



# The Lean journey towards patient safety.

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# Why Lean?

Flinders Medical Centre is a medium sized, cradle to grave, teaching general hospital in the Southern Suburbs of Adelaide.

In 2003, as Director of Clinical Governance, I declared that our Emergency Department was systematically unsafe.

(Extreme congestion, increasing rate serious adverse events, staff resignations, increasing in-unit mortality plus other indicators)

# Why Lean?



- We were already doing everything that we knew how to do.
- We needed to do something that we did not know how to do.

We turned to Lean thinking, an organisational philosophy first identified in the car industry.

# The two car family.



# Mortality in Australia-1996

## \*Causes

Isch. Heart Disease

## Number

32,800

## **\*Hospital adverse event**

**18,000**

Cancer

17,800

Stroke

12,800

COPD

6,100

Dementia

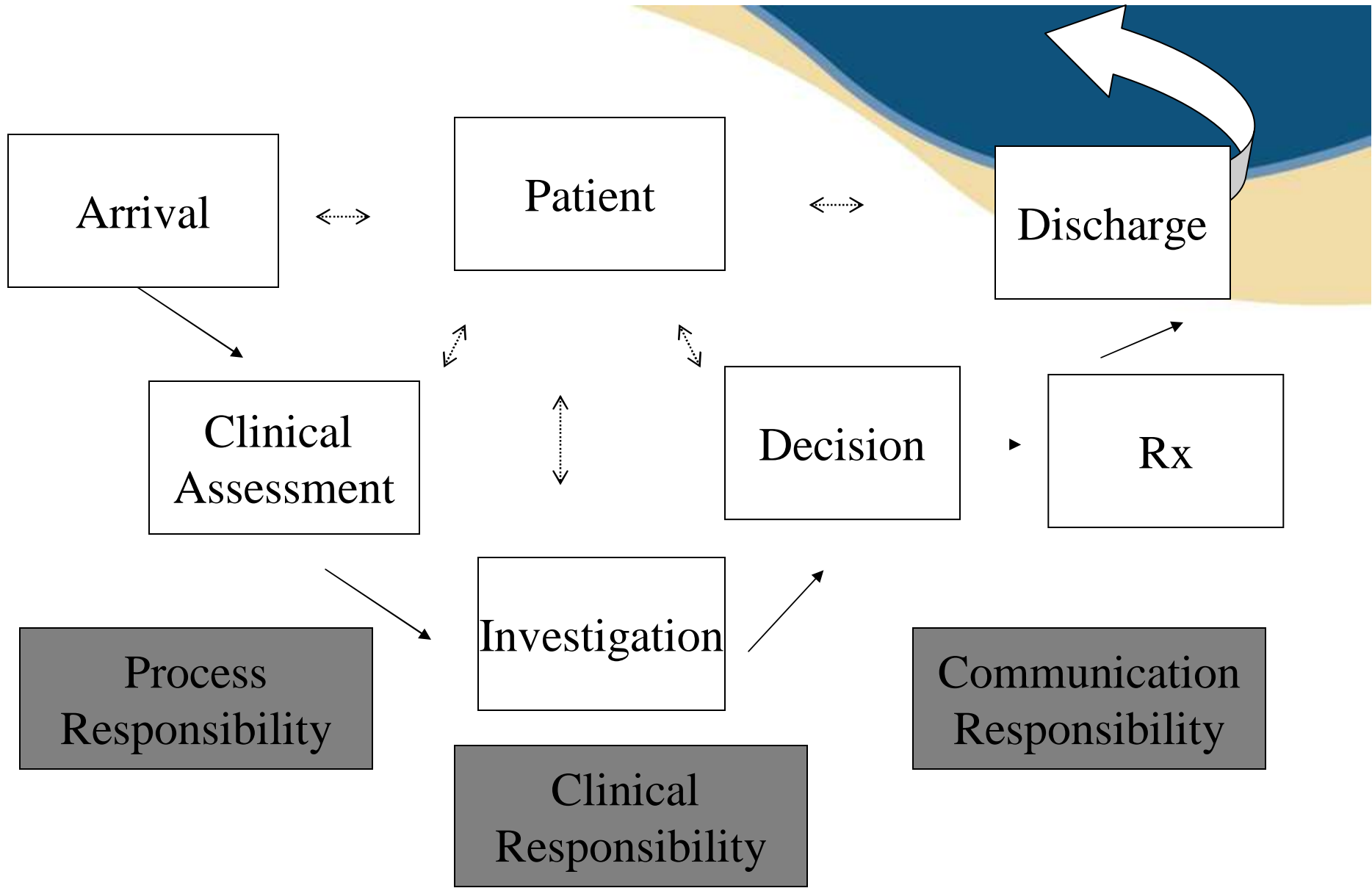
4,000

Diab Mellitus

3,000

Suicide

2,500



## The patient journey

# Lean thinking: five simple principles

- Specify **value** from the standpoint of end customer.
- Identify the **value stream** for each product family.
- Eliminate **waste**
- Make the product **flow**.
- So the customer can **pull**.

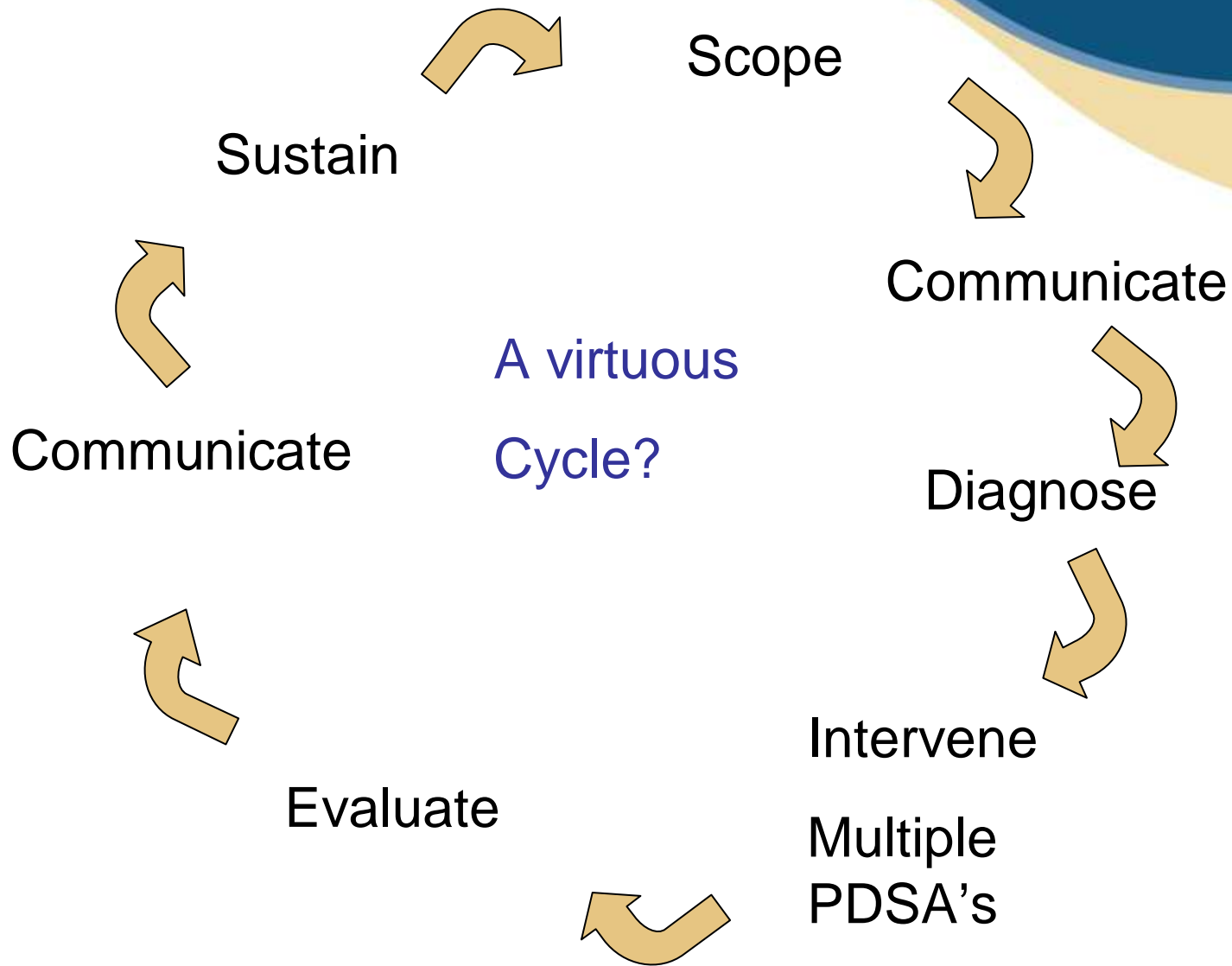
As you **manage toward perfection**.

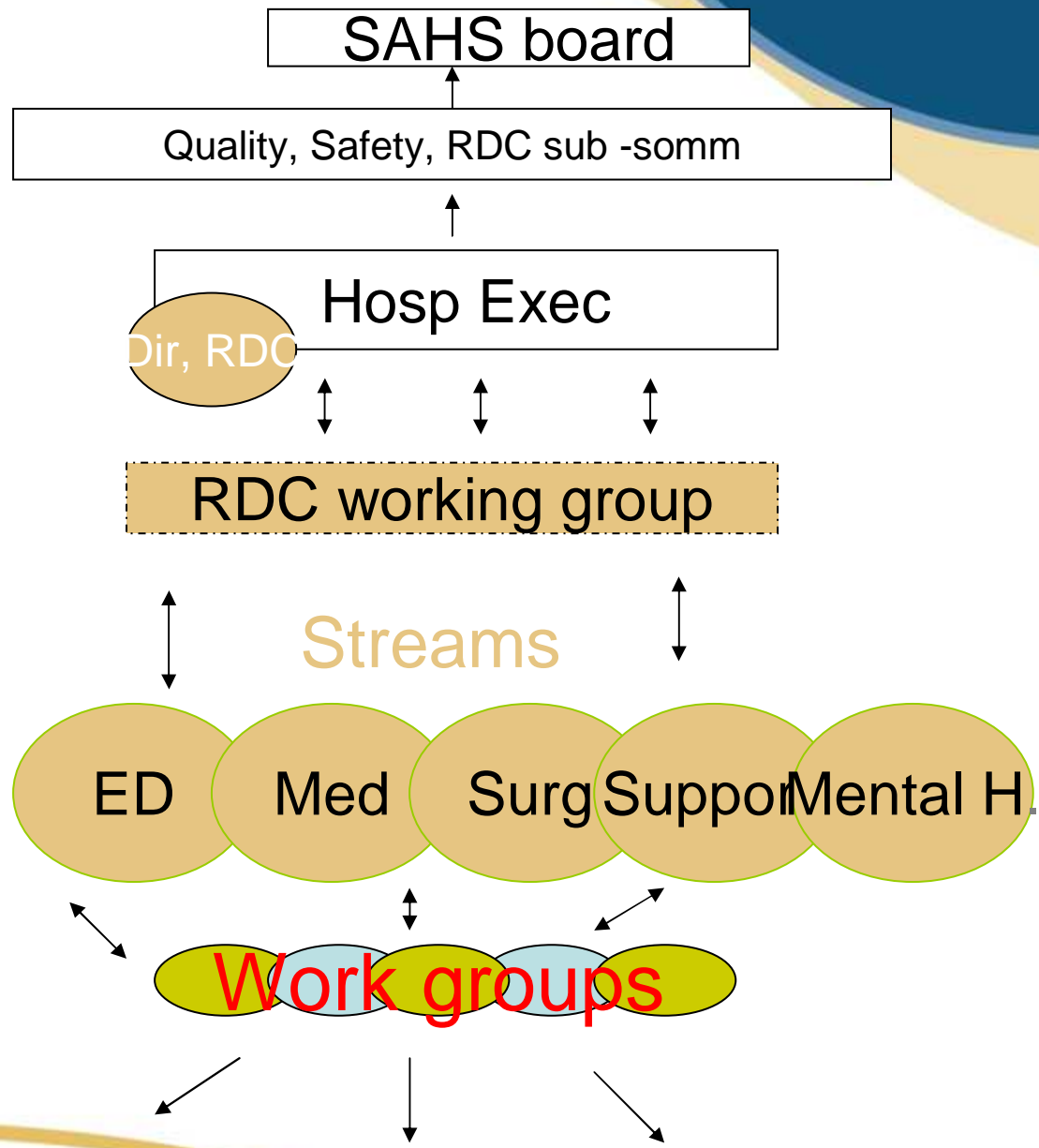
# Making Invisible work visible.

If we consider patient journeys as taking place along de-facto production lines that weave their way through the hospital,

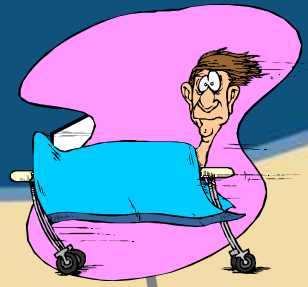
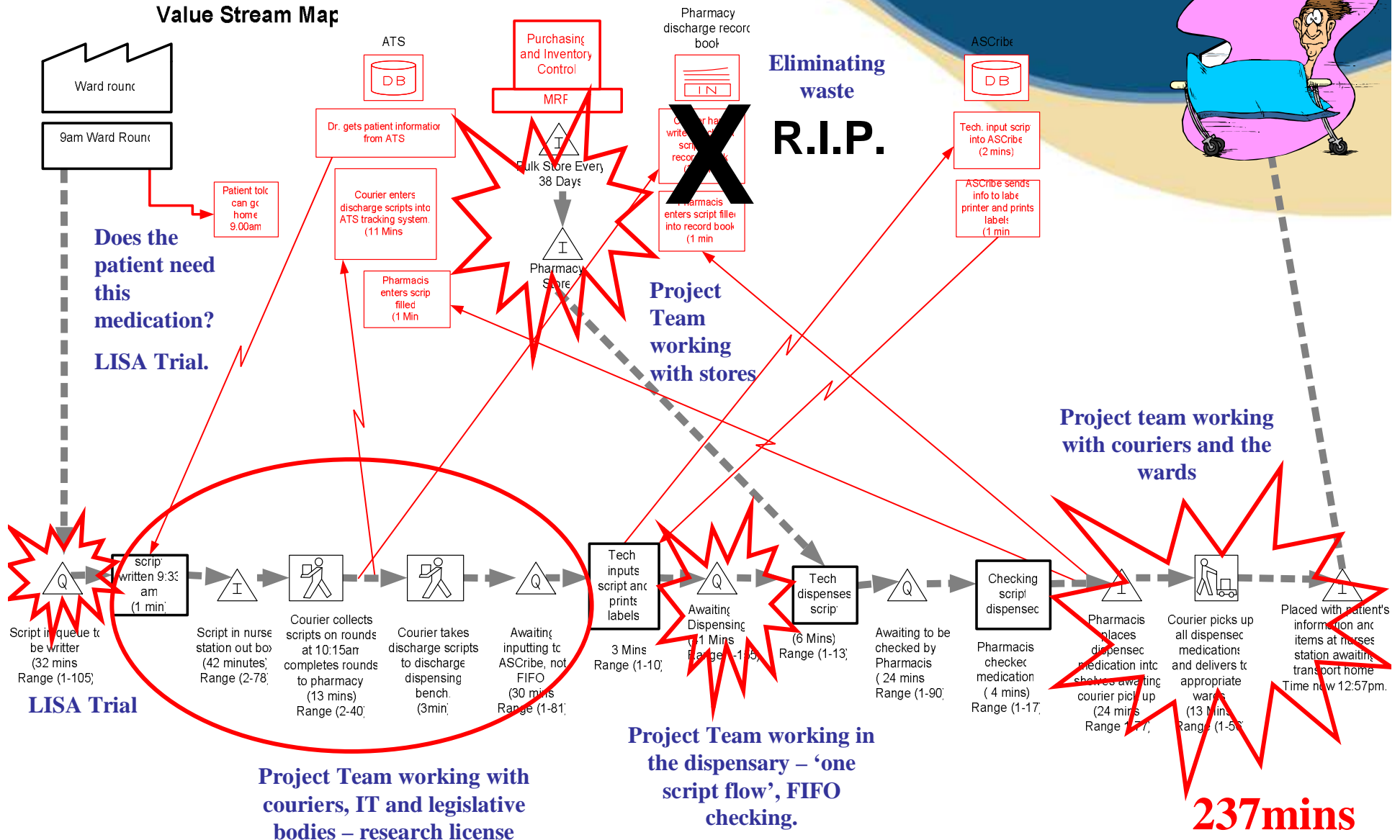
Then much of crucial work at key stations is cognitive, and invisible to external observers.

Mapping is the key to making invisible work visible.





# Discharge Script Value Stream Map

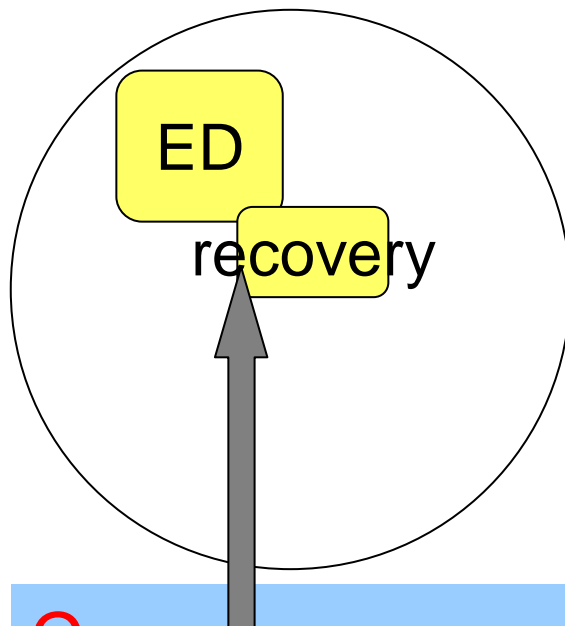


32 mins	42 mins	13 mins	3 mins	30 mins	4 mins	6 mins	24 mins	4 mins	24 mins	13 mins	222 minutes NV!
1 min	1 min	1 min	1 min	1 min	1 min	1 min	1 min	1 min	1 min	1 min	15 minutes VA

Ratio 1 VA : 15 NV!

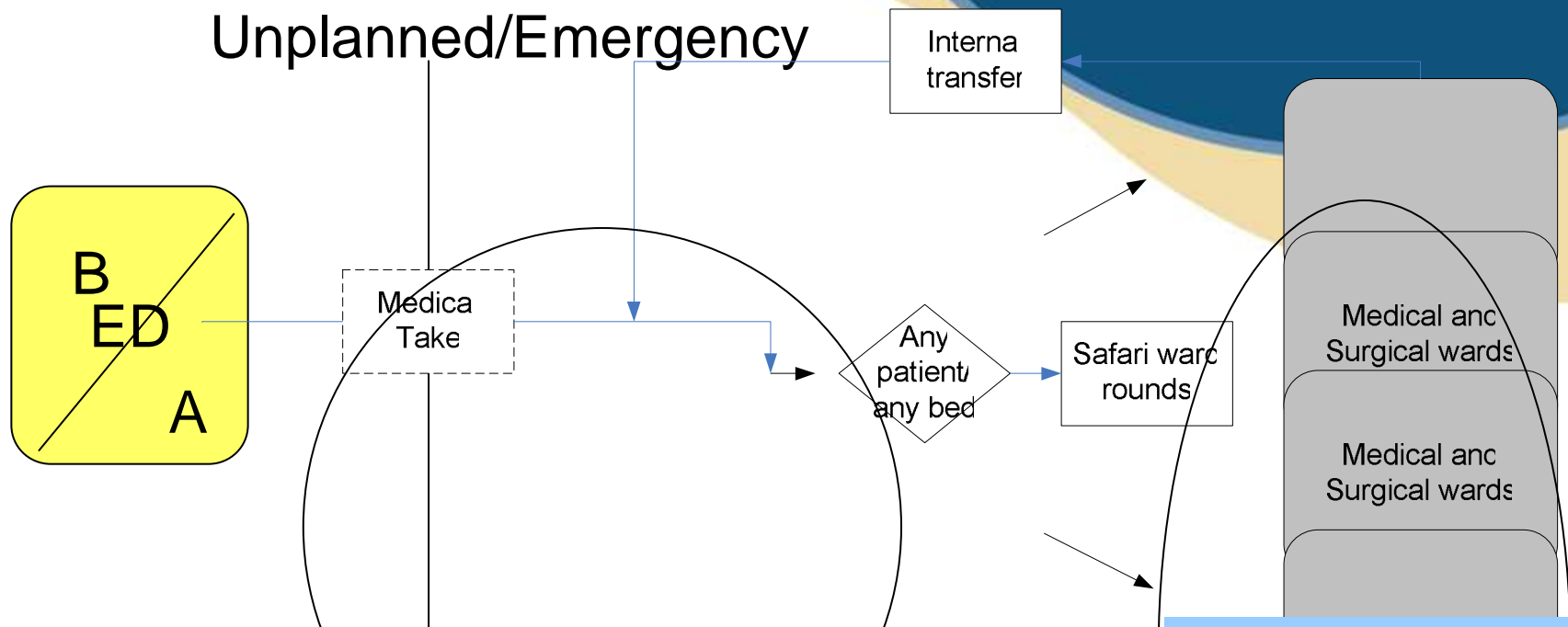


## Unplanned/Emergency



Common issues related to 5  
clinical areas; chaotic  
prevalence; increasing delays;  
incidence; quality.

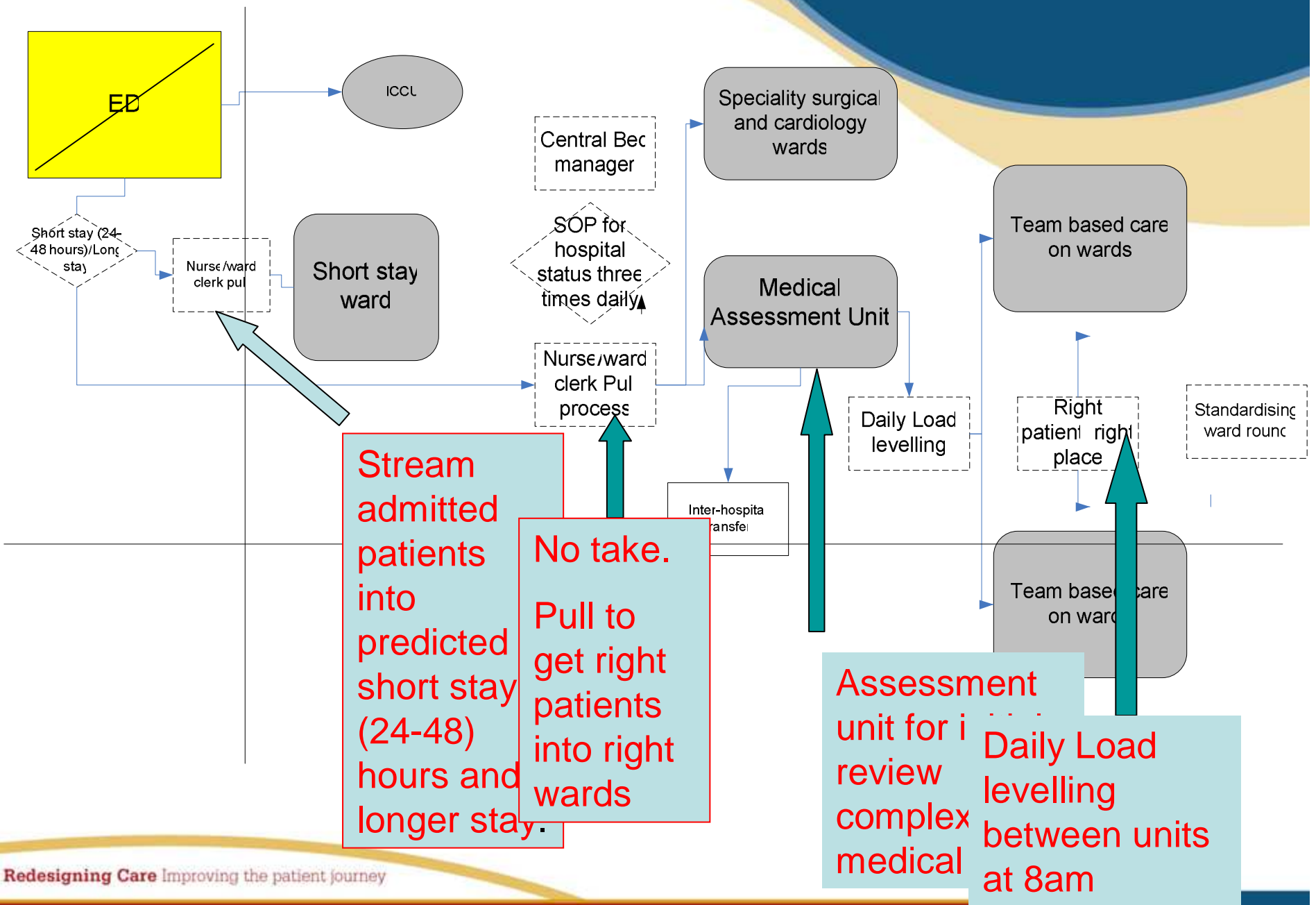
Stream patients into dischargeable and likely-to-be-admitted. Use First-in, First-out for both



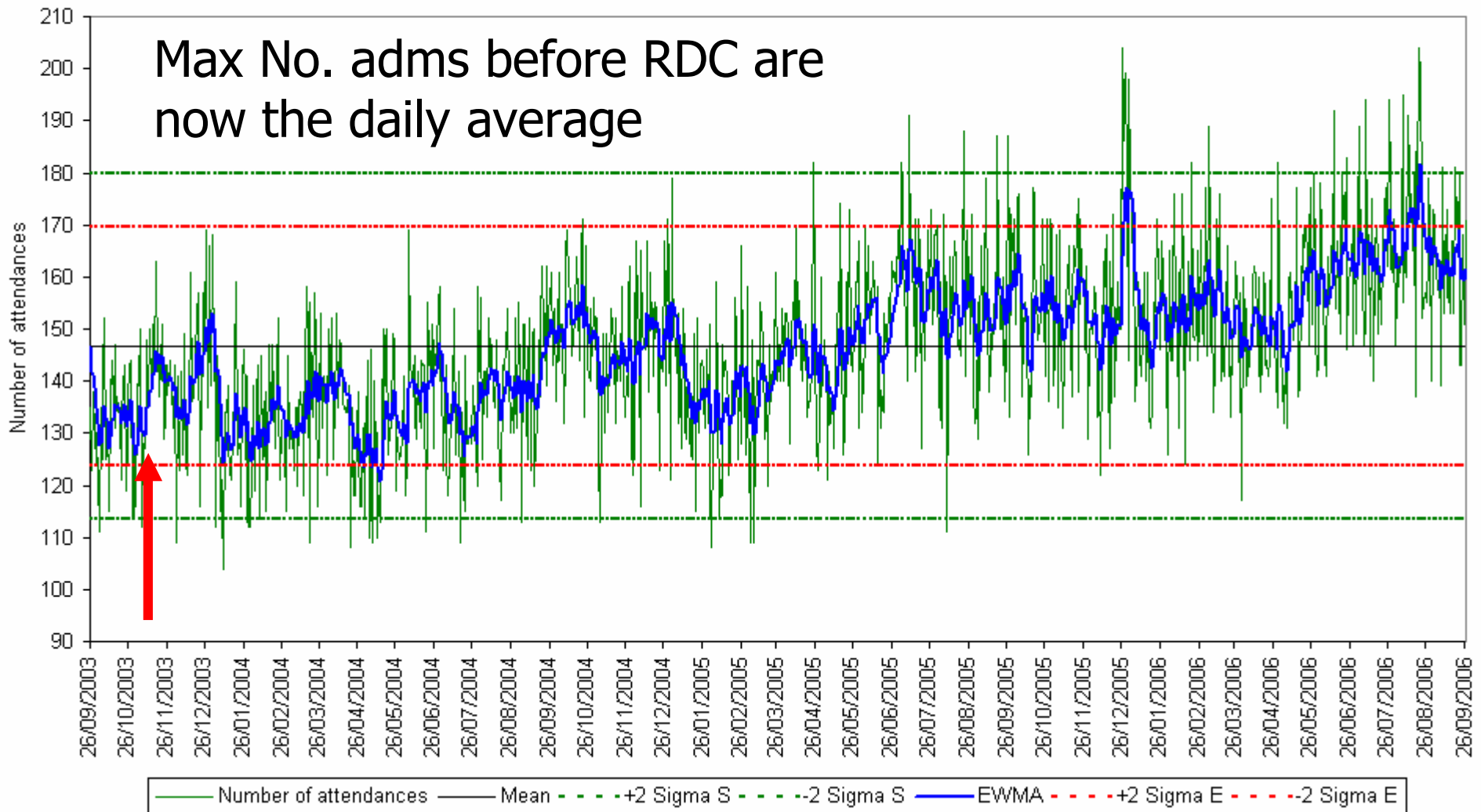
“take’ system; variability in demand over 4-5 day cycle; central dispatcher over-rides clinical needs.

Loss of ward differentiation; excessive motion and transportation of staff, patients and supplies

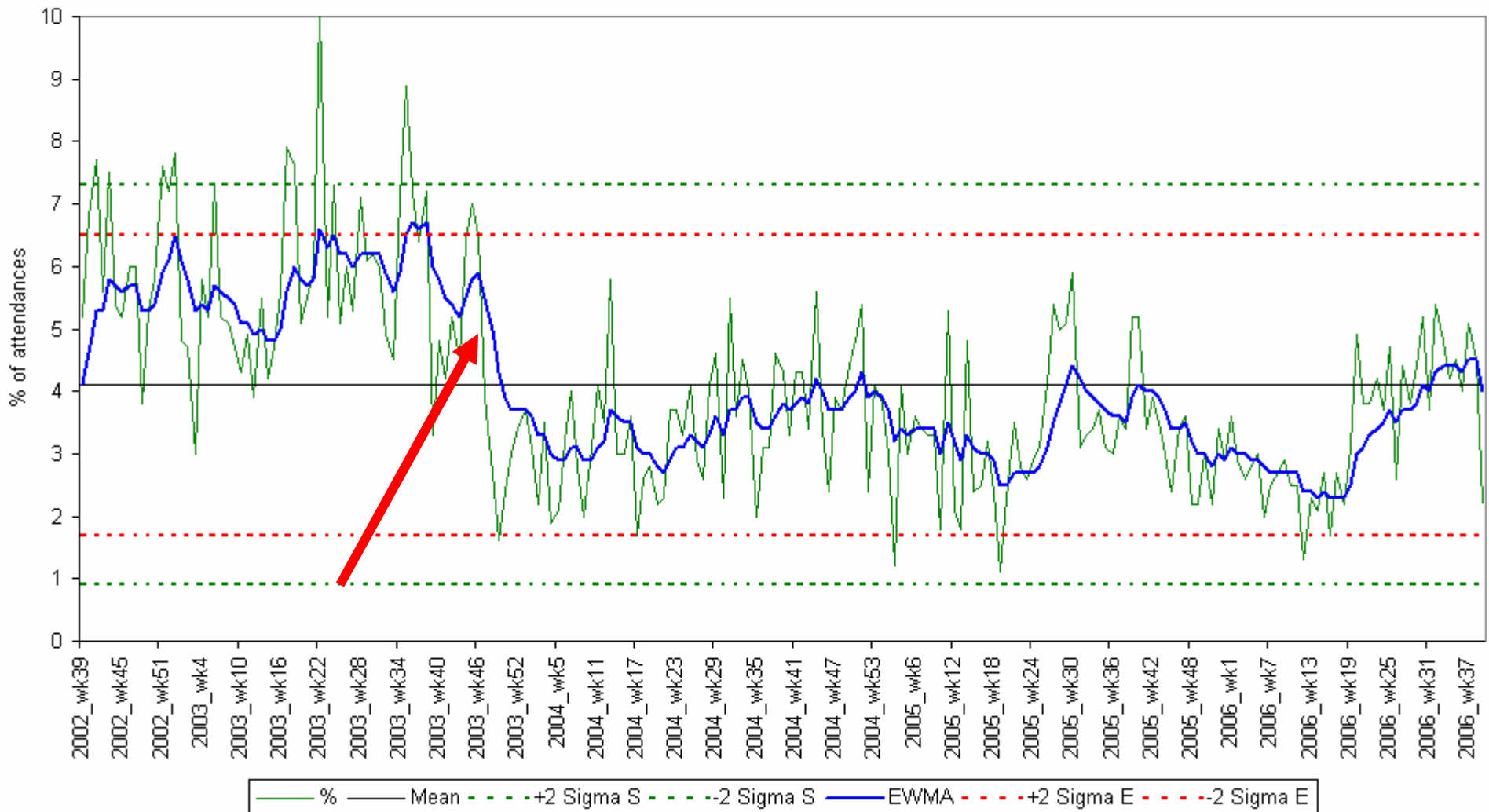
Planned/Elective



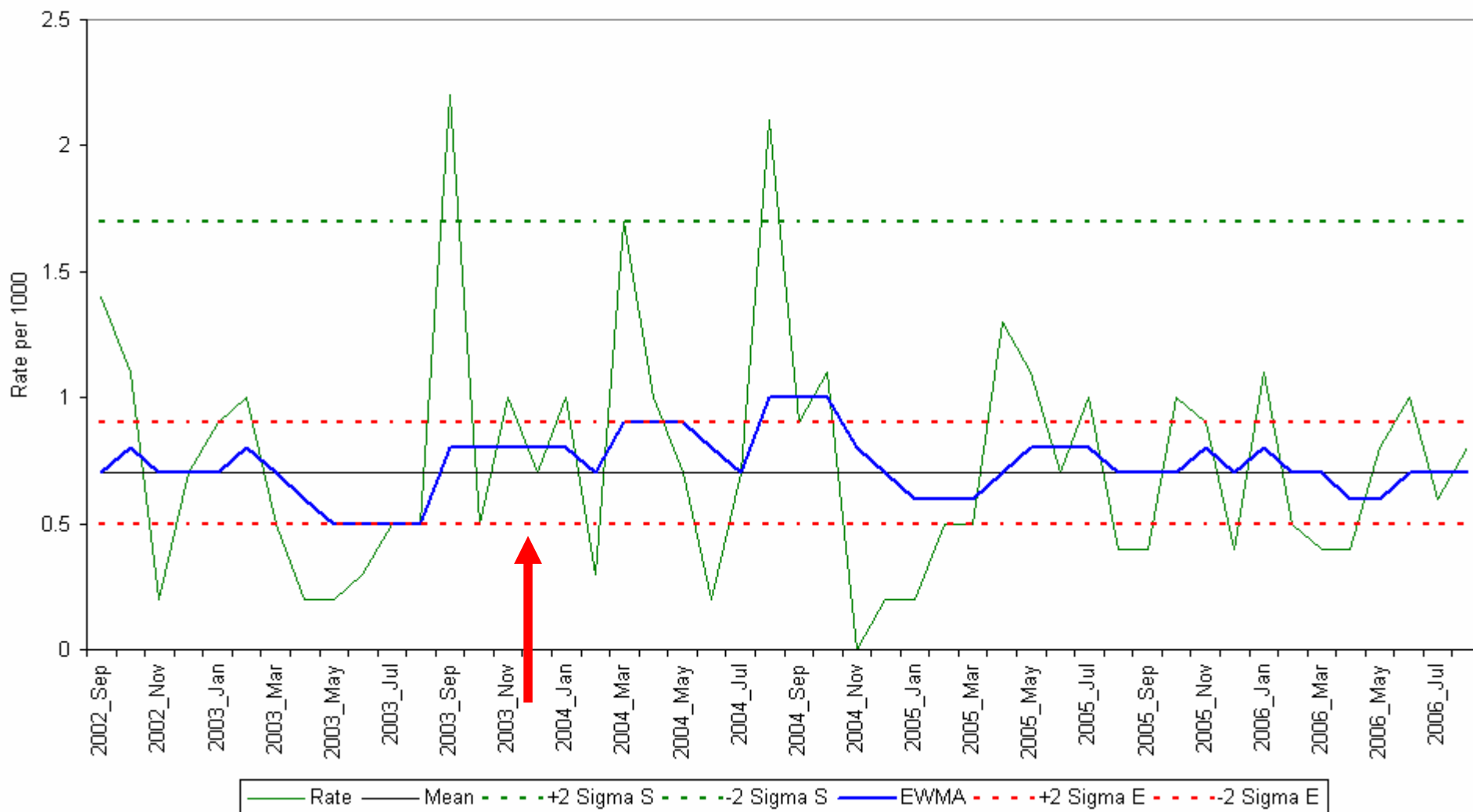
## ED Attendances (excluding priority 6 cases)



### EWMA chart ED weekly % of "did not wait"



### EWMA chart monthly ED death rate



# Serious adverse events

**Dec 02-Nov 03**

**15** events in the Emergency Departments, **7** patient deaths.

**Dec 03- Nov 04**

**4** events in the Emergency Department, **1** patient death.

**Dec 04-Nov 05**

**5** events in the Emergency Department, **0** deaths.

# Severe adverse events whole hospital

- 2001/02 1.78 events per 1,000 seps
- 2002/03 1.98 events per 1,000 seps
- 2003/04 0.90 events per 1,000 seps
- 2004/05 1.27 events per 1,000 seps
- 2005/06 0.41 events per 1,000 seps



## Other outcomes

- Readmission and hospital mortality rates stable.
- Staffing stable and FMC able to recruit.
- 10,000 bed days saved since onset RDC program.
- FMC sufficiently cost effective to invest from recurrent budget into equipment and other programs.

# Does Lean thinking represent the next step in patient safety?

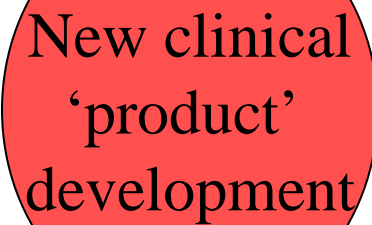
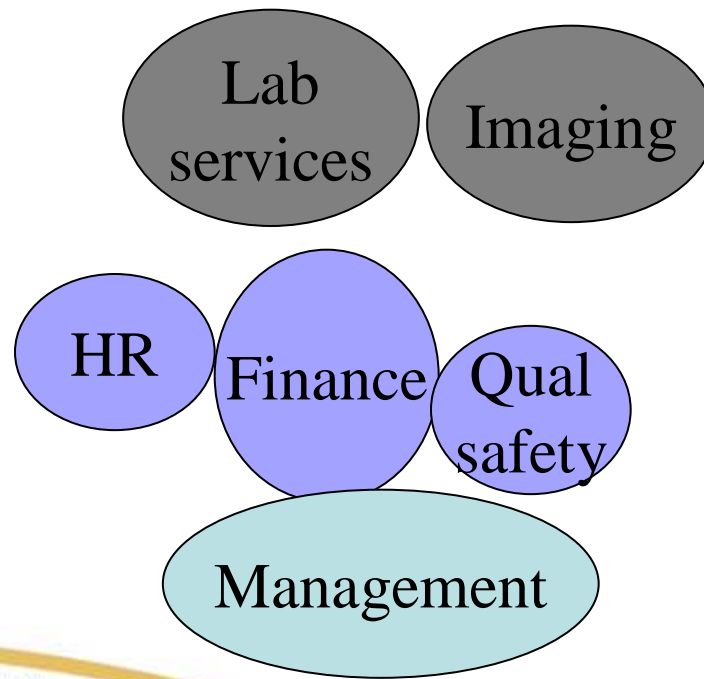
- Lean thinking sees error and rework as waste.
- It provides a detailed implementation strategy.
- It embeds safer care in a whole of service program that also addresses access, workforce and cost-efficiency issues.
- The value-stream approach allows for prospective testing of weaknesses and improvements in first-time quality.

# What does the hospital make?.



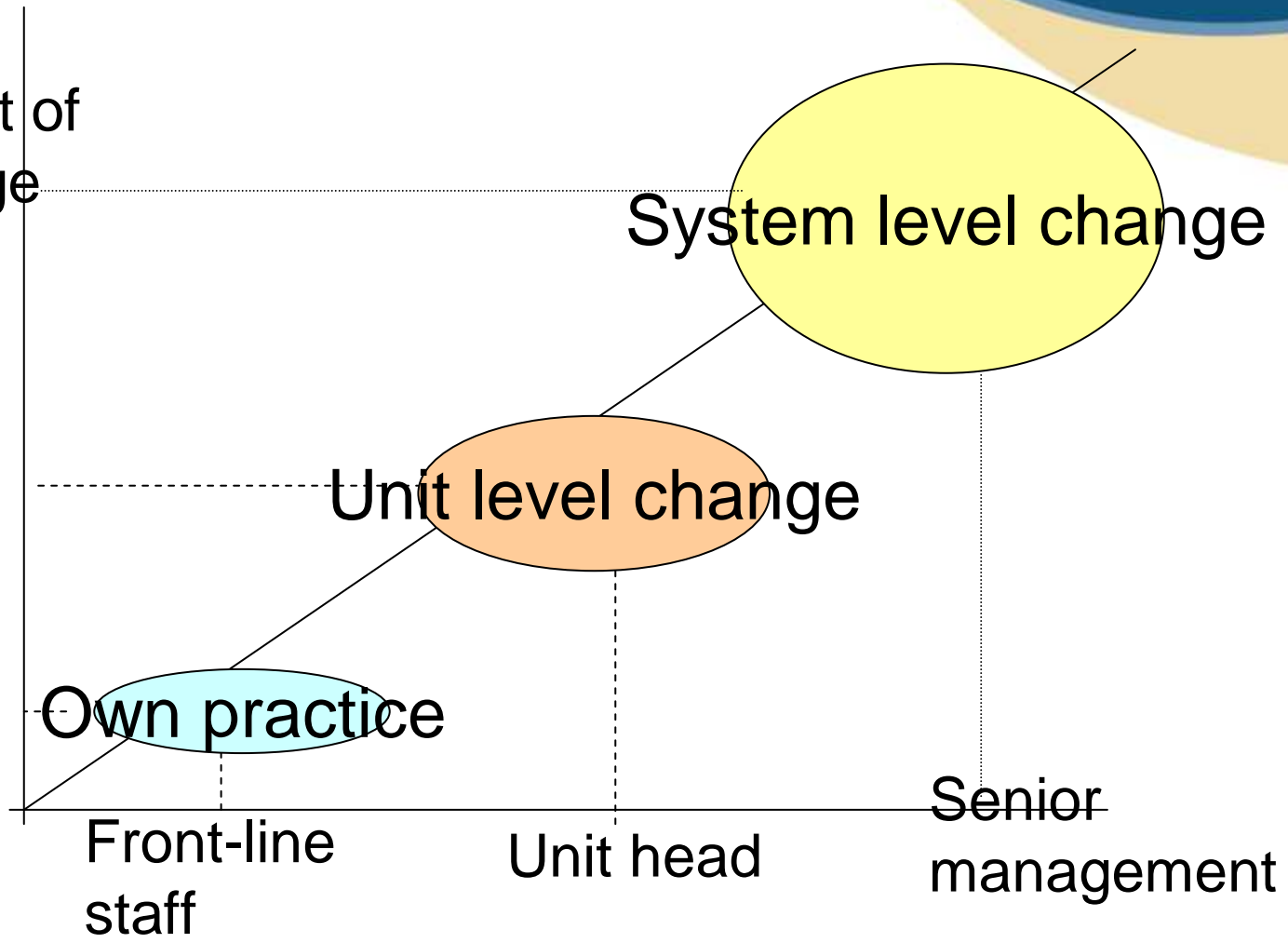
Clinical Services

Clinical  
Process  
Engineering



New clinical  
'product'  
development

Extent of change



System level change

Unit level change

Own practice

Front-line staff

Unit head

Senior management



**The greatest challenge:**

CONSTANCY  
OF  
PURPOSE