



**Informed decision making, effective implementation and scaling-up  
AI- and other data-driven innovations in health care**

**How can we strengthen knowledge management and mobilization in  
health and care?**

Brent Opmeer, PhD  
*Vilans, Utrecht, The Netherlands*  
*ARC West, University of Bristol, Bristol, United Kingdom*

Prof. dr. Henk Herman Nap, PhD  
*Vilans, Utrecht, The Netherlands*  
*Centre of Expertise in Dementia & Technology, Technical University Eindhoven, The Netherlands*

# Content

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2. How (existing) models, principles and policies can help
  - Evidence based approach
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  - Knowledge management and mobilization
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# Context and problem

Context is familiar:

- European (as many other) health care systems are confronted with major challenges: ageing population, increased expectations, abundance of technological and social innovations, and scarce resources (budget and workforce)
- High need for sustainable solutions, i.e. more/better community care, informal care, reablement
- Digital innovations – including AI-based technologies – may be part of the solution, but are not a silver bullet

Problems are manifold:

- Technology push by both large and small tech-companies, technology hypes and unrealistic expectations
- Local DIY-solutions by creative innovators within health care organizations, lacking expertise and capacity to act as manufacturer
- *Pilotitis*, not-invented-here syndrome, lacking evidence and (presumed) successful applications fail to scale-up
- Limited evidence/governance/regulation on which technologies should be (structurally) funded/reimbursed, implemented and scaled-up

# Pathways to improvements

In recent decades, various frameworks, models and principles have contributed to optimal use of scarce resources to maximize health for all:

- The Cycle of Rational Use\*, based on principles of Evidence based medicine (EBM)/Evidence based practice (EBP)/Health Technology Assessment
- Impact-oriented approaches and Learning Health Systems models
- Knowledge infrastructure to identify knowledge gaps, prioritize and commission research and development, and implement evidence and proven/improved technologies in practice

Could these frameworks, models and principles strengthen the knowledge infrastructure when applied to AI- and datadriven innovations?

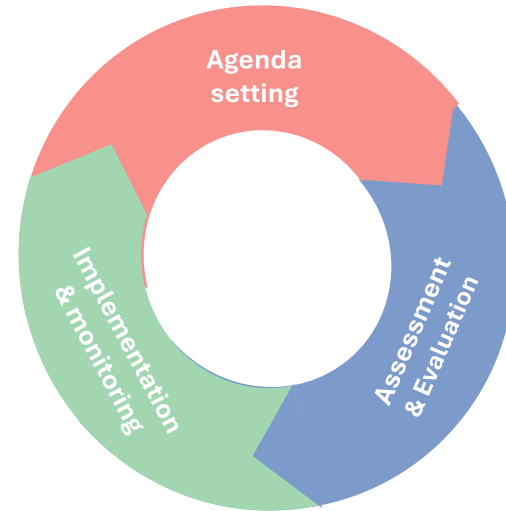
*\*Cirkel van Gepast Gebruik – Dutch ZE&GG programm*



# Evidence based approach

## “Cycle of Rational Use”

- Rationale and model underlying the ZE&GG<sup>1</sup> Programme commissioned by the Dutch Health care Institute (ZiNL)
- Being used for rationalized allocation of scarce health care resources (budget, capacity, workforce)
- Continuous (learning and decision making) cycle
- To identify evidence gaps, prioritize and commission research and value assessments, and stimulate implementation of evidence based interventions, procedures and technologies in clinical practice



Cycle of rational use<sup>2</sup>



1. <https://www.zorginstituutnederland.nl/over-ons/programmas-en-samenwerkingsverbanden/zorgevaluatie-en-gepast-gebruik-zegg>

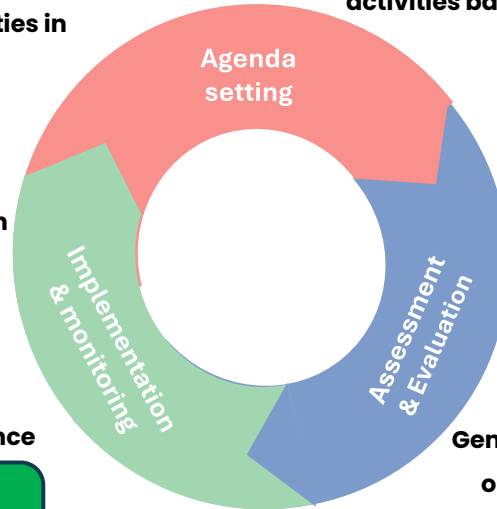
2. <https://zorgevaluatiegepastgebruik.nl/>

# Cycle of rational use

Health outcomes?  
Quality of life?  
Cost(savings)  
Staff shortages  
Patient autonomy  
Etc, etc?

**Identify Knowledge gaps and improvement opportunities in clinical practice**

**Prioritize/commission research/innovation activities based on expected impact**



**Research and innovations aimed at achieving envisaged impact**

**Monitor implementation and achieved value/impact in clinical practice**

**Implementation of evidence**

**Generated evidence on existing/newly developed technologies and methodologies**

**Decision making for guidelines, reimbursement, implementation efforts**

improved health care processes  
improved patient outcomes  
efficiency, equity, etc

remaining & new challenges and opportunities for (further) improvement and optimization

new/adjusted guidelines  
new/improved technologies  
new/improved implementation methods

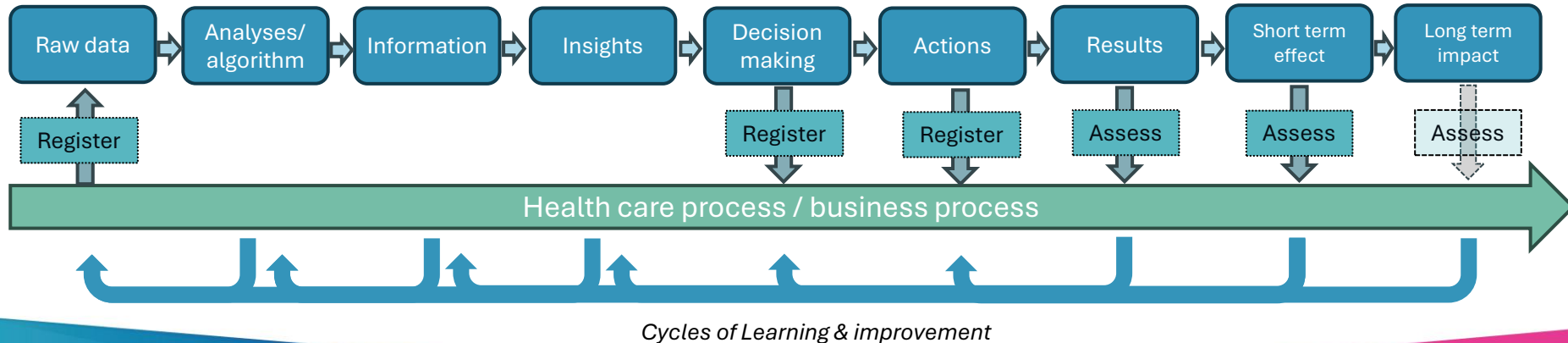
Evidence: proven (cost)-effectiveness, safety, equity, etc of innovations/implementation methods

Evidence: no proven (cost)-effectiveness, safety, equity, etc of innovations/implementation methods

# Impact-oriented and learning approach

Explicate the theory-of-change: how are data and AI expected to contribute to intended outcomes/impact?

- What actions will lead to improved health outcomes, increased efficiency, less workload, etc?
- What insights are needed to inform decision to take these actions
- What data is needed to allow these analyses/algorithms to produce this information?
- What (existing or newly collected) data are needed for these analyses/algorithms?



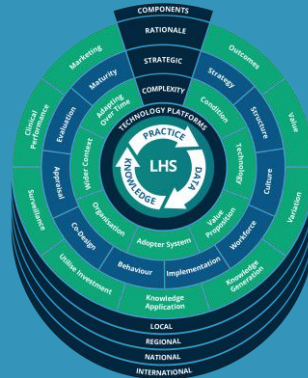
# Learning Health Systems (LHS)

- Unfocused learning occurs always and everywhere
- To achieve **common objectives** requires a clear rationale, strategy and focused approach is required
- Addressing a multitude of factors that may vary in complexity: the **Learning Health System**
- Learning and improvement occurs and needs stimulation at different **levels**, through different **means** and **loops**

## Common objectives

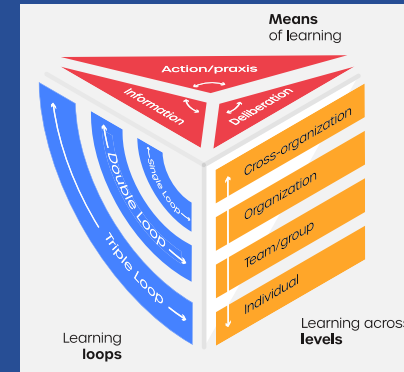
e.g. improving health outcomes and quality of life, quality of care, efficiency of health care processes and delivery, etc.

## Learning Health Systems model



Foley T, Vale L. A framework for understanding, designing, developing and evaluating learning health systems. Learn Health Sys. 2023; 7(1) <https://learninghealthcareproject.org/>

## Learning means, levels and loops



Sheikh K, Abimbola S, editors. Learning health systems: pathways to progress. Flagship report of the Alliance for Health Policy and Systems Research. Geneva: WHO; 2021



# Knowledge management and mobilization

How will generated evidence and accumulated knowledge from learning and improvement be shared to fill knowledge gaps?

How to make the right evidence and knowledge available at the right place in the right time? Knowledge management!

- Adoption of evidence and knowledge usually very slow → active knowledge mobilization as well implementation (support) are required to speed up
- Requires vision, governance, policy, leadership as well as capacity and funding to support practices implementing evidence and applying knowledge

→ A body of evidence/knowledge available on knowledge mobilization and implementation (e.g. Vilans “Knowledge squares/banks”, NIHR ARC/HIN websites)

→ Many organizations and programmes already in place to (better) enable/facilitate this



# Many organizations, high variety of studies



**ANDERS  
WERKEN  
IN DE ZORG**



# Governance and collaboration in value assessments

## National Consortium of Value Determining Parties and Research Matchmaking

- **Collaboration** in the implementation where we complement each other
- Sharing **methodologies** and working **uniformly**
- Share results **earlier**
- Involvement of students, graduates, PhDs
- Working more on the basis of **processes**, themes and demand **instead of technologies**
- Participate in value-determining research AWIZ, WTT, IIG2.0, Digizo.nu, etc.
- Collaborations with universities of applied sciences through, among other things, PIT
- Involving a **broadier group** of research parties



Vilans

Actueel ▾ Wie zijn we ▾ Thema's ▾ Wat doen we ▾ Kennis Vilans Protocolen Contact

# Consortium Waardebepaling

Initiatiefnemers: Anders Wereld NeLL Vilans digizo.nu Uniforme Waardebepaling

Home > Wat doen we > Projecten > Consortium Waardebepaling

## Consortium Waardebepaling

Deel deze pagina via:

Veelbelovende technologie

LEAD: Vilans, AWIZ, PIT, NeLL & Digizo.nu

Current team: AWIZ, TNO, Vilans, TZA, ZN, Fontys, NHL Stenden, Regio+, WZW, NELL, Digizo.nu, ZonMw Academy t Dorp, Saxion, HU, ROC Twente, Zuyd, Vita Valley, Nivel, RIVM, Zuyd, HAN, UMCU...

2024: Expansion to 1st, 2nd and 3rd line research parties (including Academic Collaborative Centers, NHG...)

# Concluding remarks

- The ***Cycle of Rational Use*** provides a solid framework for **identifying evidence and knowledge gaps, prioritizing and commissioning research and innovation** activities and the subsequent **implementation into practice**
- Many **regulations** as well as **health policy** and **epidemiologic/healtheconomic principles** also apply or are applicable to AI- and datadriven applications
- An **evidence based, impact-oriented** and **learning approach** will help to better **inform decision making** as well as **health care delivery** regarding implementation and scaling-up in practice as well as further development of applications
- **Generating and sharing evidence and knowledge** during each step in the cycle is required to **enable learning** and **inform decision making at all levels** in the health care system, working towards **Learning Health Systems**
- This will help to **(better) serve patients needs**, to **optimize processes**, **demonstrate (added) value** and **effectively implement evidence** into health care practices
- **Governance and collaboration** in agenda setting, prioritizing and commissioning research and innovation, including harmonized value assessments, will contribute to **evidence based** and **optimally implemented** AI- and datadriven applications



# THANK YOU



## More information?

Brent Opmeer [b.opmeer@vilans.nl](mailto:b.opmeer@vilans.nl)

Henk Herman Nap [h.nap@vilans.nl](mailto:h.nap@vilans.nl)

### References:

Sheikh K, Abimbola S, editors. Learning health systems: pathways to progress. Flagship report of the Alliance for Health Policy and Systems Research. Geneva: WHO; 2021  
Foley T, Vale L. A framework for understanding, designing, developing and evaluating learning health systems. Learn Health Sys. 2023; 7(1):e10315. doi:10.1002/lrh2.10315

### Websites:

[www.vilans.nl](http://www.vilans.nl)  
<https://www.vilans.nl/kennisbank-digitale-zorg>  
<https://www.vilans.nl/wat-doen-we/projecten/consortium-waardebepaling>  
<https://digizo.nu/>  
<https://www.zorginstituutnederland.nl/>  
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