

Advancing Interoperability and Data Access in the United States

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Background and Scope

Scope of Work

The 2009 HITECH Act sought to promote nationwide adoption and effective use of interoperable electronic health records (EHRs). While EHR adoption has substantially increased, particularly among hospitals, the ability to move data across EHRs to support frontline clinical care and the ability to move data between EHRs and other systems and applications that support patient engagement, public health, research, and a wide variety of other health-related purposes has been substantially more limited. While it is clear that progress has been made, there is a need to understand where we are with that progress and what we need to move it forward more rapidly.

This report describes perspectives from HLC/BPC member organizations on how to advance interoperability of systems and electronic information sharing in the U.S. We present synthesized findings from 48 interviews with executives from health systems, hospital trade associations, payers, device manufacturers, health IT vendors, professional societies, pharmaceutical companies, and national leaders in health IT and interoperability.

The findings in this report serve to:

- Define a vision or desired future state
- Describe health information sharing priorities (or “use cases”) for those who deliver, receive and pay for care, and other related stakeholders
- Describe barriers to more rapid progress
- Describe key actions that are needed by the private sector and with support from government
- Describe measures that can be used to evaluate progress

Methods

To capture perspectives from a diverse set of stakeholders on a variety of topics, we developed a semi-structured interview protocol (described below), which guided hour-long phone interviews with organizations and individuals selected by the Healthcare Leadership Council (HLC) and the Bipartisan Policy Center (BPC). We first conducted interviews with HLC and BPC member organizations, and then interviewed a set of health IT and interoperability experts with broad perspectives on the interoperability landscape. The interviews were transcribed and synthesized and the results are presented in aggregate in this report. We interviewed a total of 48 participants (see Attachment 1).

Interview Guide

We created a semi-structured interview guide that was reviewed and edited by HLC and BPC. The interview guide contained two sections (see Attachment II).

Section One gathered perspectives on health information sharing priorities and measures. In this section, we assessed: (1) outcomes that organizations were trying to achieve by supporting or pursuing interoperability; (2) specific interoperability use cases that are essential to achieving those outcomes; (3) specific actions that are needed to advance interoperability at various levels (e.g., policy, infrastructure, integration), (4) key measures to assess success in achieving identified use cases, and (5) barriers to more rapid progress.

Section Two sought to gather perspectives on vision and key actions that are needed to advance interoperability including: (1) identifying interoperability efforts that the interview participants are currently involved in as well as efforts they are not involved in but find effective, (2) key actions by policy makers to speed interoperability progress, and (3) key actions by the private sector to speed interoperability progress.

Data Collection and Analysis

We reached out to interview participants by email, and then scheduled and conducted individual hour-long interviews. We took notes during the interview and recorded the interviews to refer back to for more detailed information. We extracted the relevant information by topic and organized our findings to identify areas of consensus as well as areas of differences between organizations. The results of our synthesis are presented in the following section.

Vision-Desired Future State

The majority of organizations identified the desired future state as one in which the right data is available to the right person at the right time. In this future state, higher-quality, more efficient decision-making is enabled by providers, patients, payers, and other stakeholders having seamless access to needed information. An additional core component of the desired future state was high-quality information that is accurate and actionable, and therefore provides value as well as reduces healthcare costs.

Some organizations acknowledged the desired future state but also described what was perceived as a more realistic near-term state in which summary of care records can be shared across any EHR implementation.

Defining Interoperability and Member Efforts to Advance Interoperability

The definition of interoperability was essentially consistent with the vision of the future state - that is, the delivery of the right information to the right person at the right time without substantial human-mediated effort. More specifically, interoperability was defined as the ability to communicate health information for individuals and populations across different organizations, different entities, and across different care settings that may or may not be formally related to each other. This exchange could occur internally within an organization and externally at all different levels, including nationally, regionally and locally, for all types of health data including clinical and administrative data.

Some organizations offered more technical definitions, such as the ability to link different information systems together using standardized data formats. The linking should be bi-directional to allow the push and pull of information. The end result would be data that could be shared and consumed by both people and machines.

Member Efforts to Advance Interoperability

At the national level, many organizations have advocacy groups or teams that are interfacing with Congress, Office of the National Coordinator (ONC), and the Department of Health and Human Services (HHS) to educate them and influence them in terms of their efforts around interoperability, and share feedback and commentary on proposed regulations such as TEFCA, Meaningful Use, and the 21st Century Cures Act. One organization mentioned that they are trying to capture their members' pain points in becoming interoperable and using those stories to educate Congress.

Many organizations also support development of national standards and are stakeholders or support the Da Vinci and Argonaut Projects in their effort to accelerate the adoption of HL7 Fast Healthcare Interoperability Resources (HL7® FHIR®) as the standard to support and integrate data exchange across communities and development of FHIR-based APIs.

Many are also members of different organizations whose mission is to drive improvements in healthcare and patient outcomes through information technology such as the Healthcare Leadership Council, the Bipartisan Policy Center, eHealth Initiative, and the American Medical Informatics Association.

Most organizations said they were either involved themselves or if not, found the following initiatives effective:

- The Sequoia Project & Carequality Initiative
- CommonWell Health Alliance
- DirectTrust
- CARIN Alliance

In total, we identified more than thirty national organizations that respondents engaged with to advance interoperability. Organizations perceived fragmentation and overlap of current interoperability efforts, with the needed for greater coordination among them.

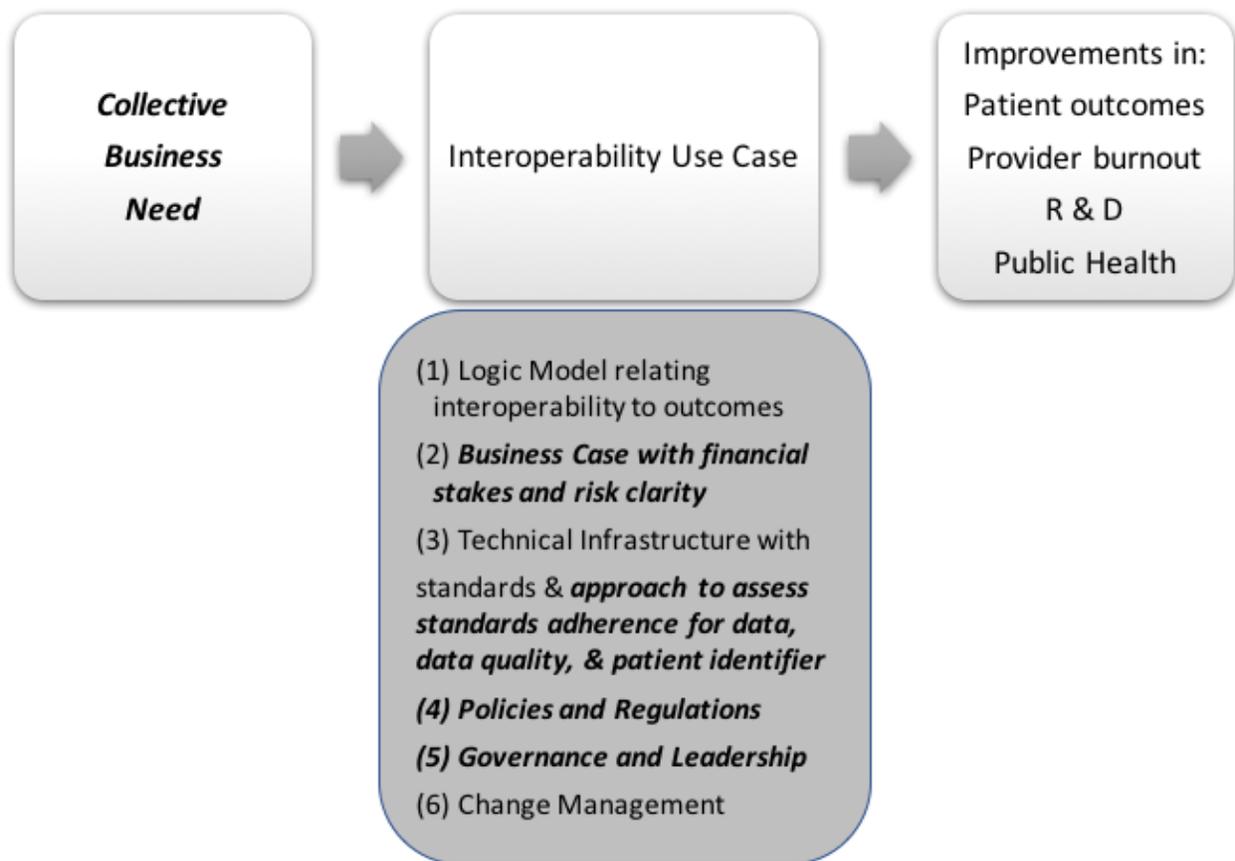
Not many organizations were working with efforts that sought to advance interoperability at the state or local level, but some mentioned the need to work at the state level on revising the approach to patient consent (most often by switching from an opt-in to an opt-out approach). Some organizations mentioned that they work closely with their state Health Information Exchange (HIE) organizations, typically as participants in information exchange.

Conceptual Model of Needed Approach to Speed Interoperability Progress

There was a shared perspective that we are not pursuing interoperability using approaches that have proven successful in other industries and contexts, and that the root cause of slow progress is that interoperability is not driven by widespread business needs to achieve it. Widespread business needs were largely understood to be the core business needs of provider organizations, which are shaped by payer organizations (upstream) and shape vendor needs (downstream). The related concept of “aligned” incentives referred to these relationships – payers creating conditions in which providers were incentivized to invest in interoperability and demand such solutions from their vendors. However, a future state in which widespread business needs (stemming from aligned incentives) define a collection of specific interoperability use cases that result in improved outcomes was perceived as the exception rather than the norm.

Below we illustrate this future state and the identified current gaps (in italics). These gaps inform specific actions that could be pursued by HLC/BPC and their members to address these gaps (described later in the report).

Figure 1. Needed Approach to Achieve Improved Outcomes through Interoperability*



*Italicized items are current gaps.

Priority Use Cases

Most organizations prioritized clinical use cases, including interoperability between doctors and hospitals, and between doctors/hospitals and ancillary service providers (e.g. labs, radiology). Many who prioritized clinical use cases did so because these use cases enabled providers to make more informed decisions and reduce unnecessary utilization, thereby reducing healthcare costs. A few organizations also added that clinical interoperability alleviates the burden on the patient to transport or remember the information themselves.

While clinical use cases emerged as top priorities, a varied set of additional use cases were also cited by a wide array of organizations. These use cases featured interoperability between

hospitals and long-term/post-acute care providers, interoperability that enables patients to access their medical data, interoperability that supports public health activities, interoperability that supports population health, and interoperability for administrative purposes (e.g. eligibility verification for benefits). For example, one organization said they do participate in public health interoperability efforts in their region around surveillance and outbreaks since it is critical in the management of larger populations. (However, they also noted use-case specific challenges as they encounter more technology issues with public health interoperability efforts than with clinically-focused efforts.) In addition, although some stated that administrative interoperability is important to be able to discuss benefits with the patient and in particular the cost of different medication choices with patients based on patient benefits, some thought that it was not as critical since the ability to check benefits has already become routine (i.e. this type of interoperability was available before the ability to exchange clinical data).

Interoperability with social services (e.g. food banks, homeless shelters), while stated as important, was generally lower priority. Several organizations stated that social services did not have the technological capabilities to exchange information.

Other use cases mentioned were interoperability between clinical care and non-clinical services, such as daily living support. One organization mentioned that better interoperability between these two care settings could help make the case for the important role of non-clinical services in the healthcare ecosystem since ongoing communication between the two settings could prevent problems from becoming life-threatening by preemptively addressing concerns. For example, a community program that assesses needs by conducting home visits could administer a comprehensive assessment, and communicate information to both clinical and non-clinical settings about needed support or services.

A few organizations mentioned being able to use the data for clinical research or clinical trial research as a priority.

Barriers

Business Needs:

Many efforts to pursue interoperability today pull the key market players along - sometimes unwillingly and sometimes willingly but with little sense of urgency. This is a symptom of the reality that interoperability is not a “stay in business” issue. It is unlikely that the government will act to fundamentally change this dynamic in the near-term. It is therefore incumbent upon the private sector to use the tools at their disposal to change market dynamics in ways that create a widespread business need for broad-based interoperability. In particular, well-defined interoperability use cases in which there are “dollars left on the table” from not engaging in them would allow organizations (in particular, provider organizations) to make a strong case for greater interoperability investment that is actionable. Key levers to address business needs include:

- Payers/employers → providers via network participation agreements
- Providers/payers/employers → vendors via contracts
- Patients → providers (& payers/employers) via purchasing behaviors

Technical Infrastructure:

While improving technical infrastructure was described as a second-order issue that would be addressed by the market if the business need to do so existed, there were specific opportunities to improve technical infrastructure that were prioritized. Lack of a national patient identifier and slow, inconsistent adoption of standards were common barriers mentioned that impede better data integration. Many stakeholders pointed to the benefits that would come from a standardized patient identifier, and while many called on the government to address this, there is the opportunity for collective private sector action to create a de facto standard identifier (or patient matching approach) using market power. As in many other industries, standards emerge from companies with market power (“anchor tenants”) using a given standard and requiring its use by business associates. There are also state-level approaches to patient identification that could be expanded nationally, such as Michigan’s Common Key Service. Particularly considering that the VA will soon need to move to a new approach to patient identification, there is a specific window in which private sector action to establish a market leader approach (to either a patient

identifier or a standard matching approach) could then quickly become a broader national standard. More broadly, there is a need (supported by federal policy efforts) to move towards a common language and common architecture to enable interoperability. As specified in 21st Century Cures, the common architecture will be Application Programming Interfaces (APIs) that are widely used in other industries and enable core operations: create, read, update, and delete. The common language that these APIs will use to enable interoperability of health information is FHIR – a draft standard describing data formats and elements (e.g., medication, immunization). With increasing momentum behind these architecture and language components, the need to rapidly adopt FHIR standards and API approaches were also frequently cited by organizations.

Policies and Regulations:

Similar to technical infrastructure, the broad policy and regulatory environment was not perceived as a top priority area for action to speed interoperability. However, specific policies and regulations were cited as impeding interoperability progress and would therefore benefit from collective private-sector action to address them. One of the two areas – lack of harmonized consent policies across states – has long been recognized as a challenge and there is perhaps an opportunity for HLC/BPC members to continue to pressure their states to work towards harmonization. A less well-recognized issue is the uncertainty about the organizational risk that comes from greater engagement in interoperability; that is, there is a lack of clarity about the types of risk exposure (e.g., malpractice, HIPAA violations) to which an organization may expose themselves if they are on the leading edge of pursuing interoperability. This dynamic compounded the lack of business need, such that both the financial case and the compliance case were uncertain. While regulatory clarification would need to come from the government, requests for such clarification by HLC/BPC members could help.

A few organizations mentioned that the Stark Laws need to be revised. Stark Laws are fraud and abuse laws that prohibit referral of a patient for designated health services to an entity in which the referring physician or a family member, has a financial interest. These can impede exchange by preventing a hospital from helping fund interoperability efforts of referring providers.

Governance:

There was widespread agreement that there are many organizations pursuing interoperability, with some degree of overlap and insufficient coordination. The goal of TEFCA is to address this fragmentation. However, participation is voluntary and the final approach has yet to be released. Assuming that the final TEFCA framework is broadly acceptable, it would send a strong signal of a commitment to reduce fragmented interoperability efforts if HLC/BPC stakeholders were early participants in TEFCA.

Key Private Sector Actions

There were some differences in the assessment of the extent to which the current market environment will drive towards needed interoperability. In particular, some organizations felt that the only needed action was to achieve open data (presumably via APIs), and then the market will figure out how to align itself and achieve varied use cases. Others felt that private and public stakeholders needed to take broader actions to create stronger incentives and target other barriers, such as patient identification.

We suggest the following actions that, if pursued collectively by HLC/BPC members, would address the root of the problem and drive towards a widespread business need for interoperability, tied to specific use cases. Often, we suggest the strongest form of an action, but also recognize that achieving consensus among a diverse membership may require more flexible approaches (i.e., voluntary approaches, less standardized approaches).

Action 1a: Develop and use standard contracting language between payers/self-insured employers and health systems/provider groups that includes interoperability in network participation agreements.

Action 1b: Develop and use standard contracting language between payers/self-insured employers/provider organizations and health IT vendors that includes interoperability in contracts.

Ideally, this language would be co-developed by payer, provider, and vendor organizations, and would address specific use cases for which conformance testing can be performed. Action 1b may be supported by an upcoming NAM report on procurement strategies to drive increased interoperability.

Action 2. Develop a standard “Notice of Information Access Practices” (akin to the Model Privacy Notice developed by ONC) and require that health systems/providers make it available to patients.

The Notice would describe the specific options available to patients for how to access their medical records and how to pursue them in simple, easy-to-follow steps.

Action 3: Develop similar incentive programs between payers/self-insured employers and health systems/provider groups tied to interoperability-sensitive outcomes.

While many felt that the best payment driver to create a strong business need to invest in interoperability would be moving quickly to full, two-sided risk contracts, an interim action that could create a stronger business need would be to tie incentives to interoperability-sensitive outcomes, following the model of programs such as HACs or avoidable readmissions. The challenges are creating a consistent program across multiple payers and defining interoperability-sensitive outcome measures that avoid penalizing appropriate care.

Action 4: Develop a program that rates provider organizations on the level of interoperability and share these ratings with patients for their current providers as well as other geographically-close providers with better interoperability ratings.

This consumerism approach would be modeled off the CMS Medicare Advantage plan star ratings, and evidence that patients switched plans after being informed that a higher-rated plan was available in their market. The challenges are creating a consistent program across multiple payers and defining the rating system to accurately reflect organizations that have strong interoperability processes.

Action 5: Endorse and adopt a standardized approach to patient identification/matching, using the market power of HLC/BPC stakeholders to become the de facto national standard (i.e., pick a winner).

Given the heterogeneity in approaches, any effort to coordinate and streamline approaches would be valuable but, as has been demonstrated in other industries, if a group of influential stakeholders pursues a consistent approach, it can have an outsized effect on the industry and become the de facto national standard.

Action 6: Pursue rapid adoption of FHIR-based APIs to achieve open data

While there is growing momentum behind a common architecture (APIs) and common language (FHIR) to more readily enable interoperability, there is still substantial opportunity for members to more actively engage in these efforts. It begins with engagement in the FHIR development process, working with groups like Argonaut to develop the standards. Also critical is engaging vendors in prioritizing which available FHIR standards to implement in their upcoming upgrades. Ultimately, what is most critical is that organizations that hold healthcare data turn on all available FHIR-based APIs to make the greatest breadth of data available for exchange.

Action 7. Collectively pressure ONC to move towards a new approach to certification that includes an ongoing assessment of conformance to standards, leveraging TEFCA as an opportunity to make this transition.

There was a perception that the approach to certification of EHR technology could be improved in ways that would strengthen interoperability infrastructure, though this would be a government action. In particular, tying certification to ongoing testing of conformance to standards, rather than the current approach (a pre-market, one-time assessment), would represent an important advancement. Given that approaches to assess the quality of conformance to data, document, and transport standards exist, these could be more broadly leveraged and implemented by networks such as CommonWell or other Qualified Health Information Networks (QHINs, as described in

TEFCA). The private sector could support this by collectively urging ONC, perhaps as part of finalization of TEFCA, to require ongoing conformance/quality scoring of CCDAs and other mature standards.

Action 8: Pursue consensus advocacy on two key regulatory barriers impeding interoperability progress issues: patient consent and organizational risk.

While interviews did not reveal specific policy or operational solutions, consensus statements from HLC/BPC members that offer a framework to guide regulatory activities would likely be helpful to regulators. That is, while regulators are likely familiar with the problem, they lack insight into what the industry views as the most promising solutions. Therefore, a consensus statement on how best to harmonize patient consent models across states, for example, could prompt policy actions.

Action 9: Use “participation power” to drive more coordination between interoperability efforts via a consensus response to and/or participation in TEFCA.

When the final TEFCA is released, the most valuable activities in which HLC/BPC members could engage are to respond to it in cohesive manner (e.g., a single set of public comments) and clearly indicate the extent to which they plan to participate in it/support it. If TEFCA is not widely supported, a consensus statement on a viable alternative that achieves the same goal of coordinating interoperability efforts is needed.

Key Government Actions

A subset of actions that could be advanced by the private sector were also called out as key actions for the government to pursue. For example, advancing a national patient identifier or patient identification approach was often cited as a key government action, though some had concerns about the privacy implications of this action. Most participants suggested that government should continue to work to advance standards development, particularly of FHIR-based APIs.

Government could also take part in creating aligned financial incentives and business models across healthcare settings to be able to exchange data. Much of the discussion focused on more rapidly moving from volume based payment to value based payment. However, more targeted efforts to create financial incentives for providers and EHR vendors to advance interoperability were cited as well as penalties for information blocking.

A few organizations mentioned the value of a government-led national patient awareness campaign on why data sharing is important and valuable.

Measures to Evaluate Progress

All the interviewees believed that measuring interoperability progress is difficult for several reasons. One reason is that interoperability is a moving target that is in constant state of evolution. Another reason is that there is no single measure that can capture the state of interoperability, and it is only through an array of metrics that it would be possible to understand the status of interoperability. Yet another reason that measuring progress is difficult is because it is unclear how to define and normalize measure denominators. Overall, there was agreement that measures of progress should be outcomes-based. Specifically, desired outcomes should first be identified and measured, and then upstream measures of the flow of information could be created and tied to these outcomes. There were also some suggested proxy measures that could reflect interoperability progress but not measure it (or the impact on outcomes) directly, such as:

- Number of times that data has to change formats via manual efforts
- Health IT overhead costs
- Time required to merge together patient information from multiple sources

Ultimately, the chosen action item(s) should guide measure efforts as each would lend itself to a specific set of measures that track progress on the given action. However, given the focus on outcomes above, it would be valuable to identify the outcomes expected to be impacted by the actions and measure those as well.

Parking Lot Topics

There were three topics that were mentioned in interviews but with a great amount of uncertainty about whether or how they will impact interoperability progress. The first related to the role of large, non-healthcare technology companies (like Apple and Google) as solution providers.

There was a perception that these companies were getting more and more involved in the healthcare sphere, but not yet taking any clear actions targeted at solving core interoperability challenges. If they did, such efforts hold the potential to be “game changers” in terms of the interoperability ecosystem.

The second topic was patient facing APIs. The ability for patients to access their medical record through an API is relatively new and still rare, but expected to grow (particularly with Apple Health Kit Health Records integration). The extent to which patients will take advantage of these new capabilities, and what type of “app” ecosystem will emerge to generate value from medical record data are both unclear. In addition, it is also unclear whether patient-facing APIs will be a “workaround” to achieve a broader set of interoperability use cases.

Lastly, some interviews surfaced novel state-level models to speed interoperability progress. While no one identified a model that clearly should serve as a model for the rest of the country, there was recognition that states were continuing to experiment with different approaches and a model could emerge that would be able to rapidly scale.

Attachment 1 – Organizations Interviewed

Adventist Health System

Aetna

American Academy of Family Physicians

American Academy of Pediatrics

American College of Physicians

Athenahealth

Beth Israel Deaconess Medical Center

Bioreference Laboratories

CareJourney

Center for Medical Interoperability (CMI)

Cerner Corporation

Change Healthcare

ChenMed

Cleveland Clinic

CMS

CommonWell

Eli Lilly

Epic

Fairview Health System

Franciscan Missionaries of Our Lady Health System

Geisinger

HCA

Hearst Health

Intermountain Health

IQVIA

Kaiser Permanente

Leidos

Marshfield Clinic Health System

Massachusetts eHealth Collaborative

Mayo Clinic

Medidata Solutions

MedStar health

Memorialcare Health System

Merck

National Health Council

New York Presbyterian Hospital

Northshore University Health System

Novartis

ONC*

Pfizer

Premier

Senior Helpers

Stryker

Surescripts

Tenet

The Sequoia Project

Vizient

*Two separate interviews (with different participants) were conducted with ONC.

Attachment II – Interview Guide

Interviewee: [NAME], [ORGANIZATION]

Introductory Text

Thank you for your willingness to participate in this interview. Our goal today is to understand your perception on specific topics related to information sharing priorities, vision of future state, key measures to determine national progress and key actions needed by both private sector and by government. We ask for your honest feedback and opinions as that will help us ensure the greatest likelihood of success in the goals of the project.

This project is a grant awarded to UCSF by the Healthcare Leadership Council (HLC) and the Bipartisan Policy Center (BPC) focused on advancing interoperability and data access. The primary goal is to advance interoperability of systems and electronic information sharing in the U.S. to support:

- 1. Better health outcomes for individuals in the U.S.; and*
- 2. Higher quality, safer, more cost-effective care for individuals and populations.*

At this point, I'd like to make you aware that any information you provide is completely confidential and will only be used within our research team at UCSF and HLC-BPC. Also, research studies include only people who choose to take part. Please take your time to make your decision about participating. If you have any questions, you may ask us now or at any time during the interview.

For purposes of capturing the correct information, we would like to record this interview. This allows us to ensure that we've fully and accurately captured all your feedback in our notes. These will be destroyed at the end of the project. Is that acceptable?

I'd be happy to answer any questions about the project before we begin. Do you have any questions?

Preliminary Questions

1. *Please tell us about yourself and your organization.*
2. *How does your organization define interoperability?*

Section 1: Health Information Sharing Priorities and Measures

3. *What outcomes you are trying to achieve by supporting or pursuing interoperability?*
4. *Which specific interoperability use cases do you view as essential to achieving these outcomes?*
5. *Please share the extent to which you perceive the below use cases as valuable including why they are important, and the end-goal of the use case:*
 - a. *Clinical 1: interoperability between doctors and hospitals*
 - b. *Clinical 2: interoperability between doctors/hospitals and ancillary (e.g. labs, radiology)*
 - c. *Long Term and Post-Acute Care: interoperability between doctors, hospitals, and ancillary with long term care, SNFs, home health organizations, etc.)*
 - d. *Personal Health: (e.g., supporting individuals' access to their health information to support improvements in health)*
 - e. *Public Health: (e.g. disease surveillance, outbreaks)*
 - f. *Population Health: (e.g. chronic care for populations, new delivery system and payment models, transparency efforts, etc.)*
 - g. *Social Services: interoperability with social services (e.g. food banks, homeless shelters, etc.)*
 - h. *Administrative (e.g. eligibility verification for benefits)*

We now want to discuss actions that are needed to advance interoperability at various levels:

- **Policy.** *This level addresses items such as consent, financial incentives, and shared approach to identifying patients.*
- **Infrastructure.** *This level focuses on being able to move data from point A to B.*
- **Integration.** *This level is about incorporating the flow of data into workflows and practices.*

6. *For each priority use case you mentioned above, what are you doing to advance...*

- a. *National interoperability policy efforts?*
 - i. *How do you/should you measure progress in this?*
- b. *State or local interoperability policy efforts?*
 - i. *How do you/should you measure progress in this?*
- c. *Interoperability policy efforts between organizations?*
 - i. *How do you/should you measure progress in this?*
- d. *Interoperability policy efforts within your organization?*
 - i. *How do you/should you measure progress in this?*
- e. *Interoperability infrastructure?*
 - i. *How do you/should you measure progress in this?*
- f. *Interoperability integration?*
 - i. *How do you/should you measure progress in this?*

7. *Are there any other specific actions that we haven't covered that you are taking to advance your priority use cases?*

8. *How would you assess when we've successfully achieved these use cases?*

9. *What are the primary road blocks to more rapid progress?*

Section 2: Vision and Key Actions That Are Needed

10. *Which public or private interoperability efforts are you a part of? Why did you choose to participate in these?*

- a. *Where are these efforts focused? (Policy, Infrastructure, and/or Integration)*

- b. How have these efforts been most effective to date?*
 - c. What do you think these efforts need to do to be more effective?*

- 11. Are there other efforts that you are not a part of that you find effective?*
 - a. Where are these efforts focused? (Policy, Infrastructure, and/or Integration)*
 - b. How have these efforts been most effective to date?*
 - c. What do you think these efforts need to do to be more effective?*

- 12. What single action by federal policy makers do you think would be most impactful in speeding up interoperability progress?*
 - a. What are the key obstacles keeping this from happening today?*
 - b. What additional actions do you think your organization can take to address these obstacles?*
 - c. What would motivate you to take these actions?*

- 13. What single action by private sector do you think would be most impactful in speeding up interoperability progress?*
 - a. What are the key obstacles keeping this from happening today?*
 - b. What additional actions do you think your organization can take to address these obstacles?*
 - c. What would motivate you to take these actions?*

Wrap – up

Thank you for your time. Is there anything else you think we should discuss related to the topics covered in the interview today?

If you have any questions or think of anything else you'd like to add, please contact [lead interviewer]. Thank you again for your time today!