

# Prehospital Emergency Care of Obstetric and Pediatric Patients - IP Team-teaching Improves Patient Safety

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Dublin January 10, 2019



The Market Square, Oulu

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# Prehospital Emergency Care of Obstetric and Pediatric Patients (3 ECTS)

## Course Design (1/2)

### Background

- Paramedic **students feedback**:  
Uncertainty about management of childbirth  
EMS-doctor / midwife "on the road", rarely possible...
- Lack of possibilities for practical training on delivery ward
- Centralization of care in Finland  
Required 1000 childbirths / year → maternity hospital closures
- [Fertility rate decreases, total fertility rate at an all-time low](#) (Statistics Finland)
- Increased number of immigrants
- Longer distances to hospitals
- Increasing number of OHDs
- Risks in outside of hospital deliveries (OHD) are 4 x greater  
→ **Something needed to be done**

# Prehospital Emergency Care of Obstetric and Pediatric Patients (3 ECTS) Course Design (2/2)

**Interprofessional team-teaching combined with multiform learning**

→ Excellent possibility to improve obstetric patient safety

Design of the new course

- based on real-life cases
- combined midwifery competence
  - WHAT paramedics need to know and need to do
- with paramedic competence
  - HOW it's possible in special environment, out of hospital, in Northern Finland

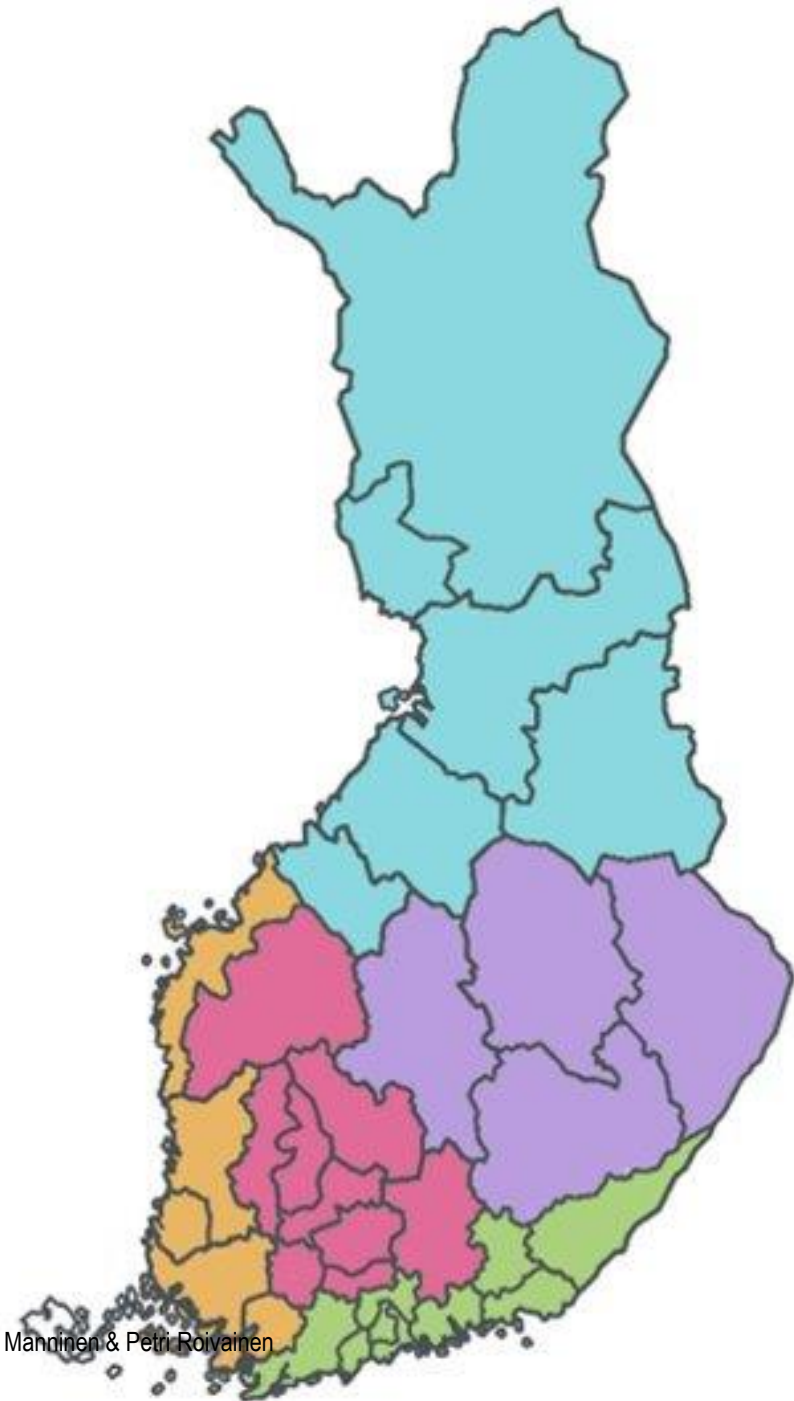
**Since 2015**

**Design, implementation and evaluation of the new course with IP team-teaching**

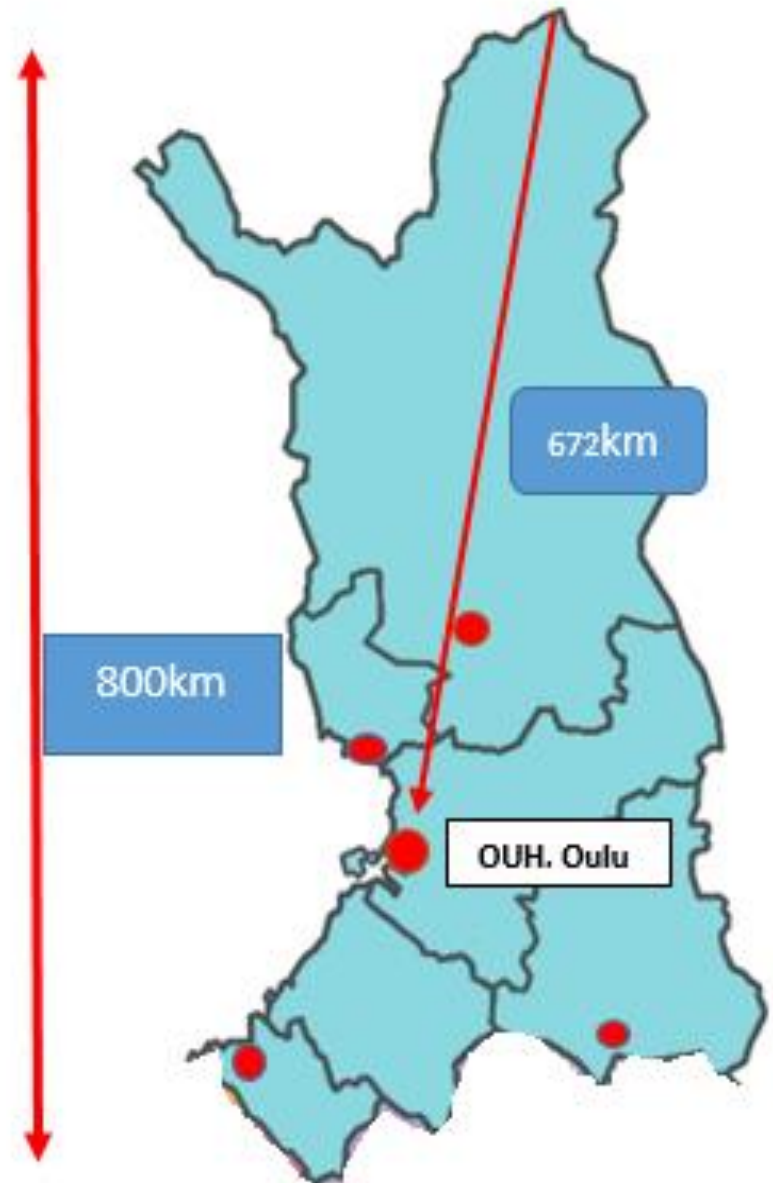
- After basic studies (for example EMT, obst, gyn & ped)
- For 3rd year paramedic students new "advanced clinical skills" course

# Social and Health Services in Finland

- › All social welfare and healthcare services are delivered by five regional providers, based on current, **specific catchment areas (ERVA)**
- › Oulu University Hospital (OUH)
- › OYS in Finnish
- › OUH – ERVA more than 50% of surface area of Finland
- › Only 742 000 / 5.5 million inhabitants



- › Oulu University Hospital  
OUH (OYS) - ERVA
- › 4 district hospitals
- › 2019: 5 maternity hospitals
- › LONG distances
- › For patients and students





# Synnyttäjien lukumäärä 1987–2017

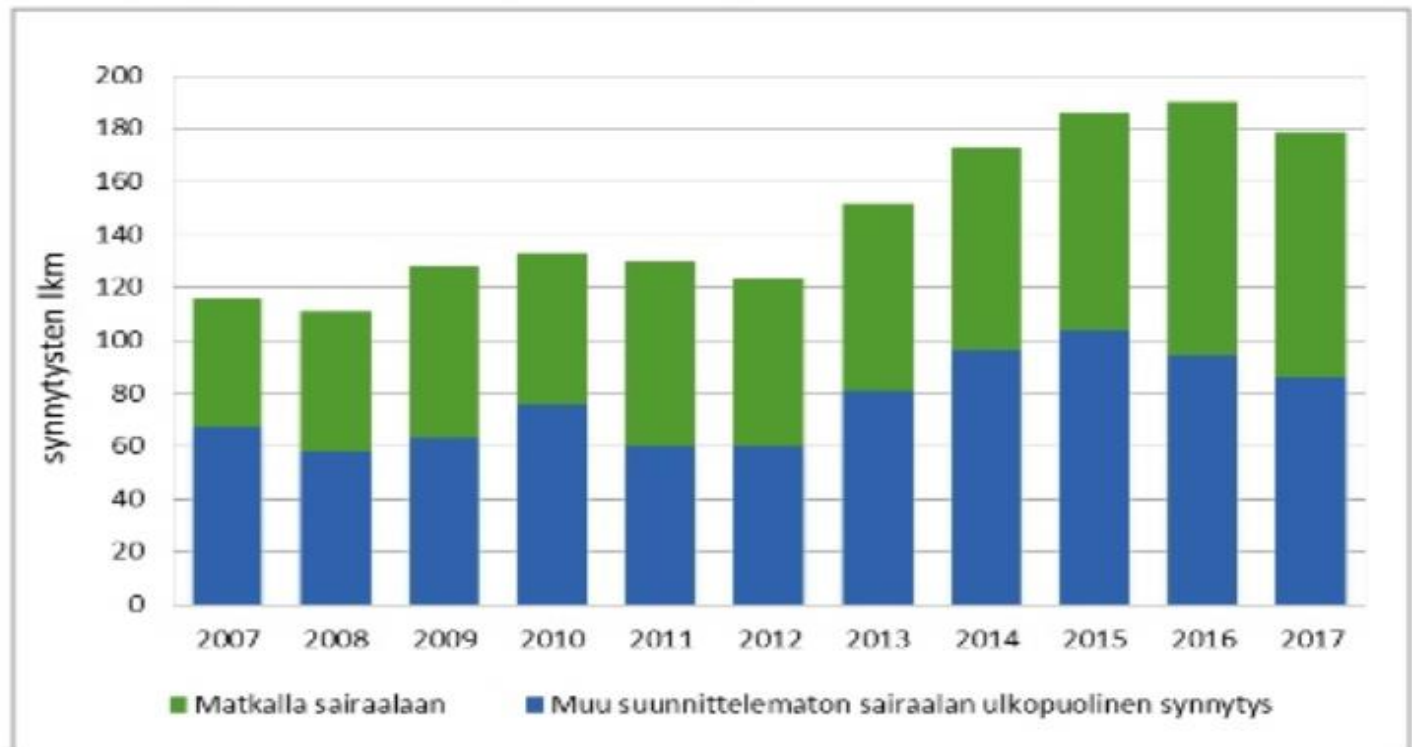
## childbirths



# Childbirths (2017) n=50151 (50854 children)

Unplanned  
OHDs  
in Finland  
2007 - 2017

## Suunnittelemattomat sairaalan ulkopuoliset synnytykset vuosina 2007–2017

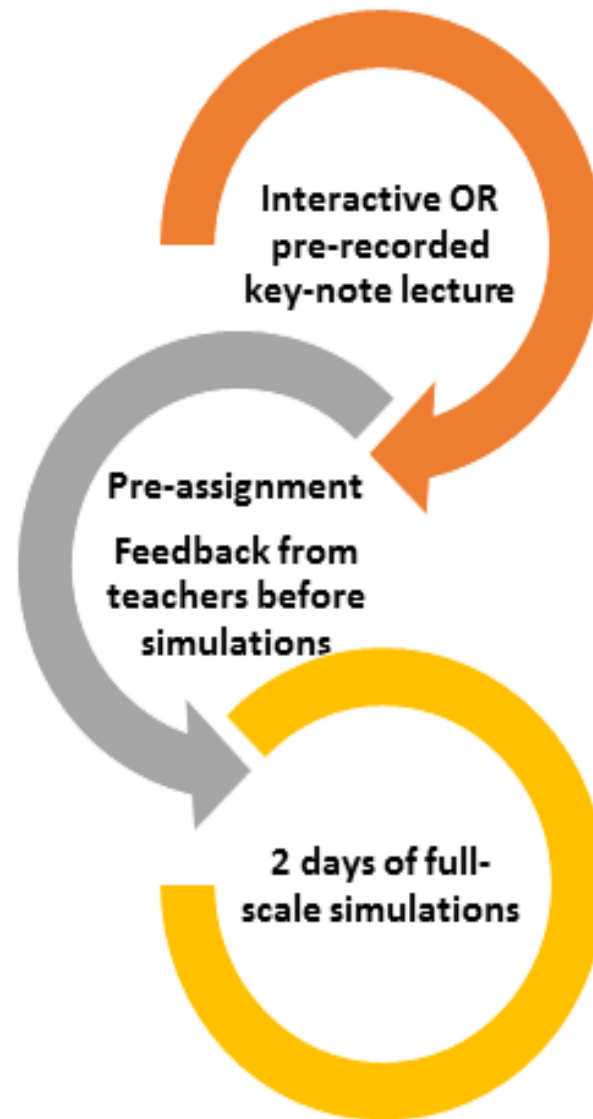


On the way to the hospital // Other unplanned OHD

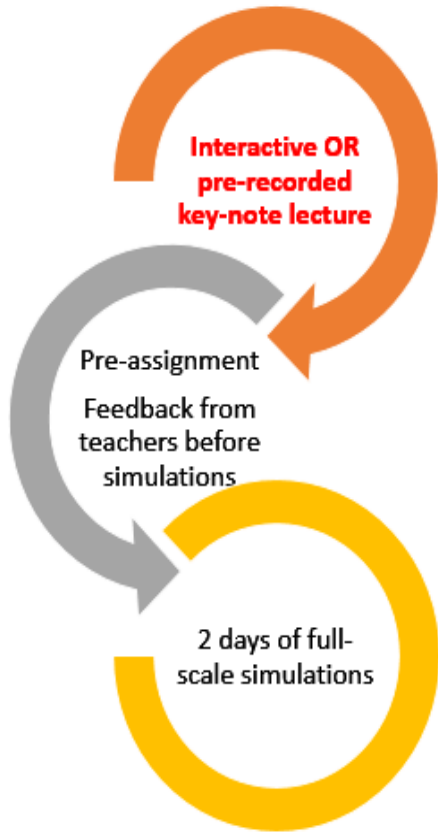


Lähde: THL/ Syntyneiden lasten rekisteri

# Course Implementation

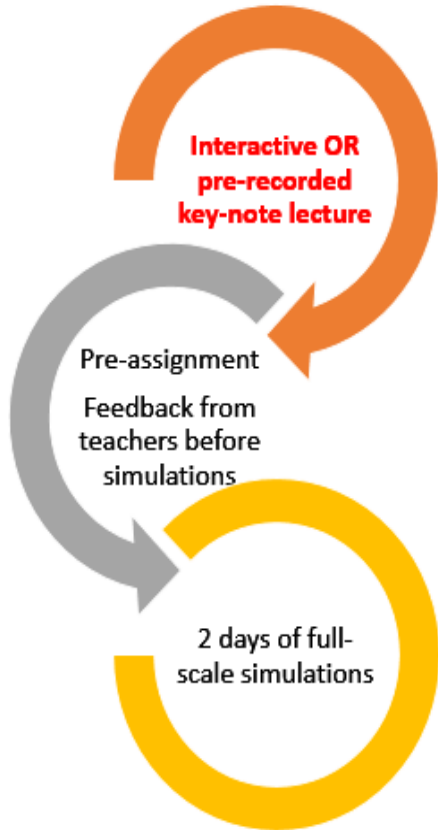


# Interactive or pre-recorded lecture



- Orientation, 3 hrs
  - Physiological childbirth in different environments
  - Obstetric and neonatal acute situations / emergencies in prehospital settings
- Theoretical part of the course
  - possibility to 100% online learning
- Experiences about two different implementations (*online / f2f*) → pros & cons in both

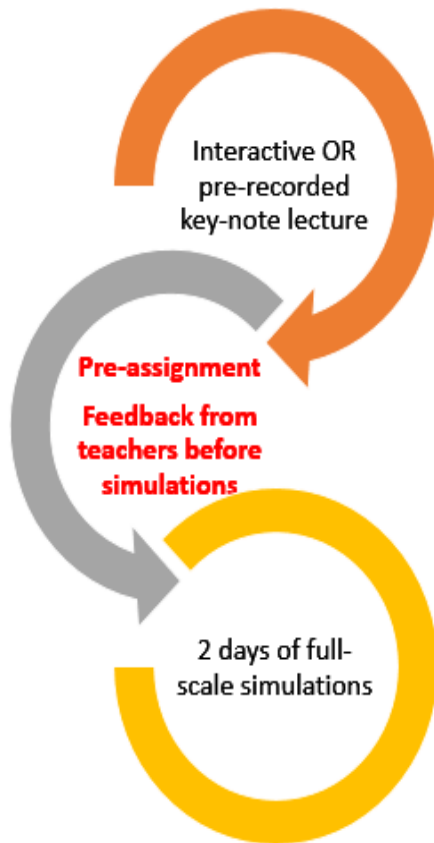
# Interactive or pre-recorded lecture



- OHDs / Childbirths are rare for paramedics
  - no daily routine
    - Care of physiological childbirth differs from urgent EMS / ambulance patient care
    - Cases in real life may differ from low-risk childbirth to emergency care of **two** critically ill patients
- Lots of cases, pictures, videos

Anxiety of students requires a lot of discussion  
IF ONLINE → even more discussions in simulation

# Pre-assignment

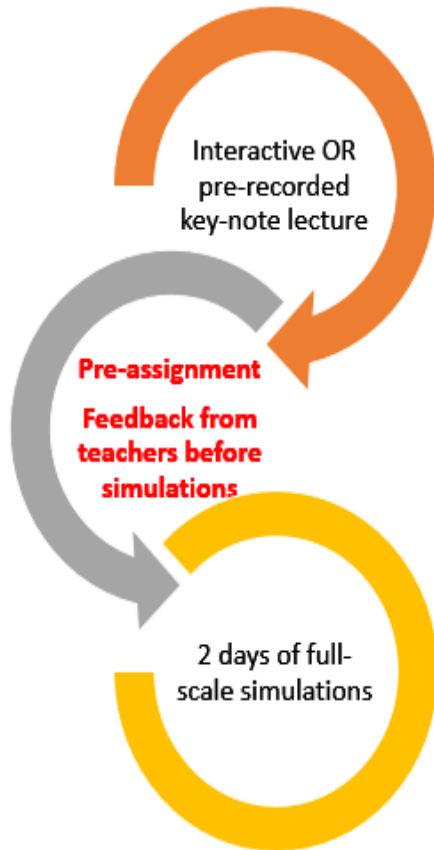


- Flipped Learning
- Self-study material
  - Paramedic Handbooks
  - Protocol Manuals
  - [Current Care Guidelines](#)
  - Educational videos (2)  
done by students in IP-team  
(Unplanned OHD, Infant CPR)
- Online learning platform / Moodle

# Pre-assignment/ Self-study material videos done by paramedic students with IP-team



# Pre-assignment



- Pre-assignment in small studygroups
  - cases
  - multiple-choice questions
  - essays
  - maternity card
- feedback from lecturers → corrections
- possibility to online discussions



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	pvm	pvm		

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ÄITIYS-  
KORTTI

Kannen kuvitus: Joachim Lindbom & Erno Wään, 2018

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## EXAMPLE 1 / pre-assignment

” Code 790A / 790B - Childbirth ”



There is a 25 year old woman calling from her house. She's 37 weeks pregnant and has had contractions for the past two hours.

Contractions are 5 minutes apart for the last 30 minutes and she finds them painful in her back and lower abdomen.

## EXAMPLE 1 (cont.)



How do you estimate / evaluate if you should TRANSPORT the woman into hospital or is it better to STAY home to see if the child is about to be born?  
What further information is needed...

**Estimation and reasoning for decision making is required.**  
Case continues...

## EXAMPLE 2 / pre-assignment

### Maternity card

(authentic info, double documentation)



Questions → finding correct INFO

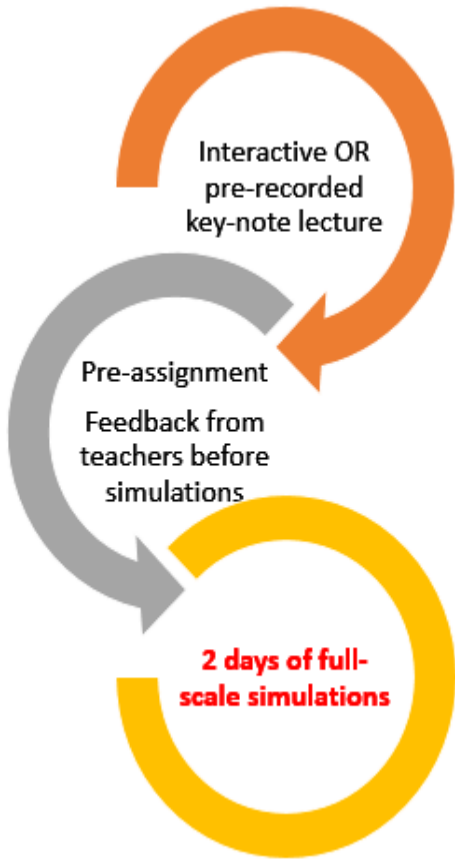
Important to have these skills in possible urgent EMS-situation

Same maternity card is used in simulations.

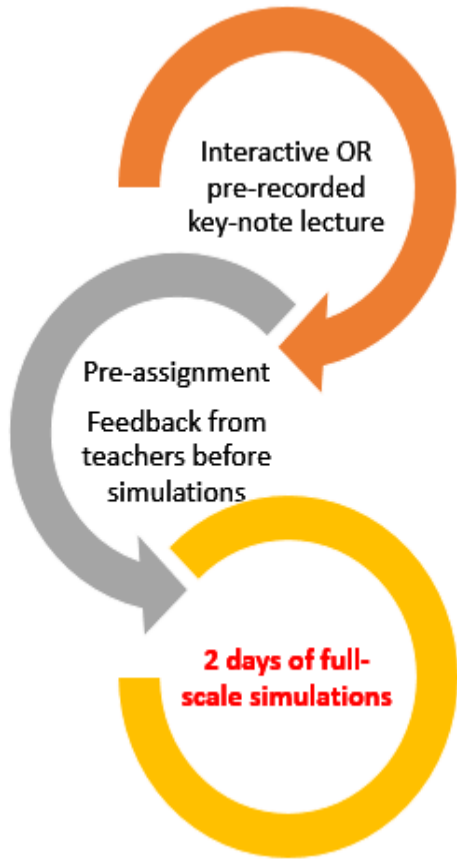
# Simulations

## Simulation based learning / real-life scenarios

- 2 full-scale simulation days
- 12-14 students/ group
- face-to-face discussions emphasized in simulations
- 1 hour in the beginning
  - about theory, pre-assignment, expectations, preconceptions, experiences etc
- 4 students (2 ambulance units) acting in simulation studio
- Maternal/ Neonatal patient simulators and monitors
- Possibility to consultations (“doctors / midwives”)
- Other students (in debr.room via video-connection)
  - structured observation and evaluation



# Simulations



## DEBRIEFING

IMPORTANT part of simulation-training  
Requires a lot of time but is beneficial

Dialog / reflective conversations  
between students – IP teacher-team

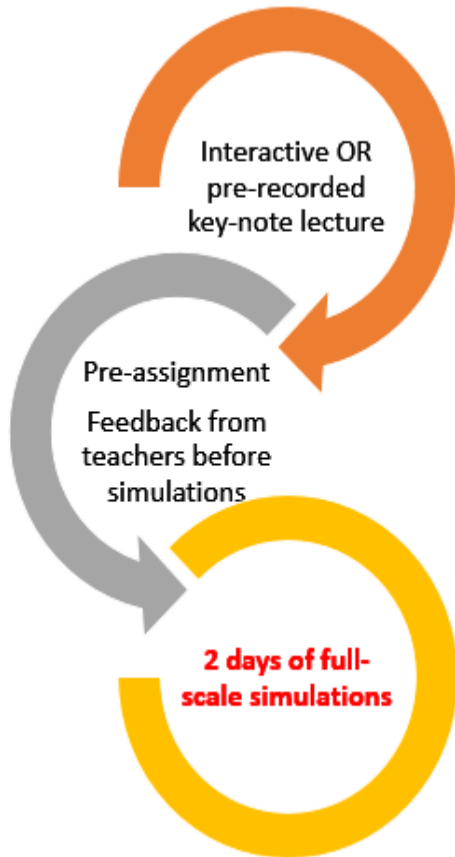
### **Benefits of team-teaching are strongly emphasized**

Midwifery substance-related knowledge

→ understanding WHAT is necessary to know and do  
combined with Paramedical knowledge

→ understanding WHAT and HOW is possible to do in  
special environment, out of hospital

# Simulations



- Active participation and shared expertise
  - experience of equality and mutual respect
  - experience of increased learning
- Dialog / reflective conversation
  - Shared experience by both students and lecturers
- katso tutkimus ? Petri?
- IP team-teaching
  - Excellent feedback. From all.





# Simulation Day 1, scenarios

## CHILDBIRTH

From simple to more complicated cases

- 1) Baby is unexpectedly already born
- 2) Very quick childbirth at home  
Newborn requires stimulation, PPH 1000 ml
- 3) Decision of transferring the patient, baby is born before hospital and in need of special care (stimulation, ventilation)

# Simulation Day 2, scenarios

## FIRST TRIMESTER

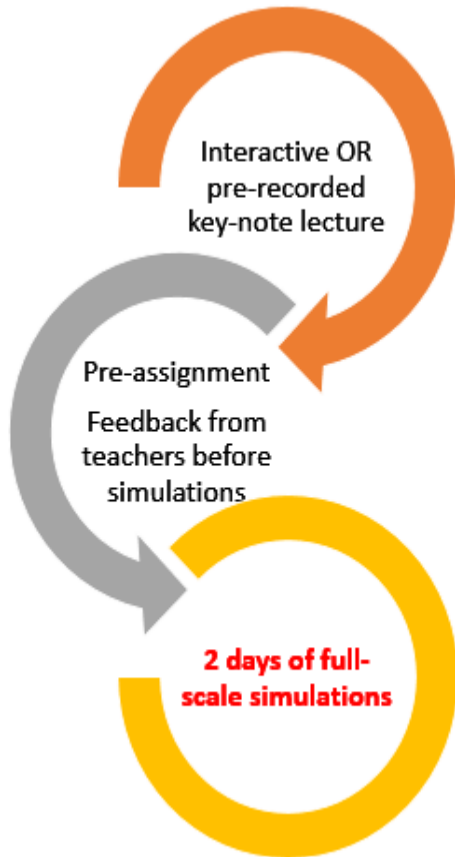
- Extra-uterine pregnancy

## THIRD TRIMESTER

- Pre-eclampsia
- Hemorrhage during pregnancy  
placenta previa etc.
- Opioid – intoxication  
incl. ethical issues and for example Child Welfare Act

Discussions and emotional issues are included in simulation days

# What do they actually learn?



## IP team-teaching enables A LOT

- Technical and non-technical skills
- A lot "out of their comfort zone"
- Systematic examination and treatment
- Re-assessment regularly
- ABCDEF / F = future + fundus etc
- Leadership, teamwork, communication
- Decision making
- Ethical questions
- Situation awareness
- Diverse families
- Observation of the overall situation of family, children, spouse...
- Possibilities of painrelief
- Legislation
- etc.

# Immediate Post course Evaluation / Feedback

- Best course during our education
- Good package; lecture and pre-assignment were very good for simulation preparation.
- Simulations were really good. Could not have happened without both teachers.
- Teachers were experts and their roles were clear – filling each others knowledge.
- Should the pre-assignment be split in two – like simulation days?
- 3 hours is enough to get started
- More than 3 hrs lecture is needed
- More hands on – skills labs before simulation!
- Implementation exceeded all my expectations
- Hands-on-training and simulations made me feel more certain about "code 790"
- The course made focusing on a obstetric big picture (two patients etc) clearer.

# What have WE learned?

## IP - Team teaching provides benefits also for lecturers

- Wider understanding and respect of different substances
- Developed clearer perspective (on the differences and similarities)
- New collegial relationships
- Experience of increased learning
- Saw teaching “through the learners’ eyes”
- Improved own teaching skills
- Avoided cons of “solo-teaching”
- Stepped out of one’s comfort zone

# Course Design development

- Thoughts and ideas
  - Simulation scenarios; evaluation and improvement
  - Learning platform; new possibilities, material etc
  - Keeping up with all on-going changes with stakeholders
  - Combining more systematically with working life
  - Interprofessional course participants /  
midwifery / MD students..

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Thank You

<https://santaclausvillage.info/>





# Valovoimainen Oulu – The Light of the North

YouTube (1'49)