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How Narayana Health is **Re-wiring Care** *with Data and Automation*

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Why re-wiring.

Most health systems have digitized — paper into PDFs, workflows into screens. Re-wiring is the next step.

Re-wiring means: data flows where decisions happen, automation absorbs repetitive work, and clinicians get back to the bedside.

Digitization gave us records. Re-wiring gives us reflexes.

NARAYANA HEALTH AT A GLANCE

55 healthcare facilities · **3** countries

40 in India · 2 in the Cayman Islands · 13 in the United Kingdom

NARAYANA HEALTH INDIA

6,000+

operational beds

110+

specialties and super-specialties

4,200+

doctors · ~20,500 staff

SCALE OF CARE DELIVERED (FY25)

2.5 M+

OP consultations

240 K+

in-patient admissions

140 K+

emergency admissions

CARDIAC SCIENCES — OUR FLAGSHIP

16,500+

cardiac surgeries every year

~10% of all cardiac surgeries performed in India happen at Narayana Health.

7,000+ CABG · 500+ valve repairs · 400+ aortic surgeries · 175+ TAVI/TAVR/TMVR

Founding mission, high-quality care affordable to all.

Four forces. None solvable with more of the same.

1 Demand

Demand is rising on two fronts. Populations everywhere are aging — the share of people 65 and older is climbing faster than ever, in nearly every country in the world. At the same time, roughly half the global population still lacks reliable access to essential health services. The system has to grow upward and outward at the same time.

2 Workforce

A nurse shortage you can't recruit your way out of. A clinician burnout problem you can't policy your way out of. Doctors today spend up to 4 hours a day in the EHR — much of it documentation, much of it after-hours, much of it driving burnout.

3 Cost

Payors and patients can't absorb more. By 2030, healthcare will be the single largest line item in Singapore's government budget. India's out-of-pocket health burden, while improving, still sits well above the global average. Trajectories across ASEAN are mathematically unsustainable.

4 Expectation

Patients now compare us to Grab, DBS, and Amazon — not to other hospitals. A "good experience" used to mean polite reception staff. Today it means: book in 30 seconds, no queue, reports on the phone, follow-up that knows who you are.

You can't hire your way out. You can't price your way out. The only lever left at scale is how care is wired.

Two core platforms.

The EMR platform — Athma — and the intelligence layer — Medha that learns from it and from every other system in the network — are how every clinical and operational decision in our network gets made.



Our EMR and clinical-operations platform

The system that runs clinical work across 55 facilities and 3 countries: documentation, ordering, scheduling, the patient app, real-time clinical messaging — the daily operating reality of every clinician on every shift.

Athma is where care is delivered.



Our Data Intelligence & AI platform — the single source of truth

Integrates data from every source system in the network — Athma (clinical), our ERP (finance, RCM, supply chain), HRMS (workforce), and others — into one unified semantic layer. All three tiers of intelligence run on Medha.

Medha is where care is understood and acted on.

HIMSS AMAM Level 6

First and only in the Indian sub-continent · 2nd in APAC under the new AI-focused AMAM guidelines · among an elite few worldwide in Analytics & AI maturity.

Built first for Narayana, and now adopted by other leading health systems in India and beyond.

Three tiers. Sequenced. None skippable.

Data Intelligence & AI cannot be one-off, piecemeal, or opportunistic if it is to sustain. It has to follow a clear strategic approach — sequenced correctly. Skip a tier and the one above it collapses.

● Foundational

INTELLIGENCE

Aggregating, cleaning, and unifying all data into a single source of truth — with monitoring visibility into every business process.

Examples: revenue & volumes dashboard · receivables dashboard · P&L dashboard

DEFINED BY

- Unified data architecture across systems
- Automated data pipelines ensuring quality
- Complete coverage — operational, clinical, finance, supply chain, revenue, manpower
- Unified semantic layer — single source, single definition of truth

Answers

"Can I trust the data?"

● Actionable

INTELLIGENCE

Putting the data into action. Specific problem-solving use cases, integrated into workflows, tracked to ROI.

Examples: revenue leakage detection · clinical care gaps · cash flow tracker

DEFINED BY

- Data intelligence integrated into workflows
- Insights directly drive care decisions and actions
- Actions systematically tracked and measured
- Impact quantified across KPIs

Answers

"What should we do — and did it work?"

● Agentic

INTELLIGENCE

AI that autonomously monitors a process and orchestrates decisions within its field of control — with a human in the loop.

Examples: demand-planning agent · discharge-summary agent · ABG interpretation agent

DEFINED BY

- Autonomous systems that independently drive actions
- AI agents that reason, plan, and adapt
- Sequences of actions executed toward defined goals
- Continuous learning and optimisation from outcomes

Answers

"What's getting done while we sleep?"

The discipline isn't choosing a tier. It's sequencing all three — and refusing to skip the boring tier underneath.

The pillars of data intelligence in a health system.

Six domains. Every large health system needs all six. Coverage and sequencing both matter — partial intelligence is not intelligence.

1 · Clinical Excellence

Quality and outcomes that distinguish the institution.

- Quality & outcomes monitoring
- Care pathway analytics
- Continuous risk stratification
- Diagnostic decision support
- Clinical safety & incident analytics

2 · Patient Experience & Engagement

The journey from first interest to long-term loyalty.

- Access & wait-time analytics
- Patient acquisition & funnel
- Engagement & satisfaction
- Personalised communication
- Retention & journey analytics

3 · Operational Excellence

Convert capacity into care, predictably.

- Throughput & turnaround
- Capacity & utilisation
- Resource scheduling optimisation
- Process control & compliance
- Length of stay & patient flow

4 · Financial Performance

Revenue earned, cost controlled, cash converted.

- Revenue cycle analytics
- Payer & contract performance
- Cost & margin analytics
- Cash flow optimisation
- Budget & variance control

5 · Workforce Productivity

The hardest-to-replace asset in healthcare.

- Productivity & utilisation
- Scheduling & rostering
- Workforce planning
- Variable pay & incentives
- Burnout & retention analytics

6 · Supply Chain & Assets

Material, equipment, real estate — at scale.

- Demand forecasting
- Inventory optimisation
- Procurement & sourcing
- Asset utilisation
- Vendor & price benchmarking

Pick a pillar to skip and a fault line opens up underneath the rest. The discipline is comprehensive coverage.

AI agents around every stakeholder.

Where data intelligence stops informing decisions and starts taking them — with a human in the loop, every time. Four audiences. Four categories of agent.

● 1 · Clinical Staff Agents

Doctors, nurses, technicians. The single highest-leverage place to deploy AI.

- Clinical documentation (voice-to-note, ambient scribing)
- Diagnostic interpretation (lab results, imaging, ABG, ECG)
- Risk stratification & decision support
- Care coordination & handoff
- Knowledge retrieval (guidelines, protocols, patient context)

● 2 · Patient Agents

Patients and caregivers, across the full journey, in their own language and literacy level.

- Appointment booking & scheduling
- Pre-arrival admissions (forms, consent, insurance)
- Pre-visit assessment & history capture
- In-stay companion (queries, status, escalation)
- Discharge guidance & adherence follow-up
- Feedback & satisfaction capture

● 3 · Back Office Agents

Admin, finance, ops, supply chain. Taking high-volume repetitive work out of human queues.

- Auto-GRN, Auto-Reorder and Dispense bot
- Document processing & data entry
- Call-centre co-pilot & quality auditing
- Financial reconciliation (statements, matching, posting)
- Cohort building & analytics queries

● 4 · Payor Agents

The revenue-cycle interface between provider and payor.

- Eligibility & benefits verification
- Medical coding & charge validation
- Pre-authorisation automation
- Denial management & appeal drafting
- Explanation-of-benefits processing

Every bot or agent we deploy clears three rules: **In the workflow** · **Explained** · **Measured**

Built around what we needed, not what we were sold.

In 2019 we re-architected our data platform. We did not run a platform evaluation spree. We listed exactly what we needed first — the breadth of source systems, the volume of clinical messaging, the latency of agentic workflows, the regulatory footprints we operate across. That list shaped every platform decision that followed.

THE WISHLIST — THIRTEEN NON-NEGOTIABLES IN FOUR CLUSTERS

● Data foundations

- Single source of truth
- Unstructured data support
- Multiple language support

● Performance & scale

- Scalable
- High performance
- Parallel processing

● Engineering rigour

- Modular & containerized
- DevOps
- Failure handling
- Rollback

● Governance & trust

- Data governance
- Security & privacy
- AI ready

The most expensive mistake in data architecture is buying before you know what you're buying for.

Delivering it is half the work.

Most data intelligence projects fail at adoption, not at development. Different users consume data intelligence differently. The Medha platform stack reflects that — five delivery mechanisms, each calibrated to a different mode of consumption.



Gateway · Organisation-wide

The single front door — org-wide AI co-pilot. The entry point to all data intelligence and digital tools.

Leaders & managers

Strategic analysis: dashboards, reports, and full conversational data intelligence.

Operations & middle management

Actionable insights delivered as analysable tasks. Replaces spreadsheets.

The larger workforce

Workflow metrics with zero learning curve. "Is my number healthy today?"

All users, in the systems they already work in

Insights embedded directly into source applications — Athma, ERP, HRMS — surfaced at the moment of decision, inside the tool.

Developing data intelligence is half the work. Delivering it — to the right user, in the right form, at zero friction — is the other half.

The four principles that hold the program together.

Without these four, every healthtech AI program eventually drifts into pilot purgatory. We have learned this the expensive way.

1 · Democratization + Institutionalization

The objective of the program.

Democratization — every role, every process, every decision backed by the right data intelligence. Data intelligence reaches everyone.

Institutionalization — data intelligence is not a choice, it is the process. Embedded into workflows, not parallel to them.

2 · Data quality and intelligence move together — not in sequence

The most common trap is paralysis-by-data-quality.

"Garbage in, garbage out" sounds wise. In practice, it is what kills programs in year one. We did not wait for data to be clean. We started at whatever level the data was, and the work itself surfaced the gaps — gave operations the right priority list for what to tighten.

3 · Use case selection is a discipline, not an inbox

Without it, data intelligence is just opportunistic.

We don't pick use cases by who's asking loudest. The organization has a 1–2 year strategy. Every candidate is scored against potential impact and ease of implementation, and weighted by alignment with that strategy. The scoring is the discipline.

4 · Measure impact across seven dimensions, not one

"Did it save dollars?" maybe the wrong question.

A single-dimension ROI calculation misses most of what AI actually does. We measure across seven: man-hours saved · decision frequency · earlier interventions · decision quality · data quality · direct KPIs · indirect KPIs.

Without these principles, you are running projects. With them, you are running a program.

Capacity created without capex.

THE PROBLEM

Length of stay and discharge turnaround are the two largest cost levers in any tertiary hospital — and both are usually misdiagnosed as clinical problems. They are not. They are flow problems.

Every hour a patient stays beyond clinical readiness is a bed unavailable to the next patient and an hour of clinician attention not given to someone who needs it.

In a network of 6,000+ beds across 19 hospitals, those hours add up faster than any new wing we could build.

WHAT WE BUILT

Three pieces, working together:

Discharge & flow dashboards — surface the patterns. Which units, specialties, times of day, blocking events repeat most often (pharmacy pickup, transport, summary not signed, lab pending, insurance approval).

Discharge grids — convert each delayed discharge into a task assigned to the person who can clear the blocker. The right nurse, doctor, pharmacist, or coordinator sees their own list.

Medha Scribe — automated, voice-assisted discharge summaries. The single largest blocker no longer waits on a typist; drafts in real time as the doctor speaks, files into Athma EMR.

THE RESULT

↓ **33%**

Discharge turnaround time

100,000+

clinical hours / year returned to patient care — equivalent of ~50 full-time clinicians

Hundreds of bed-days liberated per month — with no new construction.

In a workforce-starved sector, the most valuable thing data intelligence builds is not efficiency. It is capacity — created without capex, without hiring.

Re-wiring the in-patient stay — from arrival to discharge.

THE PROBLEM

Two distinct kinds of friction in the in-patient experience.

Before arrival, paperwork — forms, consent, insurance, identity — typically filled out in a waiting room. 30 to 45 minutes the patient could have spent at home, that the front desk has to absorb at scale.

During the stay, the patient is in a foreign environment, unsure what is happening, when, or why. Every small question — "when is my medication?", "when am I being discharged?" — becomes a bell-pull for an already-busy nurse.

WHAT WE BUILT

Two bots, end-to-end across the inpatient journey:

Pre-admissions agent. Completes admission documentation — forms, consent, insurance verification, identity — before the patient arrives. Patient walks in, paperwork is done.

In-patient companion bot. Available throughout the stay. Answers patient and family queries in real time, surfaces status, and tickets requests automatically to the right department — tracking each to closure.

Behind both, an experience dashboard tracks the patient journey live.

THE RESULT

Week 1 of deployment at one of our smaller facilities — a 100-bed Bangalore hospital:

600

patient requests handled by the in-patient companion bot

~1,200

fewer trips by nurses to patient rooms

(One trip avoided to take the request. One trip avoided to bring the answer back.)

Hospital infrastructure and bandwidth is precious. Anything that can happen without depleting that bandwidth, should happen without it. That's what bots make possible.

Turning the ECG into a cardiac triage tool.

THE PROBLEM

ECGs are everywhere. Relatively inexpensive. Non-invasive. They can be performed outside of a hospital as well, at homes or at camps.

A standard 12-lead ECG costs a fraction of an echo, takes minutes, and can be done by any technician.

The clinical question we asked:

Can the ECG cover more of cardiac health than it does today?

Can we add more power to the ECG?

WHAT WE BUILT

A suite of three proprietary deep-learning models, trained in-house, all operating on a standard ECG image:

ECG-EF AI — predicts low left ventricular ejection fraction.

ECG-Echo AI — predicts echo-detectable abnormalities (PA pressure, stenosis, regurgitations).

ECG-CAD AI — predicts likelihood of coronary artery disease.

Foundation: 100,000+ paired ECG–echocardiogram studies — the largest such dataset assembled in India.

THE RESULT

Recognition

BMJ South Asia Award

for Best Digital Innovation

Deployment

Clinical beta across our network

Certification

CDSCO underway

A low-cost ECG, plus an AI model, can now screen a large portion of the population for a wide range of cardiac functions.

THE PRINCIPLE TO TAKE HOME

The most important upgrade in healthcare isn't a model. It isn't a platform. It isn't a procedure.

**It is the time and attention
*a clinician can give a patient.***

Data and automation, done right, don't make care more techy. They make it more human.

Bringing back the joy of care.

That, in the end, is what we are building toward.

The bar every new capability has to clear: Does it free a clinician minute? Does it save a patient rupee (dollar)? Ideally both.

Cited as a reference implementation by the Royal College of Physicians of England — and now also running at other leading health systems in India and beyond.

Thank you.

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