



**Karolinska
Institutet**

How does lean work in emergency care

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**Reducing waste and inefficiency in the healthcare
systems, increasing quality of patient care**

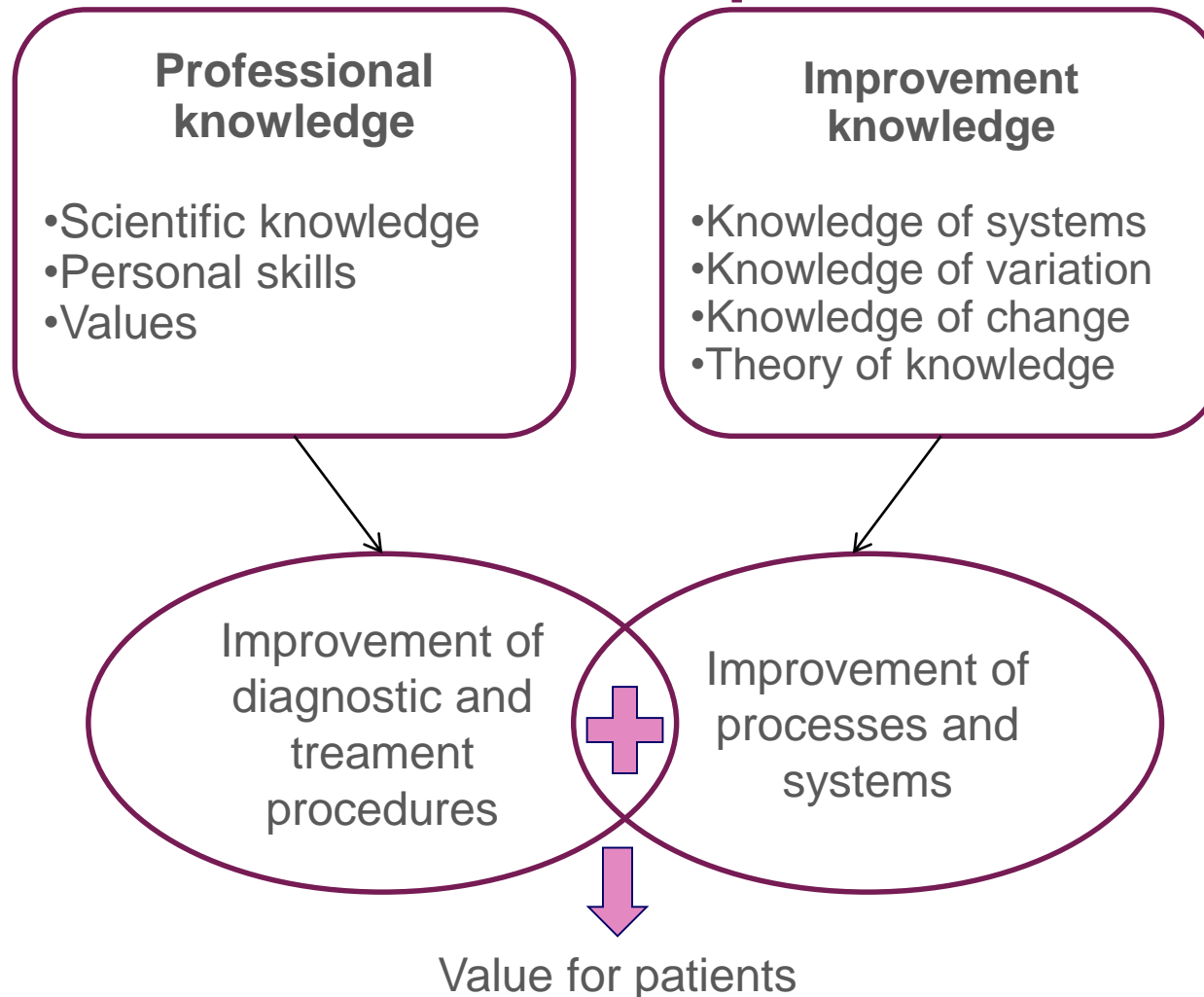
BAD NEWS

We do not consistently deliver the best possible care based on the knowledge available

- We use effective methods even in cases when they do not help (overuse)
- We use the right methods in the wrong way (misuse)
- Fail to use the methods that would help a patient (underuse)

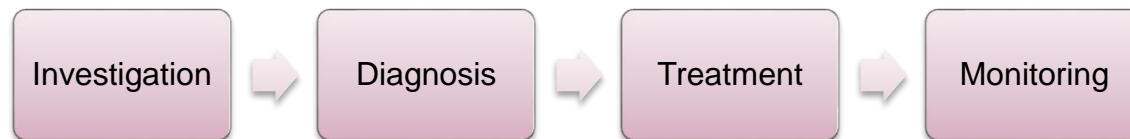
GOOD NEWS

Improvement science is pivotal to create value for patients



“Every system is perfectly designed to produce the results that it does”

- To improve healthcare we need to change processes and systems
- “...the sequence of clinical decisions and tasks that together result in the solving of a patient’s health problem and the creation of patient relief”.



Bohmer, 2009

“Lean” is a management practice based on the philosophy of continuously improving processes by

- Increasing customer value or reducing non-value adding activities (MUDA)
- Reducing process variation (MURA)
- Reducing poor work conditions (MURI)

(Radnor et al. 2012)

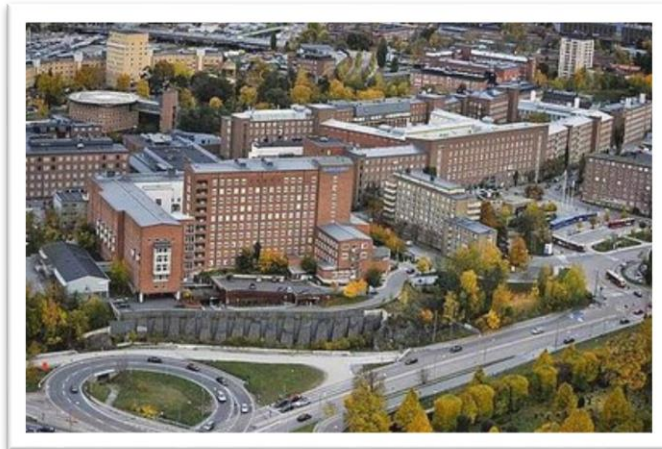
Lean: from theory to practice



Danderyd University Hospital

80 000 ED visits/year

578 beds



Karolinska University Hospital

200,000 ED
visits/year

1,595 beds

Fast track for patients with hip fracture

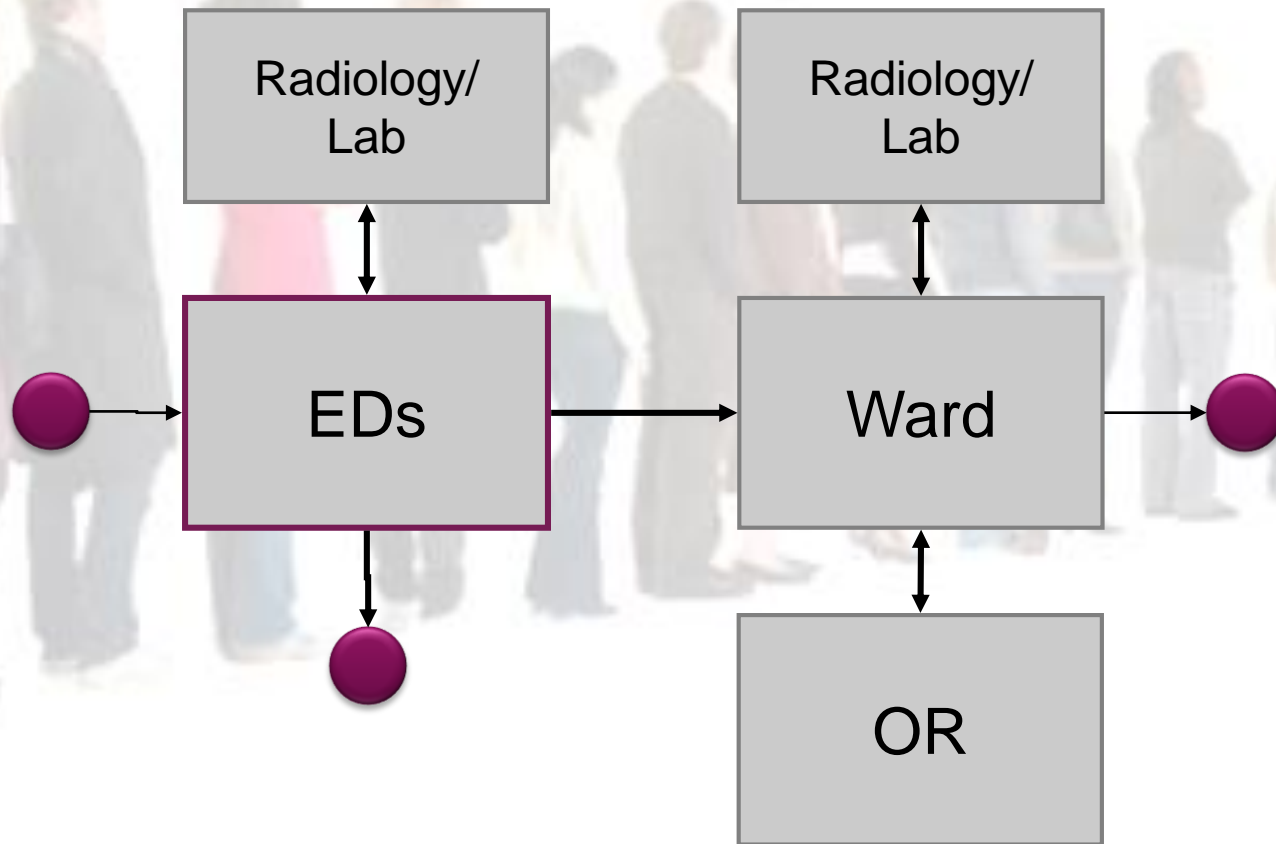




Timely, Safe, Efficient, and Equitable care for patients with hip fracture at the Danderyd Hospital

- **Timely**
 - Percentage of patients operated within 24 hours: from 47% a 83%
 - Waiting time: from 24.8 to 20.0 hours
- **Safe**
 - Timely access to surgery is associated with improved outcomes (in the literature)
 - Reduction of adverse events
- **Efficient**
 - More efficient use of resources
- **Equitable**
 - No parallel increase of waiting time to surgery for other acute orthopaedic inpatients

Reduce non-value adding time from a patient perspective at the Karolinska University Hospital



The lean intervention focused on six key areas



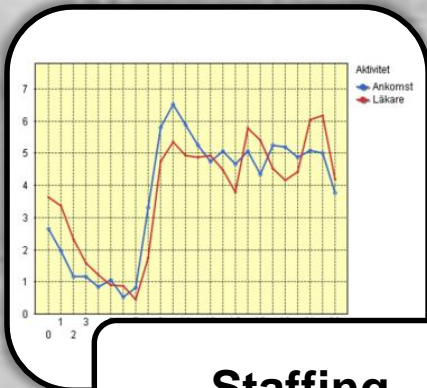
Way of working



Competence



Free staff



Staffing



**Continual Improvement
Management meetings**

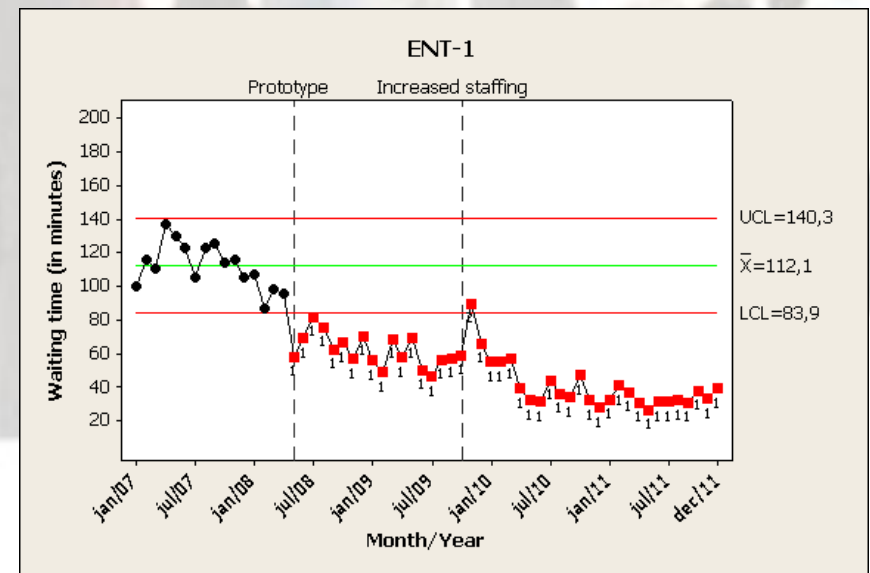
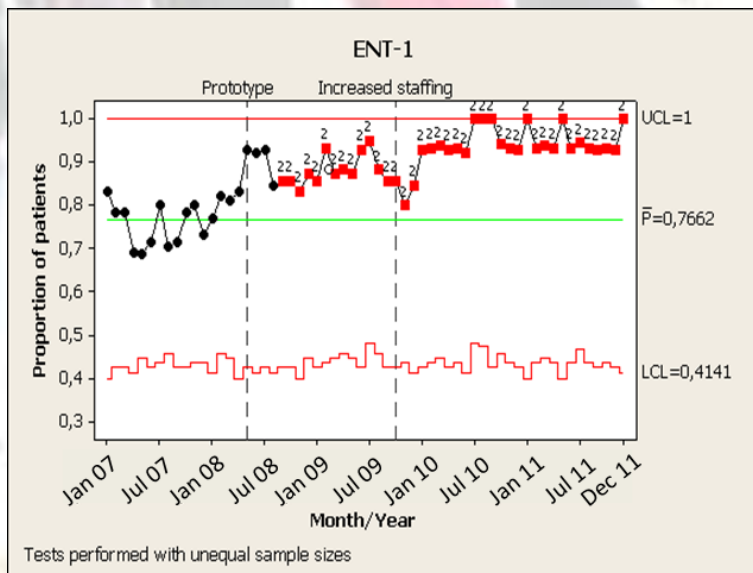
Tid	Antal sök	Läkar-bed.	Kö	Ut	Takten
21-8	1	0	1	-	0
8-9	6	3	4	0	3
9-10	2	3	3	0	3
10-11	3	5	1	4	3
11-12	5	1	5	4	3
12-13	3	5	3	2	3
13-14	5	3	5	1	3
14-15	6	3	5	1	3

**Continual Improvement
Visual management**

Reduced non-value adding and variation

Up to 29% relative increase in the % of patients ready to leave the ED in 4 hrs

Up to 56% relative decrease in waiting time to first physician assessment



References

- Mazzocato, P., et al., (2015). *Unpacking the key components of a programme to improve the timeliness of hip-fracture care: a mixed-methods case study*. Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine, 23(1): p. 93.
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- Mazzocato, P., et al. (2011). *How does lean work in emergency care? A case study of a lean-inspired intervention at the Astrid Lindgren Children's Hospital, Stockholm, Sweden*. BMC Health Serv Res 12(1): 28.
- Mazzocato, P., et al. (2010). *Lean thinking in healthcare: a realist review of the literature*. Qual Saf Health Care 19: 376 - 382.

Lean practices...

... the first step towards the development of healthcare organizations that continually learn how to better meet patient needs