

Inside the Federated Data Platform

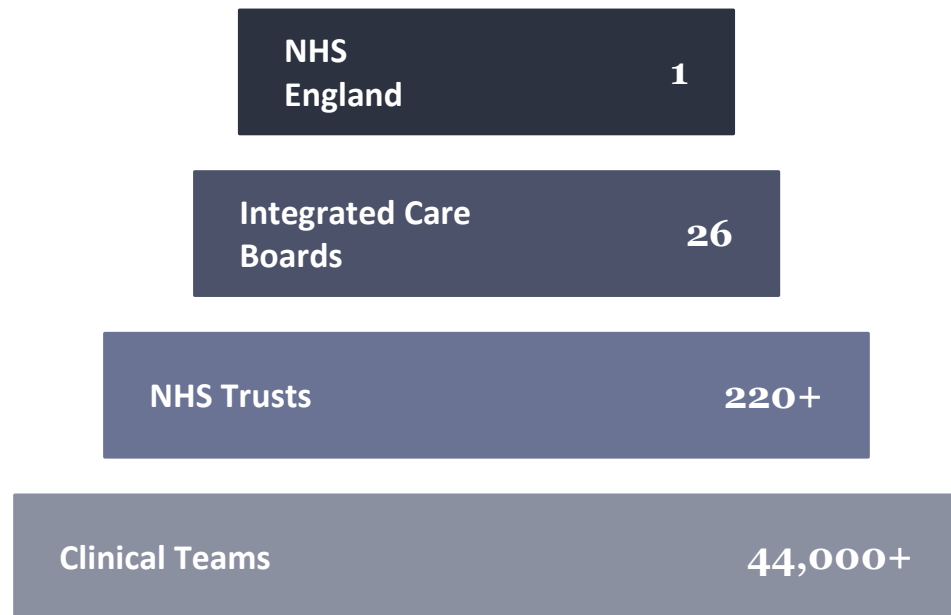
A Data Management Perspective

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The NHS: A Data Management Challenge Like No Other

The NHS Hierarchy



Each Trust procures its own IT: 50+ formal systems, thousands of informal spreadsheets, whiteboards, and paper workarounds.

Beyond the NHS

Tens of thousands of organisations also hold patient data, each with their own systems:

- GP practices ~6,300
- Care homes ~15,000
- Social care providers ~18,000
- Mental health charities Mind, Samaritans, etc.
- Community pharmacies ~11,000
- Voluntary sector hospices, rehab, carers

None of this data is connected.

The data about patients is fundamentally unreliable because no one has connected it.

What Fragmentation Looks Like in Practice



Silos everywhere

Patient data sits in separate systems that do not talk to each other. A clinician treating a patient in A&E cannot see what happened in the mental health trust, the community service, or the GP practice.



Master data chaos

The same patient can appear as three different records across three organisations. The same drug can have different names in different systems. The same ward can be coded differently in neighbouring Trusts.



Inconsistent metadata and reference data

There is no shared language for what data means. A "discharge" in one Trust's system may not mean the same thing in another's. National reporting requires manual translation.



Duplicated effort

Every Trust builds its own reports, its own dashboards, its own workarounds. The same problem is solved independently hundreds of times across the country.

What the NHS Has Tried: EPR Investment

What it achieved

- ✓ Core clinical records moved out of paper notes and into IT systems
- ✓ Ease of retrieval improved significantly
- ✓ Coding consistency at the individual system level
- ✓ Data security improved through access controls and audit trails

What it did not achieve

- ! Breaking down silos between organisations
- ! Integrating software with clinical process
- ! Eliminating the parallel world of spreadsheets, whiteboards, and paper notes
- ! Giving clinicians a single view of the patient

Clinicians use the formal systems. They also keep their spreadsheets. The silos remain.

The Rise of Analytics, IG, and the Absence of DAMA

Over the past two decades, the NHS invested heavily in two disciplines:

Analytics and Business Intelligence

Performance dashboards, statutory returns, population health analytics, waiting list management. Every Trust has a BI team. National data collections expanded year on year.

Information Governance

Data protection officers, Caldicott Guardians, the Data Security and Protection Toolkit, information sharing agreements. IG became a well-resourced, well-understood function.



What was notably absent

- Data governance as a discipline (beyond IG compliance)
- Data quality management as a systematic practice
- Master data management across organisational boundaries
- Metadata standards, data catalogues, lineage documentation
- Data stewardship as a defined role
- Any recognition that data is an asset

The NHS built analytics on foundations that no DAMA professional would recognise as governed.

COVID Changed Everything

The pandemic proved the data could be connected

When COVID-19 hit, the NHS needed to see data across organisations in something close to real time for the first time. How many ICU beds were available? Where were the surges? Where were the ventilators?

The usual barriers were swept aside by urgency. Data sharing agreements that took months were signed in days. Institutional reluctance to let data cross organisational boundaries disappeared overnight. The NHS COVID Data Store, built on Palantir Foundry, became the proof of concept.

The epiphany

Once the silos were broken and the data was connected, a deeper question surfaced: what if the platform could do more than show the data to managers and analysts? What if clinicians could work inside it directly, managing patients, taking actions, recording data as part of their workflow rather than as a separate administrative task? The pandemic had cracked the silo problem. The next step was to ask who the platform should serve first.

NHSE made a deliberate choice: the next national platform would serve the frontline first, not the back office.

What Makes FDP Different: Frontline-First

Reporting-First

The traditional approach. Data is extracted from clinical systems, transformed, loaded into a warehouse, and used to produce reports and dashboards.

The data warehouse is read-only. Nobody changes data inside it. Clinicians never see it. Its audience is analysts and managers looking backwards at what has already happened.

This is how every NHS data platform has worked until now.

Frontline-First

A different paradigm. Data from source systems is brought into a shared model, and users work directly inside the platform. They view, update, and act on data in real time.

The platform is read-write. Clinicians and managers change data state inside it. New data is created by the act of using it. Analytics becomes a byproduct of operational use, not the primary purpose.

This is what FDP does. It is a fundamental departure.

This has consequences for every DAMA discipline: governance, quality, lineage, and stewardship all need rethinking.

Why Frontline-First Fixes Data Quality

The NHS has spent decades asking clinicians to record data properly. It has never worked, because in a Reporting-First model the clinician gets nothing back.

Reporting-First: the incentive is broken

Clinicians record data into EPR systems primarily because they are told to. The data feeds reports they never see, dashboards they never use, and national returns that serve a management function, not a clinical one.

The result is predictable: data quality and completeness are poor because the people entering the data have no stake in its accuracy. Coding is inconsistent, fields are left blank, free text is used where structured data is needed. Data quality improvement programmes come and go; the underlying incentive never changes.

Frontline-First: the incentive is aligned

Clinicians record data because the tool they are recording it into is the tool they use to manage their patients. The platform replaced the spreadsheet they could not work without. Data entry is integral to the clinical workflow, not a separate administrative burden.

They also get more back than they ever did from the spreadsheet: linked data from other organisations, AI-powered enrichment, and a live operational view that updates as colleagues across the system enter their own data. Quality improves because the people creating the data depend on it being right.

When the tool is mission-critical to the clinician, the data quality problem solves itself.

Frontline-First in Practice: The A&E Scenario

A patient arrives by ambulance. The A&E team has four hours. Here is what they face.

Without FDP

- Verbal handover from ambulance crew
- Mental health history invisible
- Medication list: ask the patient
- Community care plans not accessible
- Start from scratch every time

With FDP

- Ambulance data synced before arrival via live data links to the ambulance trust
- Mental health crisis plan visible: a linked object from the mental health trust, updated in real time
- Medication record assembled from across Trusts, each contributing to a shared patient object
- Community care context surfaced automatically through link types in the ontology
- Clinician enters triage data directly in the platform; no need to go back to the EPR or a spreadsheet

The clinician reads and writes inside the platform. Data created here feeds back to the shared record.

The FDP Contract

£330m

contract value
over 7 years

Nov 2023

contract awarded
to Palantir Technologies

123

Trusts live
on the platform

80+

reporting
measurable benefits

The contract followed the success of the NHS COVID Data Store, also built on Palantir Foundry. FDP extends this capability from pandemic response into routine NHS operations.

Rollout has been phased. Each Trust signs its own data processing agreement and receives its own platform instance. As of mid-2026, the majority of acute Trusts are live, with mental health and community Trusts following.

What FDP Is: Architecture and Function



Federated, not centralised

Each Trust gets its own instance of the platform, connected to a national instance. Patient data stays under Trust control. There is no single central database.



A shared data model

The Canonical Data Model provides a common structure for patient data across all Trusts. It is what makes data from different organisations comparable and interoperable.



A product ecosystem

Digital tools are built on the platform and shared through the Solutions Exchange. Trusts can adopt products built elsewhere, or build their own for local needs.

FDP is an operating system for NHS data, not a data warehouse.

What Makes This Architecturally Unique

In every other NHS data platform, the data lives in a warehouse, the descriptions live somewhere else, and the applications live somewhere else again. Three separate things, connected by bespoke integrations. FDP collapses that separation. Here is what that means in practice.



Semantics coupled with data

In a traditional architecture, data sits in a warehouse and its meaning sits in a catalogue, a wiki, or a developer's head. In FDP, the description travels with the data. A theatre session object does not just contain a row of values; it contains the definition of what a theatre session is, what its properties mean, and who can see or change them.



Live link types

In a relational database, relationships exist as foreign keys that an analyst resolves by writing JOIN queries. In FDP, relationships between objects are defined link types that the platform resolves automatically and that always reflect the current state of the data. A clinician viewing a patient can navigate to their referrals, appointments, and medication without leaving the application.



Actions baked into the platform

A data warehouse is read-only. FDP hosts transactional actions: defined operations that create new structured data in the ontology with validation rules, access controls, audit trails, and linked object updates. This is what allows clinicians to enter data at the point of care rather than going back to a separate system. Microsoft Fabric, Databricks, and Snowflake do not offer this.



Solutions Exchange portability

Because every Trust shares the same ontology structure, a product built at one Trust can be packaged and deployed to any other through the Solutions Exchange without rewriting the data layer. The shared model and consistent tooling make the product portable.



Security at the object level

Access controls are defined on objects and their properties, not on tables or views. The same ontology can serve different users with different permissions, and every interaction is audited. The governance model is embedded in the architecture.

AI on the Platform: AIP and What It Changes

Palantir's AIP (Artificial Intelligence Platform) is integrated into FDP. Because it draws its context from the ontology, the AI operates within the same data model, access controls, and governance framework as every other interaction with the platform.



Analytics transformed

AIP Analyst allows users to ask plain-English questions of the data and receive answers in seconds. An analyst who previously wrote SQL queries against a warehouse, waited for results, and built a dashboard can now ask the question directly and get an answer grounded in the ontology's semantic layer.

Early adopters at NHS Trusts report that analysts with no prior FDP experience are producing working outputs within their first month on the platform.



Development accelerated

Pilot, an AI coding assistant integrated into the platform, enables non-technical staff to build working applications that access the shared ontology. A ward manager or service lead can describe what they need and the AI builds a functional app with data access, validation, and user interface.

Products that previously required months of developer time are now being built in hours by people with no coding background. This is transformative, and it is also where the governance challenges get harder.

The AI is grounded in the ontology. It inherits the data model, the access controls, and the semantic definitions.

Why FDP Products Work Everywhere

How can a tool built by a team in Dorset be deployed in Newcastle without anyone rewriting it?

1 A shared data model

Every NHS organisation using FDP stores patient data in the same structure. The Canonical Data Model provides a common language.

2 Consistent tooling

The platform presents that data to users in the same way at every organisation. The screens, the workflows, the way data is shown: all consistent.

3 Build once, deploy everywhere

Where the clinical process is the same, a tool built by one Trust can be adopted by any other. Where it differs, the platform gives local flexibility to build bespoke applications. The Solutions Exchange is the catalogue for sharing.

Neither piece works alone. A shared model without consistent tooling still lets every Trust show data differently.

Challenge 1: Governing the Common Data Model

Two parallel workstreams are developing the CDM, with a structural gap between them.

NHSE FDP Programme

The delivery team that builds and deploys the operational CDM within live Trust instances. Manages day-to-day schema change, controls deployment of new objects, and responds to delivery pressure. Built using external resource via the Palantir contract.

Operational CDM published on GitHub:

github.com/nhsengland/fdp-canonical-data-model

NHSE Tech and Data Architecture

The governance function building the formal national CDM specification. Longer-cycle standards work through Expert Reference Groups: defining what should be in the model, what clinical concepts it must represent, and how it aligns with national standards.

Formal CDM specification published on NHS Futures:

future.nhs.uk/DataArchitecture



Two public versions of the CDM exist, developed by different teams within the same organisation. No formal mechanism ensures they converge, or that either reflects what Trusts are actually deploying.

Recommendation: independent governance of the CDM, with its own mandate and resources, separated from delivery.

Challenge 2: AI Accelerates Everything, Including Risk

AIP enables non-technical staff to build working clinical applications in hours by talking to an AI agent. The governance framework was designed for products that took months to develop.

What AI now enables

A ward manager describes what they need. Pilot builds a working app that queries the shared ontology, surfaces patient data, and enables actions. No developer required. No formal review process triggered.

One Trust built five products in a month with no data team input. Each app accesses the shared ontology containing all data objects across every product in the instance.

This is transformative. It is also where the governance challenges get hardest.

What governance cannot keep up with

Template DPIAs exist for the six national products. There is no template for a locally-built product, because the framework predates the capability. Every Trust must either write its own DPIA from scratch or let products go live without one.

Clinical safety standards (DCB0129, DCB0160) require hazard logs and safety cases for health IT. These standards assume products that take months to develop. The platform now enables products built in hours. Published DPIAs describe data flowing in from source systems. They do not describe data being created within the platform by AI-built apps.

The pace of innovation is extraordinary. The governance framework needs to match it.

Challenge 3: Adoption, Disruption, and Two Paradigm Shifts

NHS data teams are being asked to navigate two separate paradigm shifts at once, on a platform whose analytics tooling is not yet as capable as what they are leaving behind.



The analytics tools are genuinely weaker

Foundry's native analytics and visualisation capabilities are less mature than Tableau, Power BI, or Qlik. This is not resistance to change; it is a legitimate observation. Analysts are being asked to move to a platform that is better at operational data management but currently worse at the analytical work they were hired to do. The disruption of moving to any new platform is significant, and the case for doing so has not always been well made.



Two paradigm shifts, not one

The first shift is from reporting-first to frontline-first: an organisational change in who the platform serves. It could have happened without asking analysts to change their tools at all. The second shift is the claim that AI can now handle analytical workloads that previously required specialist skills. Many analysts are not yet convinced that AIP Analyst can replace the depth, flexibility, and precision of a well-written SQL query or a carefully designed dashboard. Both shifts are being imposed simultaneously, which compounds the disruption.



The political context makes honest feedback harder

The public debate about Palantir, the break clause, and the supplier's ethics creates an environment where legitimate technical concerns get entangled with political objections. Analysts who raise usability issues risk being dismissed as resistant to change, or co-opted by campaigners who have no interest in making the platform better. Neither outcome helps.

What the DAMA Community Should Do

Every DAMA member in England is an NHS patient. The quality of your care increasingly depends on a data model that has been built without the profession at the table.



Scrutinise publicly

Apply DAMA standards to what NHSE publishes. Assess the CDM governance model, the lineage documentation, the quality frameworks. Name the gaps. Write about them.



Join the Expert Reference Groups

The CDM is shaped by clinical experts. Data management professionals are not yet in the room. Register at future.nhs.uk/DataArchitecture and ask to participate.



Demand independent governance

A data model underpinning care for 56 million people should not be governed solely by those who operate it. Make the case for regulatory oversight, with the weight of a professional body behind it.



Engage where the debate is happening

FDP Check and Challenge Group minutes are on the NHSE website. The CDM GitHub repository is public. LinkedIn carries the active professional debate. These are accessible now.

Key Takeaways

- 1 The NHS data landscape is fragmented across thousands of systems with no shared language.
- 2 Previous investment improved individual systems but never broke the silos.
- 3 Data management as a discipline has been absent from NHS strategy.
- 4 COVID proved integration was possible. FDP makes it permanent.
- 5 FDP is an operational platform first. Frontline-First is a new paradigm.
- 6 The governance framework is not keeping pace with the platform's capabilities.
- 7 The DAMA community has the expertise and the personal stake to help fix this.