

Voice-of-the-clinical-customer interview

Structure of interview:

- 5' Introduction
- 25' Current practices, Unmet needs & wants
- 5' Innovation Pitch
- 20' Attitude towards the solution, Drivers & barriers, Attitude towards sharing & collaboration
- 5' Closing

Start of interview

Stakeholder: ...

Interviewee: ...

Role: ...

Date: ...

Introduction (5')

Brief intros.

Context: eHealth innovation track. Supported by [X], a precompetitive research centre, a.o. supporting the transition of tech from research artefacts to market uptake.

Briefly explain the approach of the interview:

- *Part 1: understand current practices.*
- *Intermezzo We present our ideas on innovation in ICUs. : To avoid biasing your answers, we do this only after concluding Part 1.*
- *Part 2: . In the second part of the interview, we solicit your feedback on our ideas..*

PART I: FOR MEDICAL STAFF

Current practices (15')

Q1: Which team do you work in, and what is your role in that team?

Q2: Please describe the typical patient population of the hospital you work in, and the clinical target group of your ICU.

PDMS system:

Central monitoring: yes/no

EMR system:

Q3: What are the specifications of your ICU facilities? (Number of beds, layout of ICU, number of admissions per year, size of paramedical team)

Q4: Can you describe a typical day in your ICU ? How do you determine the day's care program for an average patient?

Q5: Which infrastructure is used to monitor patients?

PDMS system:

Central monitoring: yes/no

EMR system:

Q6: Which patient data is stored and in which way?

Q7: How do you use patient data in the day-to-day operation of your ICU?

Unmet needs/wants (10')

Q8: What works well today, which elements of your work are you satisfied with?

Q9: What could be better? What is missing in the current way of working?

NUDGE (only if no immediate answer, or to refine the answer given):

1. Where could you save **time** in the current workflow, and in what way? Where is there any loss of time now?

2. Where could you guarantee or improve **safety** or **quality** in the current workflow, and in what way?

3. Where could you improve upon **clinical decision data** in the current workflow, and in what way?

Q10: What do you understand by data analytics?

Q11: How do you use data and / or do data analytics tools support you in your day-to-day work and patient care?

NUDGE (only if no immediate answer, or to refine the answer given):

1. (Real-time) decision support
2. Personalized healthcare
3. Clinical studies
4. Anomaly detection

Q12: How do you see clinical decision making (and the IT that supports it) evolve over the next 5 years?

Q13: Why do you think data-driven solutions are only used to a limited extent in clinical care?

PART I: FOR IT STAFF / MedTech

Current practices (15')

Q1: Which team do you work in, and what is your role in that team?

Q2: Can you tell us about the IT team composition and way of working?

Q3: What are the specs of your IT hospital-wide infrastructure / products?

Q4: What about the IT infrastructure in / for the ICU?

PDMS system:

Central monitoring: yes/no

EMR system:

Q5: What role does patient data play in your hospital / in your products?

Q6: How is patient data made available within the hospital and outside of it (storage of data)?

PDMS ↔ EMR:

Time series frequencies:

Manual or automatic storage?

How long is data kept?

Unmet needs/wants (10')

Q8: What works well today, which elements of your work are you satisfied with?

Q9: What could be better? What is missing in the current way of working?

NUDGE (only if no immediate answer, or to refine the answer given)

1. Where could you save **time** in the current workflow, and in what way? Where is there any loss of time now?

2. Where could you guarantee or improve **safety** or **quality** in the current workflow, and in what way?

3. Where could you improve upon **clinical decision data** in the current workflow, and in what way?

Q10: What do you understand by data analytics?

Q11: How do you use data and / or do data analytics tools support you in your day-to-day work and patient care?

NUDGE (only if no immediate answer, or to refine the answer given):

1. (Real-time) decision support
2. Personalized healthcare
3. Clinical studies
4. Anomaly detection

Q12: How do you see the roll-out of hospitals and their IT systems evolving in the next 5 years?

Q13: Why do you think data-driven solutions are only used to a limited extent in clinical care?

Q11: How is *data analytics*¹ available to support hospital operations?

INTERMEZZO

Innovation pitch (5')

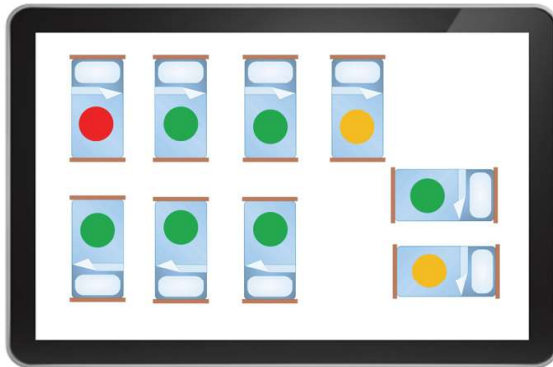
We believe there is a lot of potential in data-driven software solutions to improve IT-support for medical personnel. Despite innovative and groundbreaking research in this domain, we see little of this in day-to-day patient care. We would like to understand better why this is the case. Where are the pain points, and which of these pain points can be alleviated by better IT support? We have come up with a proposal for innovative software for data-driven ICUs which we present via mockup slides (cfr. below). We would like to solicit your feedback on this proposed innovation, as a way to concretise which pain points are resolved by it, and which remain.

¹ By data analytics we mean some computation on monitoring data that allows for a better interpretation of this monitoring data. This can go from very simple to complex:

- indications of min / max values that are exceeded for 1 data stream; up to and including
- the combination of different data streams and EMR data to display personalized indicators or predictors, e.g. the chance that a patient with a specific medical history will develop brain trauma within 24 hours given brain scans, heart rate, body temperature, respiration and APACHE score.

24/7 DIGITAL HEALTH WORKER

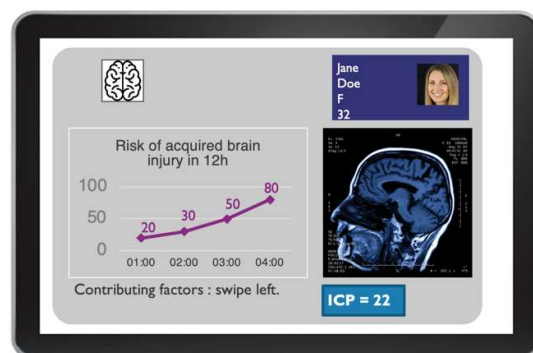
WARD VIEW



PATIENT VIEW



CLINICAL CHAPTER VIEW



PART 2: FOR ALL

Attitude towards the solution (5')

Q14: What do you think about our proposal?

Q15: Which analytical solution(s) would you prefer to see deployed in the context of this monitoring system?

NUDGE (only if no immediate answer, or to refine the answer given):

1. Smart trends / alarms
2. (Real-time) decision support
3. Clinical pathologies
4. Anomaly detection

Drivers & barriers (5')

Q16: What, who, and which incentive would be needed to bring our solution to your unit?

- What would you pay for this solution?

Attitude towards sharing / collaboration (10')

Ed.: We think that sharing data and knowledge could be a blocking factor. Hence these next questions.

Q17: Would you contribute patient data to improve data-driven (solutions for) care?

- Under what conditions?

Q18: Would you like to have access to more (internal or external) patient data to improve data-driven (solutions for) care?

- Under what conditions?

Q19: Would you like to share / offer your own data-driven solutions to other healthcare centers to improve their care workflows?

- Under what conditions?

Q20: Would you like to use data-driven software developed in other care centers / by other stakeholders?

- Under what conditions?

Q21: Would you like to collaborate with (other) healthcare centers to develop better data-driven solutions for healthcare?

- If yes, why?

- If no, why?

Q22: Do you think data-driven software developed in-house can improve through collaboration with other stakeholders / care centers?

Closing

Q23: Would you like to stay informed about our innovation project?

Q24: Is there anyone else we should talk to?

Q25: Are there any issues that have not yet been discussed?

(Business cards)

Guidelines² for:

‘USER ASSUMPTION TESTING IN PRACTICE’

Introduction

- Who are you going to talk to?
- How are you presenting yourself and your project/innovation?
- Do's & Don'ts:
 - Do: introduce yourself & indicate why you interview the person
 - Don't: give away too much information on your innovation
 - Do: capture all relevant information to later on segment and profile your interviewee
 - Don't: start asking difficult or complex questions
 - Do: ask to record the interview
 - Don't: make too extensive notes while interviewing

1.Current practices

- Do's & Don'ts:
 - Do: create a time-line / process overview based on the responses & validate it directly
 - Don't: steer the conversation too much or pre-answer, be open for unexpected stuff
 - Do: ask for clarification when unknown terms are used
 - Don't: forget to ask about positive aspects (delights)

² Guidelines are extracted from *User innovation & user testing*. Dimitri Schuurman. Presentation Slides. Living Labs team & methodology, 2018.

- Do: refer to past actions and use open questions – why / how
- Don't: be judgmental or steering

2. Unmet needs & wants

- Do's and don'ts
 - Do: let the respondent indicate positive and negative aspects in the process/timeline
 - Don't: start by mentioning specific needs yourself
 - Do: let the respondent prioritize the needs and wants they elicit
 - Don't: keep on asking if there are other needs left
 - Do: check whether the need is shared by others
 - Don't: forget to ask questions to further specify the needs & wants (dig deeper)

Innovation pitch

- short & to-the-point!!!
- Use visuals or tangibles (demo) if possible
- Don't make it too technical, focus on added value without going into sales-mode

3. Attitude towards the solution

- Do: let room for spontaneous reactions and opinions, but urge them to be specific
- Don't: filter out negative feedback
- Do: try to reflect back to the 'current state' of the respondent to make it more tangible
- Don't: go in defense-mode

- Do: use card sorting or other techniques for feature prioritization or package creation
- Don't: accept all feature requests, try to understand the 'why' behind them

4. Drivers & barriers + Value capture

- Do: only do this near the end of the interview
- Don't: steer away from potential barriers or hide them
- Do: use information from the 'current state'
- Don't: use this as the only info for pricing (triangulation)
- Do: try a 'role-taking' exercise
- Don't: push too much if they are not that interested

Closing

- Thank the respondent!
- Ask if they want to be kept up-to-date and willing to be involved in later stages
- Ask for other interesting interviewees (snowballing)

PAY ATTENTION TO

- Satisficing (compliments): "What do you think about my idea?"
- Steering questions: "What is missing in the current solutions?"
- Fluffy questions and dito replies (anchor to past experiences): "How do you usually carry out that task?"