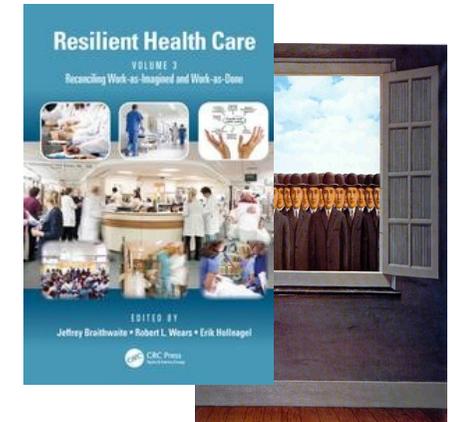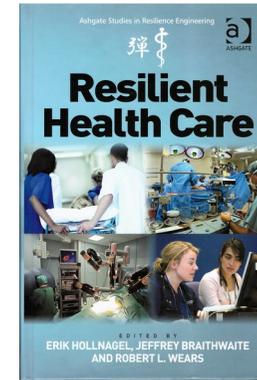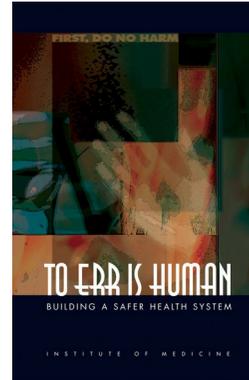# Managing Healthcare Safely: a Safety-II Perspective

Erik Hollnagel
Professor, Professor Emeritus, Ph.D.

Primum non nocere

Sporadic period (~500 B.C. - 1950)
In hindsight, patient safety was a minor concern.

Breakout period (~1990 - 2015)
Patient safety becomes a legitimate area of activity.

Resilient period (2011 - ????)
Distinction between Safety-I and Safety-II.

FIRST, DO NO HARM

TO ERR IS HUMAN
BUILDING A SAFER HEALTH SYSTEM
INSTITUTE OF MEDICINE

Resilient Health Care
EDITED BY
ERIK HOLLNAGEL, JEFFREY BRAITHWAITE
AND ROBERT L. WEARS

Resilient Health Care
VOLUME 3
Reconciling Work-as-Imagined and Work-as-Done
EDITED BY
Jeffrey Braithwaite • Robert L. Wears • Erik Hollnagel

500 BC   0   1800   1900   2000

1847   1860   Harvard medical practice
1991

The problem is safety!

Patient safety is the <u>absence</u> of <u>preventable harm</u> to a patient during the process of health care. The discipline of patient safety is the coordinated efforts to prevent harm, caused by the process of health care itself, from occurring to patients.

Patient Safety
Making health care safer

When we think about safety, we usually think about accidents – about (low probability) events with adverse outcomes.

Learning from experience (traditional)

← Looking back

Looking ahead →

Evaluate experience – how a crisis was handled.

When we look back, we pay attention to failures and mistakes.

Was something missing? Resilience?

Lessons learned – what should we do next time?

How can we avoid the same failures and mistakes in the future?
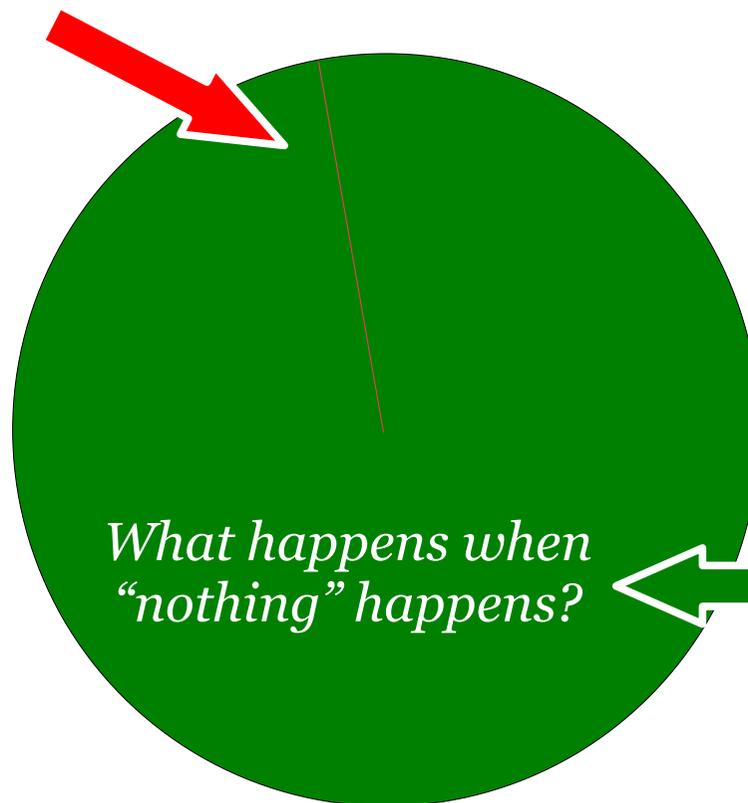
How can we provide what was missing?

What do we learn from experience?

Accidents, failures & mistakes

Easy to see
Happens rarely
"Simple" causes
Find & fix

We learn what does not work!

But we do not learn what works!

What happens when "nothing" happens?

Work that goes well ("Non-events")

"Difficult" to see
Happens all the time
Easy to understand
Usually neglected

How should we learn from experience?

← Looking back

Looking ahead →

Evaluate experience – how a crisis was handled.

When we look back, we pay attention to failures and mistakes.

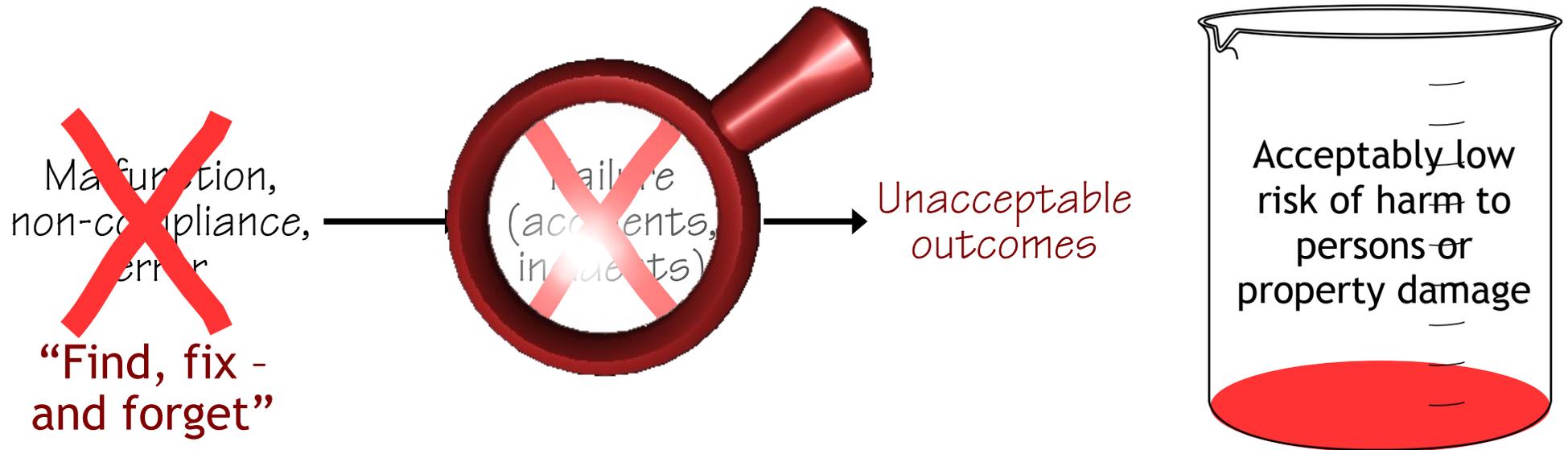*When we look back, we should also pay attention to strengths.*

Lessons learned – what should we do next time?

How can we avoid the same failures and mistakes in the future?

*How can we improve strengths?*
How can we do better what was done well?

Managing safety

Safety-I: A condition where the number of adverse outcomes (accidents / incidents / near misses) is as low as possible.

Malfunction, non-compliance, error

"Find, fix – and forget"

Failure (accidents, incidents)

Unacceptable outcomes

Acceptably low risk of harm to persons or property damage

Prevent, eliminate, contain, constrain.

"Identification and measurement of adverse events is central to safety."

Managing safety by snapshots
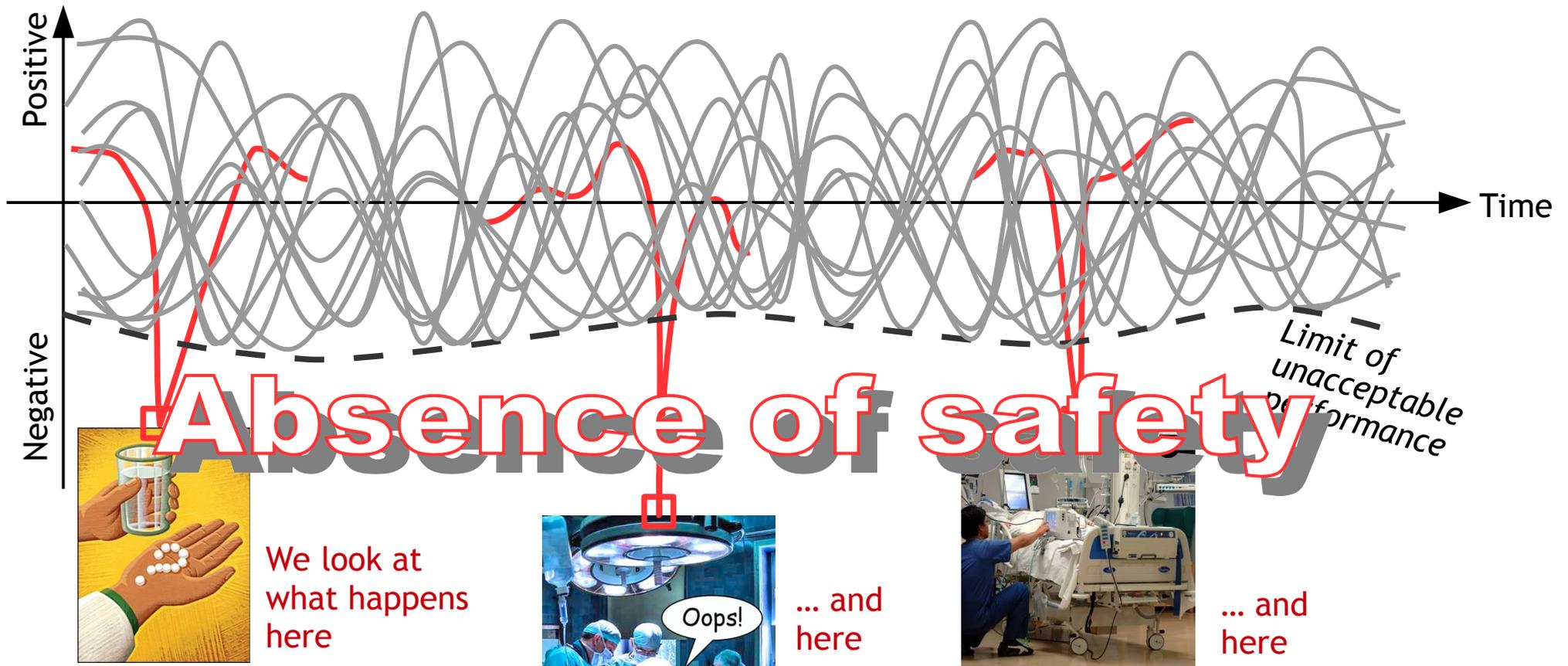
© Erik Hollnagel, 2021

Safety-II and learning

Is it possible to understand what a happy marriage is by analysing and learning from divorces alone?

Analogy suggested by Marit de Vos

Is it possible to understand what safety is by analysing and learning from accidents and incidents alone?

The problem is not safety!

Safety is defined and measured more by its absence than by its presence.
Reason, J. (2000). Safety paradoxes and safety culture. Injury Control & Safety Promotion, 7(1), 3-14.

Reliability is a dynamic non-event … it is an ongoing condition in which problems are momentarily under control due to compensating changes … Weick, K. E. 1987.
Organizational culture as a source of high reliability. California Management Review 29 (2), 112-128.

Safety is invisible: people often don't know how many mistakes they could have made but didn't …

Safety is invisible: reliable outcomes are constant, which means there is nothing to pay attention to.

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Explaining what happens and how

Difficult to see when "nothing" happens

No need to understand why the expected happened.

A need to understand why the unexpected happened.

Easy to see when something happens

-3σ -2σ -1σ μ 1σ 2σ 3σ x

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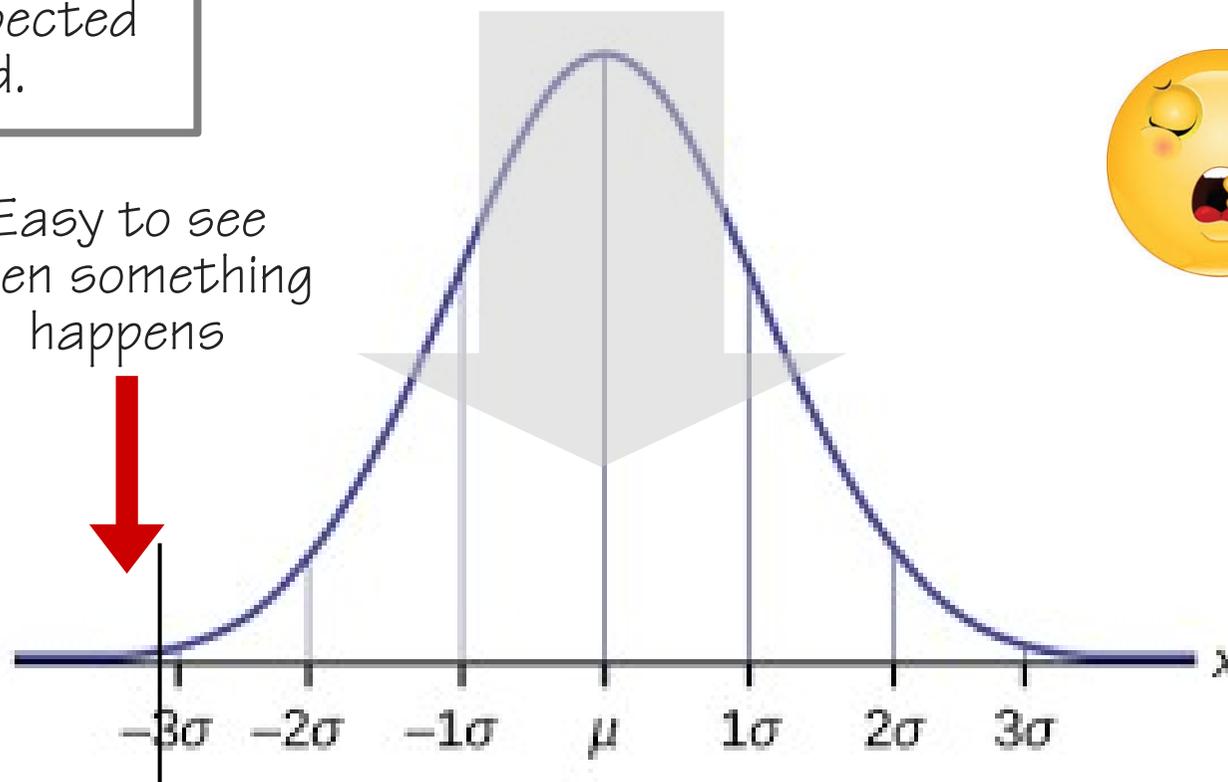
Can we explain why things go well?

We have few ways of explaining how and why things go well!

To manage safety we must know what happens when "nothing" happens.

Presence of safety

Outcome value

Positive

Negative

Time

Limit of unacceptable performance

We have many ways of explaining how and why things go wrong.

Life is full of expected events

Every day, from morning to night,

practically everything we do

works just as it should ...

... and we take it for granted

The need of adjustments

Many socio-technical systems are non-trivial.
Some details are not fully known.

Conditions of work therefore never completely match
what has been imagined or specified.

Few — if any — tasks can successfully be carried out
unless procedures and tools are adapted to the situation.
Performance adjustments are both normal and necessary.

➤ Individuals, groups, and organisations always
adjust what they do to match existing conditions
(resources, demands, conflicts, interruptions).

➤ Because resources (time, manpower, information,
etc.) always are finite, such adjustments will
invariably be approximate rather than exact.

Performance adjustments

→ Acceptable outcomes

→ Unacceptable outcomes

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"Work-as-imagined" and "work-as-done"

Safety synesis synthesis

Design (tools, roles, environment)	Work & production planning ("lean" - optimisation)	Safety management, investigations & auditing

Work-As-Imagined   Work-As-Imagined   Work-As-Imagined

ACCIDENT INVESTIGATION

Work-As-Done

Post Interventional Unit Rooms 316 - 325
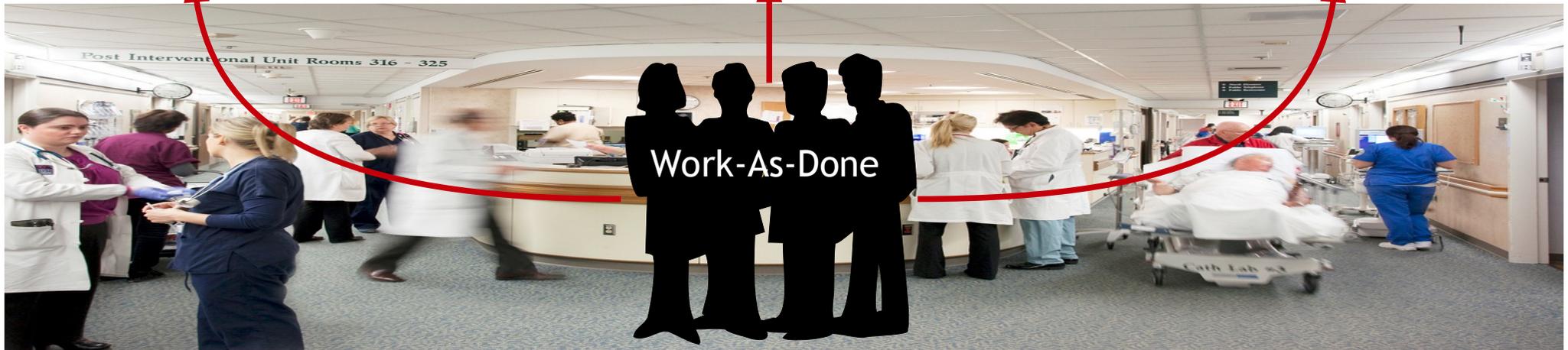
Managing safely

Safety-II Safety is a condition where as much as possible goes well. It is the ability to perform as required under varying conditions.

Approximate adjustments → Acceptable outcomes 😊

Approximate adjustments → Unacceptable outcomes ☹️
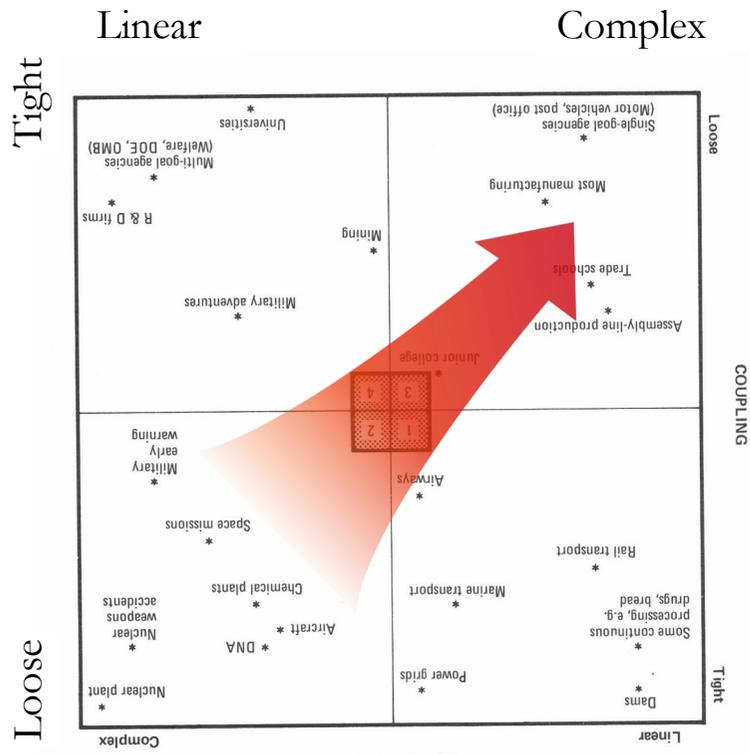
As much as possible goes as needed and intended.
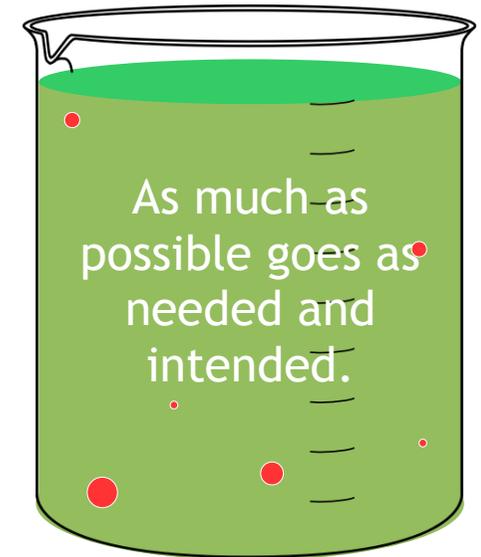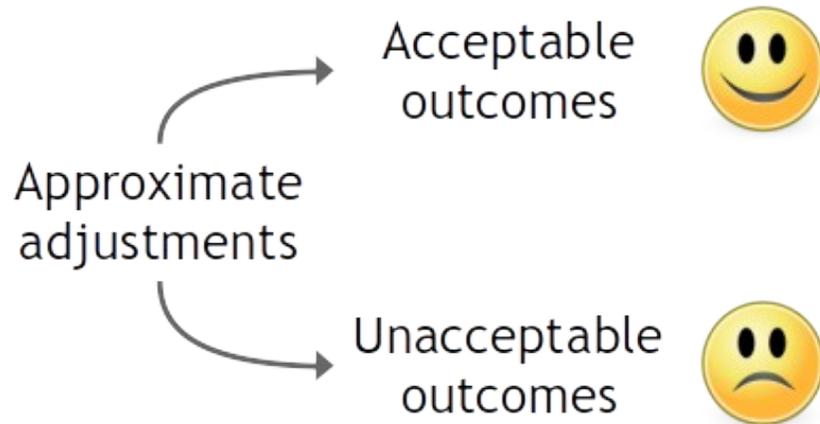
Support, strengthen, facilitate, improve.

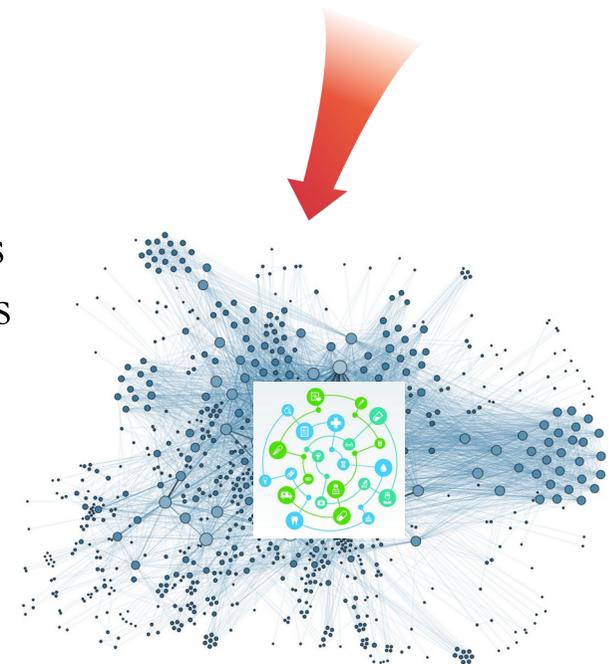"Something cannot go well and fail at the same time."
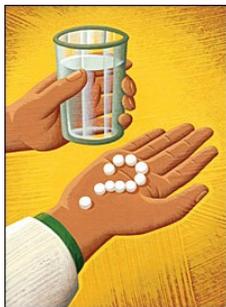
Healthcare: dynamic, complex, high-risk

Perrow (1984). Normal accidents

The performance of a **complex adaptive system** is not predictable from how the "components" function.

A **complex adaptive system** cannot be managed as if it was isolated from the surroundings

Problems and solutions must match

Simple problems may (possibly) have

Simple solution

Complex problems <u>always</u> require

Complex solutions

Disguising complex problems as simple problems by offering apparently "simple" solutions does not make the problems any simpler.

It only makes it more likely that the solution will not work.

From resilience to resilient performance

Resilience as a property

Simple: what a system has

Resilience is the ability
to react to and recover
from disturbances.

Resilience as a quality

Complex: how a system does

Resilient performance matches
requirements under expected
and unexpected conditions
alike.

弾

2006

2020

*We can only measure the <u>potential</u> for resilience but
not resilience itself. (Hollnagel & Woods, 2006)*

Lincoln's "House Divided" Speech

"If we could first know <u>where</u> we are and <u>whither</u> we are tending, we could better judge <u>what</u> to do and <u>how</u> to do it."

Springfield, Illinois, June 16, 1858

Management requires knowledge

Position:	How (well) do you know the current position? Are there any delays? What happens around the organisation?
Goal:	How have goals been defined and targets set? Are there priorities or conflicting interests? What is the time window / time horizon?
Means:	Are the means appropriate for the goals? How much effort will be required and by whom? Is there any "noise" that may drown the "signals"?

Three assumptions:

Everything will work as planned.

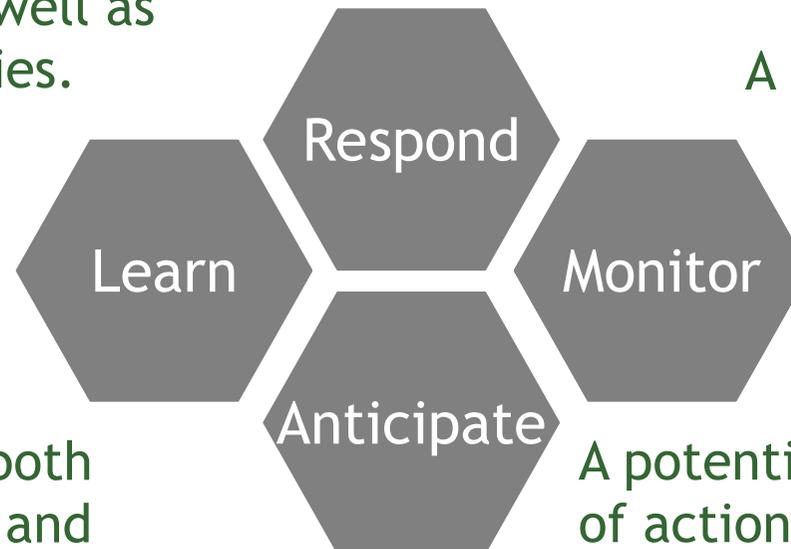Conditions will be stable during the change.

Nothing else will be done.

Systemic potentials

An organisation should be able to function as required under expected and unexpected conditions alike (changes / disturbances / opportunities).

A potential to respond to threats as well as opportunities.

A potential to monitor what happens - externally and internally.

A potential to learn - both from what goes well and what goes wrong.

A potential to anticipate the effects of actions as well as long-term changes to demands and resources.

Respond

Learn

Monitor

Anticipate

The potentials apply to both individual and organisational performance.

Why the four potentials are needed

Without the potential to respond, threats and opportunities will go unanswered.
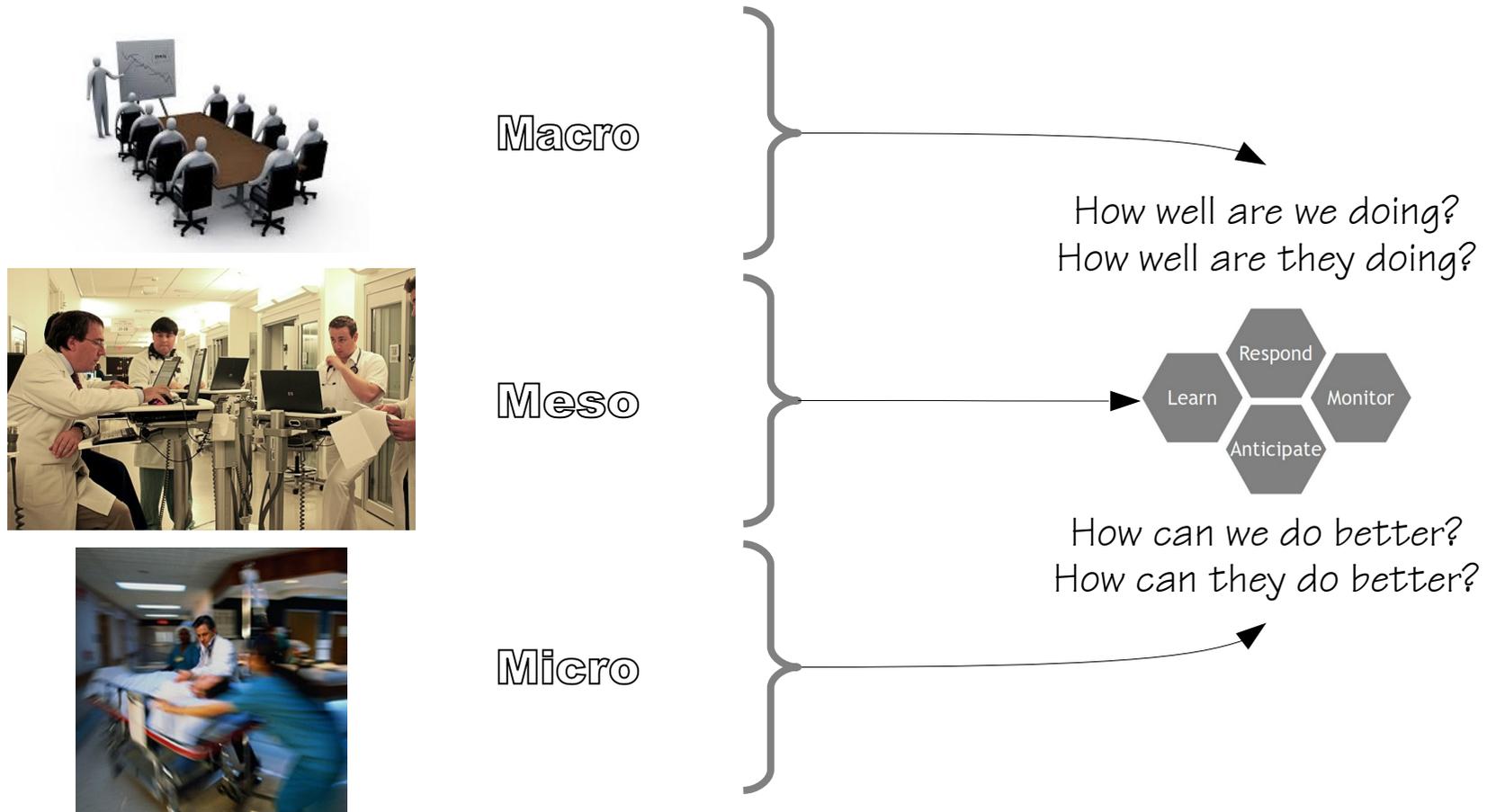
Without the potential to monitor, everything that happens will be a surprise

Respond

Learn

Monitor
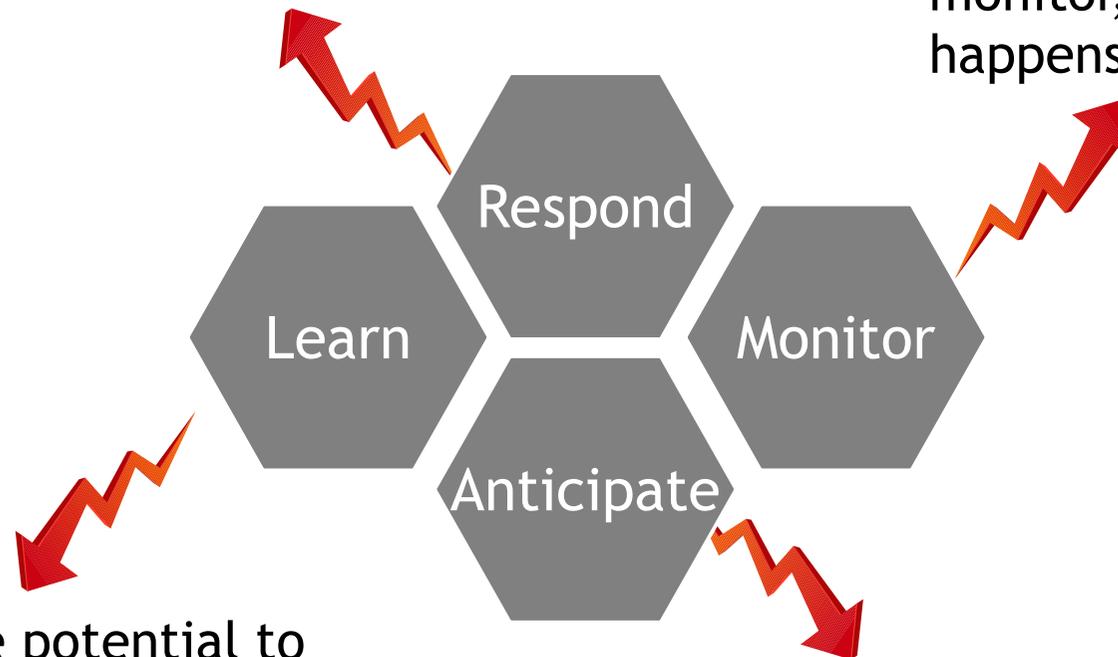
Anticipate

Without the potential to Learn, the system will always respond in the same way and rely on the same indicators.

Without the potential to anticipate the future is assumed to be a repetition of the past.

Managing by the four potentials

Macro

Meso

Micro

How well are we doing?
How well are they doing?

Respond
Learn   Monitor
Anticipate

How can we do better?
How can they do better?

The potentials can be used to manage resilient performance at all levels of an organisation.
They can be used to look at what others do – and also at what people do themselves.

The SPM can be used to show position

Systemic Potentials Profile for the ability to respond (constructed example)

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A single criterion is not enough

It is not enough to look at something in isolation or just one criterion for a system's performance. We need to look at other criteria as well.
Each criterion represents a special concern for the system's performance, with its own tradition, methods, models, and vocabulary.

| oductivity | Safety | Quality | Reliability | Resilience | Sustai |

But we must look at them together. It is the system's performance as a whole that we should be concerned with and manage.

Managing safety or managing safely?

Focus on what goes wrong

Select based on severity.
Cases are rare with few similarities.
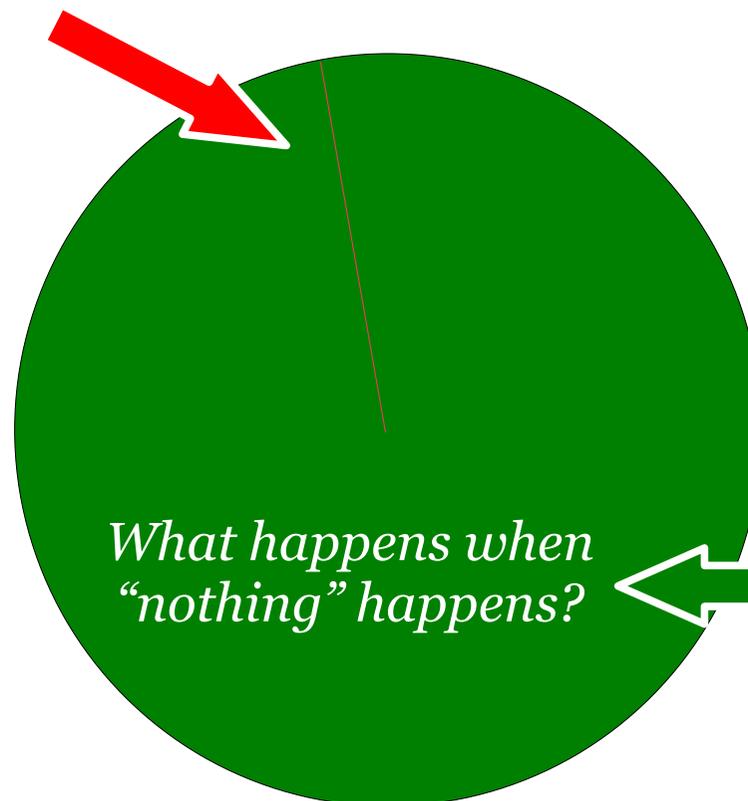Difficult to verify lessons.

Managing – healthcare safety

Managing healthcare – safely!

What happens when "nothing" happens?

Focus on what goes well

Select based on frequency.
Cases are aplenty with many similarities.
Easy to verify lessons.

Thank you for your attention