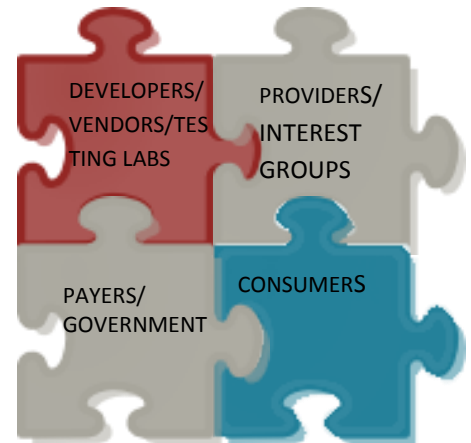


1. General¹

The actions proposed in the roadmap are the right actions to improve interoperability in the near term. Overall, the short-term actions seem appropriate to energize and increase public/private national participation in HealthIT interoperability. In keeping with the general industry trend of improving quality of care, engaging patients and reducing cost using HealthIT as a vehicle, the strategies were appropriate. Overall, the target of the short-term actions point towards enforcing behavioral changes and removing current barriers to interoperability through public-private collaborative governance, better alignment of stakeholders’ policies, standards and practices. For example, getting federal agencies to change and align their policies to efforts on the roadmap is a good strategy to increase compliance across the board. In addition, the alternative payment methodology that will allow 30% of Medicare payments to providers be based on quality and value by 2016, 90% of fee-for-service Medicare payments aligned with clinical quality measures by 2018, and 50% of all supporting care coordination are good measures that could reinforce providers’ behavior towards demonstrating quality and value through interoperability.



INTEROPERABILITY OF HEALTH DATA

Learning Health System as a long term strategy is an innovative approach that with great deal of coordination and trust is achievable over a long period of time, possible exceeding 10 years duration. Given that the health care system in the United States is complex with multiple ecosystems, it will be imperative that trust is fostered across the spectrum for the learning health system to be effective. Private entities must be able to trust and collaborate with governmental entities in reaching decisions meaning that the government will need to use less of a top-down legislative approach. In contrast, top-down approach’s desirability is in effecting change. The two approaches should be reconciled. Another way to achieve trust is to focus on creating sub- learning systems within each ecosystem and then abstracting common standards for application across the industry to avoid further overwhelming an already overloaded system.

Gaps to be addressed

In theory, the short-term actions in the road map can be effective if successfully implemented. However, there needs to be more information on ‘how’ and ‘who’ will ensure the success of implementation. Below are additional gaps that should be addressed.

1. In what ways would the ONC ensure that “independent” federal agencies policy align with the interoperability roadmap? Would there be an overarching body with the authority to effect the policy changes being proposed?
2. ONC will need to ensure that stakeholders across healthIT ecosystems have equal footing in the collective decision making between competing policies, business interests, and standards. The use of a decision-making body might be appropriate.

¹ Questions on the road map. Pages: 6-7

3. The cultural change expected of providers in building block D will take time to materialize. The plan calls for providers and their organizations to include interoperability requirements in the contract they sign with developers. Even when this is done, it is possible that the technological tool may be at the infancy state or new standards are implemented post contract. Developers that met previous interoperability standards may become incapable of meeting new ones due to the time it takes to develop new technical tools. Providers and their organizations should be able to trust that ONC certified vendors/developers meet the interoperability standards. Providers' due diligence should be limited to ensuring the developers they contract with have up-to-date certification. New standards should be provided ample time to mature before becoming mandatory.

a) Appropriateness of timing

In general the three-year estimate for each arm of the short-term stages is constricted and rushed. ONC should extend the timelines. Given that the Affordable Care Act (ACA) has been in establishment since 2009 with consistent and continuous work towards using information technology to achieve Meaningful Use, yet, there are still many challenges. In what ways can some of the short-term actions be done in a shorter time period? For instance, activities like the creation and adoption of policies, and driving consumer choice toward advocating for healthIT by selecting providers that have advanced IT-enabled functions take time. Before consumers can become healthIT advocate, they must first independently understand healthIT, buy-in to the value of healthIT, and guaranteed the privacy and security of their health information in an age of increased cyber-attack. Patients, especially the older strata of the population may not be independently persuaded to change a provider that has a sub-standard IT system as advanced IT may not equate to better care to them.

In addition, ICD-10, and Meaningful Use stage 3 are additional ongoing initiatives with similar timelines. A recent survey on healthcare purchasing showed that over 30% of respondent hospitals are planning on switching vendors in 2015 with implementation possibly going into 2017. All of these initiatives are constraints on providers and consumers resource.

b) Associating the right actors/stakeholders with critical actions

The right actors are associated with the right actions. The bigger issue of concern is ensuring that the actors have the tools, influence and the ability to make the necessary changes in the time frame assigned.

2. Priority Use Cases²

Rationale for the top 3(three) use cases

Out of the 56 use cases, the following 3 have been selected by KHIE. The selected use cases are the core use functions of interoperability which are 1) data exchange across systems that makes the data available at the provider level and integrated into their workflow, 2) access to health information at the patient level (as opposed to raw data that patients may not understand), and 3) data availability at the

² Priority interoperability use cases. Pages: 165-166

societal level for cost reduction and population health management. Other use cases listed are also important. However, for a national initiative, it is critical that the core use cases stay true to the mission and vision of the inception of interoperability, which is to have the right data available for the right patient at the right time, even in emergency situations. Some of these use cases are complimentary and should be combined. Whenever such is the case, KHIE has taken the liberty to combine them.

- 1) Public health agencies routinely use data derived from standards -based connections with HIEs and EHRs and uses it to plan investments in public health activities. These public health activities include population health management utilizing data from all relevant sources on each patient (including information on births, deaths and occupational health hazards) and is accessible to providers and other population health stakeholders (#1 and #50 combined).
- 2) Emergency medical providers have the ability to query data from other sources while managing chronically ill patients after a disaster regardless of geography or what network the data resides in (#49).
- 3) Patients have the ability to access their holistic longitudinal health record when and where needed.

3. Governance

Without a coordinated effort, chances are that will be a few public-private governance organizations forming as a result of the call-to-action for the roadmap. The challenge then becomes how to select the best one that should represent all healthcare ecosystems. Too many sticks in the fire may be divisive, time wasting and may send contradictory message to the same industry that ONC is seeking to unify. Instead of waiting to identify an industry-led governance effort, ONC should be the conduit for the creation of an industry-led governance group where all stakeholders can contribute to directly or through sub-ecosystems. This way, concerted efforts would benefit the outcomes and the timeframe of the roadmap objectives.

The level of authority that the governance framework will have should be pre-established. ONC would need to further clarify whether the governance structure would be formal or informal. For example, an advisory group providing recommendations on learning systems may not have the power to effect the type of change that a formal governance organization on interoperability could. The long term success of roadmap is dependent on the governance framework. The governance body must be able to achieve results to avoid losing stakeholders interests.

4. Supportive Business, Cultural, Clinical and Regulatory

Private health plans and purchasers have financial interests in breaching gaps in healthcare quality and in value-based payments. Interoperability with bidirectional exchange between payers and providers will support the send, find or receipt of common clinical data list in real time. Real time availability of clinical data set can be used to automate authorization of care in situations where clinical information is needed, it can decrease waste in repetitive services cost, and help mitigate cost of frequent users of ER through the initiatives that Health Information Exchanges (HIEs) in the nation are developing. It makes good business sense for private payers to identify frequent ER users as a risks management strategy to reduce cost since these small

percentage of consumers will have higher cost of care that are preventable through case management or enrollment in a patient centered medical home. Private payers will need to support providers to send, find or receive common clinical data to achieve the benefits stated.

Furthermore, encouraging the sharing of information across the continuum of care would reduce re-admissions and enhance smoother transitions of care. The periodic review of medical records that private payers do can be done electronically, which also will reduce expenses to the private payers.

Private payers should align with federal policies and reinforce adoption of standards and certification. The alignment of interoperability initiatives and private payers' business model is a critical success factor. Private payers' payment model, especially those with Medicare and Medicaid related products should foster interoperability and not create competition that may jeopardize interoperability efforts.

In addition, there should be a way to incentivize private payers to support send, find or receive common clinical data across the care continuum of their commercial products as a way to drive positive behavior. ONC should not assume that independent private payers will change their business models to promote interoperability without incentives.

ONC should cautiously approach two of the roadmap's recommendations. One, the recommendation that "payers make the adoption of certified health IT systems or demonstration of interoperability a condition of participation for providers that wish to take part in insurance programs" and two, that consumers be incentivized to choose providers within their networks that have advanced IT-enabled capabilities around care coordination." The two recommendations are great but they assume that 1) providers' choice is a barrier to interoperability and 2) that consumers will respond to the nudge of interoperability from an outside entity they don't trust. The recommendations failed to recognize that providers may have certified HealthIT systems, but the vendor may not have functioning interoperability services. Due to the nature of relationship patients have with their providers, consumers may still choose to stay with their provider of choice. Importantly, the opinion of providers can shape the opinion of consumers/patients as most consumers still hold their providers' in high regard. Instead of asking consumers to pick providers with certified HealthIT systems, efforts should be on vendors and developers to ensure that the certified HealthIT systems function as expected at the point of care, enabling the flow of information and adding value to providers work flow. Providers are more effective advocate in driving patients/consumers engagement in HealthIT than payers or governmental agencies would be because of existing political perceptions of payers and the government.

5. Privacy and Security Protections for Health Information

- Predefined security methods as REST lacks a well-articulated security model. Address the security vulnerability of APIs associated with RESTful.
- Level of encryption
- Provide guidelines and standards on use of certificates for authentication using web tokens
- Provide guidelines on the implementation of authorizations

6. Core Technical Standards and Functions

- a) Care plan field and narrative are areas that can be further standardized.

- b) The approaches proposed are ideal to increase patient data matching and quality. The measurement of the accuracy of the present patient identity processes to identify where improvements are needed, standardization of data elements and development of best practices for the improvement of data quality at the time of registration are good foundational steps.

7. Certification and Testing

ONC should emphasize more on qualitative measurement of interoperability from the users' perspective. If the need for interoperability is to ensure that the right information is available at the right time, then, it becomes imperative to measure semantic interoperability at the point of care or at the point of use. Performance metrics that determine the degree to which the information received met the intended needs should be the focus of evaluation. Quantitatively performance measurement of semantic interoperability should be done to determine the degree to which the data content of CCD and/or CCDA are parsed and consumed by the receiving applications. Furthermore, during certification process, robust but measurable grading metrics around semantics should be included. This will help ensure that each vendor's certification is vetted. ONC should leverage the newly formed joint certification and testing model for IHE profile (across organization and state boundaries) collaboration between IWG, HIMSS and ICSA labs as an example of a vehicle to accomplish this objective.³

8. Measurement

- a) Yes
- b) Of the measures mentioned on the roadmap, the 'impact' of interoperability on better health quality and cost should be the most important. Interoperability is a means to an end; to impact cost and quality of care. As such it is appropriate that the impact of interoperability on cost and quality should be included in the measurement.
- c) Use cases
- d) ONC should leverage successful practices from local or regional initiatives regarding care transitions, readmissions, and ED visits that have proven to increase quality of life and replicate on the national level.
- e) Certification and testing, and maturity of technology: ONC should ensure that vendors obtaining certification have products that are functional. ONC should also create reasonable timeline to allow for one standard to mature before rolling out new standards.
- f) Public Health registries are wealth of information. Immunization, Syndromic surveillance, Cancer registries, and reportable diseases through the Centers for Disease Control and Prevention (CDC) are important data sources that have been in existence for decades and that have been improved under the ACA. Clinical analytics of these data should be one of ONC next focus. That way, the data that are already available are being used.

³ The Interoperability Workgroup Partners with HIMSS & IHE USA to Advance Interoperability. 2015.
<http://list.himss.org/scripts/wa.exe?A2=IHEUSA;72386ca3.1503p> (last accessed March 25, 2015)

- g) Health Information Exchange, Regional Extension Centers are available additional resources that can be used to address measurement of interoperability gaps. For example, Kentucky Health Information Exchange as a state designated public health agent (PHA) assists providers connect to up-to-date technology. Providers are not responsible for procuring the latest technology themselves as long as their vendors have the ability to connect; the providers are able to connect as well.
- h) Data process should flow from private vendors to state entities and then from the state to the national level.
- i) Howbeit imperfect, the following are some examples of short-term and long-term ways to measure impact:
 - 1) Opinion poll (providers). Use this tool to measure the semantic of data content received e.g. CCDAs at the point of care based on providers' perspective.
 - 2) Claims data and providers financial performance: ascertain whether providers with advanced IT-enabled capabilities around care coordination have reduced claims/per patient which will demonstrate that they are accessing and utilizing already available information on patients as opposed to reworking.
 - 3) Provider productivity: Are doctors seeing more patients in the day because the average time spent per visit is reduced due to technology? Measure provider volume/day before and after IT adoption and interoperability initiatives.
 - 4) Certification and Testing: what percent of 2014 certified vendors have problems connecting to HIEs or national registries? Measure the efficacy of the current technological tools to achieve the desired outcomes.
 - 5) Public health registries: analyze the quality of data in the national registries.