



Swiss Health  
Data Space



# AI – towards a novel patient – physician relationship

Prof. Dr. Barbara Biedermann

Vice president, Assoc. Swiss Health Data Space



# Agenda

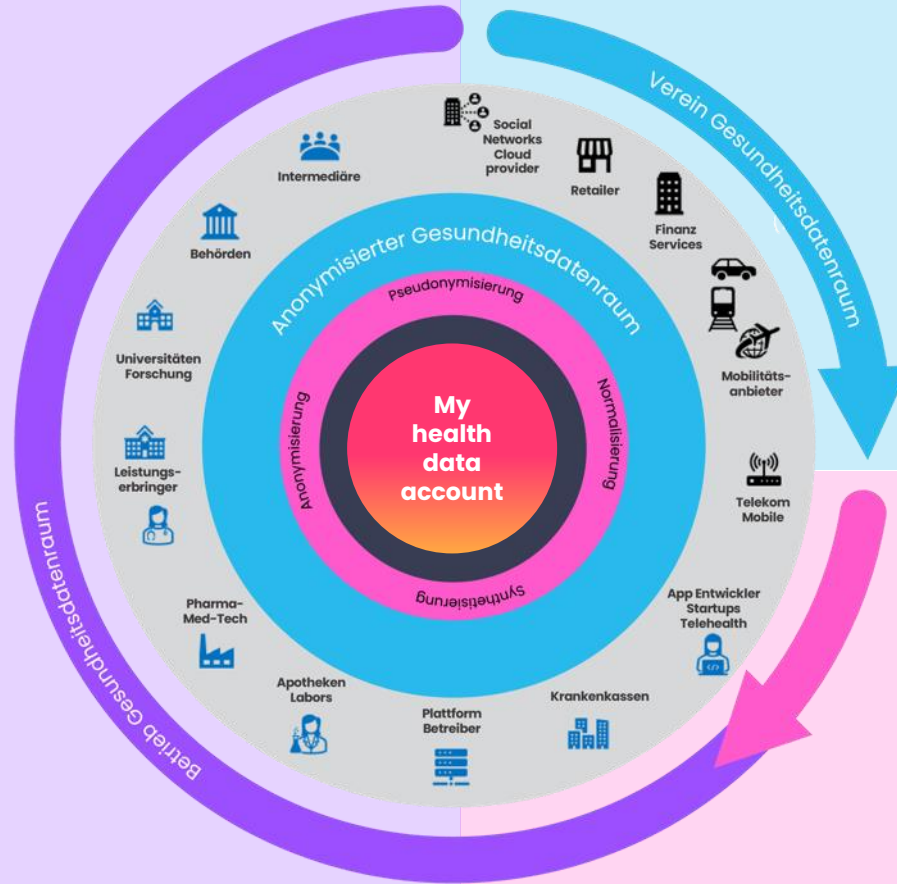
-  Association Swiss Health Data Space – a short introduction
-  How can AI enrich the interaction between patient and physician?

# Association Swiss Health data space



## OUR VISION

Put the individual person in the center and use the full potential of digital transformation – both for the individual and the society



## OUR MISSION

- Increase insight and mutual appreciation
- Identify promoters
- Form good governance rules
- Define requirements
- Enable the transformation

## OUR «TOOL BOX»

- Identify potent and long-term operators
- Write functional specification documents
- Test the health data infrastructure
- Integrate and make the system interoperable



**Swiss Health  
Data Space**



*Quelle: Evoloque, 2024*

8 Avril 2025

10ème symposium de recherche, unisante

# A comprehensive medical examination by a physician



**> 7'000 data points**





**Clinical  
examination**



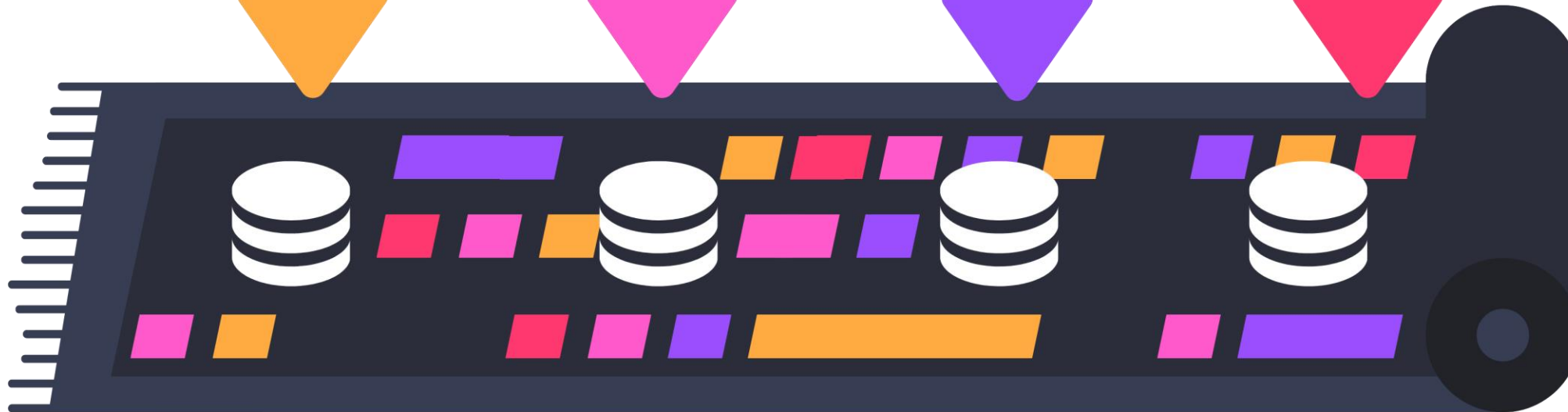
**Lab, X-ray, ECG,  
histology, etc**



**Costs**



**mHealth  
Wearables**





## Progress



Medical Check-Up



Insurance & claims



Private Data Stores



Vaccination



Logbook



Unusual observations



EPD/DEP/EPR



## Logbook

All topic



All posts



My posts

^ Oldest



Barbara

Adetswil, last year

### Logbook - Login & Usability - ELCA

*"I like the logbook. It is our tool to make progress in the digitalization of the Swiss health system."*



#### Details for this step

How many hours did you spend to manage access to the logbook?

0.25

Did you need additional, personal support to access the logbook?

no

What are your expectations to the logbook?

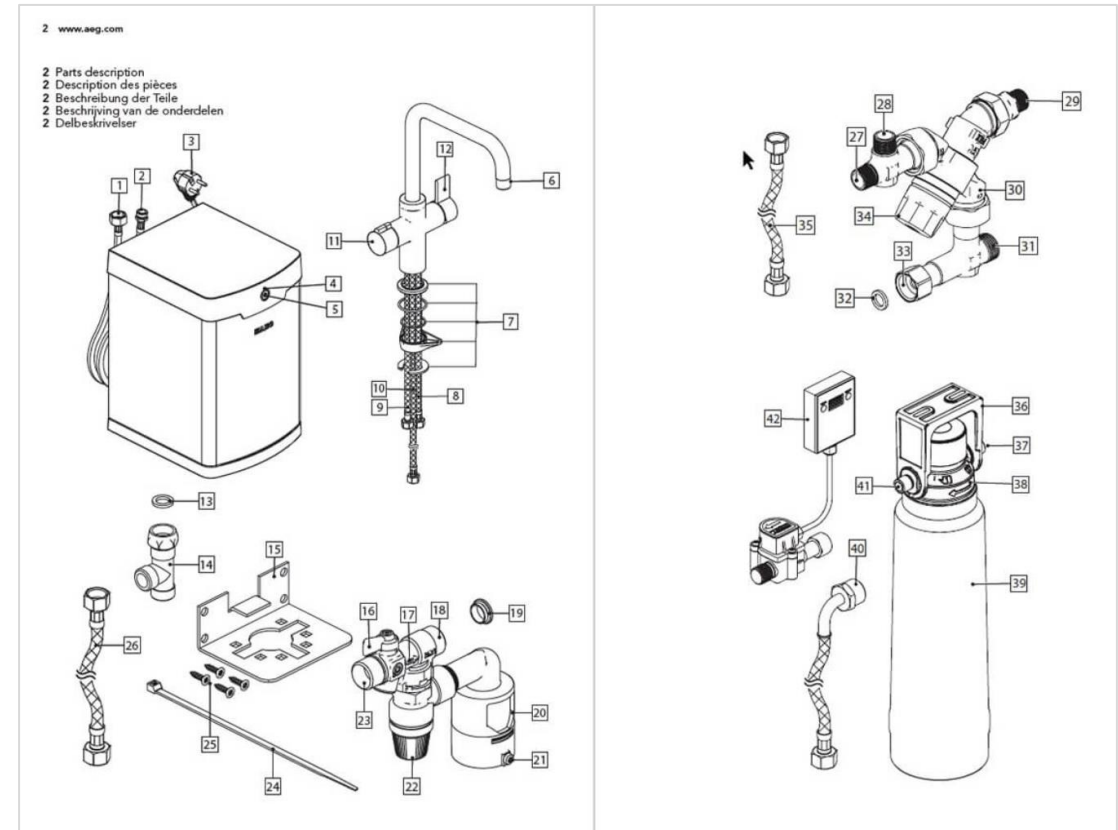
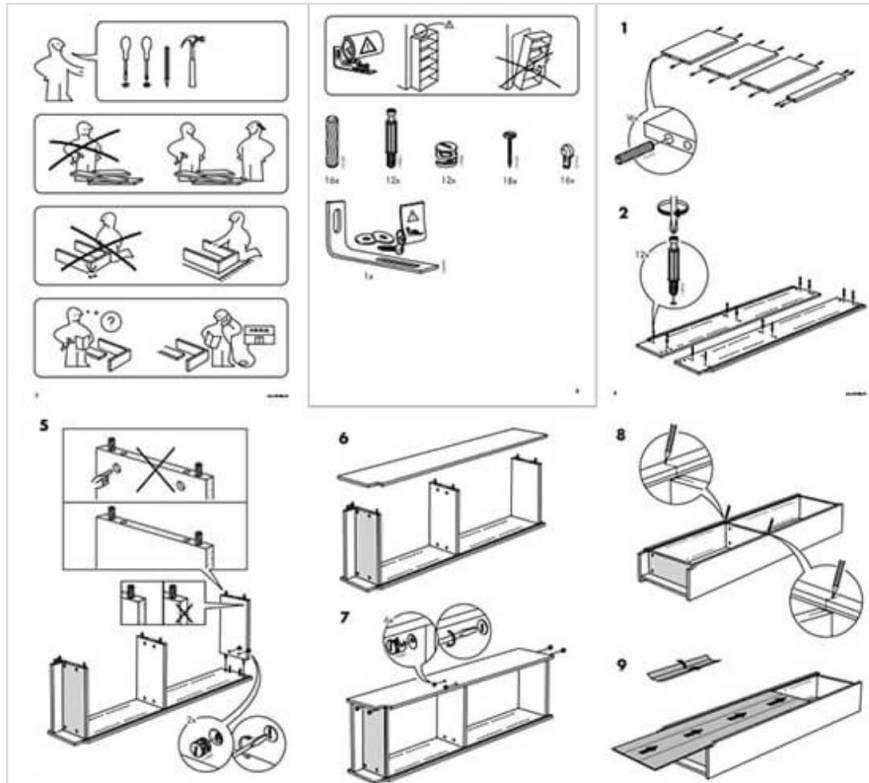
To be able to contribute ideas and improvements to the building of a swiss health data space, that belongs to the public.

The logbook is  
self-explaning

Did any errors occur when using the logbook? If so, please describe

Some, but they were fixed by the ELCA Team almost immediately

# Assembly instructions....





# Who will operate the SHDS?





# Association Swiss Health data space



- 👤 founded in 09/2022
- 👤 >200 members
- 👤 >1300 followers on linked in
- 👤 >100 salutonauts and 5 mediconauts

# Save the date: June 23, 2025 17.00 – Olten Hotel Arte



Healthcare leader, author, educator, columnist and podcaster



For 18 years, **ROBERT PEARL, MD** served as CEO of The Permanente Medical Group (Kaiser Permanente). He is also former president of The Mid-Atlantic Permanente Medical Group. In these roles he led 10,000 physicians, 38,000 staff and was responsible for the nationally recognized medical care of 5 million Kaiser Permanente members on the west and east coasts.

He is a clinical professor of plastic surgery at Stanford University School of Medicine and on the faculty at the Stanford Graduate School of Business, where he teaches courses on healthcare strategy, technology, and leadership. Pearl is board certified in plastic and reconstructive surgery, receiving his medical degree from Yale, followed by a residency in plastic and reconstructive surgery at Stanford University.



## Keynote speaker: „It's all about AI“



# Agenda

- Association Swiss Health Data Space – a short introduction
- How can AI enrich the interaction between patient and physician?











8 Avril 2025

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# The AI tool box at the patient–doctor interface

-  Analysis of documents and archives
-  Intelligent dictation
-  Listen to a conversation
-  Structured summary
-  *Clinical reasoning*
-  *Decision support*

Save

Email

Send to

Sort by:

Best match



Display options

MY CUSTOM FILTERS

993 results



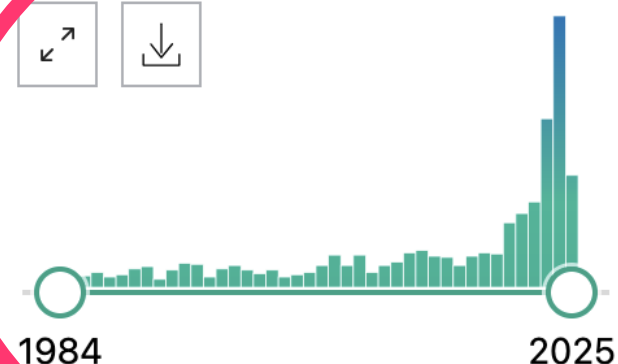
Page

1

of 100



RESULTS BY YEAR



PUBLICATION DATE

- ☐ 1 year
- ☐ 5 years
- ☐ 10 years



1

Cite

Share

## Clinical Reasoning of a Generative Artificial Intelligence Model Compared With Physicians.

Cabral S, Restrepo D, Kanjee Z, Wilson P, Crowe B, Abdulnour RE, Rodman A.

JAMA Intern Med. 2024 May 1;184(5):581-583. doi: 10.1001/jamainternmed.2024.0295.

PMID: 38557971

**Free PMC article.**

This cross-sectional study assesses the ability of a large language model to process medical data and display **clinical reasoning** compared with the ability of attending physicians and residents....



2

Cite

Share

## Medical Artificial Intelligence and Human Values.

Yu KH, Healey E, Leong TY, Kohane IS, Manrai AK.

N Engl J Med. 2024 May 30;390(20):1895-1904. doi: 10.1056/NEJMr2214183.





PMID: 38810186

Review.

No abstract available.





# The elements of clinical reasoning



-  The history = interview
-  The physical exam = observations
-  Differential diagnosis = analysis
-  Treatment plan = conclusion

# The elements of clinical reasoning

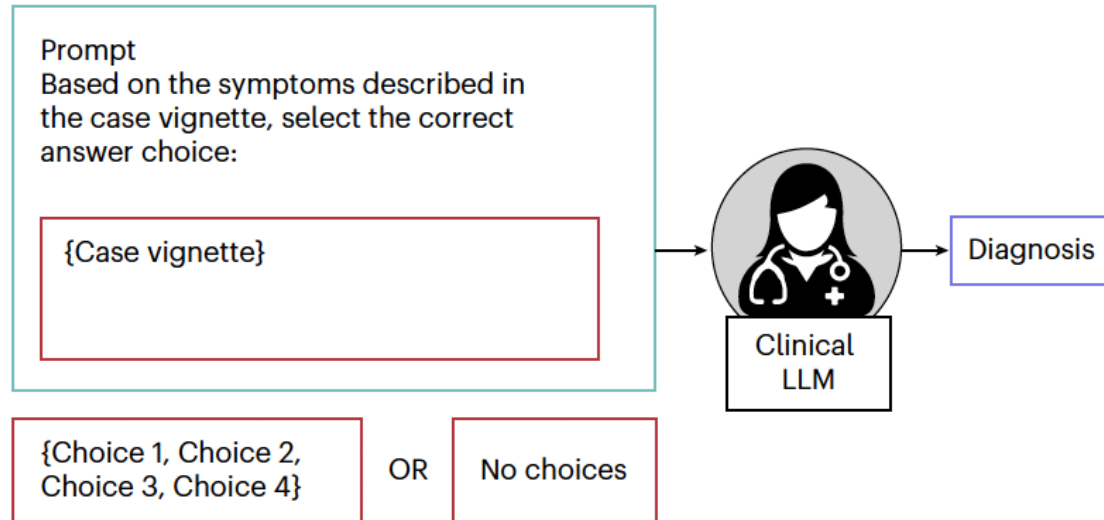


-  The history = interview ✓
-  The physical exam = observations O
-  Differential diagnosis = analysis ✓
-  Treatment plan = conclusion ✓

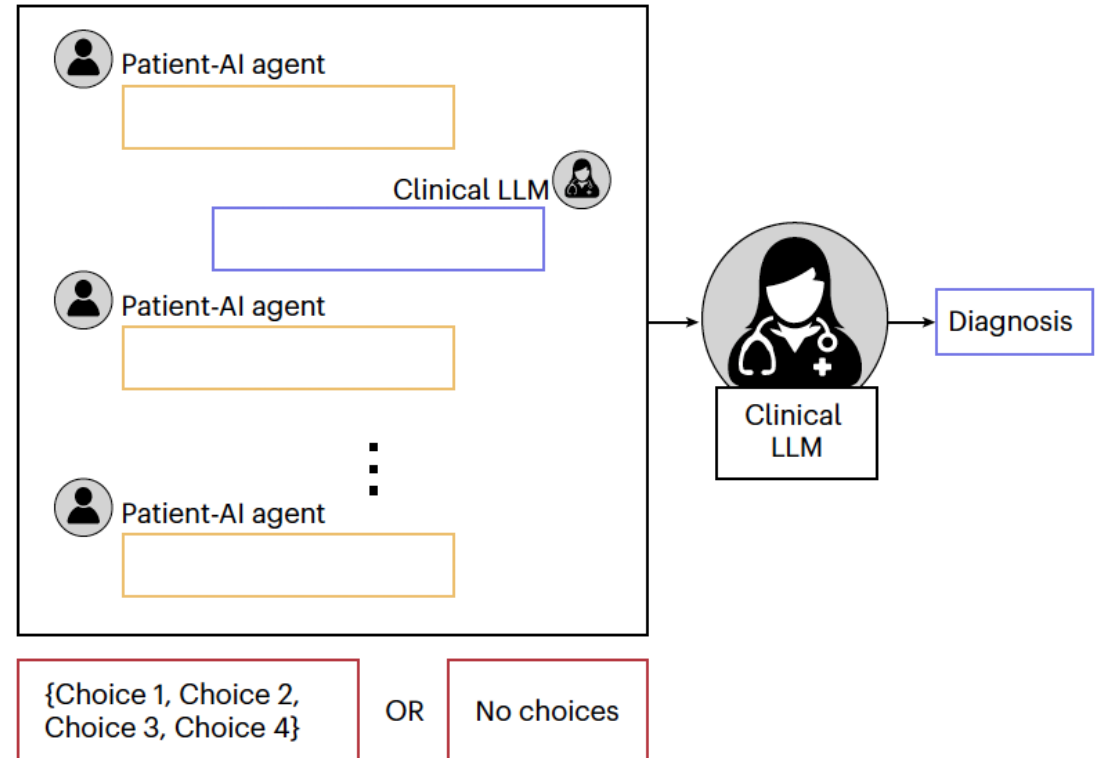


# CRAFT-MD – conversational reasoning assessment framework for testing in medicine (Nat Med (2025) 31: 77)

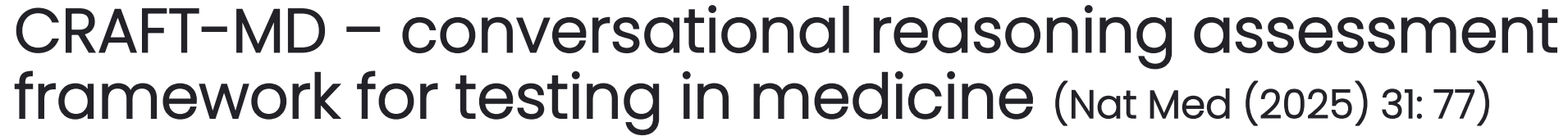
## Vignette



## Multi-turn conversation







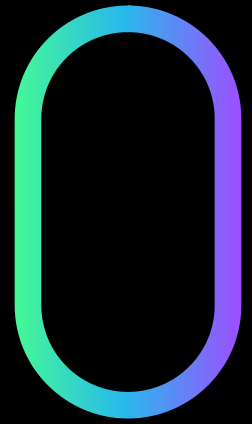


# How to assess AI quality ?

- 👉 Prospective, randomized controlled trials <sup>1)</sup> <sup>2)</sup>
- 👉 Outcome based evaluation
- 👉 Comparison to „best of care“ = Gold standard
- 👉 Peer-reviewed publication
- 👉 Reproducibility of results

<sup>1)</sup>NEJM AI (2025) 2:1 <sup>2)</sup>npj digital medicine (2025)8:148

# Take home messages



- ❖ LLMs are very powerful and fast in scrutinizing language content (*e.g. pdfs in EPR*)
- ❖ Prompted with good case vignettes, they have a good diagnostic performance (*sic!*)
- ❖ Personal data protection is an issue when using LLMs

The background of the slide features two astronauts in white space suits floating against a black background. A large, semi-transparent orange circle is centered on the slide, serving as a backdrop for the text. The astronauts' hands are visible, reaching towards the circle.

**Thank you for  
your attention!**

<https://gesundheitsdatenraum.ch/>



## CRAFT-MD

- 2000 case vignettes
- 10'000 conversations
- in 48-72 hours
- 15-16 hours expert evaluation (random sample)

## Human testing

- Patient and doctor recruitment
- 500 hours for patient simulations (3 min per conversation)
- 650 hours for expert evaluations (4 min per conversation)

**(Nat Med (2025) 31: 77)**





# Limitations

- 👤 Inscrutability of LLMs (parameters, methods, trainings are nontransparent)
- 👤 „Shifting baselines“ – volatile data basis
- 👤 Importance of prompts and context
- 👤 Data security, data safety and personal data protection

NEJM (2024) 390:1895

# The AI tool box at the patient-doctor interface

- 🔊 Analysis of documents and archives +++++
- 🔊 Intelligent dictation +
- 🔊 Listen to a conversation oo
- 🔊 Structured summary o
- 🔊 *Clinical reasoning* yes, but
- 🔊 *Decision support* ooo

«The purpose of this article is to analyze the complicated reasoning process in medical diagnosis.

The importance of this problem has received recent emphasis by the increasing interest in the use of *electronic computers* as an aid to medical diagnostic processes.»

— Ledley RS, Lusted LB, Science 1959



# Espace Suisse des Données de Santé