



Rijnstate

# From hospital to home!

*Ensuring Quality and Continuity in Oncology care:  
starting to think of hybrid service models*

*Rutger Koornstra, MD, PhD*

*Medical Oncologist – Rijnstate, Netherlands*

Rijnstate. Voorop in zorg voor jou.

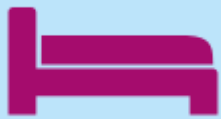
# About Rijnstate

- Top clinical hospital in East-Netherlands at 3 locations
- We like to be at the forefront
- Innovation and science high priority
- mProve network of 7 innovative hospitals



29

specialties



702

beds



433.000

residents in our  
service area



310.351

unique patients



6.668

employees



330

specialists



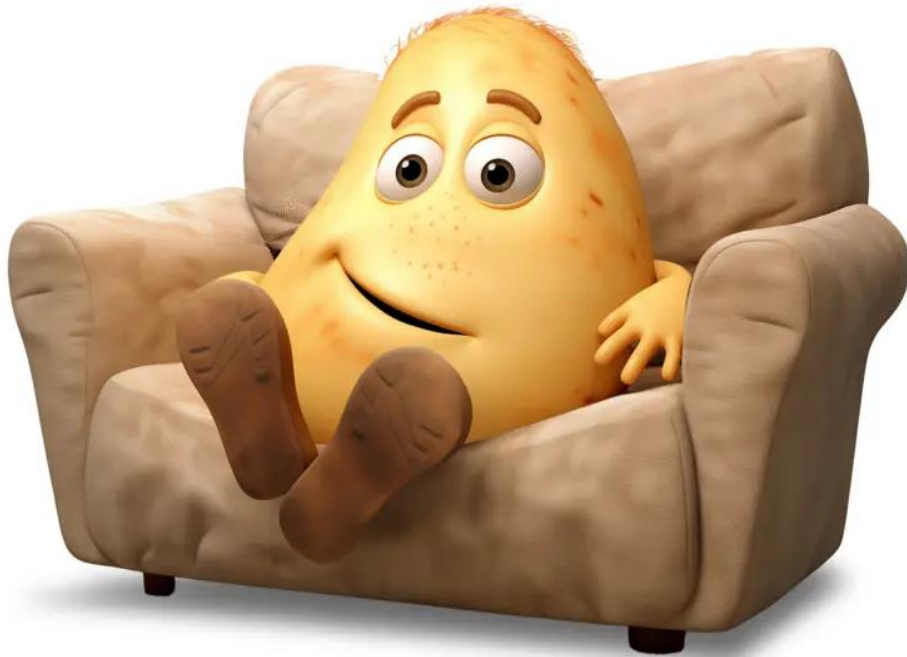
1.525

nurses

Numbers in 2023



Rijnstate



- This is ***NOT*** being or producing ***COACH POTATOES***
- This is aiming at a *future-proof* healthcare system
- Helping patients to *live their own lives*

# Background

- Ageing population
  - 2021:  $\pm 21\%$  population EU > 65 years old
  - 2050:  $\pm 30\%$  population EU > 65 years old
- 2030: 4,1 million *additional* healthcare workers needed (WHO + European Commission)
- Many European countries: *shortage of qualified* healthcare workers
- Possible solutions:
  - Training more people
  - Labour migration (cave: national versus worldwide)
  - International cooperation
  - *Transforming organisation* healthcare system





- Transition from *hospital-based* care to a *home-based* setting
- Medication @home
  - Oncology, multiple systemic treatments
  - Inflammatory bowel disease
  - OPAT
  - Osteoporosis therapy



- Monitoring @home
  - (urinary tract) infection/ pneumonia: vital signs during antibiotics, after 48-72 hrs
  - Post-surgery (breast cancer, coloncancer)
- Prevention and coaching @home
  - Coaching in lifestyle and prehabilitation (several patient-apps)

# Rijnstate@home

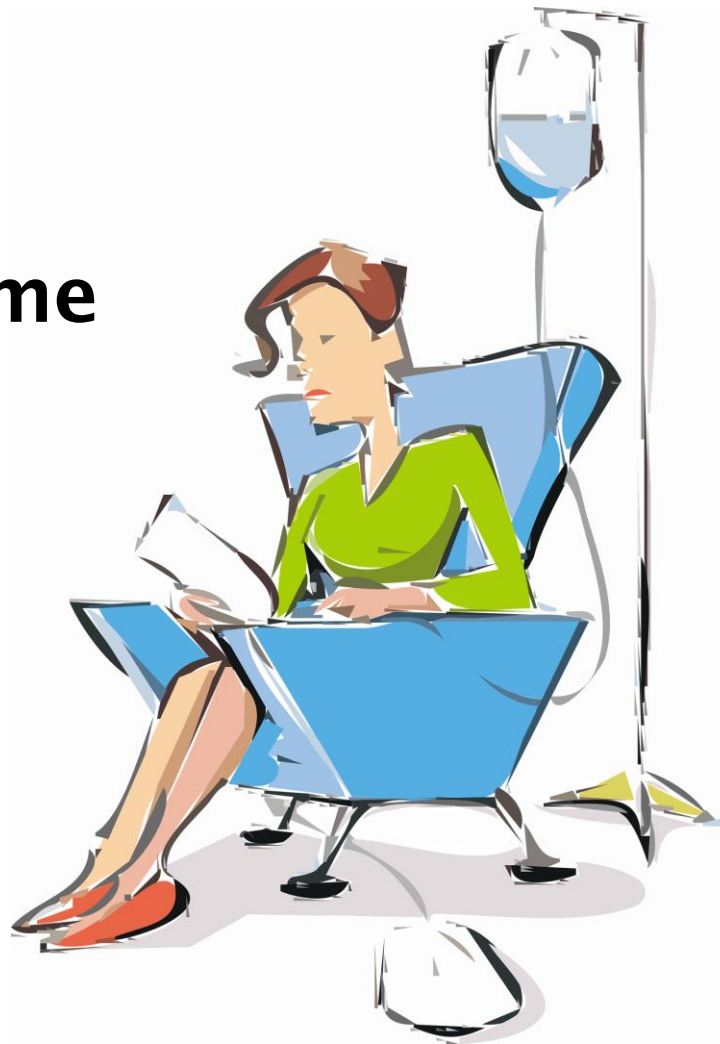
- Transition from *hospital-based* care to a *home-based* setting
  - Medication @home
  - Monitoring @home
  - Prevention and coaching @home
- **Aim:**  
to organize care in a *future-proof*, *efficient* and *patient-oriented* manner, with the hospital mainly being visited when it is really necessary.





Rijnstate

## Medication @home



Rijnstate. Voorop in zorg voor jou.



- Hospitalcare which is provided outside the hospital
- Patients needing medical and nursing specialist care
- Medical devices and medicines

In a home-based situation

## Added value:

- *Patients*
- *Nurses*
- *Hospital*
- *Quality*



# Criteria medication@home program



- Both complex and general
- Max.: once daily
- Duration: max. 1 hour (net).
- Informed consent
- Medication shelf-life time >16 hour
- Planned care, no ad hoc



# Criteria medication@home program



## *Possible pitfalls:*

- Cooperation with third-parties for patients living >25 km's from Rijnstate
- Businesscase (negative at this moment)
- Last moment drop-outs (lab/ scan results/ condition)
- Planning is time consuming



# Safety medication@home program

---



- First administration ALWAYS at the hospital
- @home there is a safety protocol, concerning:
  - Extravasation
  - Eye contact
  - Skin contact
  - Spill
- No IV entrance
- Patient condition



Rijnstate

## Monitoring @home



Rijnstate. Voorop in zorg voor jou.

# Monitoring @home



Focus on remotely monitoring patients from/ at their own home

- Home Monitoring: equipment, app, questionnaires/ advise



# Monitoring @home: example app



Home measurements



Self care



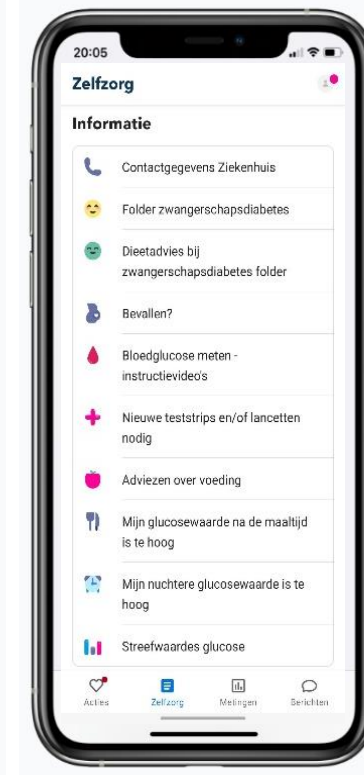
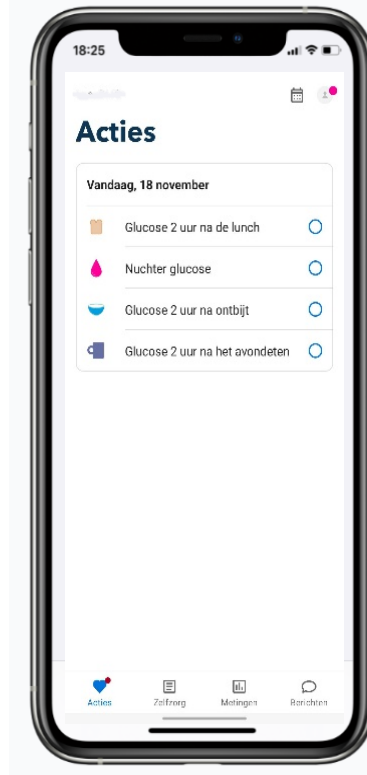
Timelines



Tresholds



Followup



# Monitoring @home



Focus on remotely monitoring patients from/ at their own home

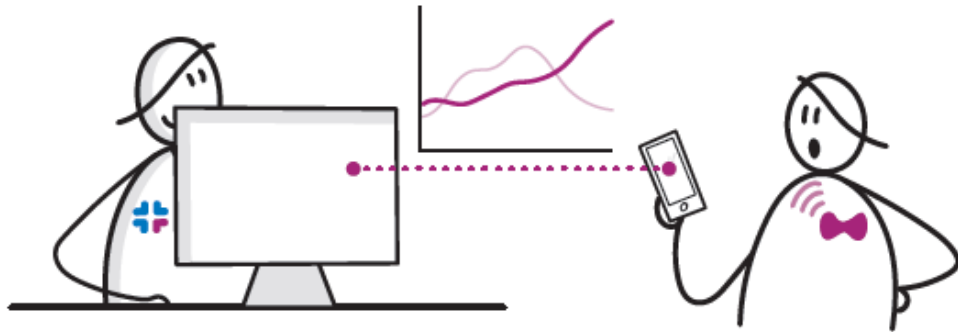
- Home Monitoring: equipment, app, questionnaires/ advise
- Virtual Care Center: real time monitoring by nurses



# Virtual Care Centre



- Permanent team of nurses (7 days a week 7:15–23:00)
- Monitoring, instructing, guiding and coaching patients
- Collaboration and contact with other healthcare providers



## The aim

- to reduce the length of hospitalstay/transfer
- reduce hospital visits
- increase patient self-management
- maintain or increase patient satisfaction.





# Virtual Care Centre



# Luscii healthcare professional portal



Browser window showing the Luscii healthcare professional portal dashboard.

URL: <https://vitals.luscii.com/nl/healthcare/dashboard>

Left sidebar menu:

- Home
- Patiënten
- Zorgverleners
- Protocolen
- Groepen
- Groeps berichten
- Organisaties
- Statistieken
- Luscii Library
- Helpcentrum
- Wat is er nieuw
- Log uit

Main content area (Dashboard):

Top bar: DEMO | zwanger, instelfase

Dashboard items:

- 6 okt. 11:21 ♦ Te laat / niet actief (3)
- 6 okt. 12:49 ● Meting (2) ● Combinatie (1) ♦ Te laat / niet actief (85)
- 7 okt. 11:21 ♦ Te laat / niet actief (4)
- 12 okt. 11:20 ♦ Te laat / niet actief (1)
- 12 okt. 15:41 ● Meting (1) ■ Meting (1)
- 13 okt. 11:20 ♦ Te laat / niet actief (1)

Table of patient entries:

Patient Info	Groep	Protocol	Action
K. K. 14-11-1991 ♀	DEMO	COVID-19	Toewijzen
M. m. 20-05-1988 ♀	DEMO	Pancreatitis	Toewijzen
Demo patiënt 12-05-1960 ♂	DEMO	Chronische nierschade	Toewijzen
L. L. 23-09-1983 ♀	DEMO	Diabetes en zwanger, instelfase	Toewijzen
A. A. 12-05-1960 ♀	DEMO	Chronische nierschade	Toewijzen
E. E. 12-05-1960 ♀	DEMO	COPD Instabiel	Toewijzen

# Monitoring @home



Focus on remotely monitoring patients from/ at their own home

- Home Monitoring: equipment, app, questionnaires/ advise
- Virtual Care Center: real time monitoring by nurses
- Situation/ conditions: post-surgery, chronic diseases, infusion Tx
- Benefits:
  - return home sooner
  - less hospital visits
  - gain insight
  - Prevent emergency admissions and/ or ER visits



Bied de juiste zorg,  
altijd en overal!

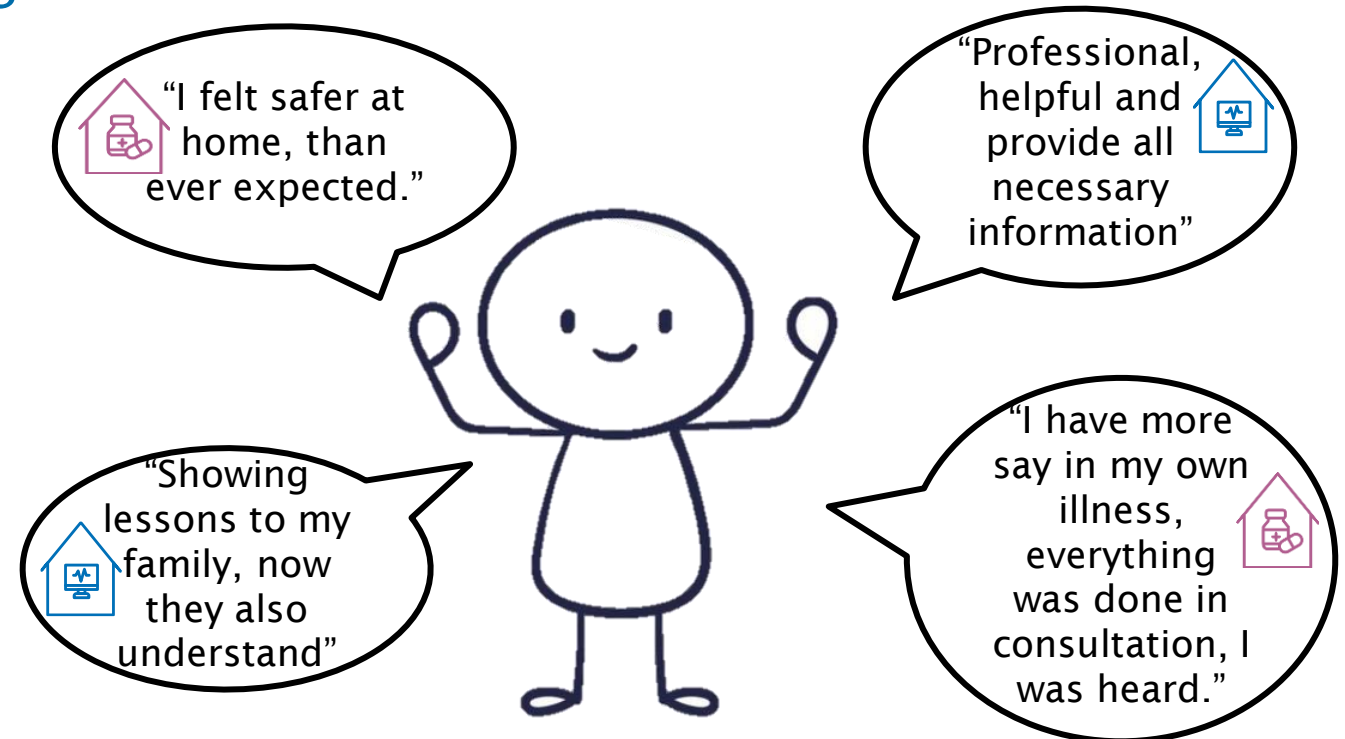


Rijnstate

# Patient satisfaction



*"Home has its advantages, you don't have to plan as much anymore and you don't have to worry about parking. Additionally, I don't like all those people in the hospital now either. The care providers just come to you. Let me stay home. I only see advantages."*



PREM : until October 2023

# Financial aspects

---

- Hospital setting is *always* cheaper
- Costs increase when moving @home
- Oncolytics@home : *negative BC*
- Outsourcing to a commercial party =  $\pm 40\%$  *additional* costs



# Financial aspects

---

- Hospital setting is *always* cheaper
- Costs increase when moving @home
- Oncolytics@home : *negative BC*
- Outsourcing to a commercial party =  $\pm 40\%$  *additional* costs

## However:

- Self-administration by patients/ travel-reduction
- Combining developments: monitoring and other digital care products
- Increase workpleasure
- Collaboration with home-care parties
- Eventually reduction beds and square meters
- Outsourced care is declared by other parties (costs – revenues)
- >> the health care financing system should be changed





---

*Will all these patients be able to stay @home in the future?*

