NAII AI Tech Sprint: "Interventions for Veterans not Currently Served by the VA" Final Demo Presentation

Presented by:
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Provider Directory Background & Business Case

Why Provider Directories?

- Provider data drives the most fundamental processes in the healthcare system. The industry relies on it to connect patients with healthcare professionals, license providers, exchange information and pay for services. Inaccurate provider data puts patient care and billions of dollars at risk.[1]
- Provider data accuracy directly impacts healthcare business processes and patient care in the following ways:
    - Critical business processes rely on accurate provider data. Health plans and providers produce and use it to process payments, detect fraud and abuse, validate credentials, exchange clinical information, manage and coordinate care and develop insurance products.
    - Regulators rely on it to oversee networks and health plan products, ensure compliance and license providers.
    - Consumers rely on it to select health plan products, seek care and avoid surprise billing occurrences.[2]
- Over the past decade rising healthcare costs and federal and state policy have intensified the need for high-quality provider data.
    - A 2018 survey conducted by the American Medical Association (AMA) found that 52% of responding physicians said their patients encounter coverage issues due to inaccurate information in payer directories.[3]

Administrative Burden on Providers

- In September 2019, CAQH surveyed 1,240 physician practices to assess the administrative costs they incur responding to requests from health plans to update and verify directory information. To gauge the volume and frequency of these requests, the survey also examined the number of plan contracts each practice manages: **On average, a physician practice has <u>20.2</u> health plan contracts.[4]**
- Further, each health plan may require their contracted providers to report different data sets in different formats, processes and at different time intervals.
- According to a 2018 AMA survey, providers reported submitting directory information to Payers in various ways, including by fax (38%); credentialing software (13%); email (13%); provider management and enrollment software (5%); and phone, mail and other methods (14%).[5]

Costs of Inaccurate Provider Directory Data

- Patients incur higher out-of-pocket costs when in-network provider information is inaccurate; inaccurate Provider Directories lead to surprise billing for patients.
- Patients access to timely care is impacted when corresponding Provider Directory information is inaccurate.
- Provider practices spend at least one full staff day per week on directory maintenance, at a cost of $998.84 per month. The average fully loaded cost (salary, benefits, overhead) for staff performing directory maintenance work is $63,004. Extrapolated nationwide, this costs physician practices $2.76 billion annually.[6]
- Additionally, inaccurate Provider Data results in claims processing delays and payments to network providers.
- Payers incur high administrative costs associated with their efforts to collect provider data and maintain accurate online provider directories, which are passed on to consumers of their health insurance plans and to network providers in the form of tighter reimbursement rates for covered care.

No Surprises Act

By 2022, the No Surprises Act requires that both Payers and Providers take steps to enhance Provider Directory accuracy rates[7]:

- Payers
  - Verify and update directories at least every 90 days
  - Update provider information within 2 business days of receipt from a provider.

- Providers
  - Have a practice in place to ensure timely provision of directory information to Payers.
  - At a minimum, submit updates to Payers
    - At beginning of plan contract
    - At termination of plan contract
    - When information materially changes

- ***Both*** **Payers' and Providers' efforts should be sufficiently capable of supporting any outside audits.**

- Our technology will greatly reduce the data entry burden for both Payers and Providers.

Provider Directory Requirements

Tricare and VA Choice contract accuracy requirements:

- Provider name
- Provider specialty
- Provider sub-specialty
- Gender
- Work address
- Work telephone number

Verification Frequency:

- TriCare/VA Choice contracts - 24-hour refresh with updated provider information
- CMS - quarterly
- States - varies by State (monthly, quarterly and annually[8])

Sprint Scope:
Exchanging Provider Data and Maintaining a “Single Source of Truth”

For the sake of proving the key concept in the 12 week sprint period, the portion of the Use Case functionality we intend to demonstrate involves ***basic exchange of provider data across logical organization boundaries*** and the ***maintenance of the “single source of truth”*** that is locally scoped to one or more organization participants (business lines) in the interoperability platform.

A core enterprise challenge for Payers is data alignment and reconciliation with its internal systems of record that support one or more Provider Directories. Payers engage multiple input schemes to obtain updated provider data (call centers, web portals, third party data collection, physical visits, etc.), but for a number of reasons cannot utilize this information in a timely manner to update their systems of record and propagate those updates to all internal systems of record that know about a particular provider identity.

We will show that propagation of truth can be done in an orderly way that ensures everyone is on the same data page at any point in time. Yes, this means **we use blockchain**, but not in the sense of a cryptocurrency “distributed ledger,” and AI techniques can be “hooked in” for intelligent identity resolution and automated state-change propagation, discrepancy detection and semi-automated resolution, applying enterprise business rules across database instances, etc.

What Will This Sprint Deliver?

1. Create a mock Payer environment simulating a Master Database and the databases of two separate lines of business (namely, TriCare and VA Choice). These will be on different database stacks, as in the real world.
2. Populate with an initially small amount of data (~100 providers). These are real providers borrowed from a well-known payer's public-facing provider directory, but used fictitiously here to illustrate the problem(s).
3. Translate the domain to an interoperable format using RDF (HL7 FHIR is a good foundation for this domain).
4. Create Linked Data Adapters using our Apex Olympos linked data microservices platform. These conform to a protocol for change propagation defined in our interoperability solution, Apex Unify!.
5. Goal is to see changes from the providers are added to Master, and propagate in near real-time to the lines of business databases that "know about" them. Multiple points where AI adds value.
6. Blockchain is used to build a "single source of truth" with "time-travel."
7. Supports real-time data collection and utilization by Payers for more timely updates of Provider Directories.
8. **Data alignment without batch scripts providing full compliance auditibility.**

Provider Directory Walkthrough - The Payer Environment and Update Process

What You Will See

1. Containerized environment emulating a prototypical Payer
    a. Master database in PostgreSQL
    b. Tricare database in MySQL
    c. VA Choice database in MongoDB
2. Near real-time update of heterogeneous databases
    a. First update Master PostgreSQL database from internal management portal
    b. Synchronizer updates SOR adapter for the TriCare mysql database
    c. Synchronizer updates SOR adapter for the VA Choice MongoDB database
    d. Observe that all are aligned with the new information

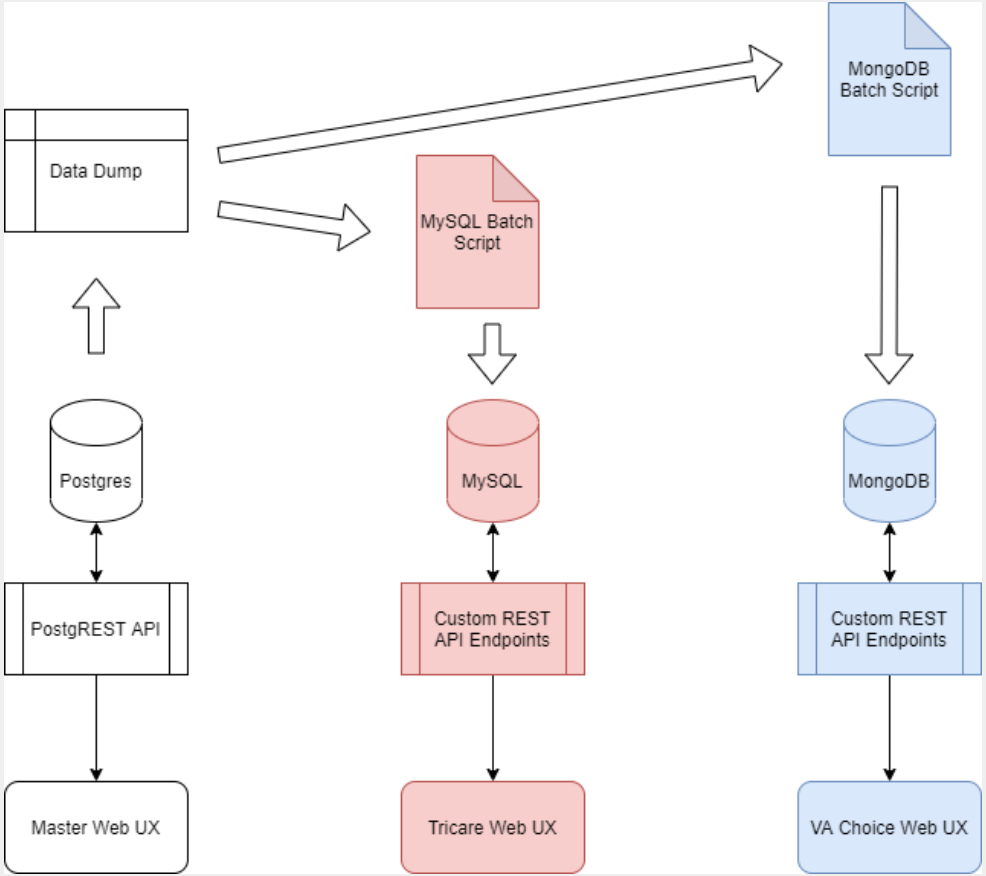

Figure 1 : Current State

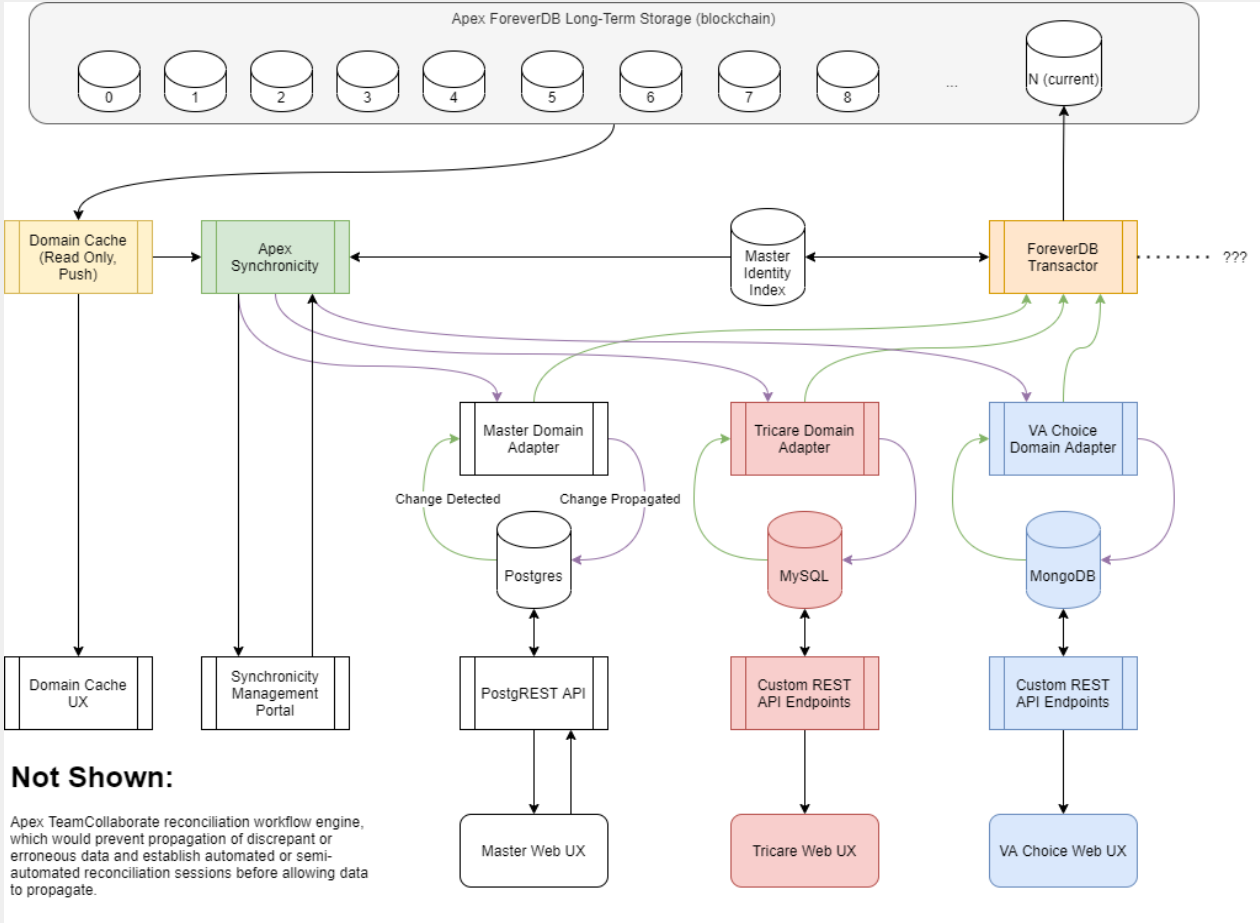

Figure 2 : What You Just Witnessed

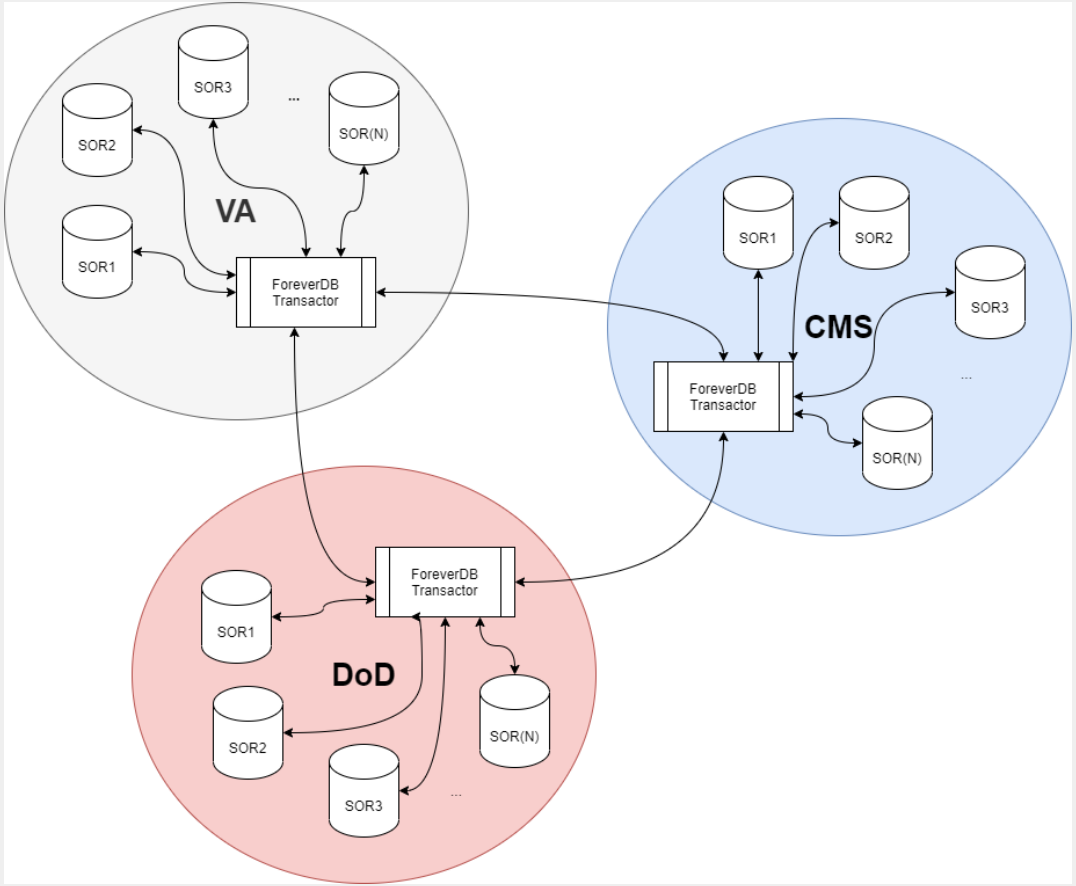

Figure 3 : (Possible) Future State

Key Points - Interoperability

- Apex's approach to "interoperability" is architecture-driven, not API-driven.
- Blockchain is used to construct single, authoritative source of truth suitable for internal SOR alignment. External alignment occurs via a distributed transactor.
- "Inter+Op": Use of linked data provides the "inter" component, and the architecture provides the "Op" component.

Key Points – Artificial Intelligence (AI)

- AI has several “entry points” in the architecture where it can add value:
  - Transactor - for intelligent identity resolution and linking
  - Domain cache - for intelligent state reconstruction over time and real-time discrepancy detection
  - Domain cache - for Clinical Decision Support
  - Synchronizer - for intelligent propagation and semi-automated discrepancy resolution.
  - Long-term storage (“black box flight recorder”) - for virtually limitless Machine Learning and BI applications
  - Adapters - for use of inference via OWL and logic programming

Benefits to VA and Veterans

- Accurate provider information reduces costs and administrative burdens on not only the Payer, but the provider as well. Reducing costs associated with maintaining these directories reduces the prices of services provided to all Veterans - whether they receive treatment at VA facilities or outside facilities.

- More importantly, accurate provider information reduces the number of erroneous claims and claim appeals, which benefits participating Veterans as well as the VA. It also allows for better, more timely, scheduling with the right healthcare provider leading to better care and healthier Veterans.

Questions

Please send any questions regarding our presentation to:

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Endnotes

[1]"Defining the Provider Data Dilemma: Challenges, Challenges and Call for Industry Collaboration," CAQH, 2016, p.1.

[2]"Defining the Provider Data Dilemma: Challenges, Challenges and Call for Industry Collaboration," CAQH 2016, p.2.

[3]"What Physicians are Saying About Directories" Powerpoint summary, American Medical Association, 2018.

[4]"The Hidden Costs of Inaccurate Provider Directories," CAQH, p.2, 2019.

[5]"What Physicians are Saying About Directories" Powerpoint summary, American Medical Association, 2018.

[6]"The Hidden Costs of Inaccurate Provider Directories," CAQH, p.2, 2019.

[7]"AMA High-Level Summary of the No Surprises Act, American Medical Association", 2020

[8]"Requirements and Regulations." BRG Network Adequacy, www.brgnetworkadequacy.com/requ[illegible]ents-and-regul[illegible]ns

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