

Healthcare data solutions in Microsoft Fabric

A unified healthcare analytics solution for the era of AI

Nov 2024

Agenda

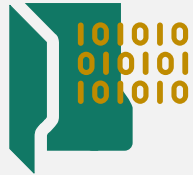
- Industry landscape
- Introducing Microsoft Fabric
- Health Data Solutions in Fabric
- Healthcare Data Model
- Demo





Today's healthcare data and analytics challenges

Improve the ability to harness siloed data for discovering clinical insights and fueling AI innovation.



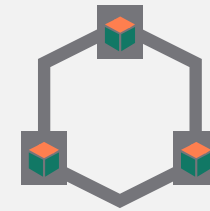
Unstructured and inaccessible data

For most providers, 50-90% of their data is siloed, limiting advances in medical treatments and technologies while maintaining regulation compliance (HIPAA)



Limited view into patient experiences

Unable to forecast emergencies, improve diagnostics and optimize treatments based on clinical patterns



Difficulty accessing the power of insights

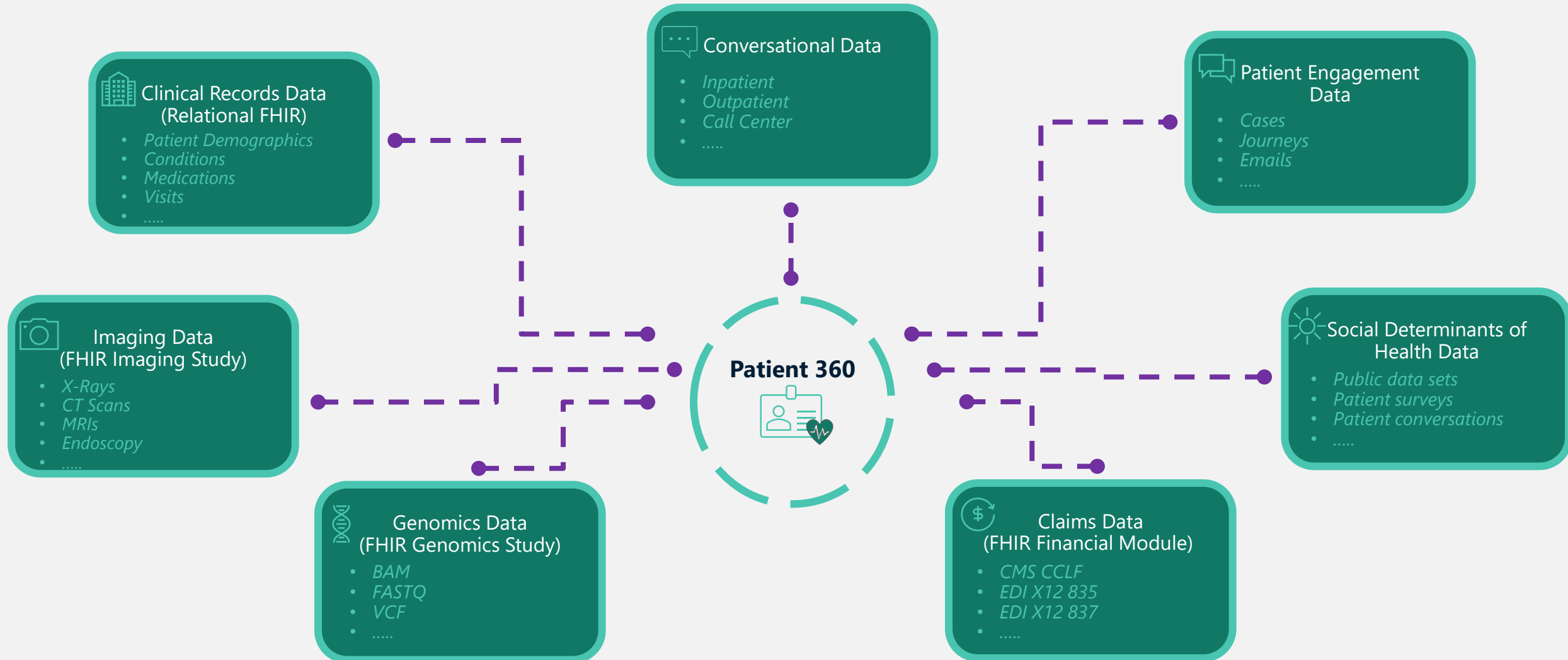
Healthcare Providers report wasting 60-70% of valuable analysis time on data processing

Improve the ability to harness data to discover clinical insights to deliver value-based care models

Siloed Healthcare Data

Improve the ability to harness siloed data for discovering clinical insights and fueling AI innovation.

Hospitals produce over 50 petabytes of data across upwards of 10 siloed systems every year. 97% of this data goes unused. [Healthcare Financial Trends for 2022](#) This limits advances in medical treatments and technologies.

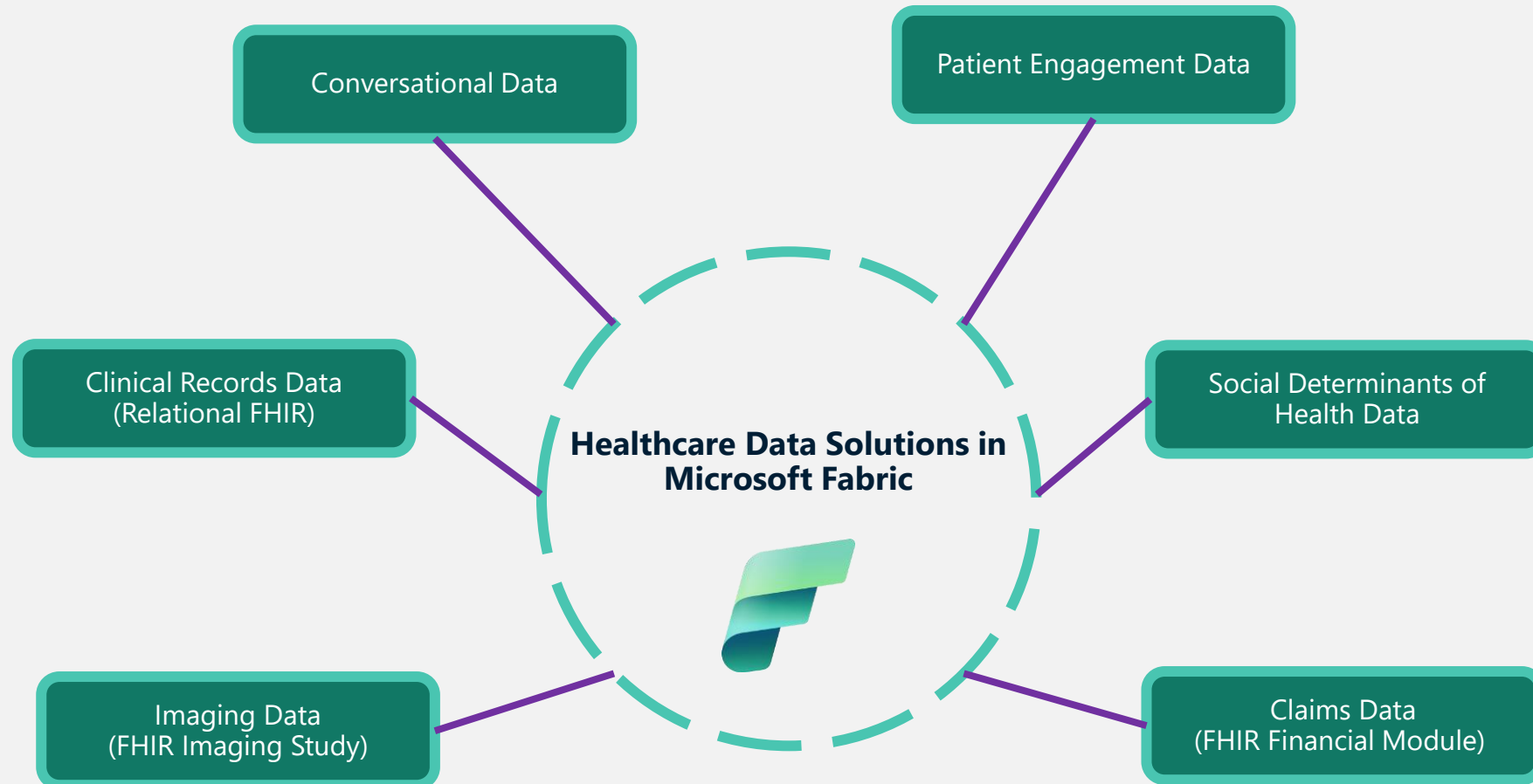




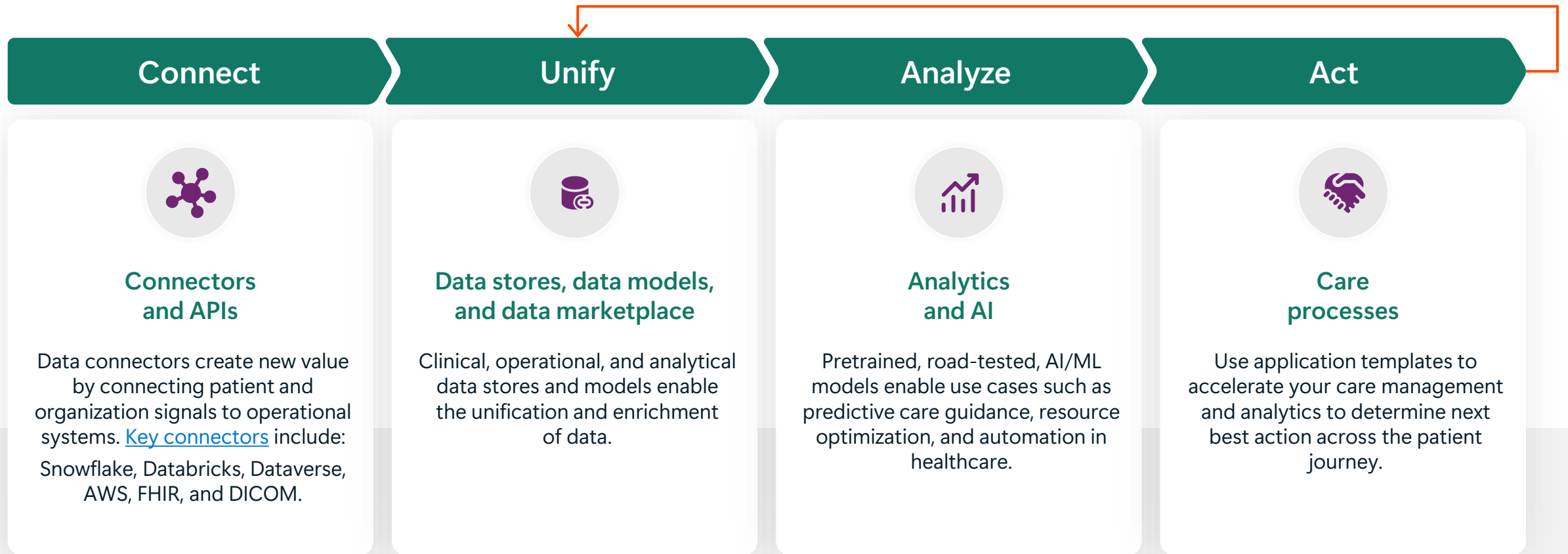
Bring data together

Harmonize healthcare data into a comprehensive multi-modal healthcare estate

Delivering a multi-modal healthcare data estate that enables customers to unify the vast amounts of healthcare data to discover, visualize, and leverage the data to power AI across the organization.



Microsoft's Data Strategy



Interoperability: Unify data from across your organization.

Compliance: Leverage the most comprehensive compliance capabilities in the industry.

Security and data protection: Access tools, products, and services for encryption, identity protection, and more.



Healthcare data solutions in Microsoft Fabric

Unified healthcare data accelerates business value



Accessible and discoverable data

Seamlessly integrate data from multiple sources into a unified data lakehouse that makes it easy to discover, reuse, and enhance data, removing silos.



Accelerated time to insights

Create a seamless scalable analytics that can meet the demands of the business to unlock deep insights within the data estate.



Democratized data through AI/GenAI

Empower every user to do more by infusing AI experiences across all data and applications.



Fuel AI innovation

Ground and tailor generative AI experiences in Azure AI Studio, with your healthcare data flowing from Microsoft Fabric.



Secure and Governed

Enable governance and configure permissions to regulate who can access and manipulate the data.



Healthcare data solutions in Microsoft Fabric

Fuel your journey to AI innovation by getting your data AI ready

Establish a central repository for all data

1

Integrate disparate data sources into a unified data platform and data lake.

Prepare data for AI innovation

2

Improve the quality of your data, to ensure it is complete, accurate, and governed.

Build generative AI experiences on top of your data

3

Enhance the breadth and depth of data-driven experiences by creating an AI solution.



Healthcare data solutions + Microsoft Fabric data experiences



Azure AI Studio



Introducing Microsoft Fabric

Analytics Platform in the Era of AI



Data
Factory



Synapse Data
Engineering



Synapse Data
Science



Synapse Data
Warehousing



Synapse Real
Time Analytics



Power BI



Data
Activator



Powered by AI with Copilot in Microsoft Fabric



OneLake



Purview

Complete data
platform

Unified analytics
data estate

Empowered
data professionals

Powered by
AI



Healthcare data solutions in Microsoft Fabric

Accelerate healthcare analytics with healthcare data solutions built on the Fabric foundation



Healthcare
Capabilities



Data Discovery & Cohort Management



Healthcare
Data Models



Healthcare
Data Transformations



Healthcare
Analytical Solutions



Data
Factory



Synapse Data
Engineering



Synapse Data
Science



Synapse Data
Warehousing



Synapse Real
Time Analytics



Power BI



Data
Activator



Powered by AI with Copilot in Microsoft Fabric



OneLake



Purview

Complete data
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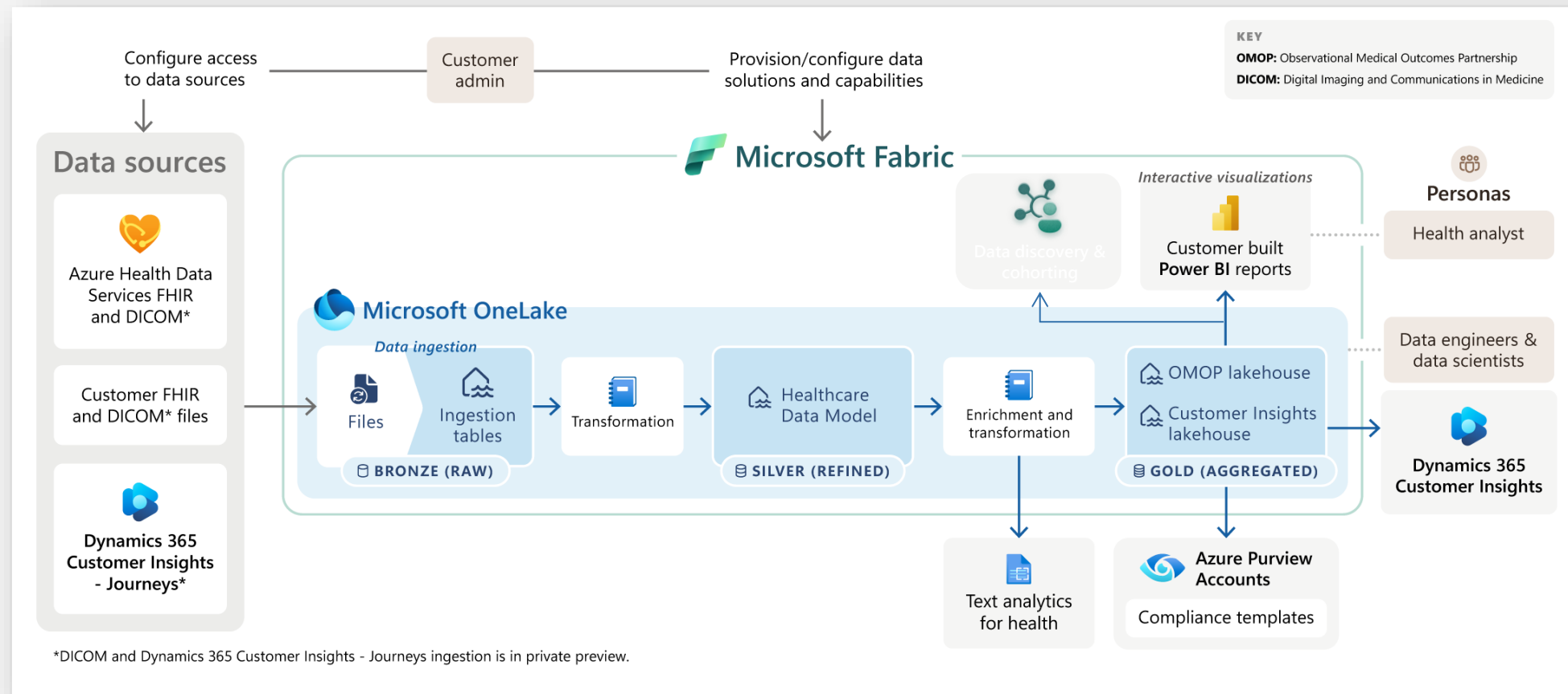
Powered by
AI



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Purpose Built Healthcare Lakehouse

Medallion lakehouse approach enabled by ingestion of multi-modal data from various sources, a comprehensive healthcare data model supporting industry & community standards across various data domains, and support for popular use-cases like multi-modal clinical research with OMOP or analytics.





Healthcare data solutions in Microsoft Fabric



Healthcare data foundations

The foundation defines the lakehouse architecture to progressively improve the structure and quality of data as it flows through each layer of the architecture.



Azure Health Data Services - Data Export

Ingest FHIR data into OneLake by using the Azure Health Data Services FHIR Service.



DICOM data transformation

Ingest, store, and analyze Digital Imaging and Communications in Medicine (DICOM) medical imaging data in OneLake.



OMOP transformations

Prepare data by using Observational Medical Outcomes Partnership (OMOP) open community standards for standardized analytics.



Dynamics 365 Customer Insights Data Preparation

Transform heavily nested FHIR data into the Delta format for seamless ingestion into Dynamics 365 Customer Insights – Data, an analytical tool that enables organizations to examine and create segments of their customer populations for outreach efforts.



Healthcare data solutions in Microsoft Fabric - Previews



Discover and build cohorts (preview)

Explore multi-modal data using natural language queries and build cohorts for downstream research and AI innovation.



CMS claims data transformations (preview)

Use the claims data transformations pipeline to bring your CMS CCLF (Centers for Medicare & Medicaid Services Claim and Claim Line Feed) data to OneLake.



Patient Outreach Analytics (Preview)

Unify appointment information from your clinical data sources with patient outreach data from Dynamics 365 Customer Insights - Journeys to show insights of the influence of different outreach efforts on appointments.



Care Management Analytics (Preview)

Gain insights to the high-risk and rising-risk patients to intervene with the right care plan actions necessary to improve the outcomes and ultimately lower the costs associated to care.



SDOH datasets - Transformations (preview)

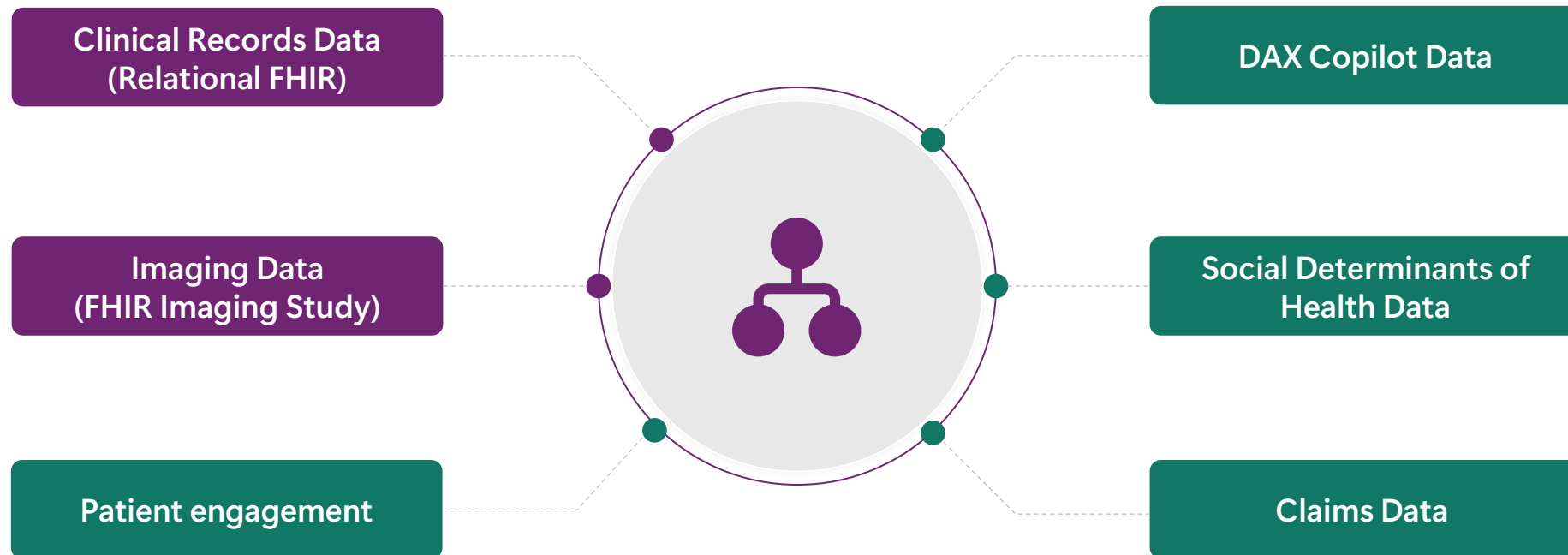
Use the SDOH datasets transformations pipeline to bring your Social determinants of health (SDOH) datasets to OneLake.



Healthcare data solutions in Microsoft Fabric

Healthcare Data Model – Harmonize healthcare data into a comprehensive model

A data model that is both comprehensive and familiar. It is driven by industry standards like HL7 FHIR, DICOM, and OMOP, can handle the many business domains found in healthcare, such as clinical, administrative, financial, and social. The healthcare data model support analyzing FHIR clinical data leveraging traditional SQL based tooling, by providing FHIR data in a relational form.



■ GA

■ Public Preview

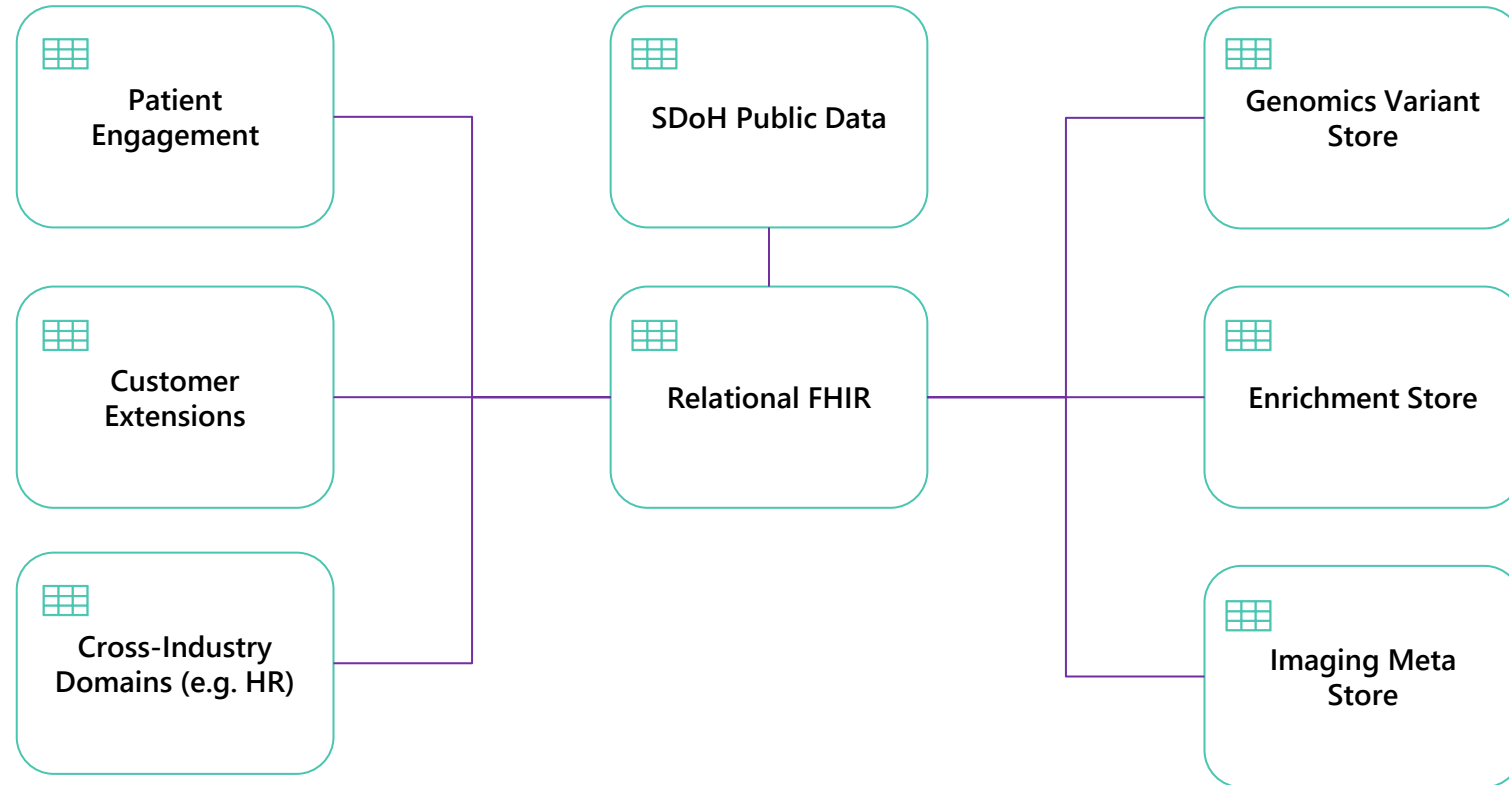


Healthcare data solutions in Microsoft Fabric

Healthcare Data Model – Harmonize healthcare data into a comprehensive model



Healthcare Data Model





Healthcare data solutions in Microsoft Fabric

Fabric building blocks – Extend platform tooling to deliver custom Healthcare components



Lakehouses - There are four lakehouses that are created when you deploy the healthcare foundation capability.



Notebooks - Each of the capabilities that you enable will add one or more [notebooks](#) to your workspace.



Data Pipelines - Some of the capabilities that you deploy will provide pre-built [data pipelines](#) that run the logic in the pre-built notebooks to transform your data.



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Demo

Tour the solution and review
Data Ingestion



Healthcare data solutions in Microsoft Fabric

Additional reading – Industry and Microsoft documentation for further learning

- Industry standards**
- [HL7 FHIR standard](#)
 - [DICOM standard](#)
 - [OMOP Standard](#)

- Product pages**
- [Microsoft Cloud for Healthcare](#)
 - [Azure Health Data Services](#)

- Learn Modules**
- [Get started with healthcare data solutions in Microsoft Fabric](#)
 - [Healthcare data solutions overview](#)
 - [Get started with Microsoft Fabric](#)

- Technical Docs**
- [Azure API for FHIR documentation](#)
 - [Manage medical imaging data with the DICOM service and Azure Data Lake Storage](#)
 - [What is a lakehouse in Microsoft Fabric?](#)
 - [What is Apache Spark compute in Microsoft Fabric?](#)



Healthcare data solutions in Microsoft Fabric

General availability and Public Preview



Microsoft Fabric is covered by the HIPAA BAA (ISO/IEC 27017, 27018, 27001, 27701). Healthcare data solutions is available in all [Azure regions where Microsoft Fabric](#) is available, contingent upon capacity.

Supported languages: English, French, German, Italian, Japanese, Portuguese, Spanish.



Previews designated as production ready do employ privacy and security measures typically present in generally available Online Services.

With healthcare data solutions, use Microsoft provided sample data or your own data that is subject to regulatory compliance requirements.

[Learn More](#)

[Deploy it today!](#)

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something for
everyone!



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Karuana Gatimu

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How was the session?

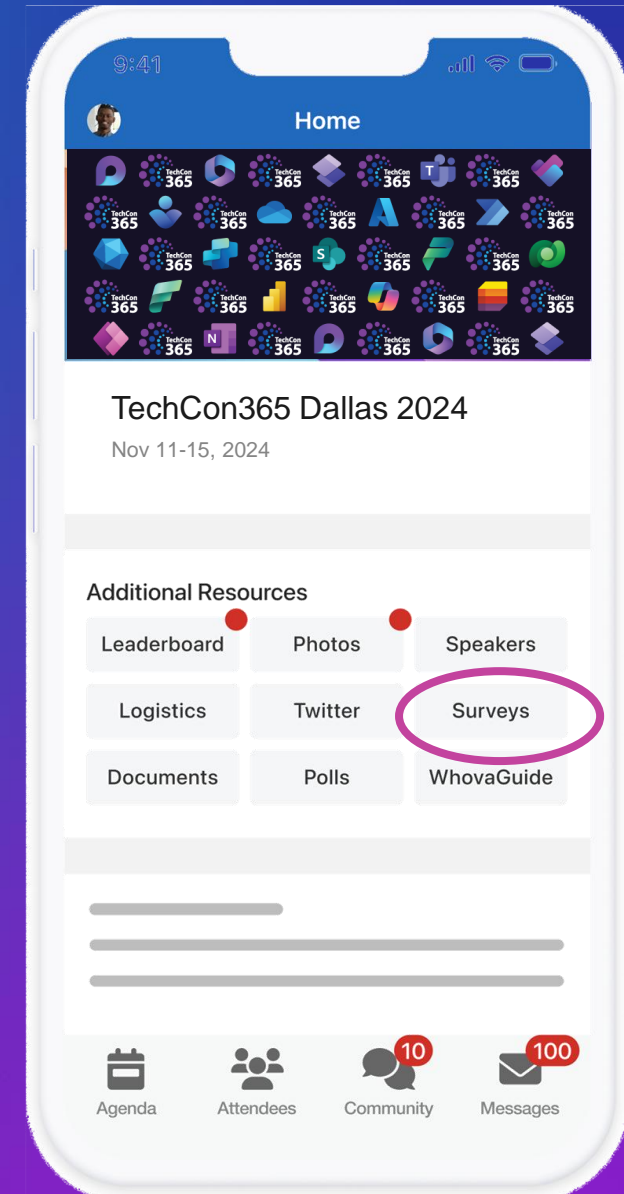
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