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L4: Showing effect of quality improvement projects using digitalized audit

-Developing tools for quality improvement

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Goals

Presentation of an audit case from the healthcare sector of Copenhagen

Technical proces of redesigning audit improvement tools

Recipe for a digital and datafied auditflow showing effect

CV

- **More than 15 years' experience datafying and visualizing quality improvement work and tools in higher education and healthcare sector.**

- **I am currently studying for my second master's degree, a master of data driven organizational development:**
  - **Unsupervised and supervised Machine Learning models**
    - **Natural Language Processing (NLP) technologies**
  - **Digital methods**

Others
- Master of management and leadership in the public sector including pay for performance-systems, merging etc.
- BA in public administration - quality assurance and development
- Courses in statistics – University of Amsterdam
- Courses in data visualization and business intelligence systems – various private actors

A brief introduction

Employees: 10.000

Budget: 900 mio. euros

Residents at nursing homes: 3400

A brief introduction to audit

- To improve the knowledge, skills and competences among healthcare workers
- An auditor (nurse) observes a healthcare worker performing multiple tasks
- Visualizing audit data

An audit case

!

The external medical control showed room for improvement...

Organizational change

We want change, especially with more **learning**…

Meaningfull management and control...

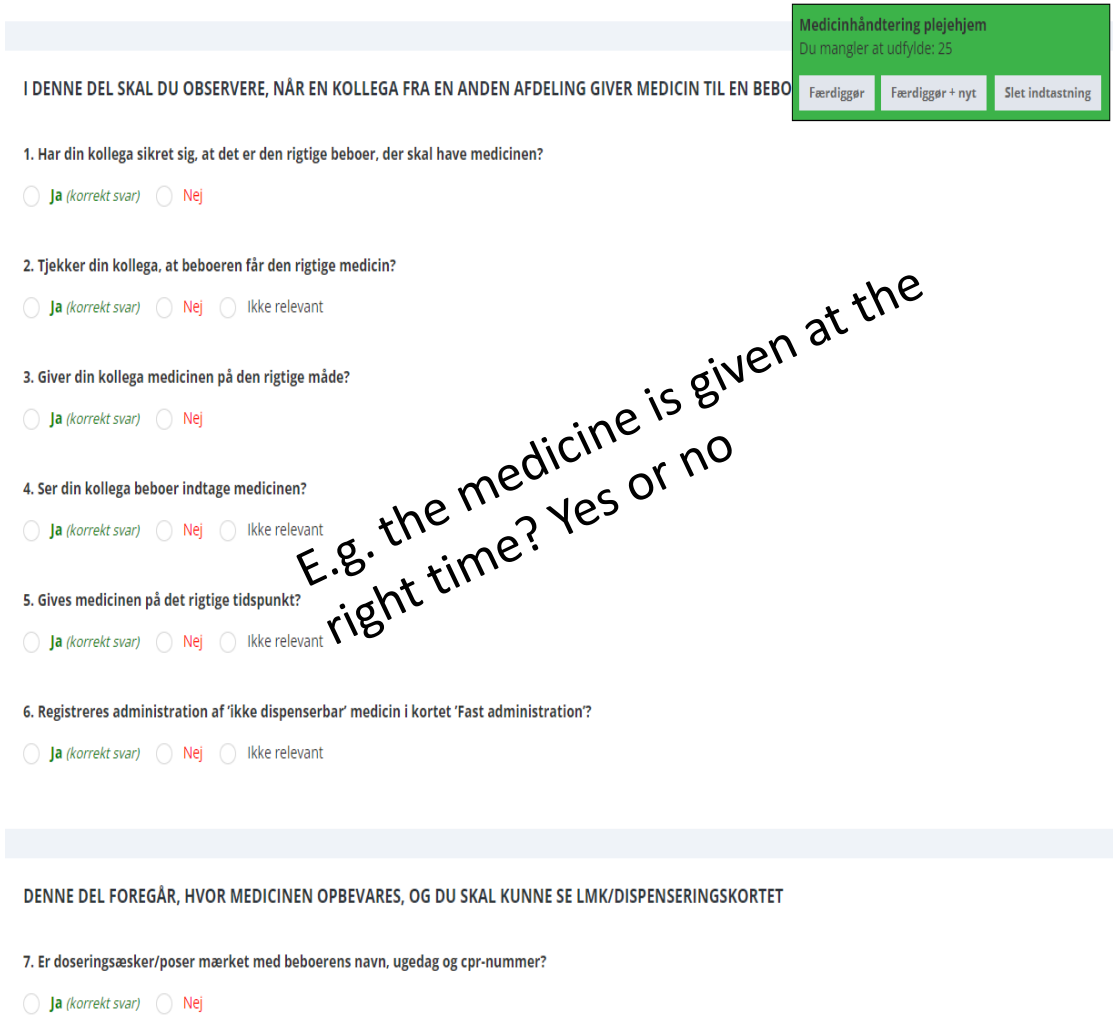
The **learning** organization is the answer…
From quality control to **quality improvement**

Three elements which are the basis for value-based management: Justice, trust and **learning**….

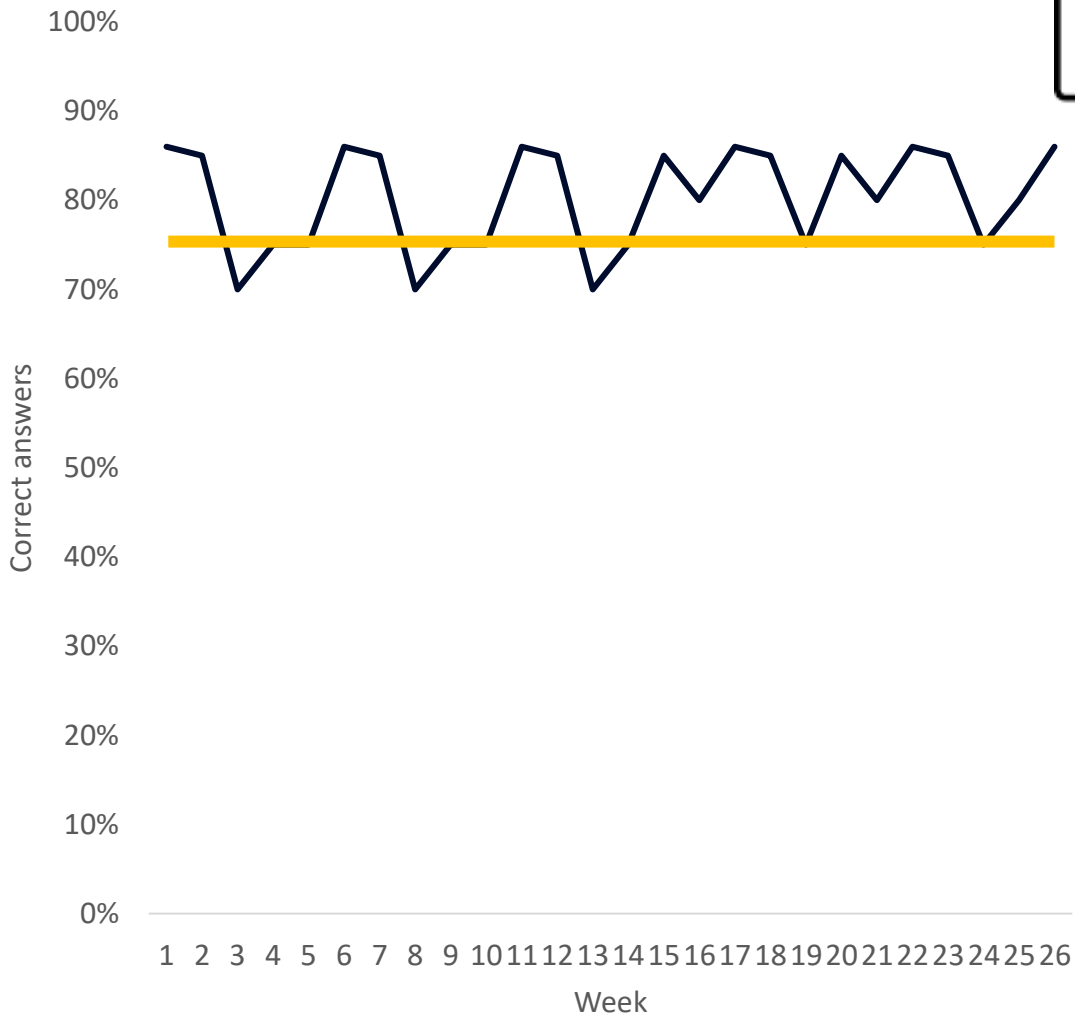
Initiatives

- Leadership courses on improvement management
- The design and implementation of a quality organization
- Provide nurses and healthcare workers with E-learning courses
- Establishing a department with outgoing quality consultants
- Toolkits for improvement work, such as audit schemes and visuals

Audit tools



E.g. the medicine is given at the right time? Yes or no



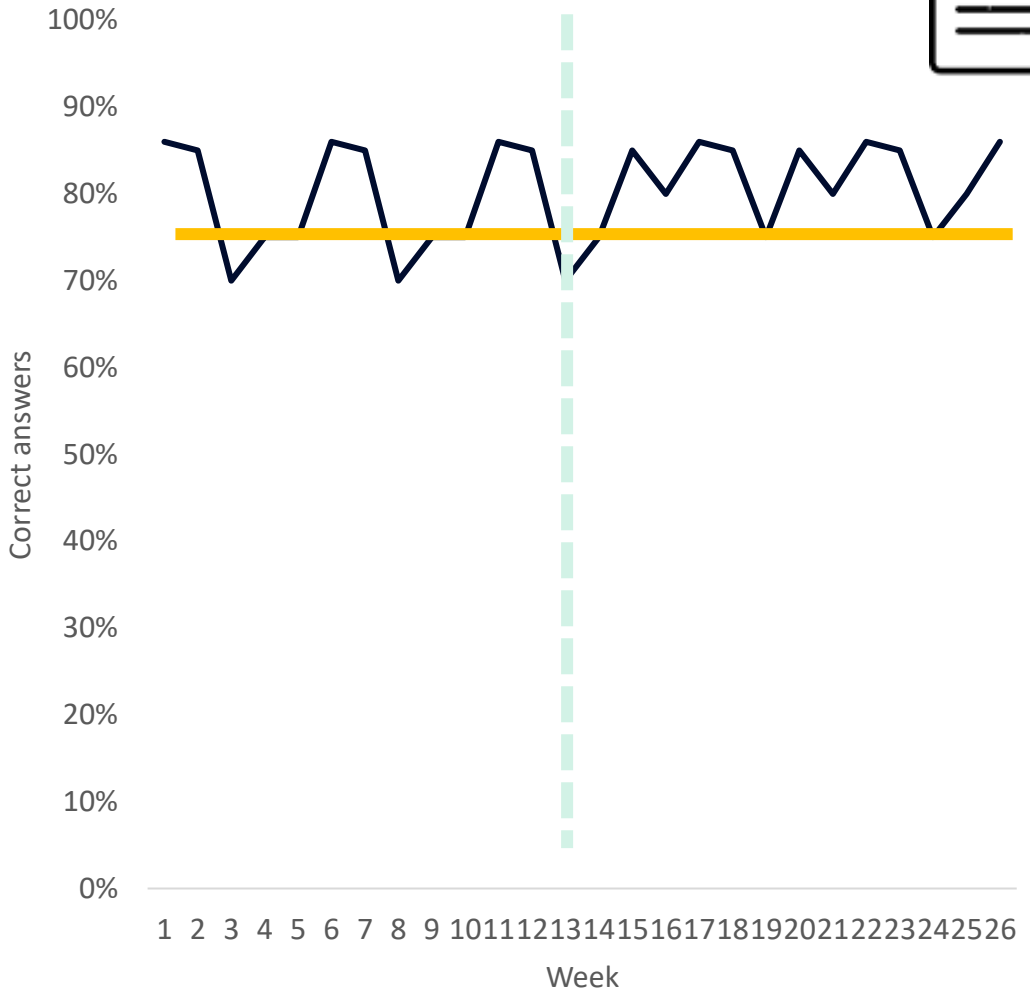
Controvers

We want change, especially with more **learning**…

The **learning** organization is the answer… From quality control to **quality improvement**

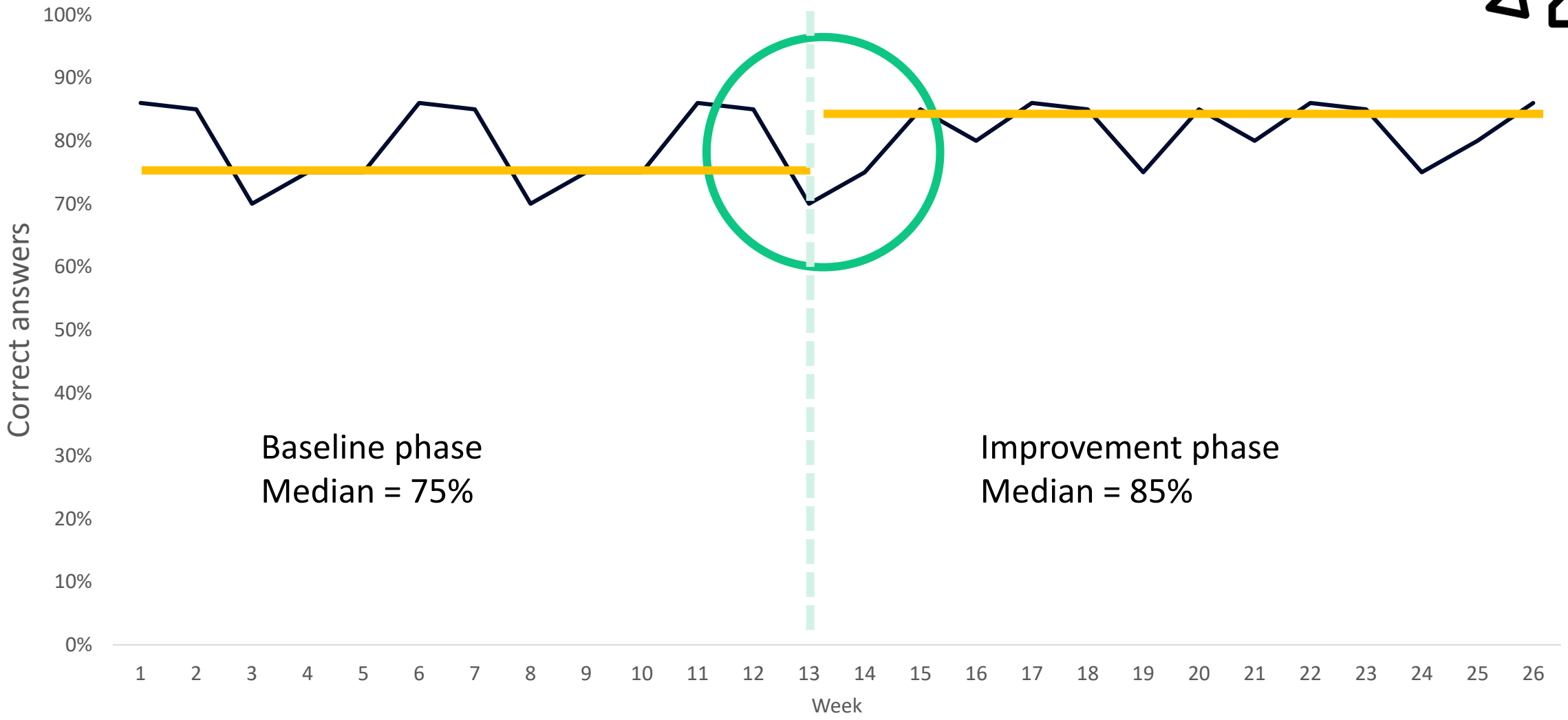
Meaningfull management and control... Understanding of different logics…

Three elements which are the basis for value-creating management: Justice, trust and **learning**….



Copenhagen Municipality

Redesigning visuals



Small change in auditscheme

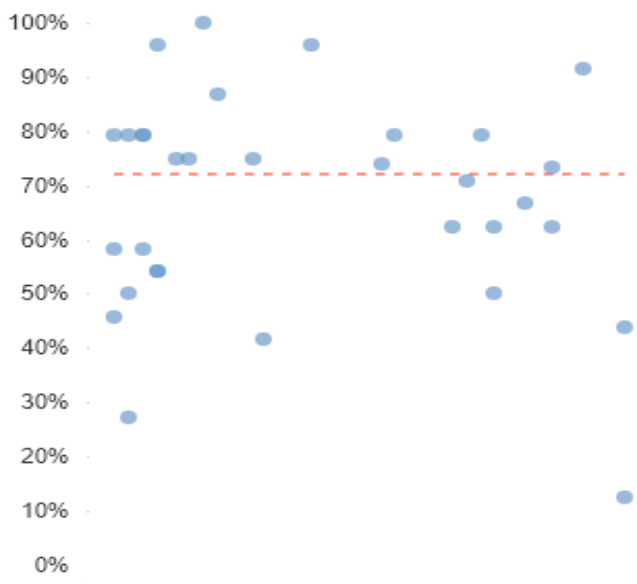
Please choose audit phase

◯ Phase 1 – Baseline-phase	◯ Phase 2 – Improvement-phase	◯ Phase 3 – Control-phase

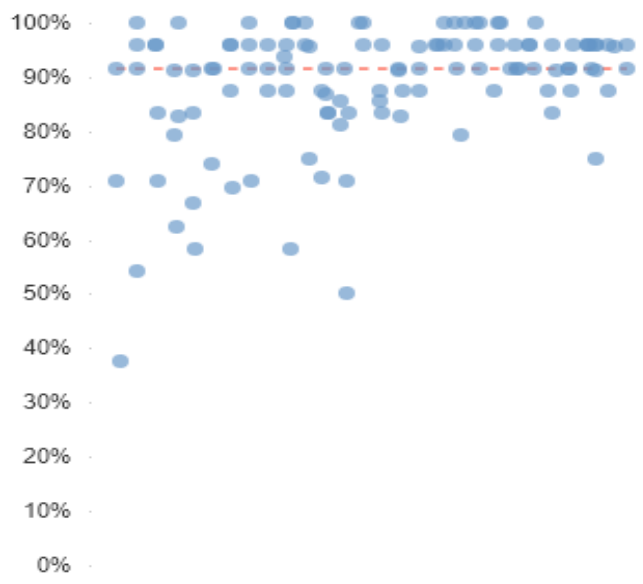
Audit data for different stakeholders

Audit report - nursing home level

Fase 1 - Baselinefase		Fase 2 - Forbedringsfase		Fase 3 - Kontrolfase	
Median	Audits	Median	Audits	Median	Audits
72,1%	32	91,7%	117	-	0



Fra dato 01-01-2022 Til dato ...

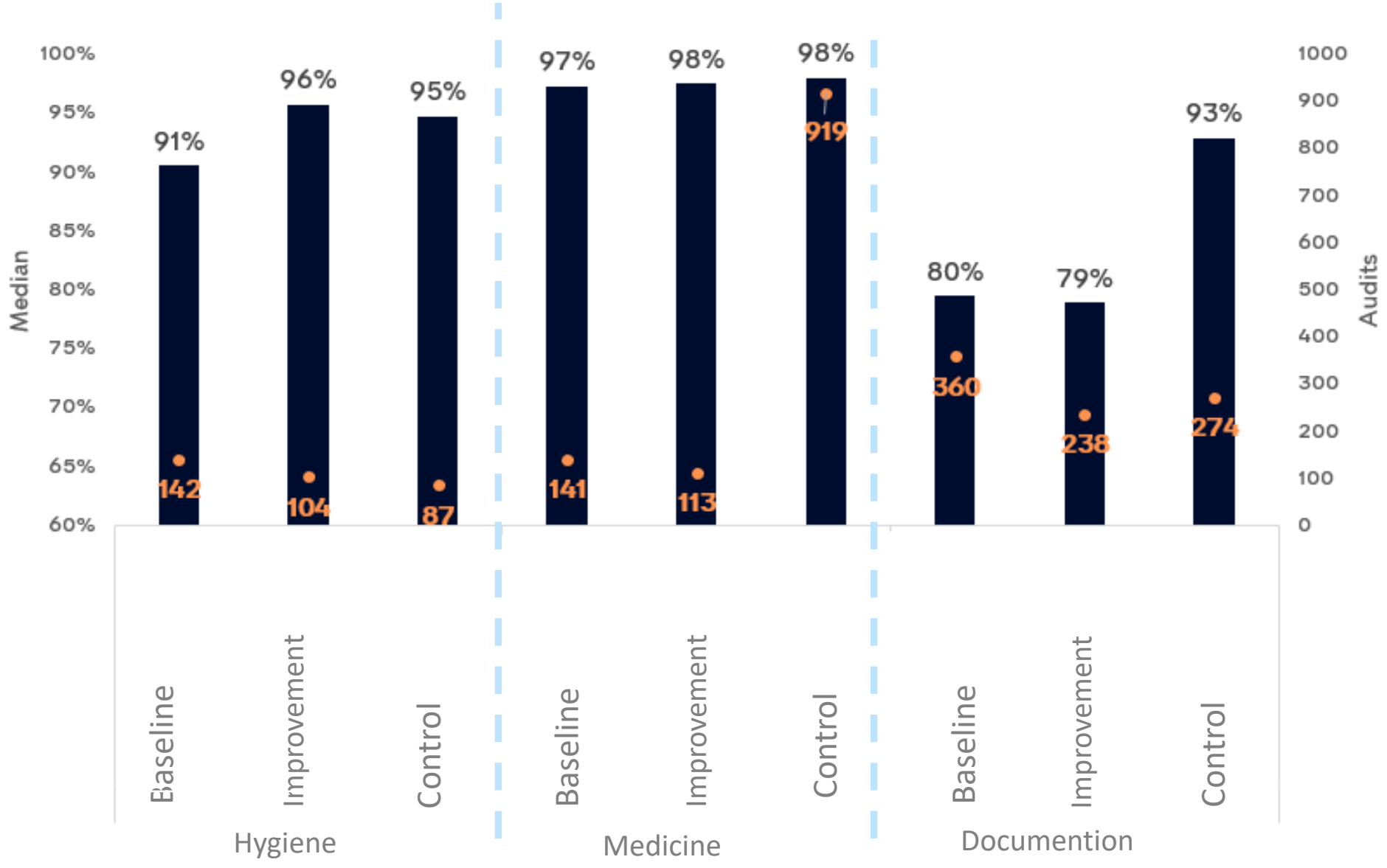


Fra dato 01-01-2022 Til dato ...

Fra dato 01-01-2022 Til dato ...

Effekt fra fase til fase 2: **19,6%**

Audit report - directors level



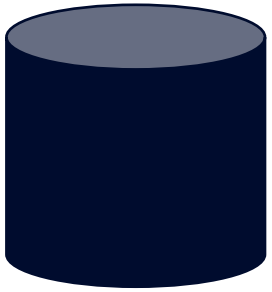
New metadata about audit proces

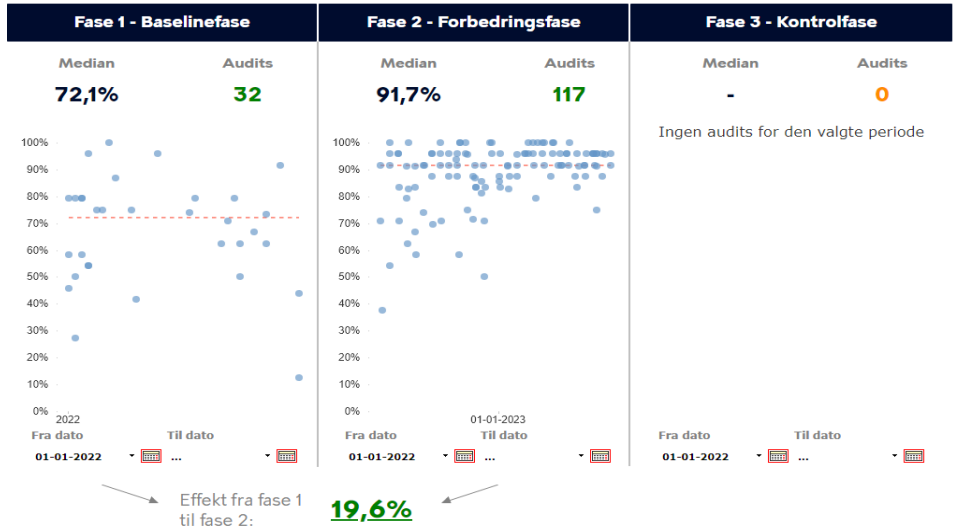
- Duration of audit phases
- Duration between audit phases
- Duration to complete an improvement process
- Identification, description, and documentation of improvement projects and the effect of these
- Sharing of knowledge about improvement processes
- Monitoring input errors

What’s the recipe?

- One or two data savvy coworkers who knows how to work with visuals and databases

Flowchart





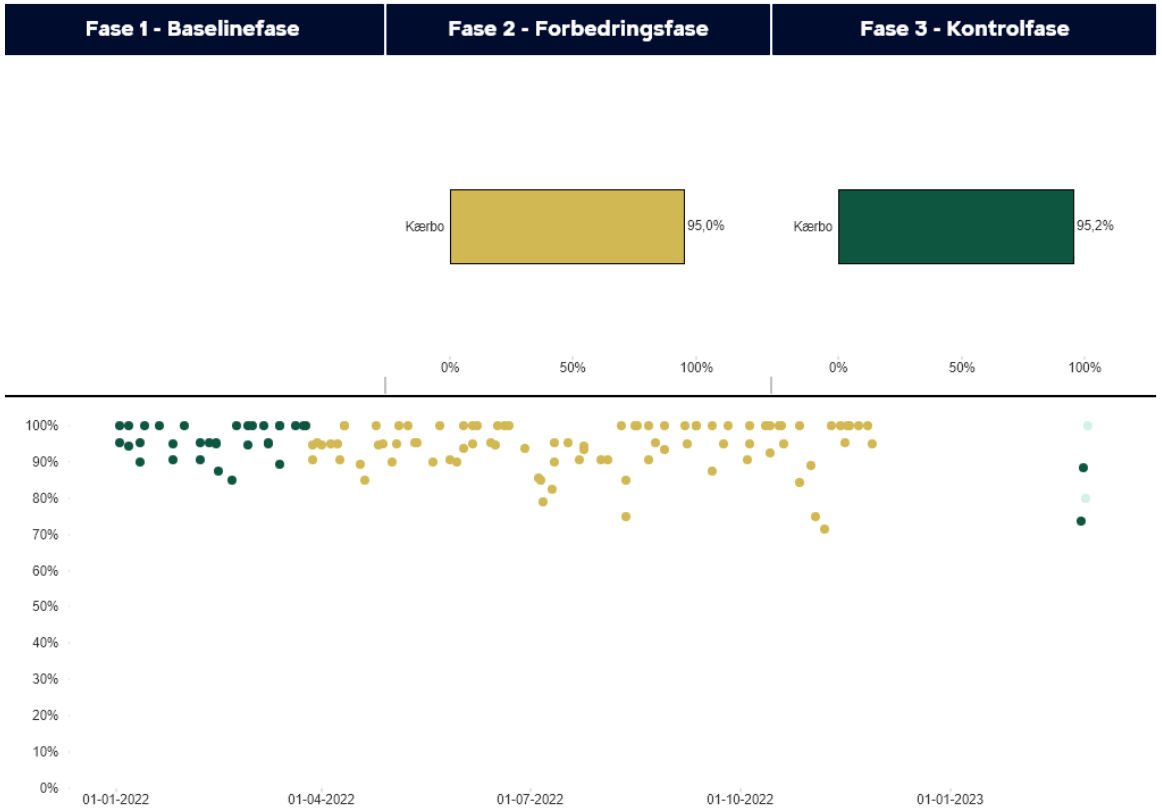
Survey program e.g. MS Forms

Datawarehouse or excel database

Business Intelligens system e.g. MS PowerBI, Tableau, QlikSence (excel)

Points of attention

- Monitor metadata automatically to catch input errors
- Learning the auditors how to annotate audit phases is an ongoing process



Summary

Data visuals should (if possible) reflect and support your strategy

Data visuals should support automatic calculation of learning/effect and data storytelling on the spot

Think meta data - meta data contain a huge amount of potential to support the improvement process.