RFI RESPONSE — HEALTH TECHNOLOGY ECOSYSTEM

INTRODUCTION

Palantir Technologies Inc. ("Palantir") is the developer of the Palantir Platform (or "the Platform"). The Platform is a commercial SaaS product with a FedRAMP-High authorization. The Platform has been deployed in support of hundreds of government and commercial customers across the U.S. and international markets. As of our most recent earnings report (PLTR), Palantir supports nearly 770 customers with configurations of the Palantir Platform. It is estimated that Palantir software manages nearly 30% of the hospital beds in the U.S. through our partnerships with customers such as Tampa General Hospital, Mount Sinai Health System, and HCA Healthcare. Our support of U.S. government customers — which began in 2010 — includes HHS operational divisions like NIH, CDC, ACF, ARPA-H, as well as VA. We also have a significant partnership with the UK's NHS to modernize and centralize a Federated Data Platform in support of hospital operations.

Our diverse experience supporting HHS and U.S. hospitals and other healthcare related customers lends a unique perspective that we share in response to the CMS Health Technology Ecosystem RFI.

Since its inception, Palantir has understood that interoperability is a worthwhile effort and a critical challenge. Previous regulation has taken the U.S. healthcare industry closer to enabling data and system interoperability, but the intent of the regulation (e.g., 21st Century Cures Act and subsequent rules) has been challenging to implement and enforce. Palantir, with great effort and technological investment, has demonstrated the value of translating medical record data into valuable outcomes across US healthcare, which reinforces the potential opportunity of improved interoperability. **Our response to this RFI petitions for clearer rules of engagement on information blocking**.

Across our healthcare work, from our government work with various HHS OpDivs to our commercial work at health systems, we have witnessed, interrogated, and solved varied but overlapping problems. Broadly, at both the federal- and provider-level, it is difficult for healthcare providers to obtain timely, complete, and quality data that form a full picture of any patient's health and medical history, as well as the operational context of the care that patient is receiving. Furthermore, our health system partners' use of the Palantir Platform has proven that driving interoperable health systems with appropriate access to clinical, operational, and financial data can improve the health system's ability to provide optimal care and equip providers to make better informed decisions. It has also shown significant gaps in the types of data and the significant barriers that slow down or prevent health systems from filling these gaps.

Unique and common learnings from commercial work and government work can help improve data access and interoperability for the U.S. healthcare system writ large. This experience and perspective includes:

- A breadth of Federal health experience that has given us knowledge and expertise in enabling our clients to obtain and harmonize public and private healthcare data from a number of sources: clinical data from large numbers of providers, claims data, social and environmental data, logistical and operational data, and more. This work has given us insight into the challenges with data integration, how data can be centralized in a privacy preserving manner, and what infrastructure or logic can be reused to do so, as well as how to harmonize data from myriad, disparate sources into a standard data model. We have also worked alongside researchers to build reusable tools that measure and report on data quality and use that information to improve data quality in source systems.

- A breadth of commercial health experience supporting health systems in capacity management, discharge planning, clinician staffing and scheduling, revenue cycle, clinical research, and other areas.
- Both our federal and commercial health work has given us experience harmonizing data from many different sources to drive interoperability, creating a translational layer on top of the raw data that promotes intelligibility and efficacy and enables the use of accurate, timely data in analyses and operational applications.

These combined learnings — what data is most useful for treatment and healthcare operations; where this data has gaps and how they can be filled; ways to streamline the integration of this data; and ways to improve data quality and interoperability — can be combined to help improve technical solutions for patients, providers, and payers.

In our response to CMS' RFI questions related to a modern Health Technology Ecosystem, we explicate challenges and advocate for solutions related to:

- The healthcare / health system data that is valuable but hard to access (for patient treatment, for claims processing, and for government institutions) and the changes required to improve access and interoperability.
- The opportunities and challenges that exist in our current systems and policies, and the steps required to improve accessibility and interoperability of clinical data from various sources.
- The technology and policy needed to enable and encourage providers to utilize digital health applications and make quality data (including from the EHR) available for exchange, including:
    - Changes to data standards and reporting practices.
    - Policy changes including limiting information blocking.

RESPONSE TO RFI QUESTIONS

Patients — 2. Data Access and Integration

PC-8. In your experience, what health data is readily available and valuable to patients or their caregivers or both?

a. What data is valuable, but hard for patients and caregivers, or app developers and other technical vendors, to access for appropriate and valuable use (for example, claims data, clinical data, encounter notes, operative reports, appointment schedules, prices)?

As a provider of operational solutions for hospitals, there are several categories of data that we have proven to be highly valuable for improving care delivery, operational efficiency, and patient outcomes, but remain difficult for caregivers and third-party app developers to access in practice:

- **Capacity and Operational Data**
    - Bed Availability (by unit, acuity, and isolation status) — There is no FHIR resource specifically for "bed" or "room" status. Currently, operational-status is not part of US Core and is not standardized or implemented in practice.
    - Operating Room Schedules and Utilization — OR utilization is a key driver for patient throughput and discharge navigation that can be greatly improved via predictive and operational technology.

  - Operational ADT — Admissions, discharges, and transfers are not modeled in FHIR as events that can be used to maintain census state in a live operational application. Encounters must be polled regularly at high volume to attempt to model this.

- **Clinical Data Beyond USCDI Scope**
  - Broader Scope Clinical Notes — The advent of Large Language Models (LLMs) has made clinical notes one of the most valuable assets for improving care delivery. Full encounter notes (including nursing, therapy, and consult notes), operative and procedure reports, detailed order statuses, and imaging and pathology narrative reports should be made available for real-time operational applications (including scanned PDFs as FHIR DocumentReferences).
  - Social Determinants of Health — A number of social determinants not shared today, such as food insecurity, housing stability, and transportation needs, can be leveraged to identify patients who may require additional support or are at risk of complications during discharge.
- **Claims and Payer Data (Revenue Cycle Functions)**
  - Comprehensive Claims History — This data, including pending and denied claims, as well as adjudication and remittance information, is not regularly implemented, nor is the data timely and accurate for the purpose of patient qualification/eligibility events, such as a prior authorization.

b. What are specific sources, other than claims and clinical data, that would be of highest value, and why?

- **Capacity and Operational Data** — A key driver for improved patient outcomes is optimizing length of stay. Access to real-time data such as bed availability (by unit, acuity, and isolation status), operating room schedules and utilization, ADT events, and other census-related information enables applications to enhance patient throughput and accelerate the delivery of care. Making the length of stay for each patient more efficient will improve particularly healthcare outcomes as well as collective outcomes as care providers will be freed up to focus on high-risk patients and high impact functions.
- **Social Determinants of Health (SDOH)** — Beyond basic elements like alcohol and tobacco use, factors including food insecurity, housing stability, transportation needs, social isolation, and legal challenges can be leveraged to improve patient outcomes. Access to these data points helps identify patients who may require additional support, are at risk for delayed or complicated discharge, or may be eligible for specialized programs. Palantir has experience integrating SDOH data to drive improved health outcomes where available and relevant, including CDC's Social Vulnerability Index and the Environmental Justice Index.

c. What specific opportunities and challenges exist to improve accessibility, interoperability and integration of clinical data from different sources to enable more meaningful clinical research and generation of actionable evidence?

- **Clinical Notes** — The advent of Large Language Models (LLMs) has made clinical notes one of the most valuable assets for improving care delivery. Full encounter notes (including nursing, therapy, and consult notes), operative and procedure reports, detailed order statuses, and imaging and pathology narrative reports, and SDOH should be made available for research (including scanned PDFs and other images).

- **Non-standard Data Formats** — Whether to improve care or to do basic research, systems first need to handle data in different formats or standards across healthcare systems. Mapping data from different formats into a common data model (CDM) — a standardized set of schemas, attributes, and relationships — enables data from different sources to be viewed or analyzed on aggregate. Such mapping efforts, however, require technical solutions that can support the complex logic needed to transform EHR data, run such logic at scale, and clearly track the provenance of data from its source system to its standardized version. These technical solutions should also be accompanied by robust security controls to ensure that any access restrictions on the source data are maintained stringently throughout its transformation.
- NIH's National Clinical Cohort Collaborative (N3C) has demonstrated success with harmonizing EHR data which arrives from healthcare sites in a number of different CDMs, to the Observational Medical Outcomes Partnership (OMOP) CDM. In addition to creating a unified set of data for research, this mapping from raw EHR to single CDM allows for the deployment of a standardized data quality evaluation pipeline and related visualizations. Sharing data quality reports back to healthcare sites, based on harmonized data in a single system has allowed those sites to identify and adjust inconsistencies with their data collection, creating a feedback loop where, over time, data quality and consistency improves due to better visibility. This virtuous cycle — grounded in a robust, accurate, and usable / operational centralized data resource — encourages healthcare site participation and leads to better research to drive improved healthcare and patient outcomes for the U.S.

PC-10. How is the Trusted Exchange Framework and Common Agreement™ (TEFCA™) currently helping to advance patient access to health information in the real world?

a. Please provide specific examples.

- Work has been done at the NIH to obtain EHR data through one of the country's largest TEFCA-Qualified Health Information Networks (QHINs) for patients who have consented to have their EHR data used for NIH research. So far, this effort has only connected to the one HIN directly, rather than onboarding and connecting through TEFCA itself, but the work demonstrates the potential of a large scale data integration that leverages TEFCA.
- Connecting to a single large HIN — or, in future use cases, connecting to multiple HINs through TEFCA — has the power to accelerate clinical operations and research by allowing patient data to be queried through one or a few central hubs rather than through many complex point-to-point connections. The same infrastructure and logic can be reused for each site whose data is queried through the same HIN, which is faster and more efficient than establishing connections with, and writing custom logic, for each site individually.
- The initial process of onboarding to, and testing connections with, a large HIN can be time-consuming and technically complex. Harmonizing the data received such that it can be used by end consumer-, provider-, or payer-facing applications — for example, data in different formats such as the legacy C-CDA standard and newer FHIR standard — also requires complex logic, run at a large scale, with access controls in place to protect PHI and PII. This upfront investment, however, can save time and reduce costs in the future.
- The NIH use case described above facilitated the transfer of patient authorization records to, and subsequent EHR data sent from, multiple healthcare providers or local Health Information Exchanges (HIEs). This connection significantly increased the volume and range of patient data

available for research. For future use cases, similar work could be done to increase patient, provider, and/or payer access to the full range of a patient's data.

b. What changes would you suggest?

We recommend the following changes:

- Data quality and completeness standards should be applied to all institutions or local HIEs that participate in TEFCA. For example:
    - TEFCA could institute requirements that all participants meet minimum levels of data quality and completeness for the data that they share. These checks could include:
        - Ensuring all measurements include units.
        - Checking for extreme outliers.
        - Ensuring that at least basic health information is available for every patient treated.
- Ideally, these checks could be implemented as "unit tests" at each site. These unit tests could automatically flag low quality or missing data to the institution and prevent that data from being shared with network participants until resolved.
- Institutions' and vendors' data quality and completeness metrics could be shared publicly to allow other participants to learn from and consider the best partners for care or research. These metrics could also be used as one factor to evaluate and award research grants.
- Mapping local codes within each institution before sharing data. This could include:
    - Centralized logic for mapping common codes — for example, sometimes, EHR-specific codes that are not included in UC Core — could be created once then shared and implemented at each TEFCA healthcare provider organization.

c. What use cases could have a significant impact if implemented through TEFCA?

A variety of use cases could have a significant impact if implemented through TEFCA. These use cases include:

- General Use Cases:
    - Providers could access patients' full medical history, including records from multiple institutions when patients transition or split care between institutions. This would enable more informed decisions, reduce duplicative procedures, and reduce the burden on patients (and providers) to share information and records between providers.
    - Patients could access their own complete medical history in one place and more easily reference steps for their own care. Having access to unified medical records will improve patient experience and outcomes.
    - With patient consent, payers could access patients' recent medical history to enable quicker processing of claims and improve fraud detection.
- TEFCA enables the centralized exchange of these EHRs. With broader use of the SSA's NHIN Interoperability Model, QHINs could also require and process patient authorization records from any system requesting patient data for a non-treatment use case, such as coverage determination, claims processing, or research.

For each of the use cases described above, TEFCA could provide the base layer for data exchange, with other systems and applications built on top of this layer to:

- Securely store all data received.
- Implement strong and flexible access controls to ensure that patients, providers, and payers only view data they've been authorized to view.
- Operationalize new EHR records for use in live decision-making for patient treatment, in claims processing, and more.
- Support in-depth analysis of retrieved data and any new operational workflows.

PC-11. How are health information exchanges (HIEs) currently helping to advance patient access to health information in the real world?

As described above, a connection to a large national HIE has enabled NIH researchers to significantly augment EHR data for research from consenting patients. Just as this connection improves the accuracy and breadth of data available for research, similar connections could improve the accuracy of treatment or claims processing for non-research use cases.

a. How valuable, available, and accurate do you find the data they share to be?

Initial analysis through our work at NIH has shown the data shared to be very available. Access to this data has significantly improved and expanded insight into patients' medical histories.

Some limitations were encountered, including duplicate records and vendor- or site-specific concept codes. These challenges could be mitigated with data quality / completeness checks, and with improved mapping of local codes.

b. What changes would you suggest?

We recommend that the above, TEFCA-related changes also be applied to HIEs.

c. Are there particular examples of high-performing HIE models that you believe should be propagated across markets?

The SSA's NHIN Interoperability Model was developed to exchange patient authorization records and EHR data for non-treatment use cases (for example coverage or research). This model has shown the ability to significantly expand visibility into patients' medical history at both the SSA and the NIH, while ensuring that data is obtained only for patients who have consented to have their data used for each program.

Providers — 1. Digital Health Apps

PR-1. What can CMS and its partners do to encourage providers, including those in rural areas, to leverage approved (see description in PC-5) digital health products for their patients?

a. What are the current obstacles?

1. **Data Access Restrictions** – The Palantir Platform provides robust technical functionality to enable seamless data integration from EHR systems, despite their outdated infrastructure and limited interoperability. Most digital health products lack the capabilities to support this level of integration, which inhibits their ability to provide digital health products to providers.

2. **Friction to Writeback and "Close the Loop"** — Writeback of clinical and operational decisions into the EHR is rarely supported, preventing providers from completing their workflows in digital health products. They must swivel back to the EHR to complete their tasks, often in more manually intensive workflows, further discouraging use of digital health products.
3. **EHR Workflow Restrictions** — Health Systems often cite a preference for third-party applications to be embedded into their current workflows. While iFraming is technically feasible, some EHR vendors create practical obstacles to implementing applications within the EHR such as impractical governance processes and agreements.

PR-3. How important is it for healthcare delivery and interoperability in urban and rural areas that all data in an EHR system be accessible for exchange, regardless of storage format (for example, scanned documents, faxed records, lab results, free text notes, structured data fields)? Please address all of the following:

a. Current challenges in accessing different data formats.

Many clinical elements not stored in structured, standard formats are more valuable today than ever before. With the advent and maturation of Large Language Models (LLMs), images, clinical notes, and other unstructured fields are immensely valuable for real-time care delivery.

As described below, there has never been such high demand for these elements in care delivery as there is today, and many of the interoperable resources supporting these elements are incomplete and inconsistently implemented. Workflows involving these notes are often delayed, incomplete, or require manual retrieval and re-entry of information to gather the whole picture.

b. Impact on patient care quality.

When missing these critical elements including history, consults, external records, and more, providers are forced to make decisions on incomplete patient data, which could easily lead to incomplete or redundant care, unsafe decision-making, increased risk for readmission, or other length-of-stay related coordination barriers. These risks are a large contributing factor to providers choosing to stay within the safety of their EHRs, even when they believe that leveraging digital apps and third party tools would augment and improve care quality if the necessary data could be made accessible.

c. Technical barriers to full data accessibility.

Unstructured and multi-modal media elements are rarely implemented in standard interoperable resources. While some DocumentReference types may be implemented, gaining access to the data backing these resources is often impossible. As an example, collecting unstructured and free text notes from some of the EHRs today requires vast EHR knowledge and is executed via custom reporting jobs by expert teams; the results of which are transferred as flat files. Implementation of said workflows often takes months, is non-standard, introduces risk of quality errors, and increases real-time workflow latency dramatically.

d. Cost or privacy implications of making all data formats interoperable.

The technical barriers described above are costly on many fronts. The IT resources required to scope, implement, test, and maintain custom in-house data transfer / integration jobs is high. EHR vendors often require professional services fees to enable new data feeds outside of the core FHIR resources. As an example, clinical notes could be made available via MDM HL7v2 messages but are often only made available with significant fees associated.

From a privacy perspective, replicating extensive unstructured data outside of EHRs can pose a risk to health systems who, as a standard practice, attempt to minimize copies of patient data stored in different systems. Given limited EHR interoperability and without standard resources for EHR data access, replication tactics are often the only way for providers and third parties to achieve interoperability.

Technology Vendors, Data Providers, and Networks — 3. Technical Standards and Certification

TD-7. To what degree has USCDI improved interoperability and exchange and what are its limitations?

USCDI has improved the baseline for interoperability and exchange by standardizing core clinical data elements and enabling API-based access across the healthcare ecosystem. However, in its implementation today, the scope is too limited to tackle many high value use cases. Lack of support for operational and unstructured data as well as inconsistent implementation (due to interpretation, or due to intentionally broad definitions) places use cases involving advanced analytics, real-time operations, and comprehensive patient context remain out of reach for many providers.

As interoperability standards improve, and health systems feel empowered to direct their own interoperability and encourage vendors to implement elements that add value to them, the full promise of interoperability can be achieved.

a. Does it contain the full extent of data elements you need?

No. To support providers in making critical decisions regarding patient care, full patient context (including unstructured data), operational context (including census-related data elements), and more (claims, SDOH, etc.) are needed for our workflows to be accurate and impactful.

b. If not, is it because of limitations in the definition of the USCDI format or the way it is utilized?

There are limitations in both the format and utilization. While there are missing elements from the USCDI (that exist in the broader FHIR spec), even amongst the USCDI, many of the definitions are open to interpretation. The completeness of these elements is often driven by the EHR vendor rather than the health system, and health systems often have felt inhibited or unable to make improvements to these models to support use cases due to the significant cost or other technical limitations.

c. If so, would adding more data elements to USCDI add value or create scoping challenges? How could such challenges be addressed?

We believe that adding more data elements to USCDI would add significant value, as many high-impact data types exist outside the current scope. However, implementing all possible elements universally could be infeasible and burdensome for both EHR vendors and providers.

To address this challenge, a tiered approach could be considered: EHR systems would be required to support a core set of universal data elements, while additional elements would be made available “on demand”— that is, EHRs would provide these elements when specifically requested and according to standardized specifications. This would balance broad data availability with practical implementation constraints, ensuring that valuable but less commonly used data can still be accessed without overwhelming health IT systems.

d. Given improvements in language models, would you prefer a non-proprietary but less structured format that might improve data coverage even if it requires more processing by the receiver?

While structured formats are always welcome alternatives to unstructured information, it would be infeasible today to capture every field that could improve a patient's care in a standard interoperable format while maintaining quality and completeness. Large Language Models (LLMs) have shown promise in extracting and interpreting important clinical context from large amounts of unstructured information. The Palantir Platform's AI capability (or "AI Platform [AIP]") has demonstrated success reining in context from a broad range of unstructured elements.

TD-9. Regarding certification of health IT:

d. What policy changes could CMS make so providers are motivated to respond to API- based data requests with best possible coverage and quality of data?

As discussed in our response to PC-10 b., we recommend the following changes:

- Data quality and completeness standards should be applied to all large healthcare providers or institutions. These standards should require that:
    - Institutions meet minimum levels of data quality and completeness for the data that they share. These checks could include, for example:
        - Making sure all measurements include units.
        - Checking for extreme outliers.
        - Ensuring that at least basic health information is available for every patient treated.
    - These checks could ideally be implemented as "unit tests" at each site, which would flag low quality or missing data to the institution and prevent that data from being shared with network participants until the issue is resolved.
    - Providers' data quality and completeness metrics could be shared publicly to allow others to consider the best partners for care or research, or could be one factor in determining funding research at these institutions

Technology Vendors, Data Providers, and Networks — 5. Compliance

TD-18. Information Blocking:

a. Could you, as a technology vendor, provide examples for the types of practices you have experienced that may constitute information blocking. Please include both situations of non-responsiveness as well as situations that may cause a failure or unusable response?

Palantir's health system clients have experienced information blocking upon discovering that patient or operational context (that was not available via FHIR or other interoperable standards) was readily available and easily accessible from EHR reporting databases, APIs, or BI/reporting tools; but have been subsequently restricted by their EHR vendors from configuring their Palantir Platform deployment to access these data elements. Below are some examples we believe may constitute information blocking:

Schema as IP — One EHR vendor treats the majority of their data stores as their proprietary intellectual property, effectively restricting health systems from leveraging the data they own as they see fit. Since some patient data only lives in these proprietary schemas, the data and access to it is in effect controlled by the EHR.

Constraints on Third-Party Integrations — One EHR vendor prevents health systems from configuring integrations between the EHR and third-party vendor systems for any data beyond the limited USCDI FHIR resources, without the third-party vendor entering a series of agreements with the EHR vendor

Non-standard and Sub-standard Implementations — While there are often robust first-class ways to access valuable clinical information, some EHR vendors will only expose sub-standard implementations to 3rd parties, such as flat-file writeback integrations on batch jobs that run at set intervals; despite APIs existing to achieve the same behavior in real-time.

Perceived Database Performance Concerns — Many EHR vendors have argued that external queries to their cloud databases can cause performance degradation, in order to unilaterally block access to reporting databases that are intended for individual use. Despite proven methods for incrementalizing, throttling, and reducing queries against databases to an invisible minimum, access is often blocked on this argument alone.

b. What additional policies could ASTP/ONC and CMS implement to further discourage healthcare providers from engaging in information blocking practices?

If implemented, we believe the following recommendations will discourage EHR providers from information blocking:

- Schemas should not be considered proprietary IP if no alternative exists for supplying the same data.
- Reasonable data access fees should be emphasized for private technologies if the technical feasibility for access is simple (no professional services required by the EHR vendor) and no public alternative exists. Open and interoperable standards should be encouraged by CMS.
- If the EHR vendor imposes heavily burdensome steps required by health system IT to enable EHR data access in third party systems, this should also constitute information blocking.
- Timelines should be enforced for offering alternatives if proprietary schemas contain information required by a healthcare technology vendor and the EHR vendor does not want to expose their proprietary IP.

c. Are there specific categories of healthcare actors covered under the definition of information blocking in section 3022(a)(1) of the Public Health Service Act (PHSA) that lack information blocking disincentives?

EHR vendors lack enforceable disincentives today for the scenario where the data required is easily accessible but is blocked by EHR vendor policy and process, as well as by their contract with the health system. EHR vendors tend to rely on their contract which explicitly prohibits the use of these technologies by the health system as a protection. These provisions should be unenforceable under the information blocking regulation.