

# LOW VALUE OF CARE IN MEDICAL HOSPITALIZED PATIENTS

## A NATIONAL DATA STREAM ON QUALITY OF CARE IN SWISS HOSPITALS

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# DIVING INTO HOSPITALS OVERUSE

Monitor and study quality of care in Swiss hospitals

## LUCID GOALS

➔ more specifically, identify Low Value Care practices

### Why ?

- Number of patients and cost of care are expected to increase
- Low Value Care represents up to 20% of healthcare costs
- No systematic monitoring of the value of care in Swiss Hospitals
- An NDS is key to efficiently study Swiss healthcare practices

### How ?

- Promote data-driven benchmarking and targeted quality improvement actions
- Build Low Value Care indicators, based on the *Choosing Wisely Initiative*
- Study Patient Reported Outcomes (PROs) to personalize hospital care



# STRONG SYNERGY

CLINICAL EXPERTS + IT / DATA SCIENCE

## GOVERNANCE

LUCID NDS



SPHN PD Dr. Marie **Méan**



PHRT Dr. Guillaume **Obozinski**

### Interdisciplinary team

- Medical
- Nursing care
- Data Science experts

### Tandem in each hospital

- Clinical
- IT/ data science

EXECUTIVE

### Scientific board

- Highly qualified experts
- Critical perspective

### Representative board

- Healthcare impact
- Patients needs
- Dissemination of results

ADVISORY

### PP Involvement

- 3 PPI experts in LUCID
- Priorities defined

### Stakeholder

- Choosing Wisely/  
smarter medicine

PATIENTS & PUBLIC  
INVOLVEMENT (PPI)





## Sustainability & Impact

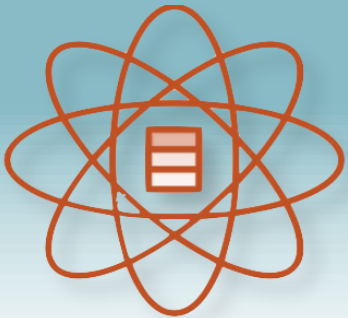
### A Stream of Data that will keep flowing on its own

- This data is routinely collected in hospitals → data collection “at no cost”
- Data validation, quality checks, traceability + versioning will be fully automated on Biomed IT
  - most probably thanks to Renku
  - → new data releases still produced automatically after the end of the funding period.

### SUSTAINABILITY & IMPACT

### Low value Care Data are of interest to many stakeholders

- LUCID will monitor **clinical processes** that are modifiable and will therefore have a direct impact
- What LUCID will deliver will be of interest for:
  - healthcare administrators
  - patients
  - care providers
  - policy makers (BAG, National Association for Quality)

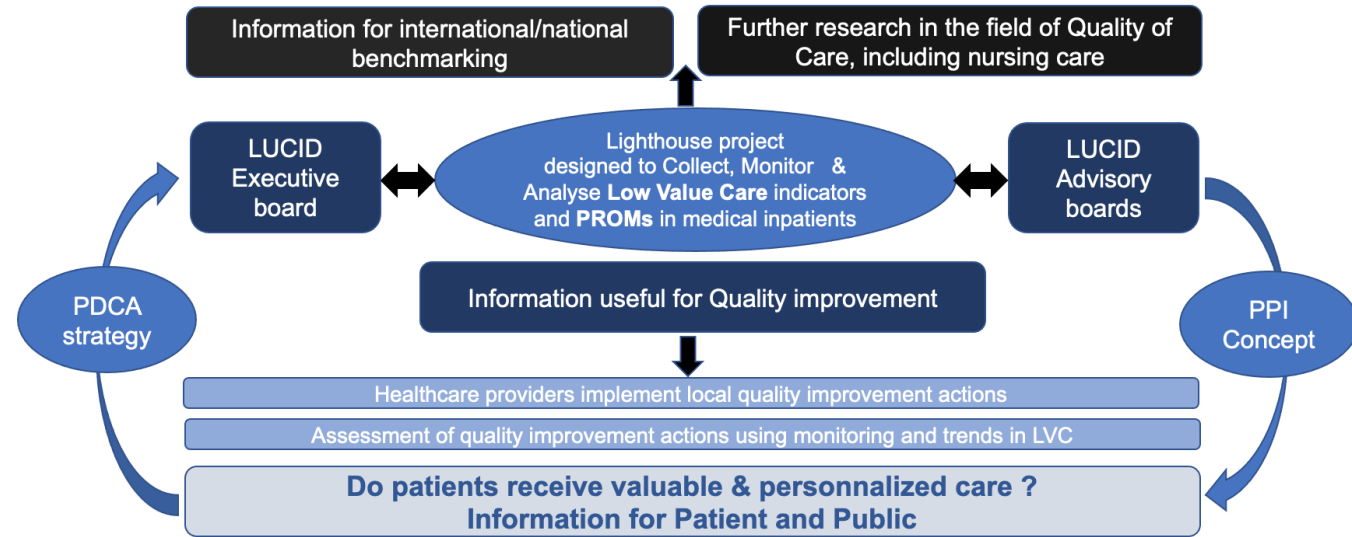


# TOWARDS AN EFFICIENT MONITORING OF CARE

Using hospital data since 2014, from five University Hospitals:

- Create **Low Value Care indicators (LVC)** based on Choosing Wisely recommendations
- Study numbers & trends of **Low Value Care** in medical inpatients :
  - for example, % of blood transfusions in haemodynamically stable patients with Hemoglobin > 80g/l
- Compare outcomes (readmission, mortality, costs, use of secondary care facilities)
- Implement the collection of Patient-Reported Outcome (**PROs**) in medical multimorbid inpatients

## LIGHTHOUSE PROJECT



- **Expected impact** → Less care for better care

## Nested projects

### 1. Patients-Reported Outcomes (PRO) in multimorbid medical patient hospitalized for acute non-oncological diseases

- Assess frequency and trends of generic PROs
- Detect potential PROs change when patients receive LVC
- Investigate if PROs can inform of potential readmissions within 30 days

### 2. Characterization and comparison of federated privacy-preserving methods suited for biomedical data analysis in a simulated environment

- Characterize which method could be used to perform the type of analyses required for the Lighthouse using Federated Privacy Preserving techniques.
- On selected use-cases, implement algorithms and evaluate the privacy-utility trade-off

### 3. Forecast of the Length of Stay (LoS) for medical inpatients

- Construct forecasting models from data available 48h after admission
- Improved model construction in all five hospitals using transfer learning
- Study association between LVC and LoS and try to integrate PROM data in LoS

### 4. And upcoming new nested projects (secondary or third party use)

# Nested project on Patient Reported Outcomes (PRO)

To collect **PROs** in medical non-oncological multimorbid inpatients

## Why ?

In oncological patients, **clinical exposure to PROs** was associated with **reduced ED visits & hospitalizations & better quality of life**

## How ?

- Collected at :
  - admission
  - discharge
  - discharge + 30 days and later
- Target : >1000 consenting patients
- Medical wards
- In all 5 hospitals
- Within 18 months
- 3 standardized PRO instruments
  - Edmonton Assessment (ESAS)
  - EQ5D index (European QL group)
  - Distress thermometer

PATIENT-REPORTED  
OUTCOMES

Edmonton Symptom Assessment System:  
(revised version) (ESAS-R)

Please circle the number that best describes how you feel NOW:

No Pain	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Pain
No Tiredness <i>(Tiredness = lack of energy)</i>	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Tiredness
No Drowsiness <i>(Drowsiness = feeling sleepy)</i>	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Drowsiness
No Nausea	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Nausea

# CONSORTIUM AND PARTNERS

## DIRECTORS



PD Dr. Méan



Dr. Obozinski

## INTERNAL MEDICINE EXPERTS



PD Dr. Vallelian



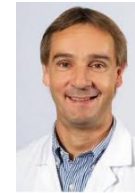
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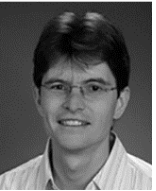


Dr. Riba-Grognuz

## DATA & PROJECT MANAGEMENT



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## PPI EXPERTS & PARTNERS



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## MAIN STAKEHOLDER & PATIENT CONTRIBUTOR



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