

# Benchmarking safety in real-time hospital work settings: challenges and promises

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Kings College London

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## **Patient Safety: the Issue**

Patient Safety: a Root Cause

Measuring Patient Safety: the SAVE program experience

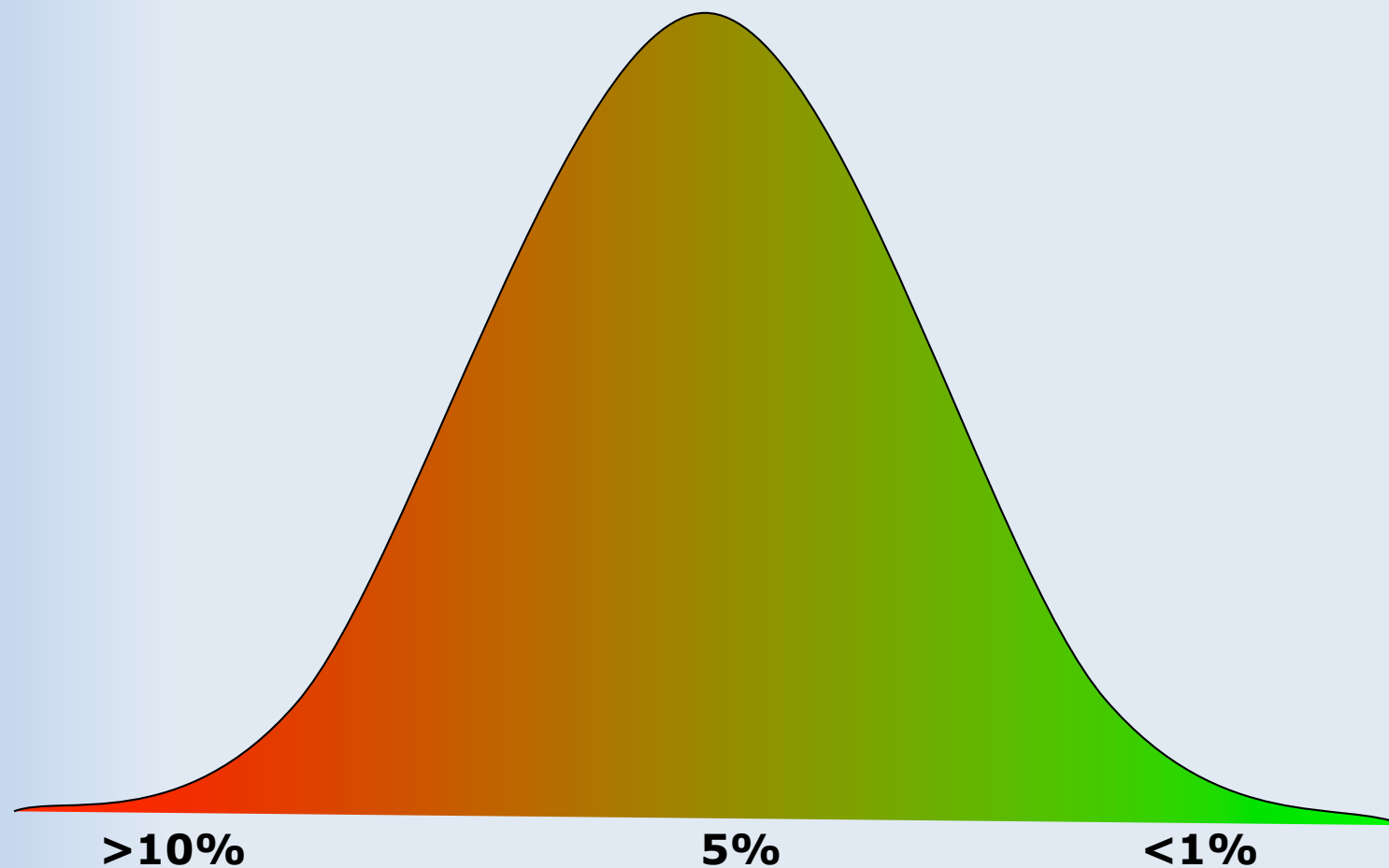
Patient Safety: the Never-Ending Quest



*"No, I haven't performed the procedure myself, but I've seen it done successfully on 'E.R.' and 'Chicago Hope'".*

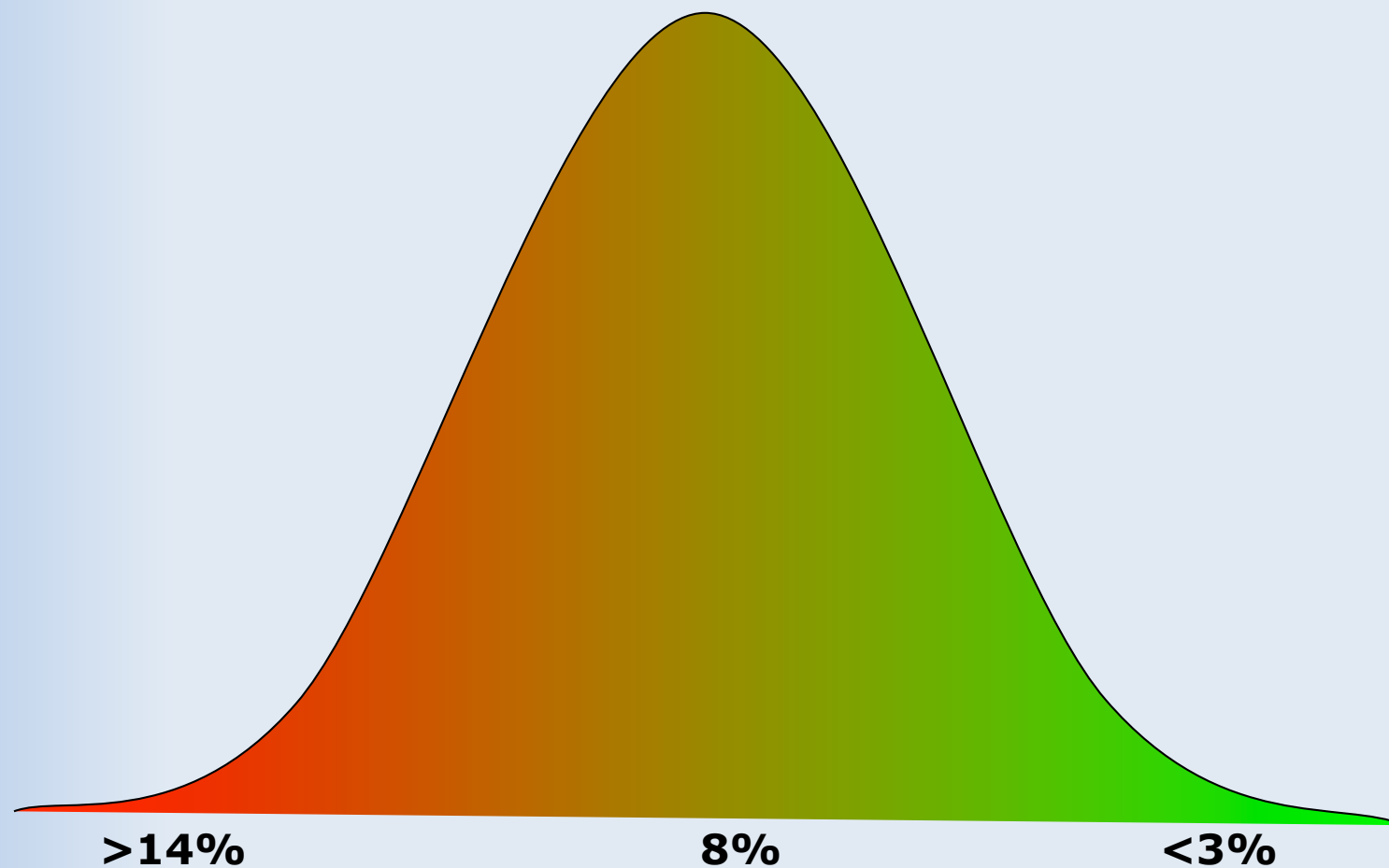
# The challenge of patient safety

Surgical wound infection rates after elective surgery



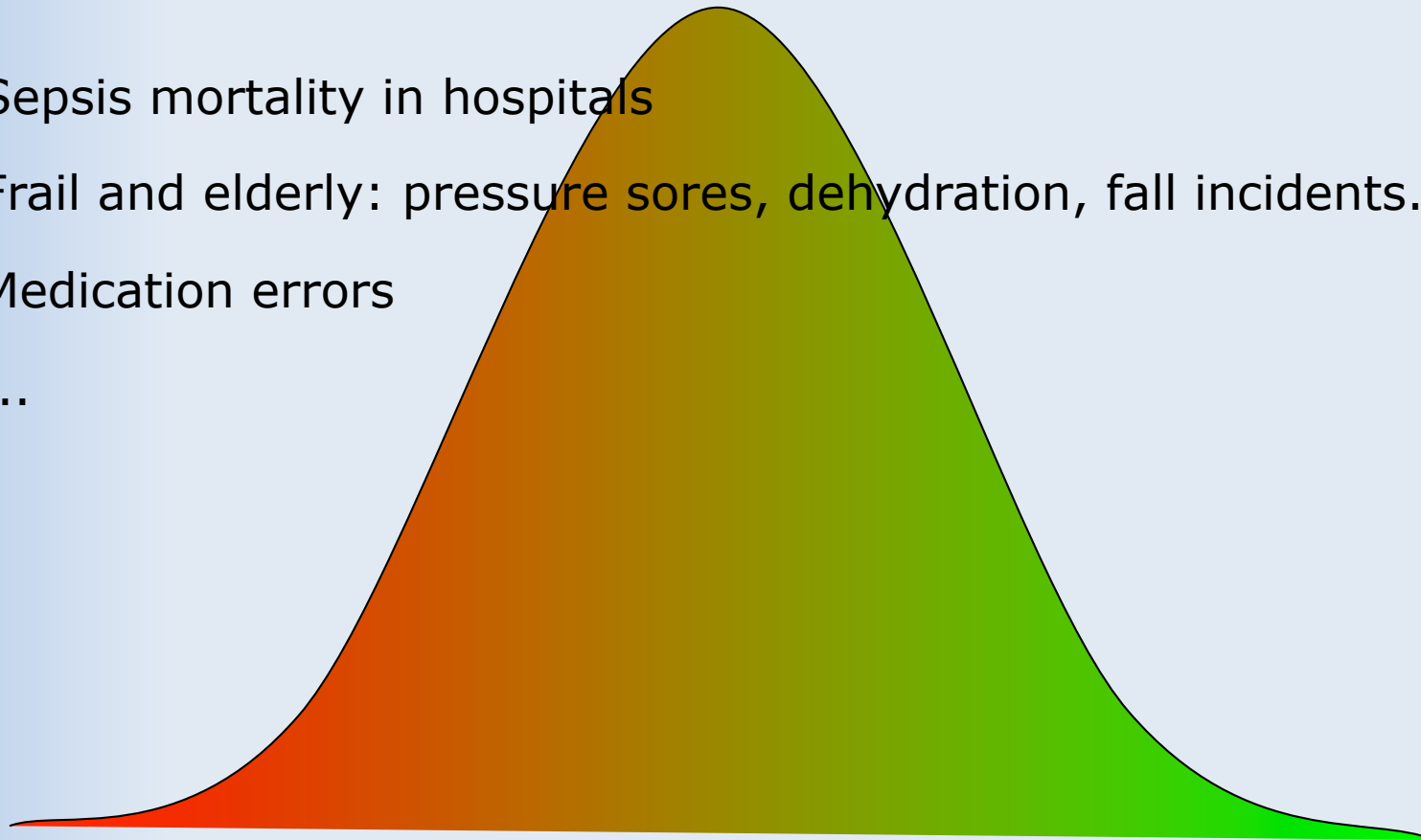
# The challenge of patient safety

Mortality of pancreatic resection in Dutch Hospitals  
(v. Heek e.a. 2005)



## The challenge of patient safety

- Sepsis mortality in hospitals
- Frail and elderly: pressure sores, dehydration, fall incidents...
- Medication errors
- ...



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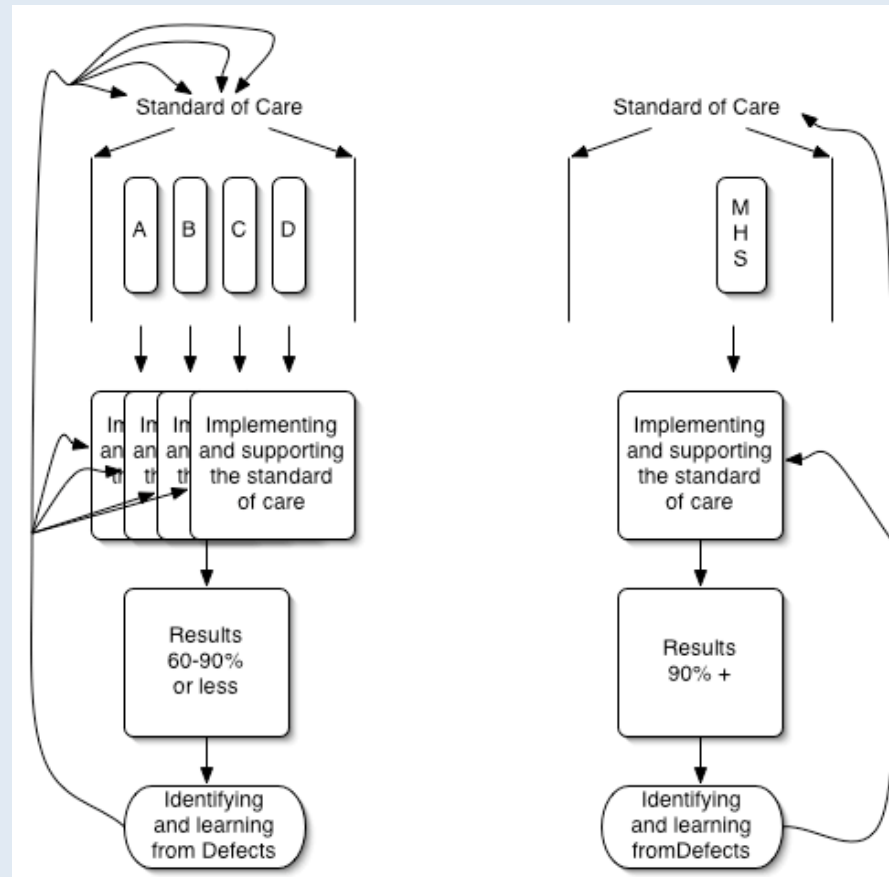
# One-step logistics

## Consequences for Patient Safety

- Ad hoc working patterns, much improvisation
- A lack of 'standardized operating procedures' results in a lack in operating *routines*
  - Three different gynaecologists may still have each their own way of proceeding with a cesarean section
- Standardisation is a core strategy for addressing Safety
  - 'Reliable design' of workprocesses: 'trying as hard as you can' will realise error margins of only  $10^{-1}$
  - $10^{-2}$  requires standardisation
  - $10^{-3}$  requires building in standards in organizational routines, ICT, forms, technology

# Standardising Care Processes

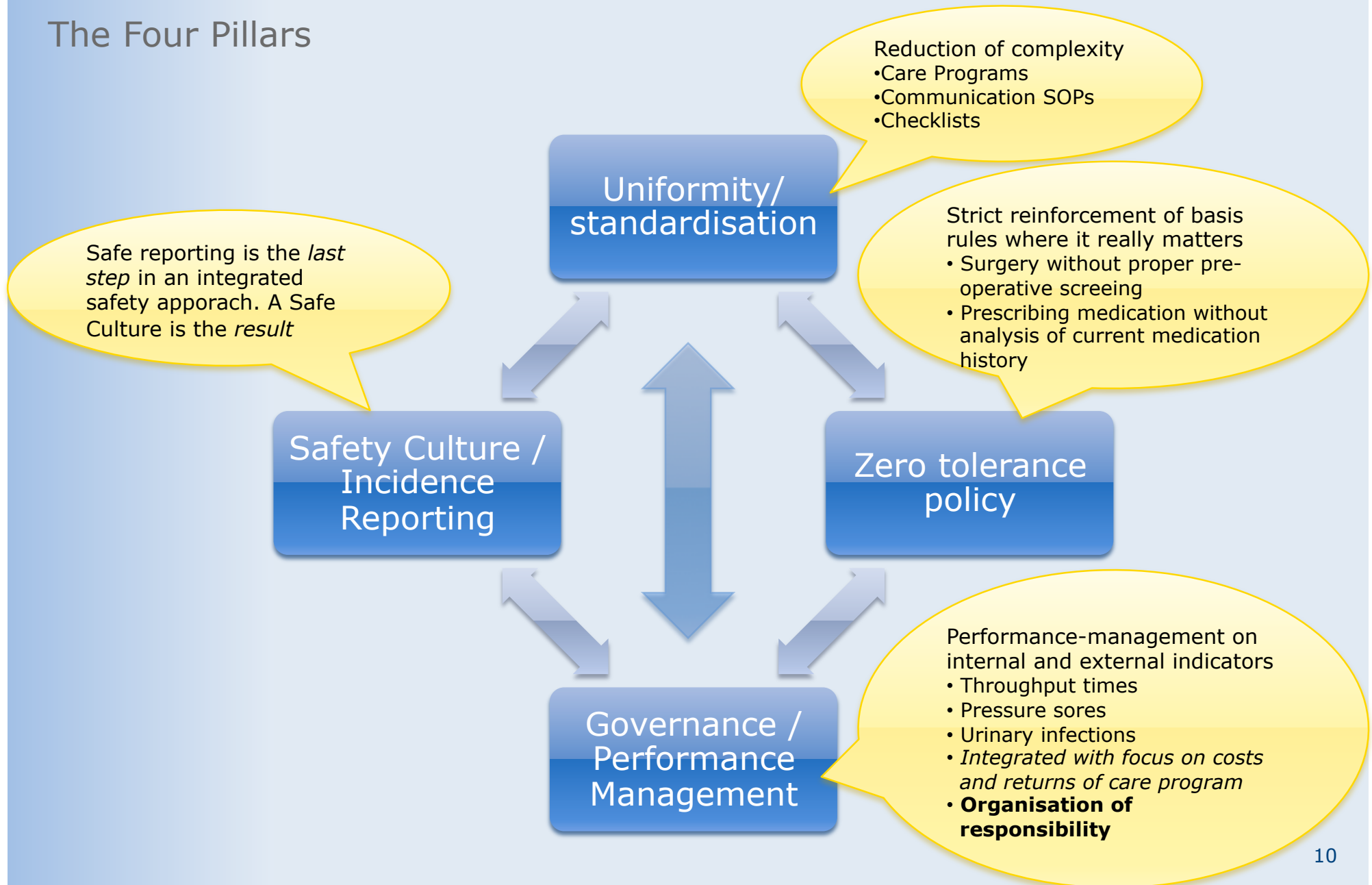
**Current** -  
 Variable, lots of autonomy not owned, poor if any feedback for improvement, constantly altered by individual changes, performance stable at low levels



**Desired** - variation based on clinical criteria, no individual autonomy to change the process, process owned from start to finish, can learn from defects before harm occurs, constantly improved by collective wisdom - variation

# Realising Patient Safety

## The Four Pillars



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# SAVE

*Saving Lives and Saving Costs in one program*

- Standardisation: Introducing Care Programs (hospital-wide; in- and outpatient)
- Measuring Quality, Safety and Efficiency through benchmarking of core processes:

- ER
- OR
- ICU
- Frail and Elderly Patients
- Medication Management



High Risk/High Cost processes

# Benchmarks: the philosophy

Getting to Change through the Confrontation with your own Data

- Combination of workflow measurements (4-8 weeks) and administrative data analysis
- First step is validation of their own data with doctors and managers
- Second step is presentation of the benchmark with improvement potential
- Third step is improvement plan underwritten by professionals and management
- Fourth step is ongoing measurement

# Example: OR Benchmark

- Optimally safe..
  - Low post-operative mortality and morbidity
- ... with optimal use of resources
  - OR time used
  - FTE personnel

# Safety focus

## Pre-operative

- Pre-operative screening
- Pre-operative preparation

## Per-operative

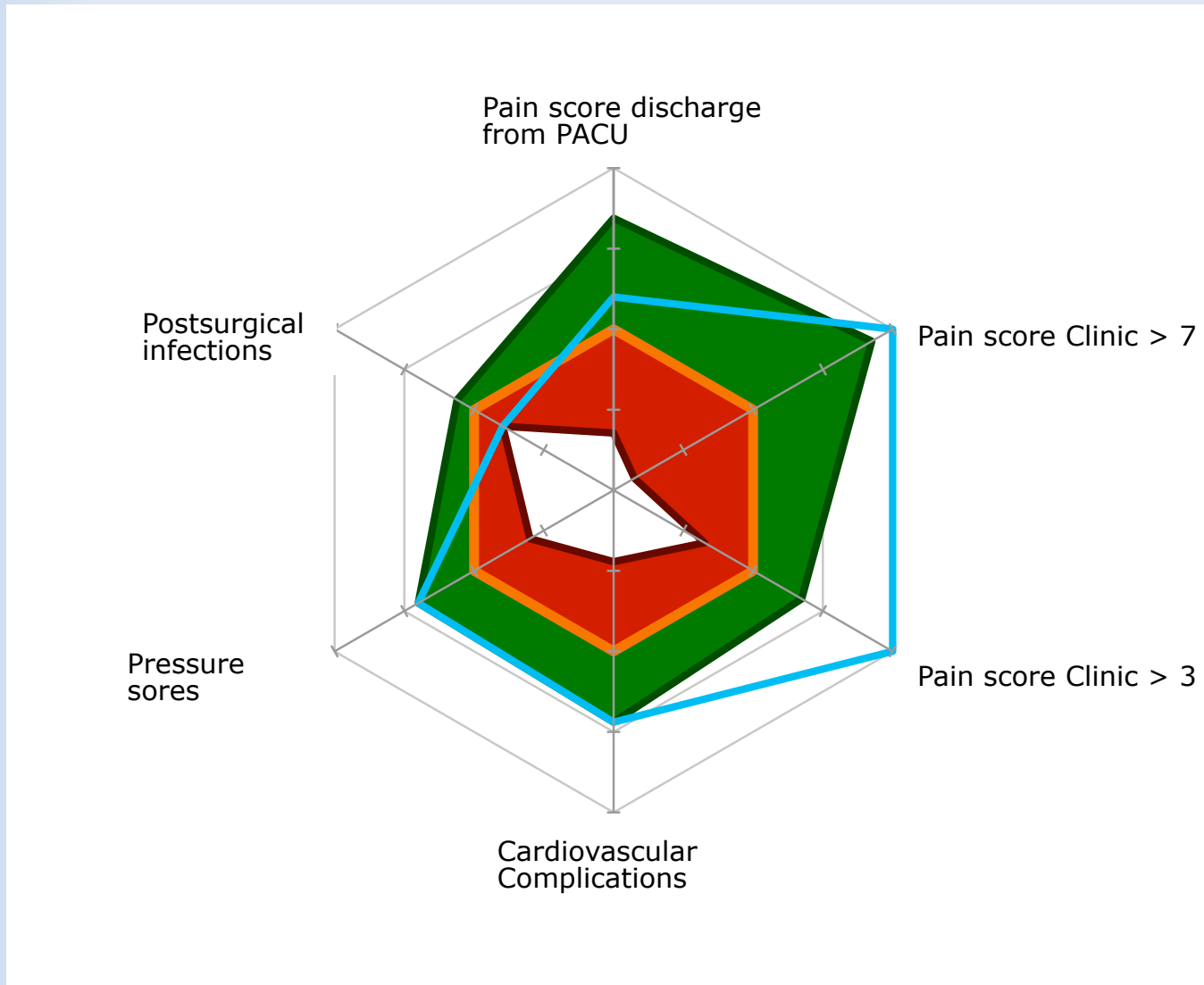
- Communication / uniformity of procedure
- Anesthesiological work process
- Training Culture
- Safety Culture

## Post-operative/ complications

- Pain
- OR – department flow
- *Mortality*
- Complications
  - Surgical wound infections
  - Pressure Sores
  - Cardiovascular

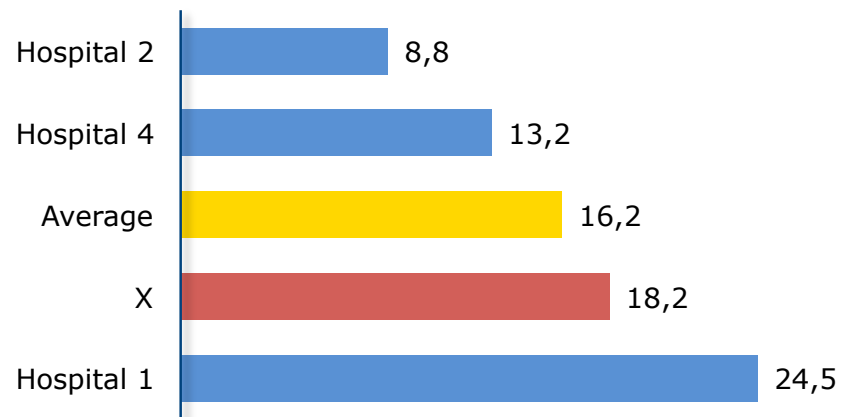
- *What is measured depends on pragmatic mixture of what is available, attainable, SMART enough..*
- *.. yet the same data are measured with uniform definitions for all participating hospitals*

# Post-operative process - score

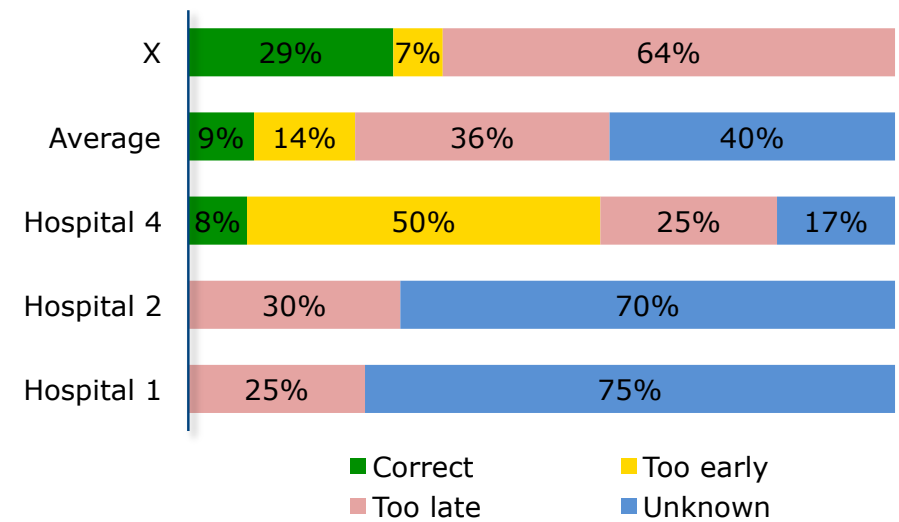


# Measure examples

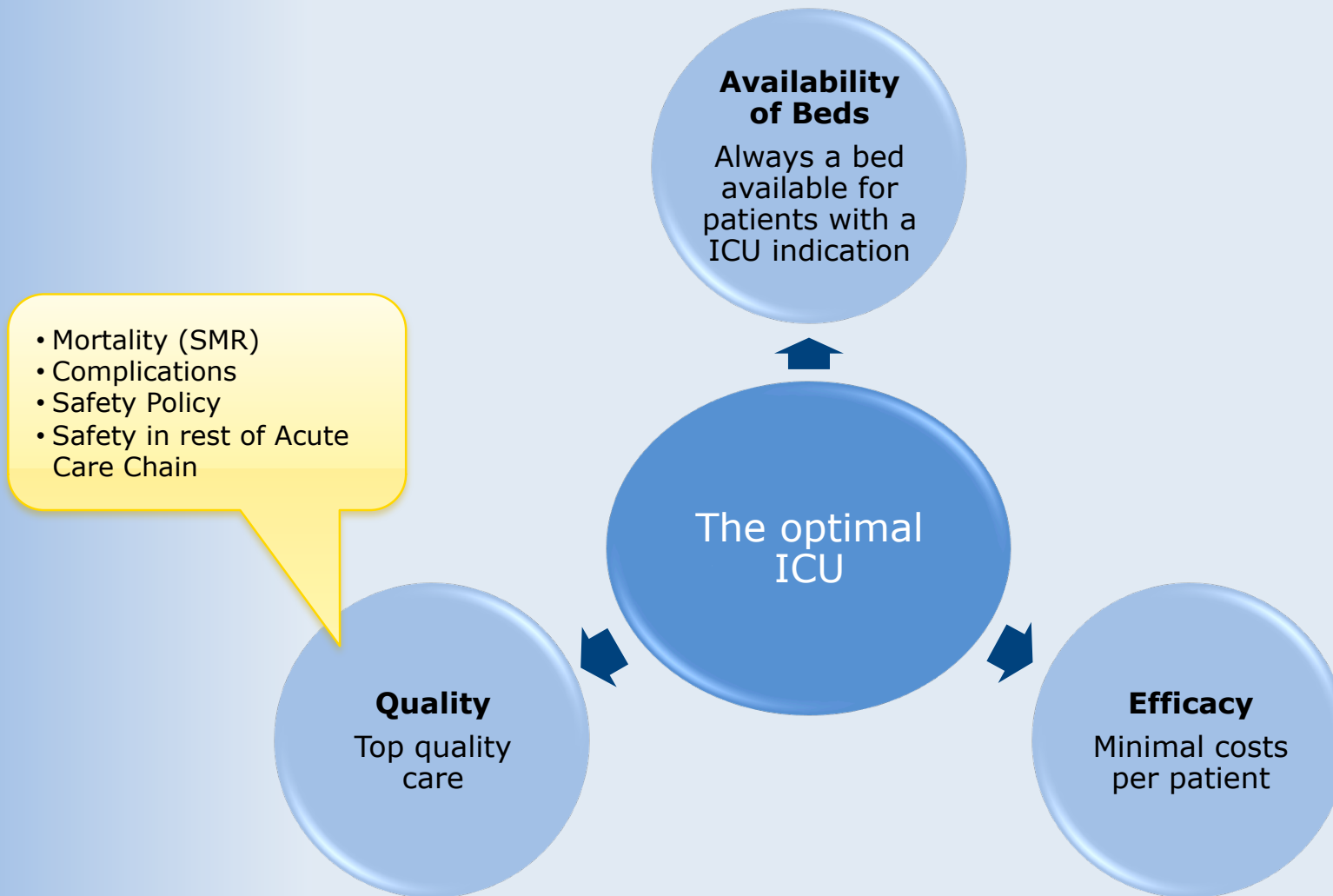
# Door movements per hour of surgery



Thrombosis profylaxis on time

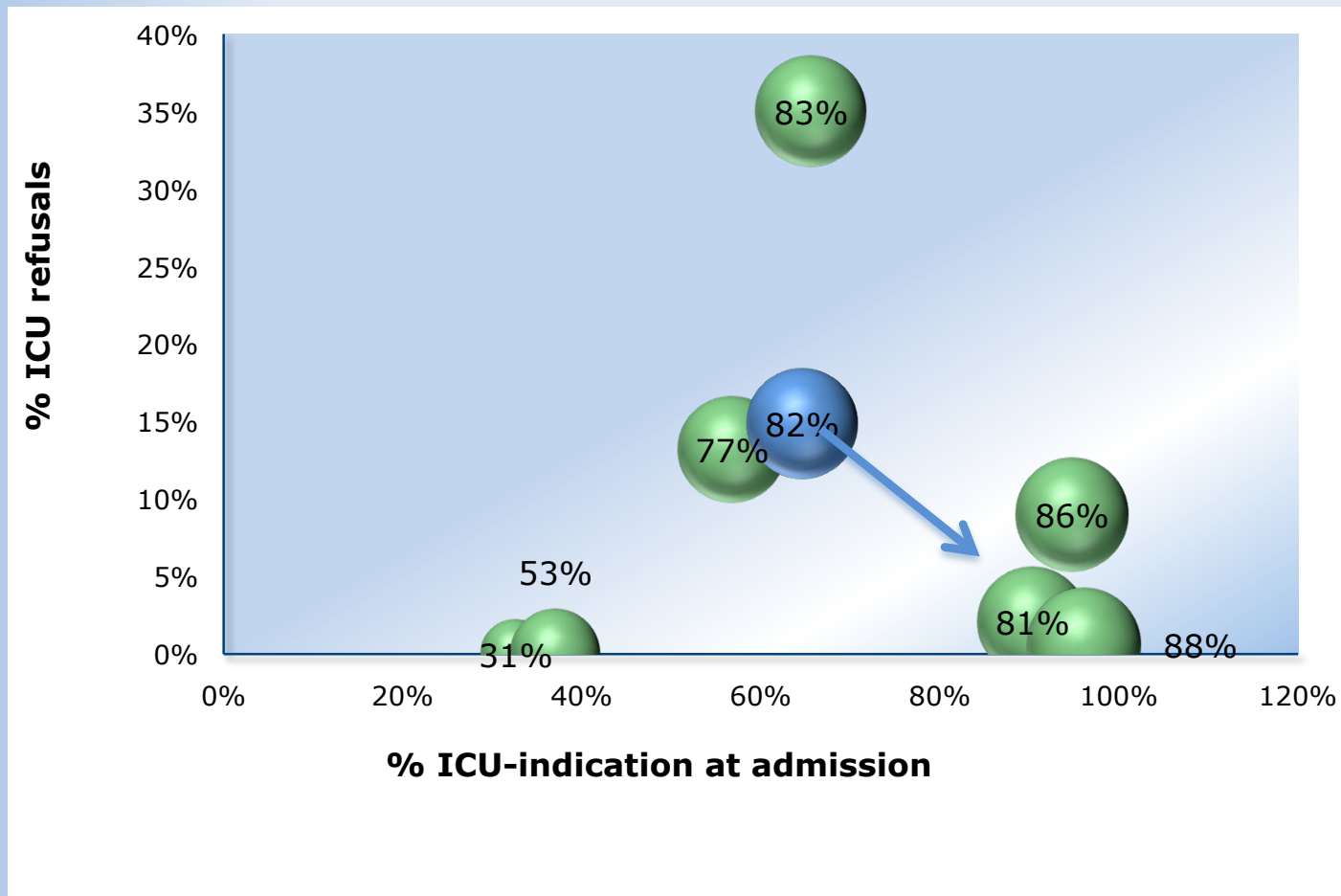


# Example: ICU benchmark



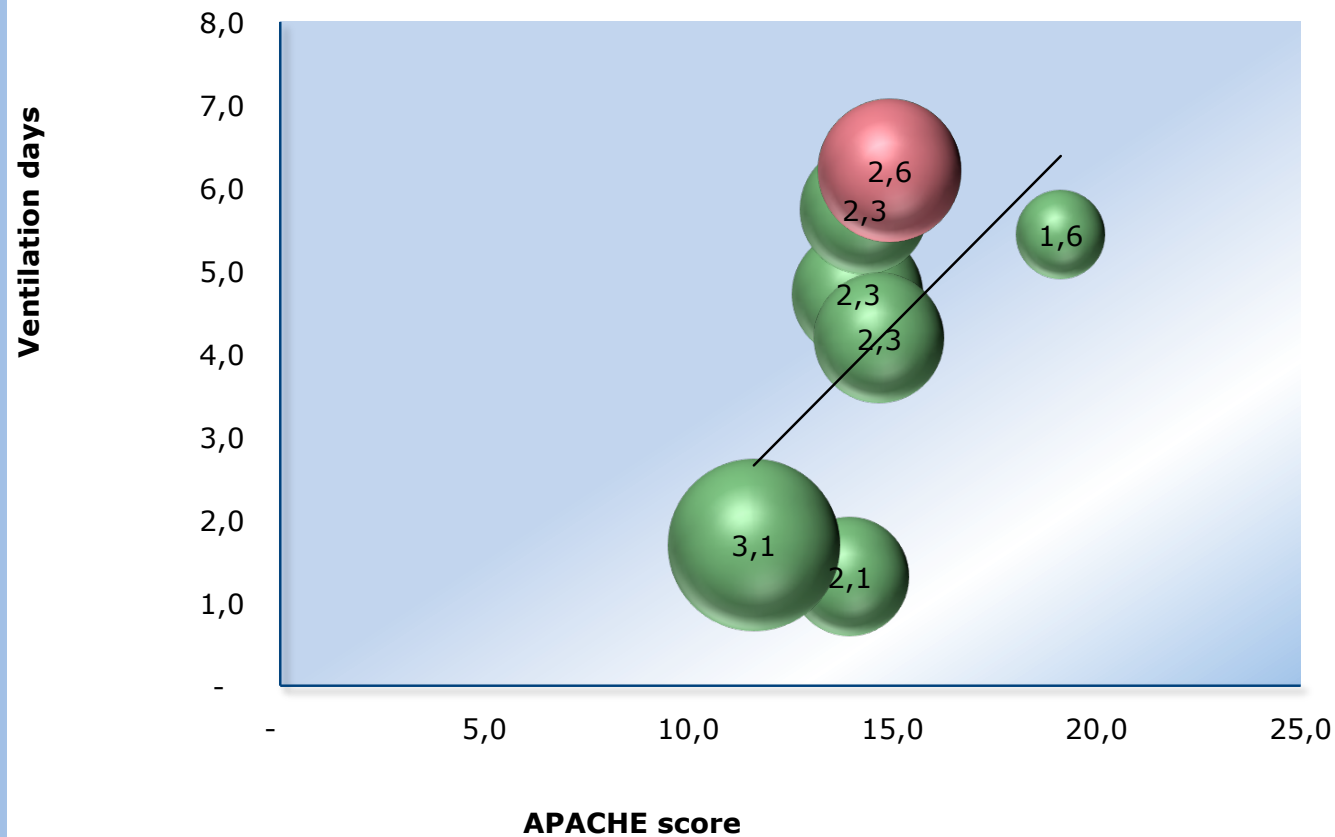
# Flow is linked to safety

Increase appropriateness of use to reduce refusals



# Reducing chance of VAPs

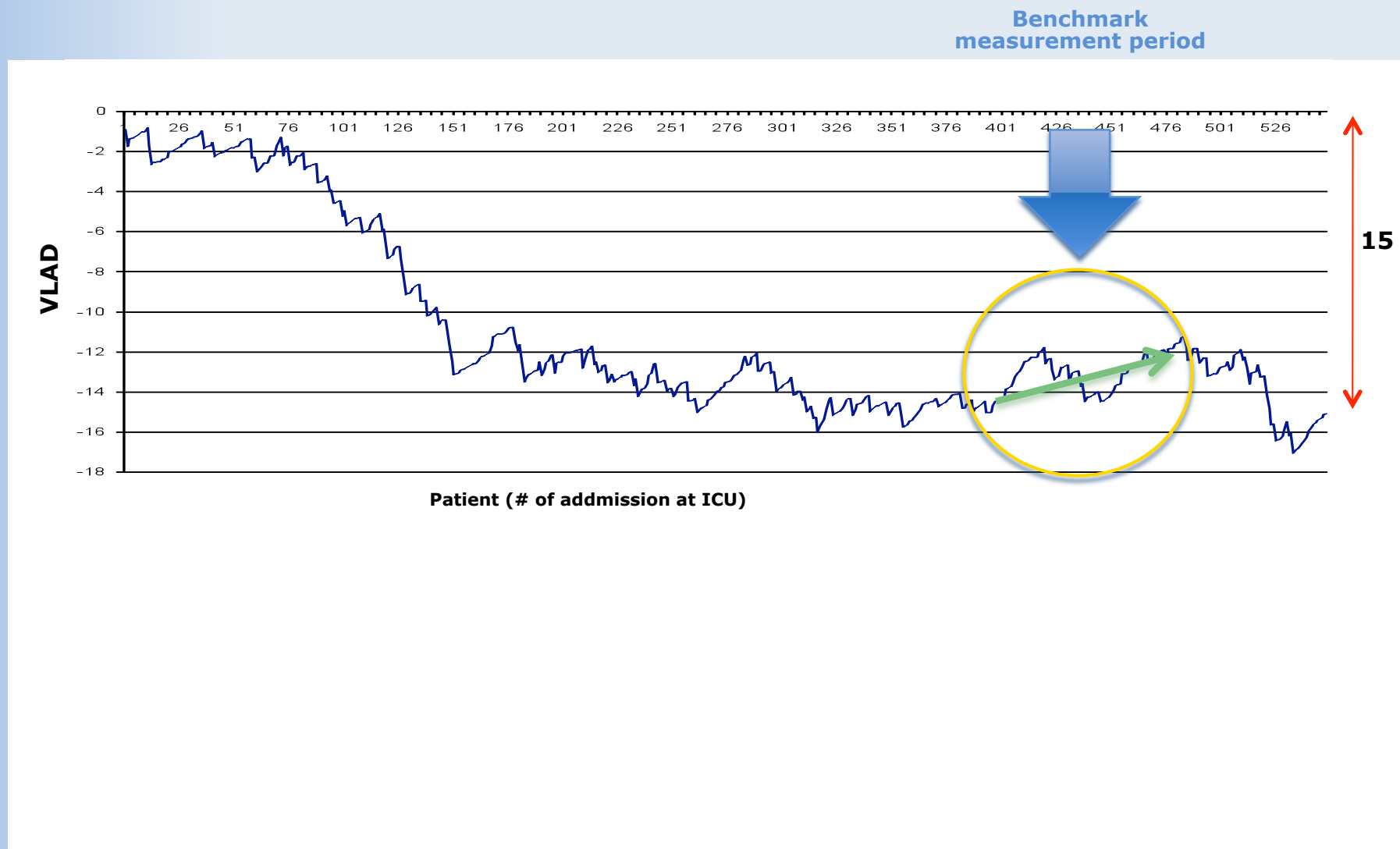
Reduce # of ventilation days



Size of ball: intensity of sedation

# VLAD

Risk-adjusted mortality and the effect of measurement...?



# Impact hospital wide at a glance...

SAVE program: two years after start

Organisatie zorgproces - geleverde kwaliteit				Financieel Resultaat	
		Spiegel ?	Trend ?	Trenddoel ?	
Veiligheid	% zkh-sterfte	○ 2,1 %	▲ -5,5 %	-5,0 %	
	% hartstilstand in zkh	○ 0,07 %	▲ -15,1 %	-5,0 %	
Effectiviteit	% patiënten geopereerd/geinterv.	○ 21,2 %	▲ -6,5 %	+5,0 %	
	% endoscopische OK	● 9,0 %	▲ +5,4 %	+5,0 %	
	% heropname < 12 weken voor dezelfde diagnose	● 6,1 %	▲ -17,6 %	-5,0 %	
	% heroperatie < 14 dagen, ongeacht diagnose/spec	● 3,2 %	▲ -17,0 %	-5,0 %	
Patiënt-gerichtheid	bezoekmomenten pat aan zkh per DBC	● 2,9	▲ -10,3 %	-5,0 %	
	tijd start tot einde DBC	● 120	▲ -18,5 %	-5,0 %	
	opnameduur (K+D), obv dagen	● 4,0	▲ -5,8 %	-5,0 %	
	opnameduur (K), obv dagen	● 6,5	▲ -7,8 %	-5,0 %	
	postoperatieve ligduur	● 4,1	▲ -29,0 %	-5,0 %	
Doelmatigheid	% spoedopname klinisch I	● 43,3 %	▲ -0,80 %	-5,0 %	
	activiteitsniveau per DBC	● 614	▲ +4,3 %	-5,0 %	
	% klinische dagen medisch uitbehandeld	● 3,4 %	▲ +173 %	-5,0 %	
	# 1e polibezoeken per DBC	● 0,64	▲ +0,16 %	-5,0 %	
	# herhaalbezoeken per DBC	● 0,89	▲ -16,5 %	-5,0 %	
	verpleegduur (excl. verk. bed)	● 3,8	▲ -2,8 %	-5,0 %	
Operationeel					Spiegel ? Trend ?
Administratieve afhandeling	tijd laatste activiteit tot sluiten DBC	● 42,3	▲ -16,7 %		
	tijd van sluiten tot facturatie DBC	● 33,4	▲ -6,6 %		
Economisch					

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# Challenges of Improving Patient Safety and Patient Safety Measurement

## I: Driving Home the Message

- Denial is deeper when it comes to safety:
  - 'who are you to tell me I've let people die'
- Chasm between management and professionals runs deeper:
  - 'who are you to tell me I'm not doing my job'
- *Yet 'conspiracy of silence' is slowly disappearing...*
- *... professionals threw us out and then started to implement improvements*

# Challenges of Improving Patient Safety and Patient Safety Measurement

## II: Monitoring the Improvement

- After consultancy or management is pushed out, the workflow measurement often stops...
  - *'too much work'*
  - *'we know what we have to do'*
- .. and the 'gap' between what you've focused on and the 'end score' is often huge
  - is the reduction in hospital mortality due to what you've worked on?
  - *even in the published best practices, there is no clear link between improvement activity and outcome...*

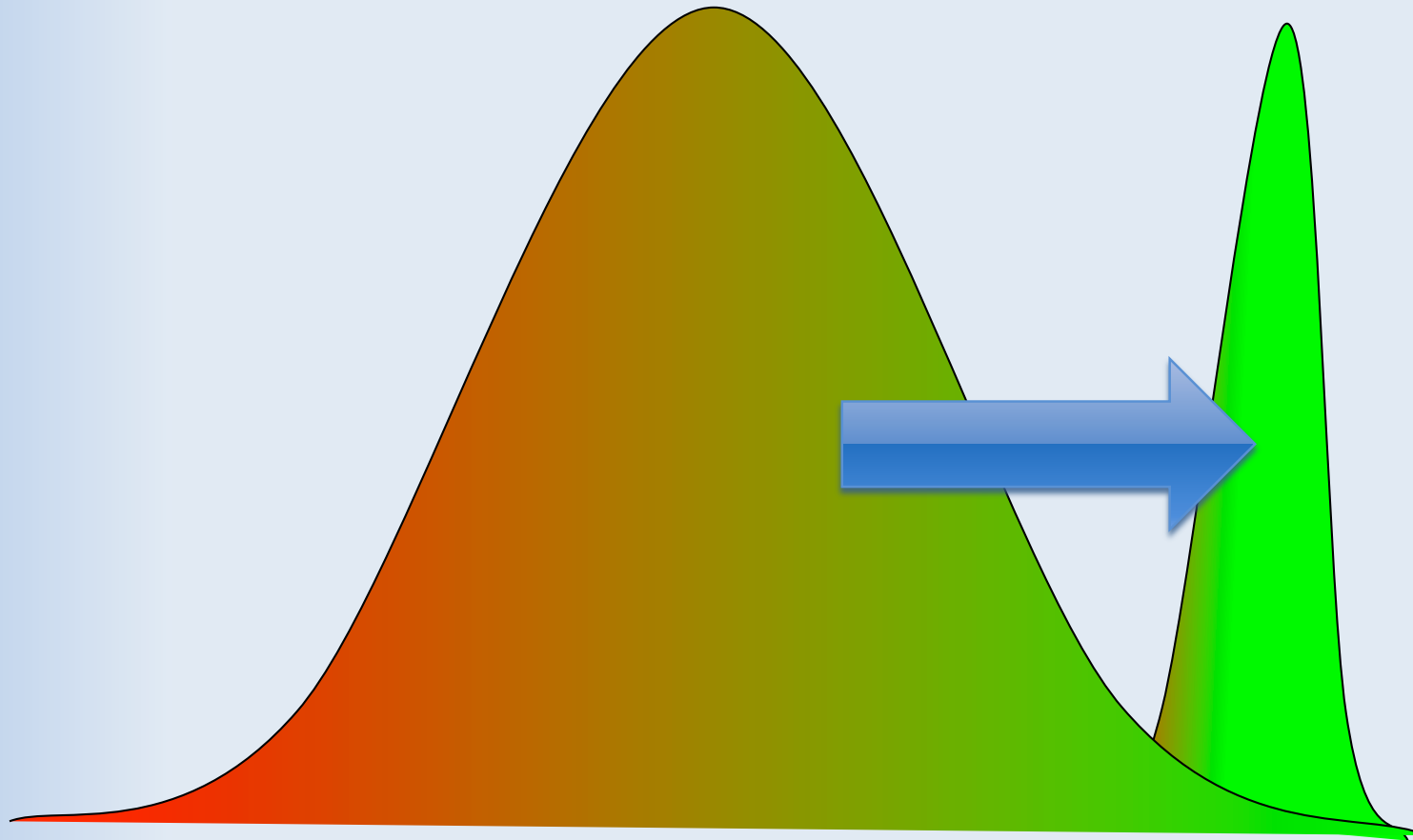
# Yet Transparency and Measurement remain the best way ahead...

'Sunshine is the best disinfectant'

- Pressure sores scores reducing rapidly since Dutch Health Care Inspectorate started to publicly publish hospital scores
- Publishing data on low volume high-risk interventions had the same impact
- The Science of Outcome Measurement is advancing rapidly
  - Many clinical risk score are becoming available *and* are being routinely used
    - Stroke, AMI, CABG, ICU mortality etc.
- "*Easy to manipulate the data*"
  - It's even easier to spot data manipulation...
  - ... and your reputation is your most valuable possession

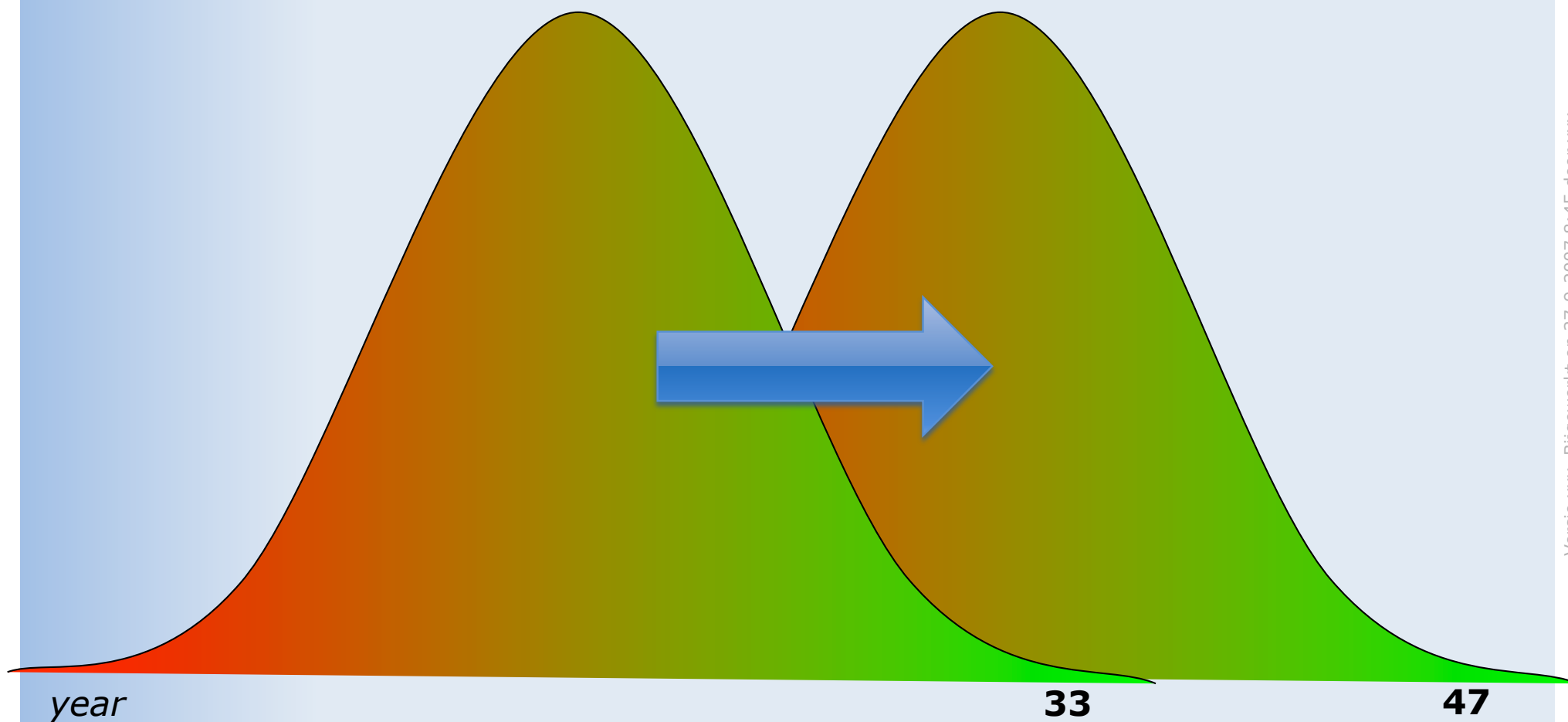
# What's the future?

Will we all become a 'best practice'?



# No – the better ones get better

Atul Gawande 'The Bell Curve' : Cystic Fibrosis survival US clinics



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# Patient Safety as a Never-Ending Challenge

