Hands-free UX for Nurses - User Research

Productive Pandas

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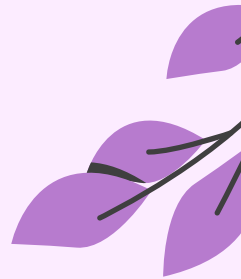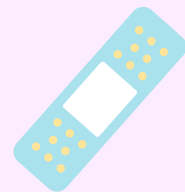
Introduction

What is this project about?

01

Overview

Interview Statistics

5

Paramedics Interviewed
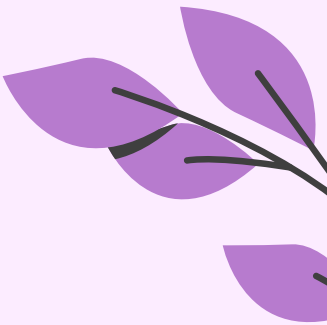
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Average Age

6 years

Average Experience with a few in school while others working for years

02

Experiences
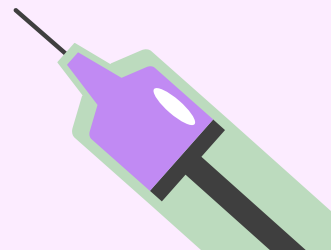
Good and **Bad**

Good

- A new experience because of a different background.
- Easier to get insights from people who are more eager about the project.
- Understood context of work.
- Most people are interested in the Hands-free devices.
- An issue that is being overlooked.

Bad

- Systems are really old and they have gotten used to it.
- The participants thought about improvement to medical instruments specifically.
- Some participants who weren't comfortable with English shared less insights

03
User Findings

Thematic Analysis

	Participant ID	3.What kind of challenges do you face in your tasks? Why?	Challenges in Decision-Making:	Ease of Protocol-Driven Cases	Unconnected Devices	Unpredictable happenings	Collecting Patient Data Complexity	Initial Diagnosis	Unorganized Information	Sharing Diagnosis	Finding what's right for the patient
	3	Well, first of all. It can be a bit of a detective puzzle sometimes. What? What's going on in the 1st place? Cause each each apartment is different. All each person is different. People may not be completely honest about what's going on and and things like that, but usually it's. Just getting those basic measurements. I'm getting the evaluation done. That's you start to have a pretty good picture then, but there's many things in the way of that. And I think. 11 big challenge I feel is. We are there alone or basically as a pair, so there's two paramedics we have all these resources that we we could call. The police, we can call the additional units. We can call the doctor and there's a bunch of information about this patient somewhere in the hospital registry. But accessing all of those is very. Like I don't know if you know what kind of radios we have, but it's it's not trivial to make conduct or whipping out the phone and try to find who to call. And then there's this whole thing. So those tend to be, you know, having like a, let's say, situational awareness. And what what are the other resources that I would conduct that are available and and I I think it's. The fact that we can't access currently I I think, I guess						It can be a bit of a detective puzzle sometimes. What? What's going on in the 1st place? Cause each each apartment is different. All each person is different. People may not be completely honest about what's going on and and things like that, but usually it's. Just getting those basic measurements. I'm getting the evaluation done.	The police, we can call the additional units. We can call the doctor and there's a bunch of information about this patient somewhere in the hospital registry. But accessing all of those is very. Like I don't know if you know what kind of radios we have, but it's it's not trivial to make conduct or whipping out the phone and try to find who to call. And then there's this whole thing. So those tend to be, you know, having like a, let's say, situational awareness. And what what are the other resources that I would conduct that are available and and I I think it's. The fact that we can't access currently I I think, I guess that's changing soon, but we can't access the patient record. So all we have to go on it. This version might have been a customer like 20 years in the hospital, but all we get is basically a name and age and that's. I think a waste free sources basically because we have to every time start from scratch the at the assessment.	I I guess I'm trying to when I'm saying this, I have already a kind of a picture of what you might be after or what you might be developing, but what what I see would be a great tool would be that if there was this report and also all the people who are involved, like my partner and if we bring in another resource like from the hospital or doctor, they would immediately see the same view that I see which is like. I I see the patient, I see the readings and I see all the things that have been done and all the measurements in like 1-1 page and they would be easier to hop in and see that. OK, so this is what is going on. Yeah, I think the most common is that. I would just write them down on a. Usually a piece of paper or or like a like a glove. Also, usually I say them out loud, but as I'm taking them so that my partner immediately hears it and then when I have a little bit more time I will.	But of course there are some patient that it's very easy to decide because if there are like I don't know, being stabbed and they're bleeding, then obviously I'm not gonna. Be able to manage this myself, but then there are very sneaky ones like. Septic infections that the person may look that they're just having a. Little fever. Little tired, but they may be actually half away, half an hour away from death so. I guess the point is that for the obvious ones, you just sort of look at your findings and decide what to do. But then if you have doubts, then at least I personally. Consult. Quite easily. Or let's say it's it's better to consult unnecessarily than not consult when it was necessary. That basically means calling a doctor of the specialisation field that you feel is maybe relevant and presenting the case. And data and getting hopefully some sort of recommendation of what might be appropriate for this one.
	4	The main challenge is we never know what will happen because a shift might be quiet at the beginning, but then things might change suddenly. We never know what will happen and how to handle them; sometimes we don't have time to eat, For example,i might eat at 6am and the night time i will eat ia 6pm.				The main challenge is we never know what will happen because a shift might be quiet at the beginning,We never know what will happen and how to handle them;				
		1. Unclear symptoms are difficult à it's hard to make	Highlight the difficulty	Point out the relative ease						

1. Could you tell us a little bit about yourself?

Difficult Start

- People are used to the tools, so they don't really see a lot of annoyances.

2. Could you describe us your typical workday as a paramedic (nurse)?

Information Exchange

- Information too cluttered to get relativeinformation from.
- Information exchange from start of the shift isa hassle and sometimes not smooth enough.

Ambulance Management

- Paramedics struggle with finding patienthistory.
- Most time-consuming task is cleaning ambulances,and managing it.
- Checking all supplies needed, and communicatingit to the next shift person.

Emergency response /Patient care

- Managing patient in emergency situation much more difficult.
- 2 paramedics, so 1 attending the patient, what does other do?
- More hands needed to handles patients.
- Very difficult carrying people to the ambulance.
- During emergency situation, the need to inform authorities, preparing brief for a doctor, making diagnosis decisions.
- Making reports for doctors becomes a hassle becuase need to rewrite.
- Wouldn't directly want to send the information to the doctor but review it before.

3. What kind of challenges do you face in your tasks? Why?

Decision-Making

- Reporting diagnosis to doctors gets bit tricky while taking care of the patient.
- Who to call, what authorities need to be notified, need to have the situational awareness for it.

Irzum Jafri

Communication with Authority

- Making reports for doctors gets difficult if you need to remember everything.
- Initial diagnosis can also be hard at times, if they have any suspicion.
- Need to remember how to reach someone
- Sharing images with doctor would be much more convinient.

Irzum Jafri

Unpredictable Shifts

- You can never predict the uncertainty regarding the work required to be done for this shift.

Personal Communication

- Difficulty for initial diagnosis interview as it takes too long, there was a trial software but it was also very slow.
- Each person communicates their problems differently.

Irzum Jafri

Data Transfer

- Measuring devices don't communicate with the computer.
- While communicating with Virve, you are required to press the button, so patient care might get interfered.

4. What kind of multitasking do you have to do in you daily job?

Manual Documentation

- Taking notes while using measuring equipment can become a hassle.

On-site Coordination

- 2 people only to co-ordinate with police, firefighters any other authorities while taking care of patients.

Self Management

- Need to take care of personal preperation.
- Need to ensure ambulance is always ready.

5. Where do you think you could need some additional help within your daily tasks?

Self-Sufficiency

- Planned well, unless situation aggravates. Need more people.

Moving the Patient

- Moving the patient can be very difficult if the patient is heavy or unconscious.

6. How do you document patient information?

Technology Enabled Documentation

- First take notes, then transfer into computer.
- Technology to transfer paper notes to computer.
- When working, might forget to document stuff. so would be nice if they can have something recorded.
- Software usability is horrible, and takes more time to figure out where to input information.
-

Patient Authorization

- Getting SSN for patient allows getting patient information.
- Storing patient data after discharge for future use.

Comprehensive Symptom and Care Documentation

- Need to document any patient information including medications, surgeries, etc. into an online system.

Network connectivity issues

- There is some issues in network connectivity when recording patient data in some areas.

7. How do you communicate and collaborate with your colleagues during your shift?

Virve

- The main work phone.
- Need to be on at all times.
- Need to press button which might become a hassle when hands are occupied.

Signal Application

- For encrypted image and video transfer

8. How do you currently use technology in your work? / What kind of technology (tools and devices) do you use in your work? Like mobile phones, Virve, apps, etc.

Virve

- The main work phone.
- Need to be on at all times.
- Need to press button which might become a hassle when hands are occupied.

Patient Authorization

- Getting SSN for patient allows getting patient information.
- Storing patient data after discharge for future use.

Defibrillator

- Sometimes connected to a computer so transfers data directly
- At others times, it is necessary to feed in information later on.

Navigation and Maps

- Required to get to the hospital / patient.

Documentation Software

- Features are added but not designed to be very usatble.
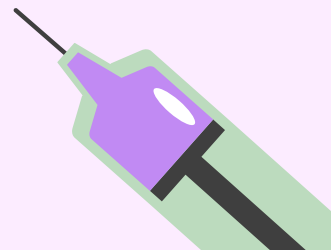- The information presented is really bad, and difficult to understand.

Nice to haves

- I look at patient, and can see their basic data, and other information required for treatment.

04

User Needs

What needs

Improving Documentation Process

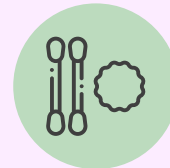Should be smooth, and not repetitive. Reducing cognitive load.

Information Share

Getting the right information at the right time to avoid overload and make decision-making easier.

Improved Communication Tools

Using e.g. the Virve phone gets a little difficult when both hands are busy, so improving its interface.

Efficient use of technology

Devices should be connected and the information transfer to computers should be easier using different camera-based etc. devices.

Persona

> I never know what's going to happen, and I need to be one step ahead. Urgent cases are hard, because I need to e.g. follow the patient's vitals, give CPR, medicate, communicate with my colleague and other parties, and memorise what I did, when, and what were the numbers. There's no time for reporting at that time.

Petra Paramedic

Age: 33
Location: Seinäjoki, Finland
Education: Bachelor of Health Care, Paramedics
Family: Husband + 1 kid

Bio

Petra has been working as a paramedic for around 10 years. She works in shifts of 12 hours, and her partner varies. Between calls, she e.g. cleans the vehicle and equipment and makes sure the ambulance is resupplied for the next gig. She's used to the technology they use, even though it's not that perfect.

Goals and motivation

She wants to provide best possible care for her patients and make the right choises to ensure both patient and her own safety. Additionally, she aims to improve her efficiency.

Needs and expectations

- Decrease of cognitive load especially during tasks that require multitasking in urgent situations
- A trustworthy system that takes also privacy into account
- More information regarding the patient
- Possibility to focus on the main tasks
- Better ergonomy

Frustrations and pain points

- All the needed data isn't easily available
- Reporting requires a lot of manual work, and there isn't often a lot of time
- Bad ergonomy, e.g. when the patient cannot walk and is heavy
- Uncertainty is always present

Personality

Empathic Rational Diligent Calm

Thanks

Any Questions?

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