



# Innovative Solutions: MedTech and Process Efficiency in Tackling Staff Shortages

Caroline Fischer, University of Twente

# Technology in Healthcare Transformations

Inter-disciplinary Expertise group of Health@BMS

Dr. Caroline Fischer, University of Twente







**Reliable, valid, and (cost-)effective healthcare technologies**

**Personalized yet holistic and efficient healthcare system**

**Sustainably embedded in institutional and societal contexts**



# SOME CURRENT TOPICS

- Care and medication @home
- **Virtual care centers**, especially impact on the involved personnel
- Technologies to **replace human labor** in care
- **Pooling of resources**, especially flexible deployment of nurses, also across borders





# CONTACT

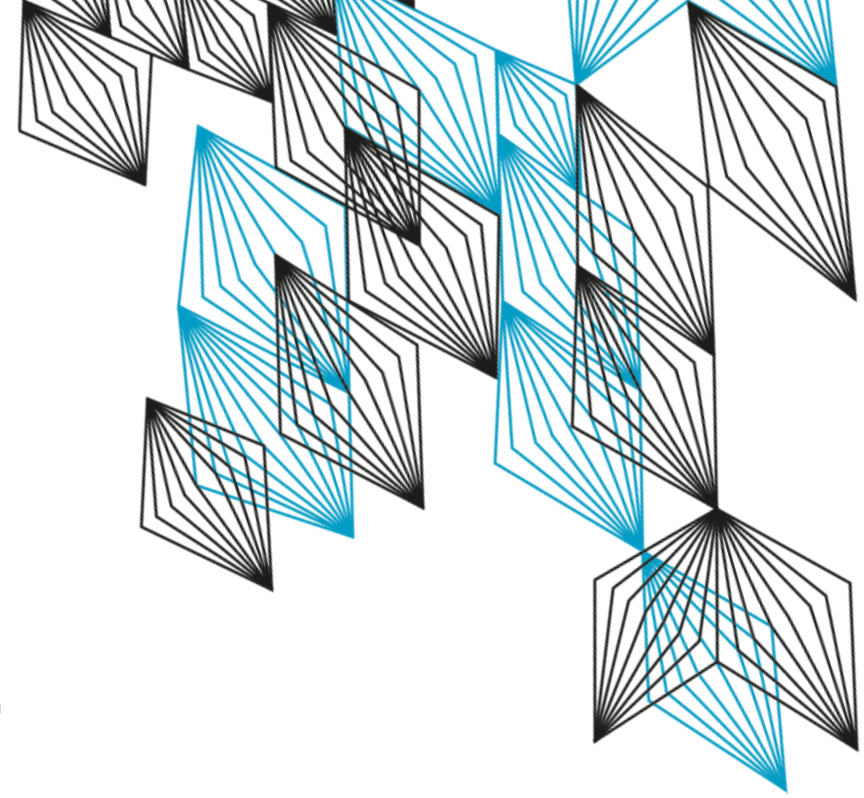
## TECHNOLOGY IN HEALTHCARE TRANSFORMATIONS

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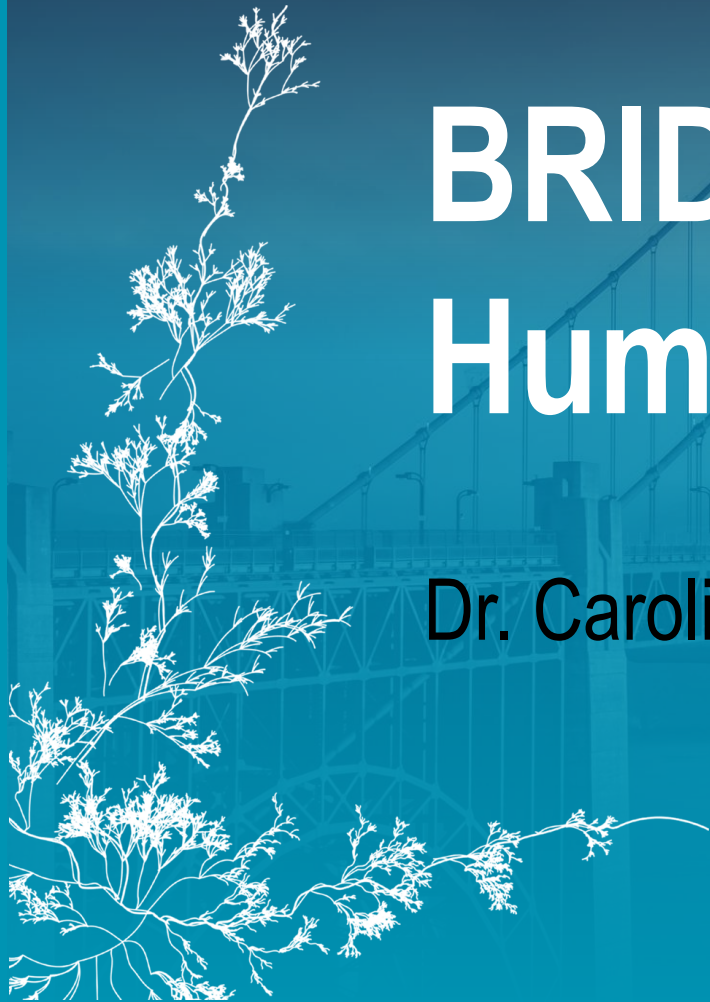
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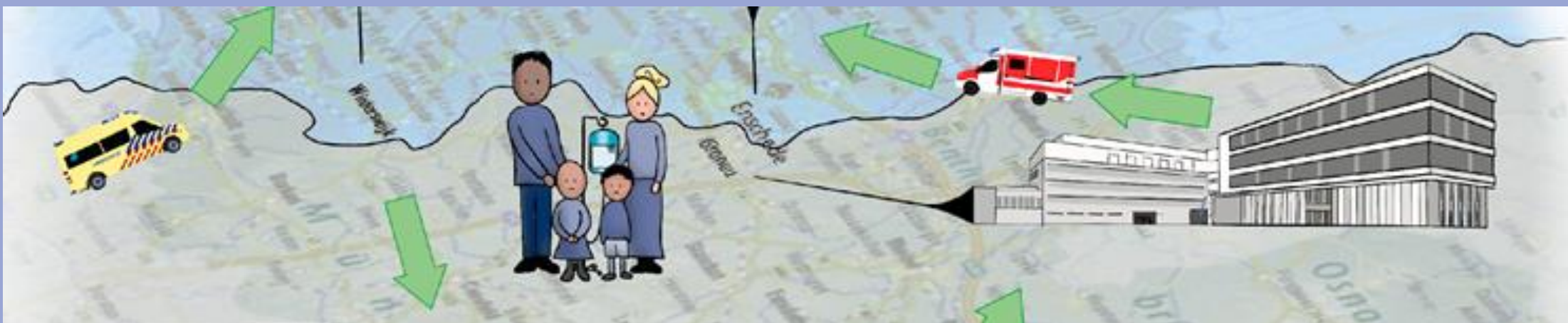
# BRIDGE – Cross-Border Human Resource Pooling

Dr. Caroline Fischer, University of Twente



# BRIDGE

## CROSS-BORDER RESOURCE POOLING IN HEALTHCARE

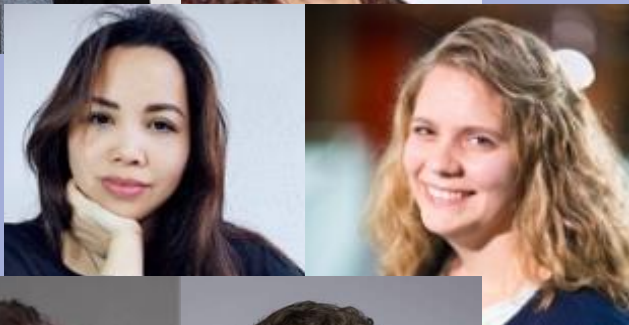
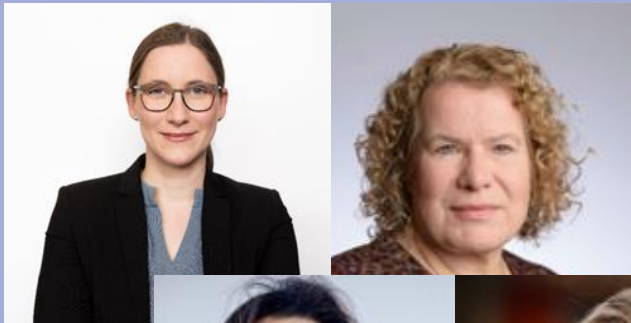


Project BRIDGE wordt uitgevoerd in het kader van het Interreg VI-programma Deutschland-Nederland en wordt met EUR 1.497.345,91 euro medegefinancierd door de Europese Unie, MWIKE NRW, de provincies Overijssel en Gelderland.

Das Projekt BRIDGE wird im Rahmen des Interreg VI-Programms Deutschland-Nederland umgesetzt und von der Europäischen Union, MWIKE NRW sowie den Provinzen Overijssel und Gelderland mit 1.497.345,91 Euro kofinanziert.



# Who we are

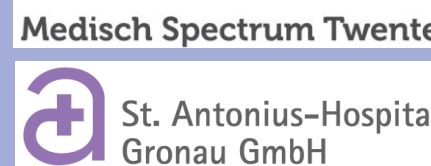


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# Our associate partners



# Specific challenges in our (cross-border) region

- Different resource shortages
- Our region is (a bit) less densely populated than more central regions
  - Steeper demographic curve
  - Less labour market potential
  - Less patients with specific diseases – hard to have all services on standby



▲ Roy Horsthuis (rechts) met zijn collega's Reinoud Klijn, Martin Huizinga en Anke Ettema (v.l.n.r.). © Cees Etzenga

## Slechts vier kaakchirurgen voor 600.000 Twentenaren: 'Heel vervelend voor patiënt'

Een afspraak met de kaakchirurg in de ziekenhuizen MST en ZGT in Twente kost vier tot negen maanden wachttijd. Voorlopig gaat het niet sneller. De artsen willen wel anders, maar eerst moet de basiszorg op orde. „Heel vervelend.”



## Behalve bij 'kraam' en verloskunde, piept en kraakt het ook in Twentse ziekenhuizen

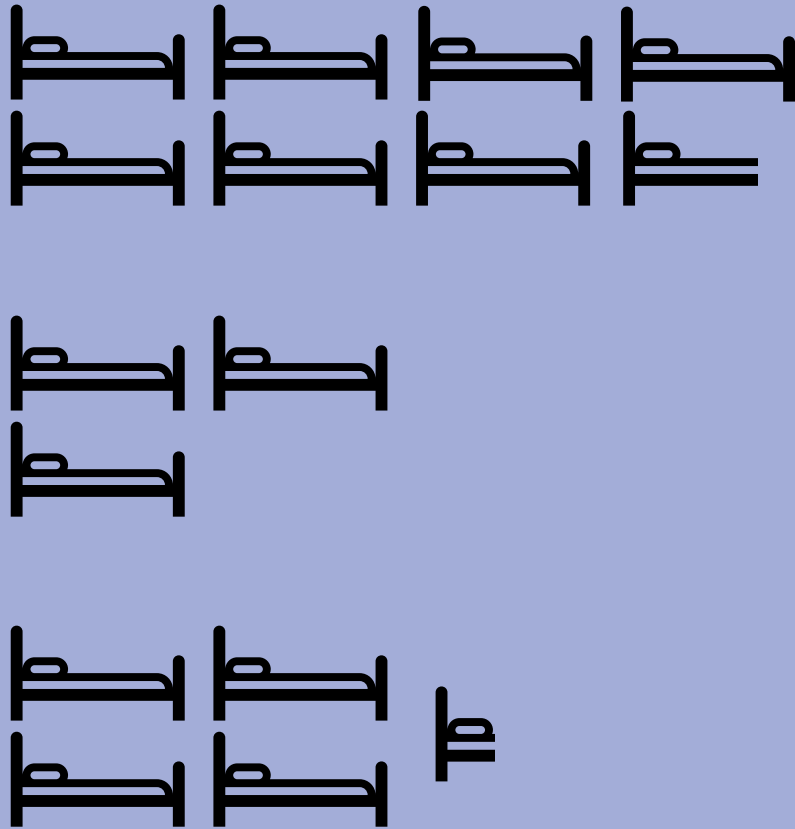
De Twentse ziekenhuizen MST in Enschede en ZGT in Almelo sluiten om en om meerdere verloskamers. Oorzaak? Ziekteverzuim in combinatie met personeelstekort. Al eerder werd duidelijk dat kraamhulp niet of nauwelijks te krijgen is in deze regio. Ook het maken van echo's wordt beperkt.

### POLITIK INLAND

## Antibiotika-Mangel für Kinder in Kliniken ein „Alarmsignal“

Medikamente

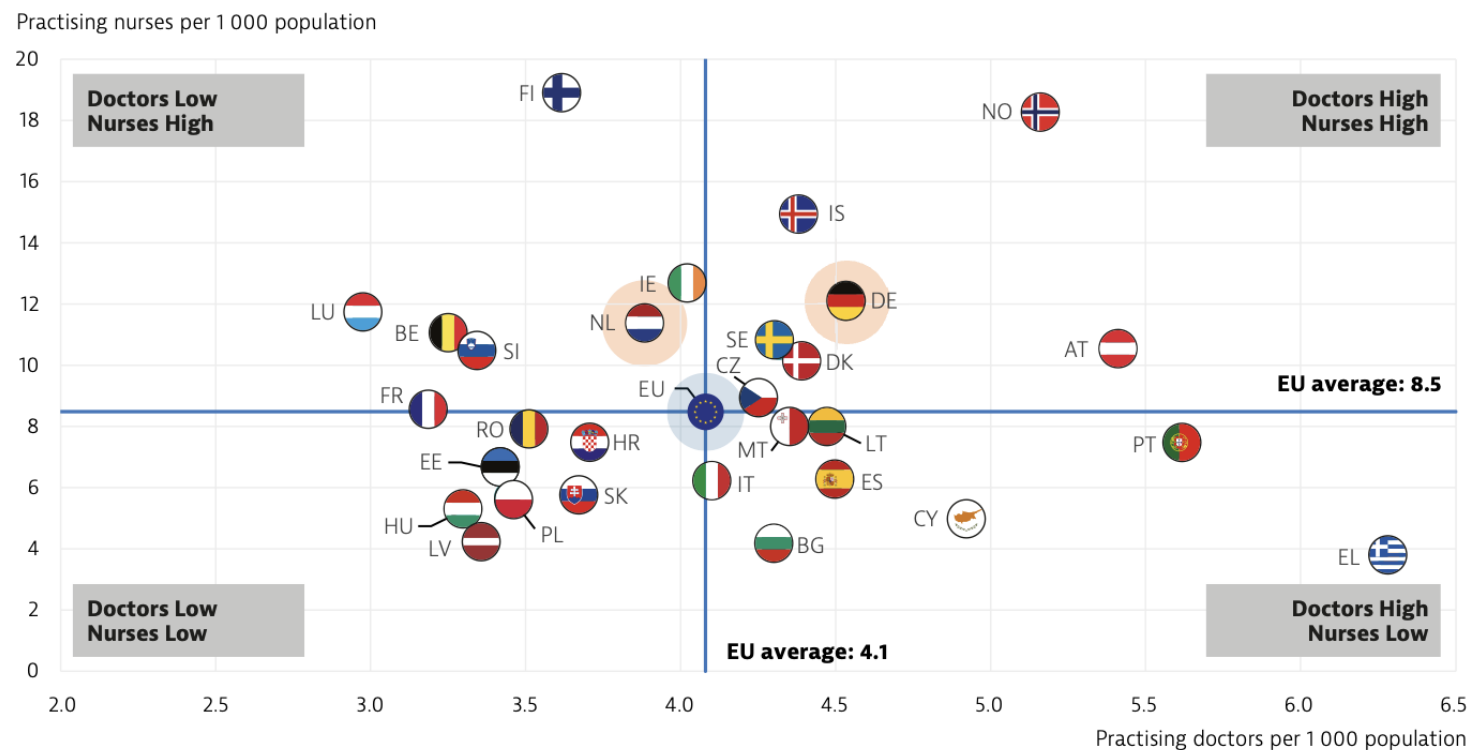
## Two different healthcare systems



- Costs and amount of public spendings (about 85% of all expenditures) are similarly high (among highest in EU)
- Huge differences in hospital beds per population
  - DE: 7.8 beds per 1,000 inhabitants (2023)
  - NL: 3 beds per 1,000 inhabitants (2023)
  - OECD average: 4.3 per 1,000 inhabitants



# Two different healthcare systems



## Practising doctors per 1,000 inhabitants



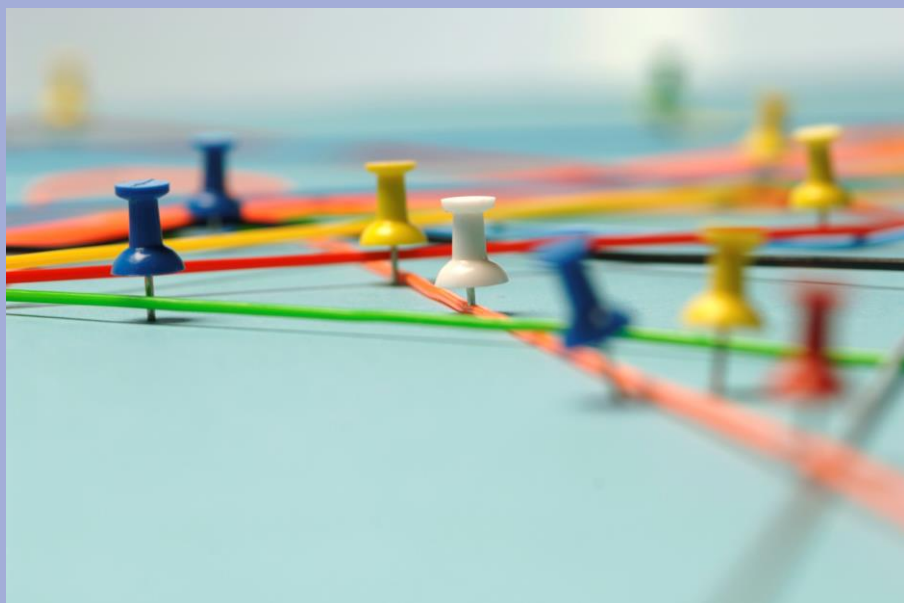
4.5 in Germany

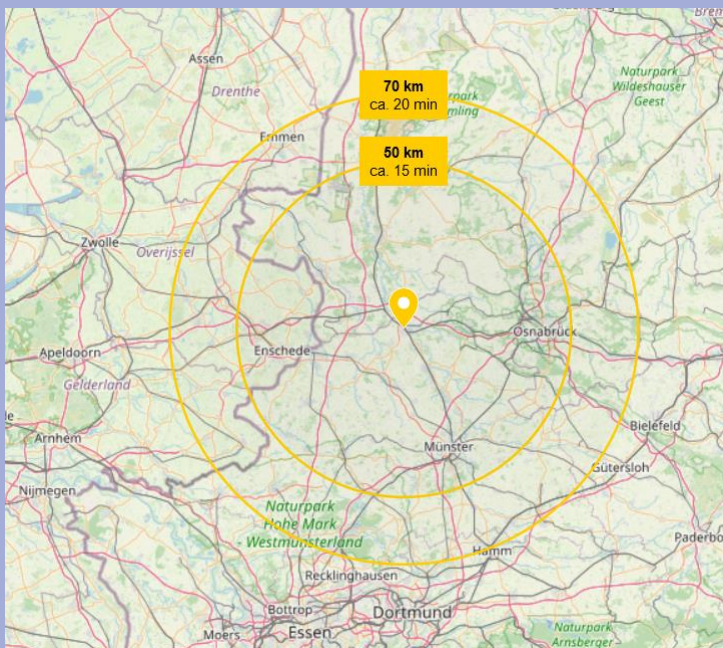


3.9 in the Netherlands

# Resource Pooling as a Solution

- Sharing or floating of resources within and across healthcare provider systems (material, beds, **personnel, expertise...**)
- Pooling care resources (and/or care demand) on a system and organizational level for improved:
  - Healthcare accessibility
  - Healthcare provider workload
  - Geographical balance in healthcare systems life-saving proximity
- Already high degree of cross-border mobility and enabling policies in European union





# What is already happening?

- Helicopter Christoph Europa 2 and ambulance cars crossing the border
- Pediatric acute care in MST for children from Gronau
- Emergency care for patients from:
  - Dinkelland in the Euregio-hospital in Nordhorn (stroke)
  - Oost-Achterhoek in Bocholt (heart attack)
- Similar initiatives also in other regions (Ems-Dollart, Rhein-Maas)



# What is still challenging

- Current projects:
  - Cover usually cases of emergency, no ambulant or general treatment
  - **Focus on travelling patients not personnel**
  - Report a high legal and administrative burden
  - Rely on individual arrangements with individual hospitals
- Administrative burden of employing personnel cross-border, e.g. concerning the acceptance of professional qualification
- Hindrances to patient mobility, e.g. resulting from health insurance coverage

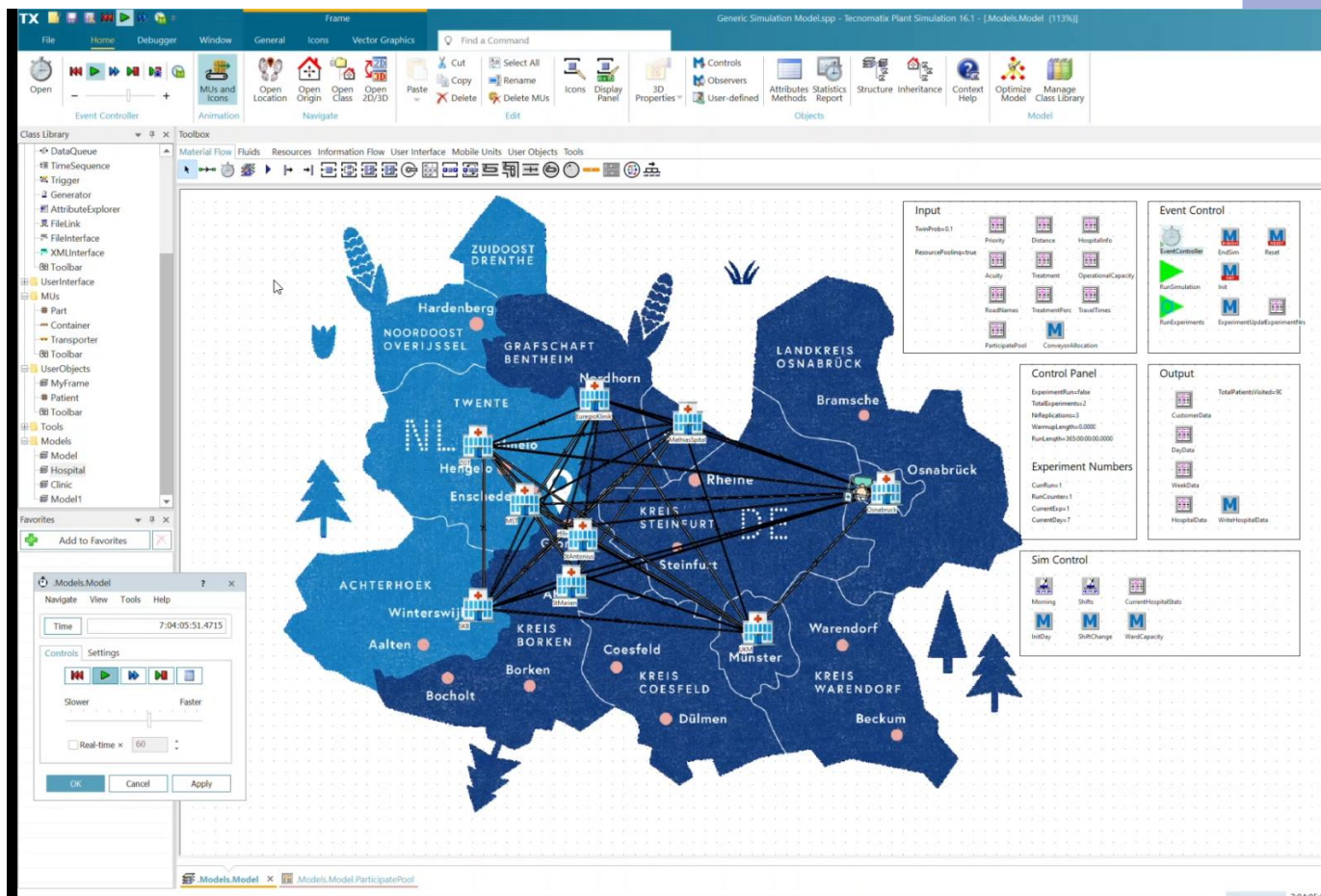




## What BRIDGE is doing

- Understand current resource pooling projects in the region
- Identify healthcare resources to be pooled by analyzing feasibility and simulating their impact
- Build **pooling relationships** between partners – set up a more systemic pooling system
- Build and provide an **IT tool** that helps in displaying and coordinatinating these resources
- Evaluate our solutions
- Give **policy recommendations** to enable scaling up and out

# Some first steps



Facilitating Conditions	Barriers	Pathways forward
<ul style="list-style-type: none"> <li>• Social Security Act, (EC) No 883/2004.</li> <li>• Patient's Rights Directive, directive 2011/24/EU</li> <li>• Recognition of Professional Qualifications, Directive 2005/36/EC</li> </ul>	<ul style="list-style-type: none"> <li>• Costs for Member States</li> <li>• Lack of Clarity</li> <li>• Third Country Agreements</li> </ul>	<ul style="list-style-type: none"> <li>• System for sharing digital data</li> <li>• Improved network governance and management</li> <li>• Make local welfare systems more financially robust</li> <li>• Create a more comprehensive legal framework</li> </ul>

Facilitating Conditions	Barriers	Pathways forward
<ul style="list-style-type: none"> <li>• Healthcare providers wanting to capture economic benefits (pull)</li> </ul>	<ul style="list-style-type: none"> <li>• Institutional mismatch</li> <li>• Mismatch in national pricing/costing systems</li> <li>• Public versus privatized healthcare</li> </ul>	<ul style="list-style-type: none"> <li>• Create formal binding agreements</li> <li>• Language staff</li> <li>• Standardized, interdisciplinary training</li> <li>• Involve staff in program design</li> </ul>

Facilitating Conditions	Barriers	Pathways forward
<ul style="list-style-type: none"> <li>• Mobile workforce</li> <li>• Patients desiring quicker/better/more extensive services</li> <li>• Patients prefer to have healthcare closer to home</li> </ul>	<ul style="list-style-type: none"> <li>• Linguistic and cultural barriers</li> <li>• Increased administrative costs to worker</li> <li>• Reduced personal and financial stability</li> <li>• Increased likelihood of error</li> </ul>	<ul style="list-style-type: none"> <li>• Clarity about roles, responsibilities and norms</li> <li>• Equity in rewards and recognition</li> </ul>



# Contact

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# THE TECHMED EVENT

BRIDGING PAST AND FUTURE: FIVE YEARS  
OF MEDTECH ADVANCEMENTS AND BEYOND

