International Forum on QUALITY & SAFETY in HEALTHCARE COPENHAGEN

15-17 May 2023

Bella Center | Copenhagen, Denmark

D9: How can Improvement Science improve the quality of care?

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Adapting to a changing world: equity, sustainability and wellbeing for all

@QualityForum #Quality2023

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Welcome

Pierre Barker, Institute for Healthcare International
Simon Tulloch, Danish Society for Patient Safety

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Patient Inventory: From Quality Improvement to Scientific Journals

Søren Valgreen Knudsen, Danish Center for Clinical Health Services

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Identification of inappropriate patient care pathways in Danish psychiatric wards: A Patient Inventory project

Søren Valgreen Knudsen
MD, Ph.D., Postdoc

DANISH CENTER FOR
CLINICAL HEALTH SERVICES RESEARCH

Patient Inventory

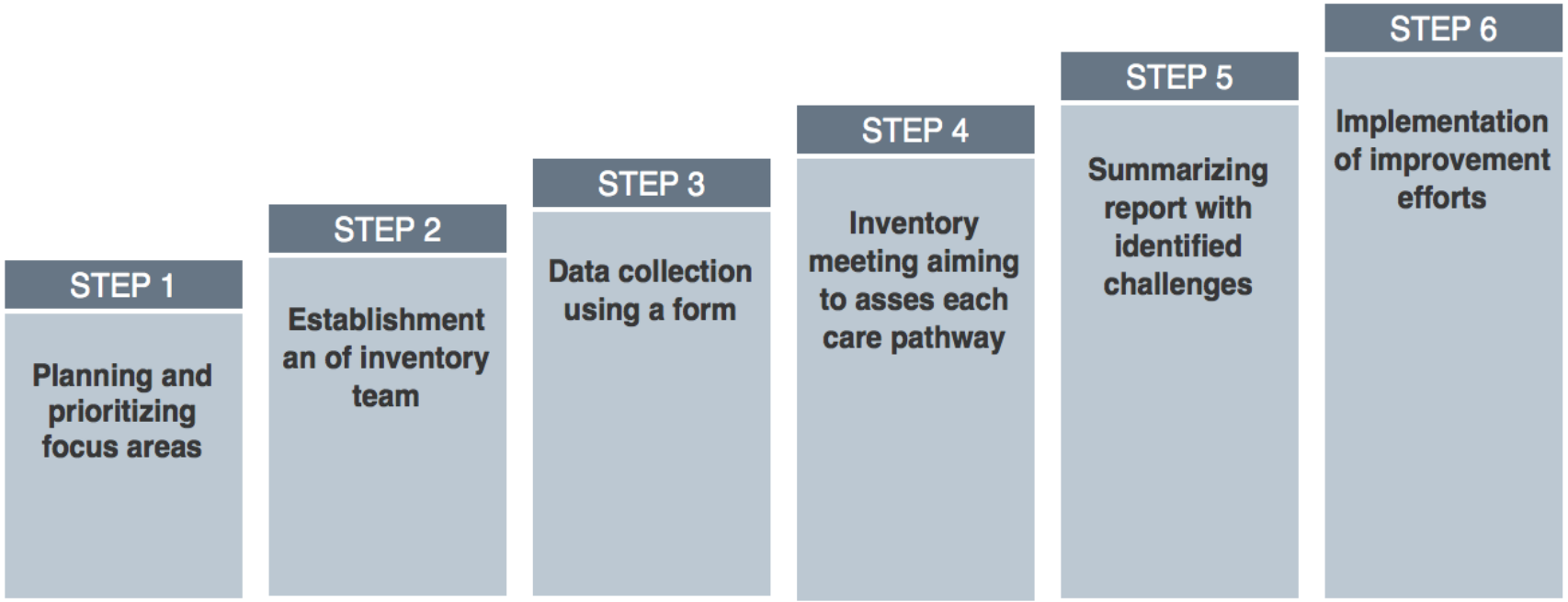
The method answers the question:

Is it the right patient in the right place at the right time, and is the correct pathway for the patient organized with the most appropriate use of resources?

Patient Inventory tool

- **The Patient Inventory method is a specialized clinical audit**
- **It provides a “snapshot” of the patient population in an entire hospital, a ward or another clinical unit**
- **The aim is to identify inappropriate or wasteful events and to facilitate reflections on the underlying causes.**
- **These reflections are used to identify focus areas for quality improvement efforts.**

Elements of a patient inventory



Strength and limitations

- Ease in planning and conducting using local data.
- Structured dialogue between staff and management for discussion of challenges in providing high quality of care.

Strength and limitations

- Is not necessarily representative of the entire patient population
- Is only indicative, the subsequent quality improvement initiatives require focus and culture

doi: 10.1093/intqhc/mzaa076
Quality in Practice

ISQua
International Society for Quality in Health Care

Quality in Practice

Quality in practice: applying the patient inventory method at a Danish psychiatric hospital

SABINA BAY HERMANSEN[1], JENS HOLMSKOV[2,3], SØREN PAASKE JOHNSEN[1], JAN MAINZ[1,2,4,5], and SØREN VALGREEN KNUDSEN[1,2]

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Psychiatric context

- Mental illness is a frequent disease and the number of adults who need psychiatric treatment is increasing.
- Challenge in bed capacity can compromise the quality of care and result in inappropriate use of resources.
- Important to identify wrongly referred patients, unnecessary waiting times and bottlenecks.

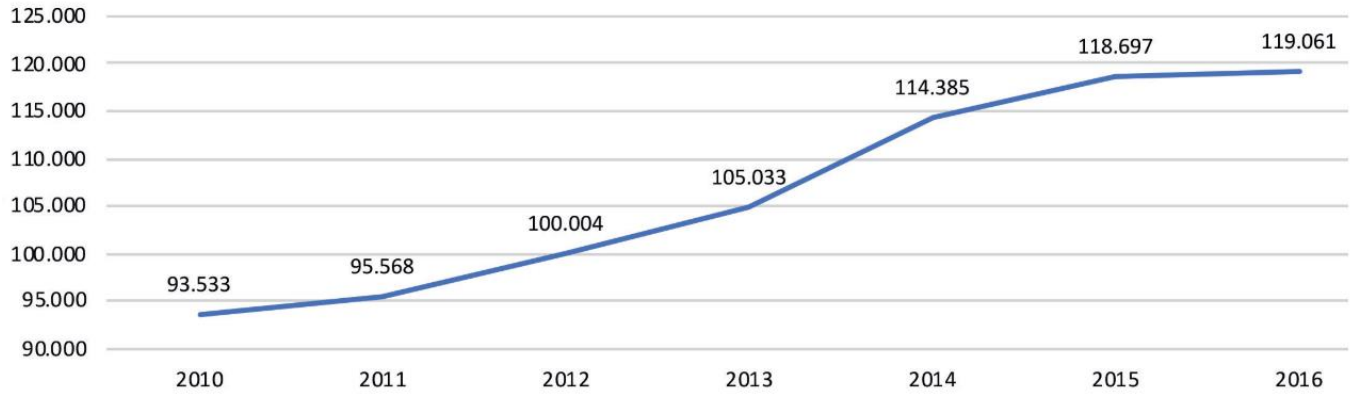

Figure 2: Number of admissions to Danish psychiatric hospitals during 2010-2016.
Reference: Benchmarking af psykiatrien 2014 og 2016. Danske Regioner.

Aim

- This study aimed to investigate the extent of psychiatric patients exposed to inappropriate care pathways and its causes.

Data collection- focus areas

Figure 5: Rationale of the clinical judgement of each of the three dimensions in assessment of inappropriate patient care pathways.

Data collection- focus areas

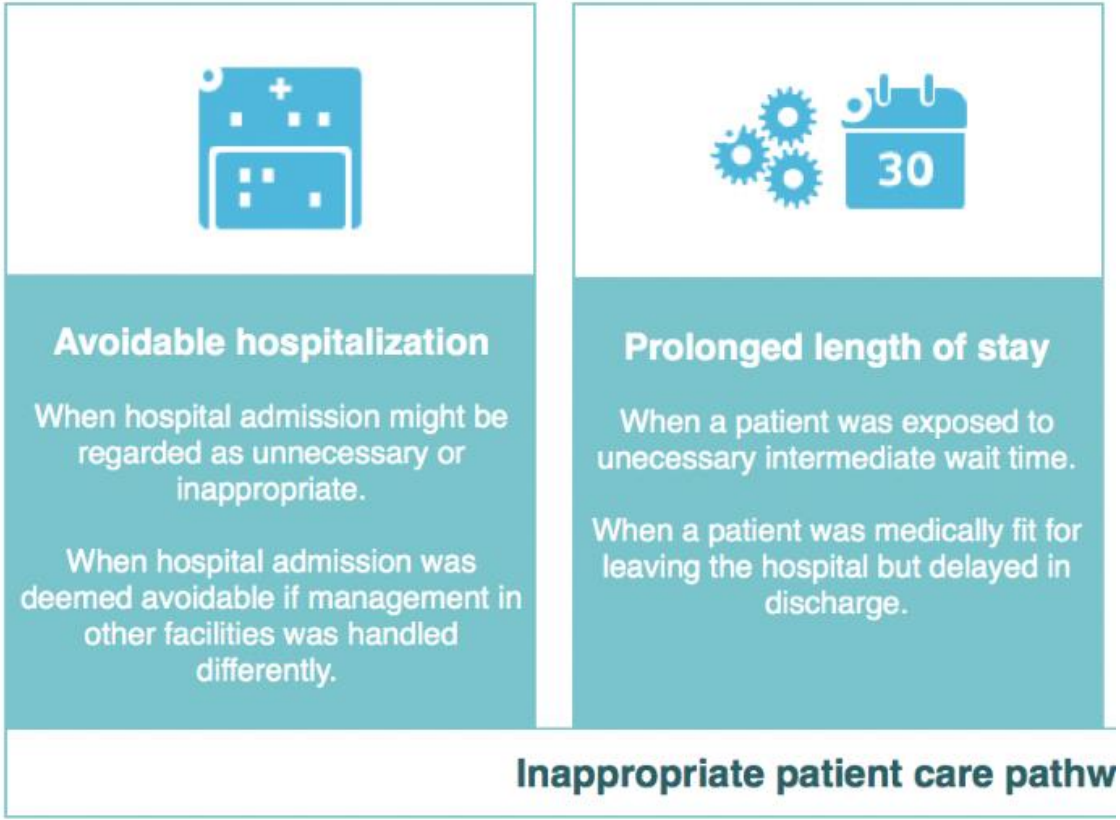

Figure 5: Rationale of the clinical judgement of each of the three dimensions in assessment of inappropriate patient care pathways.

Data collection- focus areas

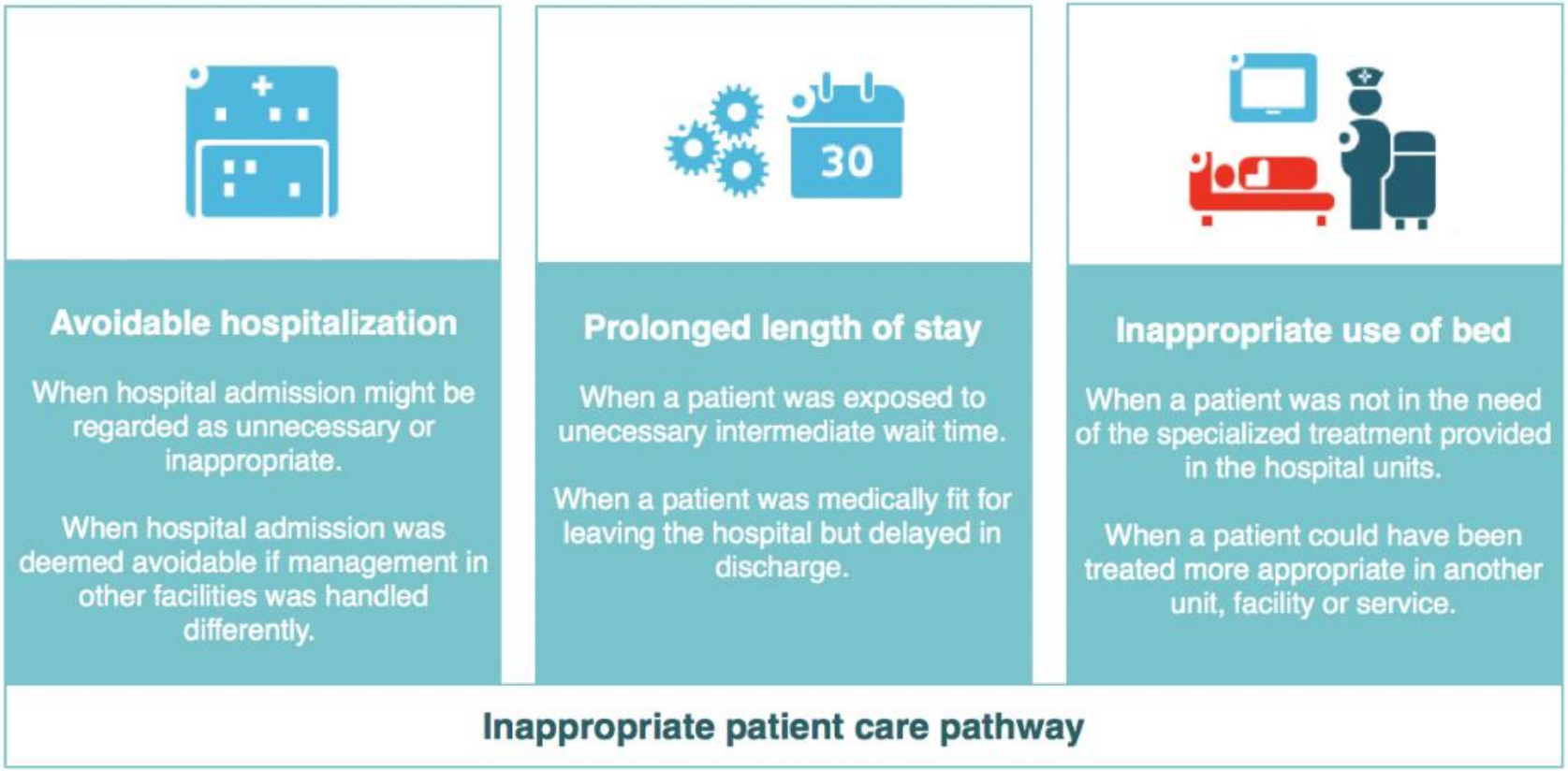

Figure 5: Rationale of the clinical judgement of each of the three dimensions in assessment of inappropriate patient care pathways.

Study process

- The clinical staff consisted of senior consultant and head nurse for each unit. The entire process was facilitated.
- The staff completed a form covering age, gender, reason for admission, diagnoses, expected date of discharge, and information about readmission status and ambulatory care.
- The staff made clinical judgement on each patient whether the patient had been exposed to an inappropriate care pathway.
- In addition the staff identified the most common single reason.
- Hereafter, the clinical staff met with hospital management forming the inventory team to achieve consensus.

Setting and patients

- Study conducted on 15 psychiatric hospital units in The North Denmark Region
- All patient admitted was included counting 201 patients.

Table 1: Distribution of psychiatric hospital units with number of available and occupied beds on the date of examination.

	Available beds (N = 229)	Occupied beds (N = 201)
The South Psychiatric Center, n		
Closed psychiatric units	28	25
Open psychiatric units	68	54
Child and adolescent psychiatric unit	11	9
Forensic psychiatric unit	13	10
The North Psychiatric Center, n		
Closed psychiatric units	24	22
Open psychiatric units	65	61
Old age psychiatric unit	20	20

Results

- **A total of 54 patients (27%) were considered to have inappropriate care pathways with a total of 65 episodes of inappropriateness.**
- **8 (12,3%) of these episodes were patient's admissions which were considered to have been avoidable**
- **26 (40%) of these episodes were patients who had unnecessary prolongation of their admission**
- **31 (47,7%) were patients who were assessed to be able to receive more appropriate treatment elsewhere.**

Avoidable hospitalization

Table 1: Episodes of inappropriate care pathways

Avoidable hospitalization, n (%)	Total (N = 8)
Premature hospital discharge	2 (25.0)
Disrupted treatment	2 (25.0)
Insufficient residential care	2 (25.0)
Poor indication for admission	2 (25.0)

Case presentation

- **“18 y.o. male, reason for admission was non-compliance with medication, institutionalized in residential home since childhood. Discharged to own home after turning 18, without social network. Municipality service did not provide him with any offers. Hospitalization deemed avoidable.”**

Prolonged length of stay

Table 2: Episodes of inappropriate care pathways

Prolonged length of stay, n (%)	Total (N = 26)
Awaiting municipality placement	6 (23.07)
Inadequate clinical staff	6 (23.07)
Delay related to care plan	4 (15.38)
Requiring other level of treatment	4 (15.38)
Ineffective discharge planning	2 (7.69)
Issues with institutional care	2 (7.69)
Social problems	2 (7.69)

Case presentation

- **“26 y.o. female, reason for admission was psychotic symptoms, internal transfer six times between three units due to non-availability of bed in closed units. Treatment delayed. Admission deemed unnecessary prolonged.”**

Inappropriate use of bed

Table 3: Episodes of inappropriate care pathways

Wrong level of care, n (%)* ** The categories presented are the alternative places with more appropriate levels of care*	Total (N = 31)
Another catchment area	8 (25.81)
Institutional care	6 (19.35)
Psychiatric intensive-care unit	4 (12.90)
Other age group	4 (12.90)
Specialized bed	3 (9.68)
Ambulatory care	3 (9.68)
Nursing home	2 (6.45)
Open psychiatric unit	1 (3.23)

Case presentation

- **“58 y.o. male, reason for admission was suicidal attempt. Patient resident in catchment areas of Thisted, although the patient did not want admission in that unit. Admission in Thisted would ease the transition to own home. The patient was assessed not to be in an appropriate bed.”**

Key insights – for internal improvement

- **Some patients being readmitted unnecessarily due to prematurely hospital discharge in index admission.**
- **Internal transfers between sections prolongs hospitalization. Some patients end up with up to 4 transfers in one hospitalization.**
- **Some patients are prematurely discharged in order to have available beds to new acutely ill patients.**

Key insights – for intersectoral improvement

- **Some patients are awaiting municipality service when otherwise deemed medically fit for discharge.**
- **Some municipalities are less willing to listen to recommendations for housing from the psychiatric wards. The result is that patients are re-admitted within a short period.**
- **Some patients are not referred to municipal services because the health professionals don’t consider the services sufficient**

doi: 10.1093/intqhc/mzaa038
Methodology Article

Methodology Article

Patient Inventory: a quality improvement method

SØREN VALGREEN KNUDSEN[1,2], SABINA BAY HERMANSEN[1], JENS HOLMSKOV[2,3], SØREN PAASKE JOHNSEN[1], and JAN MAINZ[1,2,4,5]

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- ***“Place the quality of patient care and patient safety, above all other aims.”***

  Don Berwick, 2013

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Improve better by scrum sprint in healthcare. An evaluation of the 24 hour scrum sprint method

Femmy Meenhorst, Ijsselland Hospital

Institute for Healthcare Improvement

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albert schweitzer

Improve better by 24-hour scrum sprint in Healthcare

Femmy Meenhorst

www.asz.nl

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Introduction:

Department of radiology => 6 sub-departments
200 health care professionals

Quality policy => continuous improvement

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Problems

- Low number of improvement actions
- Lead time of improvement actions is long

Cause: the current procedure is not effective and not efficient.

Goal

By implementing scrum sprint, the radiology department will realize:

- Increase the number improvement actions by 50%
- Decrease the average lead time by 50 %

SCRUM What is it?

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Scrum is a method for teamwork, innovation and improvement.

24-hour scrum sprint: start small

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Time-box period: 24 hours
Day 1 : afternoon (4 hours)
Day 2: morning (4 hours)

Day 1

Time	What	Who
08:30-08:45	**Scrum planning** Dividing tasks	Improvement team scrum master
08:45-12:00	**Carry out**	Improvement team
12:00-12:30	**Finishing tasks**	Improvement team
12:30-13:00	**Wrap up** Evaluation Feedback to the patient	Improvement team scrum master

Day 2:

Time	What	Who
13:00-13:15	**Scrum planning** Prioritise and choose actions Dividing tasks	Patient Improvement team scrummaster
13:15-16:30	**Carry out**	Improvement team
16:30-17:00	**Wrap up**	Improvement team scrum master

1 sprint in 2 months

24-hour scrum sprint

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Effective:

* Additional functions are a
* Focused for a short perio
* Create creativity
* Authority (decision)
* Willingness to change

)

Study design

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Effect evaluation:

Interrupted time serie (ITS) with a control group

Outcome 1: number completed improvement actions

Outcome 2: improvement actions completed in 90 days

Proces evaluation:

Focusgroup to evaluate the implementation

Results outcome 1: number of actions

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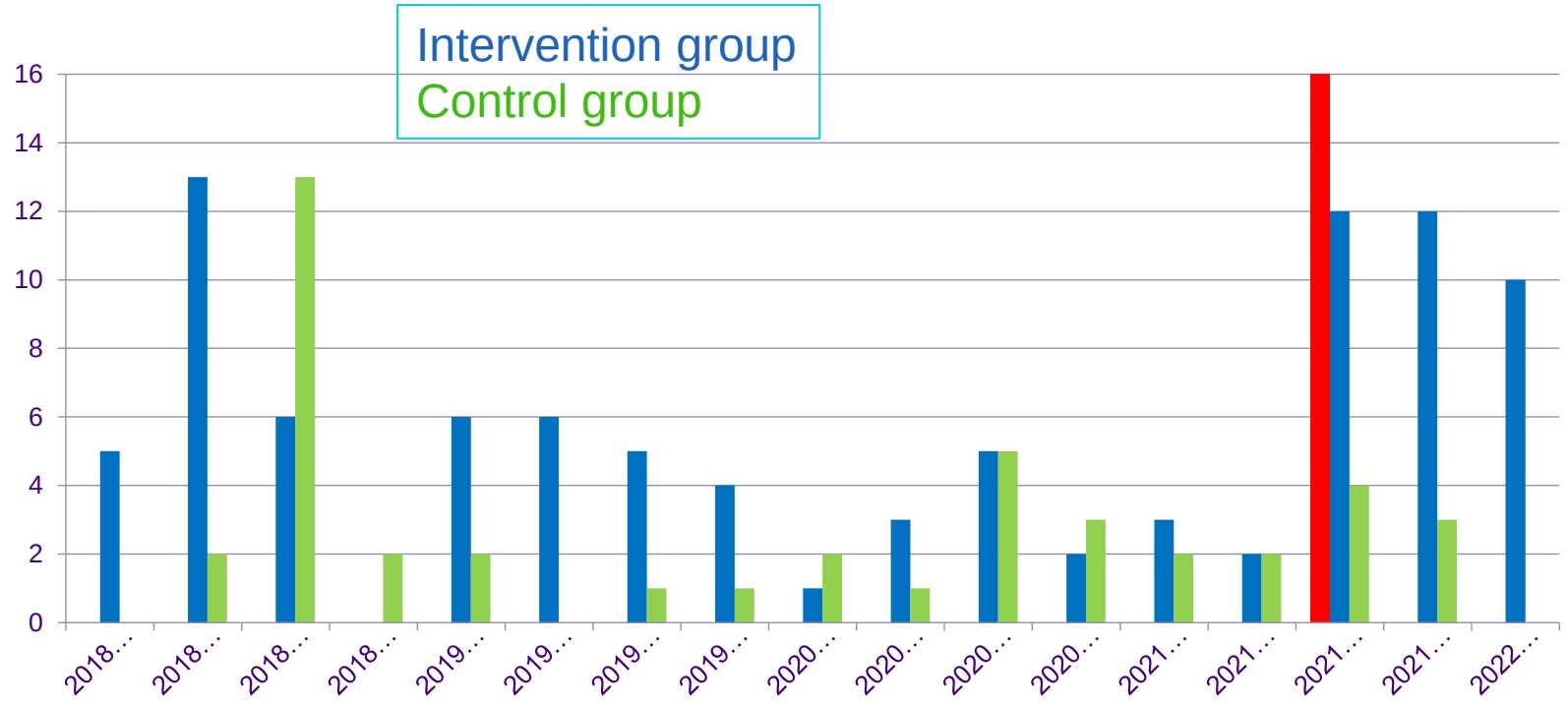

In the intervention group 2.5 times as many improvements were completed

Negative binomial regression analysis:
Intervention group: Incidence rate ratio 2.47 ($p<0.001$)
Control group: Incidence rate ratio 0.87 ($p=0.82$)

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Results outcome 2: lead time completed in 90 days

Pre intervention
Intervention group 18%
Control group: 34%

Post intervention
Intervention group 65%
Control group: 19 %

Logistic regression analysis:

Intervention group: Odds ratio 8.30 (p<0.001)
Control group: Odds ratio 0.99 (p=0.98)

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Conclusion

Goal is achieved

- Increasing number of finished actions
  (average 4,5 =>11)
- Decreasing lead time: actions completed < 90 days
  (average 18% => 65%)

Process evaluation

Experienced positively

Follow up research

Size & contents actions
Longer follow up

Take home messages

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- Give the improvement team decisive authority
- For quality improvement projects: interupted time serie as study design
- Let patient participate in the improvement team
- Besides the effect-evaluation a process evaluation is required

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A narrative journey into the borderland of patient safety

Lisbeth Lauge Anderson, Roskilde University

Institute for Healthcare Improvement

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A NARRATIVE JOURNEY INTO THE BORDERLAND OF PATIENT SAFETY

TOWARDS AN EXPANDED CONCEPT OF PATIENT SAFETY

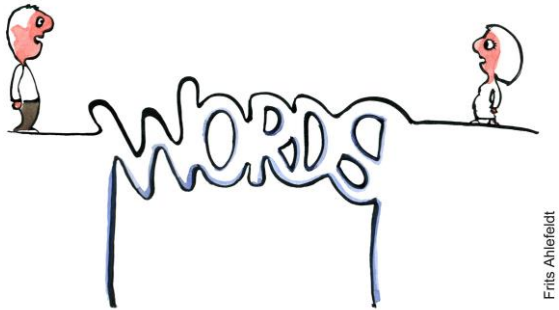
INTERNATIONAL FORUM ON QUALITY & SAFETY IN HEALTH CARE, MAY 15th 2023

Lisbeth Lauge Andersen
RN & PhD fellow at Communication & Arts,
Roskilde University, and Region Zealand, Denmark
lisbethla@ruc.dk

A qualitative, participatory PhD project

a collaboration between Roskilde University and Region Zealand, Denmark, 2021-2024.

Aim: to explore and develop knowledge on the complex dialogical aspects of the encounter between nurses and people with lived experience of mental health issues during their stay in a non-psychiatric hospital setting



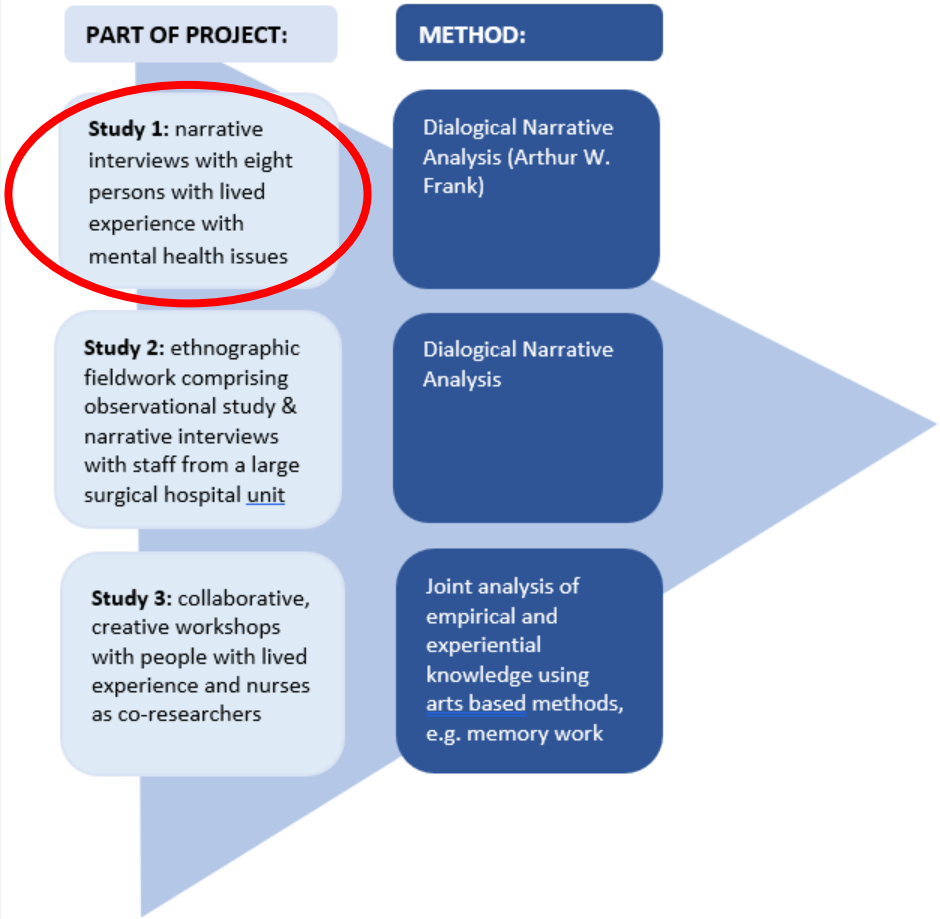
REGION SJÆLLAND PSYKIATRIEN

REFAS

RUC

Declaration of interest: none

Lisbeth Lauge Andersen, RUC and Region Zealand, Denmark



RESEARCH QUESTION:

RQ 1: how do people struggling with a mental health disorder experience somatic hospitalization and which narrative resources contribute to their stories?

RQ 2: how do nurses in a somatic hospital unit experience the encounter with people with lived experience and which discourses contribute to their meaning-making on this encounter?

RQ 3: how can coproduction contribute to collaborative learning about, and the development of, a person-centered practice? Which challenges and possibilities exist in co-production and how can we further secure the inclusion of multiple voices?

RESULTS

Results will be disseminated through academic articles, conference posters and presentations, and contributions to relevant journals of the practice field, partly in cooperation with co-researchers

Lisbeth Lauge Andersen, RUC and Region Zealand, Denmark

What is known on the topic?

https://www.tvmidtvest.dk/thisted/galleri-kaempebolger-i-vorupor [090523]

This encounter can be challenging and overwhelming for both nurses and people with lived experience

Consequences for patients´ safety and trust in health care as well as for nurses´ work environment

(Harris et al 2016, Daumit & McGinty 2018, Wong et al 2020).

Also known on the topic:

- The *experienced* patient safety is negotiable and relational.
- Patients´ perception of safety is highly related to quality of communication and responsiveness (Hor et al 2013)
- Psychosocial and emotional harm is not acknowledged in the existing incident reporting systems (Kuzel et al 2004, Sokol-Hessner et al 2015)

Lisbeth Lauge Andersen, sygeplejerske og ph.d.stipendiat ved RUC og Region Sjælland

How is patient safety defined in a Danish Context?

"Safety for patients against harm and risk of injury following the health care systems´ interventions and performances, *or the lack of it*"

(Danish Quality Guide 2022; Rexbye & Frappart, 2022:16)

Illustration by Frits Ahlefeldt https://fritsahlefeldt.net/collections/download-psychology-illustrations [100123]

What counts as unintended harm:

In Denmark, we have a strong reporting system for unintended harm

Health professionals as well as citizens are encouraged to report harmful events and the definition does exclude emotional harm, but…

The Danish Patient Safety Authority offers guidelines for reporting harmful events comprising

- Your prescription is missing in the system
- Your blood sample has disappeared or
- You were given the wrong medication

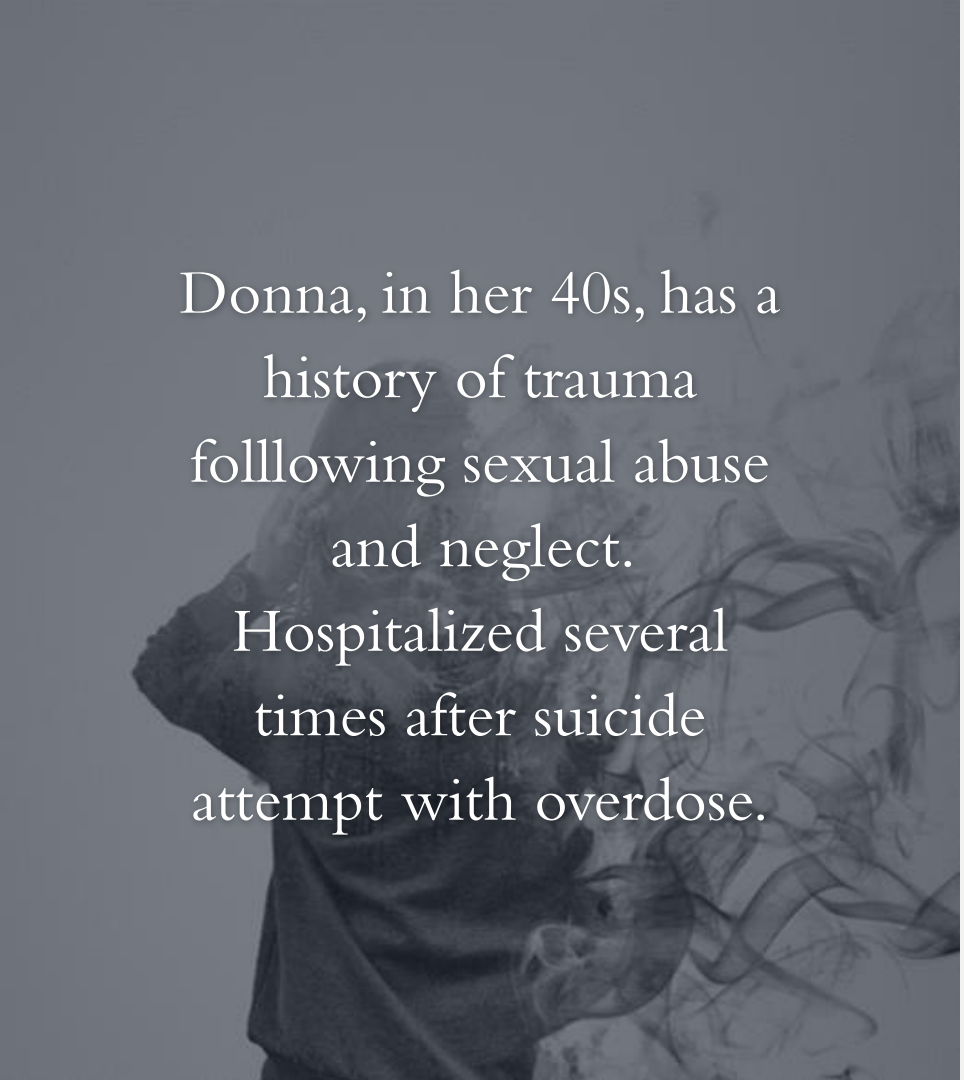
"If they still treat you, like – you know, dis-respectful, then sometimes I´ve gone out and tried [suicide] again right away" (Donna, 40s)

"It sounds silly, but I – I get mindless when I´ve gotta ask questions… And you don´t wanna make things any worse. You might be afraid of … taking any chances in that situation" (Charlotte, 60s)

"I have very often been met with the notion, that it´s because I´m not doing as I´m told. It´s not the treatment that does not work – it´s *me*, who isn´t being compliant" (Janet, 40s)

"I had my wounds stitched many times without any anaesthesia" (Katrina, 30s)

"I´m truly marked by the experience [somatic hospitalisation]… I *never* want to go there again" (Charlotte, 60s)



Donna, in her 40s, has a history of trauma folllowing sexual abuse and neglect. Hospitalized several times after suicide attempt with overdose.

"If they still treat you, like – you know, dis-respectful, then sometimes I´ve gone out and tried [suicide] again right away. It´s a kind of catalyst.

But if they were caring and… with dignity… and didn´t enhance my sense of feeling *wrong*, then I´ve been okay. Feeling ashamed of having done it once again - but without the catalyst of my *feeling of wrongness*, does that make any sense? When you´re in possession of this huge shame, it doesn´t take much to make it all fall apart."

Lisbeth Lauge Andersen, RUC and Region Zealand, Denmark

Example of Dialogical Narrative Analysis of Donna´s narrative

Shame is theoretically understood as a powerful, relational, dehumanizing factor, yet in Donna´s story it is normalised and almost downplayed as part of her narrative resources in the sense that she tries to explain and contain and contain staff´s behaviour. Nevertheless, staff holds the "key" to regulating Donna´s shame, which means they literally have the power over her living or dying.

The public narrative on mental health disorders containing stigma, dehumanization and mistrust can be seen as dynamics that maintain illness and cause frequent re-admissions, directly influencing Donna´s safety, recovery and empowerment.

On the same time Donna is completely dependent on health care professionals who possess the power to either drag her out of her own darkness or submerse her further in it – what you could also call *iatrogenic traumatisation*.

Illustration by Frits Ahlefeldt https://fritsahlefeldt.net/collections/download-psychology-illustrations [050123]

The Borderland of Patient Safety

Unintended emotional harm can be internalised causing:

- Shame, low self esteem, self-destructive thoughts & feelings
- Relapse of psychiatric symptoms that compromises recovery
- Further self-harm or increased suicidal thoughts or behaviour

The unintended emotional and psychosocial harm compromises patient safety, limiting the positive impact of patient safety on certain groups of persons. This contributes to inequity in health, which represents an ethical, democratic and a health economic problem.

The concept of patient safety needs to be expanded toward a more relational and person-centred understanding of safety

(Hor et al 2013; Sokol-Hessner et al 2015)

What this study adds:

The participatory dialogue-based design enables people with lived experience and somatic nurses to participate in co-production of knowledge on the topic through joint analysis and arts-based methods

Lisbeth Lauge Andersen, RUC and Region Zealand, Denmark

Resources

Background:

Blix, B., Hamran, T., Normann, H.K. (2013) Struggles of being and becoming: a dialogical narrative analysis of life stories of Sami elderly. Journal of Ageing Studies.

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Discussion

Pierre Barker, Institute for Healthcare International
Simon Tulloch, Danish Society for Patient Safety
Søren Valgreen Knudsen, Danish Center for Clinical Health Services
Femmy Meenhorst, Ijsselland Hospital
Lisbeth Lauge Anderson, Roskilde University

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Workshop: Fundamentals of design thinking for healthcare improvement

Byron Crowe, Beth Israel Deaconess Medical Center

Institute for Healthcare Improvement

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Human-Centered QI

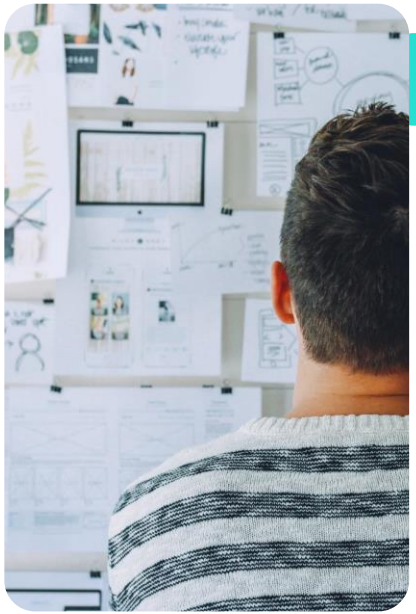
Combining Human-Centered and Process-Centered Frames to Accelerate Healthcare Improvement

Byron Crowe, MD

IHI/BMJ International Forum

May 17, 2023

Healthcare by Design

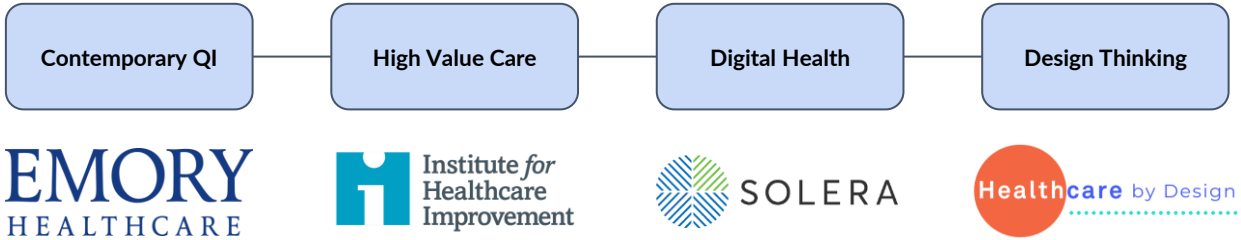


For Today

- Compare human-centered and process-centered frameworks for improvement
- Explore the intersection of contemporary QI and Design Thinking
- Learn how Design and QI tools work alongside one another in a ‘human centered QI’ approach
- Articulate next steps in implementation of design within an improvement organization

Healthcare
by Design

My Quality Journey



Comparing Process-Centered & Human-Centered Frames

What is Design Thinking?

“An approach that puts human needs, capabilities, and behavior first, then designs to accommodate those needs, capabilities, and ways of behaving”

– Don Norman, *The Design of Everyday Things*

Healthcare by Design

Design Thinking...

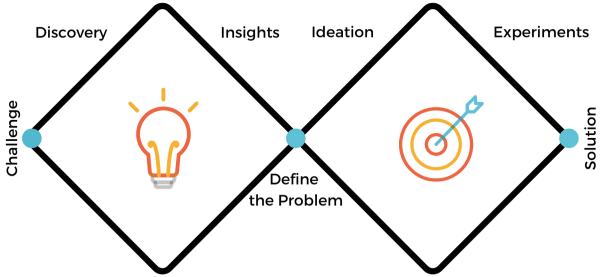
prioritizes meeting human needs as the most important goal in the problem solving process

reveals the human side of a complex process

promotes creative solutions using the Double Diamond model and associated tools

Design Thinking As Methodology for Complex Problem Solving

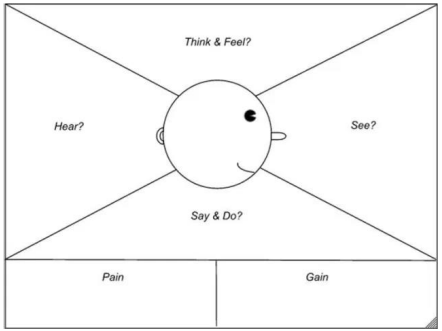
Overarching Framework

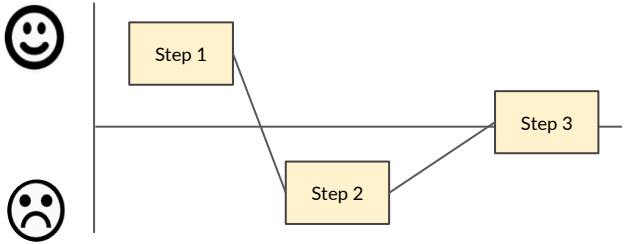


Core Principles

- Empathy
- "Yes, and"
- Diverge → Converge
- Fail early + often

Supporting Tools





Thirty Years of QI and Design

1991

Institute for Healthcare Improvement

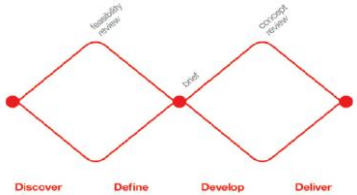
2000

2010

1991

IDEO

2003



2009

HITECH

Health Information Technology for Economic and Clinical Health Act

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Comparing DT and QI

Quality Improvement	Design Thinking
Values effectiveness, efficiency, reliability of a system	Values delightful human experience with a system
Purpose-built tools for understanding a process	Purpose-built tools for understanding people
Preference towards objective measures of success	Preference towards subjective measures of success

In healthcare, *people are often the process.*

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Healthcare Early Adopters

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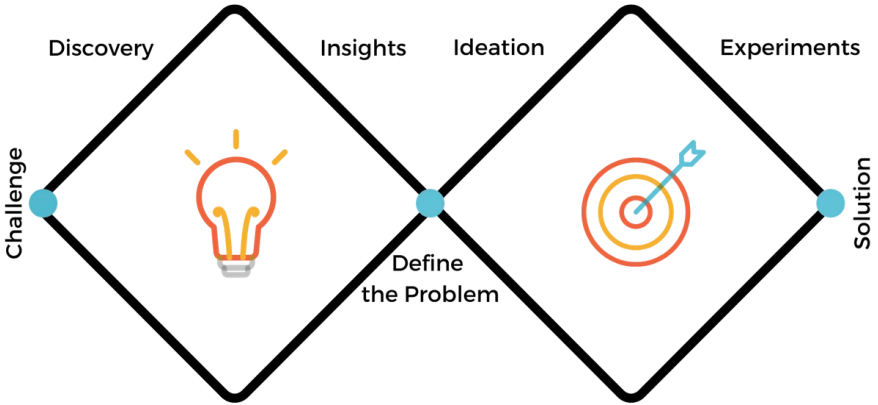
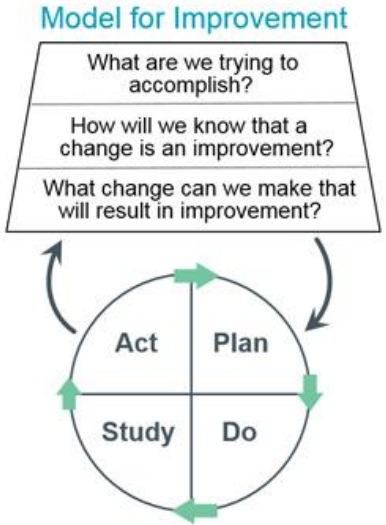
How can we use these together?





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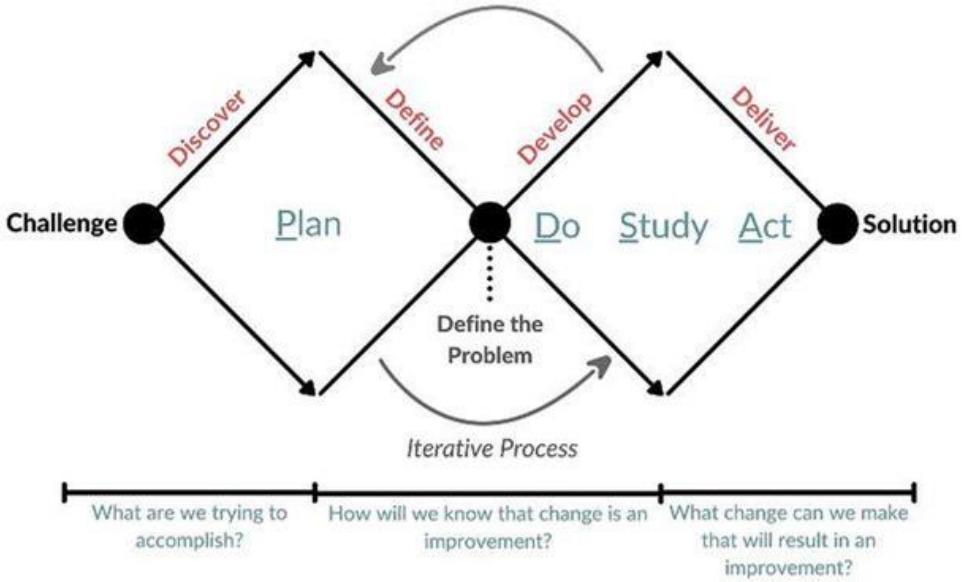
Human-Centered QI Framework

Optimism

Empathy



Iteration

Fail early + often

Diverge → Converge

“Yes, and”

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QI and Design Tool Integration

Purpose in Improvement	QI Tool	Design Tool
Overarching structure guiding the process	Model for Improvement	Double Diamond
Creating a problem definition	3 Fundamental Questions	Value Prop Canvas
Understanding current process	Process Map	User Journey
Understanding failure points	Fishbone Diagram	Empathy Map
Measuring for improvement	Run Chart	“Powerful Questions”
Rapid testing and learning	PDSA Cycle	Prototyping
Gathering feedback for future tests of change	Huddle	‘I like, I wish, I wonder’

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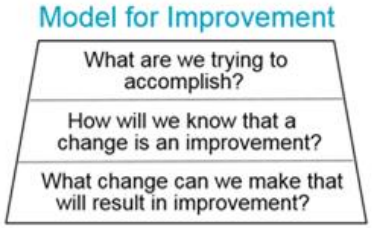
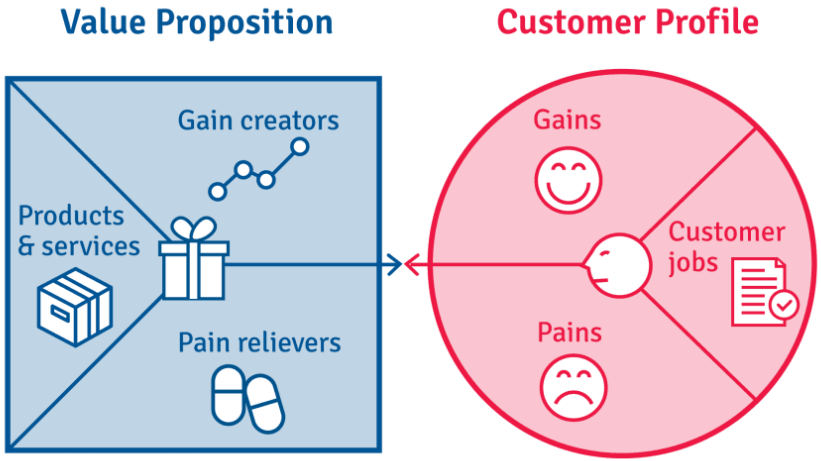
Creating a Problem Definition: Value Prop Canvas

QI Integration

- Use alongside “3 Fundamental Questions” from Model for Improvement to define value more broadly and in human terms
- Identify core user personas
- Define ‘jobs to be done’
  - Functional
  - Emotional
  - Social
- Explore current pain points and potential gains from care redesign





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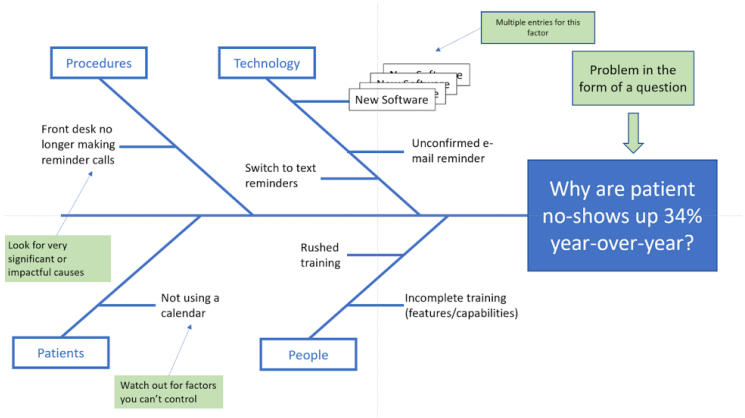
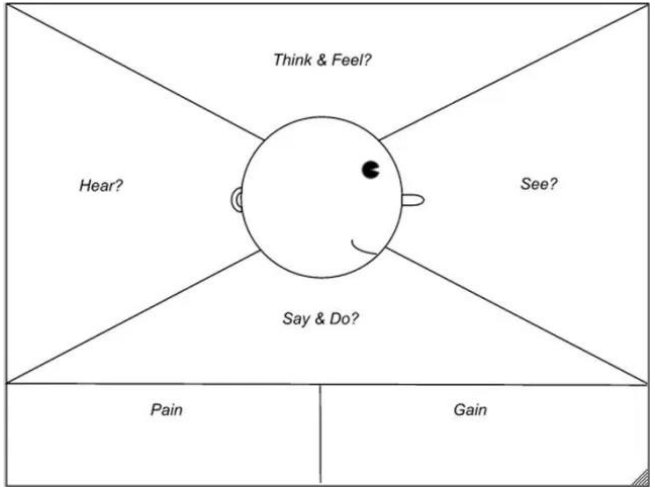
Understanding failure points: Personas & empathy maps

QI Integration

- Use empathy maps to uncover hidden behaviors and attitudes towards the process
- Crosswalk empathy map findings with fishbone and FMEA to gain insights into the human side of process failure





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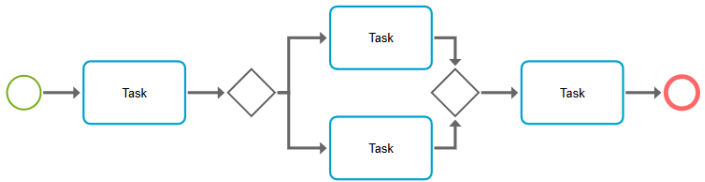
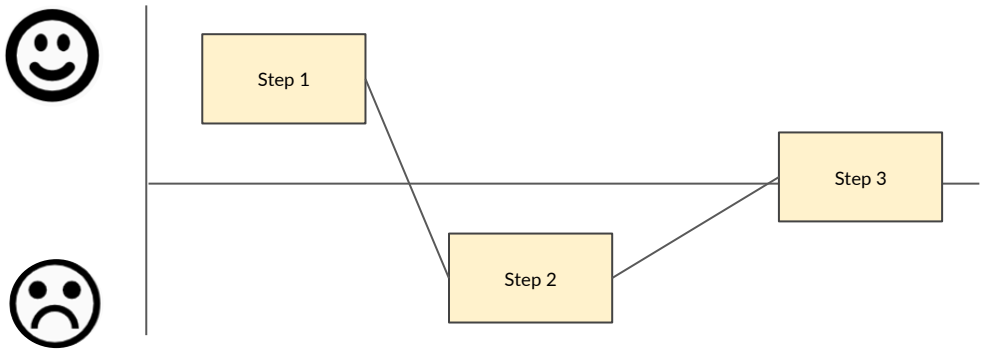
Understanding Current Process: User Journeys

QI Integration

- Apply user journeys alongside process maps to understand user emotions during a process
- Understand how pain points drive behaviour/workarounds
- Identify unmet needs in the current system





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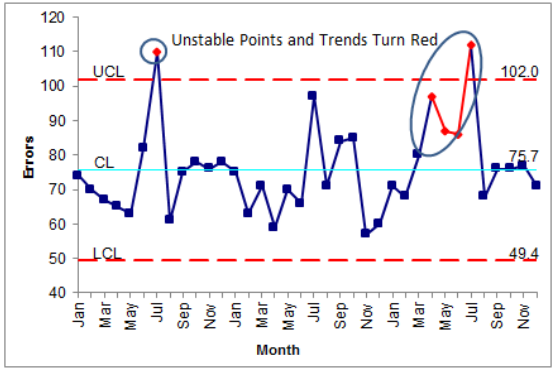
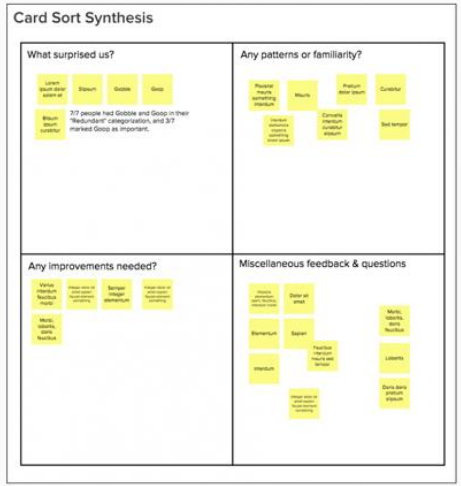
Measuring for Improvement: “Powerful questions” testing

QI Integration

- Incorporate “powerful questions” testing alongside run charts to capture early, directional feedback on whether a new intervention is meeting user needs
- Detect important failures before a measured process deviation is apparent





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Gathering feedback
‘I like, I wish, I wonder’

QI Integration

- Foster new cycles of improvement during QI huddles through creative reflection
- Reflect on the intervention in both practical and aspirational terms

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Examples

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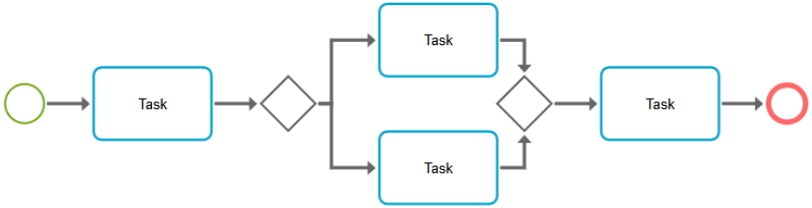
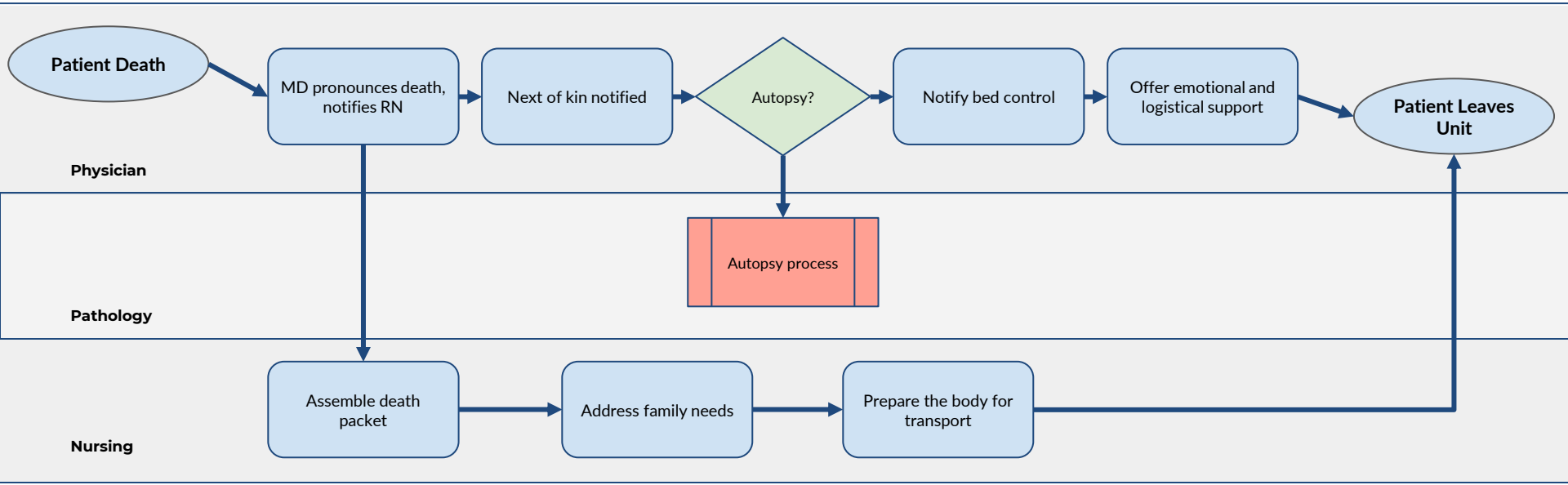
Patient Death in the Hospital





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Patient Death User Journey

Relief that suffering is over; sanctity of the ritual

MD pronounces death, notifies RN

Next of kin notified

Sensitive time; messaging is crucial

Autopsy?

Abrupt discussion; medicalization of death

Pulled away from role of healer

Notify bed control

Offer logistical support

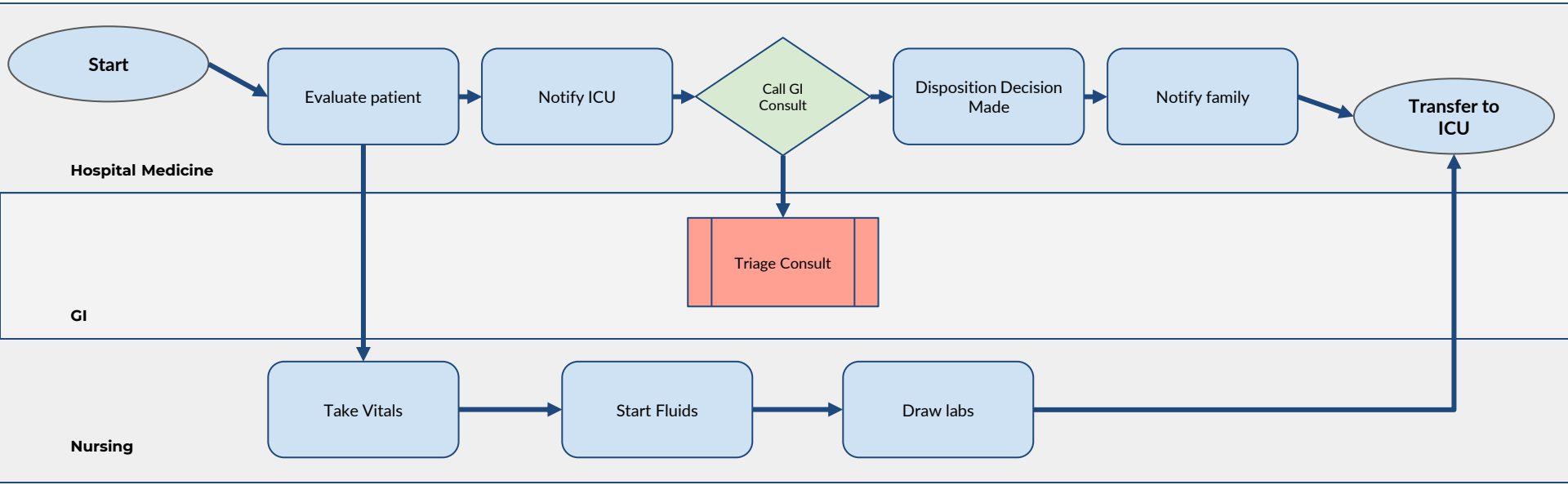
Confusion around next steps

Sense of closure; death with dignity

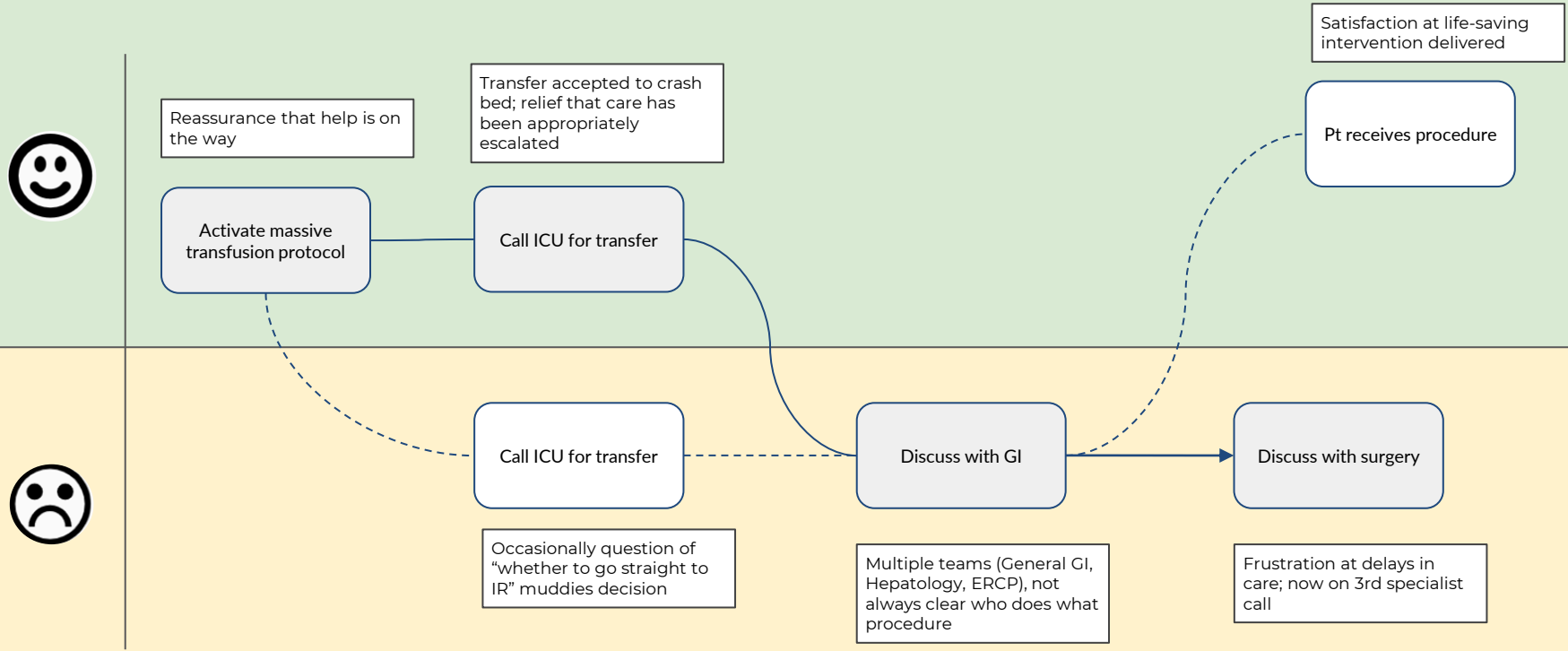
Patient Leaves Unit

Very inconsistent part of the process; lots of abrasion for families and staff

Acute GI Bleed on the Wards



GI Bleed Team User Journey



GI Bleed Team: Value of DT

Double Diamond Framework
- Diverging and converging thinking

Design Interviews and User Journeys
- New pain points revealed - confusion over ICU vs IR triage, GI team navigation, access questions

Prototyping
- Early failure of key technology proposal

Skepticism of Design? Tension with clinical process goals
- “I don’t really care how people feel during this process as long as it’s effective.”

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Next Steps for Organizations

Build Organizational Capacity

Begin using DT tools alongside current QI work

Embed Design Thinking into your Quality Academy

Foster a Culture of Design

Train key leaders, faculty and staff in design thinking

Hire a professional designer onto the improvement team

Build The Case for Design

Work with C-suite to define value prop from better experience of care

Explore lessons from early adopters to articulate value of human-centered methods

Healthcare by Design

Let’s bring people back to the center of care with design.

THANK YOU

www.healthcarebydesign.org

Did you hear about breakthrough ideas, methods, or results in the Improvement Science Stream?

Share them in the Learning Agents response form!

Relevant sessions:

- ○ A9. Introduction to the Science Symposium stream and new methodologies / evaluation design (Tuesday 11:00 - 12:15)
- ○ B10. The science of workforce and patient safety - the challenges and opportunities of technology for improvement (Tuesday 13:15-14:30)
- ○ C9. The science of workforce and patient safety (Tuesday 15:00-16:00)
- ○ D9. How can Improvement Science improve the quality of care? (Wednesday 11:00 - 12:15)
- ○ E9. Delivering equity and sustainability (Wednesday 13:15-14:30)
- ○ F9. What have we learned about the science of improvement? What's next? (Wednesday 15:00 - 16:00)