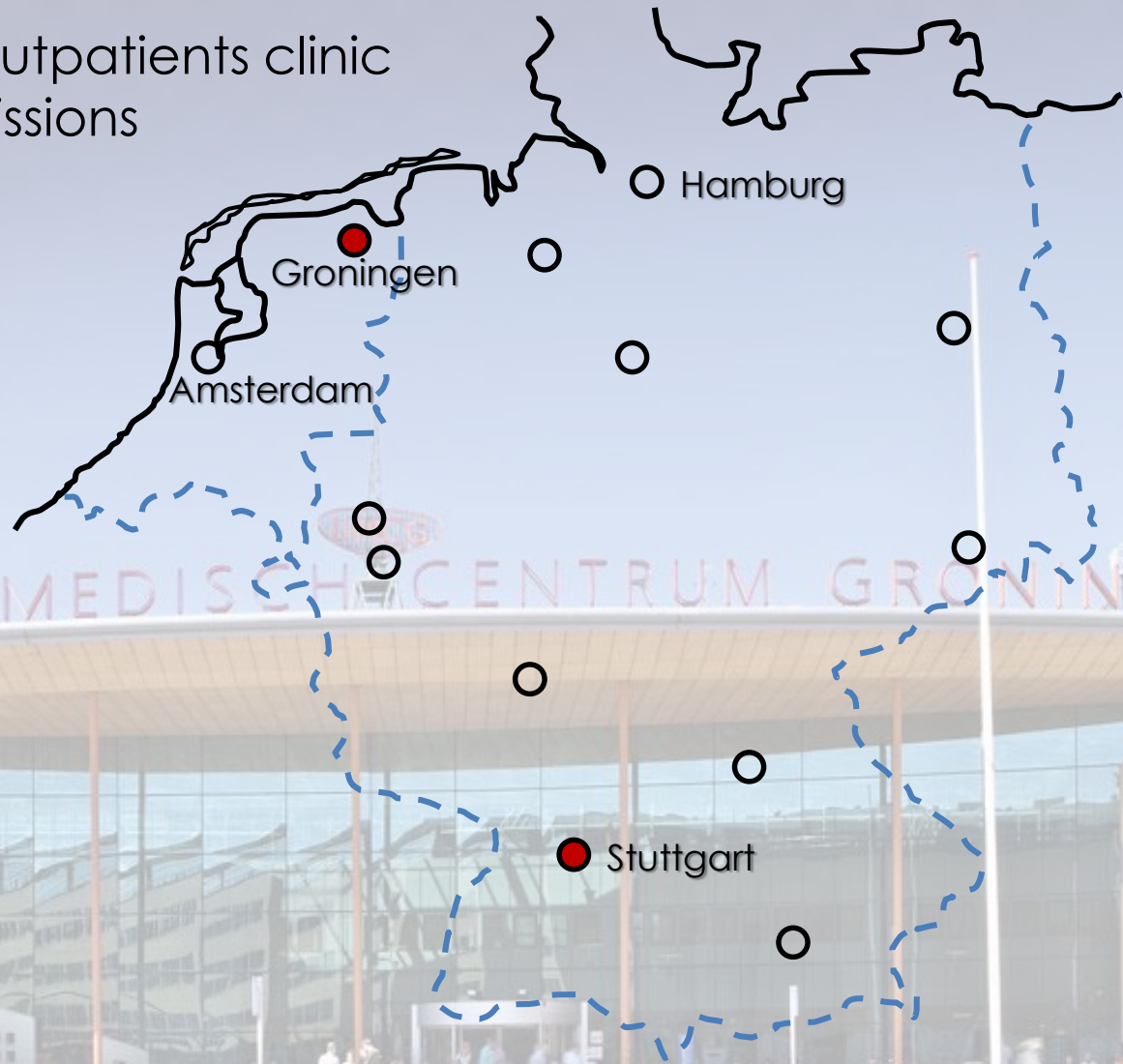




University Medical Center Groningen

550.000 visits to our outpatients clinic
35.000 clinical admissions
12.000 employees

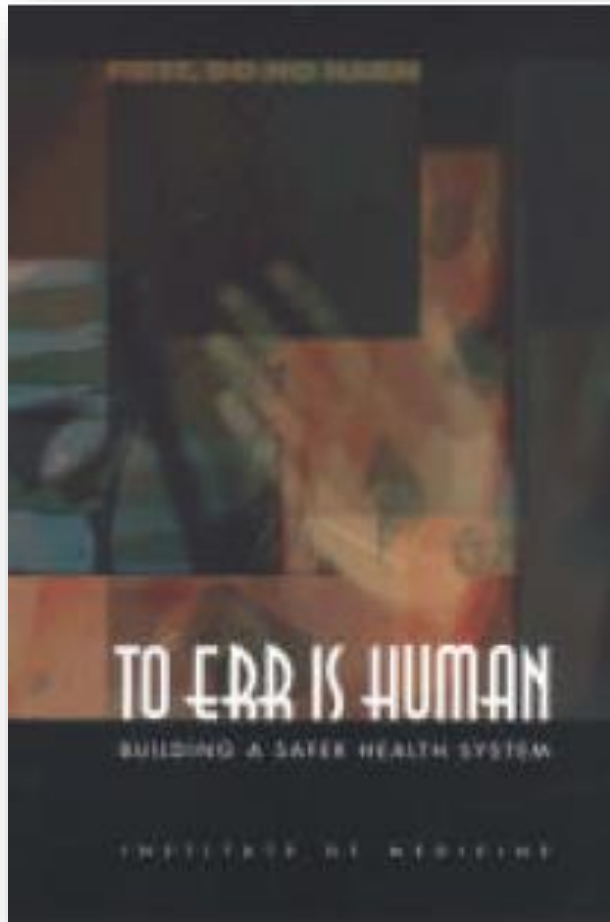




University Medical Center Groningen

Preliminary Hazard Analysis of a Track and Trace Software Tool using System Theoretic Process Analysis

G.R. Kleve, MSHE
UMCG Risk manager



To err is human: building a safer health system

44.000 – 98.000 patients
die each year as a result
of medical errors that
could have been
prevented.

Institute Of Medicine, USA, 1999

Onbedoelde Schade
in Nederlandse
Ziekenhuizen

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66 ervaren verpleegkundigen
55 ervaren medisch specialisten

1

Onbedoelde schade in Nederlandse ziekenhuizen

1482 – 2032 patients die each year of medical errors that could have been prevented.

NIVEL, Netherlands, 2007



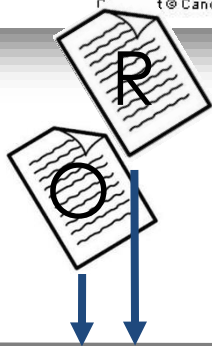
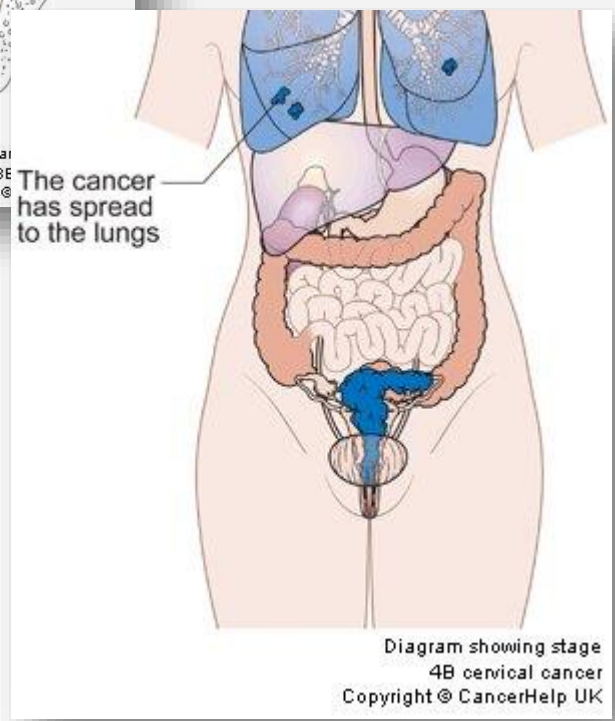
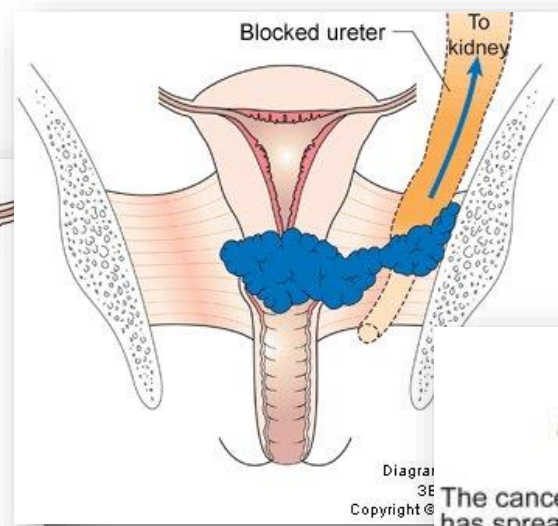
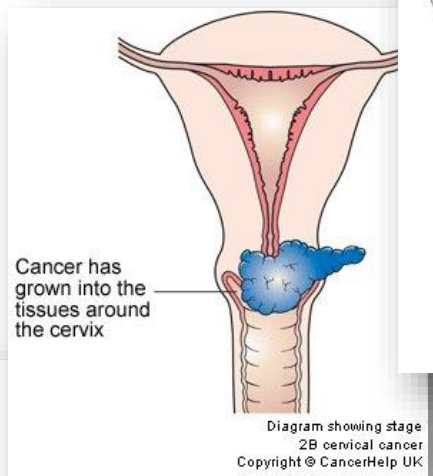
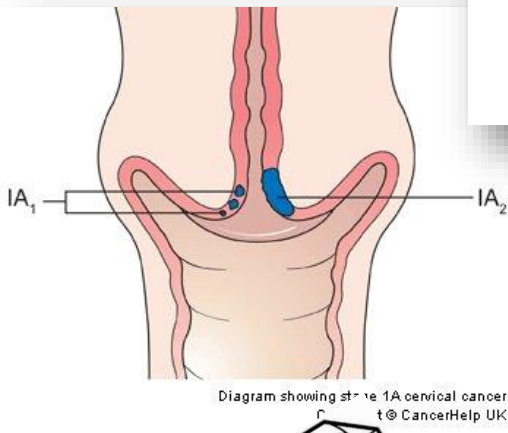
AOK 2014 Krankenhaus- Report

AOK-Krankenhausstudie  7

**19.000 Todesfälle
aufgrund von
Behandlungsfehlern**

An accident is ...

the damage a patient incurs when a physician misses a report of a diagnostic test.



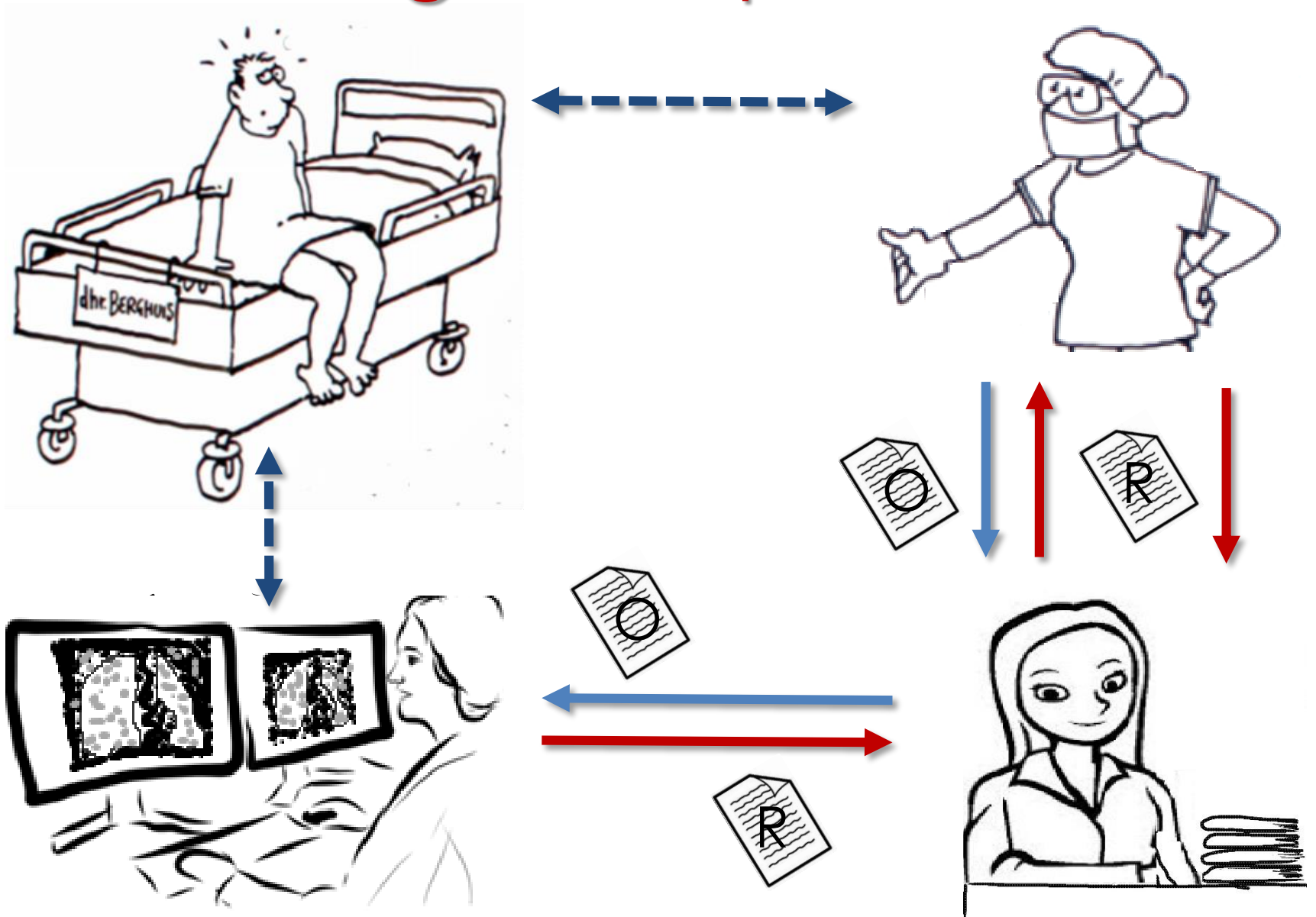
Next outpatient clinic visit



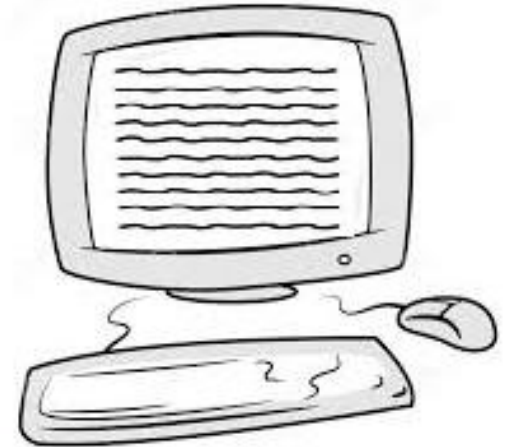
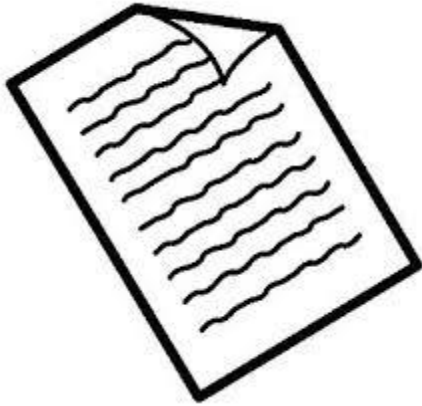
time



Diagnostic process



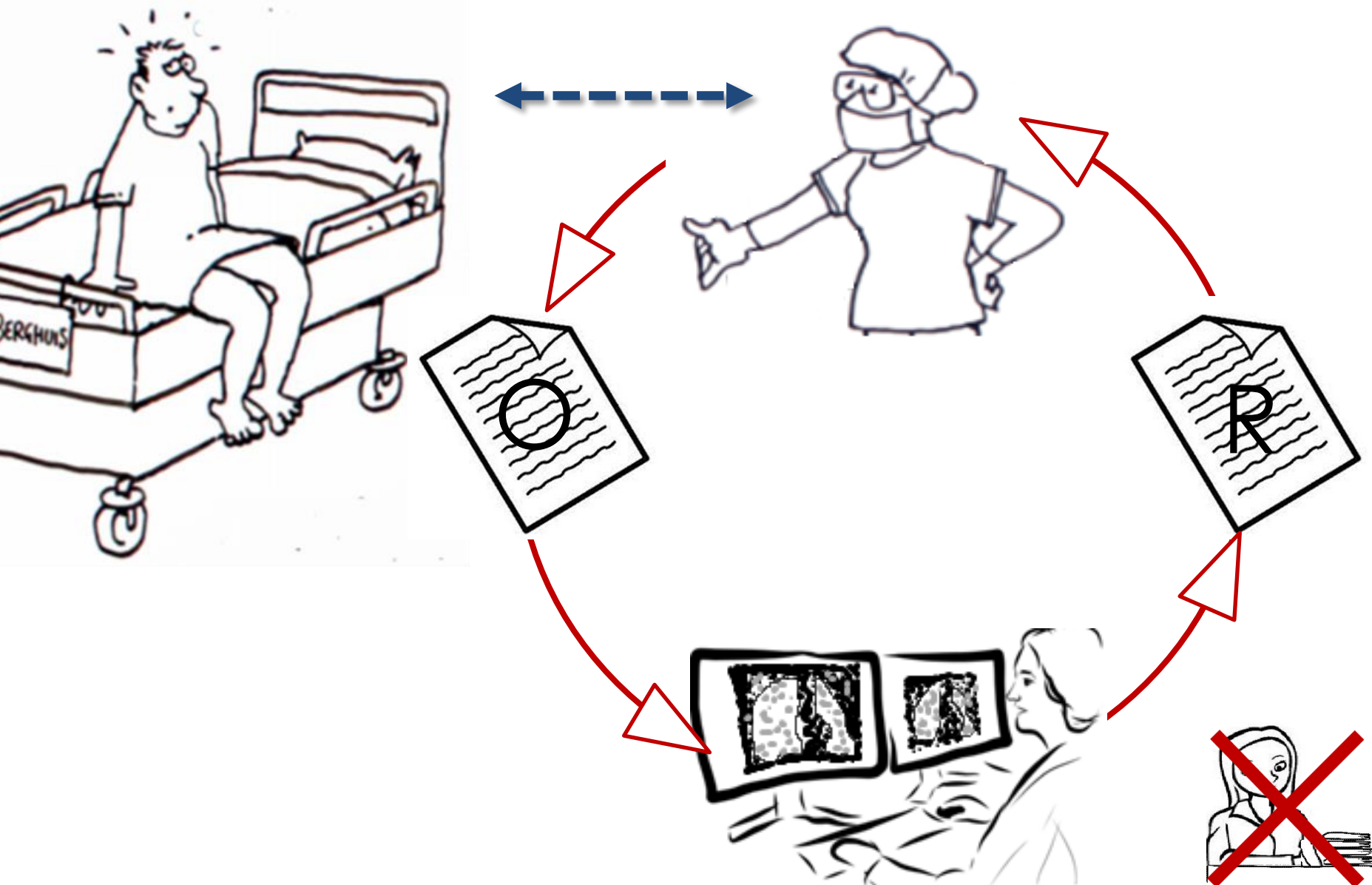
LEAN



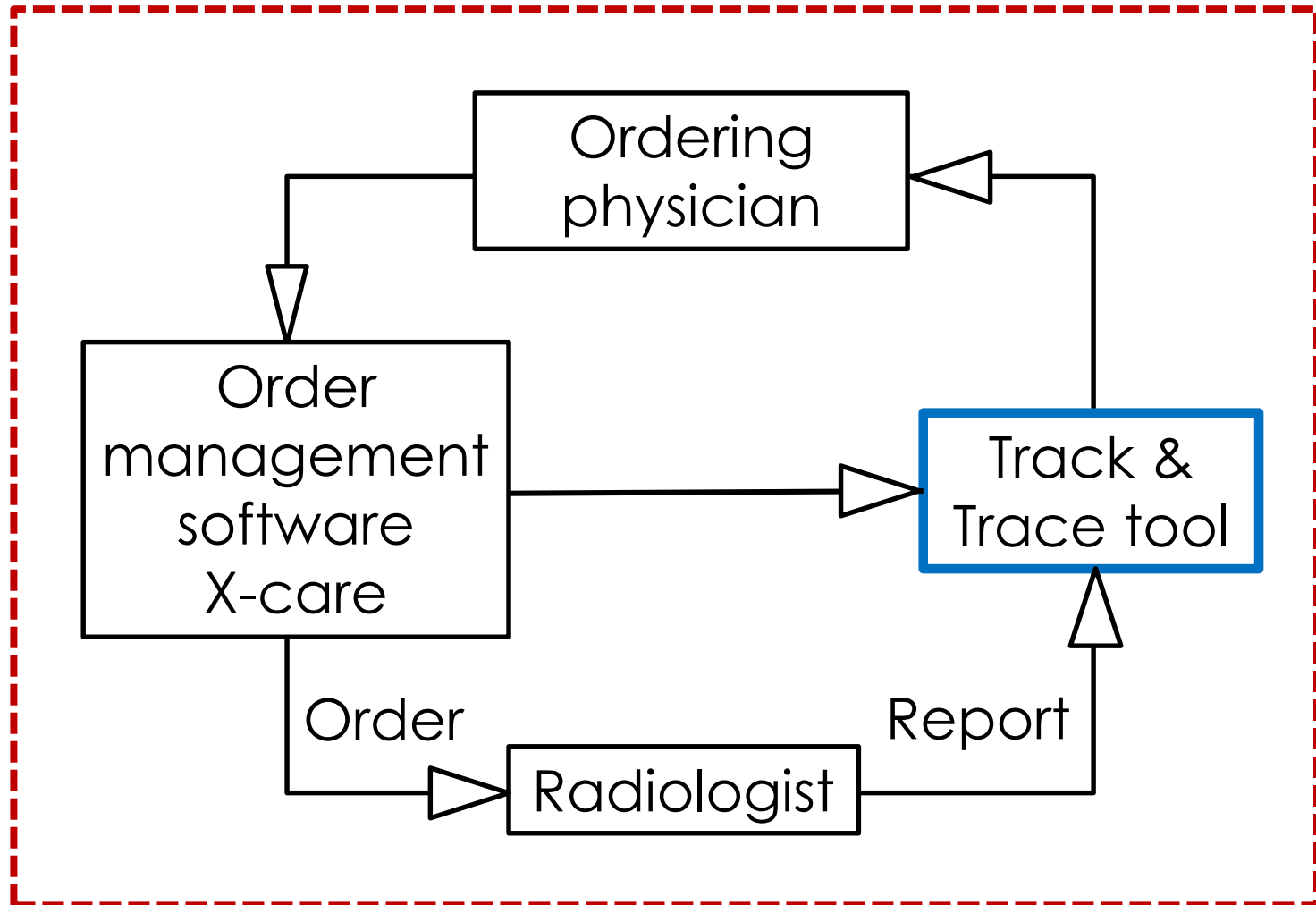
Accessibility of reports
Speed of communication
Costs of printing & sending
Costs of logistics & archiving
of medical records



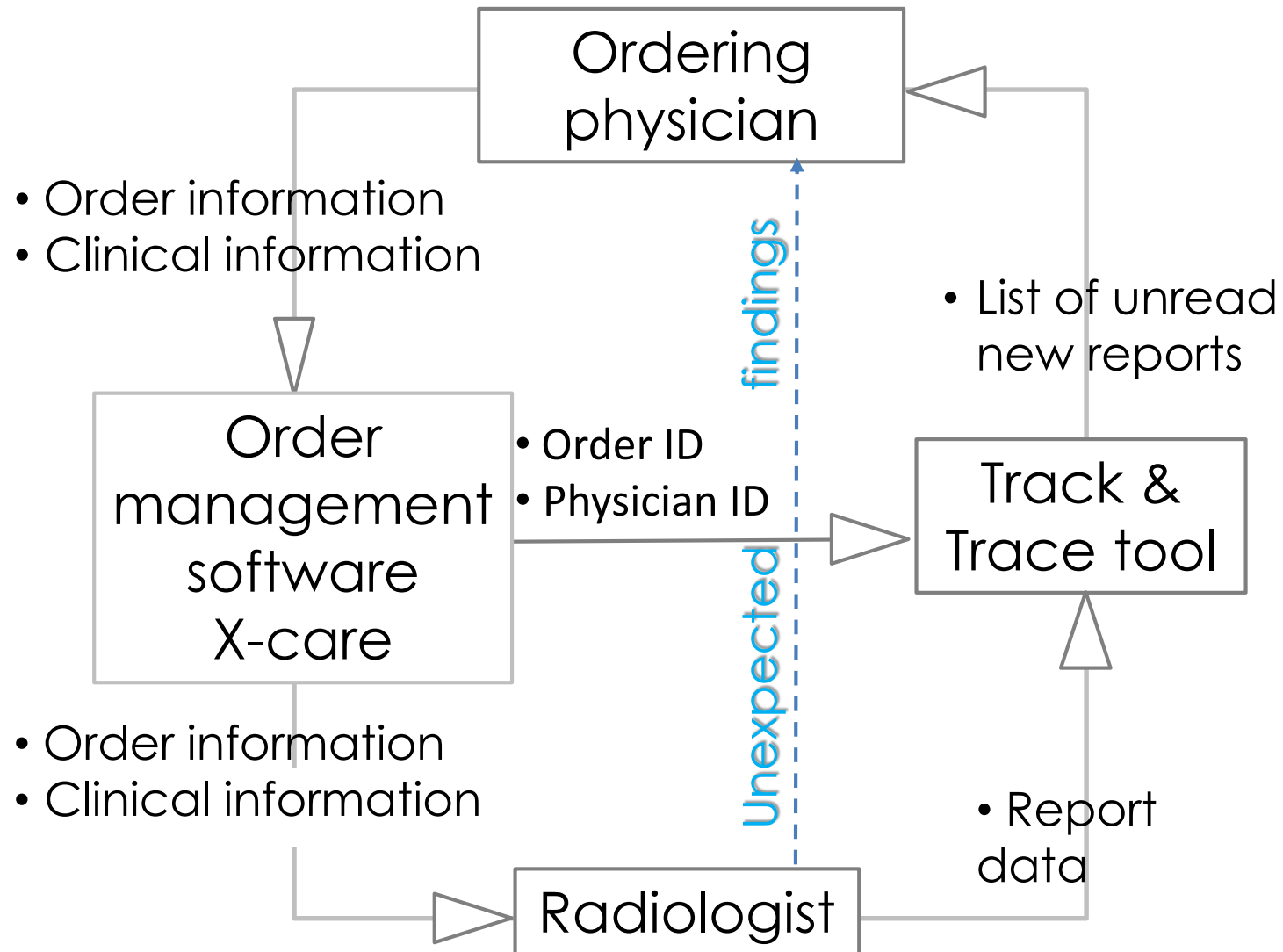
Orders & reports



Basic model track & trace tool



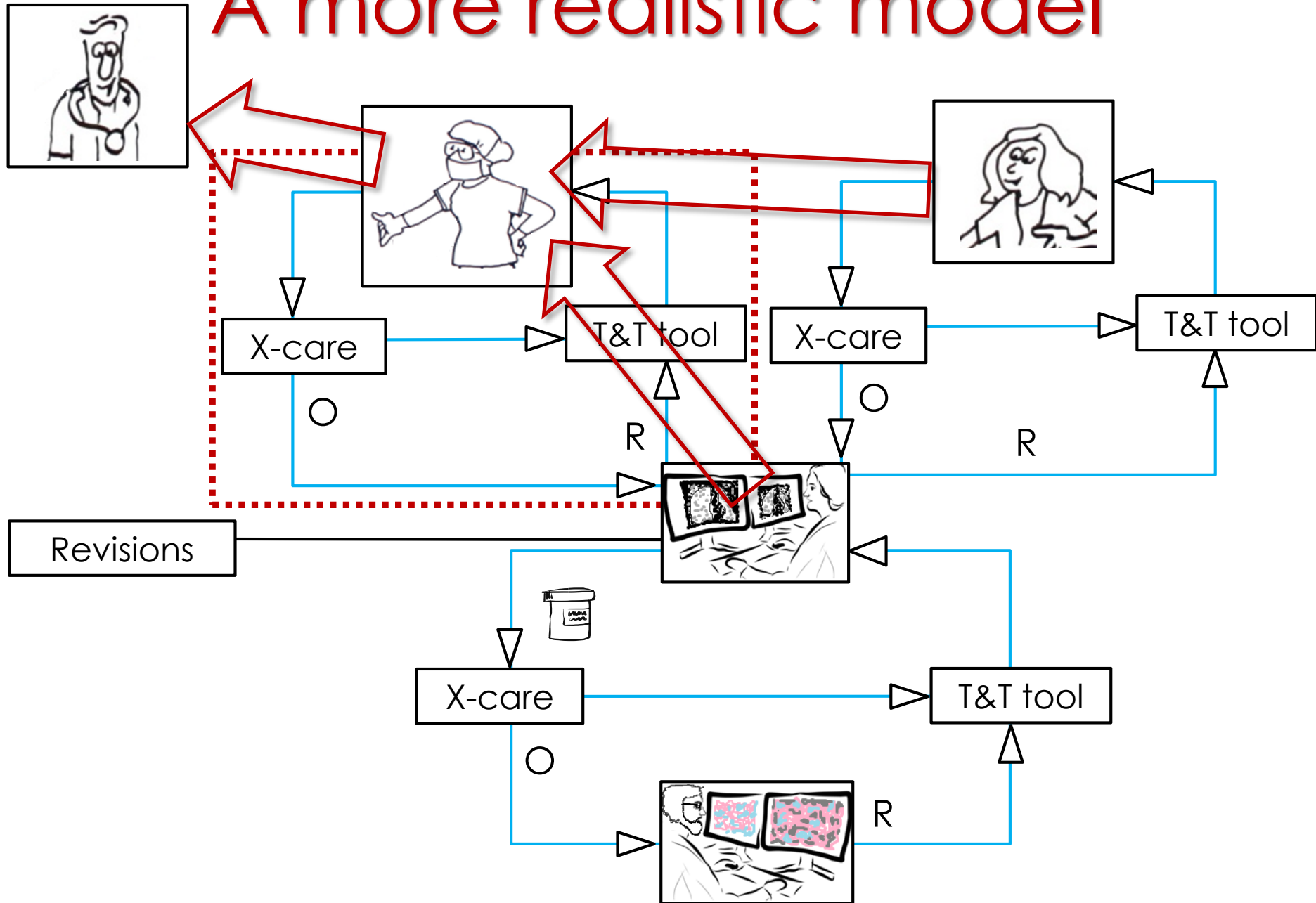
Control structure



Questions

1. What are the risks involved in the hospital wide use of the track and trace tool?
2. Under which organizational constraints can the track and trace tool be safely used in patient care?

A more realistic model



High level hazards

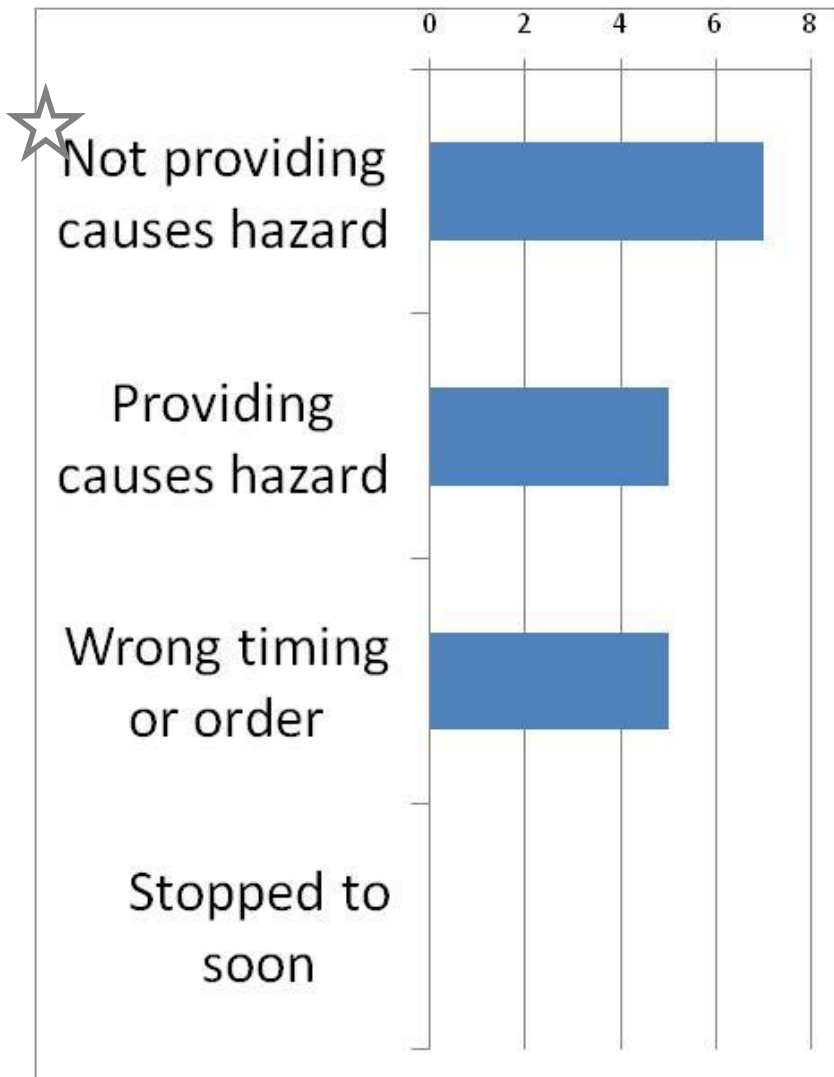
- A report that should have lead to an urgent (change of) treatment is not noticed.
- Missed reports because the actual ordering processes do not correspond to the model the tool is based on.
- Skipping reports in the lists produced by the track and trace tool.
- Absent or incomplete handing over of the care for ordered diagnostic tests.

System-Level Safety Constraints

Examples

- Every diagnostic test will be ordered on behalf of the patients' physician, even if this order is part of a diagnostic or therapeutic procedure.
- Always use the track and trace tool to see the results one by one and mark the results for seen.

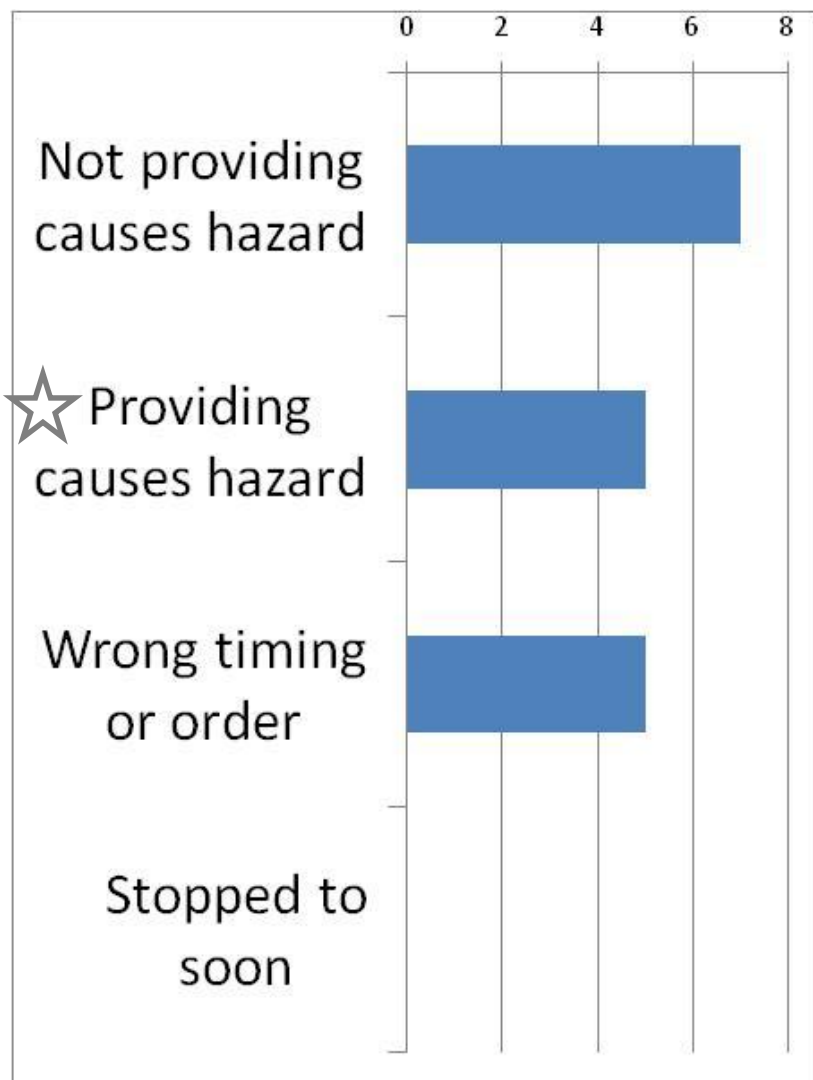
Step 2: Causes & Controls



Control activity

The diagnostician personally will communicate findings of revisions

★ Revisions of diagnostic reports will be filed with the original order

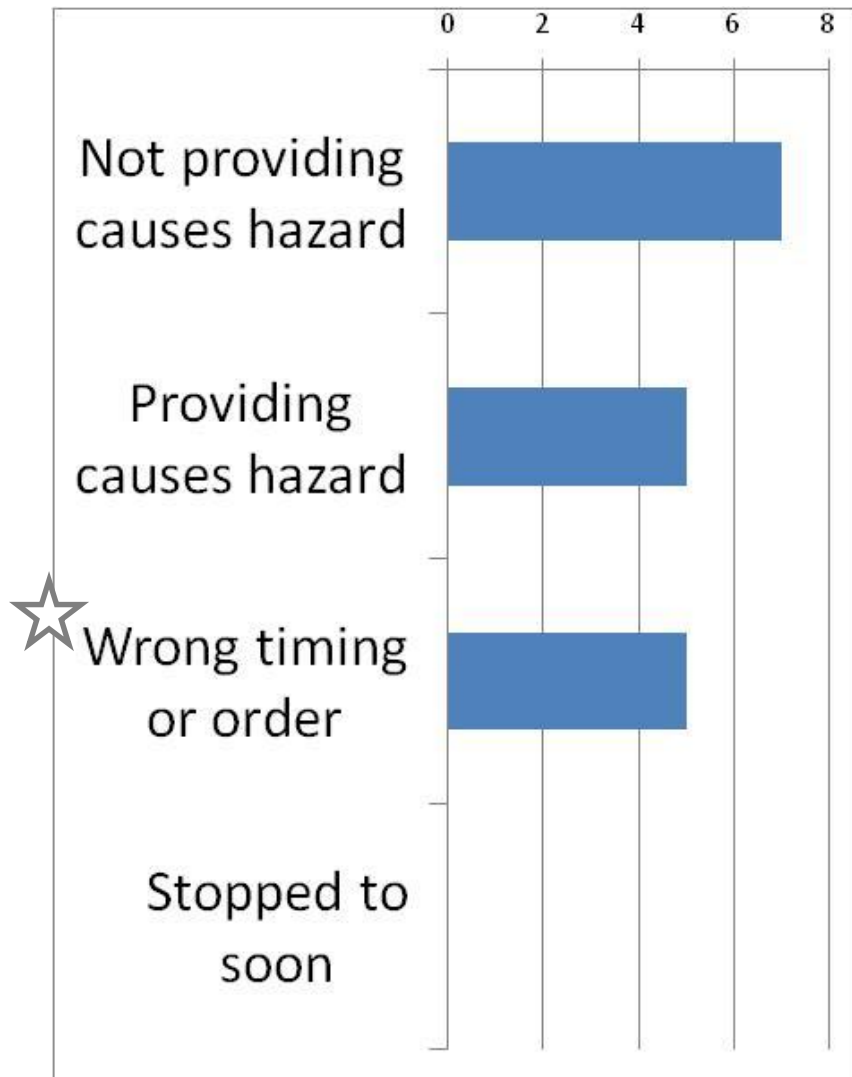


Control activity

The ordering physician will use the T&T tool to read results and check as read

★ Checked known info.

Marking a report as read after receiving results by phone or in a multidisciplinary round



Control activity

The ordering physician will hand over the care for the results

★ Too early

A report is read and checked as read by the next physician while the other is still in charge.

Refined Safety Requirements

Prove the safety and efficacy of the T&T tool in a controlled setting where the work process matches the tools' model

If proven safe and effective repeat this for other settings.

STPA

- + Systematic process
- + Cues what to look for
- + Maintaining a helicopter view

Learning objectives

- How to deal with fuzzy medical organisational context in a “Thomas process”

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