CLAIMS · SETTLEMENT · COLLECTION · AI — THAILAND UC & BEYOND

Get paid for every encounter. From the cashier to the claim — and the appeal.

Two tracks, one engine. Hospital-grade revenue settlement, collection & AI coding — shipped today. And a one-click UC (บัตรทอง / NHSO) claim export for primary-care clinics — built on the same foundation, shipping next.

Every capability labeled shipped / in build / roadmap throughout

THE PROBLEM

Hospitals leave money on the table. Small clinics drown in claim paperwork.

Revenue leaks silently

Under-specified diagnoses, missed project codes, charges consumed but never billed. The money is earned — it just never makes it onto the claim.

Denials become rework

A rejected line (REP "C") is investigated, corrected and resubmitted by hand — often weeks later, often at the whole-claim level instead of the one line that failed.

Government file prep is brutal

The NHSO 16-file submission and per-visit UC claim is a specialist job. For a **primary-care clinic (รพ.สต. / คลินิกชุมชนอบอุ่น)** with thin staff, it's the daily bottleneck.

So we attack both ends with one engine: **find the revenue and work the denials** for hospitals — and make the UC claim a **single button** for the clinic that can least afford the overhead.

THE MODEL

One revenue engine. Two go-to-market tracks.

TRACK A — HOSPITAL RCM

SHIPPED

For hospitals running full medOS Ultra today.

- Revenue Collection — 3-tab pipeline
- Medical Coder AI — ICD draft + ฿ impact
- Settlement workspace — 12 tabs
- Revenue Optimizer + RCM AI assistant
- REP · correction · AR settlement
- HORUS FP&A — live revenue twin

16 services · 97 miniapps · FHIR + HL7v2 · per-country market packs.

TRACK B — PRIMARY-CARE UC

FAST-FOLLOW

For รพ.สต. / PCU / คลินิกชุมชนอบอุ่น — UC / บัตรทอง.

- One-click UC claim export — visit → 16-file → สปสช.
- OP/PP + capitation + OP-anywhere project codes
- Authen-code + eligibility verification (HIPData)

The hard parts are done — productizing one-click export is wiring + a clinic profile, not a rebuild.

SHARED FOUNDATION — already built

UC / NHSO scheme + rates · 16-file DBF exporter · claim-batch state machine
e-Claim connector · live read model · policy gates · recommender-first AI

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THE SPINE SHIPPED

One claim lifecycle, on a live read model — nothing falls through the cracks.

01
Coding
ICD-10 / ICD-9 + DRG finalized on the coding worklist.

02
Validation
Rules engine: BLOCK / WARN / PASS before advance.

03
Claim Batch
Encounters grouped into a submission batch.

04
Invoice
Exported per payor (UC 16-file, SSS, CSMBS…).

05
REP Result
Govt response parsed: A / C / R per line.

06
AR Settlement
Payment posted, denial appealed, write-off approved.

07
Settled
Account closed, collection code stamped.

Live, not polled

Every backend write projects into the Supabase read model (`encounter_journey_cache`, `department_queues`, coding worklist). The cashier sees a billable row the instant a bill closes — no refresh button, no nightly batch.

One canonical contract

Cashier, Medical Coder, Revenue Collection and FP&A export all read the same pipeline contract and the same `v_receivables_unified` view — the stage is *derived* from downstream state, so every surface agrees.

Anomalies surface early

Missing ICD-10, same-day duplicate, high-value outlier, non-reimbursable spike — flagged at the grid the moment a claim is built, not after the payor rejects it.

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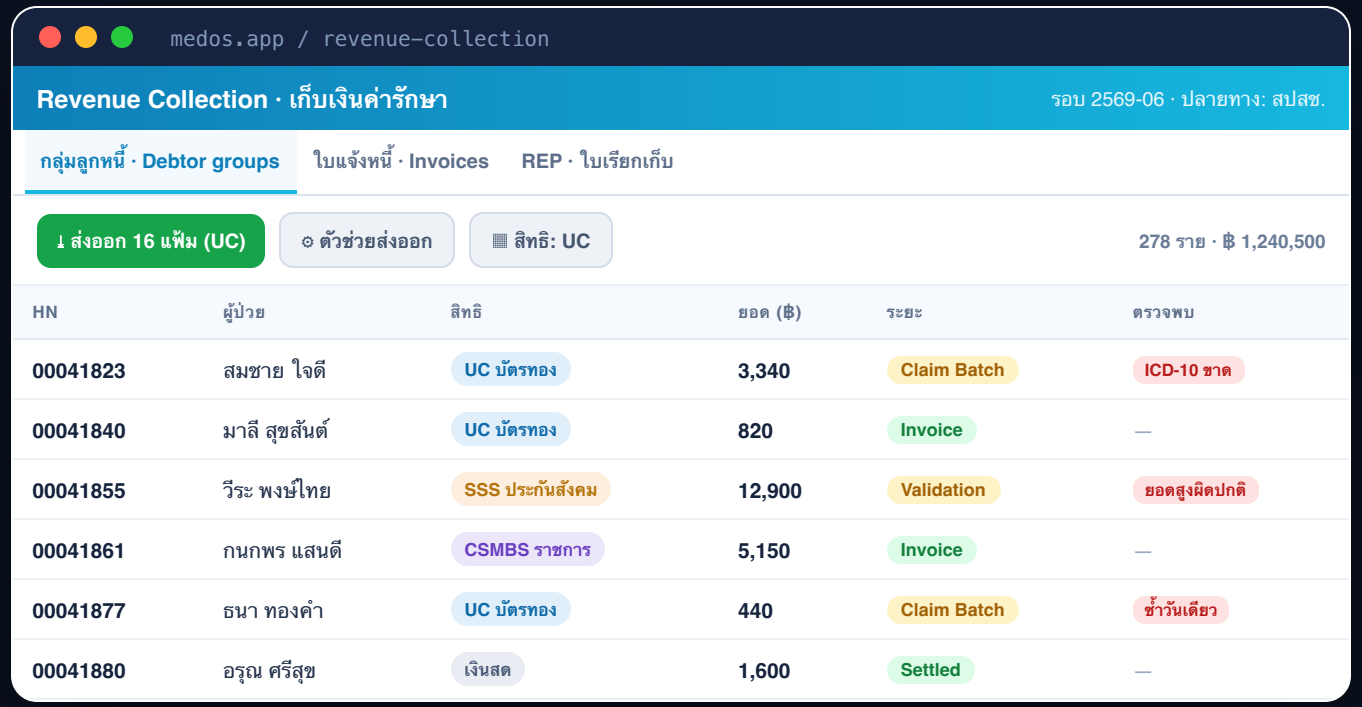
REVENUE COLLECTION SHIPPED

Every receivable in one grid — schemed, flagged, export-ready.



3-tab pipeline

Assign debtor groups (กลุ่มลูกหนี้) → invoice records → REP. The receivables grid is a MUI DataGrid with bulk edit, scheme filters and per-row stage.

Anomaly flags at the grid

Missing ICD-10, same-day duplicate, high-value outlier — surfaced before submission, so the claim is fixed before the payor ever sees it.

16-file export, built

The wizard produces real NHSO-structured 16-file output. Live auto-submit to สปสช. activates with the clinic's API credentials.

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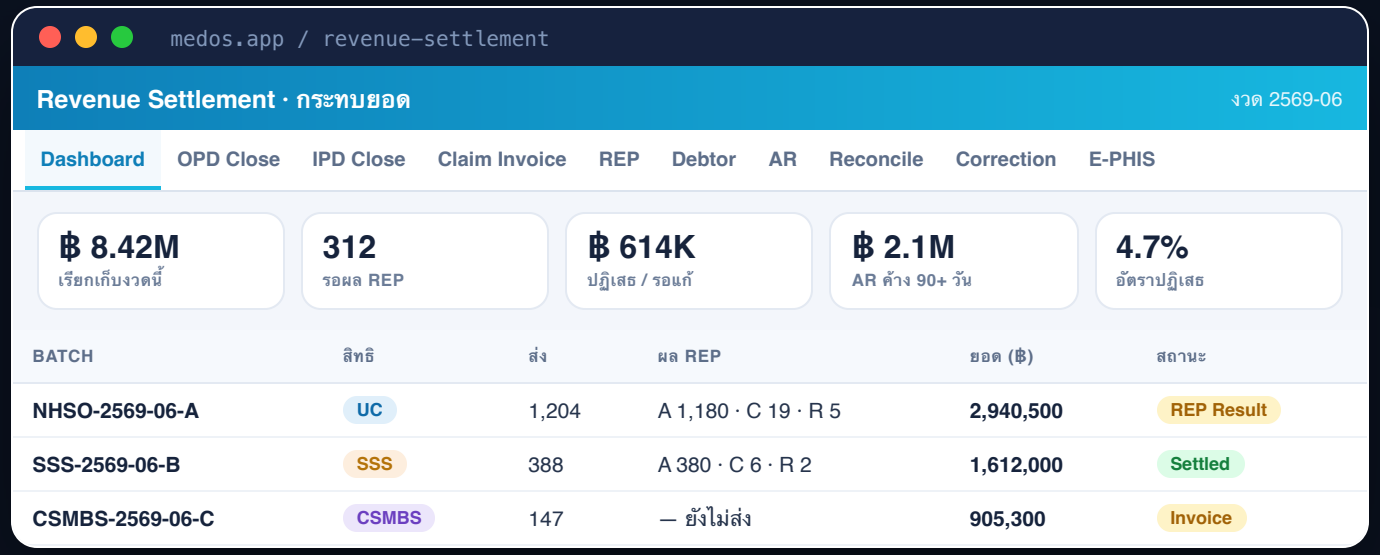
REVENUE SETTLEMENT WORKSPACE SHIPPED

The whole back office, one workspace — plus a 40-card command center.



12 tabs, end-to-end

Dashboard · OPD/IPD close · claim invoice · REP management · debtor setup · AR settlement · reconciliation · correction queue · E-PHIS bridge.

Command center

40+ direct-access cards jump straight to any tab or analytics view — denial triage, revenue-at-risk, variance, write-off policy.

Multi-market

A billing-inquiry workspace renders TH / US / JP / CN side-by-side from the same components.

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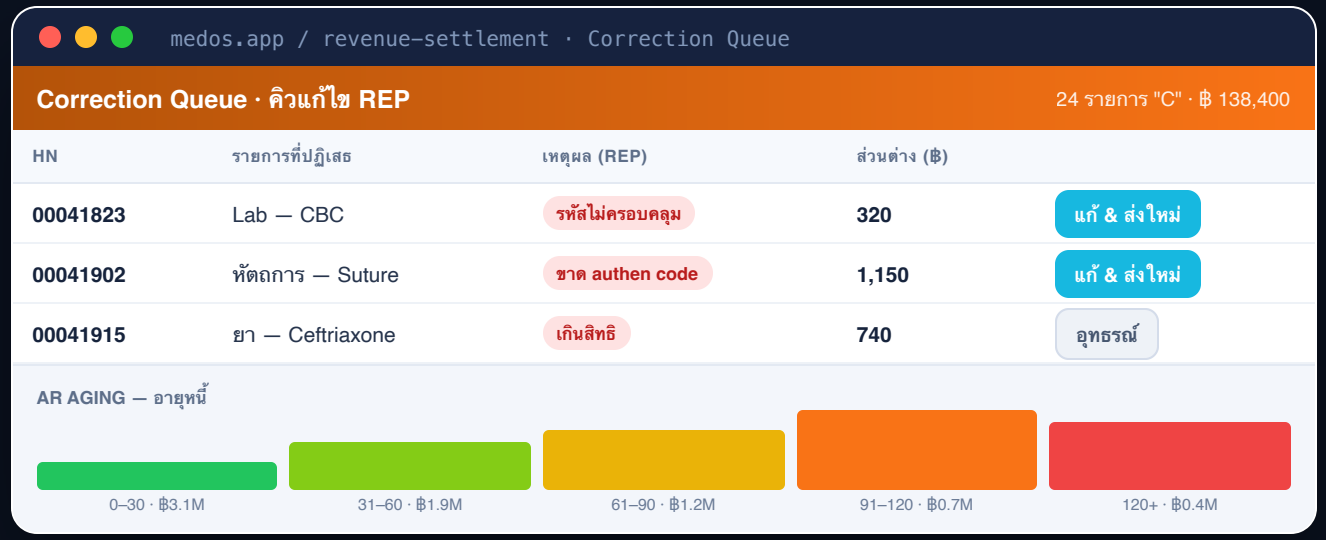
DENIALS & COLLECTIONS SHIPPED

Work the rejection at the line — not the whole claim.



Per-line accountability

Not "claim underpaid ฿5,000" — "this line approved ฿500 of ฿1,200, denied for code Z." Reconciliation matches each charge to its approved / denied status.

Appeal or write-off

Triage denials, prepare an appeal, or route a write-off through an approval chain — every action audited with reason codes.

AR aging that drills

30 / 60 / 90 / 120+ buckets click through to the exact accounts — collections become targeted, not a spreadsheet sweep.

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THE THAI CLAIMS ENGINE — HONEST MATURITY

UC / NHSO, end to end — what's built, what's wiring, what's next.

CAPABILITY	STATUS	WHAT THAT MEANS TODAY
UC / NHSO scheme + rates	shipped	UC (บัตรทอง) seeded with the real base rate (฿8,350 / adjRW, 330-day filing). Multi-scheme: SSS, CSMBS, private — scheme is a data row.
16-file (DBF) generator	shipped	Produces real NHSO-structured 16-file output (TIS-620) — INS/PAT/OPD/DIA/PRO/DRG/CHA/CHT/IPD… via a 4-step export wizard.
Claim-batch state machine	shipped	DRAFT → VALIDATED → SUBMITTED → SETTLED + REP import — the lifecycle is live-verified on the demo backend.
e-Claim connector (สปสช. API)	in build	The connector is written; **live auto-submit + auto REP-import activate with the clinic's NHSO credentials** and the export button wired through (weeks, not a rebuild).
Project-code auto-tag (WALKIN / UCEP / OP-anywhere)	roadmap	Encounter-context rules to auto-stamp UC project codes — designed; not yet generating codes.
Eligibility + authen code (HIPData)	roadmap	Real-time scheme verification at point-of-care to prevent stale-scheme denials — designed.
Capitation / OP-PP per-visit (primary care)	roadmap	The primary-care-specific UC billing model — Track B (next slide).

Honesty by convention — we never present design as shipped. The shipped rows are the hard, reusable foundation; in build and roadmap are the productization on top of it.

THE AI LAYER

AI proposes. A human disposes. Always.

Every AI output in the revenue loop is a **ranked suggestion with a reason and a ฿ figure** — accepted, edited, or rejected by the coder. Nothing writes to a claim autonomously. Accept / edit / reject becomes the training label, and every inference is audited.

Catalog-grounded — no hallucinated codes
Suggestions are drawn from the ICD / DRG / drug catalogs. An AI can't invent a code that doesn't exist in the payor's vocabulary.

On-prem first, PHI-resident
Models run on the hospital's own Ollama node; high-PHI inference never silently falls back to cloud. Edge-box runtime is roadmap.

Four roles in the revenue loop

Coder AI	drafts ICD-10/9 with confidence + ฿ impact	shipped
Revenue Optimizer	CC/MCC gap, specificity, ADP opportunity	in build
Claim AI assistant	anomaly + next-action on the settlement grid	in build
Appeal drafter	writes the appeal letter for the denied lines	roadmap

All four run on one substrate — proposals land in a human inbox; the same write path a person uses; full `llm_audit_log`.

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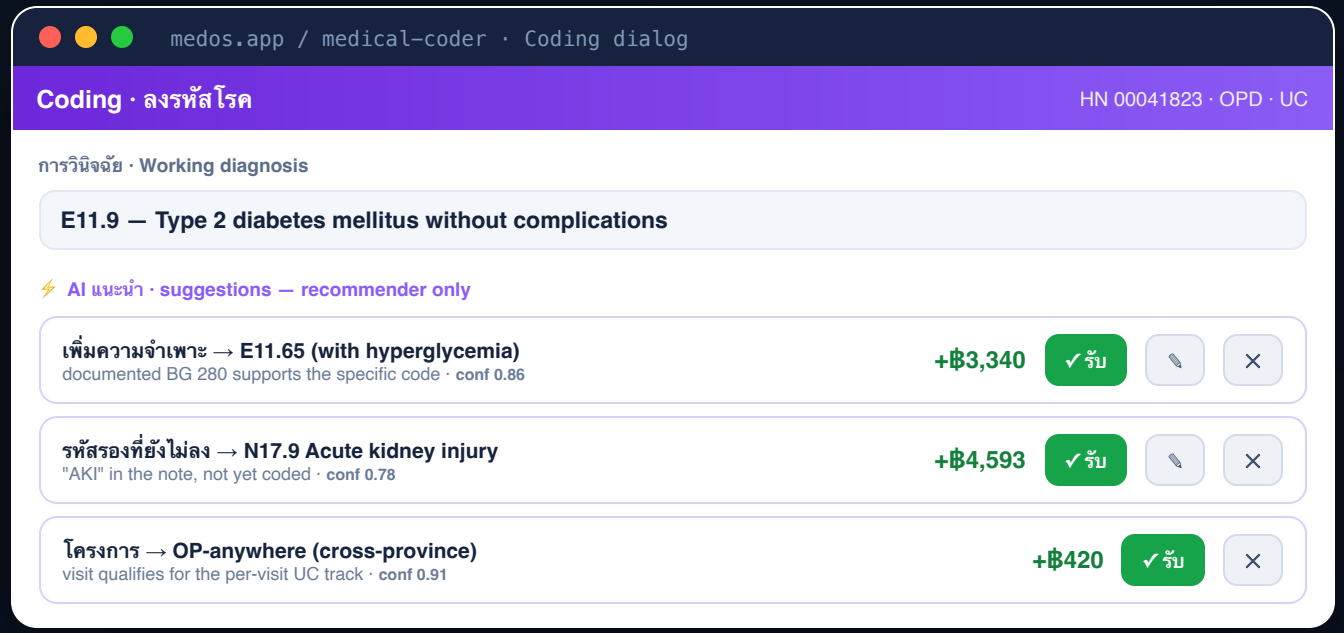
MEDICAL CODER AI SHIPPED TO UAT

The coder stays in control — the AI just makes the chart pay better.



Every suggestion shows the ฿

Specificity upgrades and missed secondary diagnoses are priced (adjRW × base rate), so the coder sees exactly what accepting is worth.

Accept · edit · reject

The coder is the decision-maker. The choice is logged — the model gets better at *this* hospital over time.

Signed = locked

Once the chart is signed, the coding is frozen and the claim advances down the pipeline.

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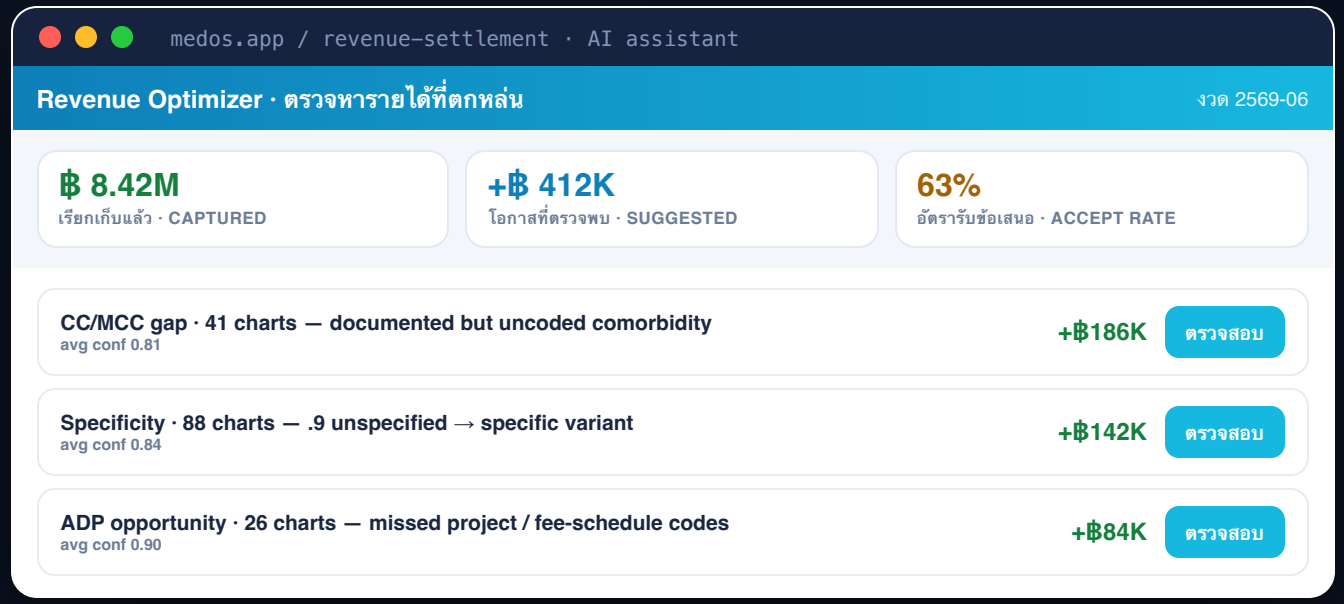
REVENUE OPTIMIZER + CLAIM AI ASSISTANT IN BUILD

Find the money the chart already earned.



Captured vs suggested
A live ledger of revenue already billed against revenue the engine believes is recoverable — with an accept-rate that proves coder adoption.

Three evaluators
CC/MCC gap, specificity upgrade, and ADP/project-code opportunity — each priced, each only a suggestion.

Anomalies, too
The same assistant flags same-day duplicates and non-reimbursable spikes before a batch ships.

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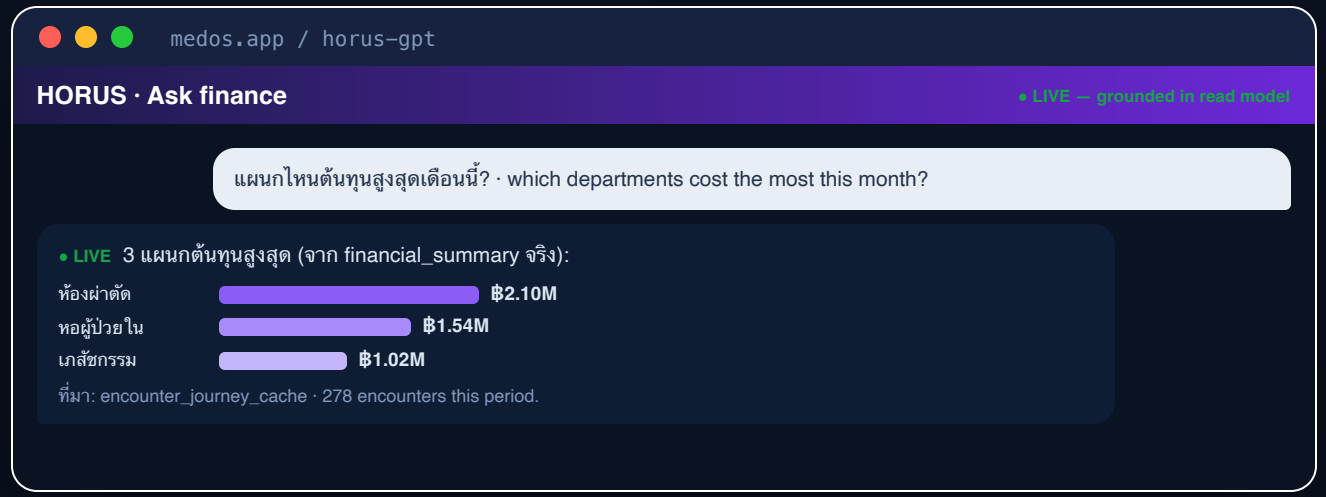
HORUS — THE REVENUE TWIN SHIPPED

Ask the hospital's finances a question. Get a grounded answer.



Provenance, not vibes

Every answer carries a ● **LIVE** / ○ **DEMO** / ○ **NO DATA** badge, grounded in the real `financial_summary` — so a CFO knows whether the number is calibrated or illustrative.

The decision twin

FP&A is one lens of HORUS — alongside capacity, queue, surveillance and a 3D command center for the executive floor.

Calibrated, then trusted

Metric feeds (cost-per-case, contribution margin) calibrate from the live read model; recommendations are backtested before anyone leans on them.

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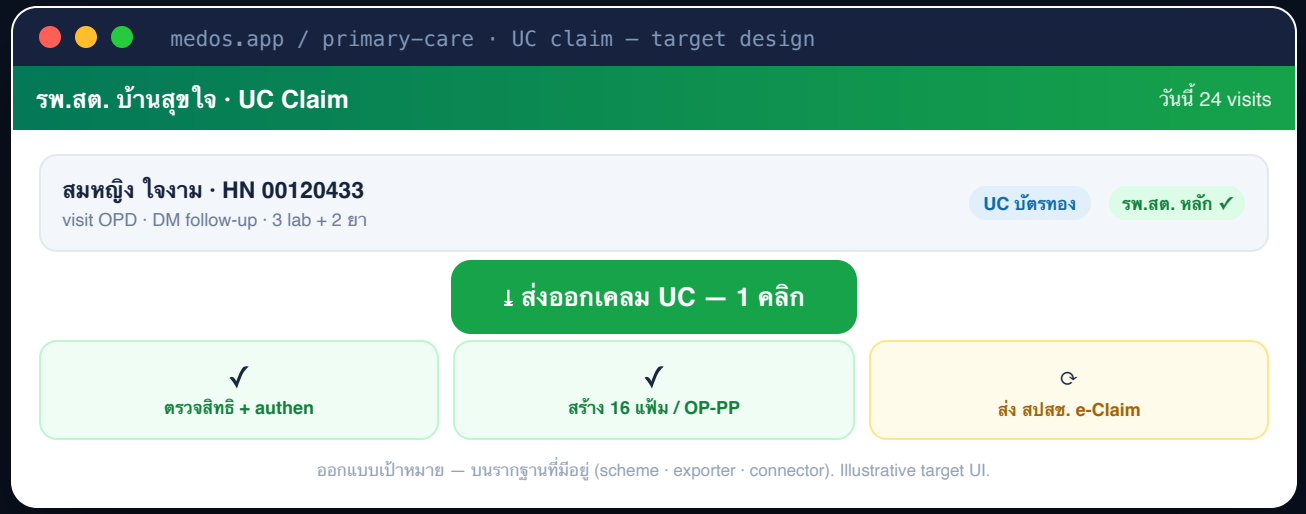
TRACK B · PRIMARY-CARE UC FAST-FOLLOW — TARGET STATE

For the รพ.สต. clinic: the UC claim is one button.



Why it's a fast-follow, not a rebuild

The export format, claim-batch lifecycle, NHSO connector and UC rate model are **already shipped**. Track B is a clinic workflow profile + the OP/PP & capitation rules + authen/eligibility on top.

Right for thin-staffed clinics

No coder, no claims specialist — the clinic clicks once; the engine validates the สิทธิ, builds the file, and submits.

Same engine, different front door

A primary-care clinic and a 500-bed hospital run the identical revenue engine — the clinic just sees one button.

WHY IT HOLDS TOGETHER SHIPPED PLATFORM

The revenue engine isn't bolted on — it's how the platform is built.

Live read model

A Supabase orchestrator projects every backend write into realtime read tables. Cashier, coder and settlement all see the same truth, instantly.

Policy-gate engine

Payment, discharge, coverage and approval gates are JSON-predicate rules edited in an admin UI — no code deploy to change a hospital's billing rule.

FHIR + HL7v2

FHIR R4 read/write + subscriptions and HL7v2 ADT/ORM/ORU with an MLLP listener — plug into any HIE, lab or government channel.

Country = data

Thailand, Philippines and Japan run today; payor rules, terminology and schemes are seed rows in a market pack — not a codebase fork.

16 microservices (NestJS + Moleculer over NATS) · React 19 frontend · Supabase read model · 17 locales · RBAC + audit throughout. The same platform that runs the ward runs the claim.

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MATURITY AT A GLANCE

What you can run today — and exactly what's next.

CAPABILITY	STATUS
Revenue Collection (3-tab grid + anomaly flags)	shipped
Revenue Settlement workspace (12 tabs + command center)	shipped
Denial correction · AR aging · write-off · reconciliation	shipped
UC scheme + 16-file exporter + claim-batch lifecycle	shipped
Medical Coder AI (ICD draft + ฿ impact)	shipped to UAT
HORUS FP&A revenue twin (live-grounded)	shipped
Live สปสช. auto-submit (with clinic credentials)	in build
Revenue Optimizer + Claim AI assistant	in build
Primary-care one-click UC export (Track B)	roadmap
Project-code auto-tag · eligibility/authen · capitation	roadmap

Multi-country, multi-scheme

Thailand UC/SSS/CSMBS run on seeded schemes + rates. Japan kaigo (介護保険) and Philippines PhilHealth case rates ship as market-pack seeds.

Coverage as data

Per-charge สิทธิ (coverage) routing and per-country billing rules are rows, not branches — a new scheme is a config change.

The honesty rule

Three labels, everywhere: shipped in build roadmap. No surprises at go-live.

THE TAKEAWAY

The hard parts of getting paid are already built. Now we make them effortless.

For the hospital, that's finding the revenue and working the denials — settlement, collection, and AI coding shipped today. For the primary-care clinic, it's a one-click UC claim on the exact same engine — the fast-follow that turns บัตรทอง paperwork into a single button.

Capture
AI coding + revenue optimizer find what the chart already earned.

Submit
16-file UC export + claim-batch lifecycle + NHSO connector.

Recover
Per-line denial correction, appeals, AR aging that drills.

Simplify
Primary-care UC export as one button — fast-follow.