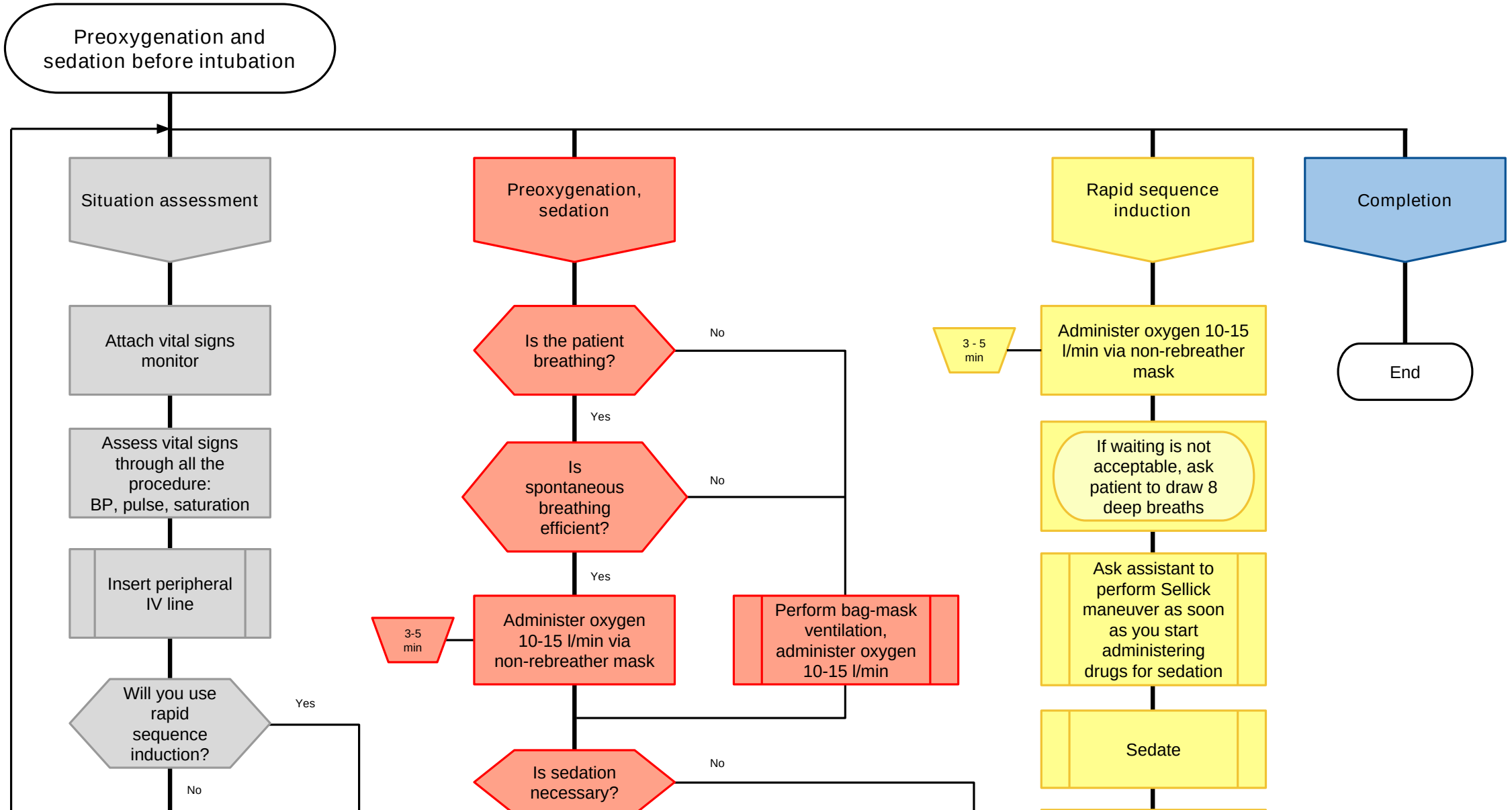
Algorithms

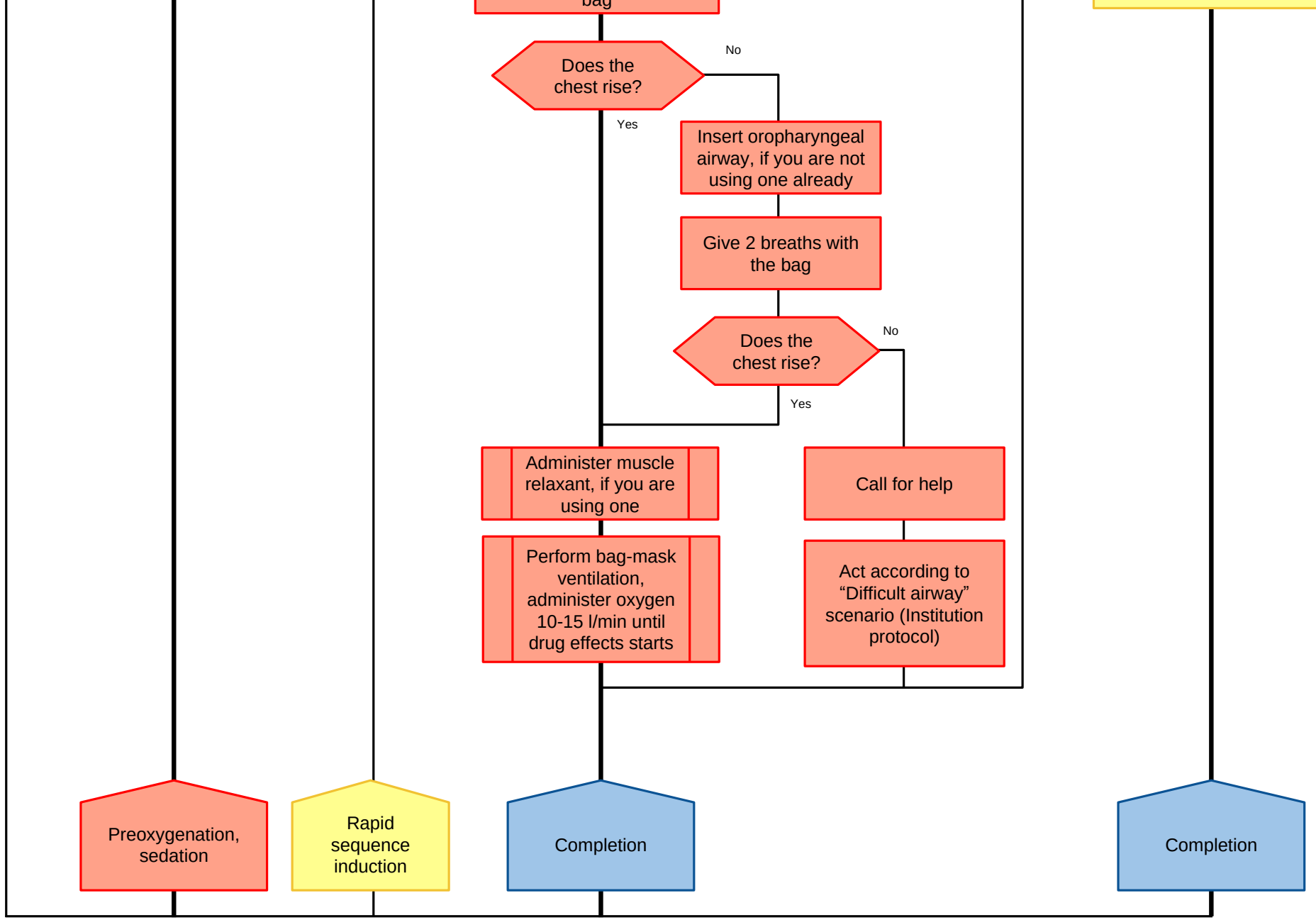
2



Step




Preoxygenation and sedation before intubation
Situation assessment
Attach vital signs monitor
Assess vital signs through all the procedure: BP, pulse, saturation
Insert peripheral IV line
Will you use rapid sequence induction?
Yes
No
Preoxygenation, sedation
Is the patient breathing?
No
Yes
Is spontaneous breathing efficient?
No
Yes
3-5 min
Administer oxygen 10-15 l/min via non-rebreather mask
Perform bag-mask ventilation, administer oxygen 10-15 l/min
Is sedation necessary?
No
Rapid sequence induction
3 - 5 min
Administer oxygen 10-15 l/min via non-rebreather mask
If waiting is not acceptable, ask patient to draw 8 deep breaths
Ask assistant to perform Sellick maneuver as soon as you start administering drugs for sedation
Sedate
Completion
End



Preoxygenation and sedation before intubation

Situation asse

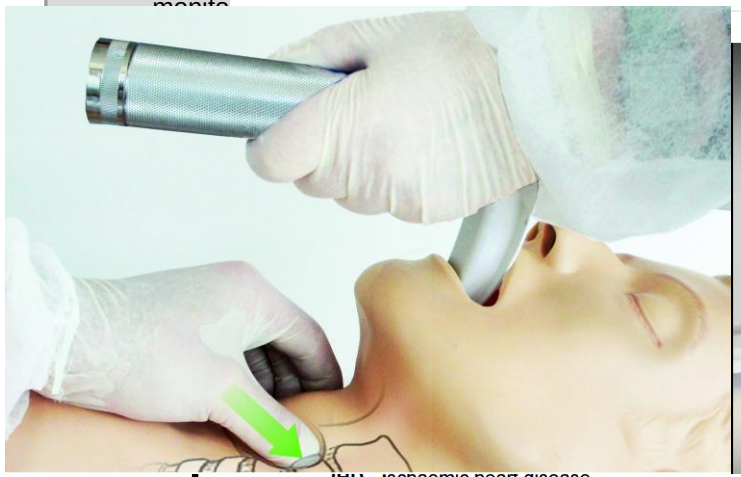
Attach vital
monito

Will you u
rapid
sequence
induction?

No

PRINCIPLES OF SEDATION

Pretre Video



IHD - Ischaemic heart disease
HR- heat rate

Is sedation necessary?

No

Rapid sequence induction

ter oxygen 10-15
a non-rebreather
mask

vaiting is not
eptable, ask
ent to draw 8
ep breaths

assistant to
form Sellick
euver as soon
s you start
ministering
drugs for sedation

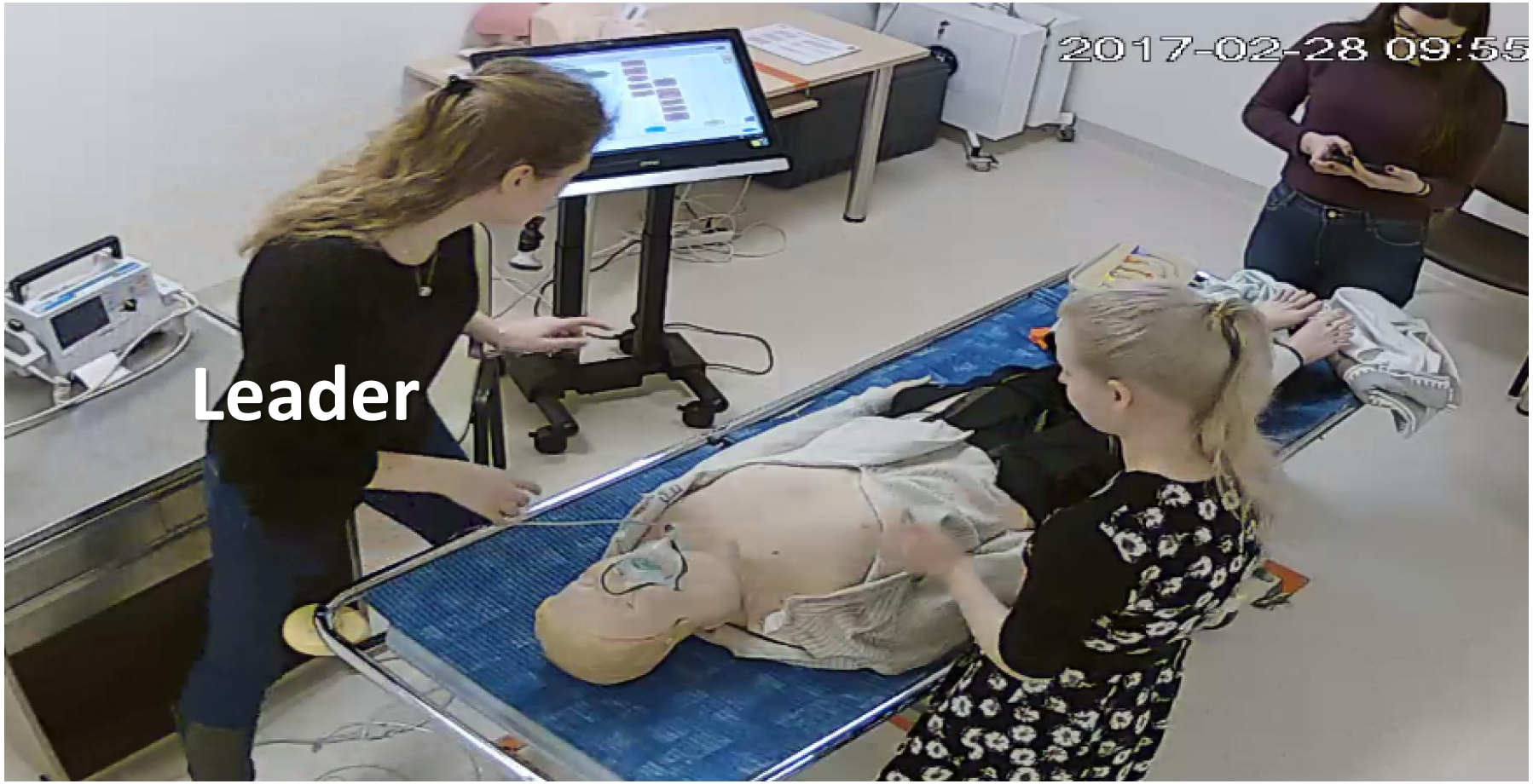
Sedate

Completion

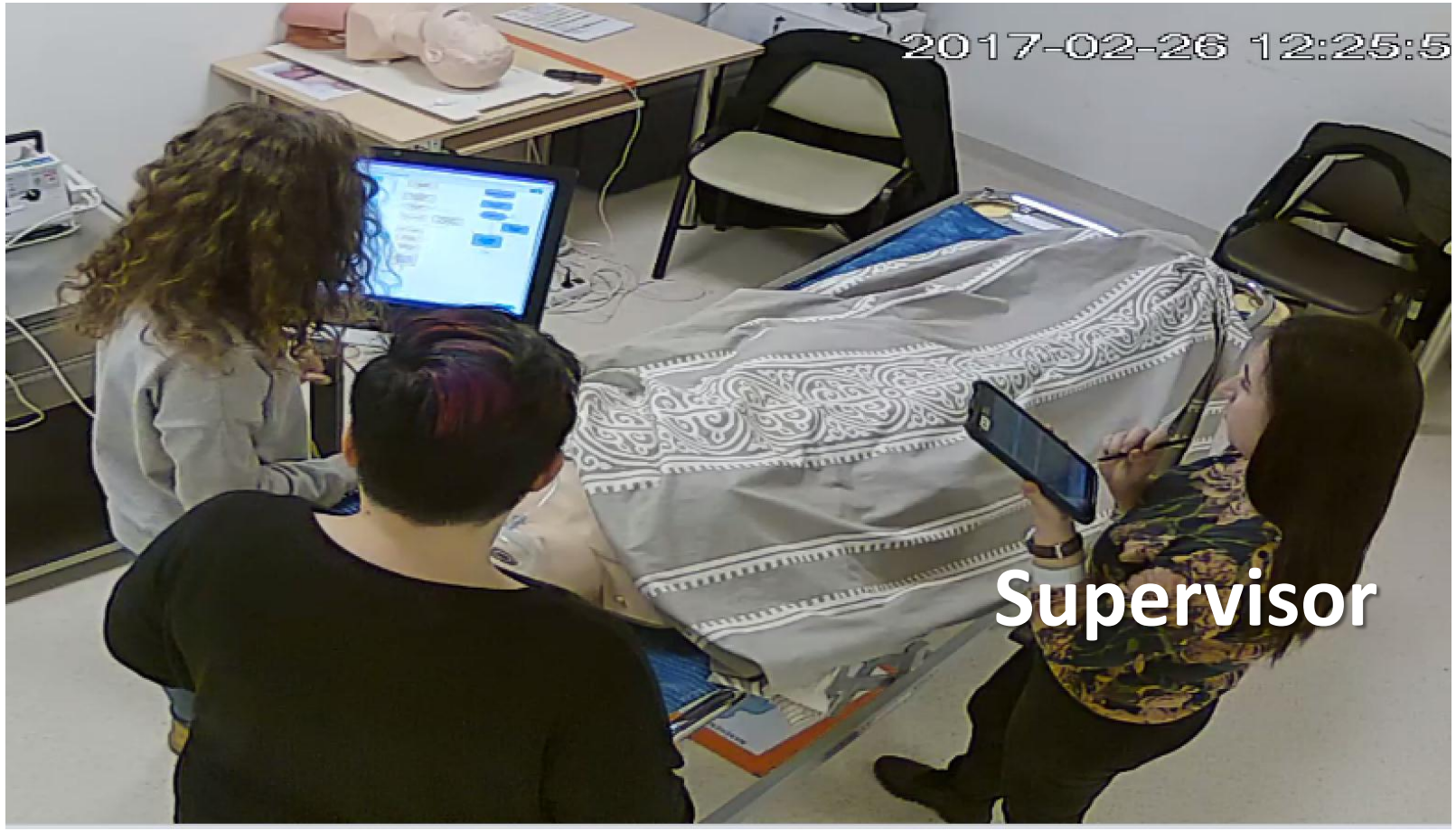
End

Simulation and peer training

Leader reads algorithms and performs tasks



Supervisor runs the scenario and gives feedback



Instant feedback and formative assessment

1.3

Scenario

BASIC LIFE SUPPORT

Information before starting the scenario

1. Algorithms No. 1, 2, 3 are used in this simulation
2. The patient should be examined as in real life situation.
3. Instructor will describe the course of the simulation only after the team leader has completed the examination.
4. Simulation is complete when all actions marked in bold have been performed.
5. During simulation do not look at the algorithm (👁), read the actions out loud (🔊), perform the action (🔨).
6. Before the simulation turn on the manikin ("Ann")
7. Press Log button to record your results
8. Use bag-mask device for ventilations
9. When the simulation is complete, press short and print the result
10. During this simulation an assistant plays a role of a shocked neighbor, who is crying, shouting, that the ambulance is late, and disturbs the leader in other ways without touching him/her (stops acting when the ambulance arrives)

Your frightened neighbor rings your door bell. Her son has lost consciousness. She asks for your help, because she knows that you are a student at LUHS. When you come to your neighbor's flat, you find her sun lying face down on the floor.

No.	Steps of the algorithm (performed by the leader and assistant)	✓	Course of the scenario (the supervisor **reads out loud** - only the text that is marked black)
1.	*ASSESSMENT*		
2.	Is he responsive to tapping and shouting?	○	Unresponsive to shake and shout
3.	Turn the victim onto his back	○	
4.	Is he breathing normally? (no longer than 10 s.)	○	Not breathing
5.	Is the victim in the hospital?	○	Yes
6.	Call for an ambulance and ask for defibrillator: - 103 (Omnitel); - 033 (Bitė, Tele2); - 03 (Teo).	○	Must address the team member by his/her name
7.	Check the carotid pulse (no longer than 10 s.)	○	
8.	Is there a pulse?	○	No pulse
9.	*CPR 30:2*		
10.	Continue CPR until defibrillator arrives	○	
11.	Perform 30 chest compressions	○	
12.	Give 2 breaths	○	After two rescue breaths the instructor tells that stomach contents begin to flow through the patient's mouth
13.	Turns the patient's head and clears the mouth	○	
14.	Continues CPR 30:2	○	In real life situation resuscitation without rescue breathing would suffice (outside the hospital)
15.	Is defibrillator available?	○	Defibrillator is not available
16.	Continues performing CPR 30:2 without interruptions	○	Does not pass, if repeats the pulse check (must perform 5 cycles 30:2)
17.	Asks if the ambulance has arrived	○	The ambulance arrives after 5 cycles 30:2. Then defibrillator is brought and the assistant starts performing compressions (no acting!)
18.	*USE OF DEFIBRILLATOR*		
19.	Place defibrillator on your side, near the head of the victim	○	
20.	Turn defibrillator on	○	
21.	Is it an automated external defibrillator (AED)?	○	Defibrillator is automated
22.	Follow instructions from AED	○	
23.	Ensure nobody is touching the victim, when AED instructs to stand clear	○	
24.	Has ALS team arrived?	○	No
25.	After defibrillation resumes CPR with chest compressions	○	The simulation ends when 30 chest compressions have been performed after defibrillation
26.	All actions have been performed in indicated sequence	○	
27.	*QUALITY OF BASIC LIFE SUPPORT*		
28.	Compression depth > 50mm	○	Average compression depth (first line)
29.	Compression rate 100-120 times/min.	○	Average compression rate (third line)
30.	90% and more compressions are correct	○	Percent correct (sixth line)
31.	Interruptions in chest compressions shorter than 10 s.	○	
32.	During ventilations the patient's chest rises	○	The student passes, if patient's chest rises after every rescue breath

qualitative

Helper aids during the simulation

Then students switch roles...

Evaluation

3

Instructor monitors and evaluates student's performance:

- From the distance
- At convenient time
- Feedback
- Formative evaluation
- Summative assessment

Evaluation

3

Visi punktai: 100%

BŪKLĖS ĮVERTINIMAS

- ☑ Ar reaguoja pajudinus ar pašaukus?
- ☑ Paguldyk ant nugaros
- ☑ Ar kvėpuoja normaliai? (ne daugiau kaip 10 sek.)
- ☑ Ar įvykis ligoninėje?
- ☑ Kviesk GMP
- ☑ Reikalauk defibriliatoriaus
- ☑ Patikrink miego arterijos pulsą
- ☑ Ar yra pulsas? (ne daugiau kaip 10 sek.)

PRADINIS GAIVINIMAS 30:2

- ☑ Gaivink, kol bus atneštas defibriliatorius
- ☑ Atlik 30 krūtinės paspaudimų
- ☑ Atlik 2 įpūtimus

DEFIBRILIATORIAUS NAUDOJIMAS

- ☑ Pasiruošimo metu atliekami krūtinės ląstos paspaudimai (iki tol, kol AID liepia atsitraukti)
- ☑ Padėk defibriliatorių prie paciento galvos toje pusėje, kurioje esi
- ☑ Įjunk defibriliatorių
- ☑ Vykdyk AID nurodymus
- ☑ Užtikrink, kad niekas neliestų paciento, kai AID liepia atsitraukti
- ☑ Po defibriliacijos atnaujina gaivinimą nuo paspaudimų

PRADINIO GAIVINIMO KOKYBĖ

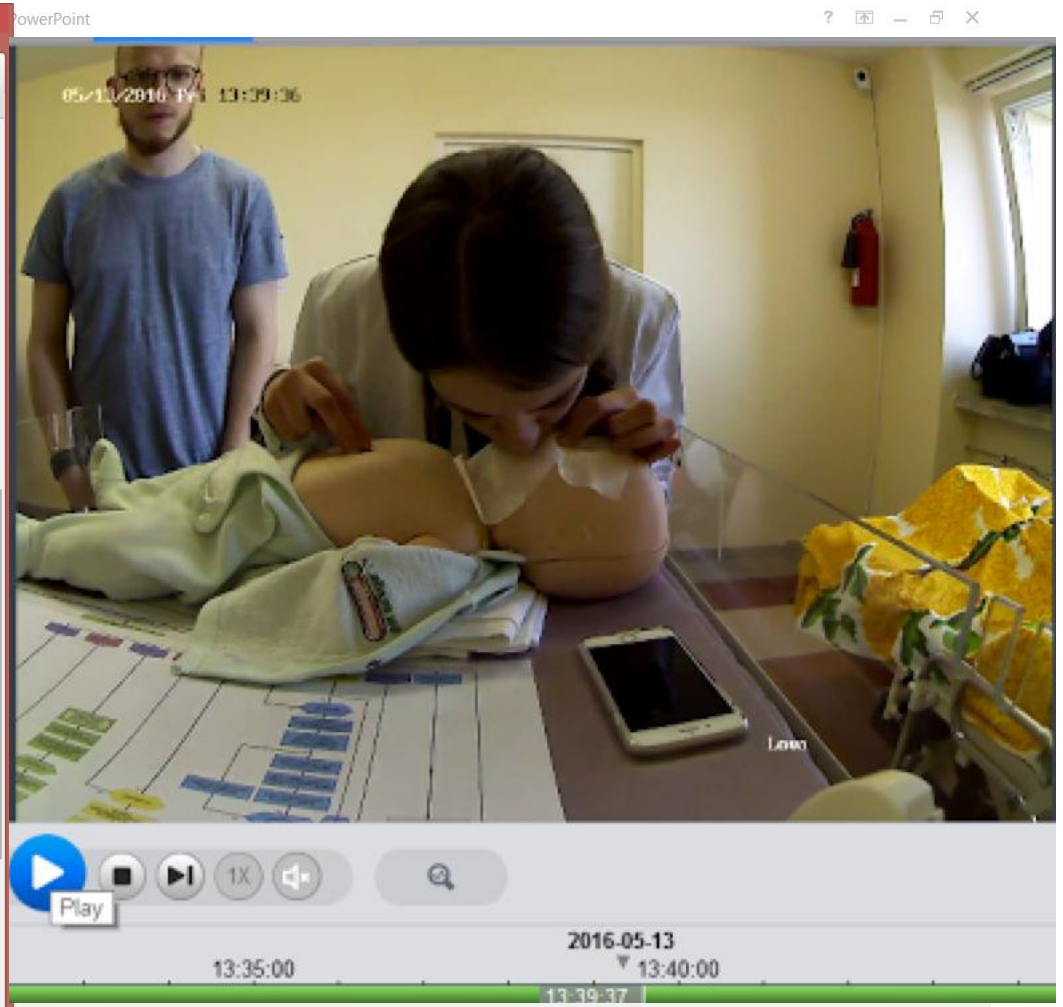
- ☑ Paspaudimų gylis >50 mm
- ☑ Paspaudimų dažnis 100-120 k./min.
- ☑ Pauzės be paspaudimų trumpesnės nei 10 sek.
- ☑ Įpūtimų metu kyla krūtinės ląsta
- ☑ Atliko visus veiksmus teisinga seka

Checklist

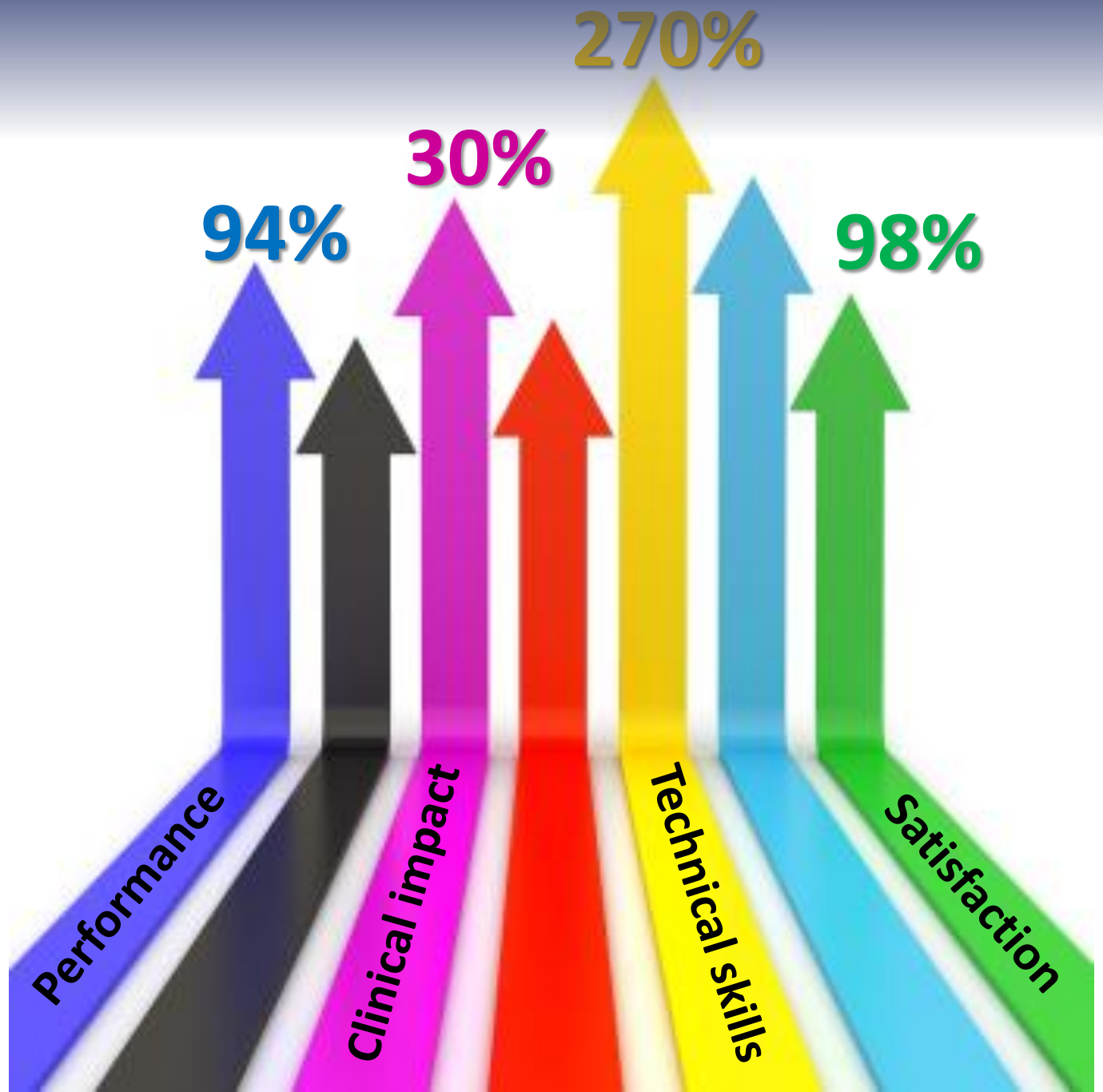
Komentaras / el.paštas:

Jūsų kūno padėtis paspaudimų metu: Jūs buvote šiek tiek pasisukusi į manekeno galvos pusę, todėl ir rankas laikėte truputį įstrižai krūtinės ląstos atžvilgiu. Atminkite, jog turite žiūrėti tiesiai prieš save, rankos tiesiai prieš Jus, nes kitaip

Comment to a student



Results


270%
30%
94%
98%
Performance
Clinical impact
Technical skills
Satisfaction

In situ simulation & clinical audit

Summary

- Guidelines
- Local protocols ->checklists
- Training
- Audit system