Navigating the Digital Landscape Transforming Healthcare Data with an Internal Developer Platform

WSO2 Conference May 7-9 | Hollywood, FL, USA

zeomega®

About Me



Britto Arul , Head of Interoperability Engineering, Zeomega



Twenty-five years of experience in Healthcare Information technology



Have been part of Healthcare Digital transformation Journey since 1999

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About Zeomega

Founded in 2001

Headquarters in Frisco, Texas, USA

To empower healthcare organizations with innovative population health management solutions.

Core Product

- Jiva: Integrated population health management platform

Key Features

- Care Management, Utilization Management ..etc
- Data aggregation ,analytics
- Patient engagement

Technology

- Python, SQL Server, zope5
- API Gateway : WSO2 API Manager
- Developer Portal : WSO2 Choreo

HealthUnity®

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HealthUnity Interoperability Platform

HealthUnity® is a comprehensive **interoperability platform** from ZeOmega purpose-built for advancing payer-provider collaboration and value-based care

Payer & Provider Experience

- 20+ years providing UM/PA workflow automation solutions for 40+ payers nationwide (ZeOmega Jiva)
- 10+ years providing Health Information Exchange solutions for regional provider networks

Industry-Aligned

- Founding member of HL7 DaVinci Project
- Compliance solutions for CMS-9115, CMS-0057, ONC 21st Century Cures Act

Vendor Agnostic

- HealthUnity™ interoperability platform connects PA ecosystem vendors (EMR, UM, CDS, etc.) using composable architecture, combines support for both standards-based and proprietary APIs

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Topic today



Navigating the Digital Landscape



Transforming Healthcare Data with an Internal Developer Platform

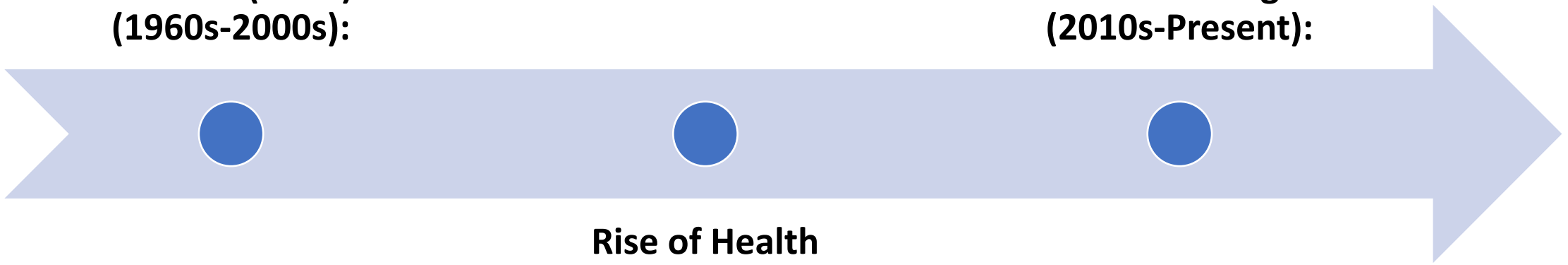
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Digital Landscape in US Healthcare

Early Adoption of Electronic Health Records (EHRs) (1960s-2000s):

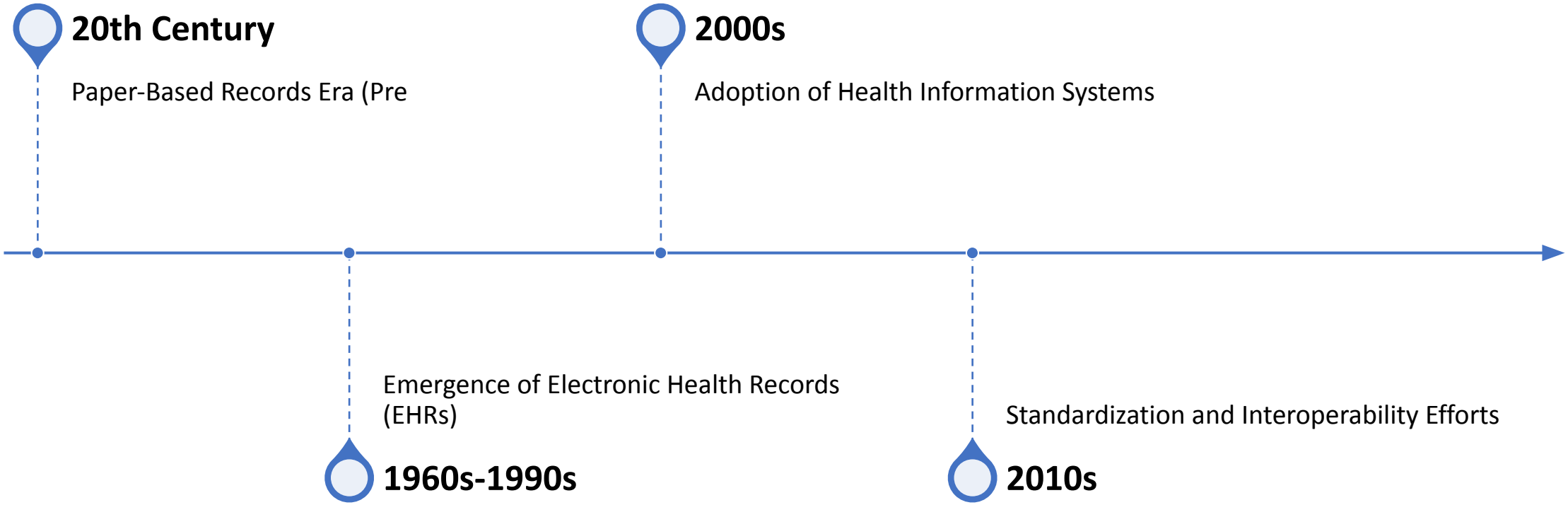
Rise of Health Information Technology (HIT) Initiatives (2000s-2010s):

Focus on Interoperability and Data Exchange (2010s-Present):



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Healthcare Data transformation



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Understanding Healthcare Data

Types of Data

- **Structured Data**
- **Unstructured Data**
- **Semi-structured Data**

Sources of Data

- Electronic Health Records
- Claims Data
- Medical Images
- Clinical trials
- Patient Generated Data

Uses of Data

- Population Health Management
- Healthcare Administration
- Clinical Decision Making
- Clinical Quality Measures
- Research and Analytics

Data Privacy and Security → **Interoperability** → **Data Quality**

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Integration Strategy

- **Data Aggregation**
  - Procure meaningful data (Claims, Administrative, Financial, Clinical) from disparate sources and use data to drive actions
  - large catalog of “Open APIs”

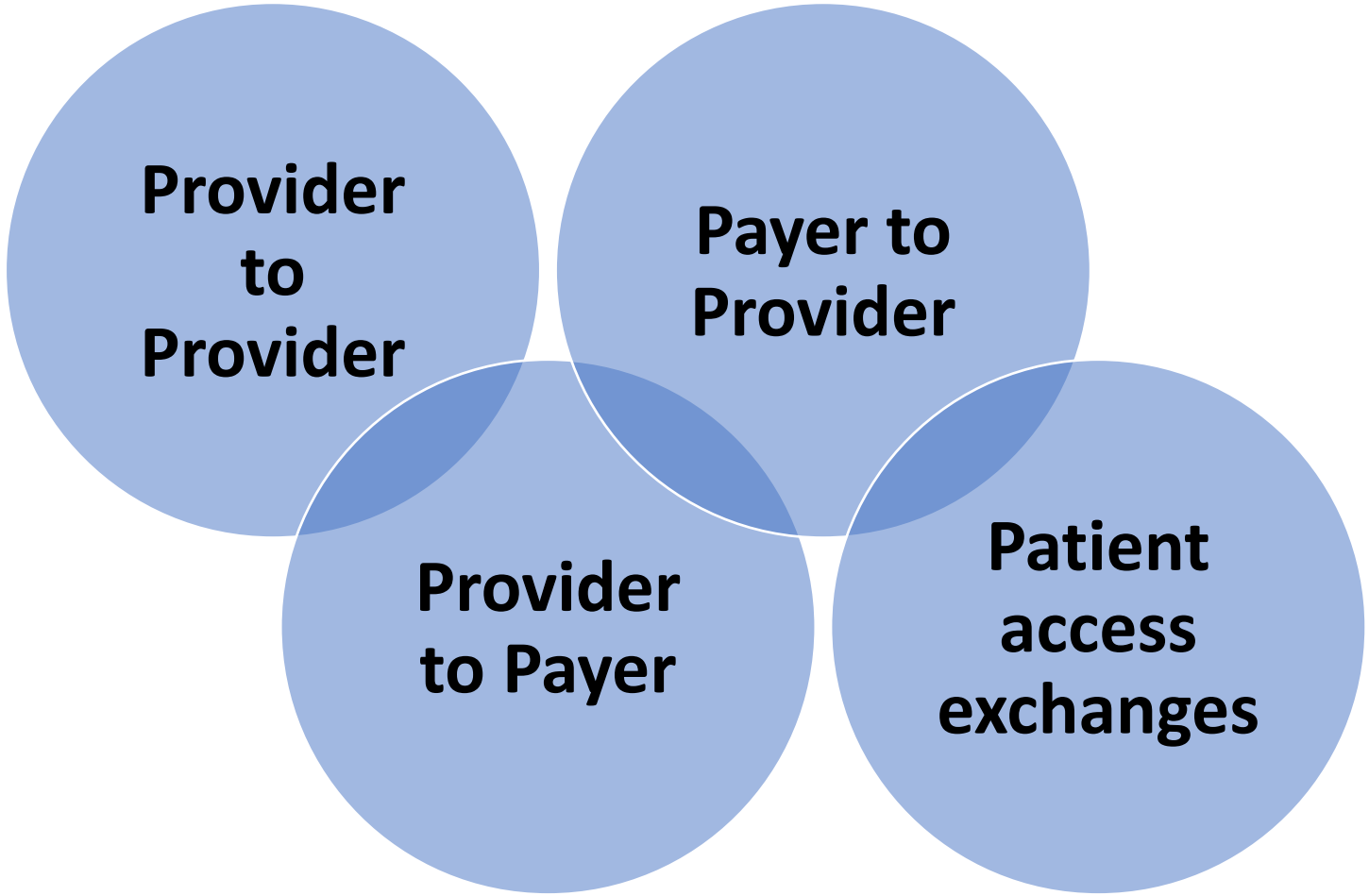
- **Link data from disparate sources**
  - Enterprise Master Patient Index (EMPI)

- **Bi-directional standards-based data exchange**
  - HL7 V2, CCDA
  - X12 270/271 (Eligibility), x12 834 (Enrollments), x12 278 (Authorization) , x12 835(Remittance), x12 837 (Claims), x12 275(attachments)
  - FHIR (Fast Healthcare Interoperability Resources)

- **Industry standard integration modalities**
  - Delimited flat files, XML files, batch loads, web service APIs
  - REST and SOAP, XML/JSON payloads

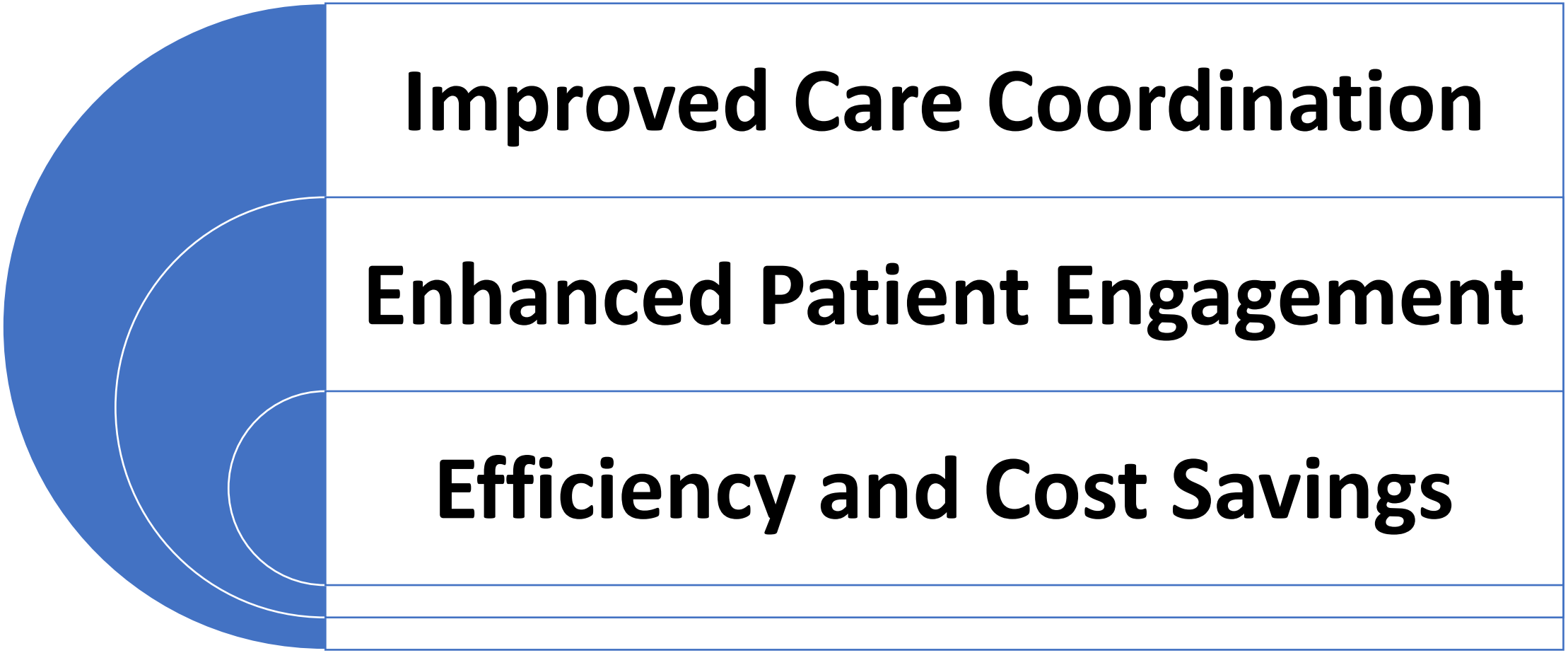
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Types of Data transformation/Exchanges



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Benefits of Data Exchanges



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Healthcare Interoperability Challenges

- Lack of Standardization
- Data Security and Privacy Concerns
- Siloed Data
- Resistance to Change
- Data Quality and Integrity

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Data exchange Mode

Batch

- Efficient for processing large volumes of data.
- Reduced strain on network resources since data transfers are less frequent.
- Easier to manage and schedule processing tasks.
- Delayed data availability

Realtime

- Enables quick decision-making and interventions, leading to improved patient care outcomes.
- Supports real-time monitoring of patient conditions and alerts for critical events.
- Facilitates seamless integration with decision support systems and clinical workflows.
- Increased demands on network bandwidth

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Problem Statement

The problem statement in healthcare data exchange revolves around the efficient and secure transfer of patient information among various healthcare entities such as hospitals, clinics, laboratories, pharmacies, and insurance companies. **Key issues include:**

Interoperability

- Different healthcare systems often use different formats and standards for storing and exchanging data, leading to interoperability challenges

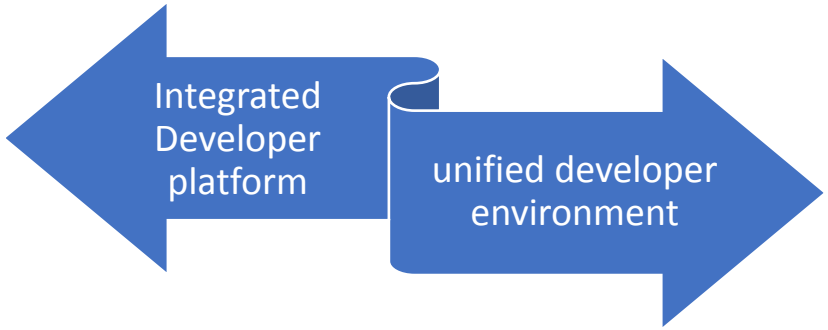
Standardization

- Lack of standardized data formats and protocols complicates data exchange processes. Establishing common standards for data elements, vocabularies, and messaging formats can facilitate smoother interoperability and reduce integration costs.

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Technology solutions

- Addressing these challenges requires collaboration among healthcare stakeholders, including providers, payers, regulators, technology vendors, and standards development organizations
- It also requires leveraging emerging technologies such as interoperability standards (e.g., HL7 FHIR), blockchain, and artificial intelligence to streamline data exchange processes while ensuring security and compliance with privacy regulations.



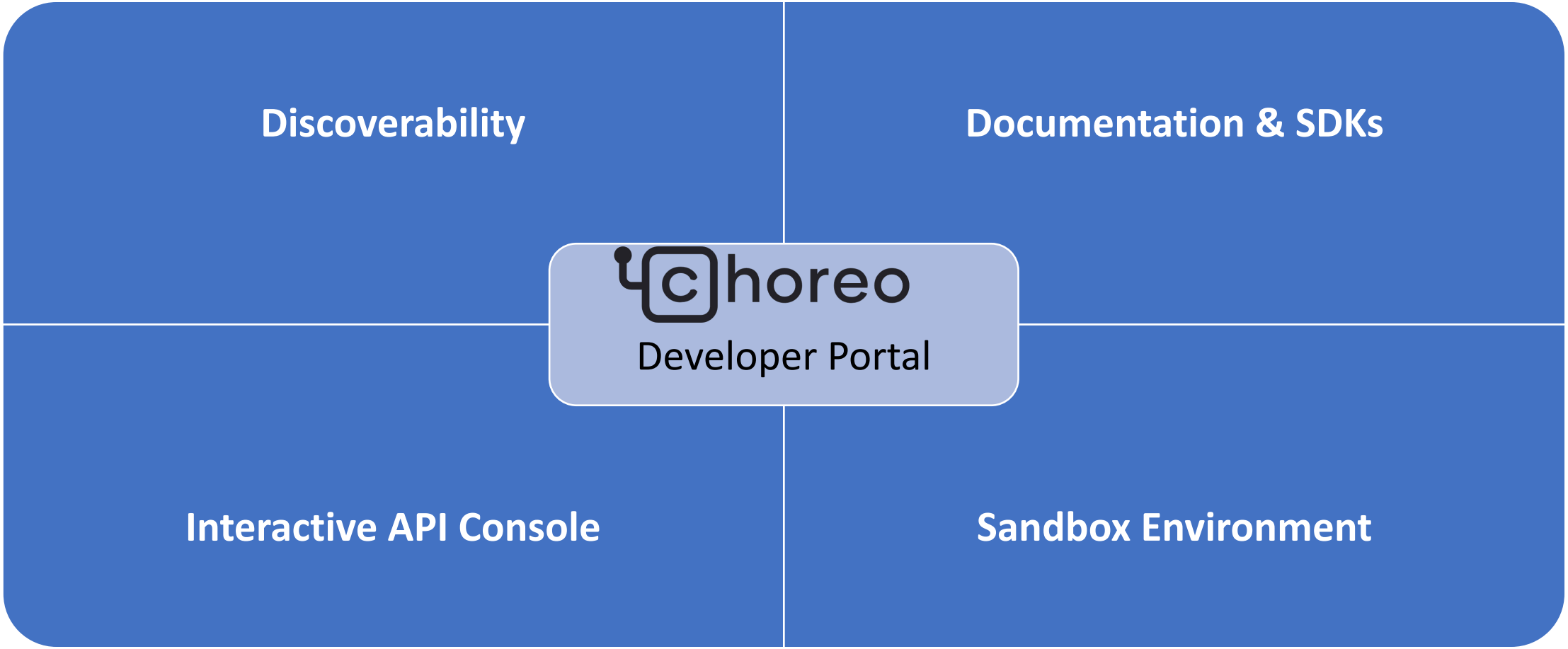
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Integrated Developer Platform

- Addressing Interoperability Challenges
- Comprehensive ecosystems that bring together developers, data scientists, and healthcare stakeholders to collaborate on data transformation initiatives.
- a unified environment with tools, APIs (Application Programming Interfaces), data resources, and developer-friendly features to streamline the development and deployment of healthcare applications and solutions.
- Streamlining Data Integration and Analytics
- Collaboration and Communication
- Easier Onboarding
- Scalability and Flexibility
- Ensuring Regulatory Compliance and Data Governance
- Support for Modern Development Practices (Devops, CI/CD..etc)

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Developer Portal



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Customized UI

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Home APIs Applications ARUL

Empowering Interactions and Insights

Navigating the Digital Landscape: Transforming Healthcare Data with an Internal Developer Platform

Browse APIs



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API Listing

Where Data and Innovation Converge

Explore and Interact Jiva API and CMS 0057 Final Rule Patient Access API, Provider Access API, Payer to Payer Exchange

Search APIs Search

Tags

All

Jiva Integration Service (19

FHIR (21)



REST

ActivitiesServiceAPI

The documents listed here are specifications for the collection



REST

AlertsServiceAPI

This API is for Jiva alerts

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Home APIs Applications ARUL

- Overview
- Credentials
  - Sandbox
  - Production
- Try Out
- Documentation
- SDKs
- Contracts



REST

ActivitiesServiceAPI

Version 1.0.0 | by Zeomega Healthunity

API Interactive

Endpoint(s) Sandbox https://4a5f0e57-db70-4be7-a85f-1373dce5ad54-sandbox.e1-u...

Overview

The documents listed here are specifications for the collection of RESTful APIs to create, update, retrieve, search and close Activities and create and retrieve Interactions

Resources

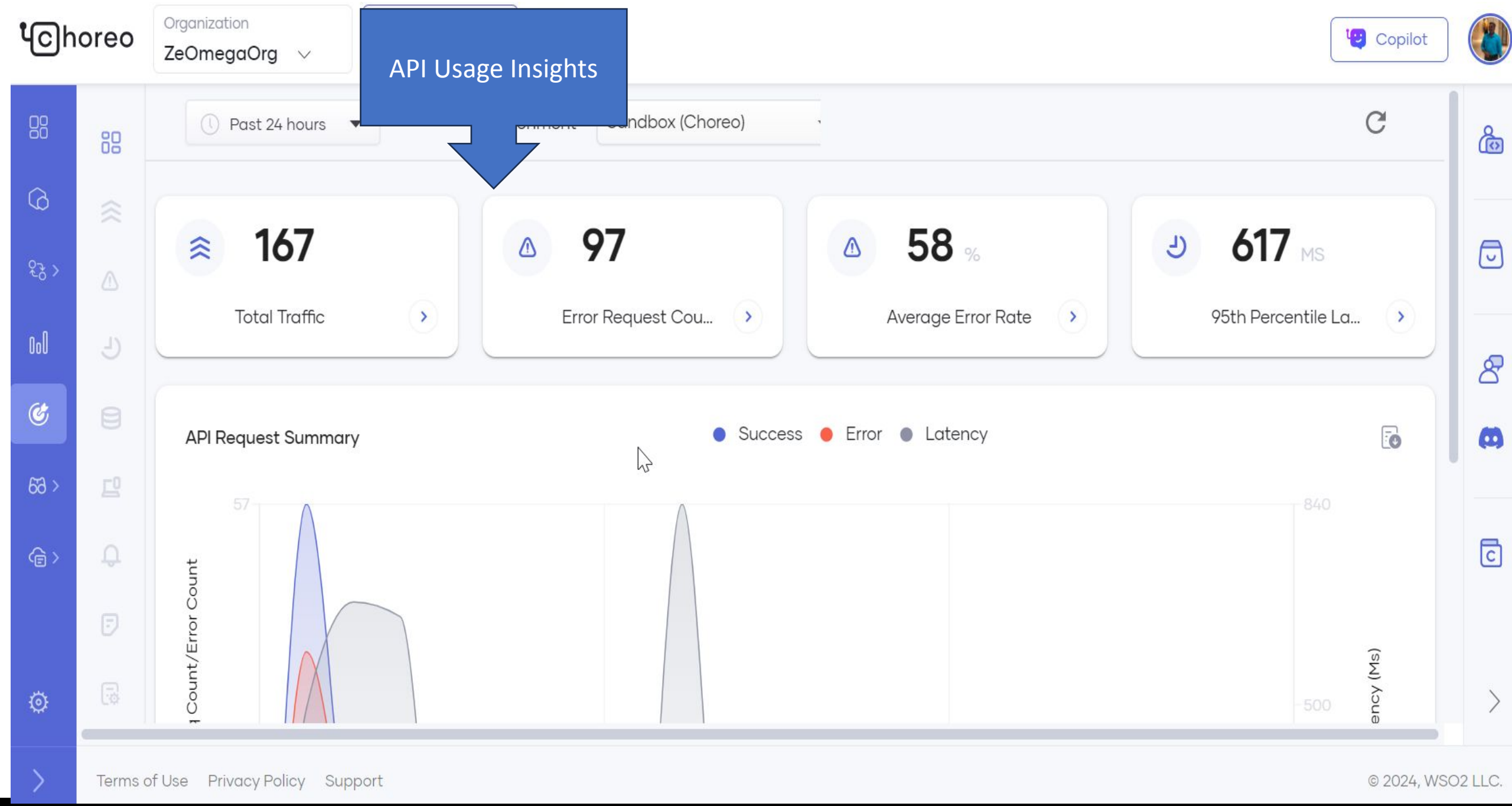
POST /

GET /{id}

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Envisioning the Evolution of Healthcare Interoperability in the Digital Age

- Expansion of Interoperability Standards
- API-Based Ecosystems
- Patient-Centric Data Exchange
- Data Privacy and Security
- AI and Analytics
- Health Information Exchanges (HIEs)
- Partnerships and Collaboration

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Q&A

Thank You



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