

NABDH: CTO Ready UI & System Architecture Blueprint

(Doctor Portal V1 | Arabic Clinical AI Layer)

1. Core Design Principles (Non Negotiable)

These principles MUST guide every UI and architecture decision:

1. NABDH is a layer, not a system
 - No EMR replacement
 - No patient facing UI
 - Everything plugs into existing workflows
2. Doctor speed > beauty
 - Reduce clicks
 - Reduce typing
 - Reduce cognitive load
3. Arabic-first clinical reality
 - Arabic UI labels
 - Arabic speech
 - GCC clinical phrasing
4. Regulatory safety by design
 - Audit logs
 - AI disclosure
 - Edit tracking
 - UAE data residency

2. Visual Identity (UI Direction)

Color palette (calm, clinical, trusted):

- Primary: Medical Green (#1F7A6B)
- Secondary: Soft Olive (#A7C7B7)
- Background: Clean White (#FFFFFF)
- Alerts:
 - Safety warning: Amber

- Critical red flag: Muted red (never aggressive)

Typography:

- Arabic: IBM Plex Arabic / Noto Arabic
- English fallback: Inter
- Large readable font sizes (doctors, gloves, fatigue)

Design style:

- Flat
 - No shadows
 - No animations except loading states
 - Minimal icons, clinical symbols only
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3. Doctor Portal V1: Screen by Screen UI

3.1 Login & Consent Screen (Mandatory)

Purpose: Legal protection + trust

Elements:

- Email / Password
 - Consent checkbox:
“AI assists documentation. Final responsibility remains with the physician.”
 - Privacy link
 - Data residency note: “Data stored in UAE”
- ✓ Required by compliance
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3.2 Dashboard (Zero Noise)

What doctors see immediately:

- “Start New Visit” (Primary CTA)
- Today’s visits (optional list)
- Time saved this week (motivation metric)

What is NOT shown:

- Analytics charts
 - Admin clutter
 - Notifications
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3.3 Clinical Recorder (CORE SCREEN)

This is the heart of NABDH.

Layout (left → right):

LEFT PANEL

- Start / Pause / Stop recording
- Timer
- Language indicator (Arabic)

CENTER PANEL

- Live Arabic transcript (real time)
- Speaker labels (Doctor / Patient)
- Auto-save indicator

RIGHT PANEL

- Safety alerts (real time)
- Red flag highlights
- Missing information prompts

✓ Directly maps to ASR + safety engine

3.4 SOAP Builder (AI + Human Control)

Tabbed layout:

- S | O | A | P

Each section:

- Pre-filled by AI
- Fully editable
- Highlighted AI-generated text

Right-side panel:

- “Why AI suggested this” (explainability)
- Safety notes
- Insurance relevance tags

✓ Required for insurance automation

3.5 Clinical Summary Module

Auto-generated:

- Visit summary
- Referral summary
- Medical history snapshot

Export options:

- PDF
 - Structured JSON (for EMRs / insurers)
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3.6 Insurance Assistant (V1)

Visible only after SOAP is complete

Shows:

- Eligibility checklist
- Pre-auth draft
- Claim narrative
- Missing items warnings

Color coding:

- Green: ready
- Amber: incomplete
- Red: high rejection risk

✓ Biggest differentiator of NABDH

3.7 Audit & AI Log (Hidden but mandatory)

Tracks:

- Every AI action
- Every doctor edit
- Timestamped logs
- Exportable for regulators

✓ Regulatory protection layer

4. System Architecture (CTO Execution Map)

4.1 High-Level Architecture

Frontend (React / Next.js)

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API Gateway
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| Notes Service |
| ASR Service |
| Clinical Structuring Service |
| Safety Engine |
| Insurance Engine |
| Audit Logging Service |

|
Azure PostgreSQL + Blob Storage

✓ Microservices, acquisition-ready

4.2 AI Pipeline (Exactly as CTO should build)

1. Audio → Arabic ASR
2. Transcript → SOAP structuring
3. SOAP → Safety checks
4. SOAP → Summary
5. SOAP → Insurance drafts

6. All actions logged
 - ✓ Matches MVP scope exactly
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4.3 Security & Compliance (Do NOT skip)

- Azure UAE region only
 - Role-based access
 - Encrypted storage
 - No external LLM APIs
 - Full audit trail
- ✓ Required for pilots & acquisition
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5. What the CTO Should Build FIRST (Priority Order)

Week 1–2

1. Backend skeleton
2. Recorder UI
3. Transcript view

Week 3–4

4. SOAP builder
5. Safety engine integration

Week 5

6. Insurance drafts
7. Audit logs

This sequencing is exactly aligned with your roadmap and budget

6. What NOT to Build (Protect NABDH)

- 🚫 Patient app
- 🚫 EMR replacement
- 🚫 Fancy dashboards
- 🚫 Advanced diagnostics
- 🚫 Over-designed UI

These kill speed, budget, and acquisition readiness.