BMJ/IHI International Forum

E7: Radical change and safety

Friday 23rd May 1245-1345 Mission 1&2

On January 5, 2024, a door plug on a Boeing 737 MAX 9 aircraft, operated by Alaska Airlines Flight 1282, blew out mid-flight, causing an uncontrolled decompression and a near-catastrophic incident. The incident revealed critical manufacturing errors and raised serious safety concerns about Boeing's quality control.

PLANNING HORIZON

YEARS TO MONTHS	DAYS TO HOURS	HOURS TO MINUTES	MINUTES TO SECONDS
Planning	**Traffic Flow Management**	**Air Traffic Control and Flight Routing**	**Aircraft Flight**
> Preparing fleet, facilities, and personnel	> Balance demand and capacity	> Assure spacing	> Attitude control
> Procure fleet	• Ground delays	> Merging and spacing	> Velocity control
> Establish schedule	• Ground stops	> Detect and resolve conflicts	> Path following and guidance
> Plan network	• Metering	> Communicate with pilots	> Propulsion and vehicle performance
	> Recover schedule	> Avoid restricted airspace	> Navigation (estimating position and velocity)
	• Delays and cancellations	> Avoid hazards	> Managing payload
	• Aircraft and crew swaps		> Monitoring, configuring, and managing onboard systems
			> Flight planning and re-planning

Emerging Hazards in Commercial Aviation—Report 2

Ensuring Safety During Transformative Changes

NATIONAL ACADEMIES — Sciences Engineering Medicine

Consensus Study Report

https://nap.nationalacademies.org/cart/download.cgi?record_id=27805
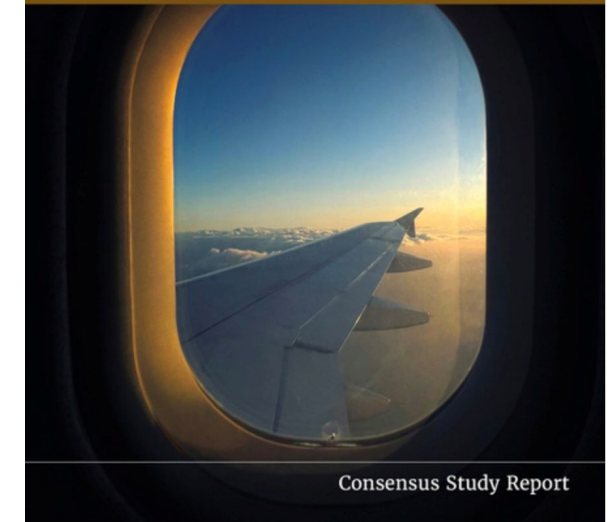
Recognising that we need to change, how do we create the conditions for transformation to be as safe as possible?

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Viral change in a nation: The Time to Connect Safety II program

Anne Marie Weggelaar, Tilburg University (Netherlands)

Results from the Swedish nationwide change initiative on knowledge-based healthcare

Karl Landergren, Medical Director, Region Östergötlandand (Sweden)

Evelina Linnros, Analyst, SALAR (Sweden)
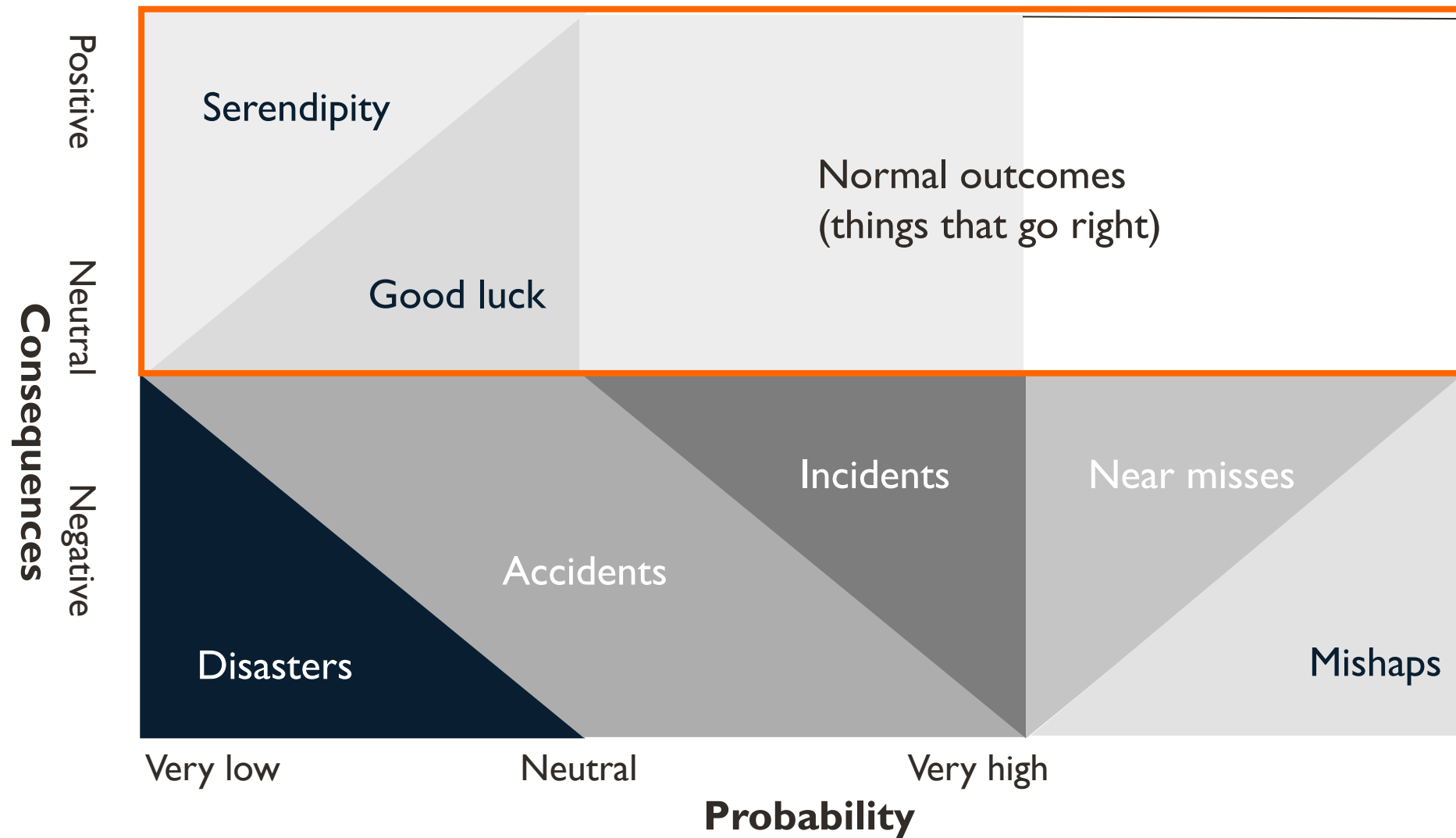
Sasha Karakusevic
NHS Horizon

Disclosure statement

| Anne Marie Weggelaar | I declare I have a conflict of interest as I receive research funding from Time to Connect. The presented information stems from my research. |

Safety-II paradigm and principles

Serendipity

Normal outcomes
(things that go right)

Good luck

Incidents

Near misses

Accidents

Disasters

Mishaps

Consequences — Positive / Neutral / Negative

Probability — Very low / Neutral / Very high

Hollnagel, E. (2011) Prologue: The Scope of Resilience Engineering. In: Hollnagel, E., Paries, J., Woods, D.D. and Wreathall, J., Eds., Resilience Engineering in Practice: A Guidebook, Ashgate Publishing Company, Bulington, xxix-xxxix.

Safety-I

Cue for enhancing patient safety: unexpect and unwanted events (e.g., failure, adverse events, accidents).

Reducing (impact and occurrence) of what goes wrong due to erratic acts.

Reactive learning: analysis of adverse events.

Human factor(s) are the main risk.

Harm can be prevented by standardization, rules and forced functions.
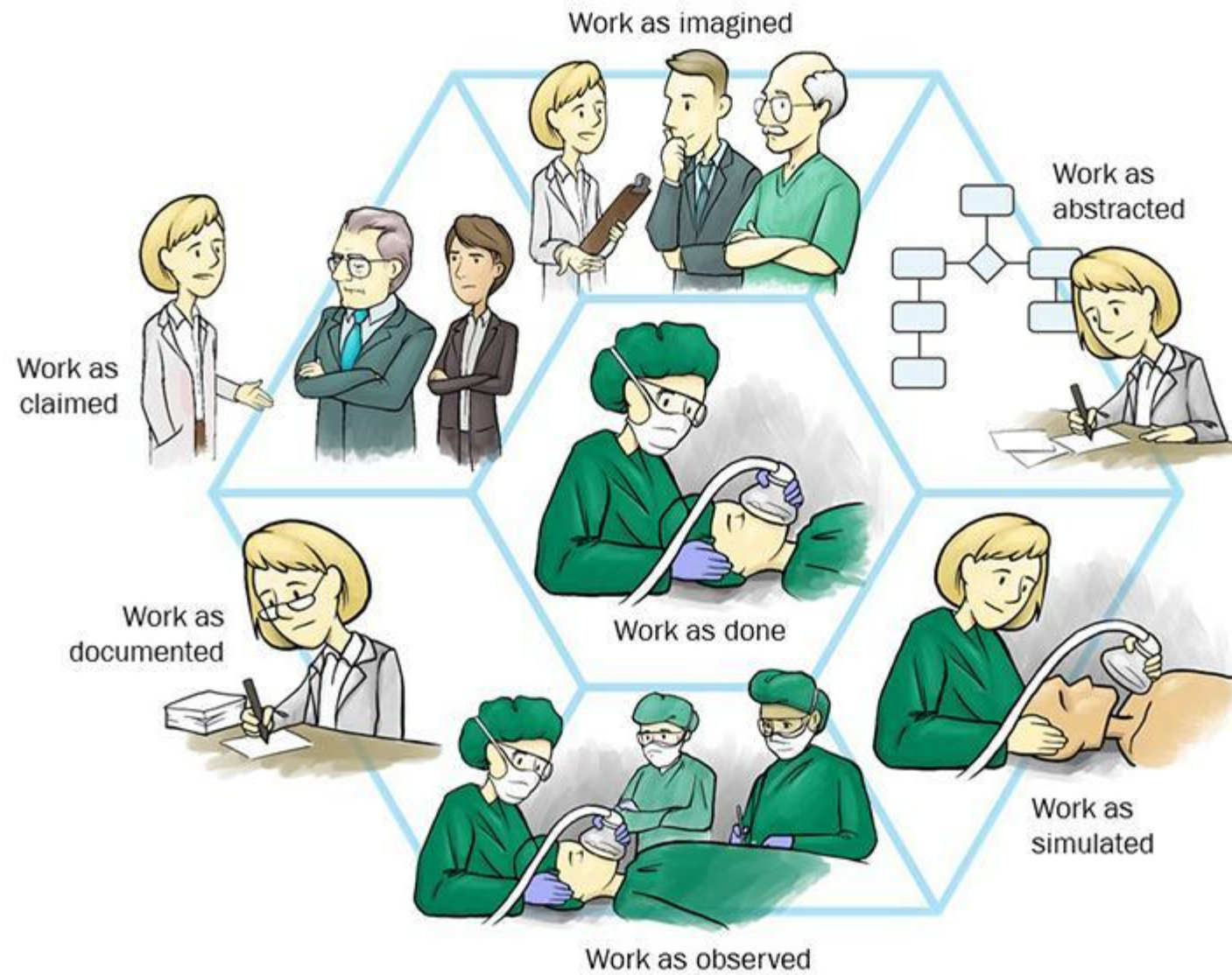
Safety-II

Cue for enhancing patient safety: understanding success of daily practice and management of variability.

Enhancing that things go right and focus on adaptation to conditions.

Proactive learning: from mundane practices.

Human behaviour creates safety.

Harm can be prevented by reflexivity and resilience.

Work as imagined

Work as abstracted

Work as claimed

Work as done

Work as documented

Work as simulated

Work as observed

https://patientsafety.pa.gov/ADVISORIES/pages/201706_80.aspx

Our daily practice and systems are poorly understood.

Therefore, our systems are unsafe.

Safety II Assumptions

As variation is inherent, safety requires work.

When we want more reliability, we need responsiveness and resilience of systems and people.

3 THEMES

ANTICOAGULATION CARE
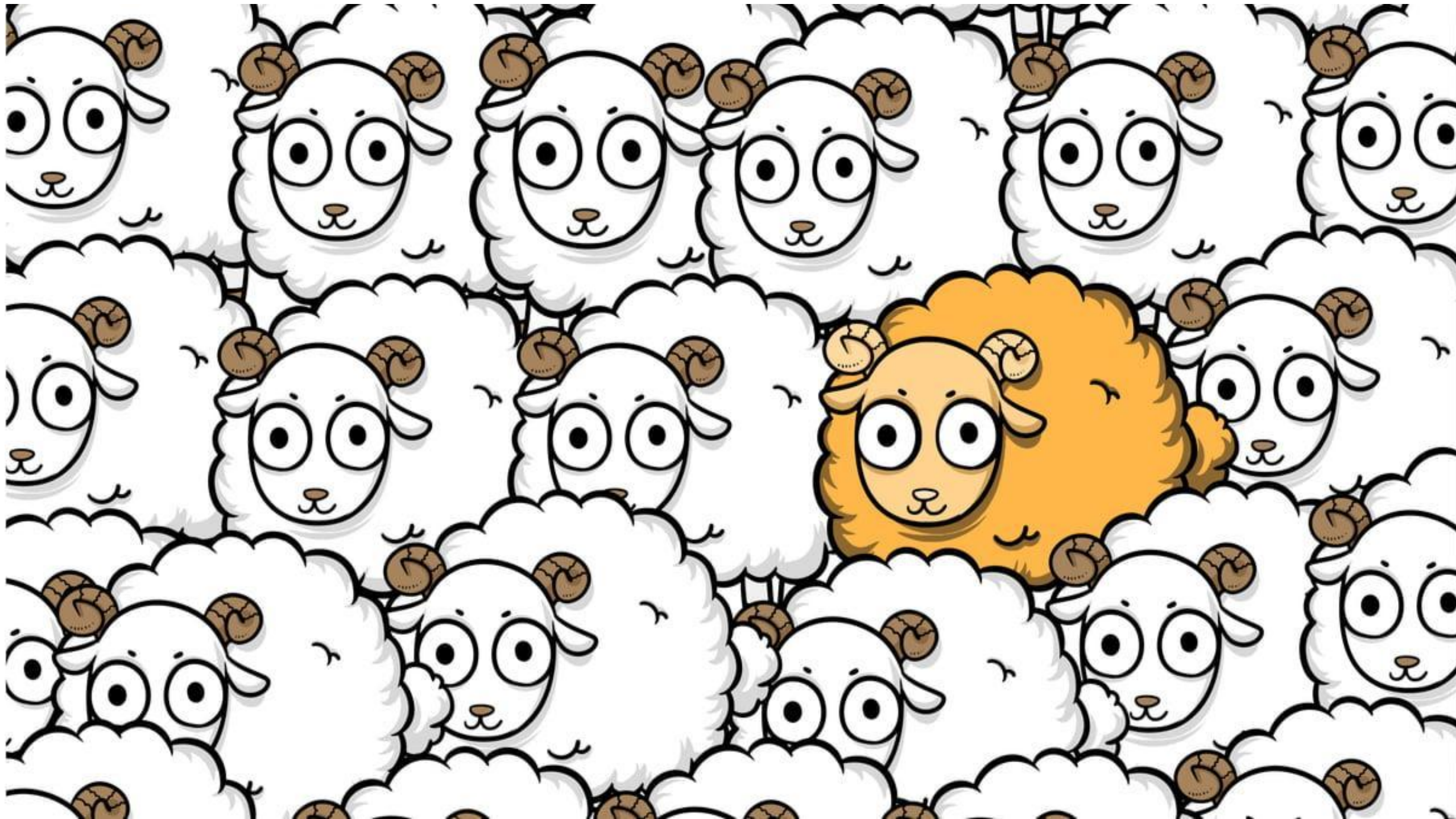
MULTIDISCIPLINARY DIALOGUE

FRAIL OLDER PEOPLE

Dutch Safety-II programme   Time to Connect

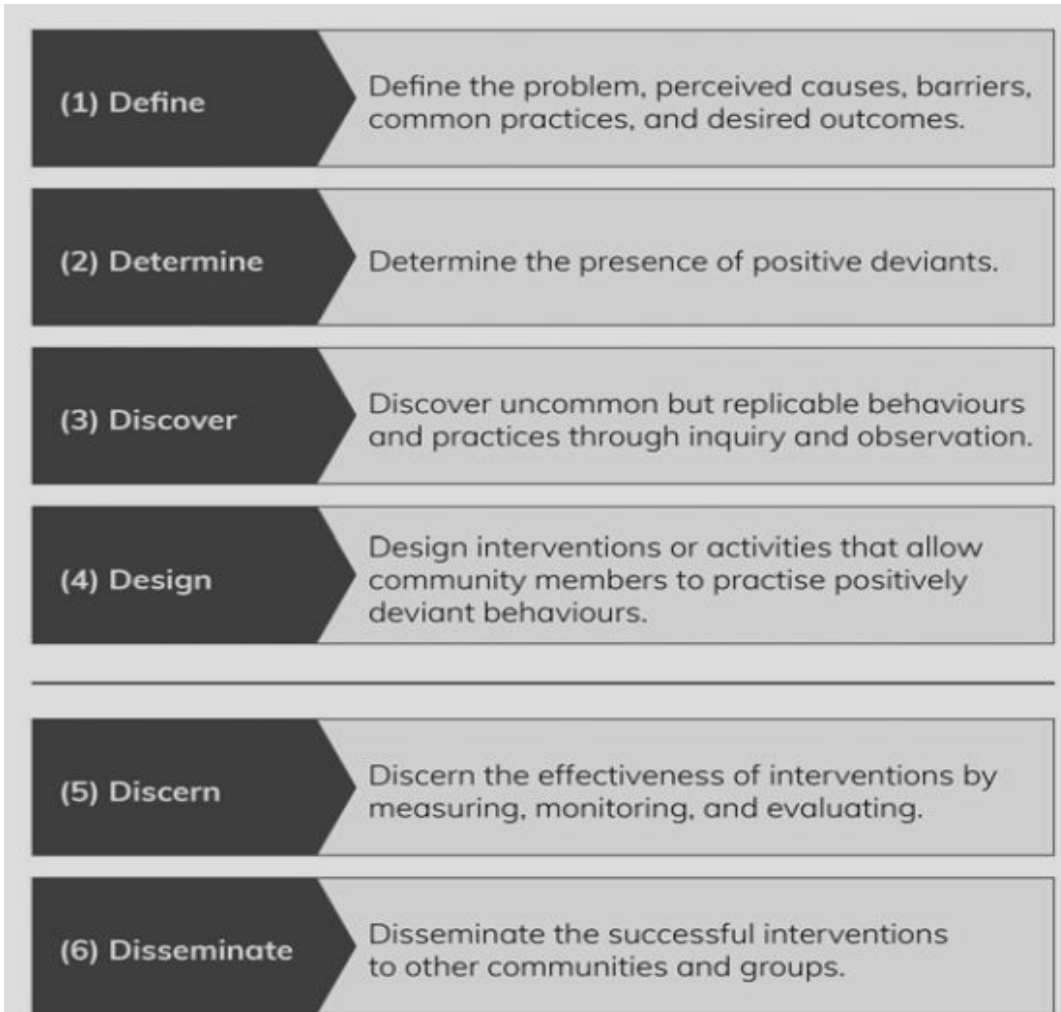# From **Not invented by Me** to **Proudly adopted from**

Figure 1 The 4Ds/6Ds framework for implementing the positive deviance approach

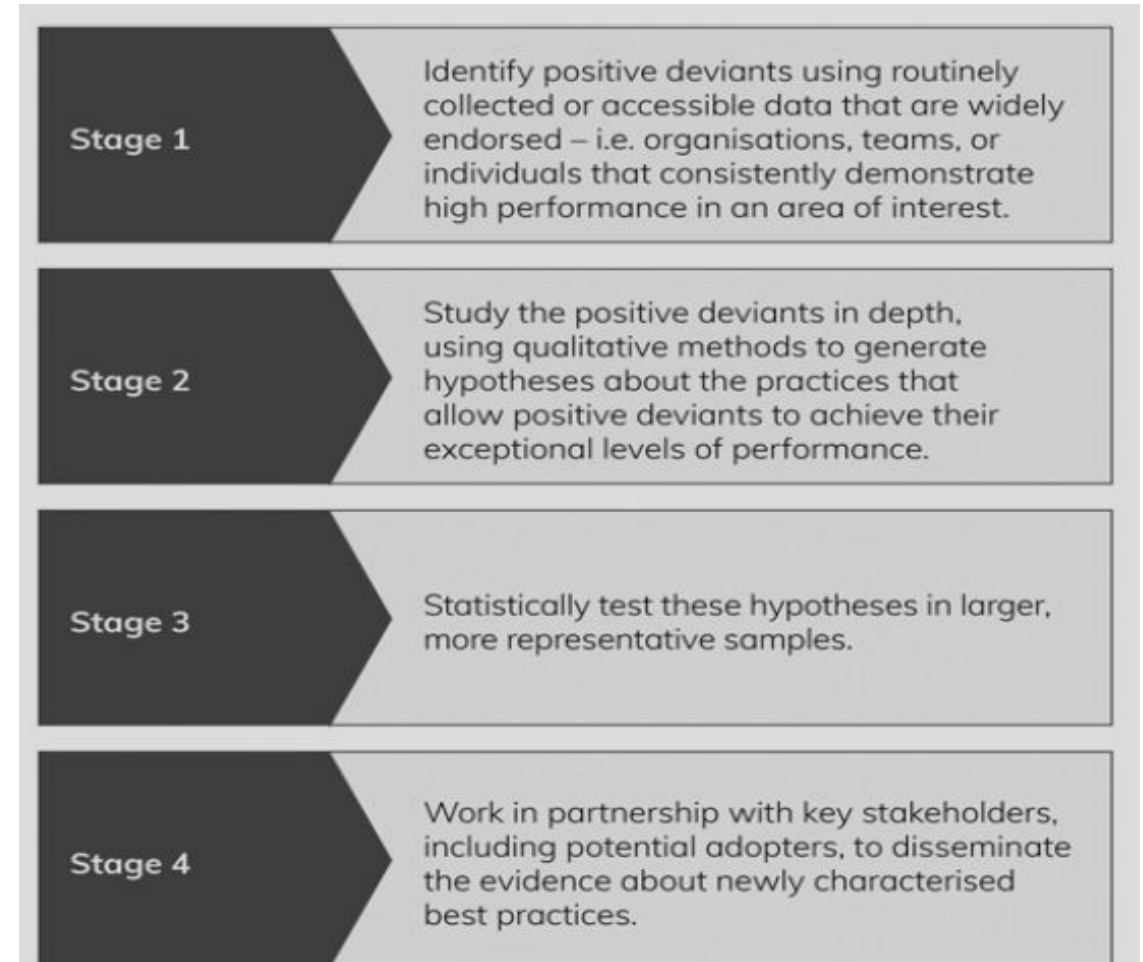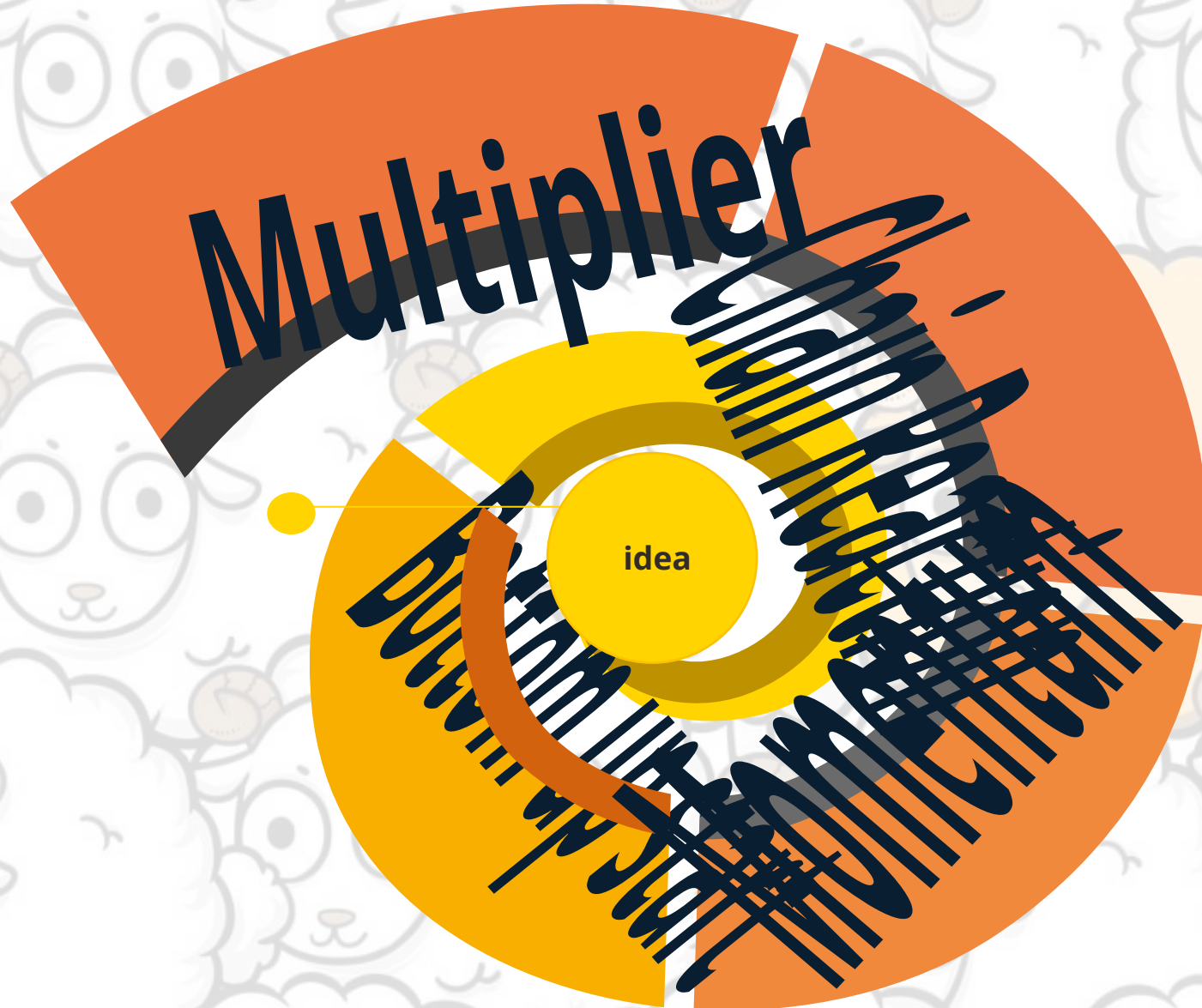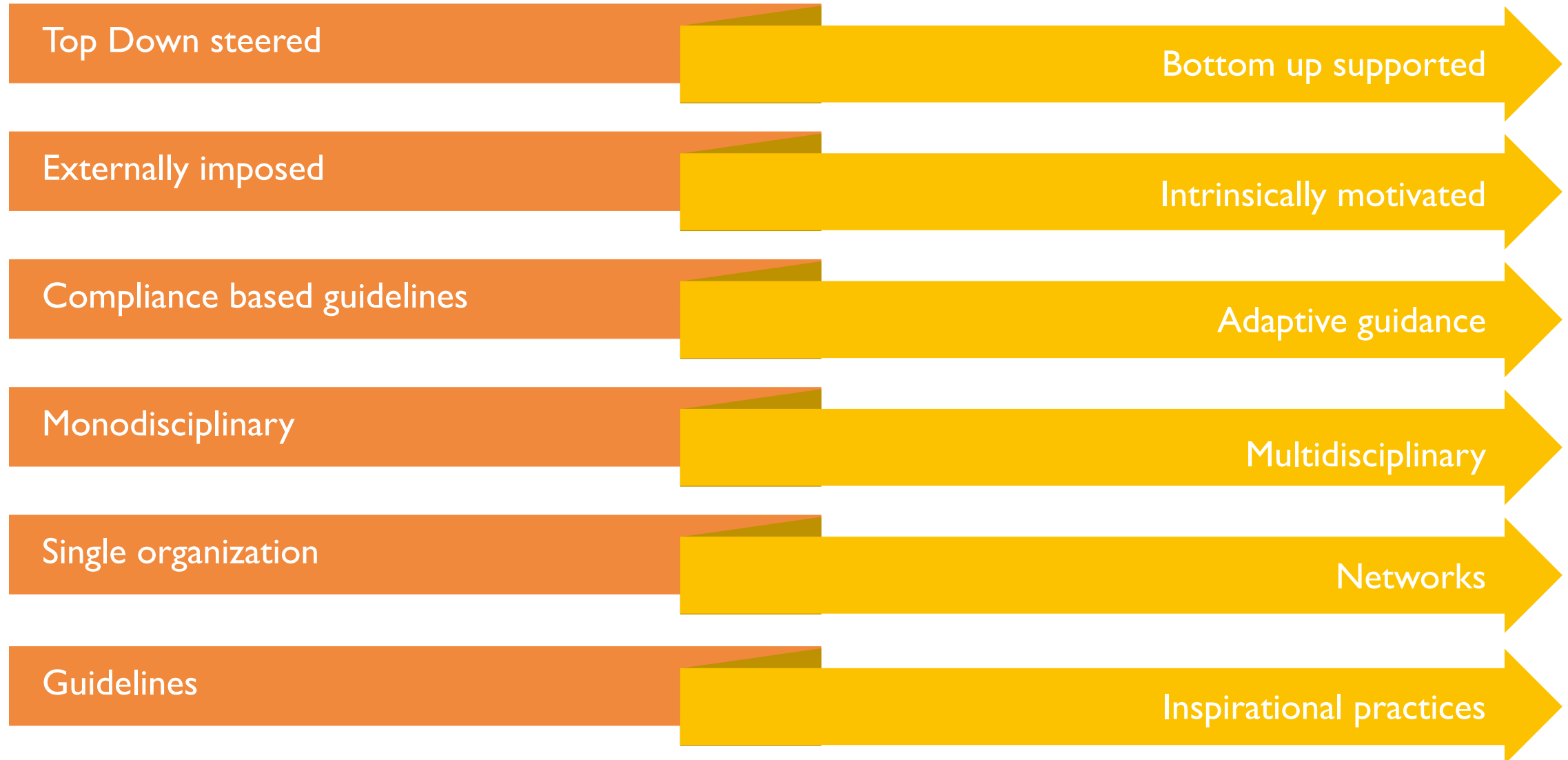| Stage	Description
(1) Define	Define the problem, perceived causes, barriers, common practices, and desired outcomes.
(2) Determine	Determine the presence of positive deviants.
(3) Discover	Discover uncommon but replicable behaviours and practices through inquiry and observation.
(4) Design	Design interventions or activities that allow community members to practise positively deviant behaviours.
(5) Discern	Discern the effectiveness of interventions by measuring, monitoring, and evaluating.
(6) Disseminate	Disseminate the successful interventions to other communities and groups.

Figure 2 Bradley et al.'s four stages to implementing the positive deviance approach in healthcare organisations

Stage	Description
Stage 1	Identify positive deviants using routinely collected or accessible data that are widely endorsed – i.e. organisations, teams, or individuals that consistently demonstrate high performance in an area of interest.
Stage 2	Study the positive deviants in depth, using qualitative methods to generate hypotheses about the practices that allow positive deviants to achieve their exceptional levels of performance.
Stage 3	Statistically test these hypotheses in larger, more representative samples.
Stage 4	Work in partnership with key stakeholders, including potential adopters, to disseminate the evidence about newly characterised best practices.

In sum: We aimed for a shift

Top Down steered	Bottom up supported
Externally imposed	Intrinsically motivated
Compliance based guidelines	Adaptive guidance
Monodisciplinary	Multidisciplinary
Single organization	Networks
Guidelines	Inspirational practices

Results from the Swedish nationwide change initiative on knowledge-based healthcare

IHI May 23 2025

Karl Landergren - Medical director of the Östergötland region in Sweden

Evelina Linnros – Analyst, SALAR

**Nationellt system
för kunskapsstyrning
Hälso- och sjukvård**
SVERIGES REGIONER I SAMVERKAN

Declaration of interest

Evelina Linnros, none to declare

Karl Landergren, none to declare

Roadmap

1. Background: The Swedish nationwide system for knowledge-based management

2. How national program groups use data to track change

3. The first joint report from the 26 program groups

4. Discussion and summary

The Swedish healthcare system: decentralised and publically funded

- National level: Legislation, monitoring and education/training

- Regions (21): Healthcare

- Municipalities (290) Social services; care of elderly and disabled people etc.

- Larger healthcare regions (6): Geographic partnership – consolidates specialised care + other forms of collaboration
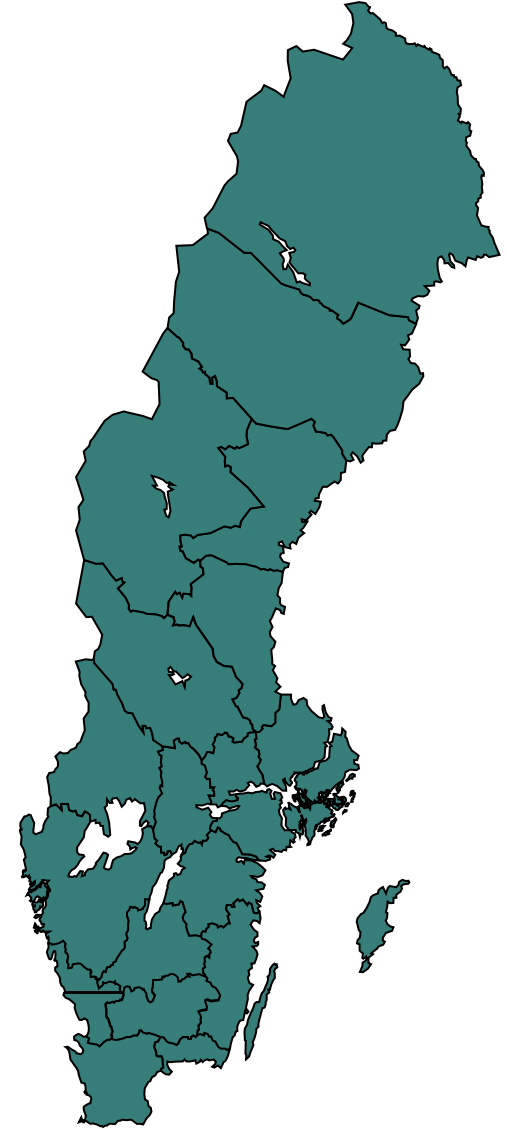
A nationwide system for knowledge-based management

- The nationwide system for knowledge-based management promotes quality improvement and health equity
- Three components: care recommendation, implementation and evaluation

Our vision: *We count our success in lives and equal health! We make each other successful!*

Care recommendations

A cohesive structure for knowledge-based management

Follow up, analyse and evaluate

Implementation: improvement and leadership
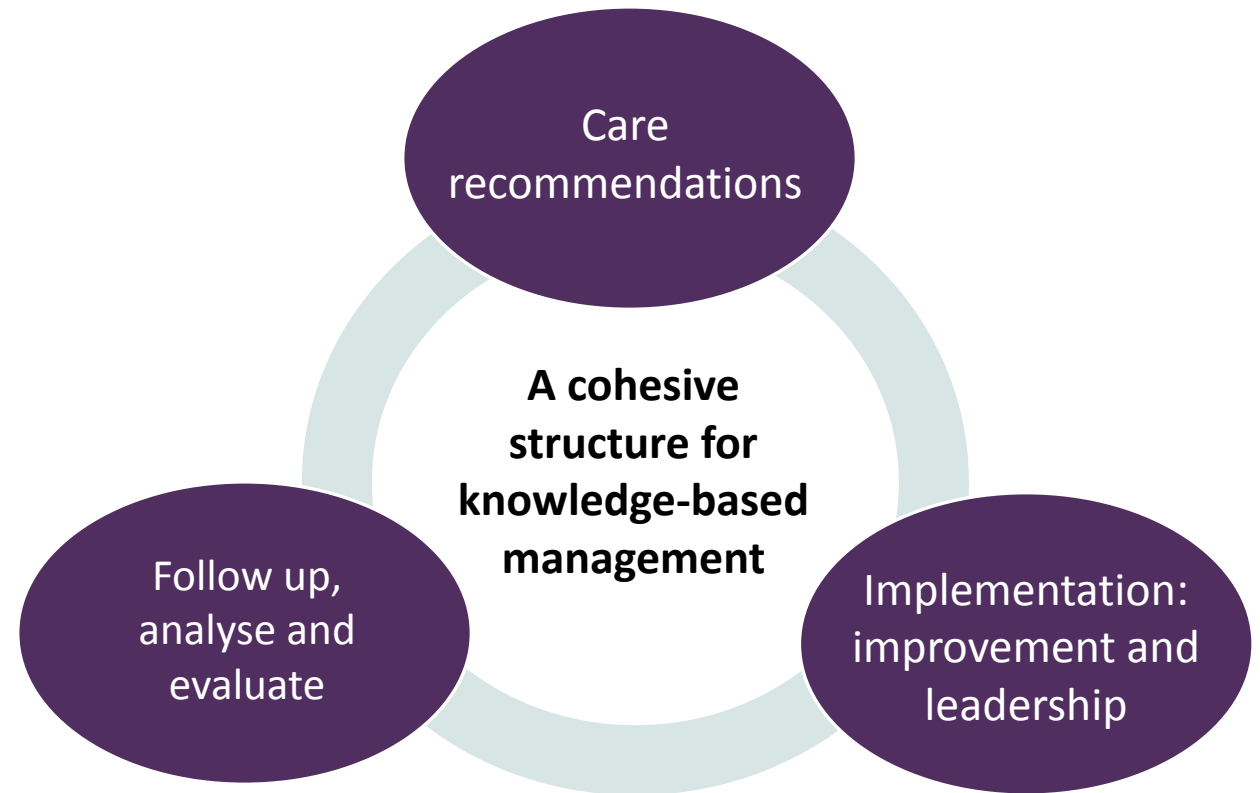
26 national program groups & 7 national collaboration groups – hosted by the 6 healthcare regions and SALAR

Norra sjukvårdsregionen
- Endocrine diseases
- Living habits
- Cancer diseases

Sjukvårdsregion Stockholm/Gotland
- Skin diseases and STDs
- Infectious diseases
- Medical diagnostics
- Rheumatic diseases
- Rare diseases
- Eye diseases

Sjukvårdsregion mellansverige
- Emergency healthcare
- Cardiovascular diseases
- Health of older people and palliative care
- Diseases of the ears, nose and throat

SALAR
- Data and analysis
- Methods for knowledge support
- Pharmaceuticals and MedTech
- Research and Life Science
- Patient safety
- Support for development
- Structured healthcare data

Västra sjukvårdsregionen
- Lung and allergy diseases
- Gastrointestinal diseases
- Mental health
- Diseases of the movement organs
- Surgery and plastic surgery

Sjukvårdsregion Sydöstra
- Paediatric health
- Gynaecological diseases, pregnancy and childbirth
- Perioperative care, intensive care and transplantation
- Rehabilitation, habilitation and insurance medicine

Södra sjukvårdsregionen
- Diseases of the nervous system
- Renal and urologic diseases
- Primary care
- Dental care

Program groups use data to follow up and analyse their areas

Suggest indicators

Suggest targets when appropriate

Balance process measures and outcome measures

Limit the number of indicators, prioritize

Avoid increasing administrative burden – information should only be documented once

Indicators and reports are published at Vården i siffror, www.vardenisiffror.se

First joint report from the 26 program groups in the nationwide system for knowledge-based management

- The report has involved over 100 medical experts and analysts tied to the system for knowledge-based management

- The program groups have selected areas to highlight in the report – often linked to areas where they have or will publish a care recommendation

- Covers over 50 themes and will be published online at www.kunskapsstyrningvard.se on June 13, 2025

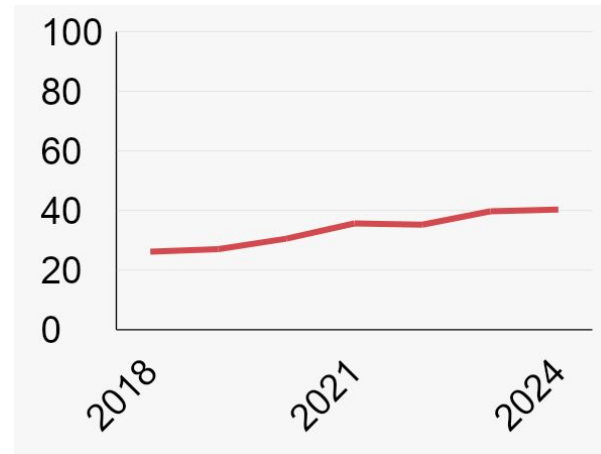# Snippets from the report: progress

Heart failure

Larger share of patients receive recommended medicines
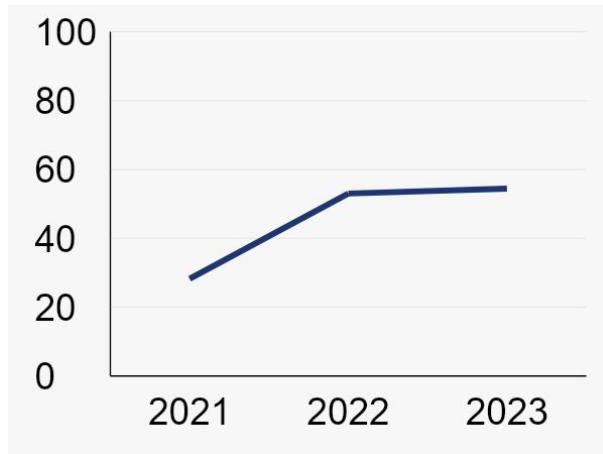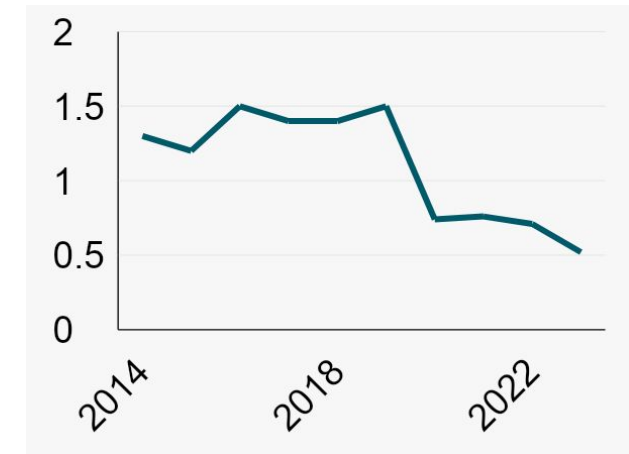

Tonsillectomy

Larger share of surgeries performed using the recommended technique
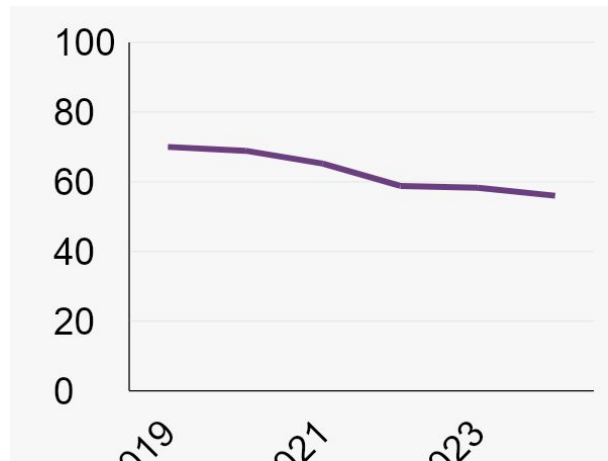

Postterm pregnancy

Number of stillborns per 1000 births in week 41+0 or later has decreased

Snippets from the report: remaining challenges

Hip fracture

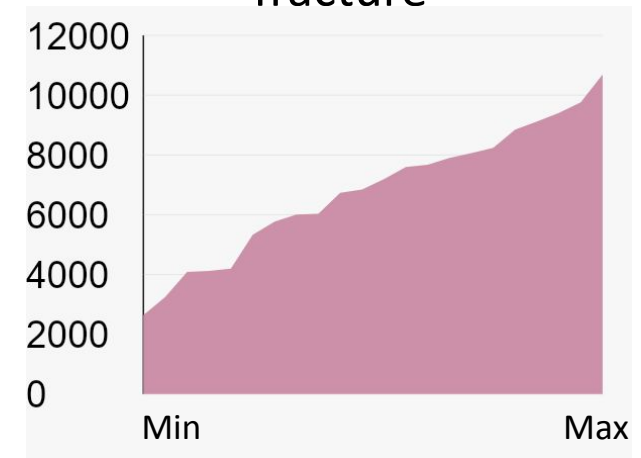Share of patients receiving surgery within 24h has decreased

Hip replacement

Share of patients who wait less than 90 days for their surgery has decreased

Osteoporosis

Substantial variation across regions in the number of subsequent fractures after an initial osteoporotic fracture

Discussion

- Access to surgery as a key challenge

- Regional differences in surgery frequency rates

- Bringing in more perspectives on unwarranted inequality

- Health data to monitor quality improvement – challenges and new data sources

- Using data to monitor progress is a key component of quality improvement, but does not always tell the whole story

Summary

- The nationwide system for knowledge-based management in Sweden aims to promote quality improvement and health equity

- First joint report from the 26 program areas will be published on June 13th

- The report contains many examples of progress but there are still challenges ahead, especially related to access to healthcare

Thank you for your attention!

Visit www.kunskapsstyrningvard.se for more information