EHMA 2025

Taking action to improve health for all

Why patients medically ready for discharge wait in hospital despite vacant spaces in rehabilitation care – a qualitative case study on artificial variability

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Treant

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3 Hospitals:

- Emmen
- Hoogeveen
- Stadskanaal

17 Care facilities:

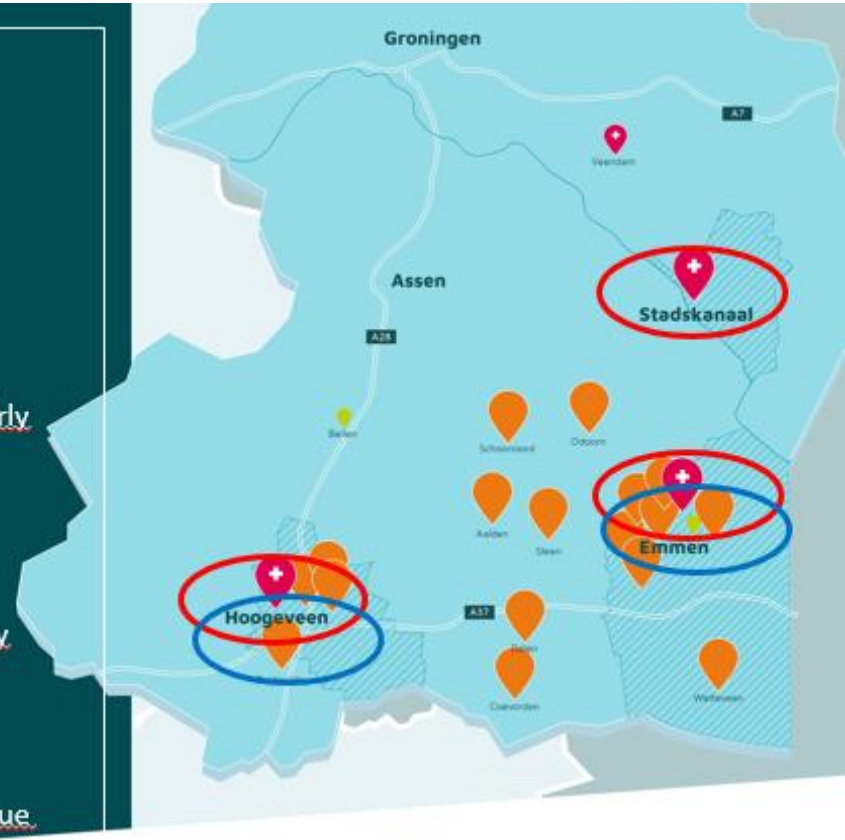
- Home care
- Day care
- Residential care
- Rehabilitation care (2 facilities)

6750 employees

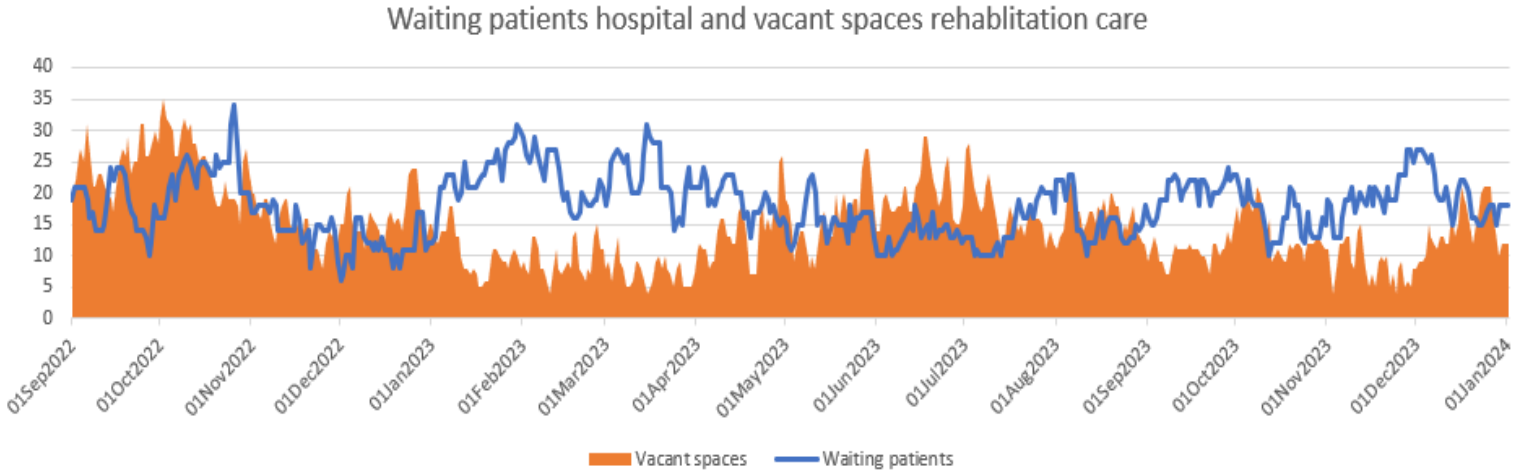
486 hospital beds
178.000 patients yearly

1471 care beds
3900 patients yearly

€570 million in revenue



Fascinating situation



Why are patients that are medically ready for discharge waiting in hospital for rehabilitation care, despite the availability of vacant spaces in rehabilitation care?

Background variability

Variability:

- Causes unwanted fluctuations in patient flow
- Major cause of underperformance

2 types of variability:

- **Natural variability:** occurs naturally
  - Flow variability - unstable pattern in the number and needs of patients requiring care
  - Clinical variability - the severity of the disease and a patient's recovery varies
  - Professional variability - differences in how staff members work and make decisions
- **Artificial variability:** unnecessary variability introduced by self-imposed agreements or habits

Litvak and Long (2000), McManus et al. (2003)

Research question

How can we optimize* the patient flow in the transfer process by identifying and eliminating artificial variability?

*

- minimize patients waiting in hospital for rehabilitation care
- reduce unnecessary vacant spaces in rehabilitation care

Data collection

Data type	Collection period
Project documents + minutes of steering group and working group meetings (documents from Jan 2021 – July 2024)	Dec 2022 - July 2024
Observational field notes of steering group and working group meetings	Dec 2022 - July 2024
Periodic meetings with project manager and project chair	Dec 2022 - July 2024
24 semi-structured interviews with healthcare professionals	Feb 2024 - May 2024

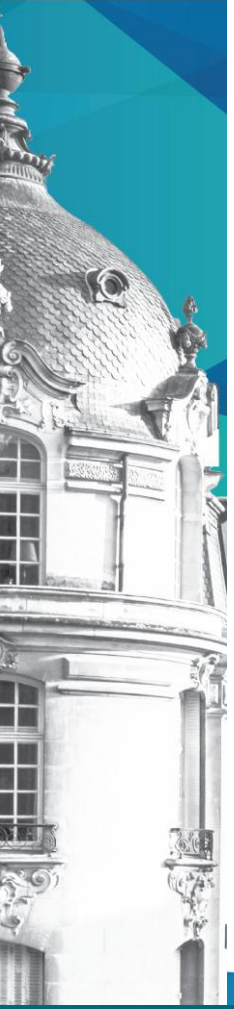
Data analysis & validating results

Thematic analysis:

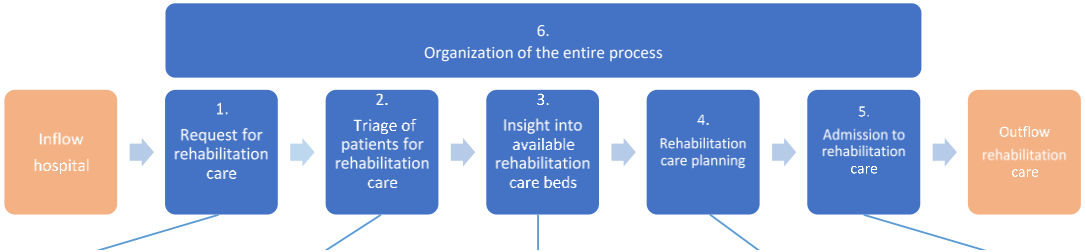
- Identifying factors of artificial variability contributing to:
  unnecessary hospital waiting and unoccupied rehabilitation beds

Validating results:

- Focus group session with members of steering group and working group
- Final validation with project manager and project chair



Phases transfer process from hospital to rehabilitation care



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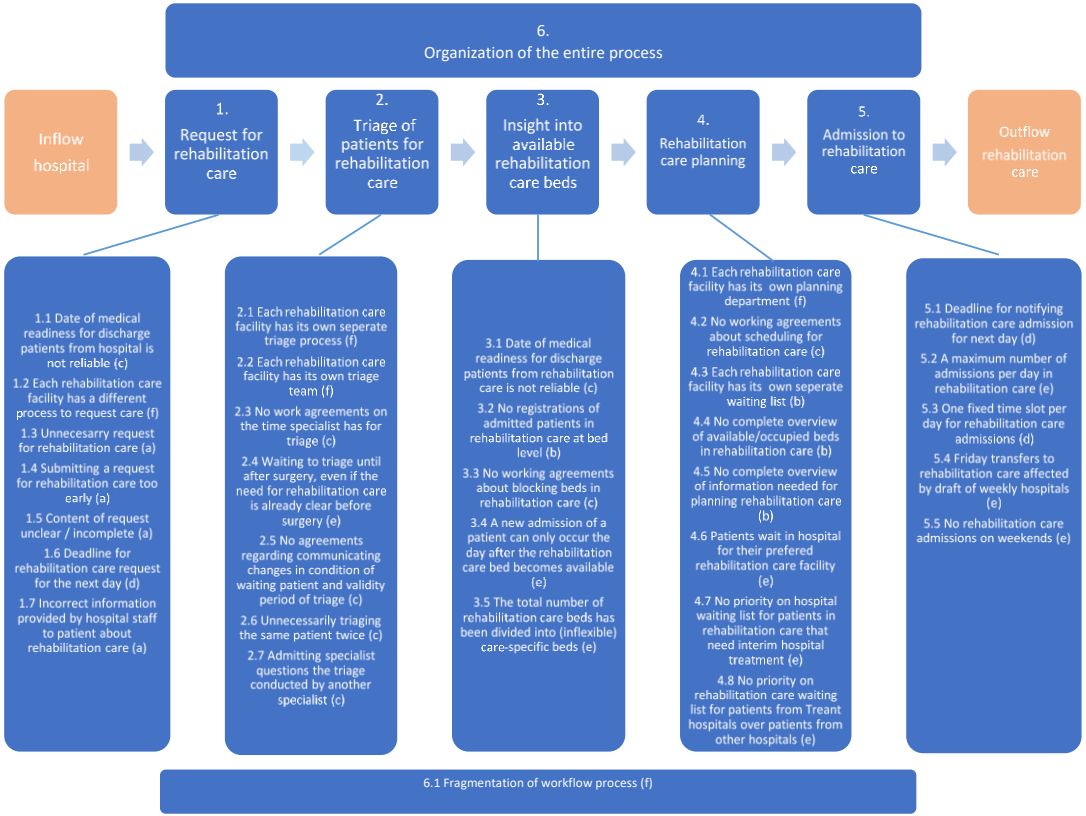
Phases transfer process from hospital to rehabilitation care

33 factors of artificial variability



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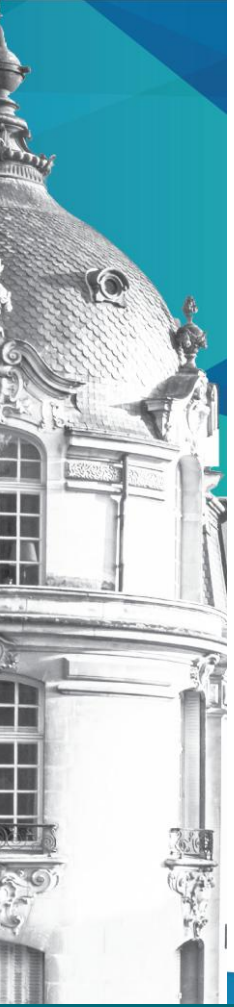

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Examples sources of artificial variability

Step 1 Request for rehabilitation care

The discharge readiness date is often unreliable;

resulting in unnecessary preparation or last-minute changes that delay patient transfers.

Planner rehabilitation care :

Just last week… there was a final discharge date written down, so officially we can plan based on that. But then, from the report, we can see it's still not completely certain. So next time, you think: yes, it's written here, but… we still don't fully trust it.

Examples sources of artificial variability

Step 2 Triage of patients for rehabilitation care

Post-surgery triage, even when rehabilitation care needs are already clear beforehand;

resulting in a delay in the transfer process.

Geriatric specialist:
I think we could work together with the hospital facilities earlier in the process. Patients with elective surgeries, like getting a new hip, are easy to plan. In a more early stage we could determine together if someone needs recovery care after surgery or not.

Examples sources of artificial variability

Step 3 Insight into available rehabilitation care beds

A new admission of a patient in rehabilitation care can only occur the day after the bed becomes available;

resulting in an empty rehabilitation care bed for one day after every admission.

Nurse rehabilitation care:
Compared to six months ago the ability to admit a new patient on the same day as another patient leaves rehabilitation care is a real improvement.

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Examples sources of artificial variability

Step 4 Rehabilitation care planning

Patients are allowed to wait in hospital for their preferred location of rehabilitation care, even if there are empty beds in the other location;

resulting in hospital beds being unnecessarily occupied, while rehabilitation care beds remain vacant.

Planner rehabilitation care:

People often think everyone is pathetic. Even the doctor says to a patient: you can wait, this is such a sad story. And then we are nowhere. People with the biggest mouths get a lot done. A major stumbling block is that the starting points are not given in advance. We are confronted with this. That's what really obstructs the flow.

Examples sources of artificial variability

Step 5 Admission to rehabilitation care

One fixed time slot per day for rehabilitation care admissions;

resulting in one extra day in the hospital and an needlessly vacant recovery care bed, by missing the time slot.

Nurse hospital:
"Traditionally, the receiving department has always had fixed times for accepting patients. It used to be very strict — and if we were delayed here due to the ambulance service or something similar, it was very difficult to still get the patient transferred the same day

Examples sources of artificial variability

6. Organisation of the entire process

There are many redundant linkages in the process;

resulting in excessive information exchange and a lot of unnecessary work that hinders the transfer process.

Manager rehabilitation care:
During some time we had a nurse especially for admissions. But there was no added value. Now the rehabilitation care nurses do the admissions of there own patients.

Geritric specialist:
We recently eliminated a lot of unnecessary steps in the triage process. A lot of people were involved, doing something that wasn't useful at all.

Conclusion

- Treant case study: 33 factors identified that keeps patients in hospital despite available rehabilitation capacity
- By looking through a lens of artificial variability, it is possible to identify factors that disrupt the process, which were previously unknown
- Well-intentioned decisions can unintentionally disrupt patient flow
- As all factors are self introduced: identify and eliminate them to optimize patient flow

Part II of our study:

- Interventions to reduce artificial variability and their impact
- Treant started tackling these factors; great improvements in patient flow thanks to reducing artificial variability

THANK YOU

Questions?

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