



---

# UX Design Challenge (Final)

with a focus on user participation

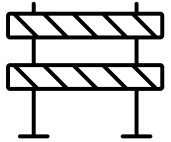
by Silas Kraume, Léon Lehnen, Anh-Thu Dinh and Alejandro Soto



# Table Of Contents

▪ Challenge & Goal	03
▪ Applied UX Research Methods	04
▪ Data Analysis Overview	05
▪ Patient Perspective	06
▪ Physician Perspective	14
▪ Security	21
▪ Technological Implications	22
▪ Conclusion	23

# Challenge & Goal



## › **Current State**

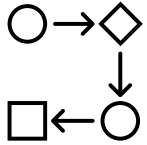
- › Functional but visually outdated & user-unfriendly
- › Lacks critical feedback & guidance
- › Risk of unintentional errors and incomplete tasks
- › Affects both patients and physicians



## › **Desired State**

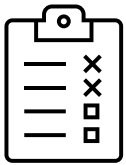
- › Improve clarity, usability & reliability
- › Low-burden experience
- › Ensure high-quality data collection
- › Adhere to non-profit budget constraints

# Applied UX Research Methods



## › **Workflow Review**

- › Accessed both patients and physicians platform
- › Reviewed all relevant processes



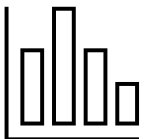
## › **Interviews & Testing**

- › Conducted interviews with patients and physicians
- › Usability Testing



## › **Technical Audit**

- › Collected technical and quality data (Google Lighthouse)
- › Accessibility testing
- › Device compatibility



## › **Data Collection**

- › Gained click and usage data

# Data Analysis Overview



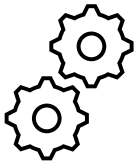
## › Quantitative

- › Conducted clickstream analysis to map navigation paths
- › Identified redundant steps in workflow



## › Qualitative

- › Analyzed feedback from 5 patients and 2 physicians
- › Identified emotional frustrations and confusions



## › Developer Input

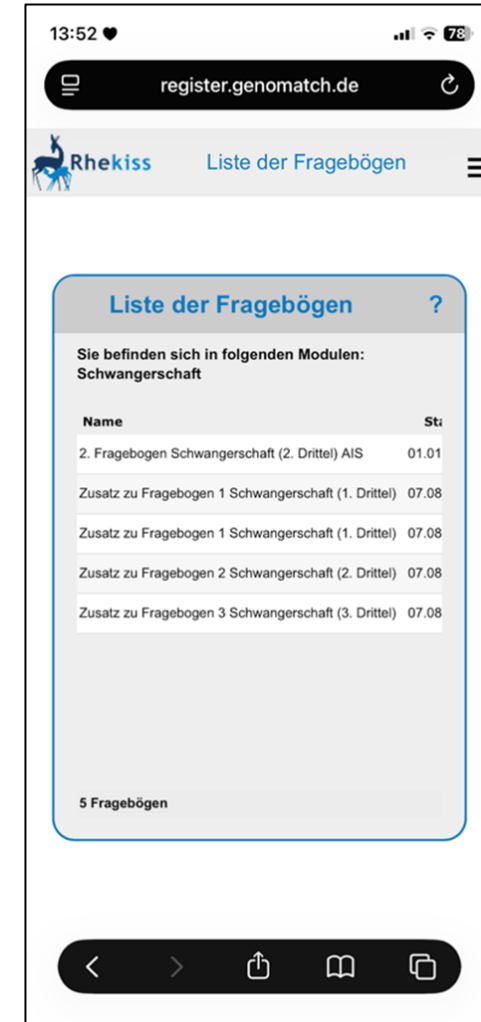
- › Validated findings and possibilities with software firm
- › Analyzed technical metadata

# **Patient Perspective**

# Patient Perspective

## › Mobile Failure

- › Interface does not adapt to mobile screens
- › Questionnaires and buttons are cut off



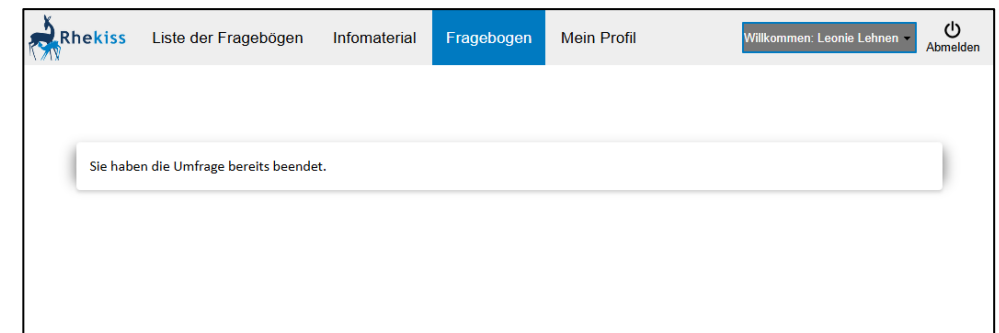
# Patient Perspective

- › **Mobile Failure**
  - › Interface does not adapt to mobile screens
  - › Questionnaires and buttons are cut off
- › **Status Confusion**
  - › Completed questionnaires aren't clearly marked
  - › Users reopened them unnecessarily



Name	Start	Ablauf	Status
1. Fragebogen Kinderwunsch RA	01.12.2025	01.03.2026	<div></div>
1. Fragebogen Kinderwunsch RA	01.12.2025	01.03.2026	<div></div>
3. Fragebogen Kinderwunsch RA	01.12.2025	19.03.2028	<div></div>
3. Fragebogen Kinderwunsch RA	01.12.2025	19.03.2028	<div></div>
4. Fragebogen Kinderwunsch RA	01.12.2025	19.03.2028	<div></div>
4. Fragebogen Kinderwunsch RA	01.12.2025	19.03.2028	<div></div>
5. Fragebogen Kinderwunsch RA	01.12.2025	19.03.2028	<div></div>
5. Fragebogen Kinderwunsch RA	01.12.2025	19.03.2028	<div></div>

8 Fragebögen





# Patient Perspective

## › Mobile Failure

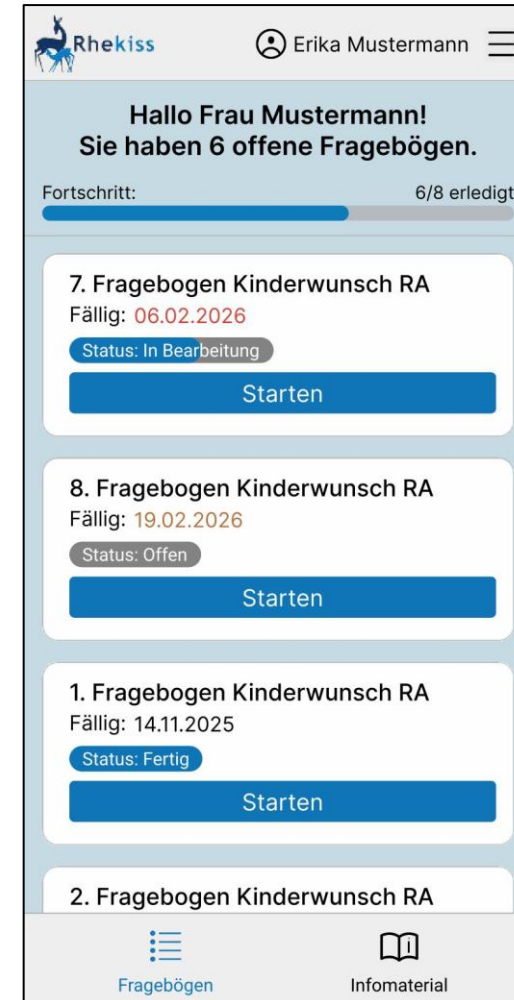
- › Interface does not adapt to mobile screens
- › Questionnaires and buttons are cut off

## › Status Confusion

- › Completed questionnaires aren't clearly marked
- › Users reopened them unnecessarily

## › Solution

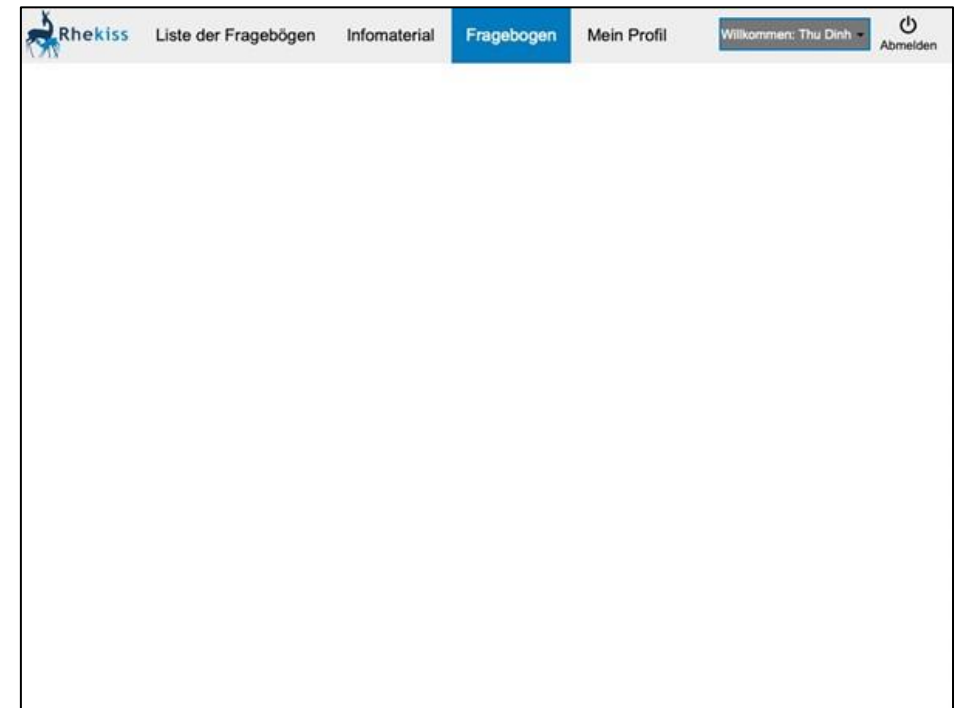
- › Mobile-optimized layout with large touch targets
- › Clear status indication using badges and progress bars
- › Noticeable colors for due date



# Patient Perspective

- › **Lack of Feedback**

- › Patients are unsure if they completed a task
- › Submission of questionnaire leads to blank page



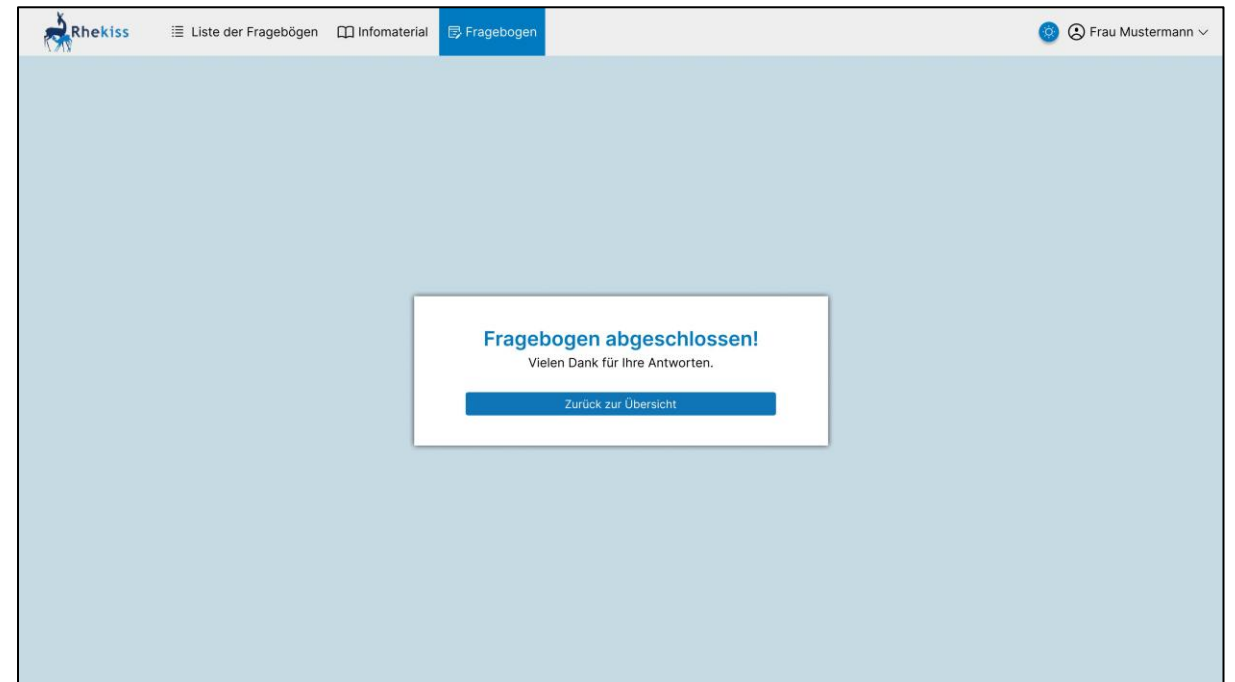
# Patient Perspective

## › Lack of Feedback

- › Patients are unsure if they completed a task
- › Submission of questionnaire leads to blank page

## › Solution

- › Confirmation at the end of the questionnaire
- › Button to navigate back to the overview



# Patient Perspective

## › Tedious Questionnaire

- › Medication names needs to be typed manually
- › No indication of progress inside questionnaires
- › Navigation to specific sections cumbersome

material **Fragebogen** Mein Profil

Mit den folgenden Fragen möchten wir erfahren, ob Sie durch Ihre rheumatische Erkrankung im Alltag beeinträchtigt sind. Bitte kreuzen Sie jeweils nur die Antwort an, die am besten Ihre Fähigkeiten während der vergangenen 7 Tage beschreibt.

	Ohne jede Schwierigkeit	Mit einigen Schwierigkeiten	Mit grossen Schwierigkeiten	Nicht dazu in der Lage
<b>1. Ankleiden und Körperpflege</b>				
<b>Können Sie:</b>				
• sich ankleiden, inkl. Binden von Schnürsenkeln und Schließen von Knöpfen?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• sich die Haare waschen?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>2. Aufstehen</b>				
<b>Können Sie:</b>				
• von einem Stuhl ohne Armlehnen aufstehen?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• sich ins Bett legen und wieder aufstehen?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>3. Essen</b>				
<b>Können Sie:</b>				
• Fleisch schneiden?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• eine volle Tasse oder ein gefülltes Glas zum Munde führen?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• eine neue Milchtüte (Tetrapack) öffnen?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>4. Gehen</b>				
<b>Können Sie:</b>				
• im Freien auf ebenem Gelände gehen?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
• fünf Treppenstufen hinaufsteigen?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

# Patient Perspective

## › Tedious Questionnaire

- › Medication names need to be typed manually
- › No indication of progress inside questionnaires
- › Navigation to specific sections cumbersome

## › Solution

- › Autocompletion for common medication names
- › Clickable navigation bar with completion status

The screenshot displays the 'Rhekiss' patient portal interface. At the top, a navigation bar includes a logo, a menu icon, and links for 'Liste der Fragebögen', 'Infomaterial', and 'Fragebogen'. The user is logged in as 'Frau Mustermann'. Below the navigation bar, a progress indicator shows sections: 'Allgemeine Angaben/Kinderwunsch' (checked), 'Gesundheitszustand' (checked), 'Medikamente' (active, with a warning triangle), 'Krankheiten' (unchecked), and 'Persönliche Situation & Beruf' (unchecked). The main content area is titled 'Wie regelmäßig haben Sie Ihre ärztlich verordneten Medikamente in den letzten 4 Wochen eingenommen?' and asks the user to note medication names as on the packaging. A table follows with columns for frequency: 'wie verordnet', 'häufiger oder höhere Dosierung', 'seltener oder geringere Dosierung', and 'fast nie oder gar nicht'. The table lists medications: 1. Medikament (with a dropdown menu open showing 'Hydroxychloroquin', 'Sulfasalazin', 'Methotrexat', 'Certolizumab', 'Adalimumab', 'Etanercept', 'Prednisolon', and 'Ibuprofen'), and 5. Medikament. Each row has radio buttons for the frequency options. At the bottom, there is a placeholder text block starting with 'Lorem ipsum dolor sit amet...'.

	wie verordnet	häufiger oder höhere Dosierung	seltener oder geringere Dosierung	fast nie oder gar nicht
1. Medikament	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hydroxychloroquin	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sulfasalazin	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Methotrexat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Certolizumab	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Adalimumab	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Etanercept	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Prednisolon	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ibuprofen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Medikament	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

# Physician Perspective

# Physician Perspective

## › Complex Navigation

- › Features are hidden in separate categories
- › „New Patient“ button at unexpected location



**Patienten** ?

Für Fragebögen bitte auf Patientennamen klicken

Name	Modul	Woche	Offene Bögen	Nächstes Ablaufdatum	Nächste Dokumentation
Herr	Schwangerschaft	18	7	09.02.2026	SS: 17.02.26 - 07.04.26 
Frau	Schwangerschaft	15	7	03.03.2026	SS: 11.03.26 - 29.04.26 
Frau	Kinderwunsch	8	10	02.03.2026	KW: 10.03.26 - 02.06.26 
Frau	Kinderwunsch	8	10	01.03.2026	KW: 09.03.26 - 01.06.26 
Frau	Schwangerschaft	10	7	09.04.2026	SS: 17.04.26 - 05.06.26 
Herr	Schwangerschaft	22	6	10.03.2026	SS: 18.03.26 - 01.07.26 
Frau	Schwangerschaft	25	6	18.02.2026	SS: 26.02.26 - 11.06.26 

7 Patienten

**Termine**

Jan 26 - Feb 1, 2026

	Mo 26.01	Di 27.01	Mi 28.01	Do 29.01	Fr 30.01	Sa 31.01	So 01.02
0:00							
1:00							
2:00							
3:00							
4:00							
5:00							
6:00							
7:00							
8:00							
9:00							
10:00							
11:00							
12:00							

# Physician Perspective

## › Complex Navigation

- › Features are hidden in separate categories
- › „New Patient“ button at unexpected location

## › Solution

- › Moved „New Patient“ button from navigation bar to patient list

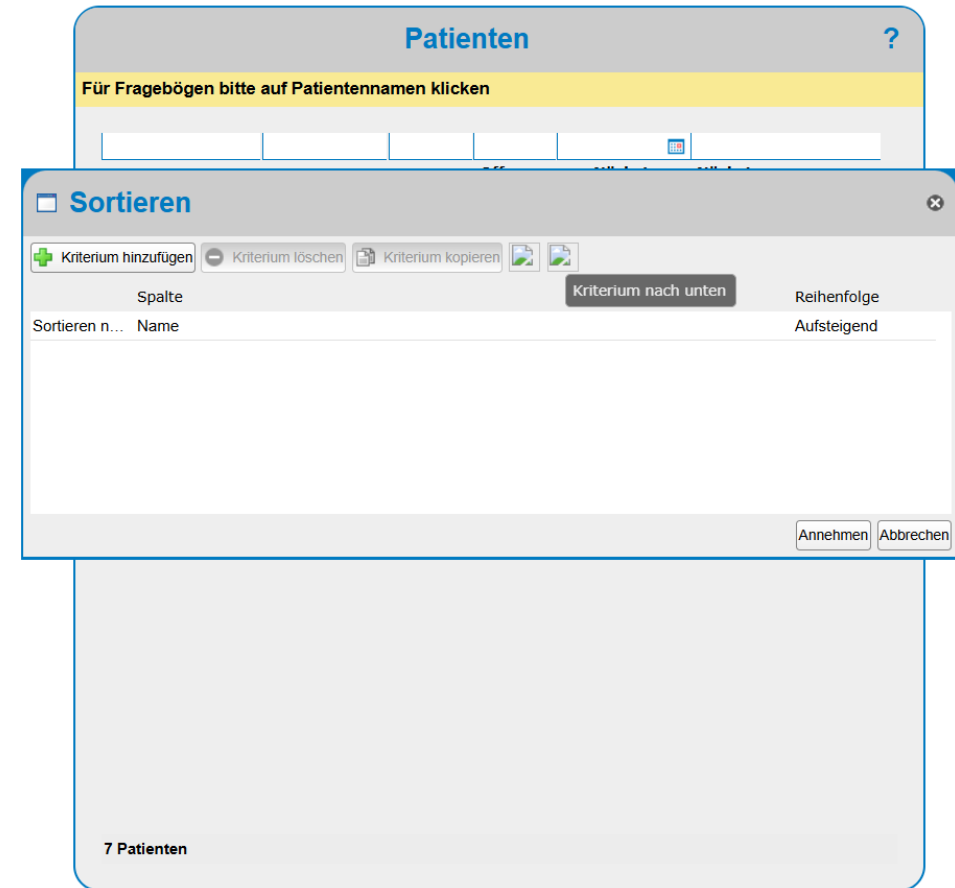
The screenshot displays the 'Rhekiss' physician perspective interface. The top navigation bar includes the 'Rhekiss' logo, a 'Patientenliste' button, and links for 'Infomaterial', 'Studienstatus', and 'Nachrichten'. The user 'Dr. Max Mustermann' is logged in. The main content area is titled 'Patienten' and features a search bar, a 'Schnelle Filter' dropdown, and a '+ Neuer Patient' button. Below this is a table of patients with columns for Name, Modul, Woche, Offene Bögen, Ablaufdatum, Nächste Dokumentation, and Patientendaten. The table lists eight patients, each with a status indicator (e.g., '7 Offen', '2 Offen') and an 'Öffnen' button. To the right of the patient list is a calendar titled 'Anstehende Termine' for February 2026, showing a grid of dates with some dates highlighted. Below the calendar is a section titled 'Heute' with a vertical timeline for the current day, showing time slots from 4:00 to 9:00.

Name	Modul	Woche	Offene Bögen	Ablaufdatum	Nächste Dokumentation	Patientendaten
Frau Erika Mustermann	Schwangerschaft	17	7 Offen	09.02.2026	17.02.2026 – 17.03.2026	Öffnen
Frau Christine Müller	Schwangerschaft	15	2 Offen	10.02.2026	18.02.2026 – 18.03.2026	Öffnen
Frau Sophie Hüber	Kinderwunsch	7	1 Offen	24.02.2026	01.03.2026 – 01.04.2026	Öffnen
Frau Yvonne Meier	Schwangerschaft	21	10 Offen	01.03.2026	09.03.2026 – 09.04.2026	Öffnen
Frau Ursula Ebersbach	Kinderwunsch	26	5 Offen	18.04.2026	24.04.2026 – 24.05.2026	Öffnen
Frau Sabrina Schwarz	Schwangerschaft	12	3 Offen	22.04.2026	30.04.2026 – 30.05.2026	Öffnen
Frau Julia Thalberg	Schwangerschaft	2	1 Offen	25.04.2026	03.05.2026 – 03.06.2026	Öffnen
Frau Hannah Schmidt	Schwangerschaft	1	4 Offen	27.04.2026	05.05.2026 – 05.06.2026	Öffnen



# Physician Perspective

- › **Hidden & Complicated Tools**
  - › Advanced filtering options are buried in submenus
  - › Filtering usage is very technical



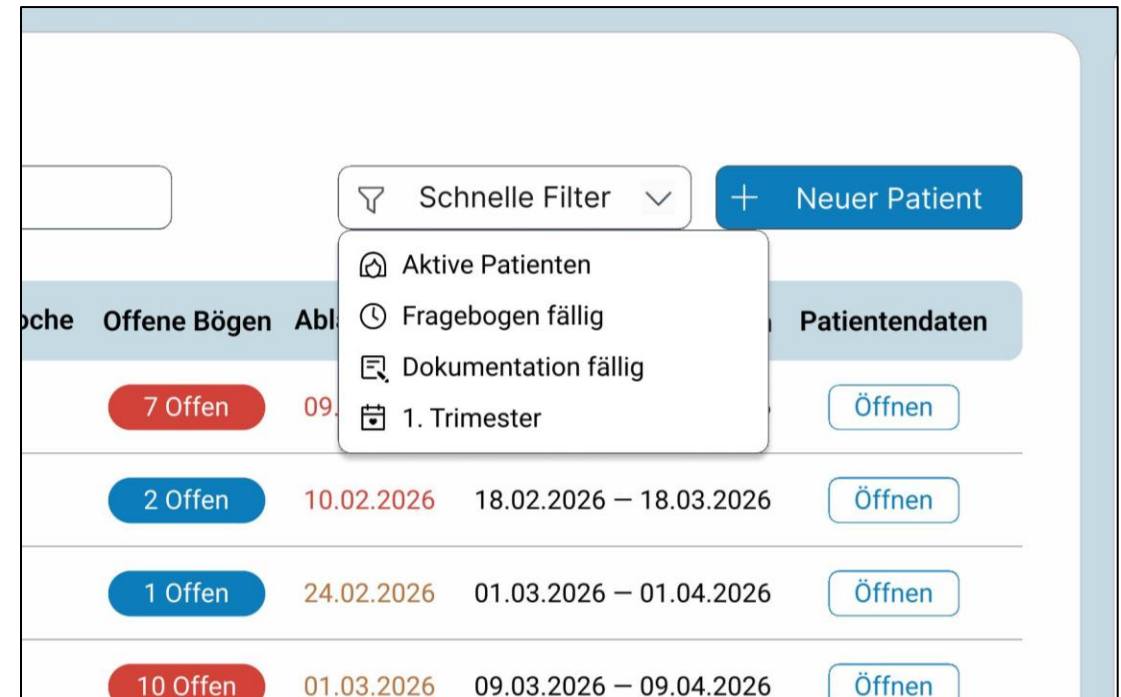
# Physician Perspective

## › Hidden & Complicated Tools

- › Advanced filtering options are buried in submenus
- › Filtering usage is very technical

## › Solution

- › Quick filters allow for fast sorting of most important categories
- › Advanced filters are still available by rightclicking the patient table



# Physician Perspective

## › Information Clutter

- › No logical grouping of UI elements
- › Overwhelming options of interactable features
- › No visual clarity

The 'Patientendaten' form in the application. It contains the following fields and buttons:

- Name : [Redacted]
- Benutzername : [Redacted]
- E-Mail : [Redacted]
- Geburtstag : 31.12.1990
- Diagnose : Vaskulitiden
- Status : Schwangerschaft
- Geburtsdatum : 30.06.2026
- Woche der Schwangerschaft : 18
- Patient(in) füllt Fragebogen nicht selbst aus : ☐
- Buttons: Grafik, Historie, Module ändern, Daten ändern, Baseline Daten Immunologie, Einbestellliste, Registrierungs-E-Mail erneut an Patientin verschicken, Loss to follow-up

The 'Liste der Fragebögen' table. It has a yellow header with instructions: 'Bitte dokumentieren Sie das Ende jeder Schwangerschaft (auch Abort, Terminierungen, Totgeburten) im Modul "Postpartal" im Bogen "Ausgang der Schwangerschaft" (Anleitung unter Infomaterial)'. The table columns are: Modul (geordnet nach Modulstartdatum), Geburtstermin, Start, Ablauf, and Status. The data is filtered for 'Schwangerschaft' and '30.12.2025'.

Modul (geordnet nach Modulstartdatum)	Geburtstermin	Start	Ablauf	Status
Schwangerschaft				
30.12.2025				
Klinischer Bogen 1. Trim. Vaskulitiden	30.06.2026	30.09.2025	09.02.2026	<input type="checkbox"/>
Klinischer Bogen 2. Trim. Vaskulitiden	30.06.2026	23.09.2025	06.04.2026	<input type="checkbox"/>
Klinischer Bogen 3. Trim. Vaskulitiden	30.06.2026	23.09.2025	27.07.2026	<input type="checkbox"/>
Therapien im 2. Trimenon	30.06.2026	07.10.2025	06.04.2026	<input type="checkbox"/>
Therapien und Komorbidität im 1. Trimenon	30.06.2026	30.09.2025	09.02.2026	<input type="checkbox"/>
Ultraschalluntersuchung 1 (Mutterpass)	30.06.2026	30.09.2025	27.07.2026	<input type="checkbox"/>
Vorgeschichte Schwangerschaften (Mutterpass)	30.06.2026	30.09.2025	27.07.2026	<input type="checkbox"/>
7 Fragebögen				

# Physician Perspective

## › Information Clutter

- › No logical grouping of UI elements
- › Overwhelming options of interactable features
- › No visual clarity

## › Solution

- › Less important actions grouped to reduce visual clutter
- › Improved color contrast

The screenshot displays the 'Rhekiss' physician perspective interface. The top navigation bar includes the 'Rhekiss' logo, a 'Patientenliste' button, and links for 'Infomaterial', 'Studienstatus', and 'Nachrichten'. The user 'Dr. Max Mustermann' is logged in. The main content area is divided into two panels. The left panel, titled 'Patientenprofil', contains 'Stammdaten' (Birth date: 14.03.2000, Username: Frau Erika Mustermann, Email: e.mustermann@mail.de) and 'Klinische Daten' (Diagnosis: Vaskulitiden, Status: Schwangerschaft, Birth date: 30.06.2026, Week: 18). It also features buttons for 'Daten ändern', 'Module ändern', and a 'Weitere Aktionen' dropdown menu with options like 'Grafik erstellen', 'Historie einsehen', and 'Baselinedaten Immunologie herunterladen'. The right panel, titled 'Fragebögen (Modul: Schwangerschaft)', shows a table of questionnaires with columns for Name, Startdatum, Ablaufdatum, Status, and Aktion. The table lists various questionnaires, including 'Klinischer Bogen 1. Trim. Vaskulitiden' (Status: Überfällig) and 'Therapien im 2. Trimenon' (Status: Fertig).

Name	Startdatum	Ablaufdatum	Status	Aktion
Klinischer Bogen 1. Trim. Vaskulitiden	30.09.2025	02.02.2026	Überfällig	Öffnen
Klinischer Bogen 2. Trim. Vaskulitiden	23.08.2025	06.04.2026	Offen	Öffnen
Klinischer Bogen 3. Trim. Vaskulitiden	23.09.2025	27.07.2026	Offen	Öffnen
Therapien im 2. Trimenon	07.10.2025	06.04.2026	Fertig	Öffnen
Therapien und Komorbidität im 1. Trimenon	30.09.2025	09.02.2026	Fertig	Öffnen

# Security



- › A critical security vulnerability was found during analysis
- › Resolved quickly in cooperation with the software developers

# Technological Implications

- › Future switch to **Tivian** and **REDCap**
  - › Free for non-profit use
  - › Focused on medical applications
  - › Improved accessibility features built-in (text-to-speech, font size)

The screenshot shows a web-based survey form titled 'Contact Information'. In the top right corner, there is a 'Returning?' link, a font size selector set to 'A A A', and a speaker icon for text-to-speech. The form instructions read: 'Please complete the survey below.' followed by 'Thank you!'. The form contains five numbered questions:

- 1) First name (text input field, with a red asterisk and 'must provide value' text below it)
- 2) Last name (text input field, with a red asterisk and 'must provide value' text below it)
- 3) Email (text input field, with a red asterisk and 'must provide value' text below it)
- 4) Can we send you more information about our event? (radio button selection with 'Yes' and 'No' options, and a red asterisk and 'must provide value' text below it)
- 5) Signature (text input field, with a red asterisk and 'must provide value' text below it, and a green 'Add signature' link with a signature icon to the right)

At the bottom of the form, there are two buttons: 'Next Page >>' and 'Save & Return Later'. A 'reset' link is also visible near the bottom right of the question area.

# Conclusion

- › Main weakness: lack of **predictability** and **feedback**
- › Path from „**functional but outdated**“ to **user-friendly and reliable**
- › Prioritize **mobile compatibility** to enable a **modern workflow**
- › **Cost-effective** changes with high return in user satisfaction