



HEALTHCARE
SOLUTIONS_

Digital Service Data Architecture

CASE STUDY

Methods
Analytics_



OUR CLIENT

The Department of Health and Social Care (DHSC) is a ministerial department that helps lead the nation's health and social care.



Department
of Health &
Social Care

It helps people to live more independent, healthier lives for longer.

The DSH required a new Medical Examiners platform to collect, secure, search and analyse person-identifiable data on all deaths in the NHS in England and Wales.

Part of long-term plans to reform how death certifications work.

THE CHALLENGE WE FACED

Following a number of reports including the Shipman Inquiry, the recommendation was made to implement Medical Examiners across the country, supported by an online service fit for the digital age.



The existing process was deemed to be frustrating for users, lacking in inadequate safeguards, and without a mechanism that allowed the NHS to see patterns, learn from them and take action.

The manual process also traversed a number of government departments. There was a need to design a process that could empower clinical, managerial, clerical and policy users to collect data and spot malpractice or underperformance.

The process would also need to contribute to official statistics in conjunction with the Office of National Statistics (ONS).

THE SOLUTIONS WE DEVELOPED

The process development was done using Agile (SCRUM) as the core methodology.

THE PATH TO PROGRESS

This project covered our end-to-end data services. From initial service design to the alpha and beta builds from our Data Engineering and Data Interaction teams.



DATA INTERACTION & INTERPRETATION



DATA STRATEGY



DATA SCIENCE & AI



DATA DISCOVERY



DATA ENGINEERING



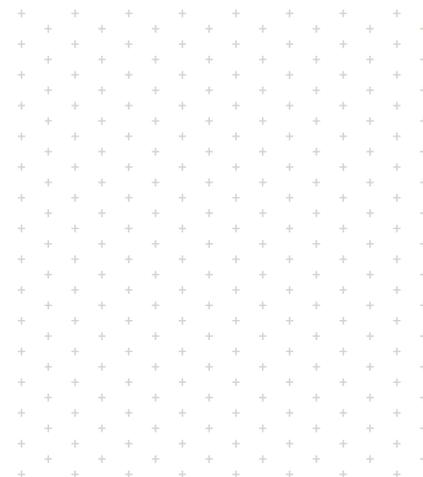
ARCHITECTURE, GOVERNANCE & INFRASTRUCTURE

This was guided by the GDS Service Manual, with user needs identified, designed for and then validated throughout the lifecycle.

Working to GDS standards, we took the non-technical client team through an end-to-end service design process led by user needs. We built out the solution from the service map through prototyping and into development.

Our design was informed by user research undertaken with clinicians and clerical staff from over 30 hospitals.

Our aim was to maintain empathy for our users: those in the process of bereavement. We focused on efficient user journeys; content that would aid them through the new and evolving clinical service.



THE ARCHITECTURE

The MedEx architecture is a PaaS web application with an API application tier and Azure Cosmos DB backend.

Large parts of the system are based on the Azure Security and Compliance Blueprint for PaaS Web Applications within the UK NHS.

The technical solution was built in collaboration with a wide group of stakeholders, including DHSC, NHS Improvement, NHS Wales, the National Coroner and the Home Office.

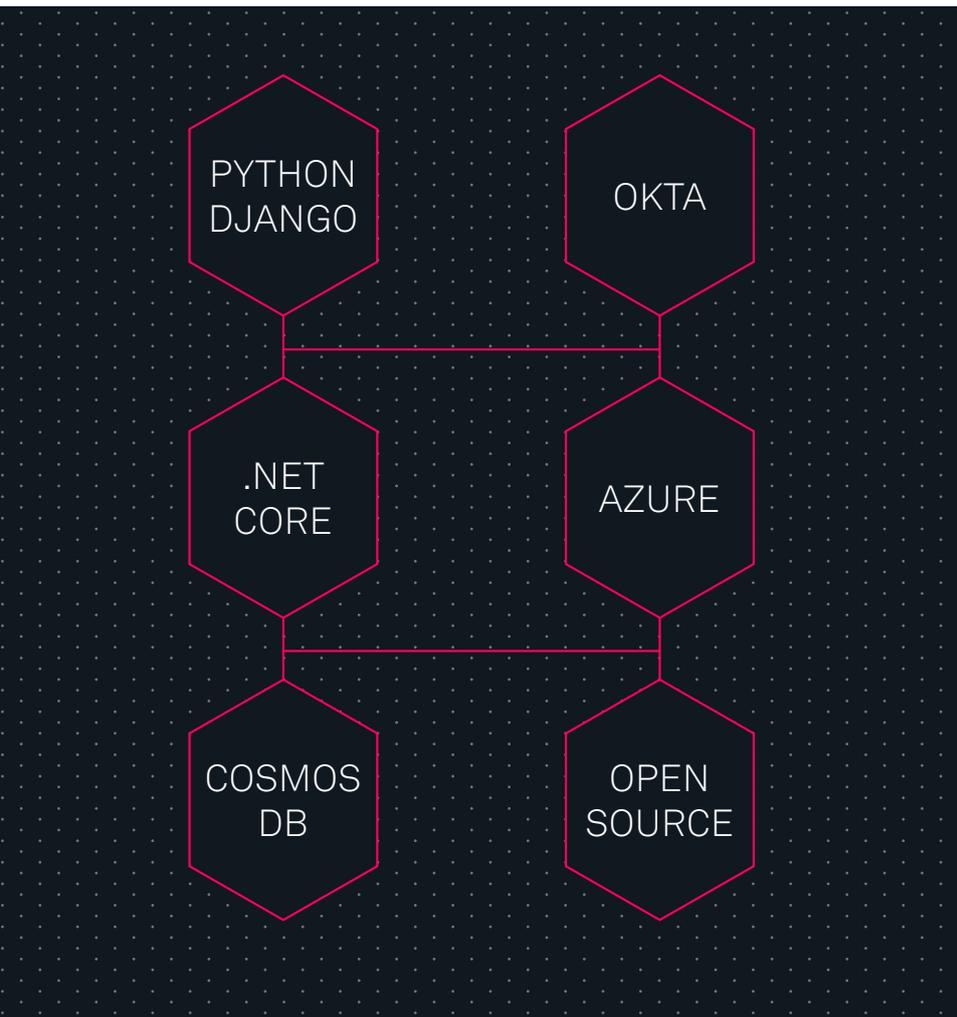
The agreed n-tier architecture comprises: technology, CI/CD and leading-edge patterns within the NHS such as:

Application data is stored in a Cosmos DB backend which uses Storage Service

Encryption to maintain confidentiality of data at rest.

Geographic redundant storage ensures that data will be replicated to a secondary datacentre hundreds of miles away. All data is stored in either UK South or UK West Data Centres.

The solution also uses Azure Storage accounts for backups and diagnostic/monitoring data. These are configured to use Storage Service Encryption (SSE) to maintain confidentiality.



THE DIFFERENCE WE MADE

The service has been well-received across participating trusts and the NHS Design community.

In particular, how the team innovated, created and shared new design patterns has been celebrated.

We also received a positive response at Medical Examiner training events where our team runs demos of how the case management system works.

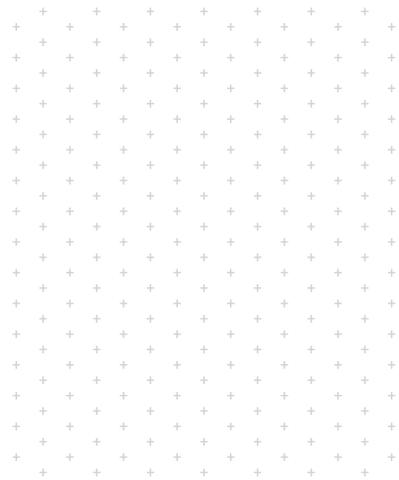
THE THINGS WE LEARNED

One of the biggest discoveries from the project was how to create a service when the policy is still being developed.

We turned this challenge into an opportunity: our research-led approach allowed all our findings from hospitals to feed into shaping the policy.

This progress was integral to ensuring the realities of working in trusts is reflected in policy formation by the department.

It also means that the Medical Examiners Service has a successful platform to build on as it is rolled out across the country.





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VAT No. GB 859 1403 14

Registered in Abu Dhabi
Company No. 000004100

analytics@methods.co.uk

[METHODSANALYTICS.CO.UK](https://www.methodsanalytics.co.uk)