Healthcare Reform & Strategic Alignment of Resources

Building the health information infrastructure to support a learning health system

**Background.** The United States is poised at a unique moment in its history with regards to healthcare reform. Substantial resources are being committed to guide a transition from current circumstances in which healthcare is fragmented, reactive, and not value based, towards the vision of a new national environment in which health services are seamless, well-coordinated, oriented towards prevention, and cost effective. Ultimately, this transformation is intended to achieve the Triple Aims of improving healthcare for individuals, improving the health of the population, and improving control over healthcare costs.

By necessity, Federal policy that will guide this complex transformation does so with a large array of initiatives and programs funded through various agencies. It will be essential to coordinate and weave together independent programs and components in order to establish a sustainable well-coordinated delivery system. This includes novel clinical and health services models, overarching financial reforms, payment strategies, data systems, information technology, and processes that can support ongoing evaluation and quality improvement. Strategic alignment offers the opportunity to achieve high quality healthcare and a Learning Health System that continuously refines and improves based on objective evaluation. Without strategic alignment there is a very real risk that this substantial national investment will result in an array of high quality but fragmented programs, or disparate components that don’t support a well-coordinated Learning Health System.

In many cases, states will serve as agents of change that coordinate transformation of healthcare and assure strategic alignment of resources at the community and regional level. This is particularly important with respect to establishing seamless health services across independent providers and organizations, or viewed another way, establishing systemness in a non-system. States can establish guiding policy and are uniquely positioned to lead delivery system reform with the capacity to align Medicaid with multi-insurer payment reforms, convene key stakeholders, develop state level information networks and data sources, and, to assure that Federal, State, and local resources are part of a comprehensive framework.

A number of States have already demonstrated their commitment and capacity in this regard with significant investment and active efforts underway to guide robust delivery system reforms within their borders. The recently announced Multi-payer Advanced Primary Care Practice (MAPCP) Demonstration is a novel approach by the Centers for Medicaid and Medicare Services (CMS) to join state led efforts driven by multi-insurer payment reforms. The provisions of the HITECH and Affordable Care Acts, the call for ONC to lead
the development of a national information technology infrastructure, the establishment of the Center for Medicare and Medicaid Innovation (CMMI), and a new willingness for CMS to join established programs, reflect a new environment where state led reforms can bring substantial resources together in a cohesive model.

Information Technology. The national investment in health information technology provides an excellent example of the critical need to strategically align resources and programs. Will these investments and intensive efforts simply result in increased use of Electronic Health Record (EHR) systems within individual practices and organizations? Or, will they result in an elegant and systems based infrastructure that allows patient information to be available when and where it is needed, supports seamless coordinated services across communities (medical and non-medical), and, provides ready access to comparative reporting and predictive modeling that supports Learning Health System activities from the local to the national level?

Strategic alignment of various Federal resources is a key ingredient to support leading states and to assure that a broad geographic footprint of a robust health information infrastructure sets a road map for the future. In states like Vermont, efforts to establish a more comprehensive health information infrastructure quickly reveal the limits of current technology, as well as the cultural and business roadblocks that need to be overcome. This needs to occur in the near term if the current national investment is going to lead to a visionary health information infrastructure. States, regions, aggregates of organizations, and independent providers need the incentives and roadmap to overcome these obstacles so that a functional digital ‘systemness’ can emerge from a distributed world.
Although not comprehensive, several key limitations are highlighted that are possible to overcome if Federal agencies and leading states work together to develop a health information infrastructure that truly supports a Learning Health System.

- **Problem 1.** EHRs are often set up and used with an emphasis on content recorded as text instead of capturing objective data supplemented by subjective commentary where necessary. Even a seemingly simple parameter like blood pressure is often recorded in different ways within the same practice or organization, sometimes in an objective format and sometimes as text. This limits the ability to support reporting for clinical purposes such as outreach and population management, as well as reporting for evaluation and quality improvement. It also limits the capacity to exchange health information across systems and organizations, a function that is essential for well-coordinated health services. Providers and EHR vendors currently have minimal or no incentive to work through the business and cultural transformation that is necessary to capture structured data elements, and to experience the advantages that can be realized for health services and quality improvement.

**Recommendations.** *Align financial incentives across federal agencies to promote capture of core structured data elements.*

Financial incentives from ONC for the next phases of meaningful use could:
- be linked directly with the actual capture of core structured data elements, and
- set the stage for performance and outcomes driven payment from payers.

Payment reforms validated and disseminated through CMMI (and built upon by commercial insurers) could include quality components linked to the capture of core structured data elements.

Strong, broadly applied financial incentives, built on providers’ recording of structured data elements, can create the demand that will drive commercial EHR vendors to respond to with intelligent functionality that makes it easier to capture guideline base elements in a meaningful way.

- **Problem 2.** Even with incentives to capture structured data elements in EHRs, there is likely to be extensive variability in the content of captured data unless incentives also promote tracking of common elements. Without common elements, there will be significant limitations on the capacity for reporting across providers, practices, and organizations, and therefore limitations on the capacity for outreach and population management, coordination of services, and comparative evaluation. *Providers and EHR vendors do not have clear expectations for core data elements and answer options to support collection of consistent data across providers and organizations.* In addition, there isn’t a direct incentive to propel wide spread adoption of uniformly structured data elements by independent providers and organizations necessary for uniform payment incentive metrics and quality measurement.
Recommendation. Extensive work has been done by various federal agencies to develop widely accepted guidelines for evidence informed healthcare including health maintenance, prevention, chronic conditions, as well as measures of quality and health outcomes. Established guidelines and measures contain the content that is necessary for a minimum set of core data elements and answer options for EHRs.

CMMI and ONC could work with other Federal agencies to coalesce a minimum, ‘Evidence A’, core data dictionary and measure set from established work. Where necessary, guideline committees could define a minimum set of evidence based data elements and answer options form established guidelines.

Financial incentives for the next phases of meaningful use could be directly linked to tracking and clinical use of guideline based elements from this data dictionary (some or all).

Payment reforms validated and disseminated through CMMI could also include requirements related to tracking and use of guideline based elements to support seamless well-coordinated services as well as comparative reporting and quality improvement.

Problem 3. There are serious technical and business barriers that limit the capacity for data exchange across independent practices and organizations. Even if a minimum set of structured data elements is captured more consistently, there are technical limitations on the ability for EHRs to exchange this information (export and ingest). Standards for messaging have been established, yet real world experience reveals that each EHR installation requires time consuming and expensive work in order to export data elements that can be consumed by other HIT systems. Stated another way, it is not evident that current EHR installations include an embedded capacity to routinely export structured clinical data elements in recommended formats. In addition, it does not appear that EHRs can routinely ingest clinical data even if it is available in recommended formats. EHR vendors have a strong incentive to sell systems over the next few years with little or no incentive to dedicate resources that are necessary to make sophisticated information exchange functional and routinely available.

Recommendation. Align financial incentives across federal agencies to rapidly promote the capacity for exchange of structured data elements across EHR systems and independent organizations.

Financial incentives from ONC for the next phases of meaningful use could be linked directly with the functional exchange of core data elements, and use of a more complete health record to support clinical and quality improvement across independent providers of services (medical and non-medical).

Payment reforms validated and disseminated through CMMI (and easily replicated by commercial payers) could also be linked with functional exchange of core data elements to support seamless services across organizations as well as comparative reporting and quality improvement.
Substantive incentives for providers, linked closely with the goals for health information exchange, could create the market pressure that is necessary for EHR vendors to make meaningful exchange a reality.

These 3 recommendations outline a pathway to develop a digital infrastructure that can support high quality health services and a Learning Health System. The sequence and opportunities to align available resources are illustrated below.

The sequence outlined above will help states and other guiding entities develop to develop the technology and networks that can support a Learning Health System. With effective incentives, users of clinical tracking system will steadily move to capture and transmit structured data elements, even if the scope of elements is limited to those promoted by national guidelines. EHR templates and visit planners will be able to prompt guideline based care as part of routine practice. Medical homes, community health teams, and other care support personnel will have the capacity to routinely use reports for outreach that promotes prevention. Comparative reporting and common data elements will be available to support evaluation and quality improvement activities. The table below further details the opportunity to build off of the Institute of Medicine strategy map and position guideline based health information as a driver of coordinated health services and a Learning Health System.
A digital infrastructure that is used to collect, transmit, and exchange structured data elements is an essential component of an overall delivery system that supports well-coordinated health services. This type of infrastructure can also be used to support data guided Learning Health System activities that continuously refine and improve the model.

Right now, a number of leading states are implementing broad delivery system reforms that depend on strategic alignment of State and Federal resources. These efforts typically include novel payment and clinical models, care support infrastructure, use of electronic clinical tracking systems, structured evaluation, and strategies for ongoing quality improvement. An excellent example is the eight states selected as part of the recently announced Multi-payer Advanced Primary Care Demonstration. A strategy that aligns resources and targets incentives, such as that outlined above, will help accelerate the capacity for leading states and other entities to include a sophisticated health information infrastructure as part of their comprehensive delivery system reforms.

Without strategic promotion, applied at a national level, the capacity for information technology to contribute to broad reforms will likely continue to lag in spite of increased use of EHR systems within practices and organizations and the desire to have those systems transform health services delivery and quality of care.