



# Flowcura

An offline-first inventory management platform to keep track of military medical logistics

TEAM: Raihan Amir Perdana, Sri Harshini Kothamasu, Venkata Amruth Gatta, Kunal Balhara



JOHNS HOPKINS  
WHITING SCHOOL  
of ENGINEERING

## Introduction

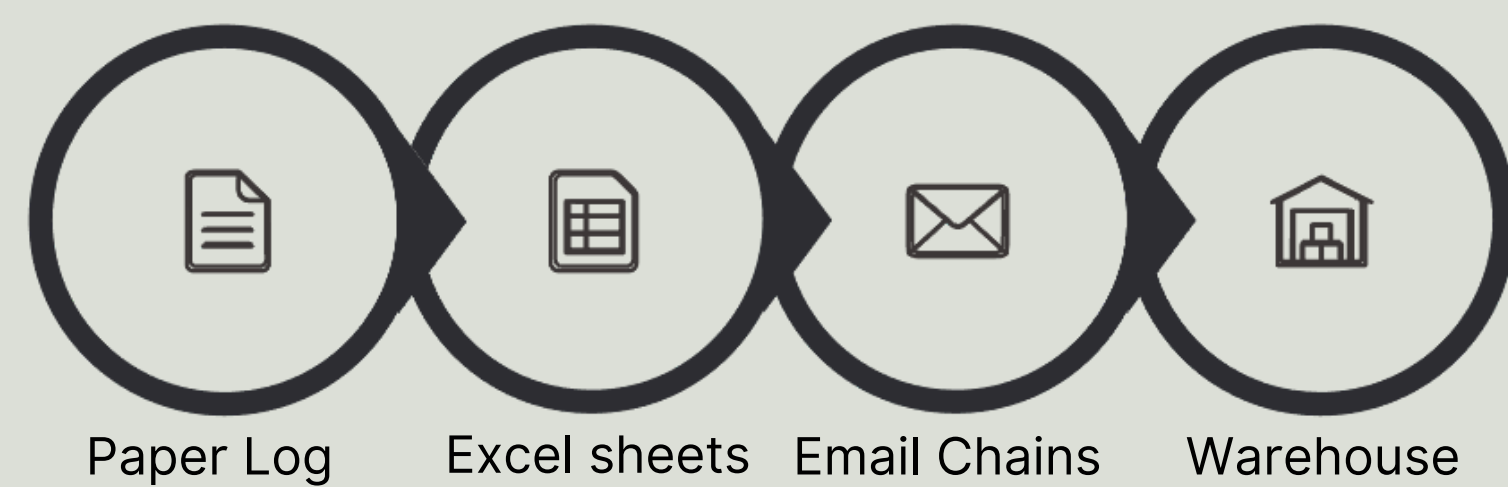
### The Problem:

**80%** of Military healthcare logistics teams lack real-time visibility.

**~25%** preventable deaths happened because of delays in care and missing medical supplies

### Today's System is Fragmented:

Military medics in disconnected environments rely on paper logs, Excel, and email, systems that introduce deadly delays.



### Causing:

Data inconsistency, delayed communication, no real-time visibility, no predictive capability

**Delays in supply = delays in care**

## Opportunity

How might we design a frontline medical logistics system that functions reliably on the edge with limited or intermittent connectivity to keep track of supplies in real-time?

## Design Requirements

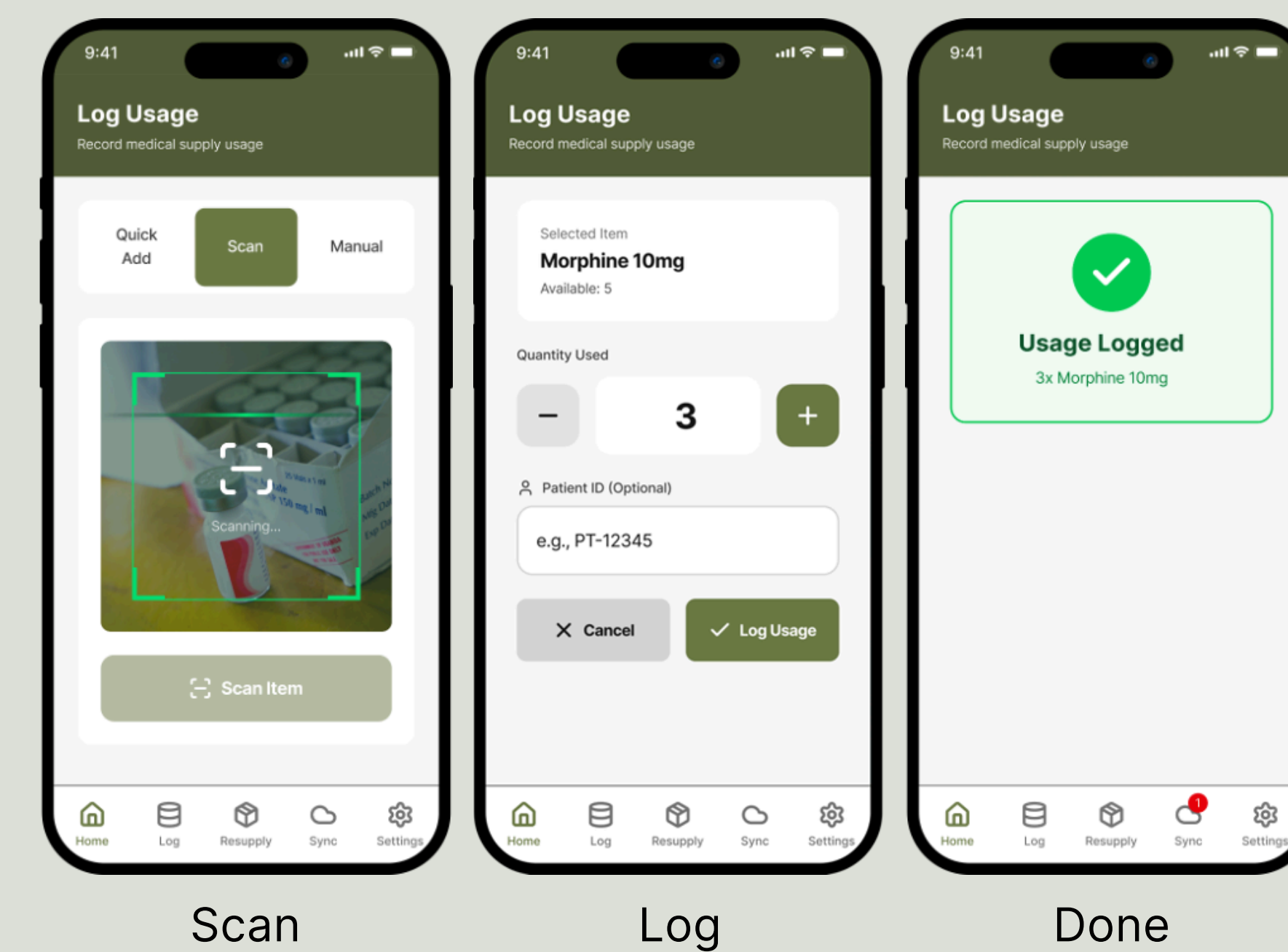
A feasible solution is developing an inventory management platform that combines:

- **Offline-First:** works with zero connectivity and auto-syncs
- **Predictive Intelligence:** AI-driven demand forecasting flags shortages before they happen
- **Field-Validated UX:** 3-tap logging, minimal friction under pressure

## Solutions

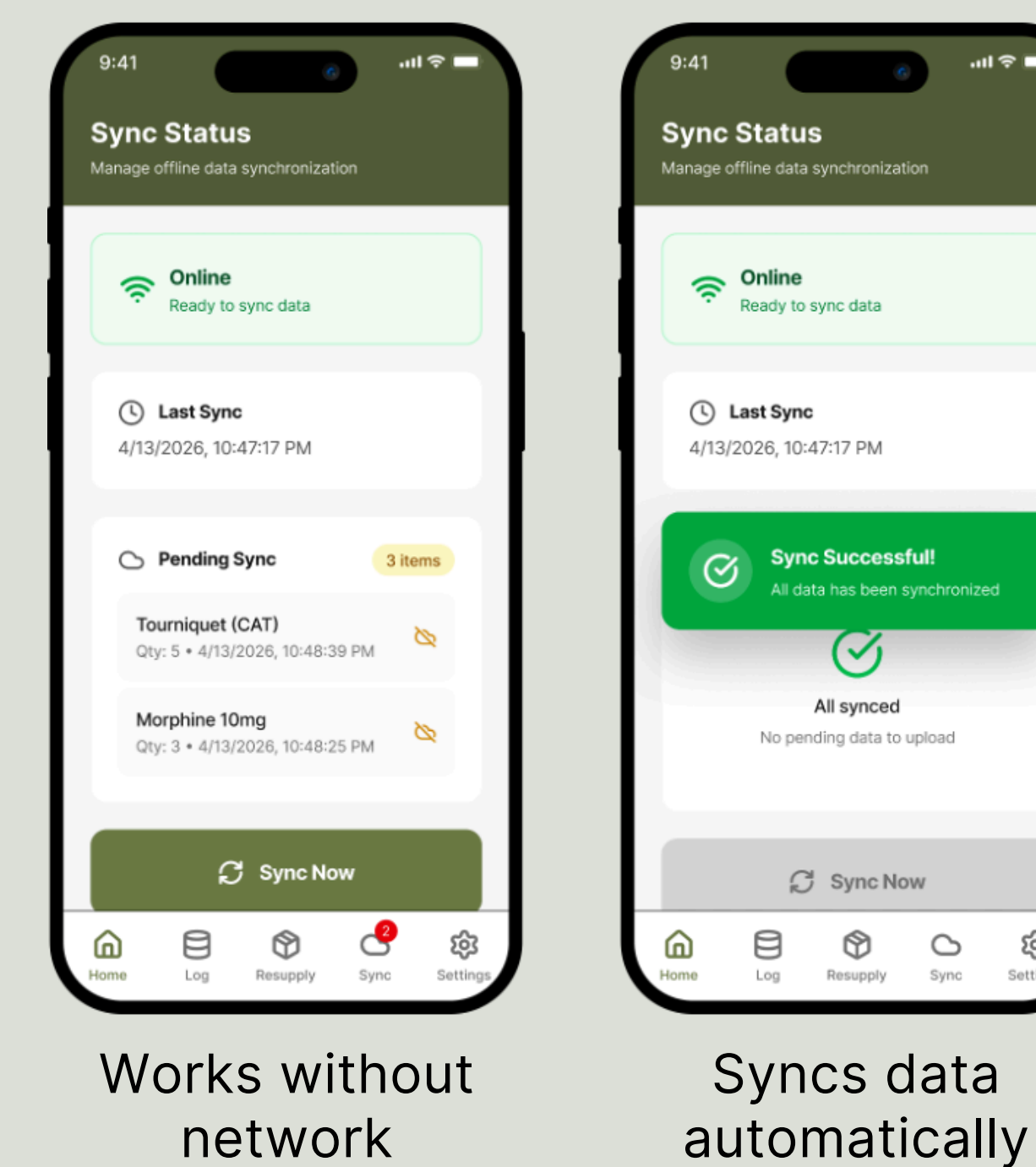
### Designed for Speed in Critical Moments

**1** 3 simple steps to log medical usage



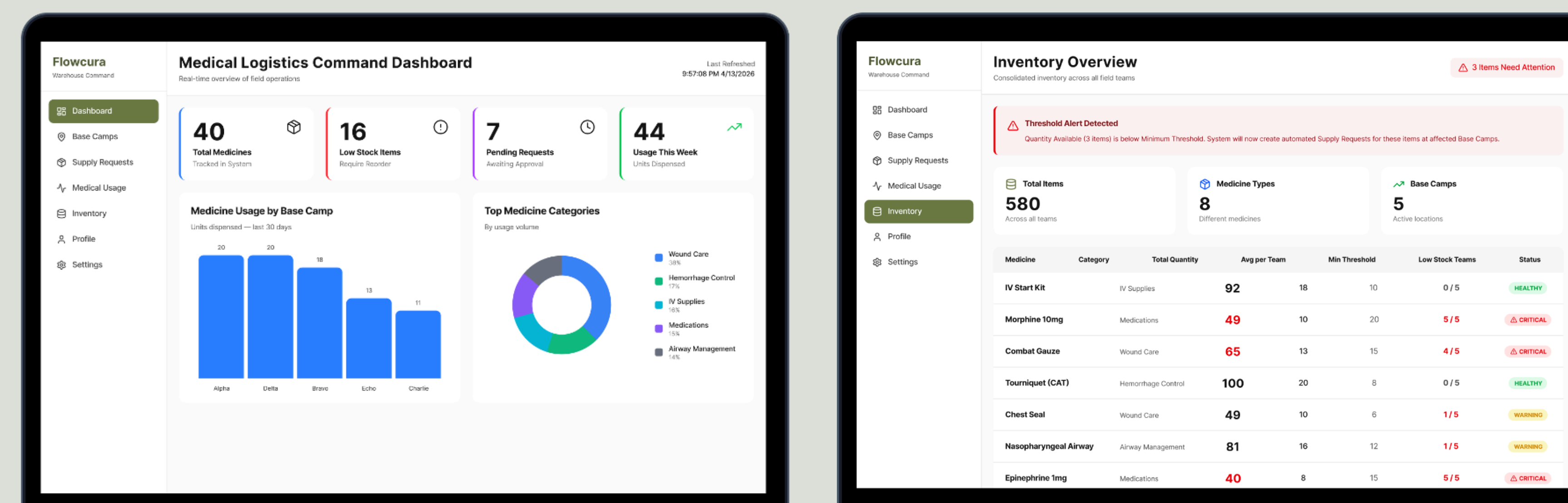
### Built for Disconnected Environments

**2** Offline-first system: works with zero connectivity

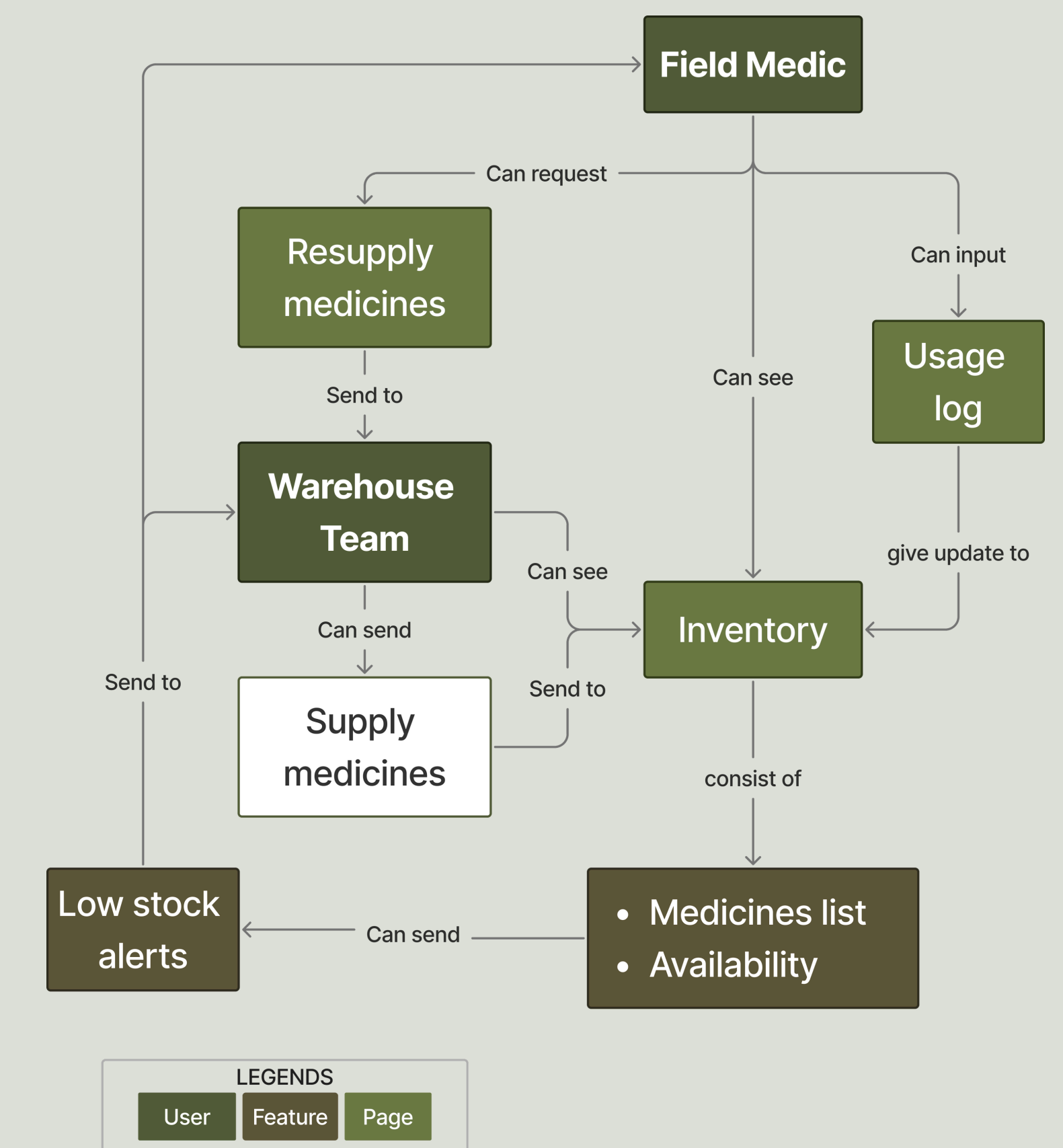


### Real-Time Inventory Data

**3** Predictive analysis flags shortages before they happen



## Concept Model



## Validation Process

- Co-design sessions with frontline medics (UK jHub Med)
- Field workflow analysis mapped to Role 1/2 aid station processes
- Iterative usability testing in simulated field conditions
- Ongoing feedback loop with NATO medical professionals

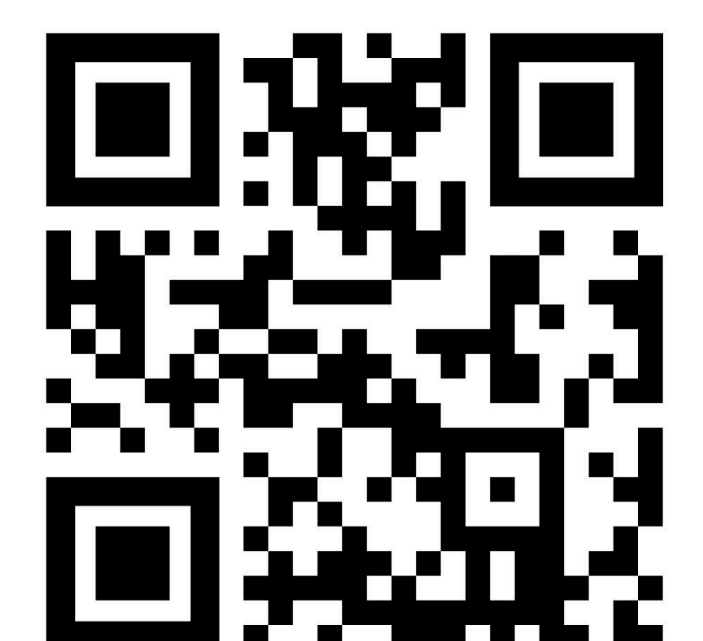


## Conclusion

Flowcura ensures that in the most critical moments, medical care is never limited by logistics.

We transform military medical supply chains from reactive to predictive and save lives where it matters most.

Try our app:



## Impact Delivered

**100%**

Elimination of paper-based tracking

**~70%**

Reduction in manual tracking time

**3x**

Faster resupply response time

**~30%**

Reduction in expired supply waste