

Our openEHR journey

Tomaž Gornik

Founder and CEO, Better Co-chair, openEHR Foundation





Better in numbers



17

markets



20+

partners



30 + million

unique patient EHRs stored



1000+

healthcare institutions connected



30+

years in healthcare IT



150 +

coworkers in UK, Germany, Ireland and Slovenia



Mission

Our mission is to improve health and care by simplifying the work of care teams and to accelerate digital transformation underpinned by data for life.



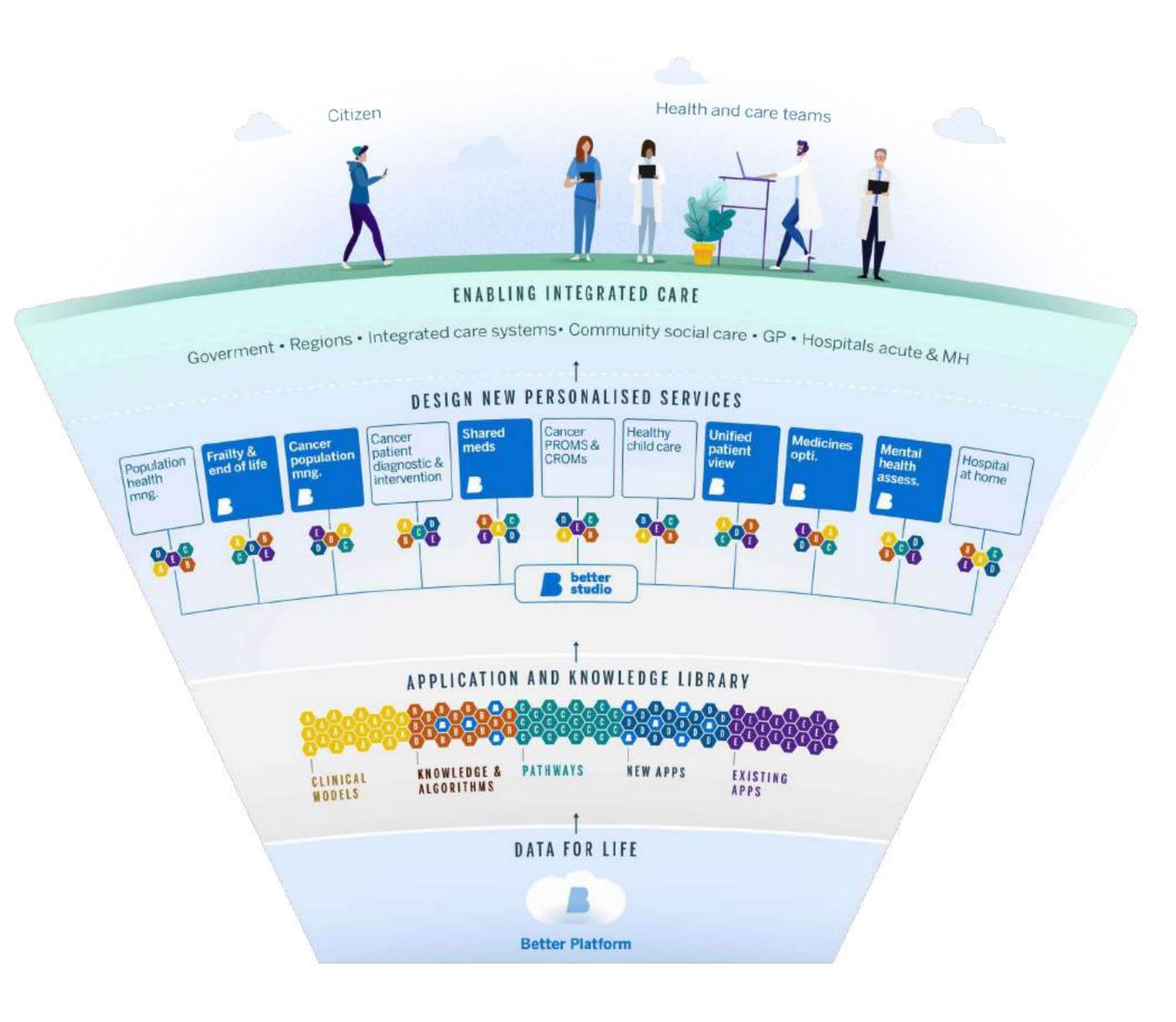


Digital Health Platform

Unified, personalised application experience portal and design system

Fast delivery of applications low-code tools

Vendor-neutral data core longitudinal care record





100+ healthcare providers and organisations use Better Platform



















































































Select Partners























T··Systems·

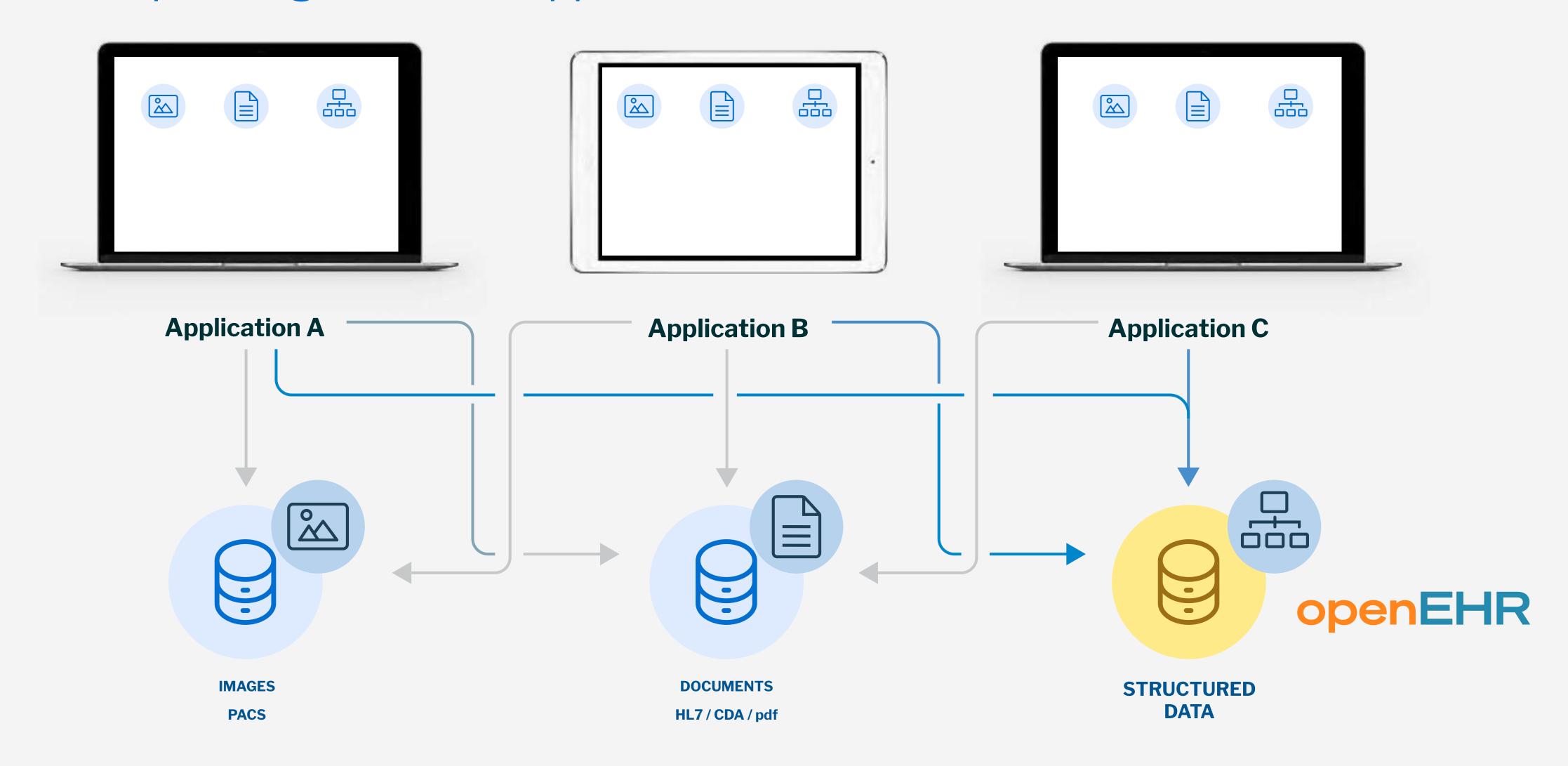


Thought Leadership



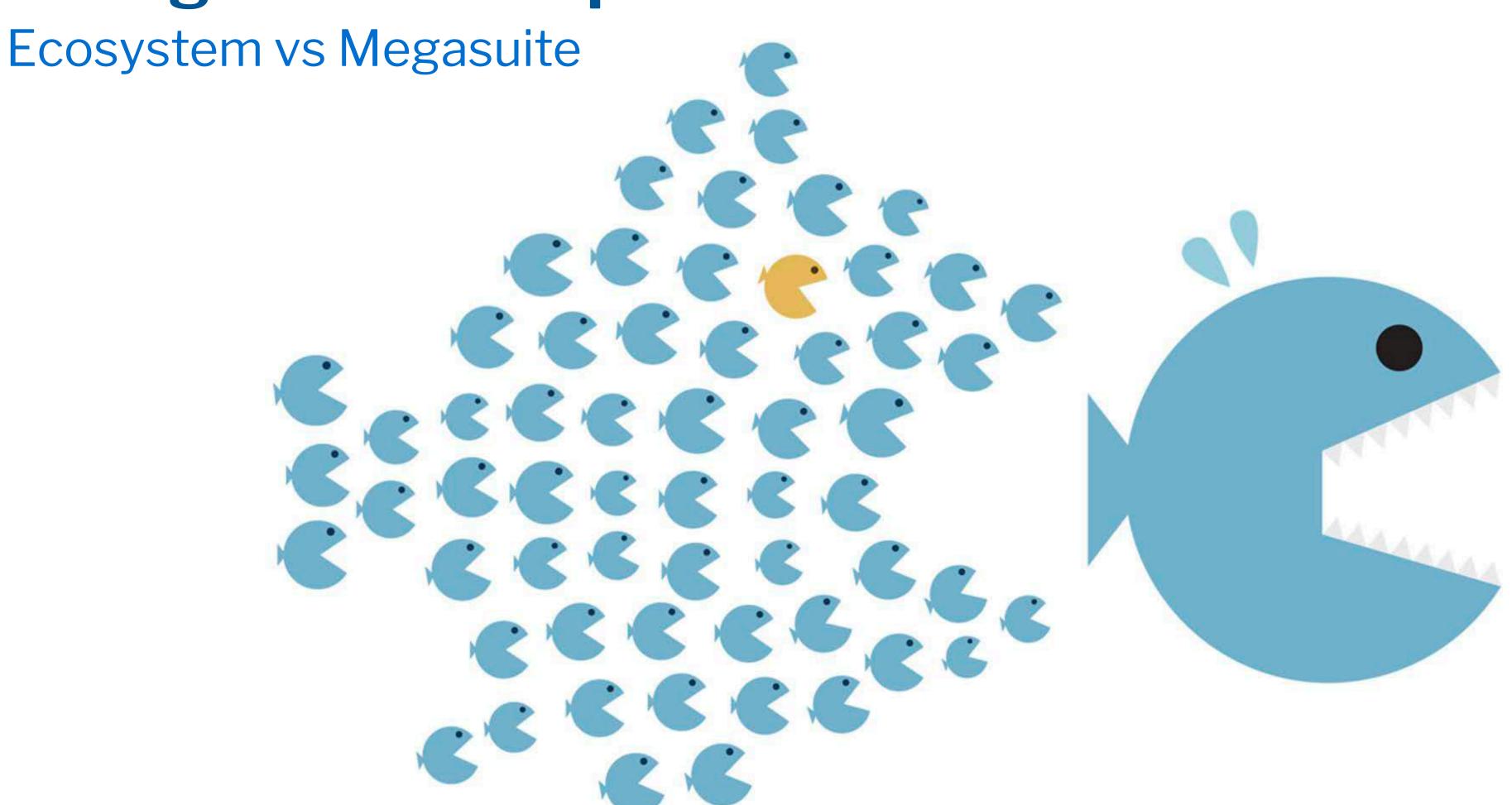
Thought leadership

Separating data from applications





Thought leadership









Thought leadership

Digital Health Platform

Rich care record built around the patient, not institution: "one patient, one record".

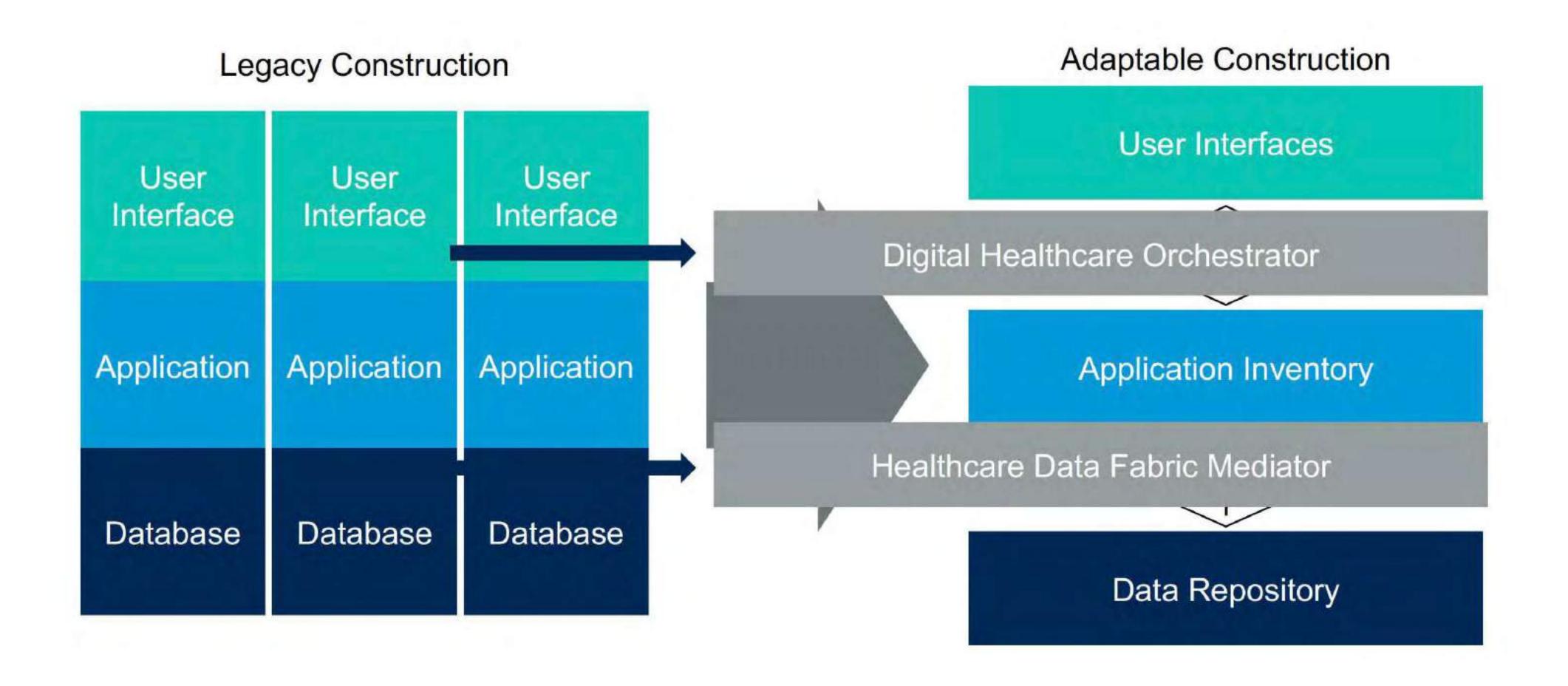
Governance of data models, choice of apps, vendors.

Ecosystem of apps, built once.





The target architecture is clear enough







Digital Health Platform









Google Health



Total Experience Composition (PaaS)



Multiexperience (Apps)

· Al Workbenches, Low-Code

Packaged Business Capabilities (SaaS)

- Al Diagnostics (Imaging)
- Al Risk Algorithms
- Collaboration
- Virtual Health Assistants

- Digital Scribes
- Virtual Care
- Shared Care Record
- Command Center/ICU

Rich Data Fabric (PaaS)

- FHIR Data Connectors
- OMOP, i2B2, OpenEHR, IHE
- AI/ML modelling

- Healthcare MDM
- Deidentification, Consent
- Internet of Healthcare Things













"With the increasing demand for effective collaboration between all involved in providing healthcare, the pain of our current vendor-driven system landscape is rapidly rising too. By embracing openEHR, as the only international open health data standard that can cater for the complexity of health semantics and is designed for persistency, we can solve this conundrum in the coming years."

Erik Vermeulen

EY Global Health Technology Leader



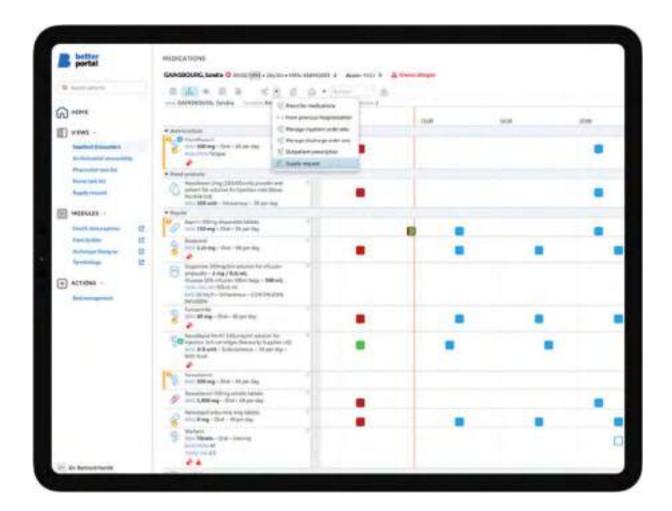


Products



Products





Collaborative medication management

Enhance patient safety through an efficient and transparent electronic prescribing and medication administration solution





A digital health platform

Build personalised application experiences using a portal, design system and low-code tools on top of a longitudinal care record





Ready-to-use,
flexible, and scalable
application for
electronic
medication
management in any
hospital department

The best openEHR based medication management solution

intuitive and easy-to-use by clinical staff

State-of-the-art

future-proof

end-to-end

medication

management

Helps reduce

missed doses

medication-

spen

Gain efficiency in

related workflows

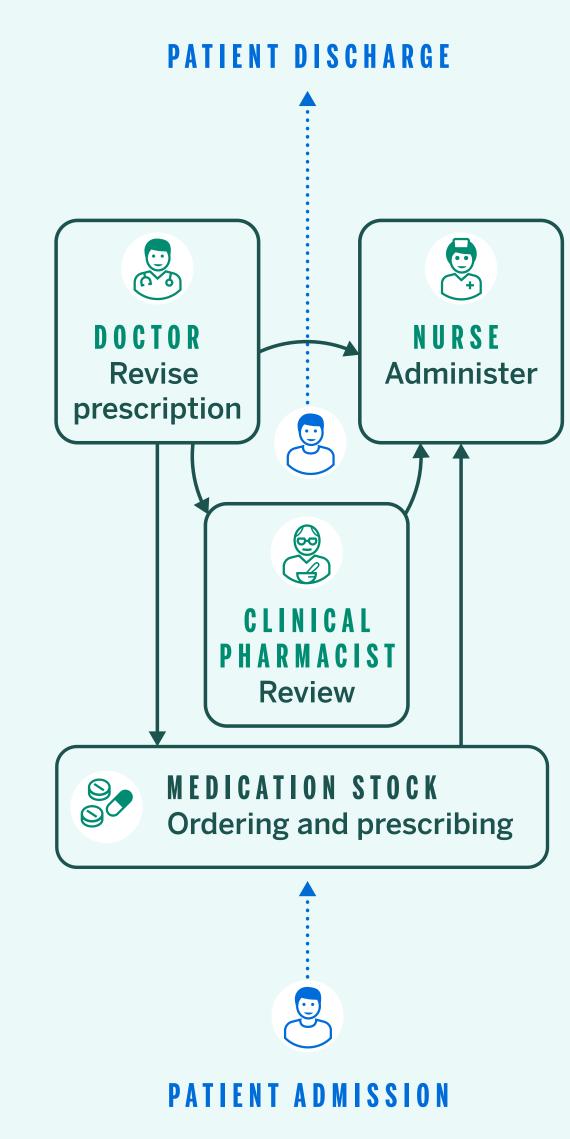
with reduced time

medication

errors and

application for

- closed-loop
 medication
 management
- CE-marked dose calculator
- BI reporting

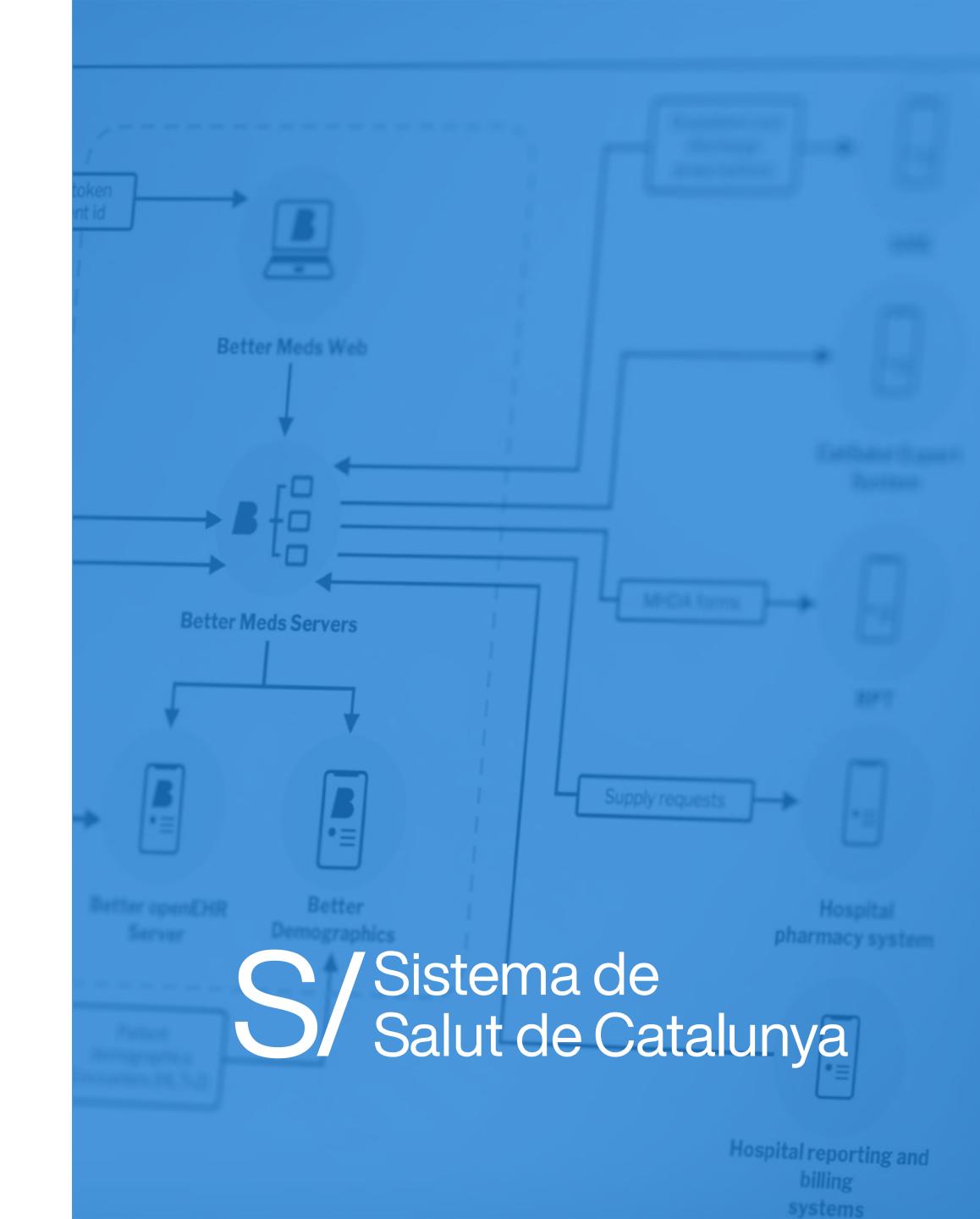




Better Meds to be implemented in more than 60 hospitals in Catalonia

Unified Therapeutic Plan

- Provide a unified prescription solution for complex pathologies across 60+ hospitals, ensuring **safer medication prescribing and administration**.
- Establish a **cohesive drug catalogue** with standardised medication sources, clinical decision support, dose calculations, validation, and billing procedures for improved efficiency.
- Enhance healthcare professionals' work experience and improve care quality through streamlined **medication reconciliation**, reducing prescription and administration time for both **outpatient** and inpatient drugs.
- Develop an **integrated therapeutic plan** for SISCAT users, promoting accessibility and **coordination among care providers** and enabling common reporting pathways for secondary data use.







Better Universal Care Planning Platform

Dynamic care planning

Predefined & custom new workflows, supports care planning and coordination at all levels of care including patient access.

Design system

Consists of style guides, application-building components, clinical forms and health data visualisations.

Better Portal

Includes User Management, User Dashboards, Patient Lists, Patient Dashboards, Patient Banners, Views, Actions and Auditing.

Better Low-Code Platform

Application Assembly Studio

User-friendly low-code environment to quickly create clinical forms and applications.

Design system

Consists of style guides, application-building components, clinical forms and health data visualisations.

Better Portal

Includes User Management, User Dashboards, Patient Lists, Patient Dashboards, Patient Banners, Views, Actions and Auditing.

Clinical Data Repository

Clinical Data Management

High-performance, vendor-neutral clinical data repository based on openEHR.

Demographics Data Management

High-performance, vendor-neutral demographics data repository based on FHIR.

Interoperability

Open API, IHE, ETL, Terminology Server, Events & Notifications, FHIR Connect, common FHIR APIs, ADT integrations.



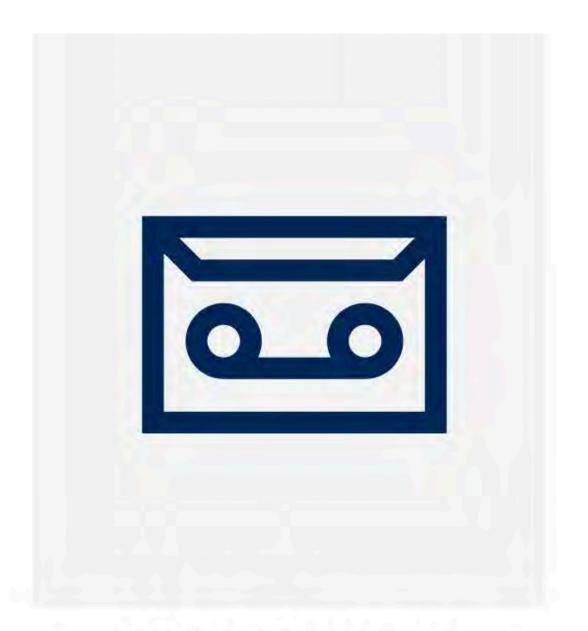
Low-Code Platform



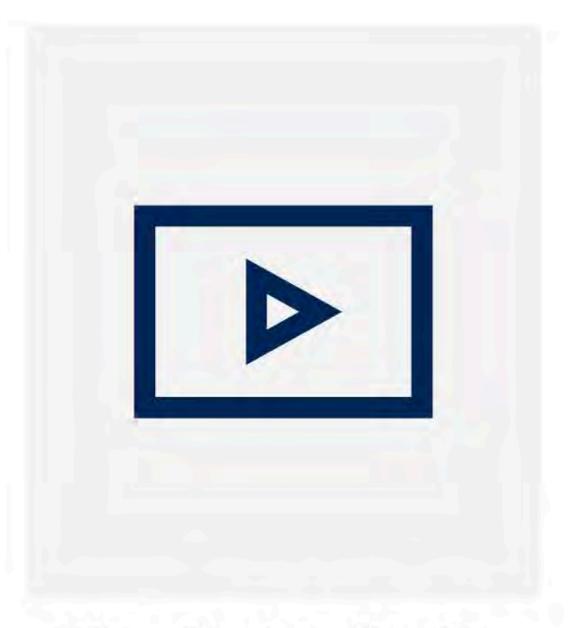
Consumer Experience: We All Have Been There



Vinyl: All or Nothing



Mix Tapes: For the Well-Equipped



Playlists: Active Personalization

Gartner



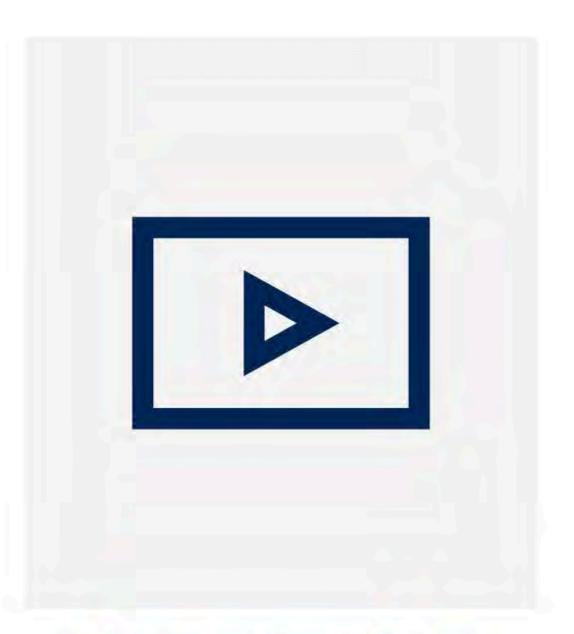
Consumer Experience: We All Have Been There



Monolithic Applications: All or Nothing



Application
Integration:
For the WellEquipped



Composable
Enterprise:
Active
Personalization

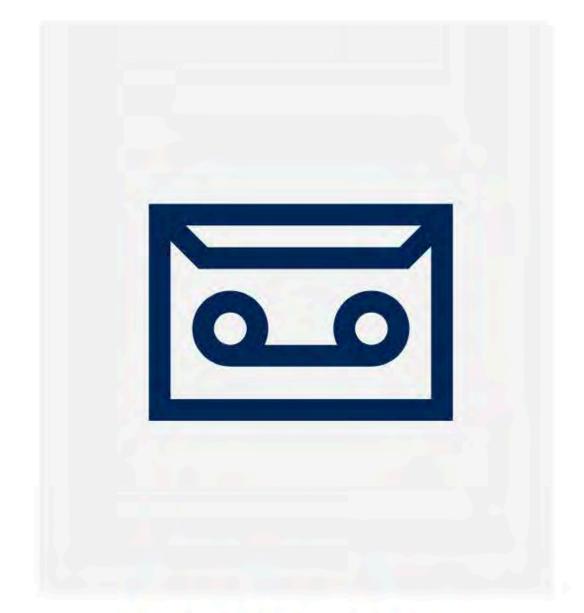
Gartner



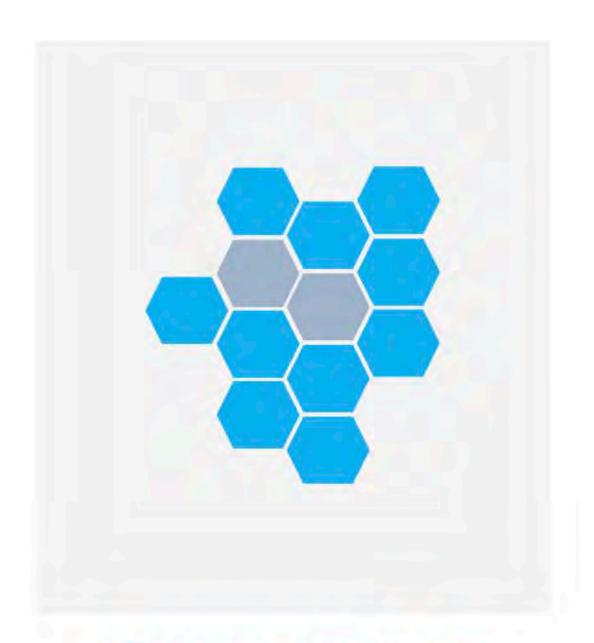
Consumer Experience: We All Have Been There



Monolithic Applications: All or Nothing



Application Integration: For the Well-Equipped



Composable
Enterprise:
Active
Personalization

Gartner









By 2023, 40% of professional workers will orchestrate their business application experiences and capabilities like they do their music streaming experience.

By 2023, the number of active citizen developers at large enterprises will be at least four times the number of professional developers.

By 2025, 70% of new applications developed by enterprises will use low-code/no-code technologies



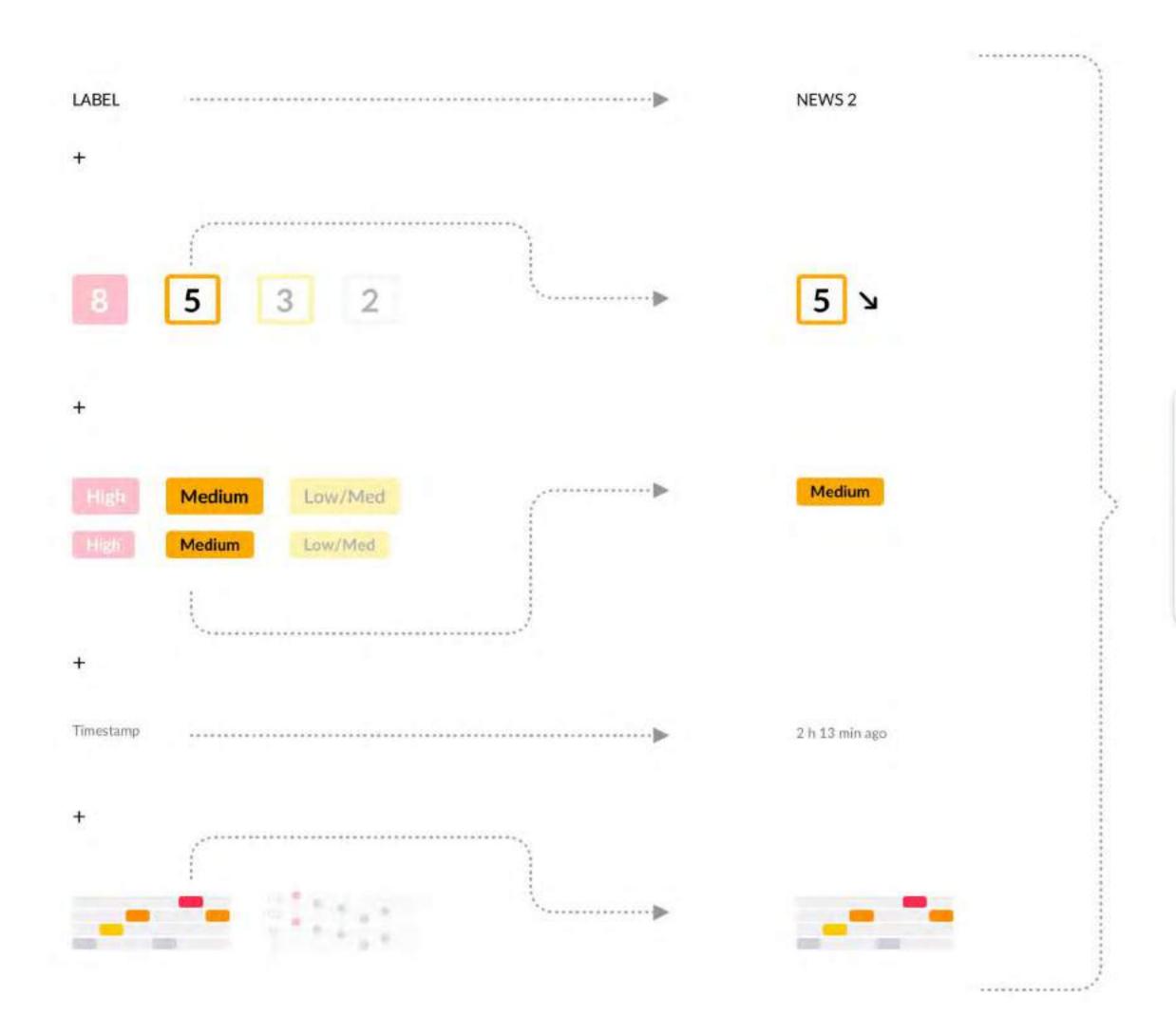


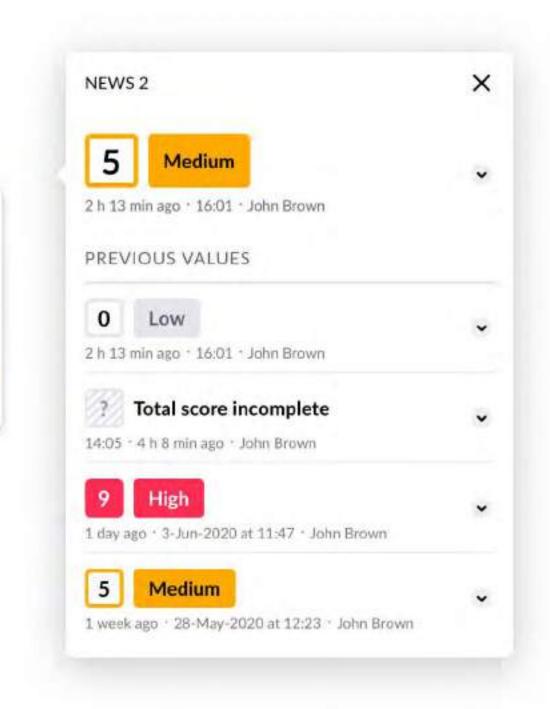
Better Design System

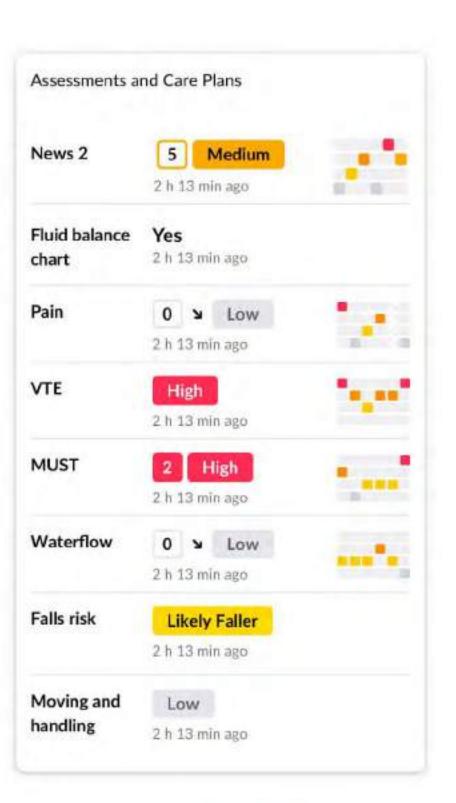
NEWS 2

Medium

2 h 13 min ago











Prognosis stage

Prognosis stage

A >

2 h 13 min ago

Prognosis stage

B⊅

Months

2 h 13 min ago

Prognosis stage

Weeks

2 h 13 min ago

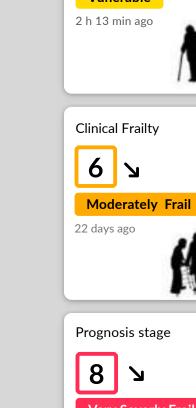
Prognosis stage

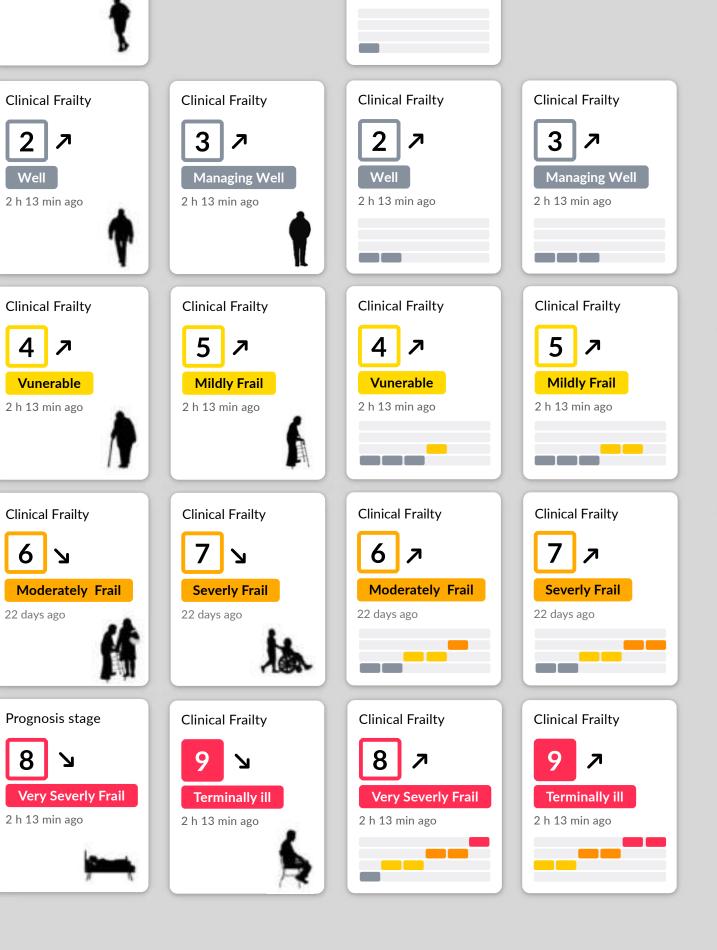
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2 h 13 min ago

Days

Clinical Frailty scale Clinical Frailty 1 7 2 h 13 min ago Clinical Frailty 2 7 2 h 13 min ago **Clinical Frailty**



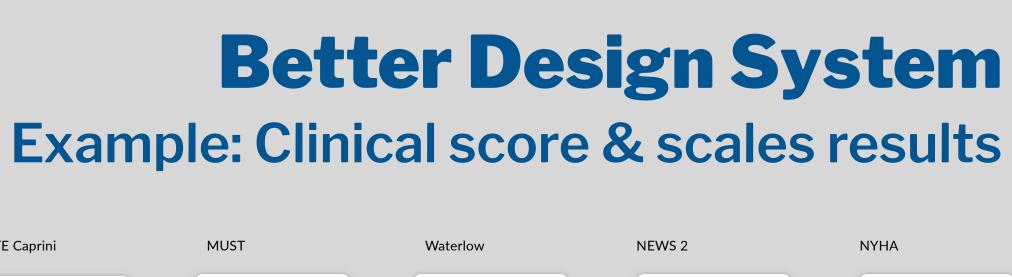


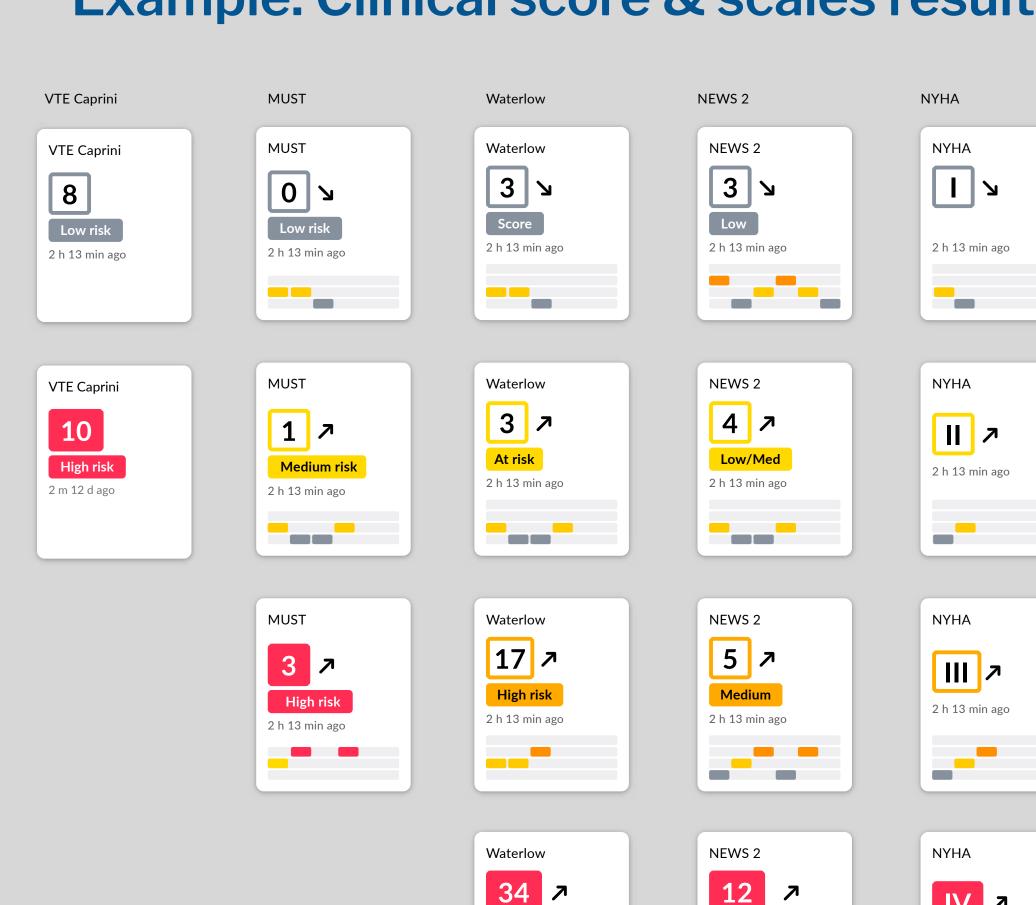
Clinical Frailty scale

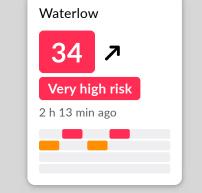
Clinical Frailty

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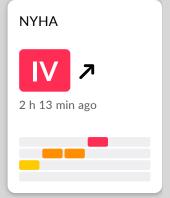
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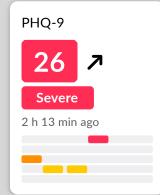












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PHQ-9

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2 h 13 min ago

PHQ-9

9 🗸

2 h 13 min ago

Mild

PHQ-9

12 7

Moderate

2 h 13 min ago

PHQ-9

17 7

2 h 13 min ago

Moderately severe

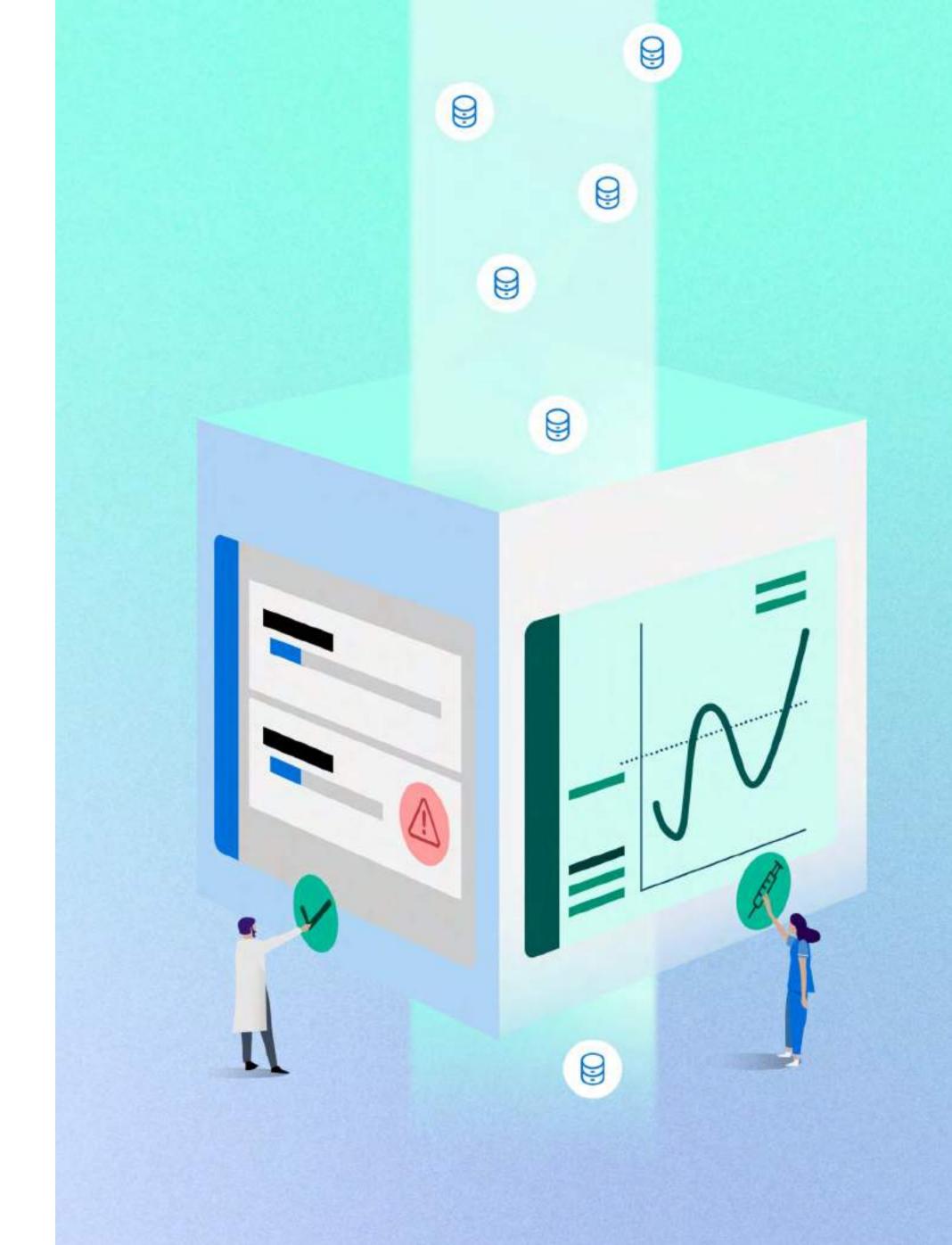


Better Studio

Better low-code Studio helps health and care teams accelerate digital transformation by converting problems and ideas into production applications faster and more cost-effectively than traditional development approaches.

Benefits

- Faster time to value and improved responsiveness to changing needs
- Better collaboration between development teams and health and care teams
- Higher adoption through solutions that address user needs





The Christie NHS Foundation Trust

MANCHESTER, UK

Better Low-Code Platform as a foundation for:

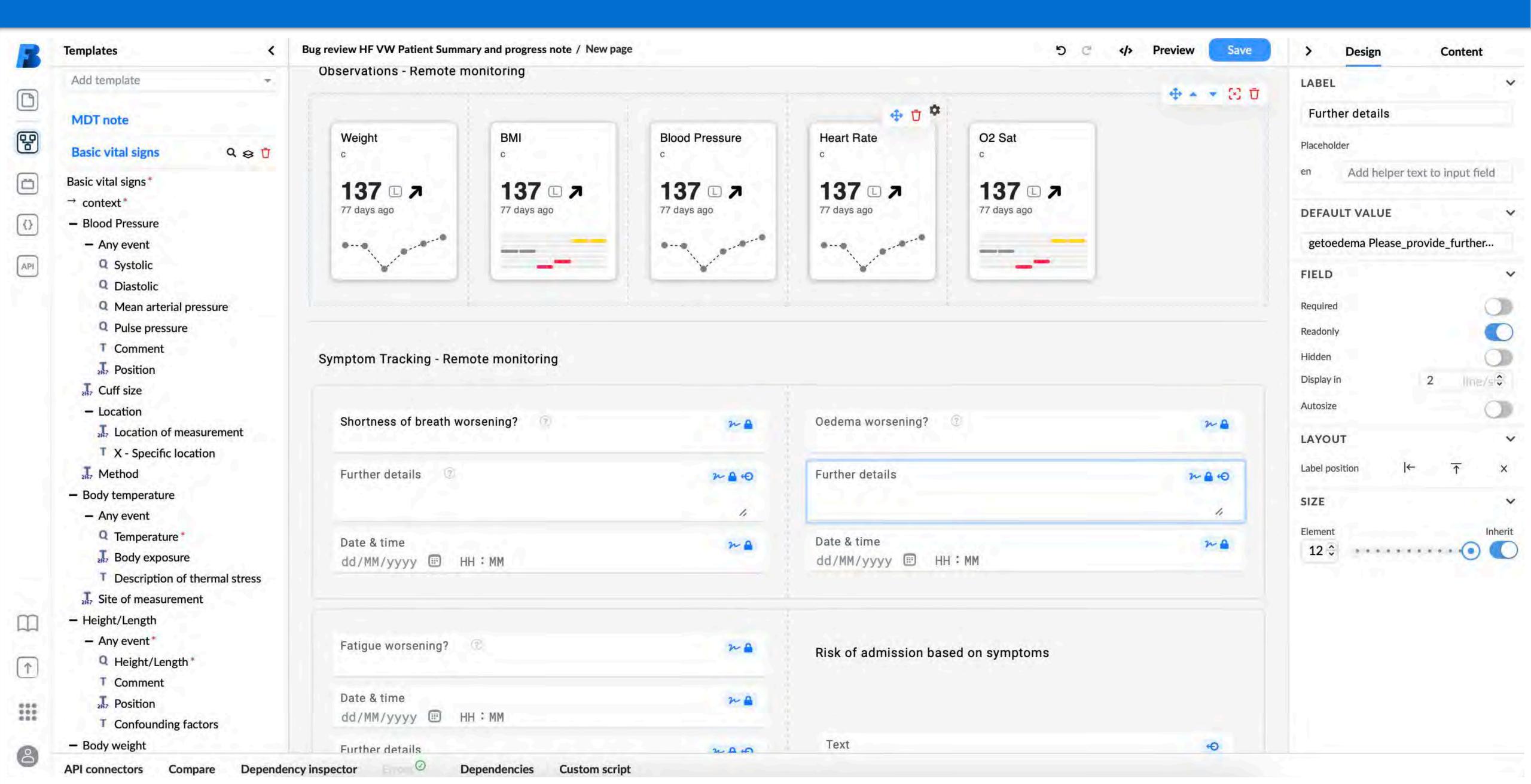
- Clinical forms
- PROMs
- Core EHR
- Research





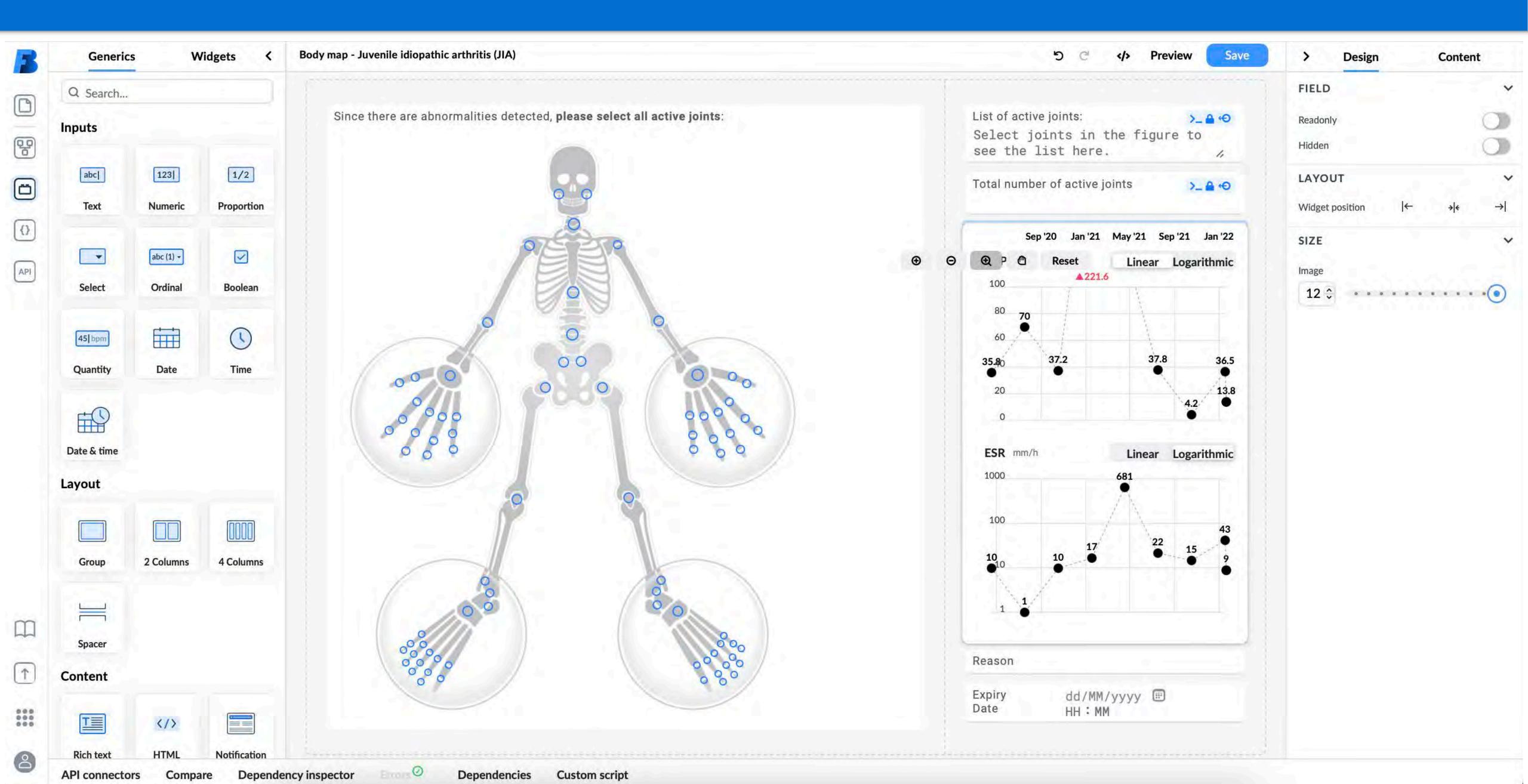


Better Low-Code Studio





Better Low-Code Studio





Universal Care Planning Platform



Diagnostic journey of a patient with heart failure

Patient: Golf Stone

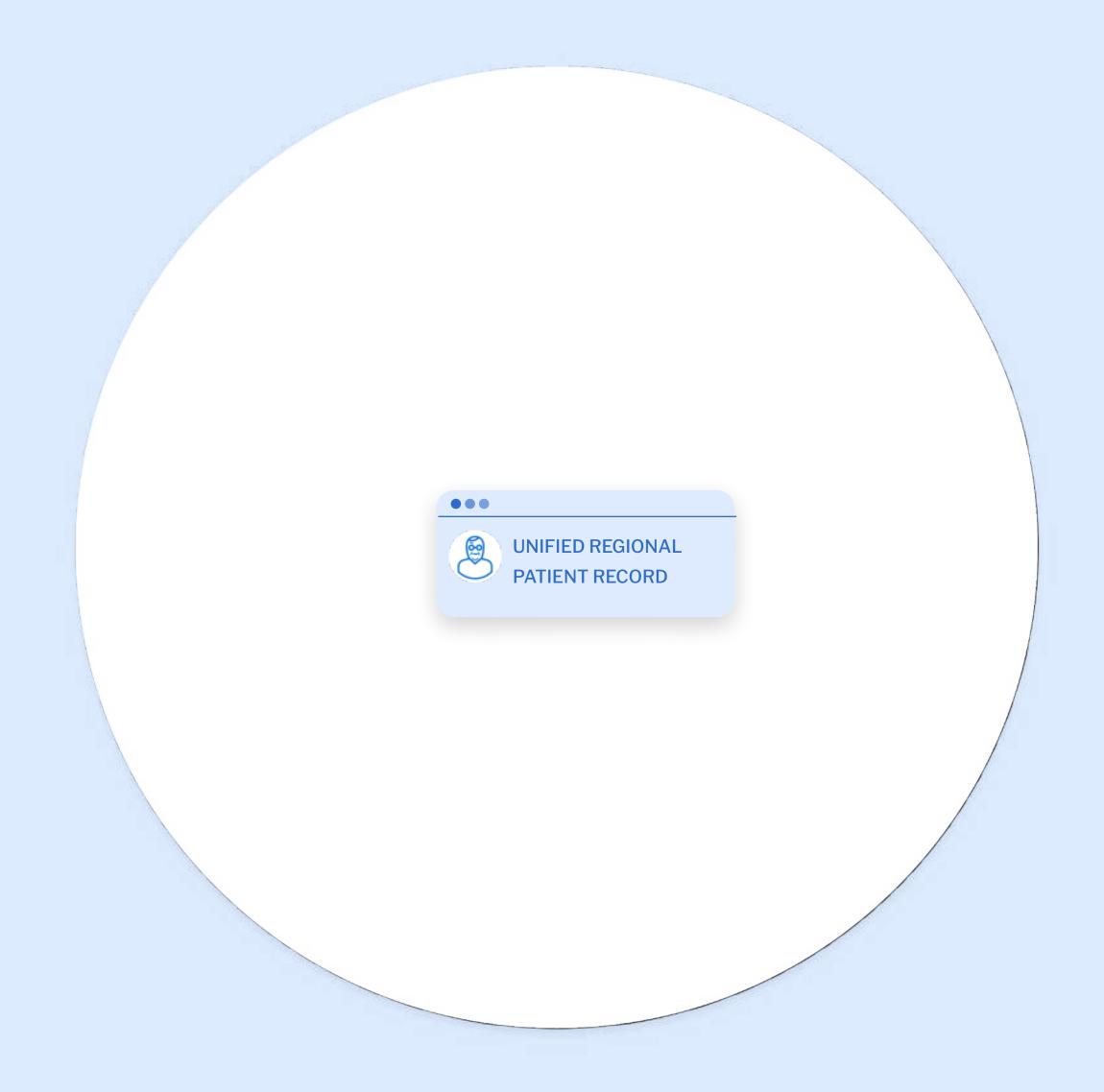


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- Gender: male
- Past medical history: healthy, no medications, smoker
- Allergy: Penicillin

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GP: Dr. Morales

Cardiologist: Dr. Silvermann





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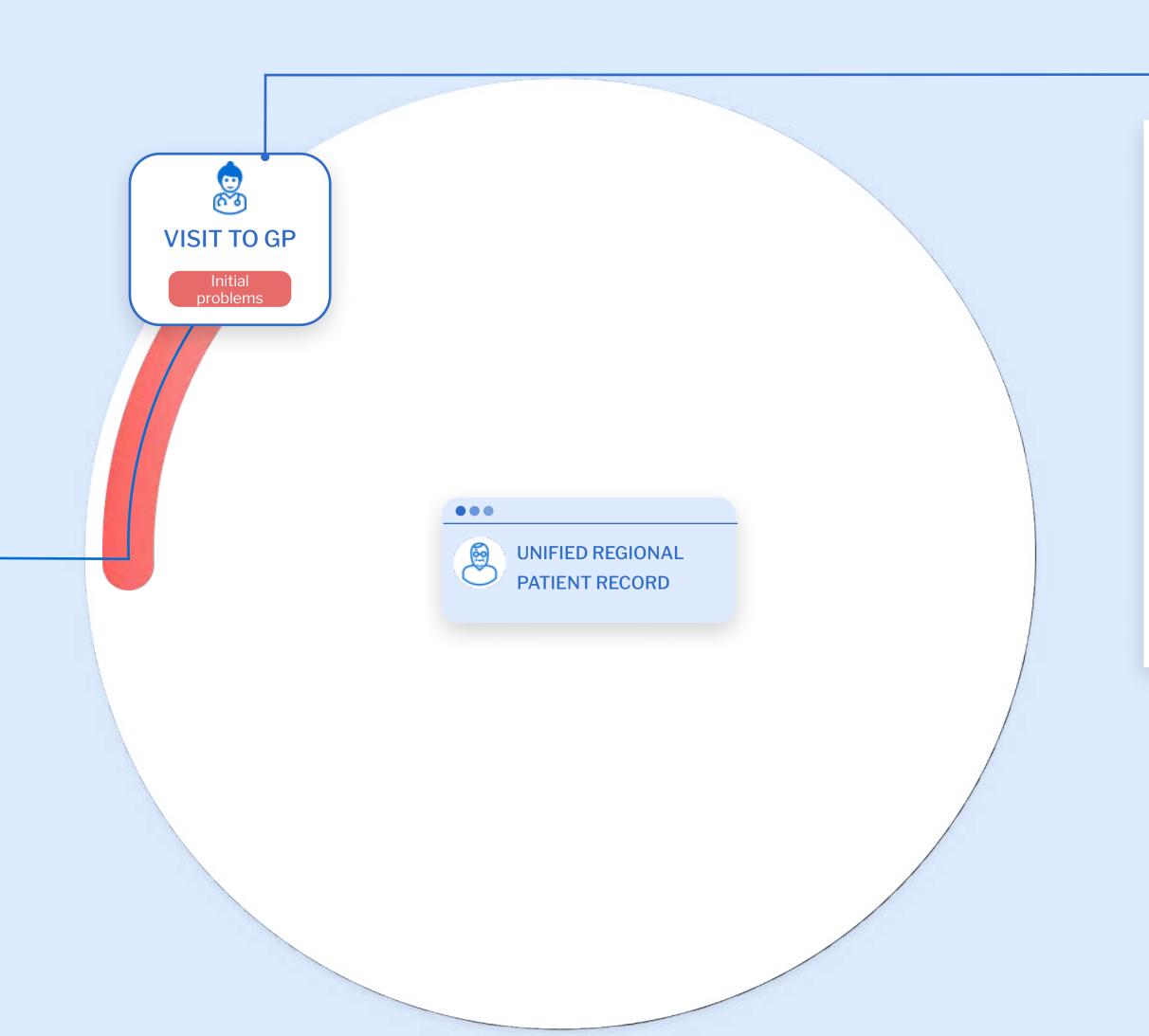
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- Current complaint
- Clinical status:
- blood pressure 142/85 mmHg
- · heart rate 98/min
- oxygen saturation (SpO2 95%)
- distended jugular veins,
- basal end-inspiratory cracles
- mid-systlic murmur
- pitting edema of lower limbs
- ECG: sinus rhythm, 98/min, QRS 168 ms (LBBB)
- -Chest x-ray: shows pulmonary congestion with enlarged heart silhuette
- Blood biochemical analysis
- Previous & new Therapy
- Referral: cardiology outpatient clinic



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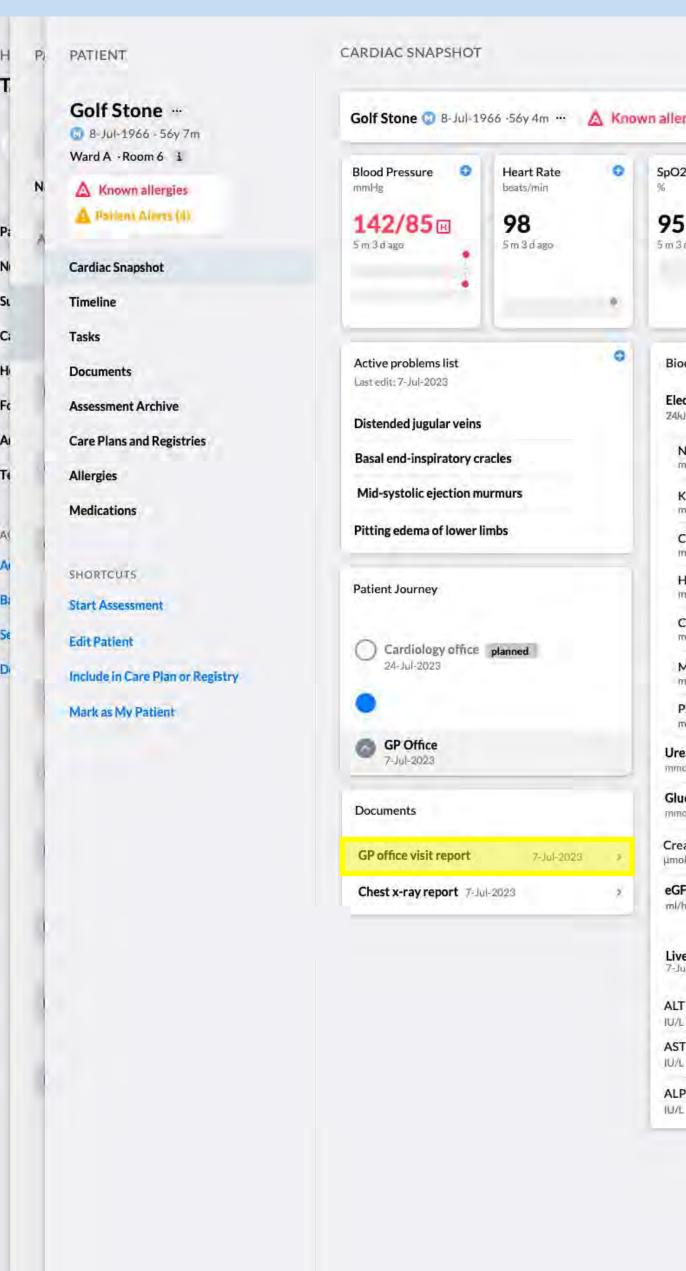
Patient: Golf Stone

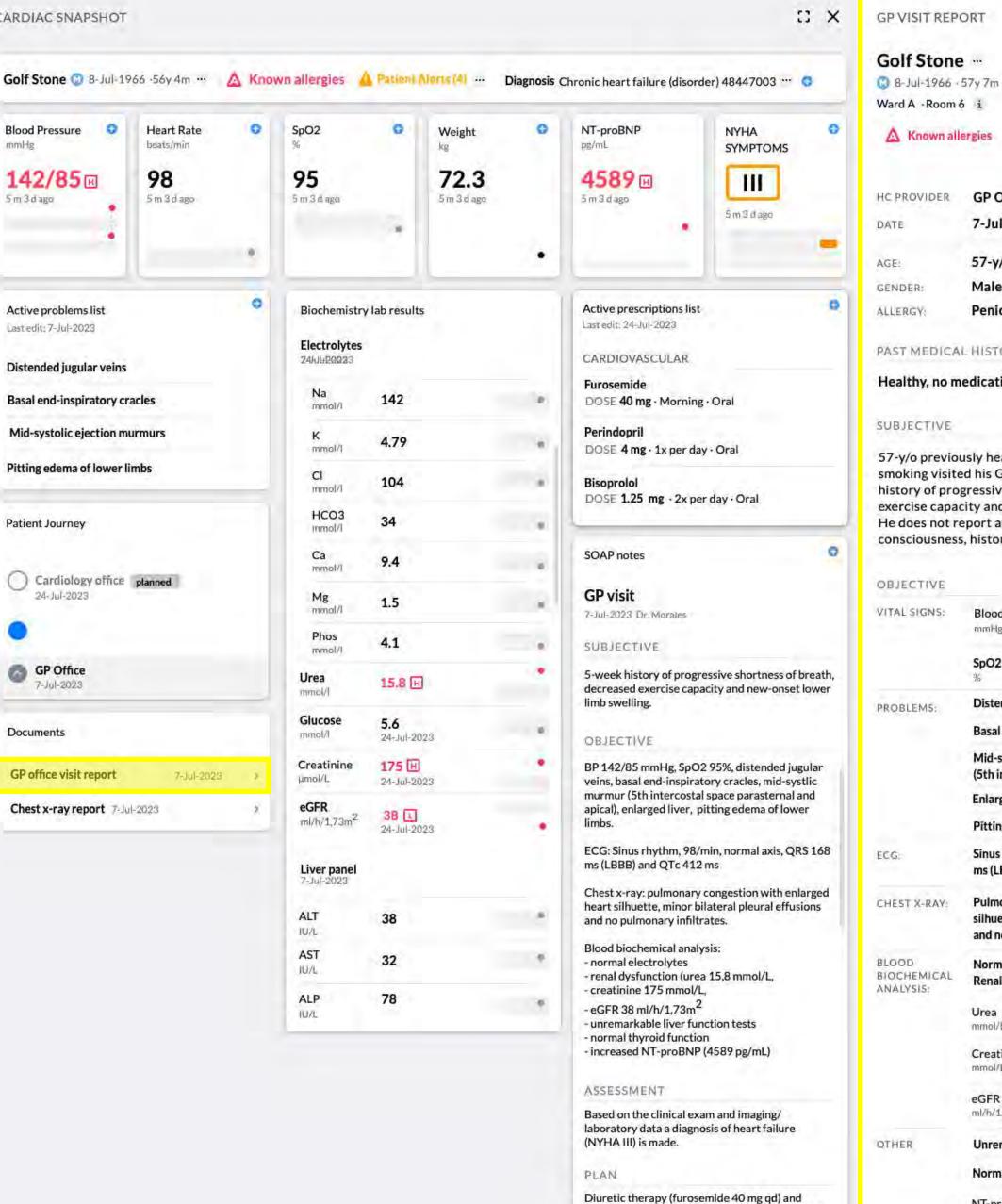
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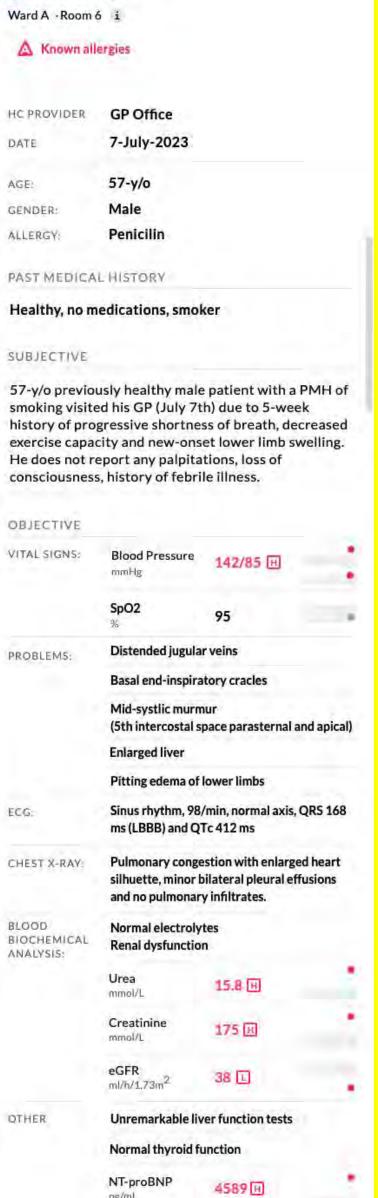
Cardiologist: Dr. Silv





baseline cardioprotective therapy (perindopril 4

mg qd and bisoprolol 1,25 mg q12) are



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Therapy

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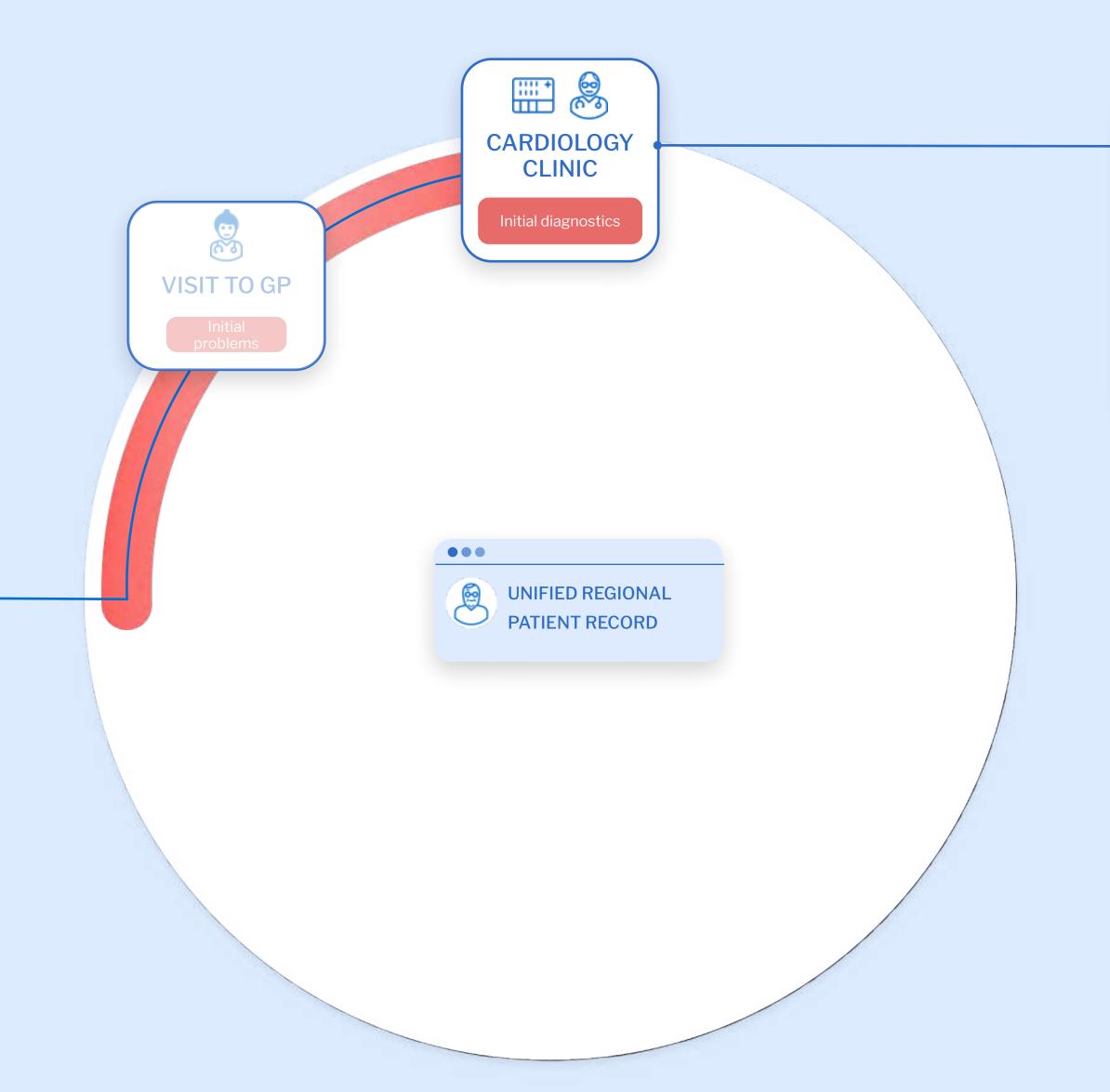
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- Patient history & GP Summary

- ECG: sinus rhythm, 74/min,

- Blood biochemistry analysis:

Scehdule Echocardiography

Schedule a Follow-up visit

- Review & Revise Therapy:

- Current status

QRS 162 ms

- Create a Plan:



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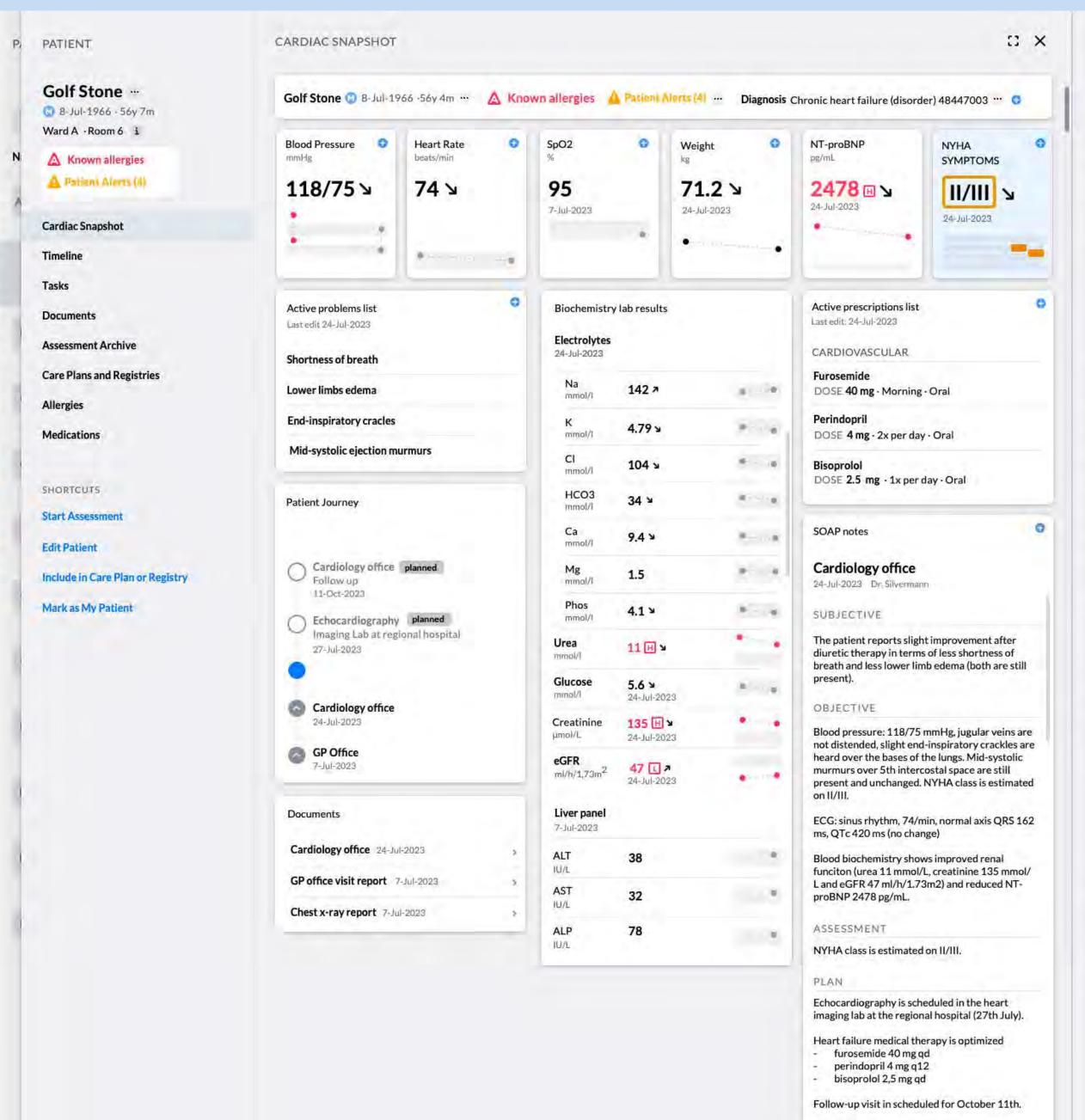
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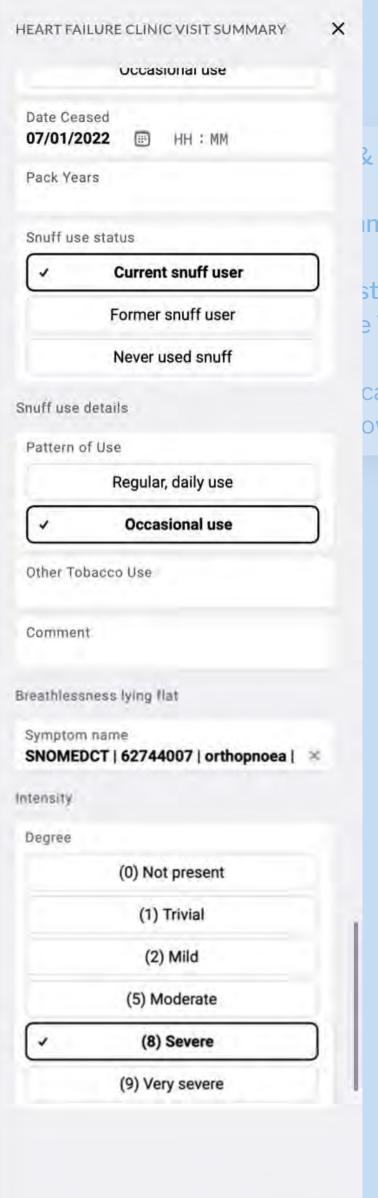
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Save

& GP Summary

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cardiography ow-up visit



Diagnostic journey of a patient with heart failure

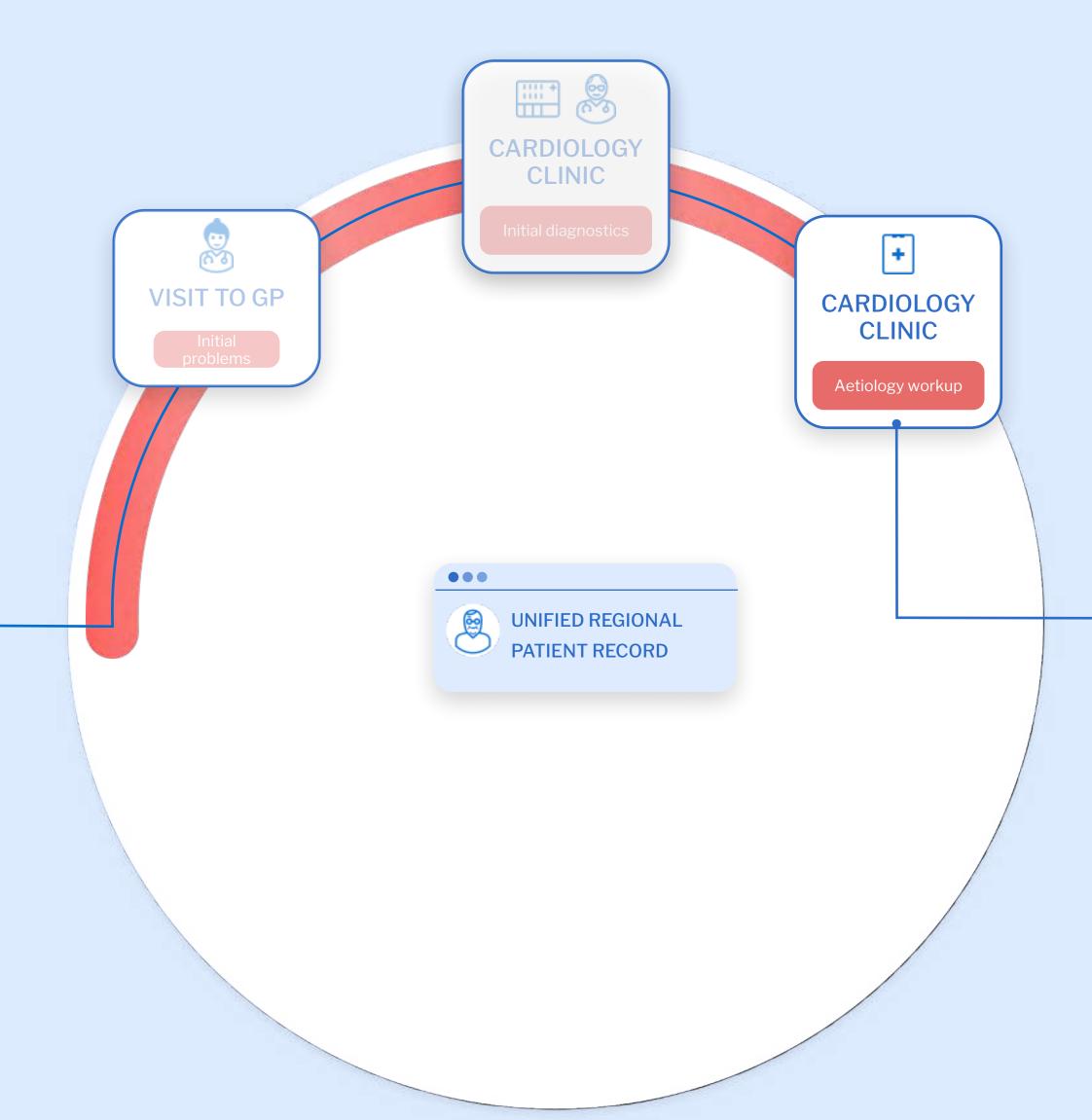
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Cardiologist: Dr. Silvermann



- Review patient history
- Confirmation of heart failure diagnosis
- Define the phenotype
- Review & Revise the Therapy
- Plan: etiological work-up (coronary angiography)

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GP: Dr. Morales

Cardiologist: Dr. S

Golf Stone 3 8-Jul-1966 - 56y 7m i Ward A · Room 6 i ▲ Known allergies A Flags (4)

VIEWS

Cardiac snapshot

Timeline

Tasks

Documents

Assessment Archive

Allergies

Medications

VIEWS

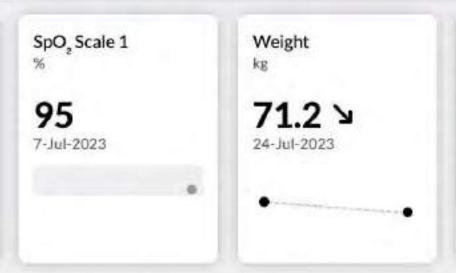
Start assessment

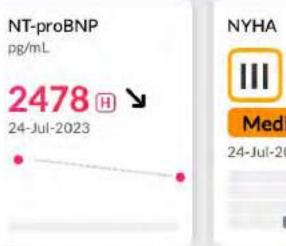
Edit patient

Include in Care Plan or Registry

Mark as My Patient

Blood preassure Heart Rate mmHg 118/75 ≥ 74 🗸







Active problems list Last edit 24-Jul-2023

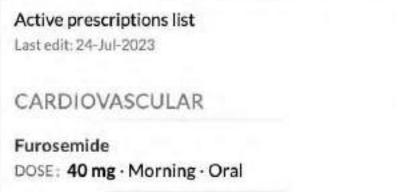
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SUMMARY

Congestive cardiomyopathy; Phenotype: Nonischemic dilated cardiomyopathy

Decreased renal function





Perindopril DOSE: 4 mg · 2x per day · Oral

Bisoprolol

Golf Stone 3 8-Jul-1966 - 56y 7m - NHS 234 456 789 1 Known allergies A Patient alerts (4)

DOSE: 2.5 mg · 1x per day · Oral

Spironolactone

DOSE: 25 mg · 1x per day · Oral



SOAP notes

ICU in Hospital

2-Sep-2023 · Dr. Mckiewitz

SUBJECTIVE

The patient is initially addmited to the step-down ICU for levosimendan infusion, followed by continuous furosemid infusion.

OBJECTIVE

With this a negative fluid balance of 15 liters is achieved and the patient got recompensated.

Cardiac MRI (August 31st) and genetic testing (September 2nd) were performed (as planned by the treating cardiologist) during hospital addmisison.

Cardiology office

15-Sep-2023 · Dr. Morales

OBJECTIVE

Blood pressure 125/74 mmHg. ECG: Sinus: 68/min normal axis, QRS 168 ms (LBBB) and QTc 417 ms.

Laboratory:

creatinine 108 mmol/L (improved)







Diagnostic journey of a patient with heart failure

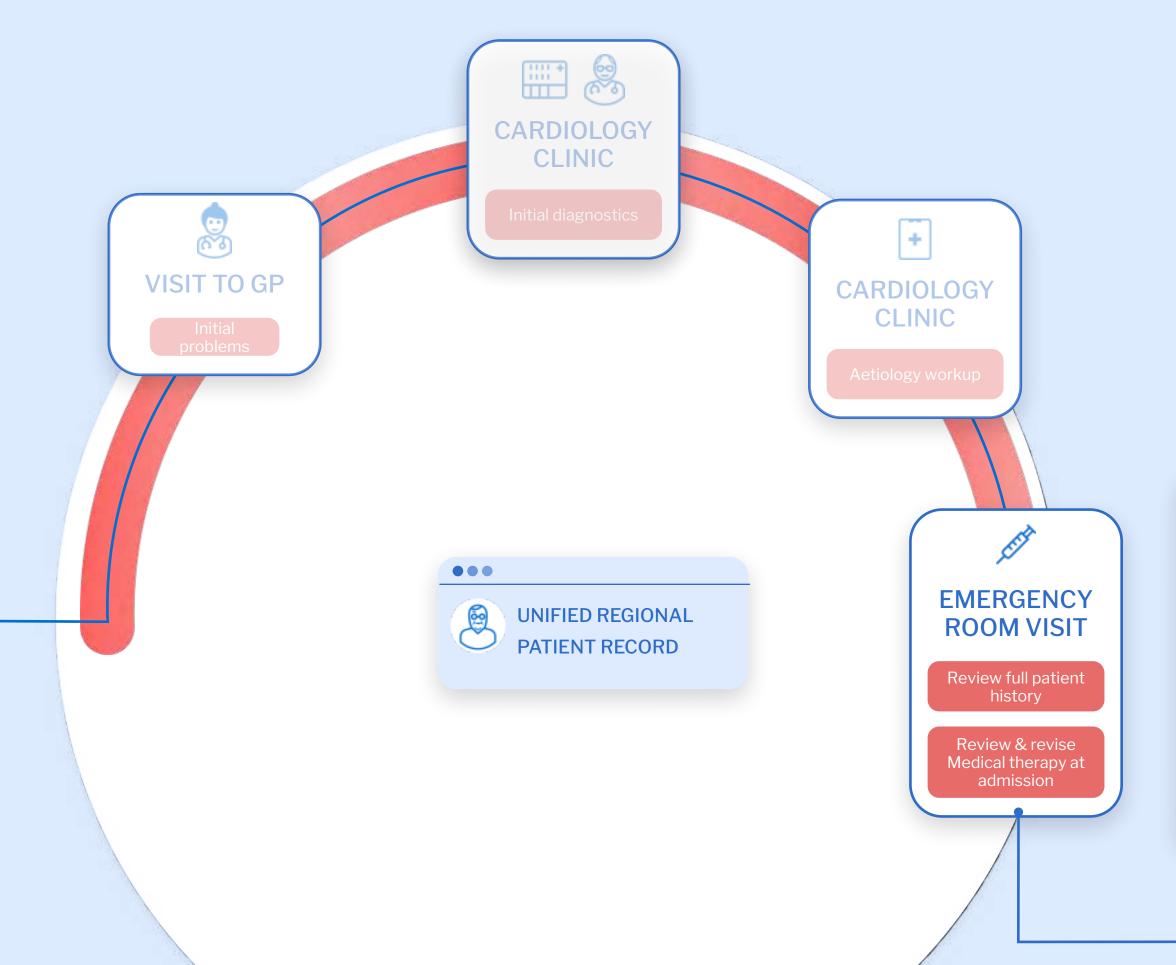
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Cardiologist: Dr. Silvermann



Add patient status

- Clinical status

- Chest x-ray

- ECG

- heart failure worsening

- Cause for deterioration:

- 5 days of progressive dyspnea and

worsening of lower limb edema

- blood pressure 103/65 mmHg

- Blood biochemical analysis



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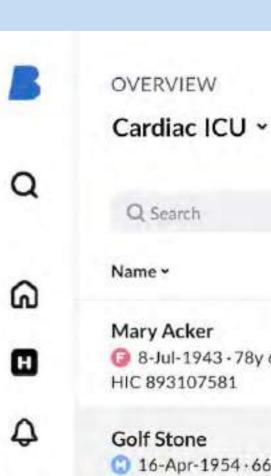
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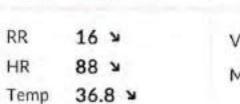
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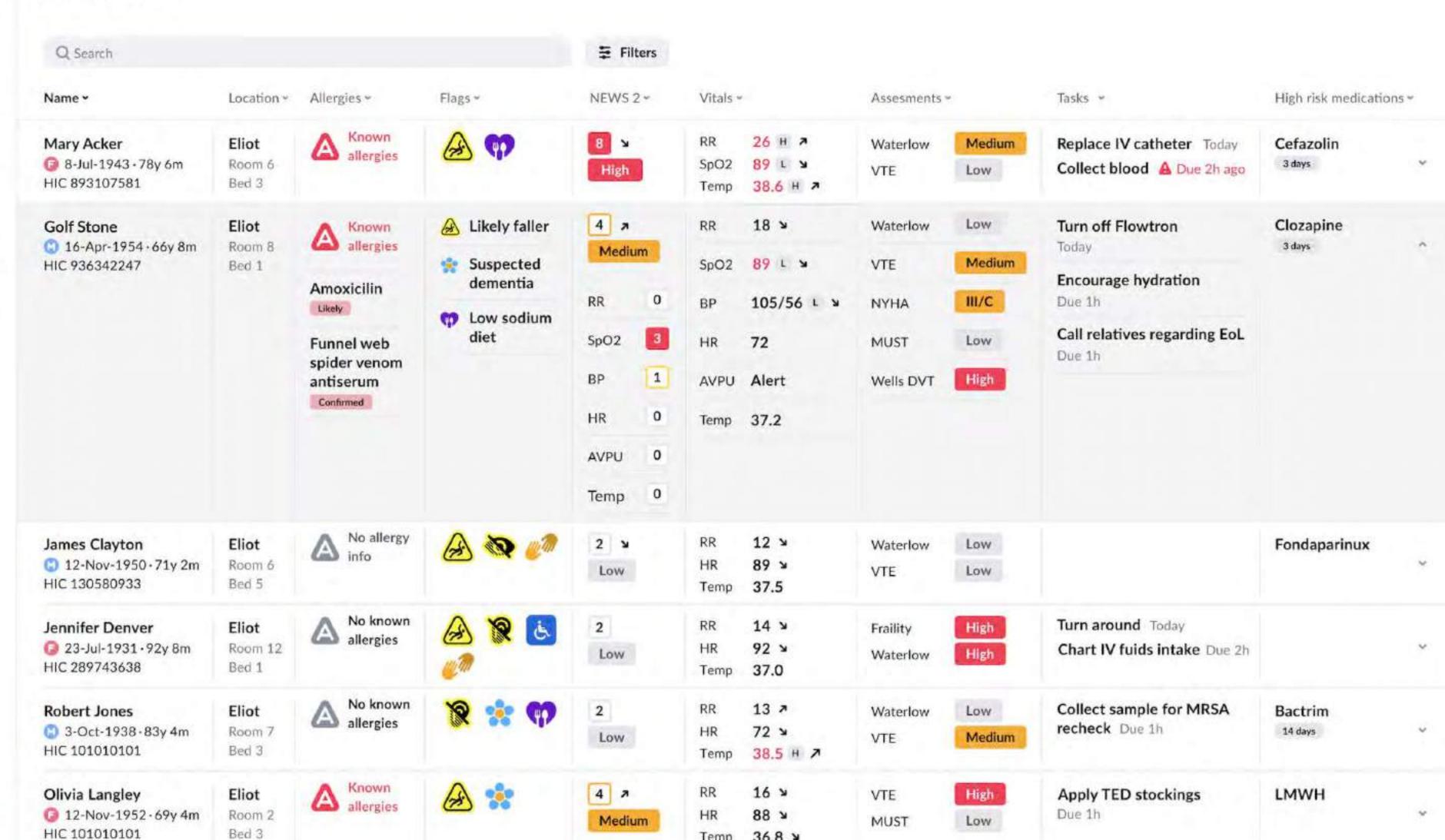
Bed 3



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Diagnostic journey of a patient with heart failure

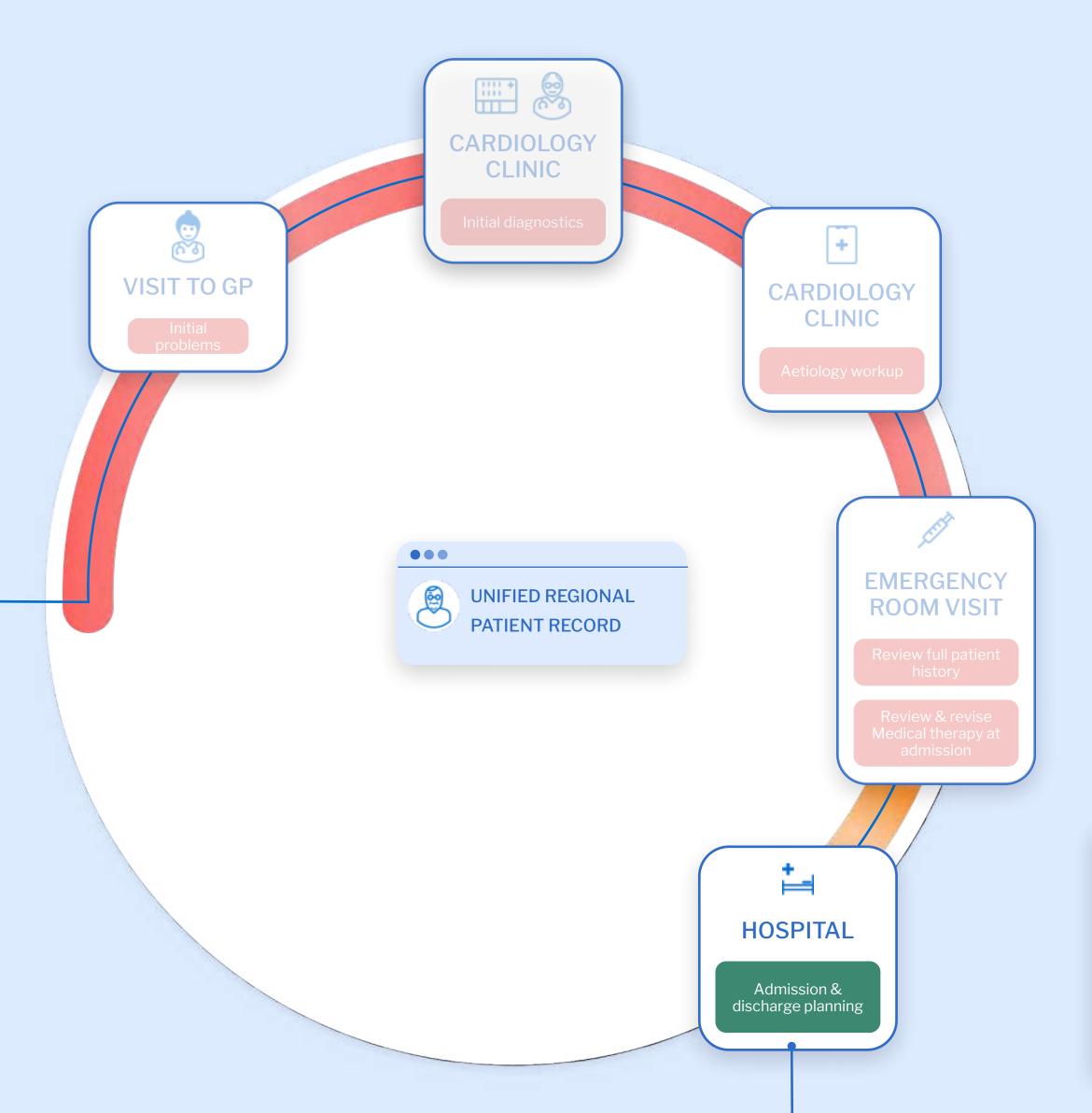
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At hospital discharge:

- main diagnosis was revised to noncompaction cardiomyopathy
- medical therapy up-titration plan was made
- earlier cardiology outpatient visit is scheduled



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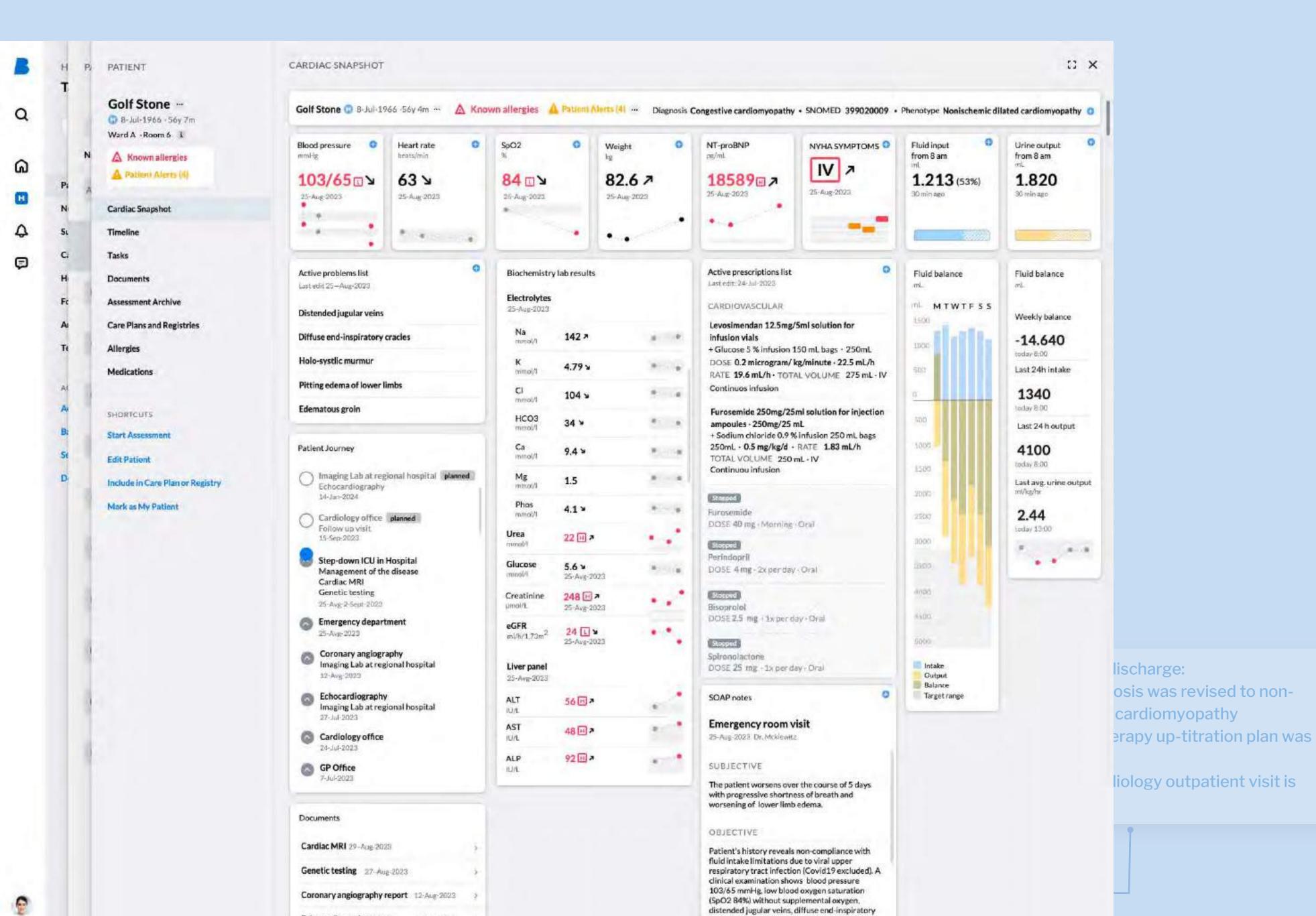
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cracies, holo-systlic murmur (5th intercostal

Echocardiography report 27-Jul-2023



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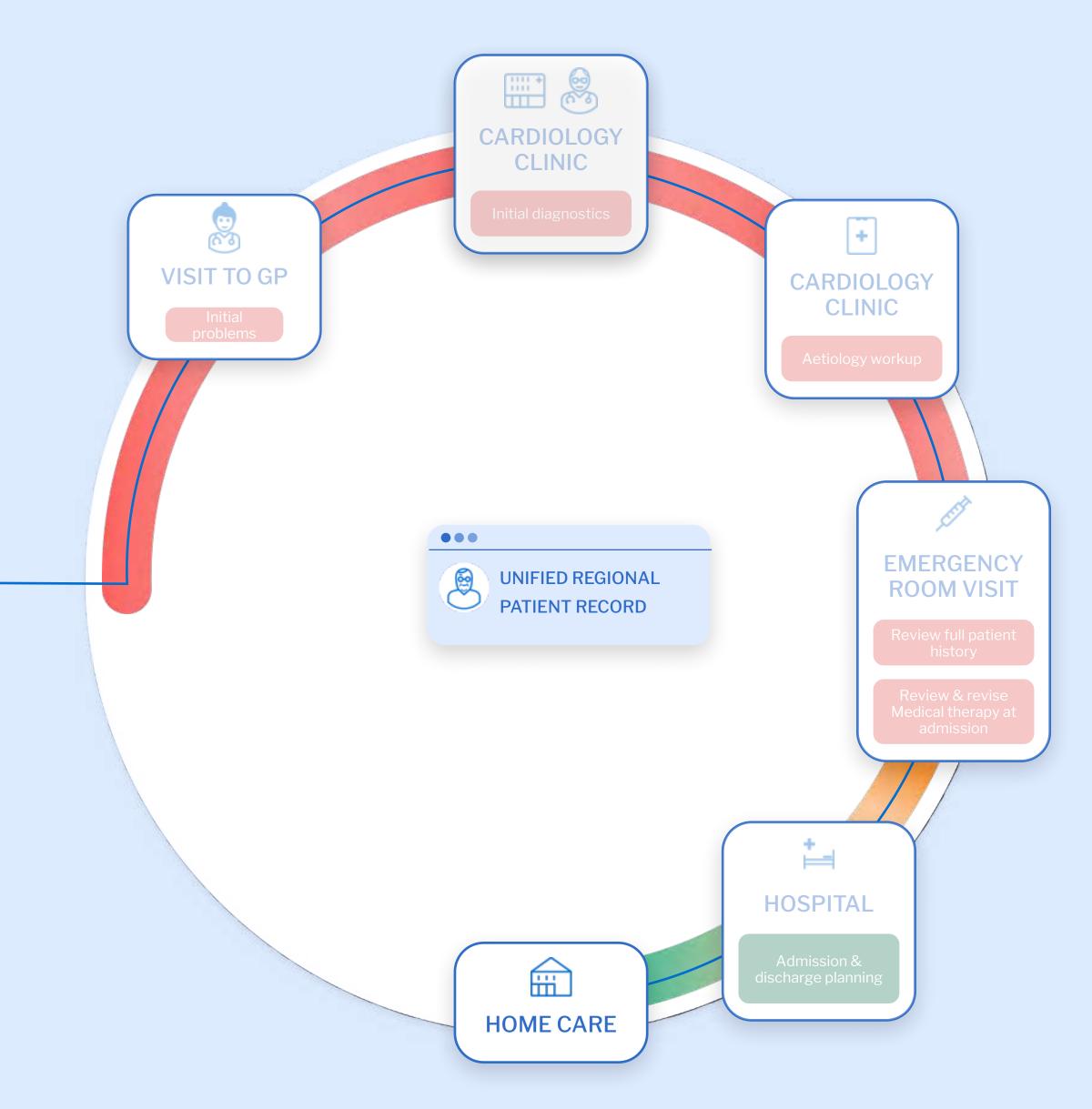
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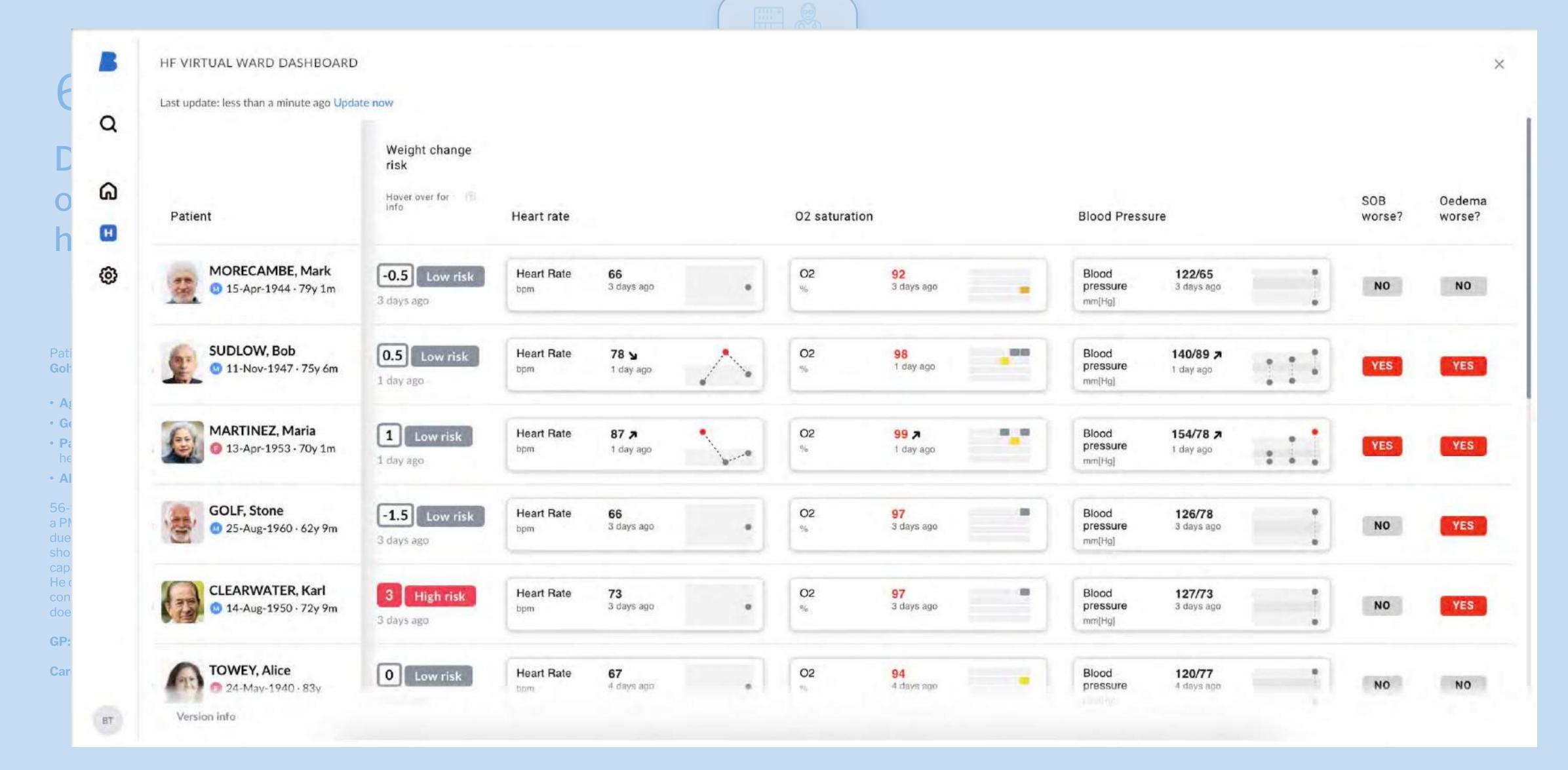
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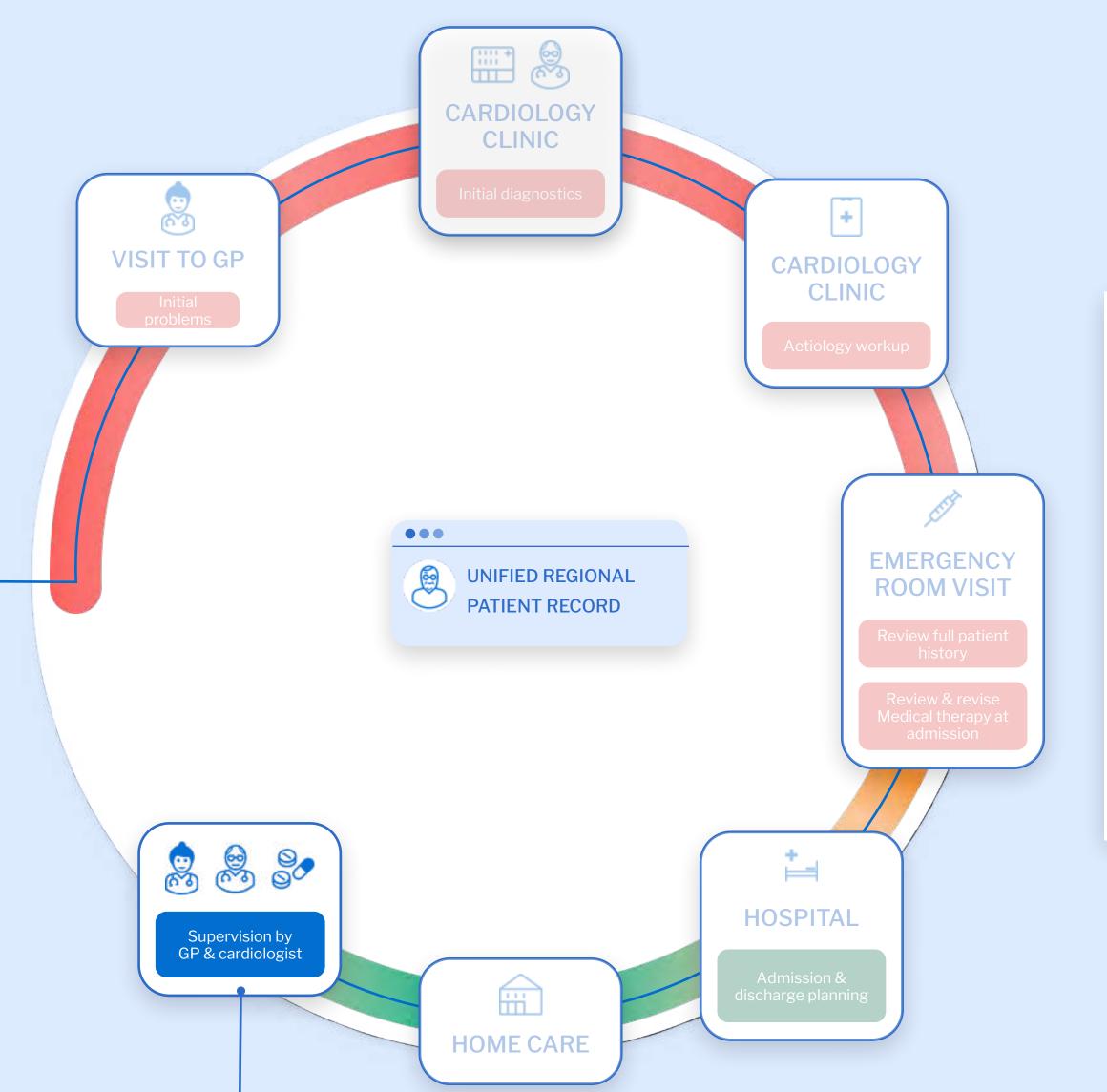
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- Review Current status
- slight improvement
- heart rate
- mild pulmonary congestion
- Mid-systolic murmurs over 5th intercostal space are still present and unchanged
- NYHA class II/III.
- ECG
- Blood biochemistry analysis
- Review & revise Therapy
- Define the Plan:
- Medication titration and decision on CRT-D
- Echocardiography follow-up
- Schedule Follow-up visit



Diagnostic journey of a patient with heart failure

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- **Age:** 56-y/o
- Gender: male
- Past medical history: healthy, no medications, smoker
- Allergy: Penicillin

56-y/o previously healthy male patient with a PMH of smoking visited his GP (July 7th) due to 5-week history of progressive shortness of breath, decreased exercise capacity and newonset lower limb swelling. He does not report any palpitations, loss of consciousness, or history of febrile illness. He does not take any regular medical therapy.

GP: Dr. Morales

Cardiologist: Dr. Silvermann



- Current complaint
- blood pressure 142/85 mmHg
- heart rate 98/min
- oxygen saturation (SpO2 95%)
- distended jugular veins,
- basal end-inspiratory cracles
- mid-systlic murmur pitting edema of lower limbs
- ECG: sinus rhythm, 98/min, QRS 168 ms (LBBB)
- -Chest x-ray: shows pulmonary congestion with enlarged heart silhuette
- Blood biochemical analysis
- Previous & new Therapy
- Referral: cardiology outpatient clinic



- Patient history & GP Summary
- Current status
- ECG: sinus rhythm, 74/min, **QRS 162 ms**
- Blood biochemistry analysis:
- Review & Revise Therapy:
- Create a Plan:
- Scehdule Echocardiography
- Schedule a Follow-up visit



- Review patient history
- Confirmation of heart failure diagnosis
- Define the phenotype
- Review & Revise the Therapy
- Plan: etiological work-up (coronary angiography)



Add patient status - heart failure worsening

- 5 days of progressive dyspnea and worsening of lower limb edema
- Cause for deterioration:
- blood pressure 103/65 mmHg
- Clinical status
- ECG
- Chest x-ray
- Blood biochemical analysis



At hospital discharge:

- to non-compaction cardiomyopathy
- titration plan was made



Review full patient history

Review & revise Medical therapy at

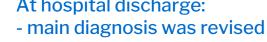


slight improvement

- Review Current status

- heart rate
- mild pulmonary congestion
- Mid-systolic murmurs over 5th intercostal space are still present and unchanged

- NYHA class II/III.
- Blood biochemistry analysis
- Review & revise Therapy
- Define the Plan:
- Medication titration and decision on CRT-D
- Echocardiography follow-up
- Schedule Follow-up visit



- medical therapy up-
- earlier cardiology outpatient visit is scheduled







OneLondon Universal Care Plan

LONDON, UK

Better Universal Care Planning Platform deployed to coordinate care for London's 10 million citizens across 5 Integrated Care Systems







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