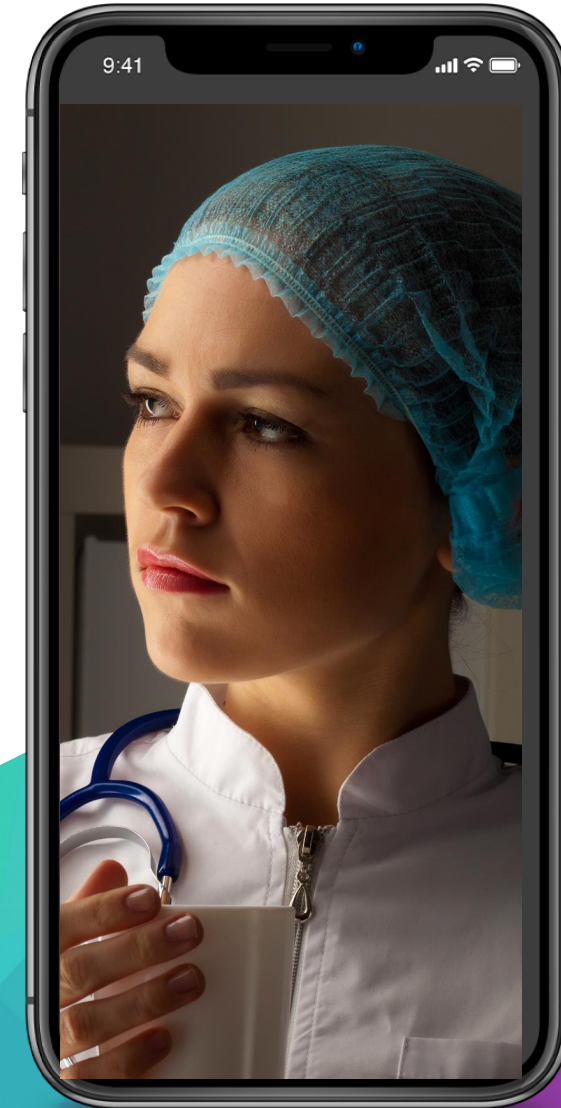


Minerva - Interoperability and Digital Transformation Platform

Company and Platform Overview

September 2020





MphRx Corporate Overview



About MphRx



Headquartered in NY with subsidiaries in India, Australia, Brazil, Singapore and UK



300M+ Patient records managed
300k+ clinical users



Built Minerva – a Vendor Neutral Digital Health platform – one of the first production implementations of FHIR



Deployed in 20+ countries
100+ customer sites



ISO:13485 and ISO:27001 Certified
Compliant with HIPAA, GDPR and
Global data protection acts.



Listed amongst the top 10 cloud vendors for healthcare in the Forrester Wave research on Enterprise Health Clouds, 2017



Customers and Partners

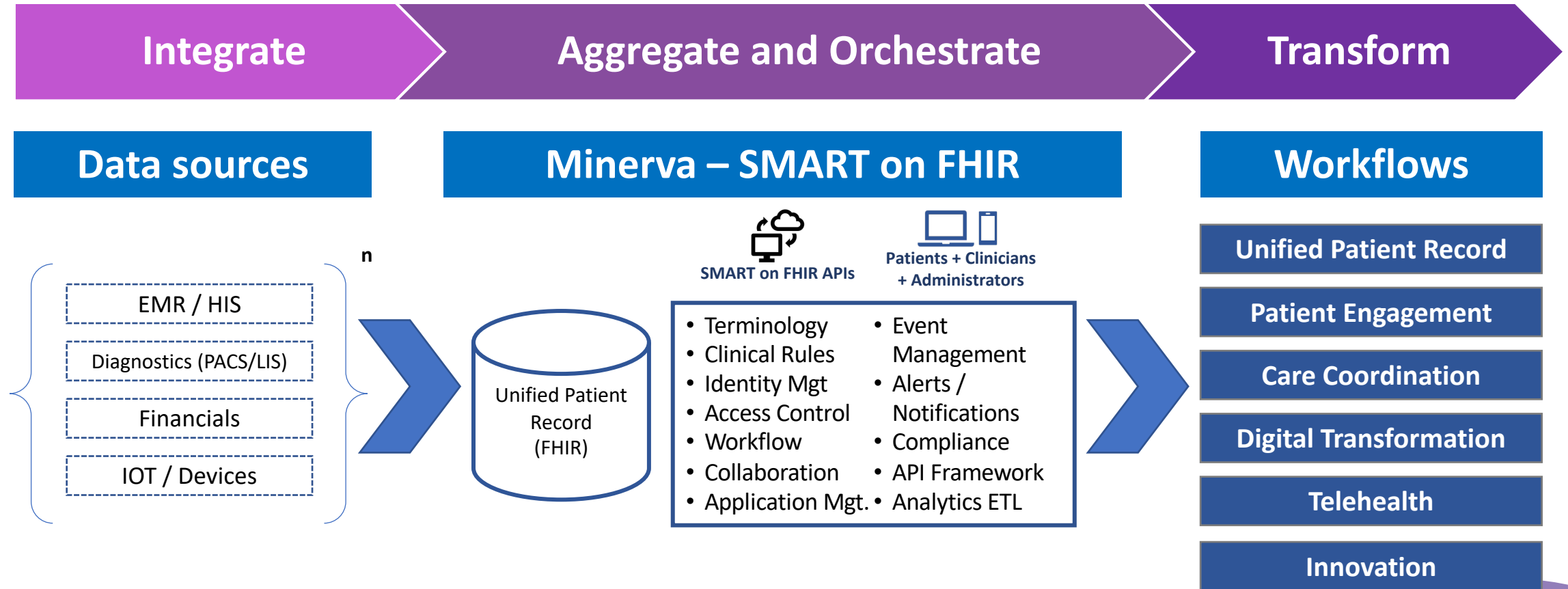




Minerva – Introduction



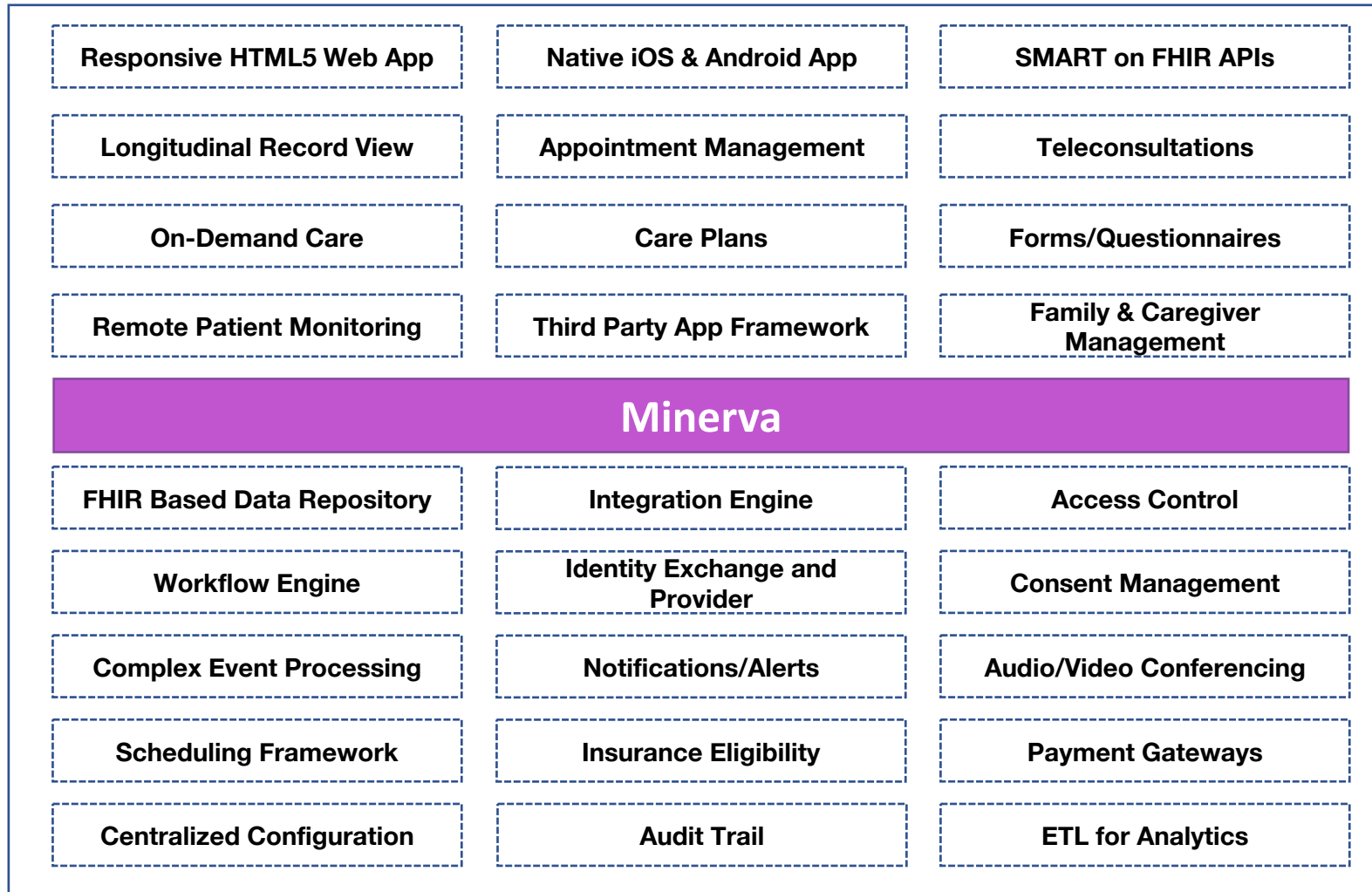
Minerva – Interoperability and Digital Transformation



Minerva helps aggregate data from disparate healthcare information systems to create a single vendor neutral health record that is based on **FHIR**.

Minerva – Building Blocks for Digital Health

The Minerva platform was designed to bring together common building blocks that are required to create digital health tools without having to rip or replace existing IT investments. This allows rapid development of use cases by re-using core components – leading to lower cost to market.



Minerva | Technology

Minerva is a Vendor neutral and an Open standards-based platform that provides healthcare organizations the ability to digitally transform their data and workflows.

Cloud and On-premise deployments

Each Minerva environment is deployed as a dedicated instance for customers. The platform can be deployed on-premise (on VMs) or on the cloud (MS Azure, AWS, Google Cloud, Alibaba).

Horizontally Scalable, Distributed, Fault Tolerant and Highly available

The platform can be scaled horizontally and can be deployed distributed across multiple sites.

Centralized Configuration

Manage configurations across multiple instances in a deployment through a single tool.

Modular Deployment

Modular architecture allows for customers to specifically deploy and scale components of the platform to suit business needs.

Security by design

Highly secure with data being encrypted both in storage and transit. Granular access control and audit trail makes it compliant with HIPAA, GDPR and other global data protection acts.





Minerva – Use Cases and Features



Minerva | Use Cases

Interoperability

Creating a vendor neutral interoperability layer across the healthcare enterprise

Integration Engine

FHIR based Longitudinal Record

SMART on FHIR Framework

Configurable Access Control

Complex Event Processing

Third Party Integrations

Extract Transform & Load EDWs

Digital Workflow Optimization

Eliminate inefficiencies across healthcare workflows through automation

Virtual Care

Create engaging digital access experiences for Patients and Providers

Patient & Family Engagement App

Clinical Viewer App

Scheduling – Virtual, On-demand & Onsite

Remote Patient Monitoring

Teleconsultations

Gamified Care Plans

Questionnaires and Forms

Surgery Coordination

Transition of Care

Digital Triage

Clinical Trials



Minerva | Use Case - Interoperability

Integrate data from disparate sources

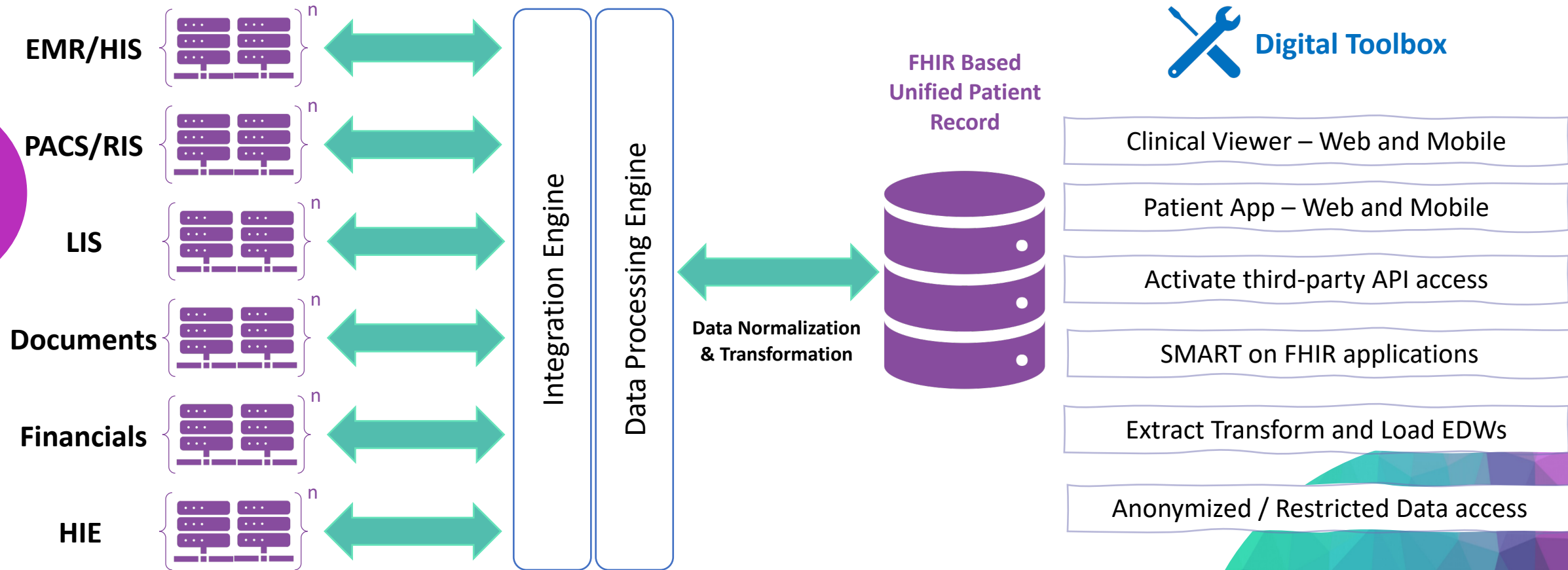
Leverage healthcare standards (HL7, DICOM, XDS, IHE Profiles, X12, EDI, FHIR) and non-healthcare standards (CSVs, Webservices, APIs, Database connectors)

Create a Longitudinal Patient Record

Minerva normalizes and transforms data into a unified health record based on the FHIR data model. Data is stored as native FHIR resources in Minerva.

Transform how you use data

Leverage out-of-the box Minerva applications and APIs to deliver more value to clinicians, patients and healthcare workers.



Minerva | Interoperability Key Features

Integrations

- Bi-directional connectors for HL7, CCD, IHE Profiles, XDS-I, XDS-b, X12, EDI, FHIR formats.
- Rapid integration with non-standard systems using CSVs, Flat-files, Webservices, RESTful APIs and DB Connectors.
- Support multiple real-time inbound and outbound events including patient ADTs, orders, results, prescriptions, claims and charges.
- Device integrations using Bluetooth or framework integrations (Apple, Google)

Data Normalization and Storage

- Store data from disparate data sources as native FHIR resources
- Normalize data across multiple systems, locations and formats to FHIR resource objects.
- Supports repository and registry models – keep core metadata in the repository and retrieve documents/images on demand from source systems.
- Integrate with existing third-party Enterprise Master Patient Index systems using ADT, PIX/PDQ or Custom APIs. Includes internal simple EMPI module for rule-based patient matching.

Data Access

- Create access rules to restrict access to data based on complex relationships.
- Supports multiple authentication frameworks such as LDAP, SAML and OAuth2. The platform includes an OpenID Identity Management system.
- Enable third-party access to clinical data through FHIR APIs.
- Centralized Audit Trail for all data access.
- Data encrypted in storage and transit (SSL)



Minerva | Digital Toolbox Features

The platform provides several building blocks that can be configured to support multiple use cases on a single environment.

Identity Management

Supports multiple authentication providers on the same instance (LDAP, OAuth2, SAML). OpenID based Identity Management module that allows users to sign up and validate access to the platform.

Access Control

Role based access control management to limit access to patient data and functionalities on the platform by creating user groups. Customize rules based on any data parameters.

Workflow Engine

BPMN2 based Workflow Engine to configure complex workflows on the platform. Task management framework for group and individual tasks, managing escalations and reporting.

Complex Event Processing

Configure customized actions based on complex events on the platform. Create rules to listen for events on FHIR resources, validate them and then run custom logic for the actions..

Notifications and Alerts

Create and manage notification templates and alerts for users. Supports in-app notifications, text messages and email notifications.

Audio / Video Collaboration

Integrated with a WebRTC based audio/video conferencing provider. Allow users to collaborate with multiple participants, screen sharing and recording – without any plugins.

Scheduling

Integrate with multiple scheduling engines (through APIs or HL7 SIU) to create a unified scheduling interface. Standalone scheduling engine to manage onsite, virtual and on demand schedules.

Payment Processing

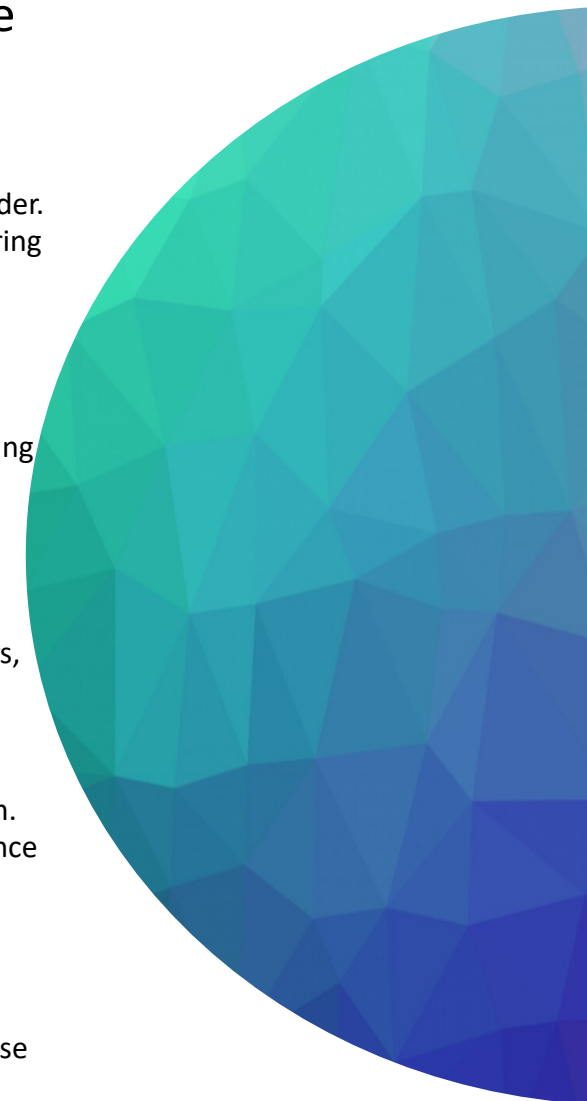
Integrate with payment gateways and insurance eligibility frameworks to provide users the ability to pay bills for encounters, appointments, telehealth and care management services.

Audit Trail

Centralized audit trail for each API call and action on the platform. Trace access of data and usage of features for audit and compliance purposes.

Open FHIR APIs and App Store

Provide and manage access to FHIR APIs (DSTU2, STU3 and R4). Embed third-party apps as widgets available to all users. Enterprise management of App store available to users.



Minerva | API Framework

Transform your existing data into a modern FHIR API interface to integrate with vendors, partners and your own development teams.



- Integrate with third-party applications using FHIR APIs instead of HL7 or custom integrations.
- Support third-party application integrations for consumer facing applications with OAuth2 based integrations.



- Provision and manage access to FHIR APIs through an administrative interface.
- Control access to data for each third-party application by creating access rules that limit the data types (resources).
- Create custom access rules to limit data based on any parameters.



- Provide access to internal development and technology teams to drive innovation.
- API Sandbox and documentation for third-party developers.

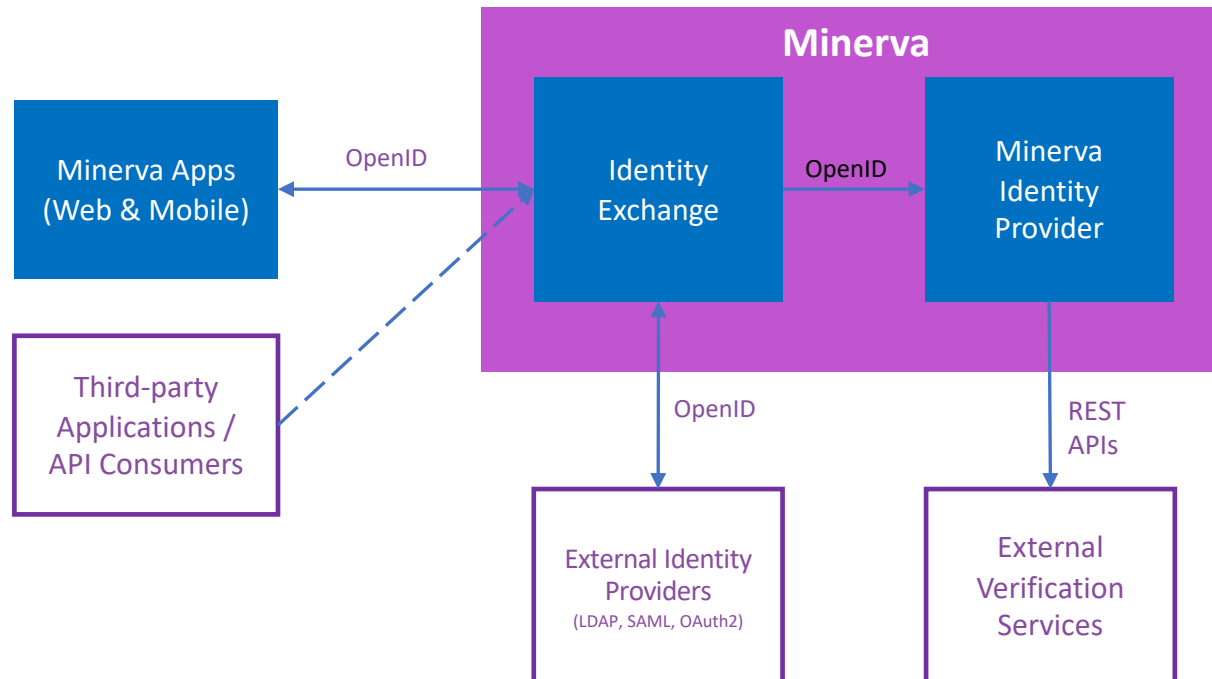


Minerva | Identity Management and Exchange

Minerva provides enterprises to setup a federated OpenID based identity management system to allow users to authenticate using multiple identity providers in a single environment.

Key Features

- Sign up consumers for accounts on the Minerva IDP using email or mobile number. Validate identity against the EMR/PAS systems or third-party verification services.
- Support multiple identity providers in a single instance
- Authenticate enterprise users based on their existing identity providers
- Authenticate consumers and caregivers with Minerva's Identity Provider with two factor authentication
- Configure external verification services to validate consumers and other external users
- Extend the Identity provider to support other third-party applications to provide a single sign on to consumers

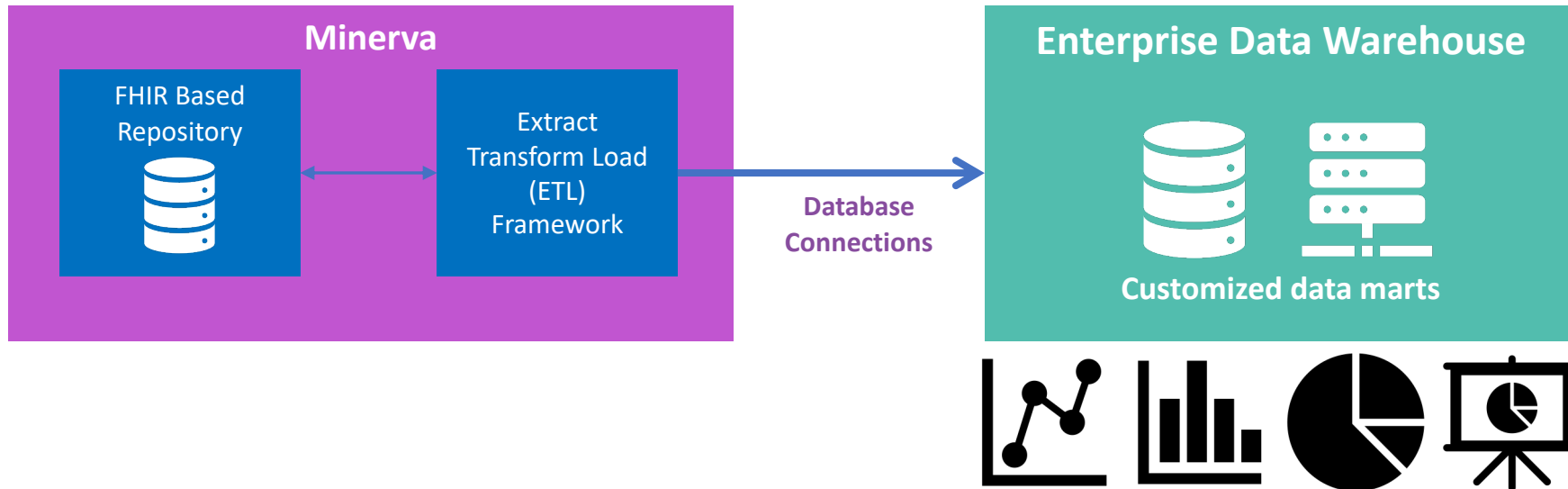


Minerva | Analytics and ETL Capabilities

Minerva enables customers to leverage the FHIR based longitudinal patient record to be used to load and enrich their data warehouse and analytics strategy.

Key Features

- Create ETL workflows to transform data into customized datamarts in the EDW.
- Vendor Agnostic support for multiple EDW infrastructures – relational databases (Oracle, MySQL, SQL Server) and distributed databases (Hadoop)
- Define the frequency and mechanism of updating the data marts.
- Create multiple datamarts for different business needs from the same canonical data source.



Minerva | Clinician App Features

Secure and Instant access

- White-labeled HTML5 responsive web application + Native iOS and Android mobile applications
- Single Sign On integration with LDAP, SAML and OAuth2 auth providers. Role-based access control to patient data
- Multi-language support

Unified Patient Record

- Instant access to the real-time unified patient record
- View all clinical data including discrete elements from disparate sources.
- Chronological timeline view for each patient
- Securely share patient records

Third-party Integration

- Embed within the EMR's patient context
- Integrate and embed SMART on FHIR and third-party applications
- Personalized population-level views for each user
- Personalized patient-level views

Orchestrate workflows

- Manage and view scheduling information from disparate systems
- Multi-disciplinary team collaboration
- Create and manage tasks across clinical user groups
- Create and manage care plans for workflow automation
- Create and manage questionnaires
- Secure Messaging
- Alerts / Notifications

Business Transformation Scenarios

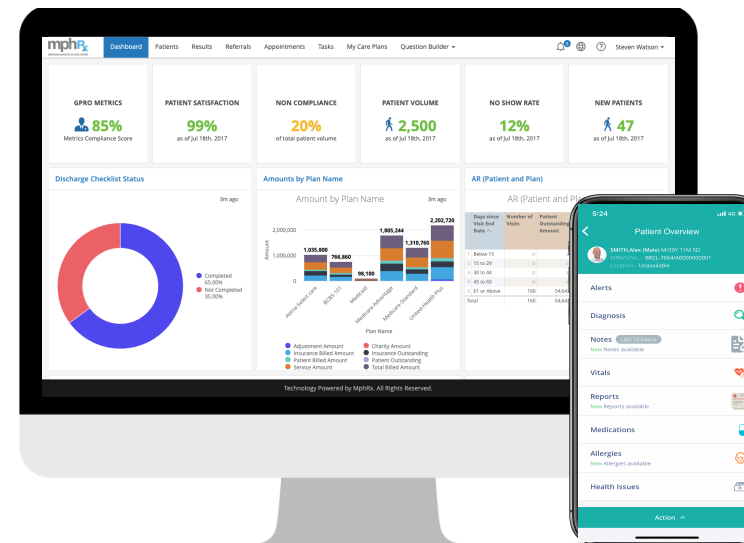
- Provide your own clinical providers with a single view of their patients across all your EMRs and IT systems.
- Deliver secure and controlled patient data to affiliated clinical providers – referring physicians, post-acute care providers or partner organizations.



Employed or affiliated clinicians, nurses and administrative staff



Referring partners, post-acute care and other affiliated partner organizations



Minerva | Virtual Care

Enable providing your consumers with holistic care across multiple delivery channels – on-site, telemedicine and on-demand with a single digital platform.

Access to Care Providers

Book appointments at clinics/hospital

Doctor/Nurse visit @ Home

Scheduled Virtual Consultations

Virtual Urgent Care

Secure Messaging with Care Teams

Manage Care Teams

Alerts for Prescriptions/Orders

Make Payments online

Visit Lab/Imaging Center

Sample collection @ Home (LabFly)

Pickup Medications at Pharmacy

Medication Delivery @ Home

Access to health records

Manage and act for family members

Manage your profile

Upload previous medical history

Connect devices + Apple + Google

Securely share records

Personalized Care Pathways

Gamification and Rewards

Online Forms and Questionnaires

Patient Diary

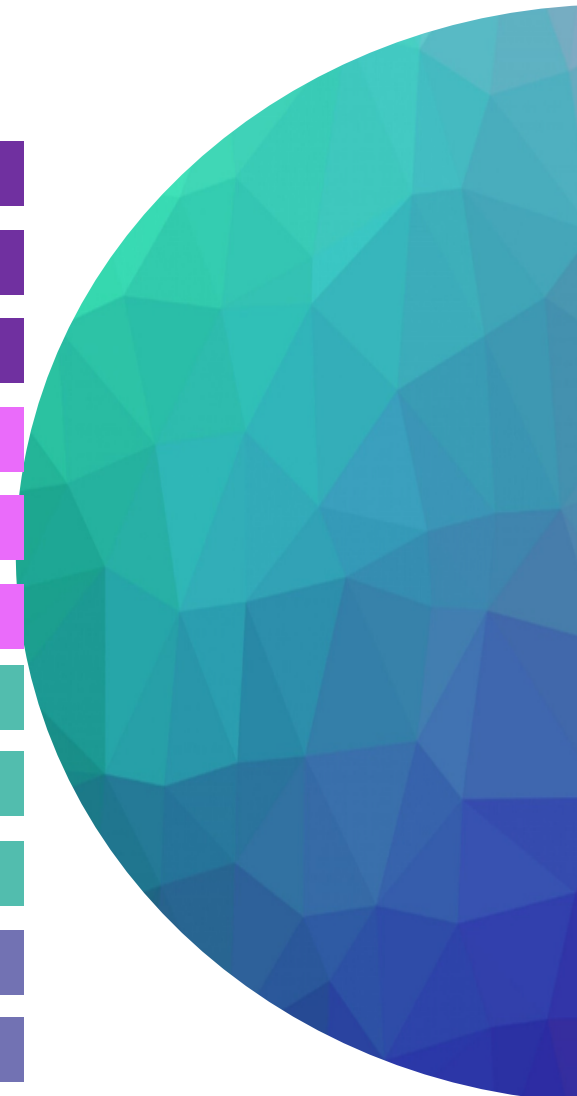
Patient Education / Wellness

Access third-party health apps

Access to Services

Manage Data

Personalized Care Management



Virtual Care | Access to Providers

A single consumer app to access clinical providers across multiple delivery channels.

Outpatient appointments

Book and manage appointments with providers at clinics, hospitals and other health facilities.



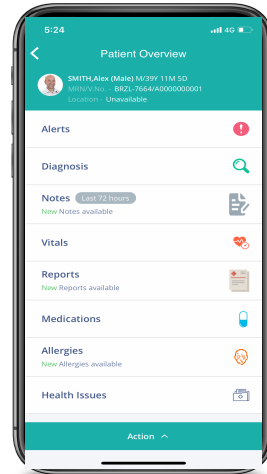
Virtual Consultations

Book and manage virtual consultation appointments with providers using the web and mobile apps.



Virtual Urgent Care

Access urgent care virtually by selecting a specialty and seeing an urgent care physician.



Care at Home

Book and manage services at home including physician or nurse visits.

Secure Messaging

Securely message care team members through the web and mobile app.

Emergency Services

Request for emergency services / ambulance through the mobile app.



Virtual Care | Access to Services

A single consumer app to access healthcare services

Laboratory / Radiology

Book and manage Lab and Radiology tests at clinics and labs.



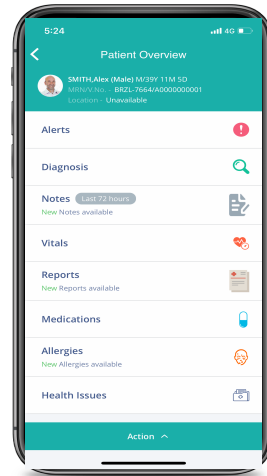
Medication Pickup

Pickup medications from the clinic or associated pharmacies.



Smart Alerts

Get smart alerts and notifications when prescriptions and orders are assigned.



Sample pickup at Home

Request for lab sample collection to be done from home.

Medication Delivery

Get medications delivered securely at home.



Virtual Care | Manage Data

A single consumer app to manage a unified health record

Manage Family members

Manage health records and services for all family members that have provided consent.



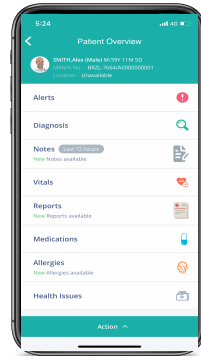
Access to health records

Realtime access to all health records including results, prescriptions and notes.



Connect Devices

Enrich your record by connecting clinical devices like glucometers, BP devices and others.



Manage profiles

Manage profile and contact information in a central system.



Upload History

Securely upload and manage previous medical history.



Virtual Care | Personalized Care Management

Personalized care management that is contextual to patients and care givers.

Personalized Care plans

Personalized care and engagement plans for chronic and post-acute patients.



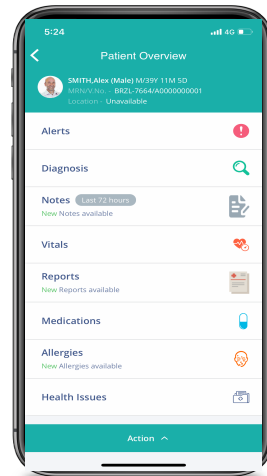
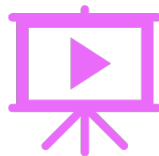
Online forms

Automatic online forms and questionnaires that can be sent to patients and their care givers.



Education & Wellness

Access to personalized and relevant patient education and wellness content.



Gamification & Rewards

Reward patients for adherence to care plans and protocols.



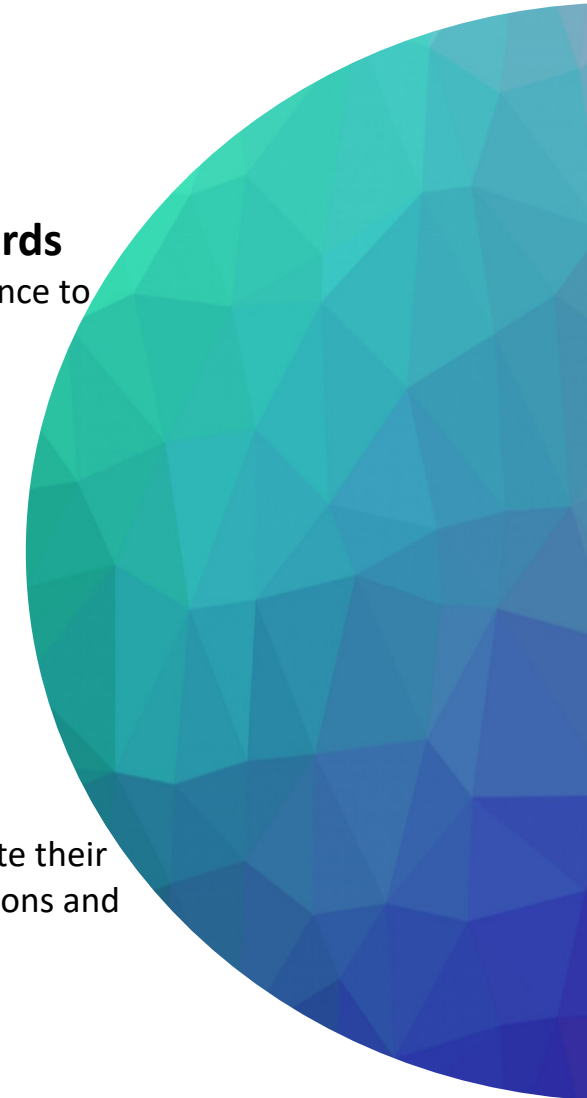
Patient Diary

Daily activity tracking through a patient diary.



3rd Party apps

Allow consumers to integrate their data with 3rd party applications and other consumer services.



Minerva | Virtual Care and Patient Engagement

Enable your consumers and their care givers to engage with your organization through immersive HTML5 Web and Native iOS and Android Mobile apps.

Access health records

Instant access to all health records from the longitudinal health record in Minerva with personalized dashboard. Limit or delay access based on sensitivity of data through configurations.

Manage Profile and Family Members

Self management of profile to update contact information, demographic data, emergency contacts, etc. Link family members to your account through a consent request workflow and access records.

Upload documents from external sources

Upload documents and medical images (DICOM CDs) to the platform from a computer or mobile device camera. Tag and enter information to describe each document that is uploaded.

Secure Messaging

Secure messaging with care teams and customer care providers through the app.

Notifications and Alerts

Get personalized notifications and alerts for medication reminders, appointment reminders and other care related activities using text, email and in-app notifications.

Manage Appointments

Book, request, reschedule and manage appointments for the patient or dependents at appointments at clinics, at home or through virtual sessions.

Telehealth and Virtual Urgent Care

Book teleconsultation appointments or access virtual urgent care through a zero-install experience.

Make payments online and manage bills

Make payments through an online payment gateway or through insurance plans. Manage and make payments to bills on the application.

Personalized and Gamified Care Plans

Enroll in personalized care plans for chronic or post-acute care management. Get rewards for adhering to care plan activities, notifications and content.

Health data Interoperability

Connect data with other third-party applications and manage the data shared with them through a single sign on.



Minerva | Care Coordination

Automate care management workflows through customized care pathways for patients, clinicians and administrative users.

Manage Task Templates

Create / manage task templates that can be reused in the platform across multiple care plans. Define each task, associated links, frequency and the type of tasks (recording vitals, questionnaires, education, etc.)

Manage Care Plan Templates

Create / manage care plan templates. A care plan template is a collection of tasks that can be assigned to several roles for a patient. Frequency and duration of each task can be configured for each template

Identify and assign care plans to patients

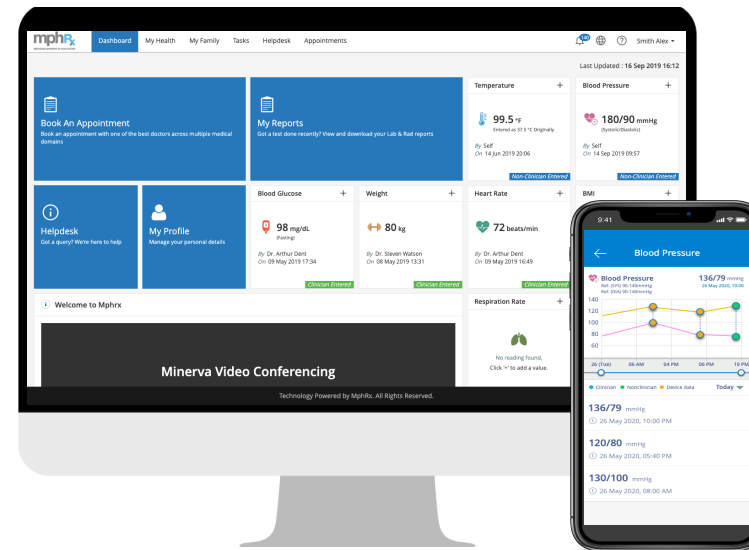
Create static / dynamic lists of patients based on rules and automatically or manually assign patients on care plans.

Centralized workflow management

Provide a centralized view of upcoming or overdue task to care managers and healthcare providers. Manage group worklists and specify expected turnaround times.

Gamification - adherence tracking & rewards

Track adherence for patients and caregivers to care plans and create a reward system to gamify the engagement.



Minerva | Telemedicine and Remote Patient Monitoring

Remotely monitor patients by connecting their devices and tracking their activities.

Connect 350+ patient devices*

Connect with over 350 patient devices through Bluetooth and application integrations to capture patient reported data. Including clinical devices like glucometers, BP monitors, thermometers and fitness trackers.

Create patient centric alerts for clinicians

Create alerts based on data that is integrated, personalized for patients and their conditions. Alerts can be generated to the care team and triaged through the platform.

Real-time data trends

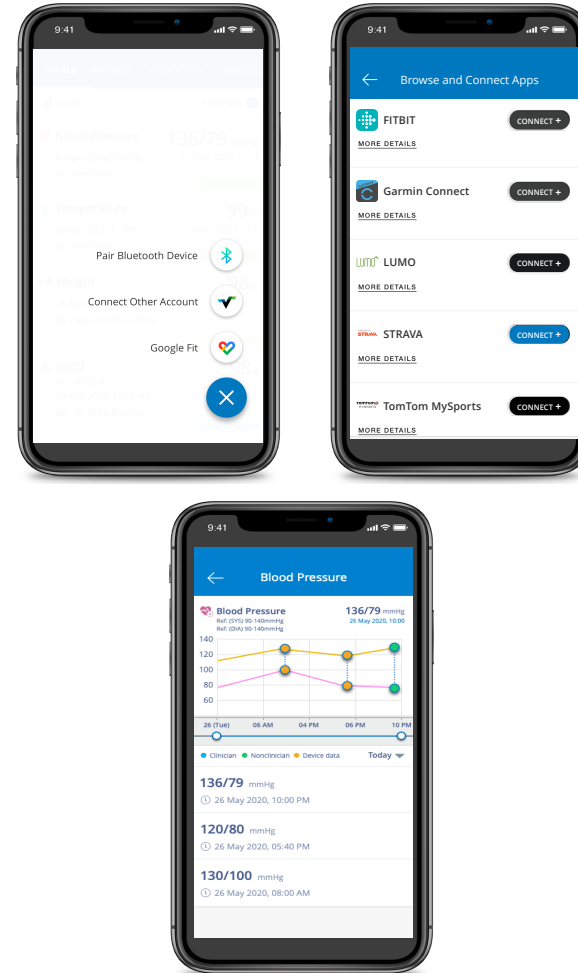
View real-time data trends for both clinical and patient reported data

Track patient adherence to care plans

Link patient reported data to care plan tasks and track adherence for each patient.

Capture data from analog devices*

Support capturing data from non-Bluetooth / internet connected devices by taking a picture of the reading from the phone camera.



* Third-party service integration and licensing involved

Minerva | Surgery Coordination

Manage surgery booking requests from surgeons, optimize the planning process and track preparations for procedures to improve efficiency and reduce cancellations.

Web and Mobile Access for Surgeon's Offices

Enable digital access to book and track surgeries at surgical facilities. Provide real-time information on planned surgeries and upload relevant patient information.

Automate surgery planning and coordination

Automate task-based workflows for various surgical center teams to accomplish activities to keep surgeries on track including pre-surgical testing, financial authorization, device procurement teams, etc.

Personalized access for different teams

Provide personalized and contextual information to all teams involved in the surgery planning process to complete activities that are assigned to them.

Single View for Operations and planning

Hospital scheduling and operations teams have a single view access to all surgeries that are booked along with the ability to track the planning process.

Notifications and Alerts

Enable automated alerts and notifications for surgeons and surgical center operations staff to keep them up to date on all updates to their patients.

Key Features

- Web-based application for Surgeons offices and surgical facility staff.
- Ability to book and request surgeries through an interactive online form.
- Form builder to create different electronic forms as part of the surgery planning documentation.
- A single system as a source of truth for everything related to surgery, e.g., forms, scanned documents, communication between teams, pending activities, and others.
- Capability to track, monitor and take various actions on all incoming requests
- Role-based access controls with LDAP enabled logins
- Automated workflows for pre-requisite tasks assignment
- Automated triggers at predefined time stamps to send out content on behalf of the patient engagement team for reducing their workload
- Tracking and alerting the overdue tasks
- A single location to store and download all surgery-related documents
- Reporting dashboards to monitor any surgery-related metrics. E.g., cancellations, reschedules, transfers, overdue tasks by different teams



Minerva | Clinical Trial Management

Leverage the longitudinal patient record to participate in clinical trial discovery, recruitment and management processes, with the potential to create additional recurring revenues for your organization.

Anonymized Data Access for patient discovery

Offer anonymized data access to pharma & life sciences partners to search and identify potential candidates for Stage 3 clinical trials. Create a recurring data subscription revenue.

Patient Recruitment and Screening

Manage the patient recruitment and screening process for candidates identified for specific clinical trials. Provide your patients with access to life saving trials with pharma & life science partner organizations.

Trial Administration

Share real-time trial administration data with clinical information for patients that are enrolled in clinical trials. Eliminate costs and overheads of sharing trial administration data with sponsors.

Key Features

- Provide sponsors (pharma & life science partners) with anonymized access to the real-time longitudinal patient record with a Web application.
- Control and manage the healthcare data without it leaving your environment through complex access rules.
- Enable sponsors to search and identify potential candidates by specifying inclusion/exclusion criteria.
- Provide your clinicians with alerts when their patients are identified for applicable trials.
- Automate workflows for recruiting and engaging with potential candidates through the recruitment and screening process.
- Securely share real-time patient data through the web application.



Minerva | Digital Triage

Enable real-time digital triaging of patients using Web and Mobile apps

Dynamically triage patients virtually

Provide specialty-based questionnaires to dynamically triage patients based on their responses. Identify risk profiles of patients based on their profiles and assign them to appropriate care plans.

Configure customized care pathways

Define customized care engagement pathways for patients based on their conditions. Deliver content, daily questionnaires, tasks to report vitals to continuously track patients.

Remotely monitor and engage patients

Remotely monitor patients through daily tasks – questionnaires, vitals and other patient reported data. Provide teleconsultations for patients. Integrate data from remote patient devices to track their conditions.

Manage large populations with existing capacity

Centralized task center to allocate tasks to clinical practitioners, care managers and health workers. Manage task allocation, escalations and SLAs through a centralized interface.

Drive engagement with consumers

Create and manage notification templates and alerts for users. Supports in-app notifications, text messages and email notifications.

Key Features

- Web and Mobile based applications for patients to enroll for digital triaging
- Create specialty / condition specific triaging workflows
- Onboard patients as users on the app using two factor authentication
- Configure questionnaire templates, scoring, content and workflows through a User Interface
- Create and manage complex care engagement pathways using an easy to use User interface
- Centralized task engine to manage allocation of tasks to clinical resources.



Questions?

Reach us at sales@mphrx.com

