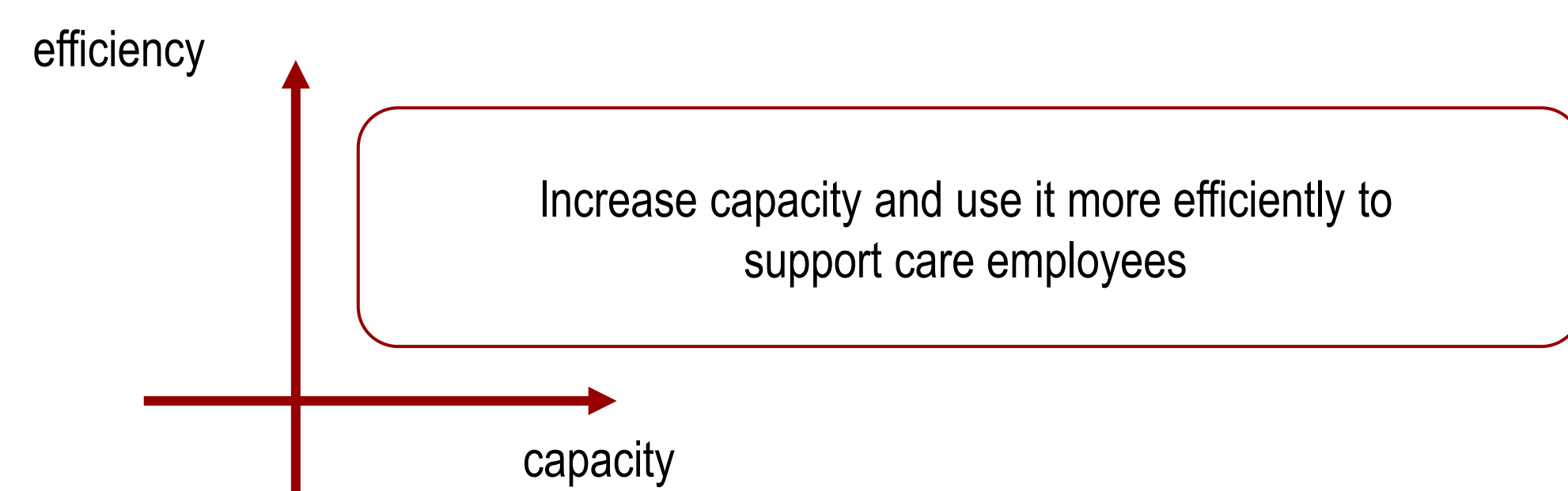


Operations Research in Healthcare Logistics

Employee and task rostering in home care and residential care

Challenge

- Staff shortages challenge quality of care and staff well-being
- Care products need to be delivered to an increasing population of home care clients



Our Approach

- Identify the (scheduling) needs and preferences of clients, employees, care organizations and suppliers
- Integrate employee scheduling preferences in rosters
- Motivate employees to increase their contracts
- Regional collaboration for employees sharing
- Regional collaboration between suppliers of goods and services and the care organisations is initiated
- Include care product and services deliveries in a regional logistical system

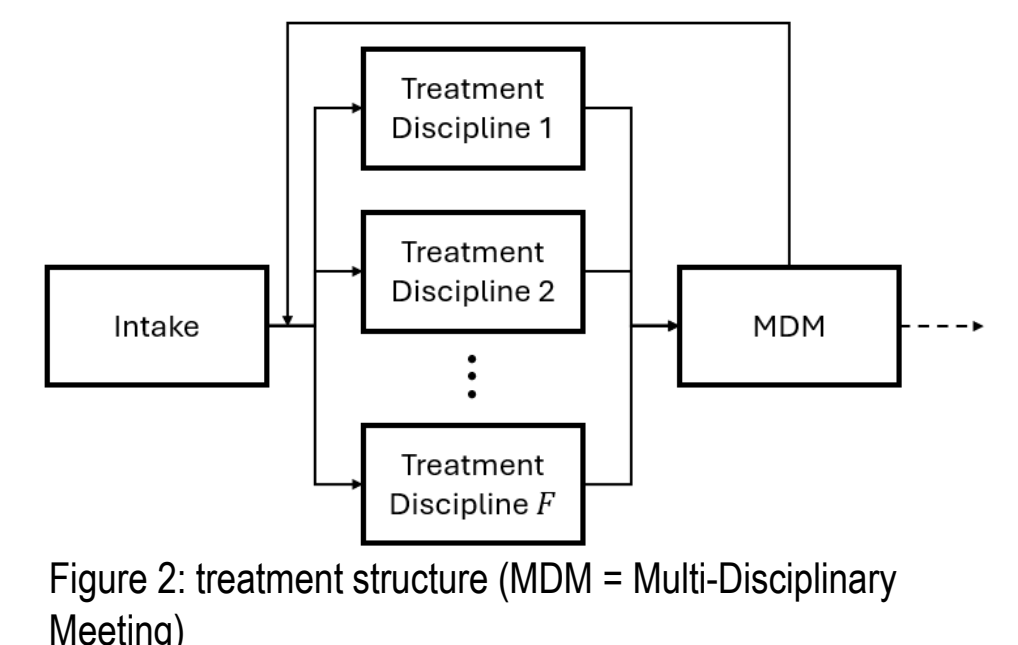
Improving accessibility in rehabilitation and mental healthcare

Challenge

- Escalating waiting times impede access to the right care at the right time
- Staff shortages require efficient use of existing resources

Our Approach

- Leveraging the treatment structure to gain insight into the strain on capacity of appointment series
- Supporting patient admission and capacity allocation decisions



Pandemic preparedness

Challenge

- Unplanned patients put healthcare chains under pressure
- Regular care is delayed, leading to undesirable outcomes

Our Approach

- Forecast ward and ICU pandemic bed occupancy
- Improve access to regular care during pandemics
- Fairly distribute regular care treatment delays across hospitals by redistributing pandemic patients
- QALY driven regular care patient prioritization
- Implement allocation rules in regional & national patient allocation systems

Regional & cross-border healthcare collaboration

Challenge

- Healthcare providers operate largely independently with isolated resource structures
- Resource shortages and growing, fluctuating demand challenge these structures
- Inefficient coordination of transfers from hospitals to aftercare organizations lead to delayed hospital discharges

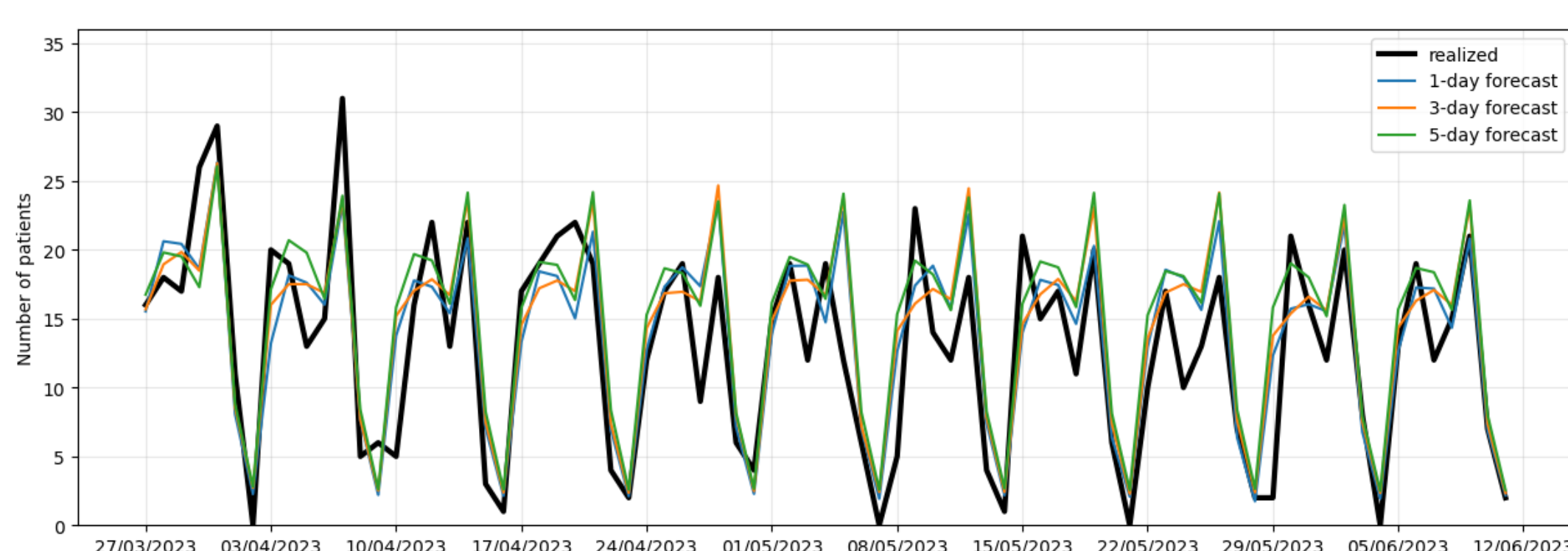
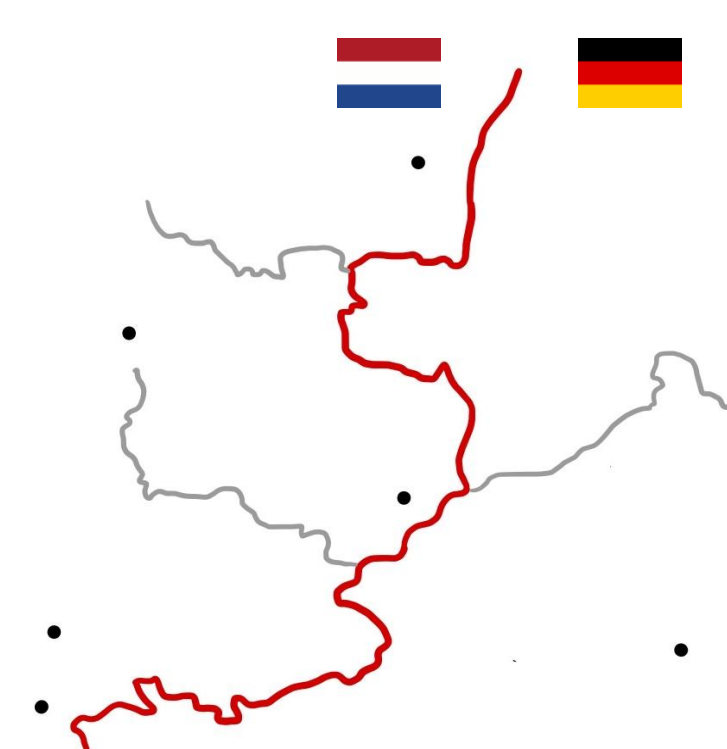


Figure 1: Short-term forecast of transfers from a large Dutch hospital to aftercare organizations.

Our Approach

- Forecast demand and capacity utilization on different time scales
- (Inter)regional patient and resource allocation
- Incentivise collaboration and decision making in the DE-NL border region



Optimizing laboratory workflows

Challenge

- Delays and workload peaks across automated and manual workflows
- Timely diagnostics

Our Approach

- Turnaround time prediction
- Analyze automated and manual sample flow
- Study delays and workload peaks in the whole laboratory
- Laboratory design
- Optimal workflows



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Scan for more info!