

Process mining within Healthcare

With or Without

Bart van Acker

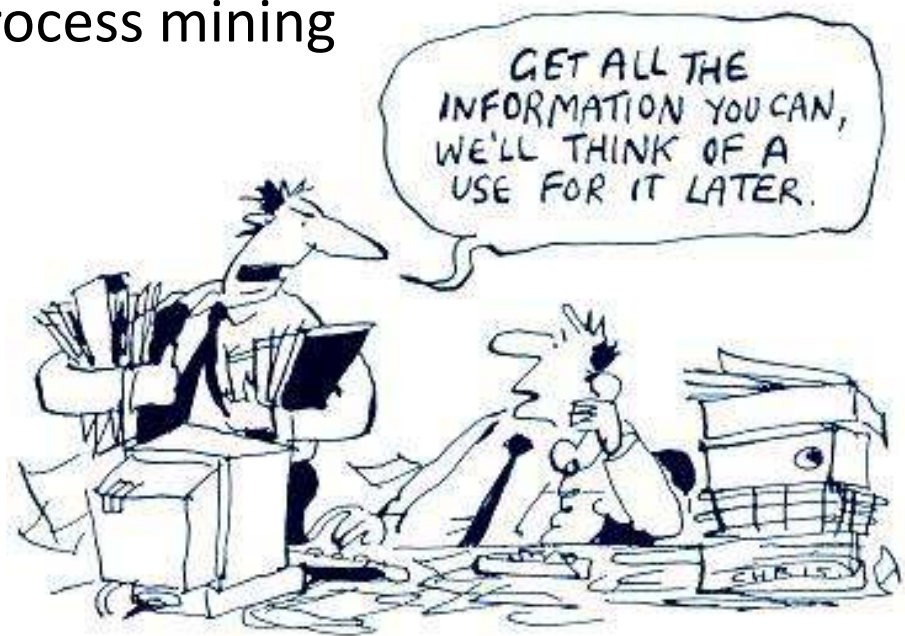
Advisor Process Improvement & Innovation

15th June 2015



Process mining within Healthcare

- Strategy of Radboudumc, Nijmegen
- Management information within healthcare
- Process improvement **without** process mining
- Process improvement **with** process mining
- Two examples
 - Intensive care unit
 - Head and neck oncology



Strategy Radboudumc

to have a significant impact on healthcare

Radboudumc

EXCELLENT QUALITY



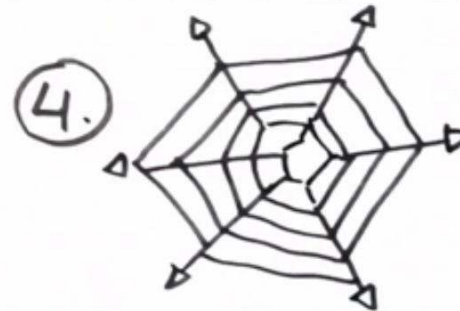
PARTICIPATORY AND
PERSONALIZED HEALTHCARE



OPERATIONAL EXCELLENCE



SUSTAINABLE NETWORKS

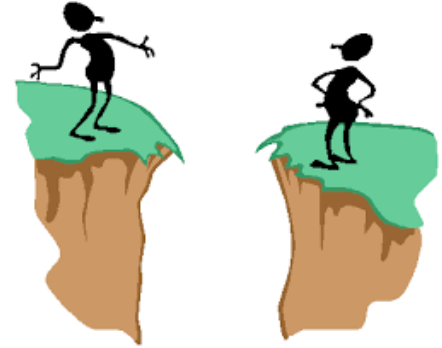


Management information within healthcare

- Healthcare Management information:
 - Focus on Finance and Quality
 - Lack on process information about Volume and Efficiency
 - *'Production'* rates
 - Throughput times
 - Utilization
- Process information:
 - Step: modalities like Operating room or Clinic
 - Flow: like Head and neck oncology



Lack of process information



- No common and objective view of processes
 - 5 front line users cannot describe the process
 - Chaotic process: Failure is greater than 20% of opportunities
- Healthcare processes are much more complex than expected
 - Hidden factory of recovering failures
 - Trend from Mono disciplinary to Multi disciplinary healthcare
- Value stream mapping (lean):
 - Frontlines describe their process
 - Based on their experiences not on facts

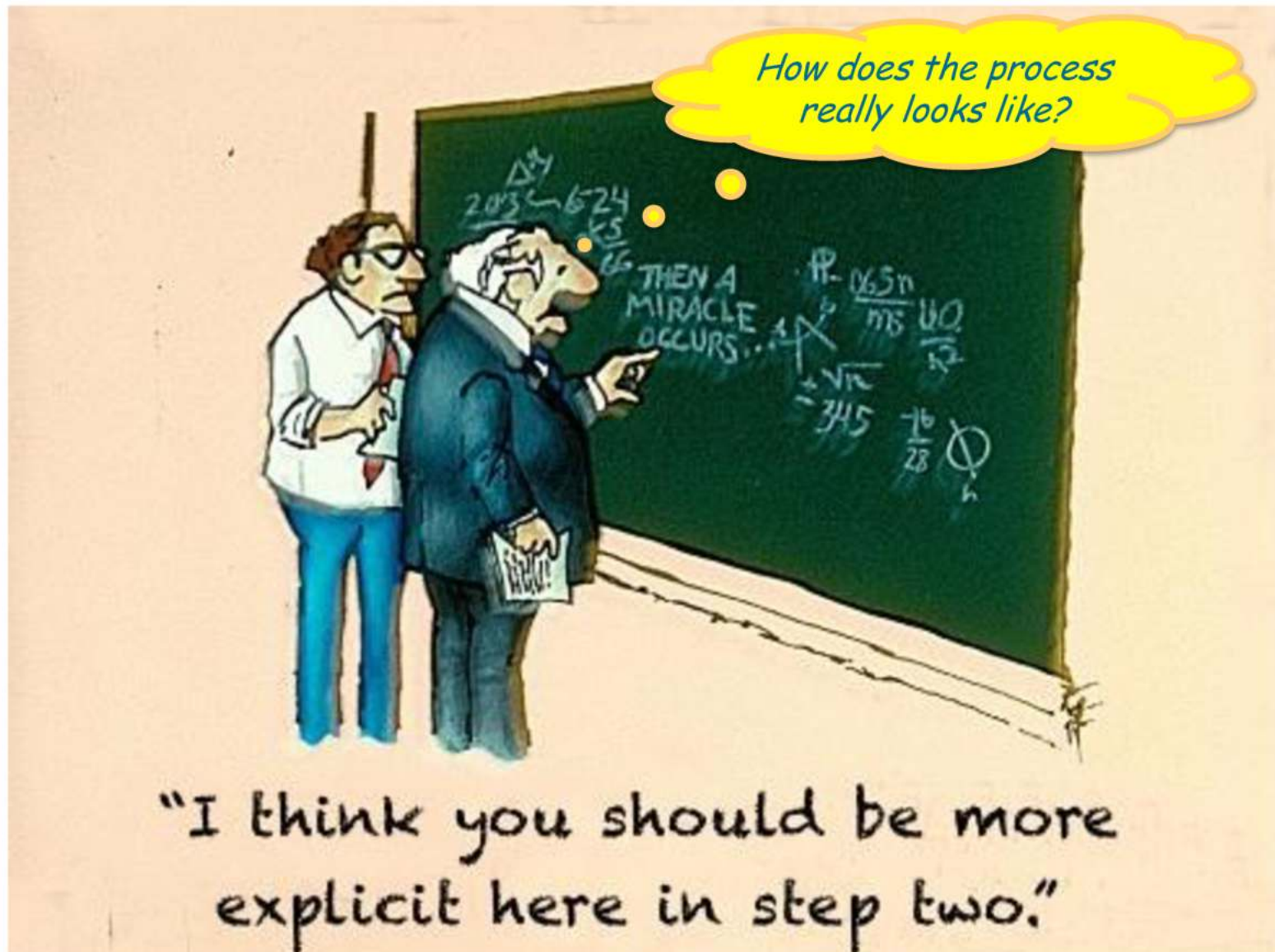
Process improvement **without** process mining

- Process analyses are based on assumptions, not on facts
- Results aren't recognized
- Validation by checking individual patient files
- Adjusting the assumptions, start all over again
 - losing time
 - losing confidences (don't recognize the results)
 - losing momentum



Throughput
time
1 or 2
weeks

Process improvement **without** process mining



Process improvement **with** process mining

- A common and objective view of processes
 - generated by using process mining based on facts
- Determine with each other the focus of the analysis
 - which part of the flow
 - which process step
- Specific analyses by process mining (using filters a.o.)
 - winning time
 - winning confidence, *'seeing is believing'*
 - winning momentum

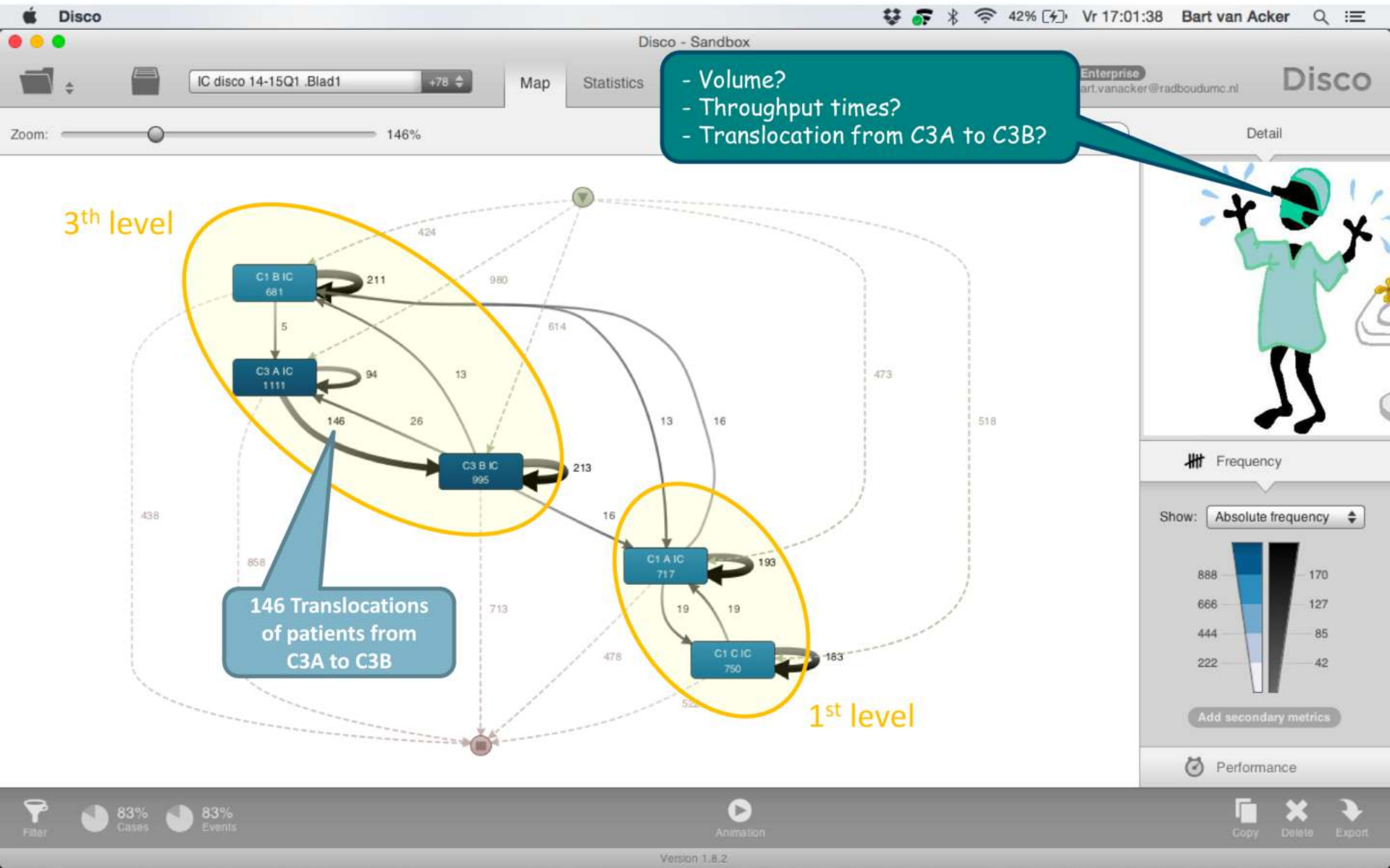


Data processing

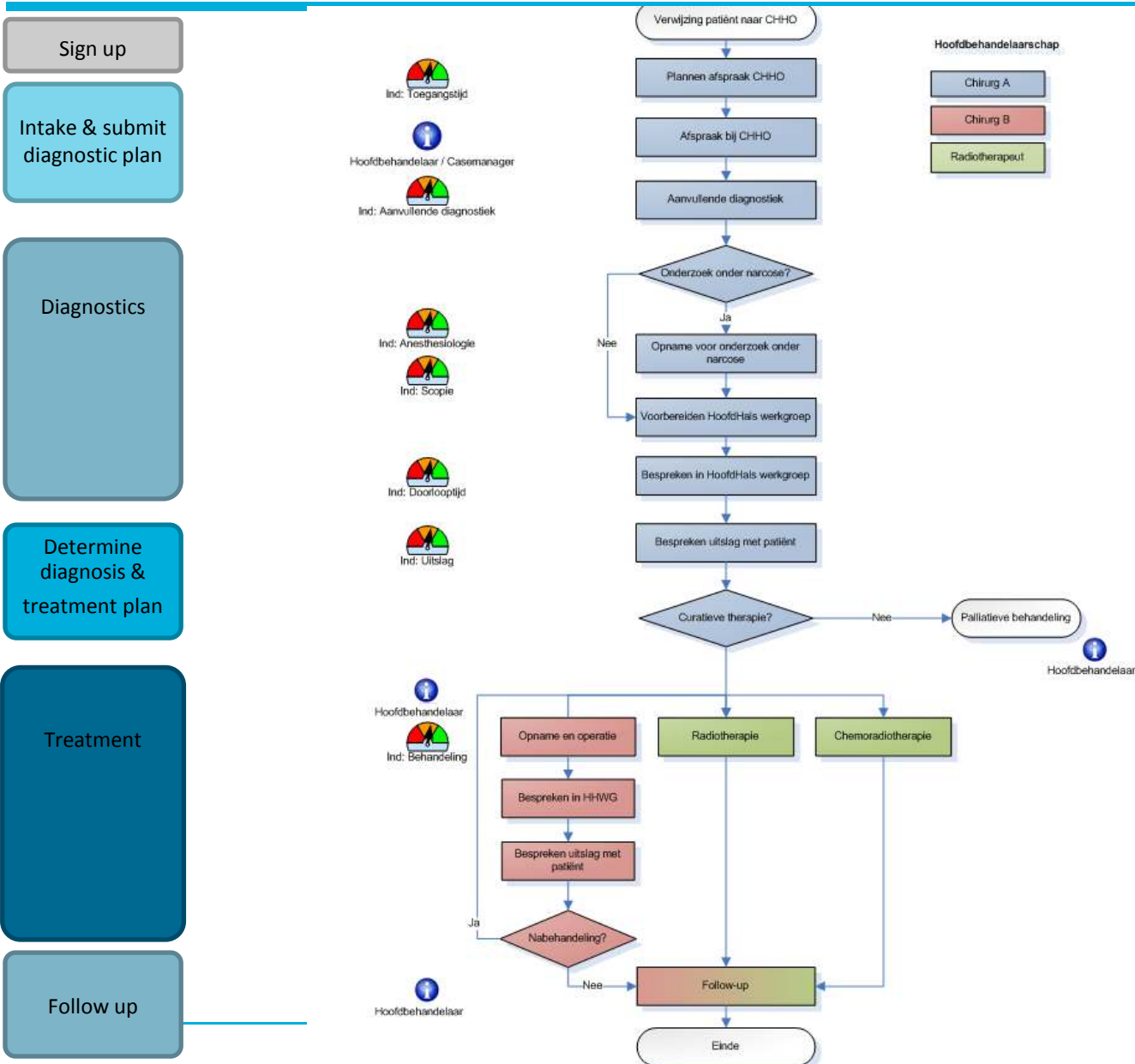


- Data sources
 - 1 modality: 1 data base
 - 1 care chain: various data bases or lists
- Data is often not ready to used
 - Many proceedings don't have time stamps yet
 - Proceedings are medically different but are equal regarding the process
- Data processing
 - Skip details
 - Bundle proceedings which are equal process wise
 - Sort proceedings to 'create' flow

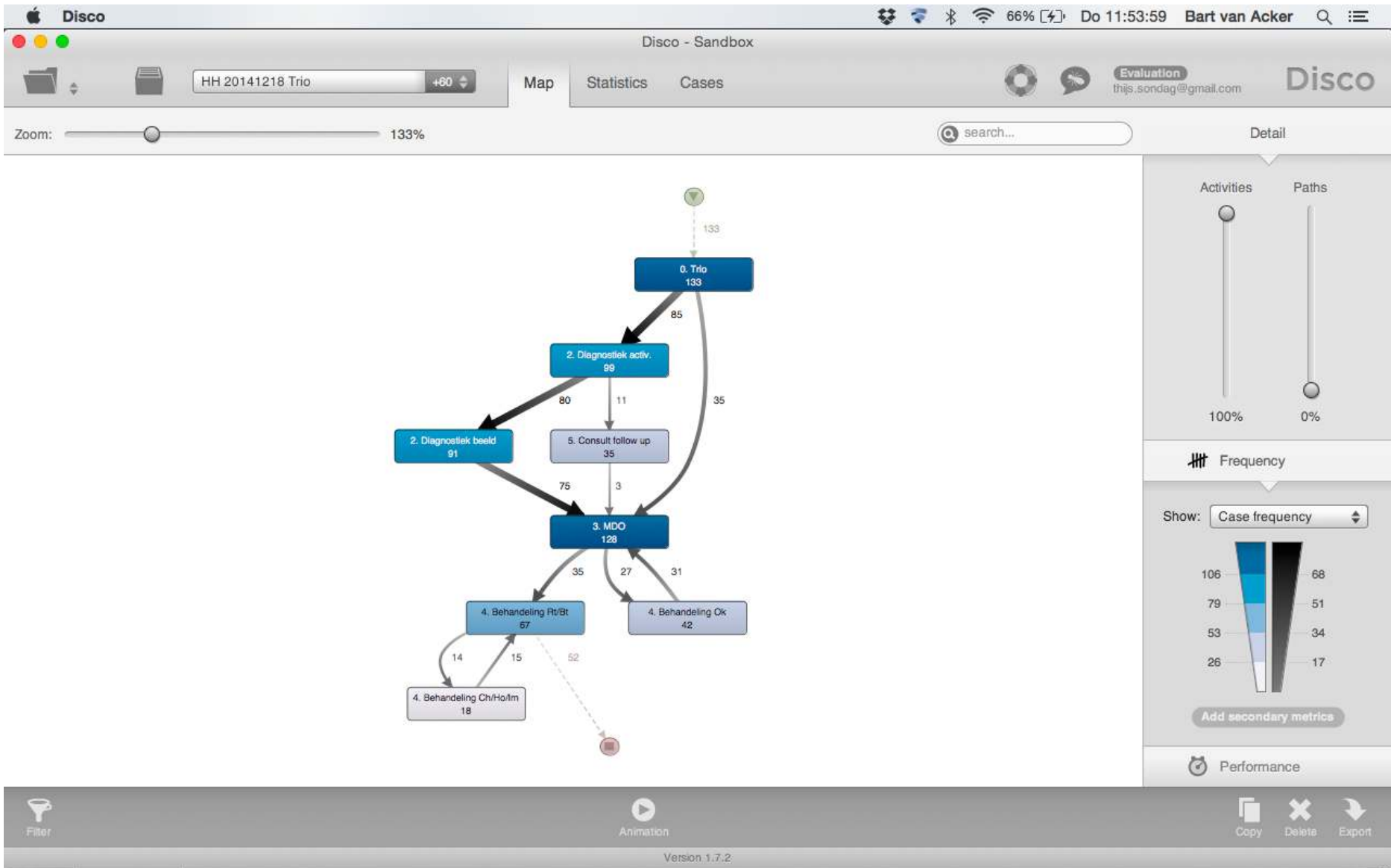
Intensive care unit Radboudumc



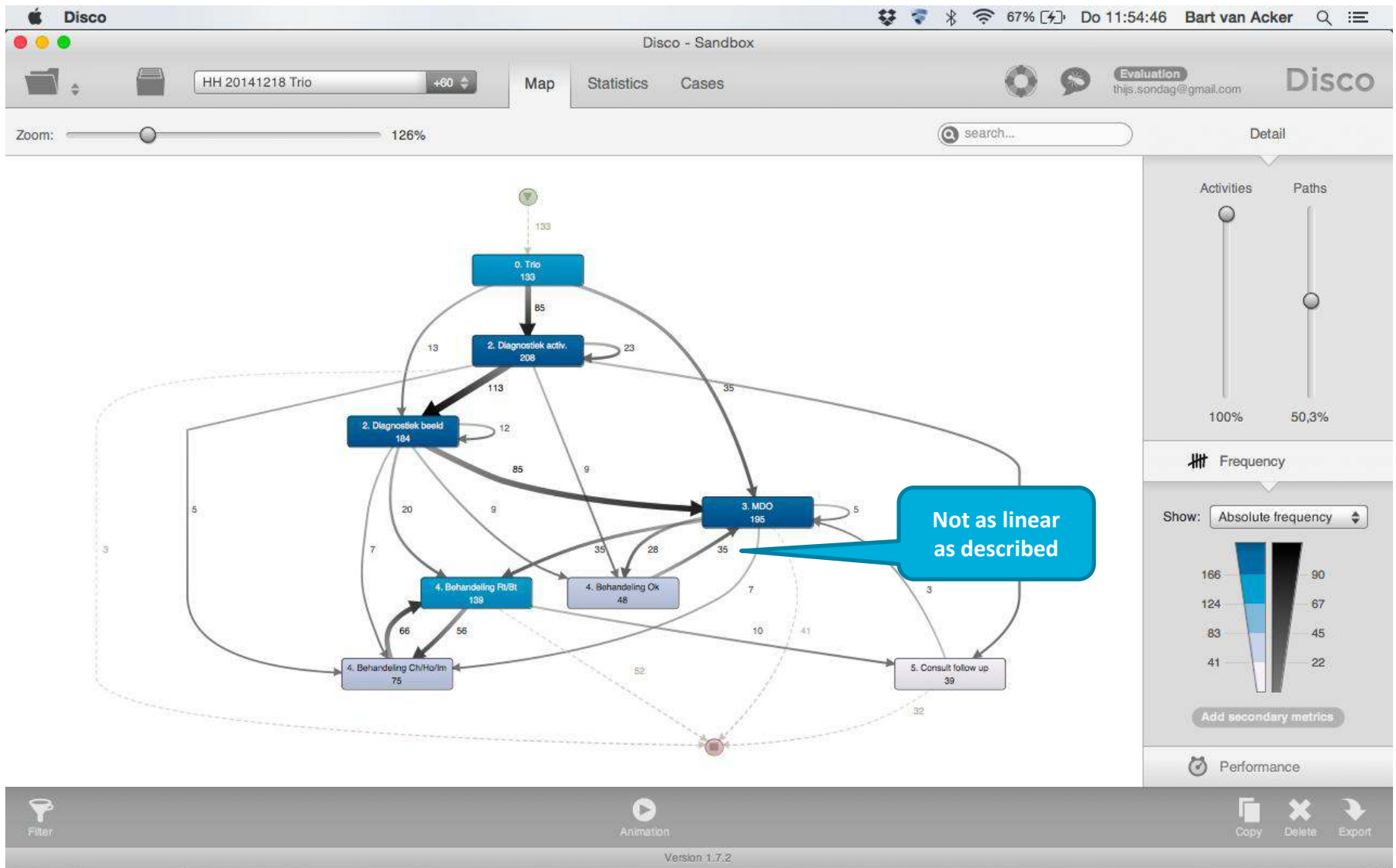
Head and neck care chain: Process description



Head and neck care chain with *Process mining*



Head and neck care chain: Paths at 50%



Added value of process mining



- With *Process Mining* the real process is visualised
- This objectified image enables to talk about the same process
- Common decision about focus
 - Which patient flow
 - Which part of the chain
- Create added value regarding the strategy

Radboudumc

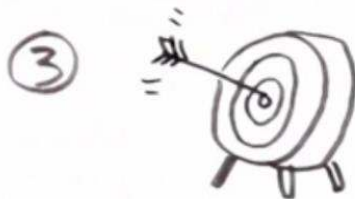
EXCELLENT QUALITY



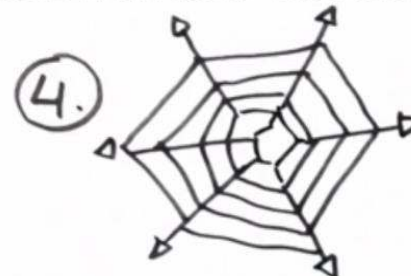
PARTICIPATORY AND
PERSONALIZED HEALTHCARE



OPERATIONAL EXCELLENCE



SUSTAINABLE NETWORKS



Contact

Ir Bart van Acker

Adviseur - Adviesgroep PVI

Bart.vanAcker@Radboudumc.nl

M +316 28 55 73 26

Radboud universitair medisch centrum

Postbus 9101, 6500 HB Nijmegen (237)

F.C. Donderslaan 2 (route 237)

www.radboudumc.nl