


Patient flows at the emergency department Activities in the ER involving radiology





Helle Midtgaard
Anesthesiologist



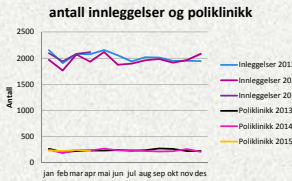


Norwegian ER


- Reference
- No speciality in emergency medicine
- Ongoing process -> EM speciality

OUS Ullevål ER



- Nearly 30 000 patients a year
- 60 % medical patients, 40 % surgical patients
- Outpatients: 10-11 %, nearly 90 % admitted
- GP's and outpatient clinics
- "Oslo legevakt"

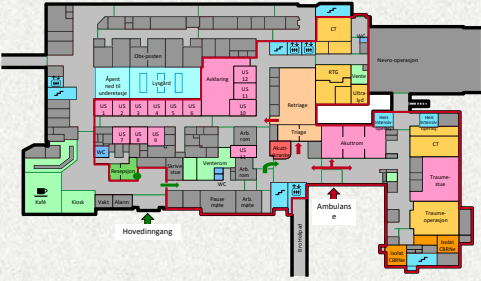




- New area of the ER opened jan 2015
- Doubled in size
 - Trauma room
 - Critically ill medical patients
 - CT lab next to trauma room
 - Hybrid trauma operating room


Oslo universitetssykehus

ER – Oslo University hospital, Ullevål




Oslo universitetssykehus

Patient flow



- 10 % "team patients"
 - Trauma
 - Critically ill medical patients
 - Thrombolysis
 - Heart arrest
 - Critically ill kids (medical and surgical)



Oslo universitetssykehus

Team patients – radiographer included: Critically ill medical patients

- Radiographer part of the team
- Chest X-ray
- Picture shown immediatly on X-ray machine
- Quick primary survey - ABCD
- X-ray on B -> examination quickly
- Radiologist on call



Trauma patients



- Chest X-ray and pelvic X-ray stationary on the trauma room
- In primary survey
- CT room next door, direct access



Thrombolytic patients

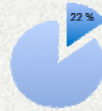
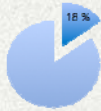


- Short pit stop in emergency room, on the ambulance stretcher
- Short evaluation, BP, blood samples
- CT scan -> no bleeding -> antithrombotic agent (bolus and infusion)



Before and after

- Before
 - 425 days
 - 1,3 thrombolytic patient alarms / 24 hrs
 - tPA administration to 100 patients
- After
 - 306 days
 - 1,3 thrombolytic patient alarms / 24 hrs
 - tPA administration to 83 patients



Door-to-needle time



- Before and after:
 - Median reduction in door-to needle time
 - 15 mins
 - $P < 0.001$
 - Every 15 mins \rightarrow + 1 month disability-free life *



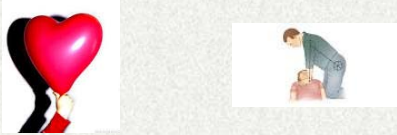
*Meretoja et al. Thrombolysis: Save a minute, save a day. Stroke 2014; 45: 1053-1058

Critically ill children

- Both medical and surgical accepted in the trauma room
- Chest and pelvic X-ray in the trauma room
- Directly to CT if indicated




- Heart arrest:
 - Chest X-ray in the emergency room
 - Straight to the angiographic lab (not in the ER)



Oslo universitetssykehus

Hybrid trauma operating room

- Immediate operation of trauma patients
- Both operations and angiographic procedures
- Other patients: combined angiographic procedures/operations
 - Ischemic bowel
 - Placenta accreta

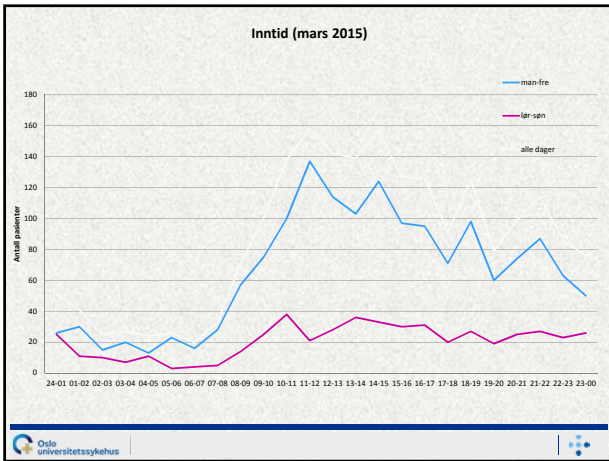


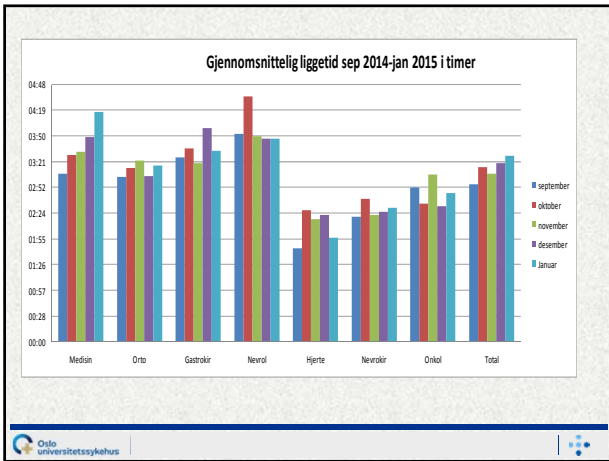
Oslo universitetssykehus

Patient flows – other patients


- Triage – MTS
- Time to evaluation by doctor
- Admission by medical doctor
- Reference to X-ray examination
- Evaluation
- Short distance to CT
- Will get shorter distance to chest X-ray
- Waiting times - prioritizing

Oslo universitetssykehus





Busy activities in the ER



- Procedures when high level of activity
- Prioritizing patients for X-ray
- Directly from X-ray department to ward

