



# WIAD 2017

LOCAL CONNECTIONS. GLOBAL IMPACT.

BARCELONA, SPAIN



# Information Architecture in eHealth

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Doctors and Patients  
designing together

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# THE ROLE OF INFORMATION ARCHITECTURE IN E-HEALTH

01  
**CHOOSING APPROACH**  
WHAT IS THE GOOGLE DESIGN SPRINT?

02  
**PATIENTS**  
HOW TO HELP PATIENTS MANAGING  
THEIR SITUATION?

03  
**MEDICAL DOCTORS**  
HOW TO HELP MEDICAL DOCTORS  
KEEPING TRACK OF THEIR PATIENTS?

04  
**CONCLUSION**  
WHAT HAVE WE LEARNED

# THE MISSION

Build a health system through the design and implementation of data driven solutions that respond to real user needs and provide patients at home with tools for healthier lives.

# THE PROJECT

Creating a new digital solution for cancer patients  
helping them to manage their situation.

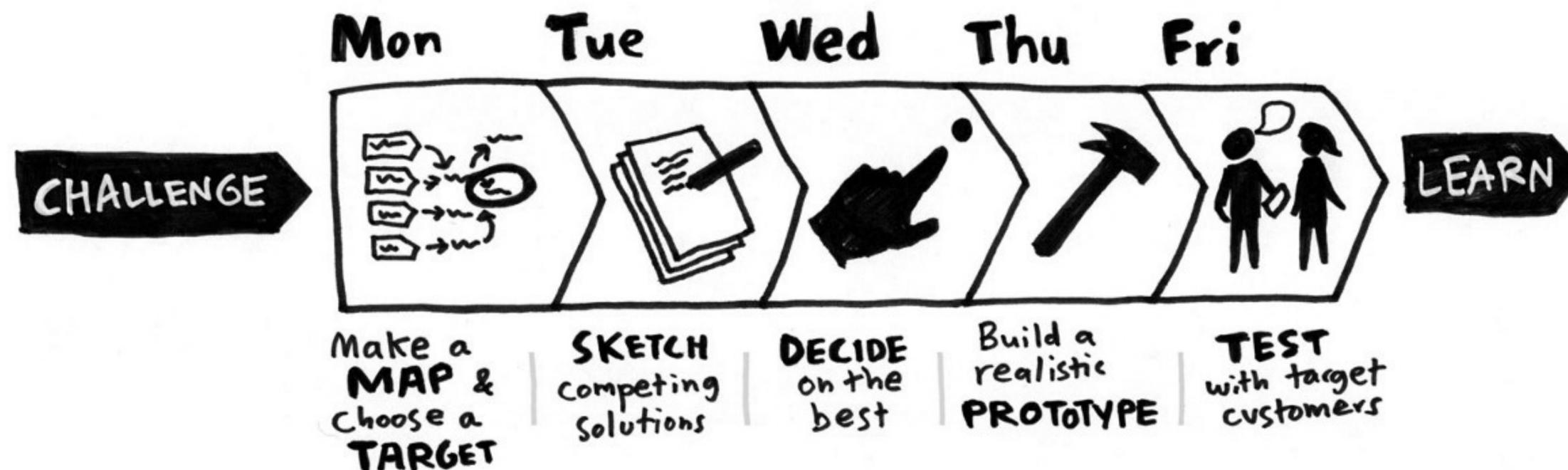
# THE GOAL

Understand how to design and develop in the most effective way a digital application for an effective healthcare.

# THE APPROACH

Google Venture Design Sprints can work well in any industry, so why not using this model to design better healthcare solutions?!

The big idea of the Google Design Sprint is to establish a small team, plan the schedule for a week, and rapidly move from a problem to a tested solution.



## DAY 1 UNDERSTAN D

Lightning talks,  
“How might we”  
questions: how could the  
app resolve user  
problems?



## DAY 2 DIVERGER / SKETCH

Review of existing ideas to  
remix and improve. Making  
sketches, to emphasize critical  
thinking and to create a big  
number of ideas and concepts.

## DAY 3 DECIDING

Choice of the concept that have  
the best chance of achieving  
our long-term goal.  
Create a step-by-step plan for  
the prototype.

## DAY 4 PROTOTYPING

## DAY 5 USER TESTS

RESULT | We need to empower patients to be an **active** part of their health care

How can we empower the patients?

Patients need the right information at the right time!

How can we help the medical doctor?

They need as well relevant information at the right moment.

*This can save lives!*

Help patients to stay organised:

- Live with their disease and give them **personalized information**
- Organisation of **medical appointments** and to respect **medical treatment plans**
- Be prepared for **surgical interventions**

The screenshot displays a mobile application interface for a patient's medical timeline. At the top, there is a blue header with a menu icon, the word "Timeline", a notification bell, and a profile picture. The main content area is a vertical timeline with a central grey line. Events are listed on the right side of the line, each with a date and time on the left. The events include: a "Pre-questionnaire" on June 13, 2016, marked as "Replied" with a checkmark; an "Appointment with Dr. Rafier at 3pm" on June 21, 2016, marked with a bell icon; a "Pre-operative checklist" on June 21, 2016, marked as "Reply in 8h please" with a checkmark; an "Appointment tomorrow at the clinic at 10h30am" on June 21, 2016, marked with a location pin icon; "Stop eating" on June 21, 2016, marked as "8 hours before Intervention" with a no-food icon; "Stop drinking" on June 22, 2016, marked as "3 hours before Intervention" with a no-drink icon; and "Your surgical intervention" on June 22, 2016, marked as "2pm: appointment at the clinic" with a heart icon. At the bottom, there is a blue button with a checkmark icon and the text "Pre-operative checklist".

Timeline

13 June 2016 Replied Pre-questionnaire

21 June 2016 Appointment with Dr. Rafier at 3pm

21 June 2016 Reply in 8h please Pre-operative checklist

21 June 2016 Dr. Rafier / Batiment A Appointment tomorrow at the clinic at 10h30am

21 June 2016 8 hours before Intervention Stop eating

22 June 2016 3 hours before Intervention Stop drinking

22 June 2016 2pm: appointment at the clinic Your surgical intervention

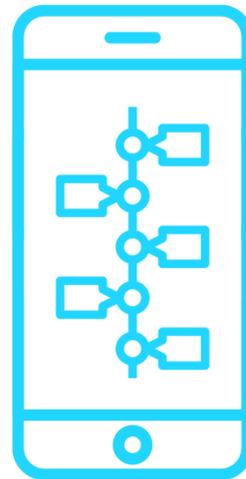
Pre-operative checklist

# Other informational benefits for the patient



## SEND PUSH NOTIFICATIONS

Send push notifications to update, remind and activate patients and their family and friends about their treatment.



## DYNAMIC TIMELINE

Effectively educate patients through a dynamic timeline about the next steps in their treatments.



## ASK QUESTIONS

Request feedback from patients by asking questions about their rehabilitation, pain level or other experiences.



## VISUAL CONTENT

Inform patients about their treatments and organisation by adding visual content.

Write personal messages to the medical doctor

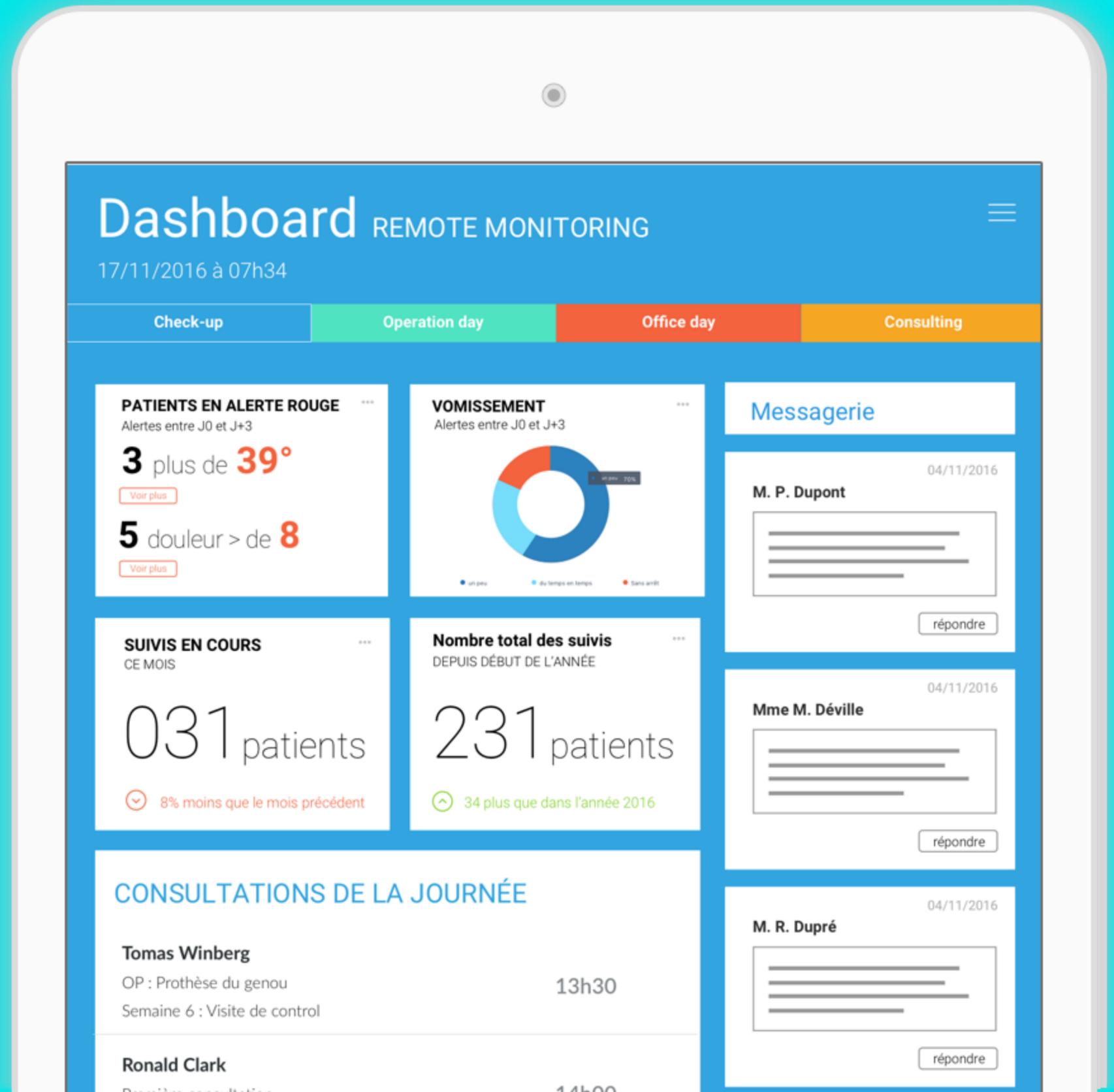
- Help the patient to be an active member of the health care team
- Exchanges with the medical doctor build trust and leads to better results, quality, safety, and satisfaction.

The screenshot shows a mobile messenger interface with a blue header bar. The header contains a hamburger menu icon on the left, the word "Messenger" in the center, a bell icon for notifications on the right, and a circular profile picture of a man. The main content area shows a conversation with three messages. The first message is from the patient, dated "Me, 03/14/2016", and says: "My problem is that since about the 4th day after surgery, I have not had a truly good nights sleep. I am having pains in my left leg along with ...". The second message is from "Dr. Rafier, 03/14/2016" and says: "I'm sorry to hear that. Take Motrin for pain. I will give you a referral for Physical Therapy, too and that should help you." The third message is from the patient, dated "Me, 03/14/2016", and says: "Thank you very much, Dr. Rafier". At the bottom of the screen is a text input field with the placeholder "Type your answer here ..." and a blue "Send" button with a paper plane icon.

Healthcare professionals:  
Bring the important  
information to the  
surface.

*If content is king,  
then the context  
is god:*

1. Remote monitoring
2. Operation day
3. Office day
4. Consulting day



# HOW TO PRESENT THE INFORMATION

« A picture is worth a thousand words »

Information dashboard design is the effective visual communication of data.

## Example:

2003 Call Volume (in thousands)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
United States	1,983	2,343	2,593	2,283	2,574	2,838	2,382	2,634	2,938	2,739	2,983	3,493
Europe	574	636	673	593	644	679	593	139	599	583	602	690
	2,557	2,979	3,266	2,876	3,218	3,517	2,975	2,773	3,537	3,322	3,585	4,183

Figure 1: A tabular display of call volume data.

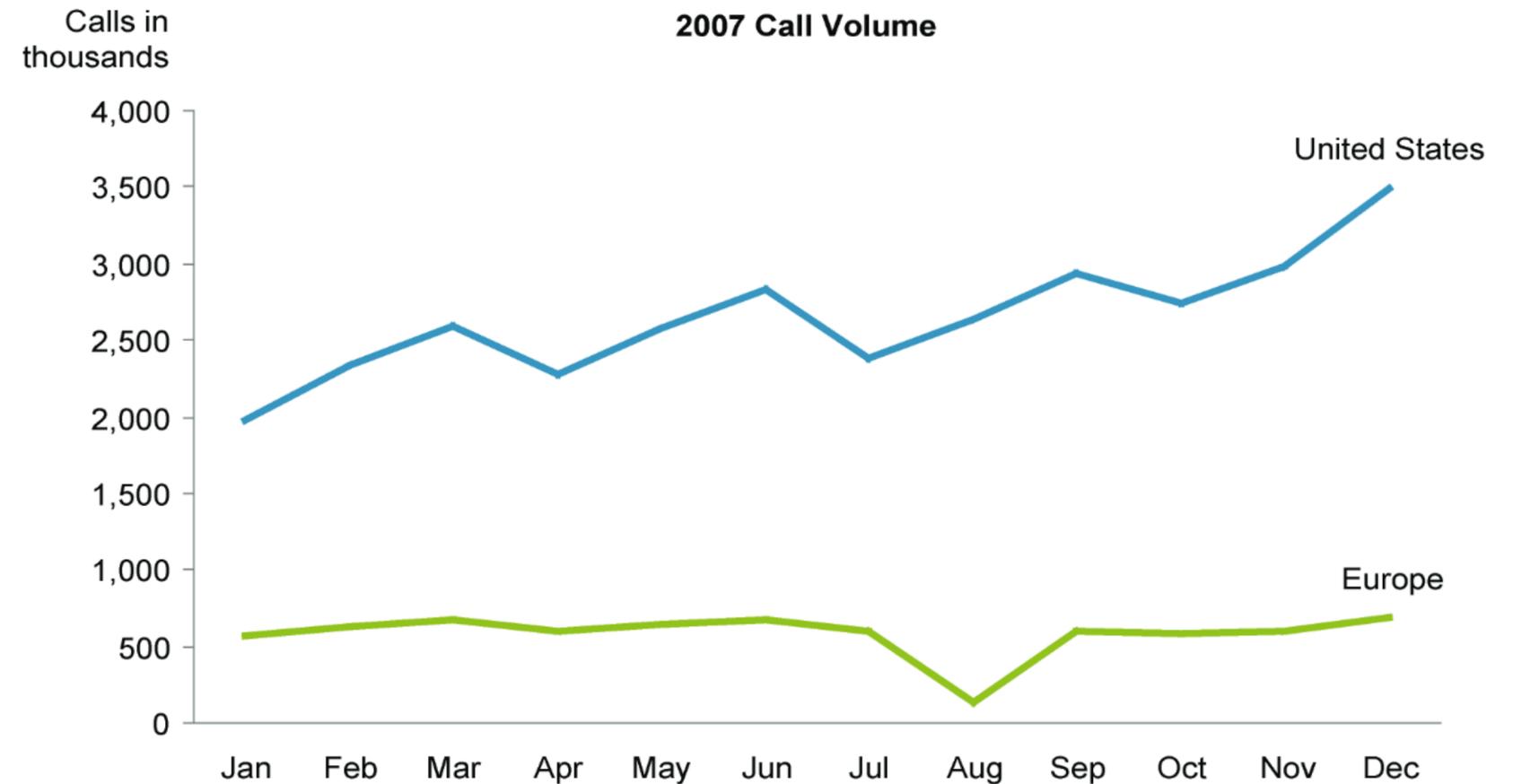
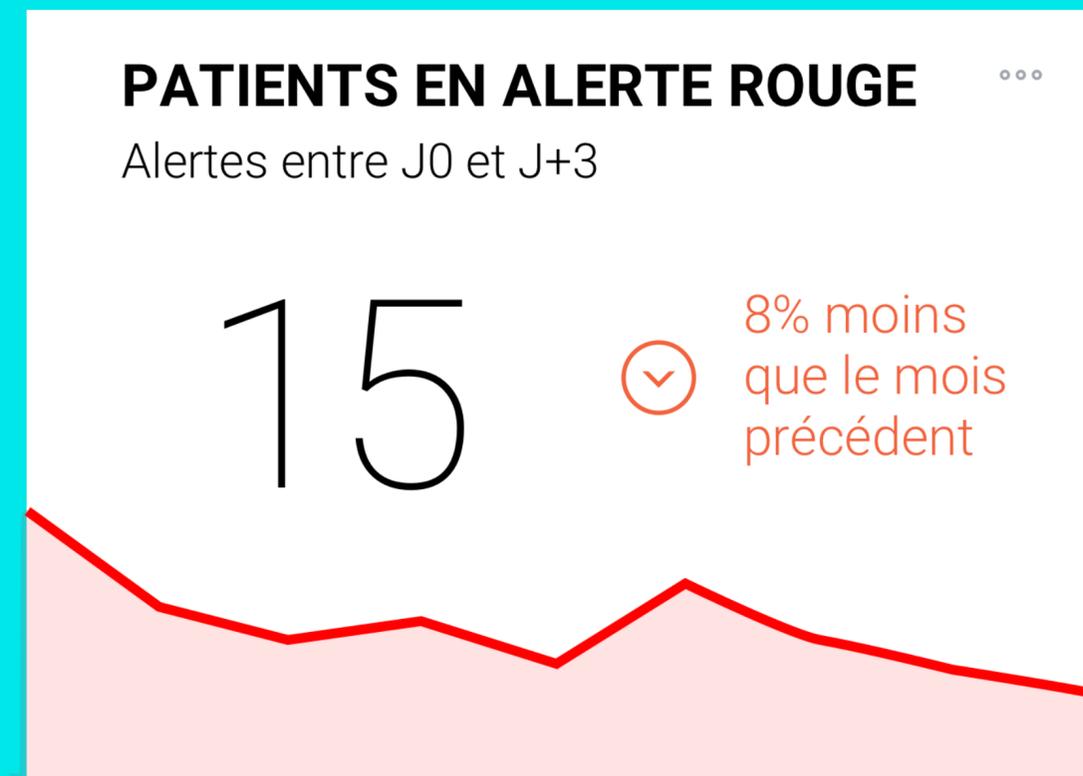


Figure 2: The same call volume data as before, but presented in a way that brings patterns, trends, and exceptions to light.

## FURTHER MAIN PRINCIPLES Designing a real-time operational dashboard:

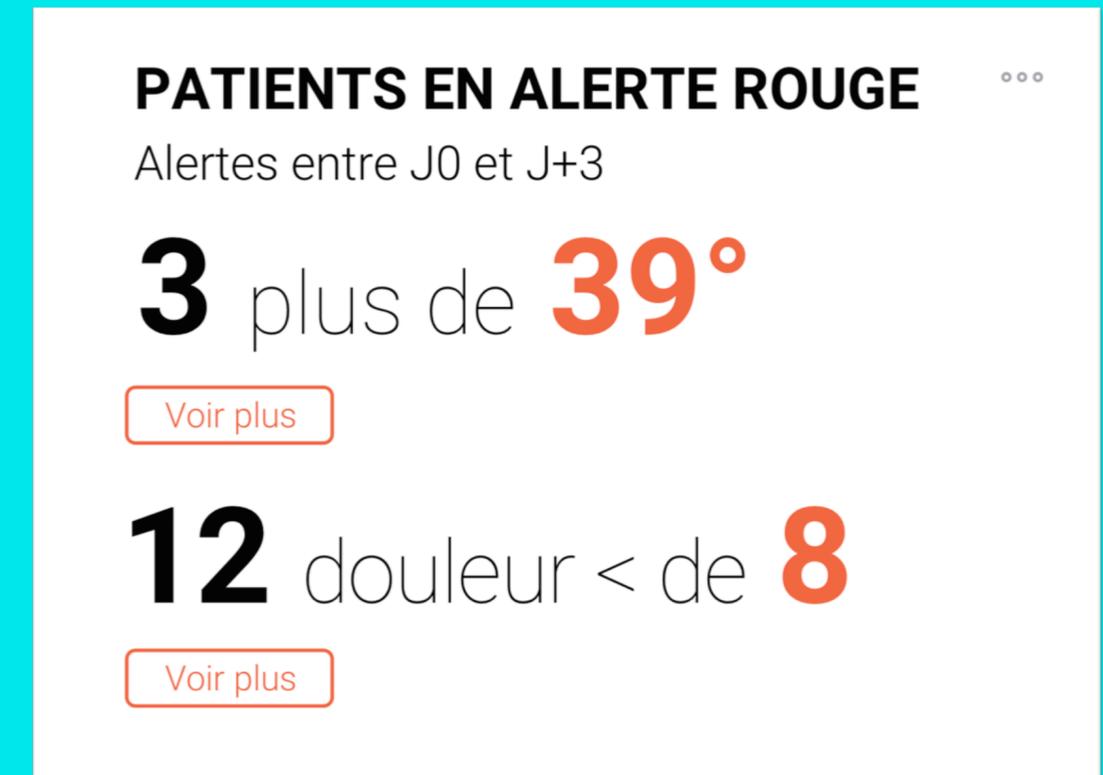
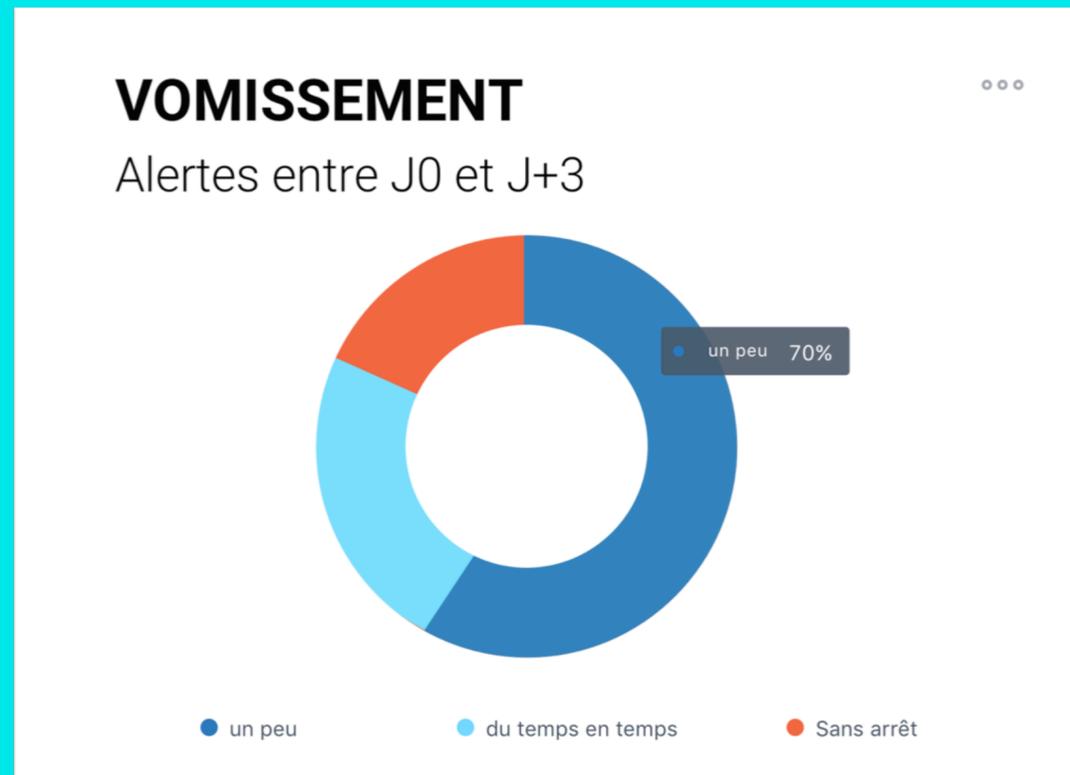
- Indicate tendencies instead of too many alert conditions
- Put the numbers in the right context



## FURTHER MAIN PRINCIPLES

### Designing a real-time operational dashboard:

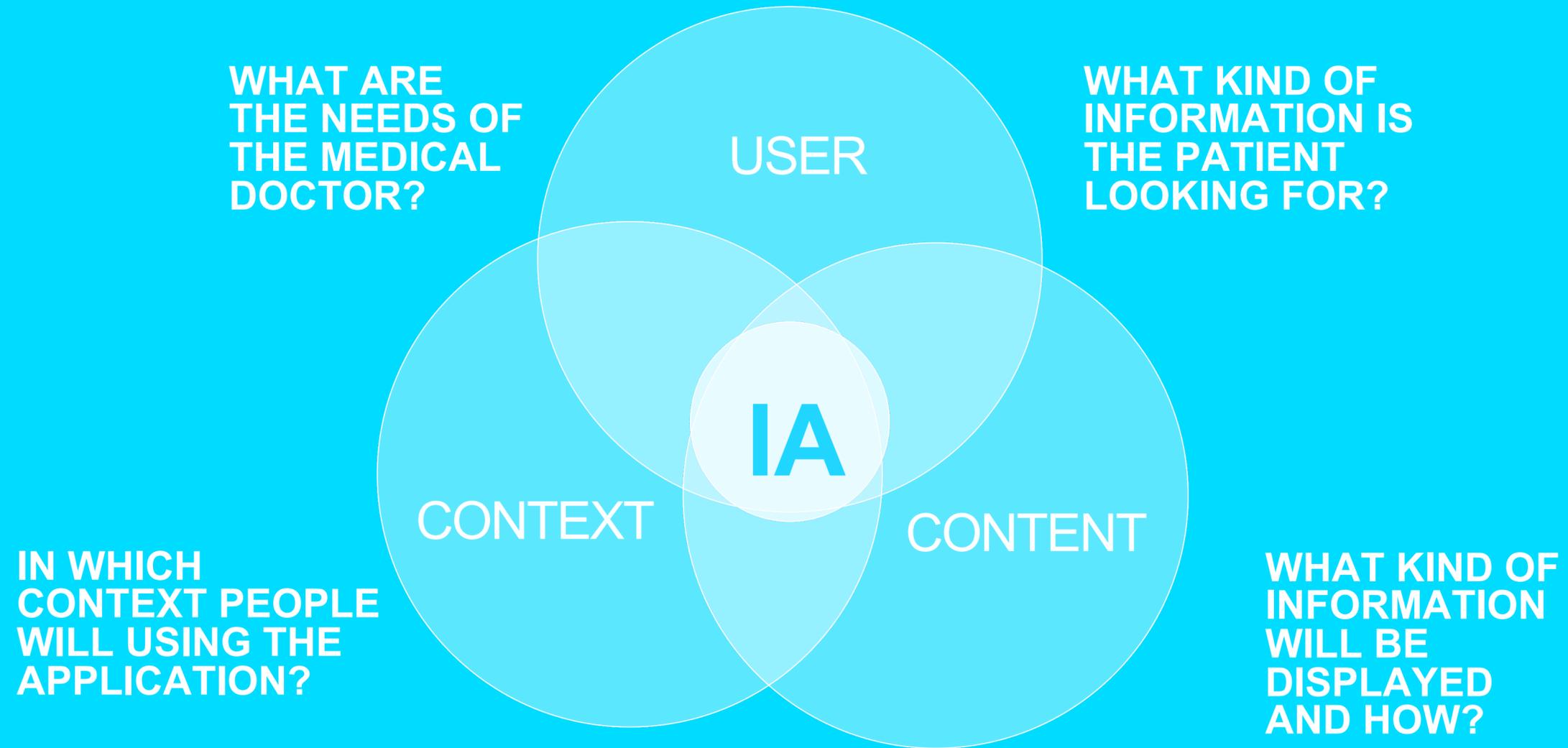
- "Call out" of single important numbers
- Using charts



The goal is to inform people with precisely what they need in the way that they need it day in and day out.

**SUMMARY** | A dashboard's strength depends on providing your audience with the current status of key metrics.

## CONCLUSION



GOOD RESEARCH MEANS ASKING  
THE RIGHT QUESTIONS

CONCLUSION

**Participatory design reduce the risk of failure for your end-product.**

**DESIGN  
SPRINT**

Understand  
prototype  
test

**User participation**

**SKETCH  
SOLUTIONS**

Find an  
answer for the  
problem

**User validation**

**DESIGN  
MOCKUPS**

Check to  
respond to real  
user needs

**UI-DESIGN**

Interface  
design of the  
Application

**User testing**

## CONCLUSION |

Design Sprint is a user centered approach and especially in Healthcare:

**EMPATHY IS KEY!**

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The major part of the problem solving is actually to define the problem:

**DESIGNING TOGETHER IS  
THE SOLUTION!**



Image source:  
[www.hermanmiller.com/why/in-this-together.html](http://www.hermanmiller.com/why/in-this-together.html)

# THANK YOU.



QUESTIONS?

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