

Blockchain: A New Approach to Provider Management

45% of Medicare Advantage provider directory entries contain *at least* one errorⁱ. These errors combined with data inaccuracies across other programs, including Medicaid and even commercial payer databases, make it impossible to rely on any provider data. Blockchain is poised to resolve these types of data issues and discrepancies plaguing our healthcare systems and databases today.

By design, blockchain data is distributed across an endless network – a shared general ledger that ensures high data accuracy, quality, and 100% traceability among all stakeholders. Recognizing the impact blockchain could bring to the healthcare industry, and specifically the management of provider data, HHS Technology Group, LLC (HHS Tech Group) set out over a year ago to *redefine how provider data is submitted, reviewed, and maintained*.

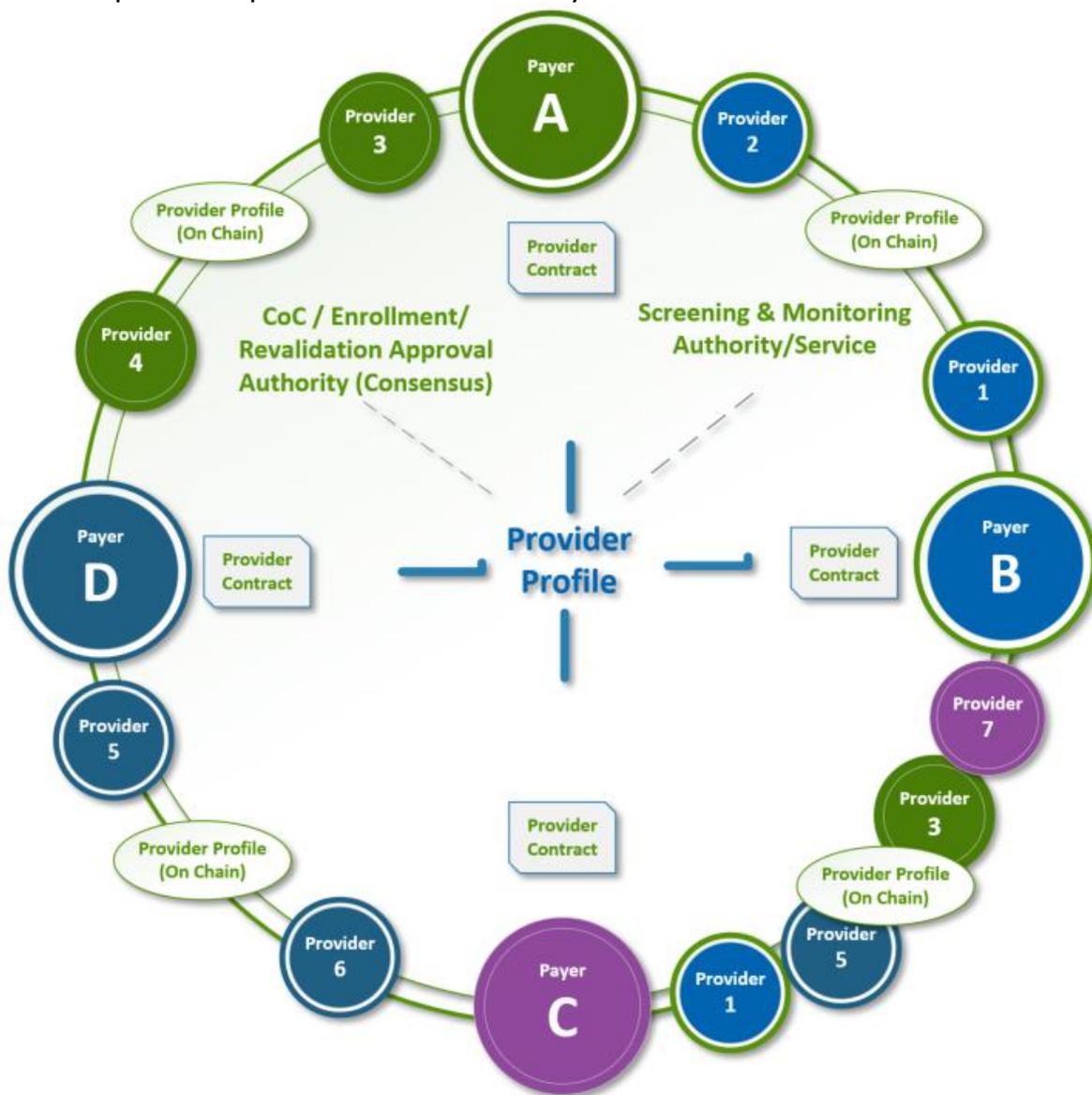
Working around defined blockchain use cases, HHS Tech Group developed and released the first Provider Management technology, **Discover your Provider™ (DyP)**, built on the open source **IBM Hyperledger Fabric Blockchain Platform**ⁱⁱ. – *changing provider management as we know it today*.

Use Cases

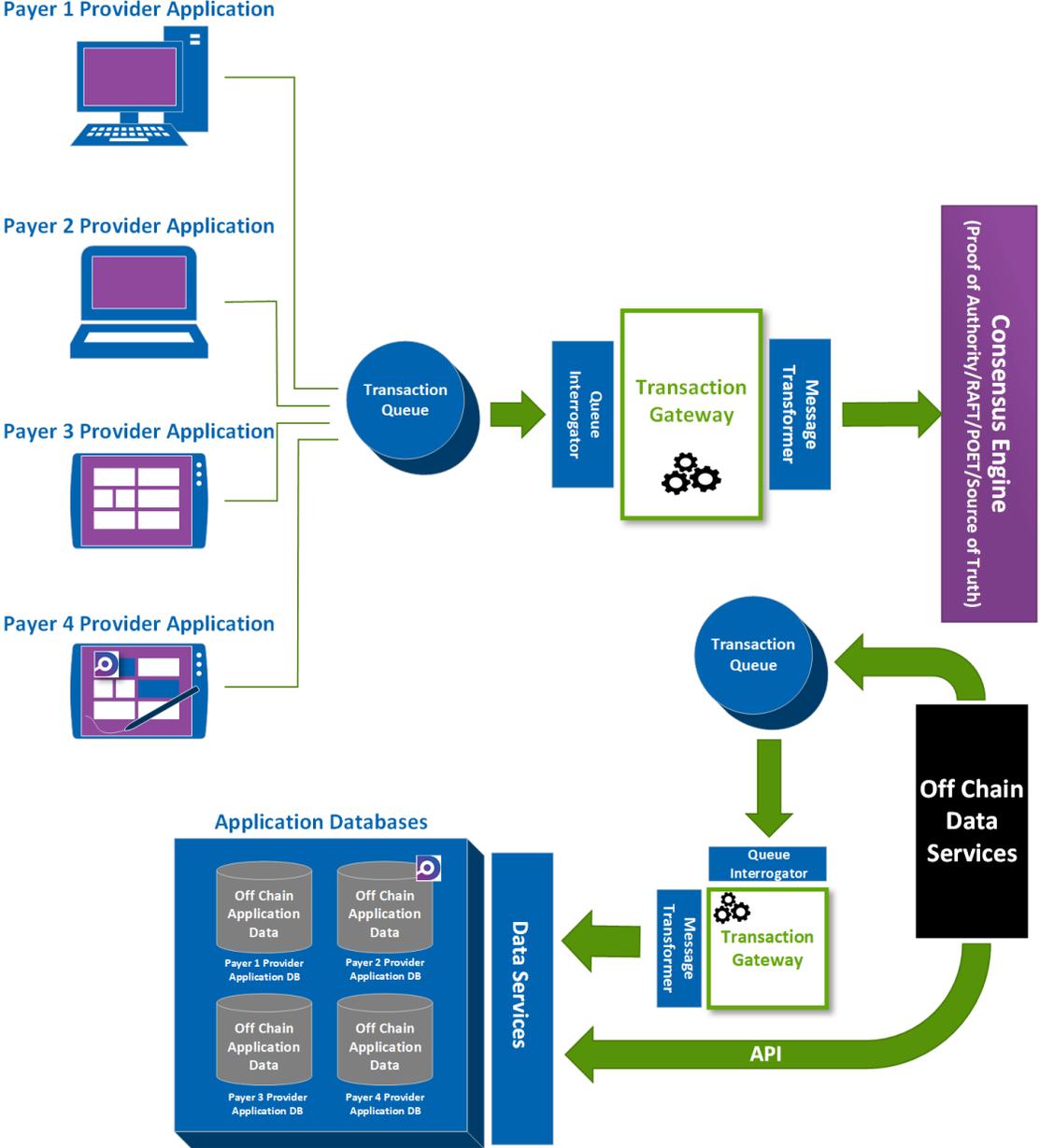
To start, HHS Tech Group established specific **Provider Management** use cases leveraging blockchain to **(1)** receive enrollments, **(2)** process Change of Circumstance (CoC) requests, **(3)** facilitate collaborative peer reviews referencing accurate public data, **(4)** manage the overall provider network, and **(5)** maintain all data within blockchain's immutable ledger while ensuring data access and confidentiality is controlled through data partitioning.

Supporting these activities, payers, including state Medicaid and commercial payers, access and maintain 'On Chain' data via an accessible Public Channel – *fostering collaboration, while ensuring inherent data accuracy and accountability*ⁱⁱⁱ. The more open the collaboration, the higher the accuracy of the data becomes. To maintain confidentiality, 'Off Chain' data storage is still enabled within backend payer databases.

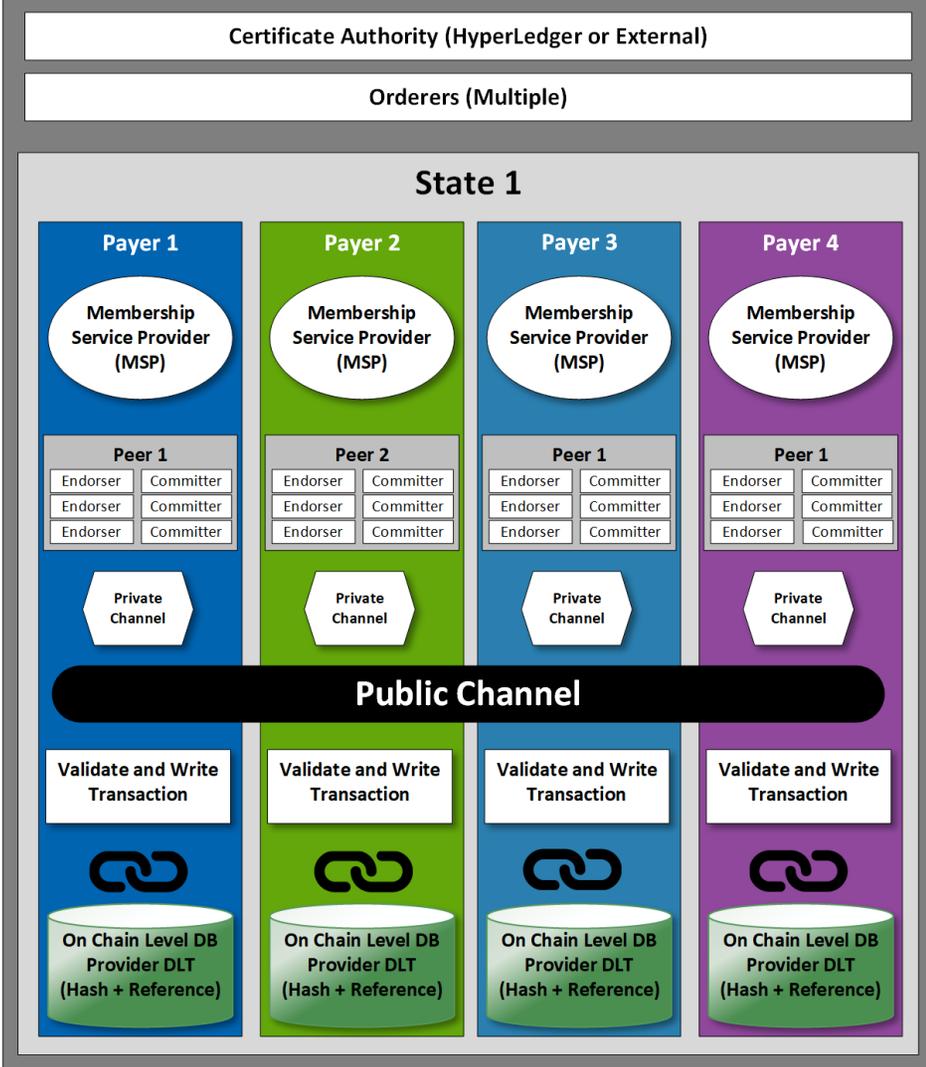
To ease payers into the adoption of DyP and its blockchain design, various configuration types can be supported, starting from a single payer maintaining a regional or national provider network to multiple payers working together to maintain provider profiles collaboratively – *on the chain as shown below*.



DyP 'On Chain' and 'Off Chain' Support: Supporting All Use Cases



Discover your Provider™ (DyP)



As new providers enroll, existing providers submit CoC requests, and provider networks continue to expand, data received across payers is captured, processed through the Transaction Gateway and the Consensus Engine, and recorded within the ledger. Data is maintained through a trackable history of the reference data and its associated hash algorithm, which serves as a 'fingerprint' to the data. All subsequent changes to the data cause an additional 'block' of data and its associated hash to be formed on top of the original^{iv}.



This creates an endless chain, with a 100% tracked history of each piece of provider data – providing inherent data accountability and accuracy. This tracked history then serves as a **Provider Wallet** for each provider, keeping each provider's data together with the associated hashed key.

To align with confidentiality laws, regulations, and specific payer requirements, blockchain data is stored over a *permissioned network*, supporting both data storage within the payer's Private Channel 'Off Chain' while ensuring all other data is accessible through the Public Channel across payers, stored 'On Chain'. Administrators reviewing provider applications, managing the network, and processing CoC requests, can *access the same Public Channel data* to validate provider information and credentials.

The Results

By accessing and contributing to the same set of information, *data accuracy is drastically improved* and individual human *errors within provider records is virtually eliminated*. **Discover your Provider™** leverages the power of blockchain, enabling data to be collaboratively maintained across a payer's network and amongst the payers themselves, supporting both government agencies and commercial payers alike. With 45% of Medicare Advantage entries and 52% of provider location listings having errors^v, action must be taken now to ensure provider data can be effectively and accurately received, processed, transmitted, and maintained.

By leveraging the power of blockchain, applications can be processed more efficiently, fraud, waste, and abuse can be mitigated, and members can receive an improved customer experience from qualified providers. For more information on blockchain provider management technology, visit www.HHSTechGroup.com.

Sources Cited

ⁱ HealthIT Analytics. *Provider Data Management Offers Payers a Blockchain Use Case.* <https://healthitanalytics.com/news/provider-data-management-offers-payers-a-blockchain-use-case>

ⁱⁱ IBM Hyperledger Fabric. <https://www.ibm.com/blockchain/hyperledger>

ⁱⁱⁱ Ernst & Young and Humana. *Free the Data: A Case Study. Crowdsourcing Healthcare Provider Directory Maintenance.* <https://www.ey.com/Publication/vwLUAssets/ey-crowdsourcing-healthcare-provider-directory-maintenance/%24File/ey-crowdsourcing-healthcare-provider-directory-maintenance.pdf>

^{iv} Blockgeeks Article. *What is Hashing & Digital Signature in The Blockchain?* <https://blockgeeks.com/what-is-hashing-digital-signature-in-the-blockchain/>

^v Ernst & Young and Humana. *Free the Data: A Case Study. Crowdsourcing Healthcare Provider Directory Maintenance.* <https://www.ey.com/Publication/vwLUAssets/ey-crowdsourcing-healthcare-provider-directory-maintenance/%24File/ey-crowdsourcing-healthcare-provider-directory-maintenance.pdf>

Contact Information:

Faiyaz Shikari
President & Chief Technology Officer
(404) 279-0801
faiyaz.shikari@HHSTechGroup.com